

Weather Safety through Online Weather Briefings

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Telvent's Helicopter Customers



Telvent DTN

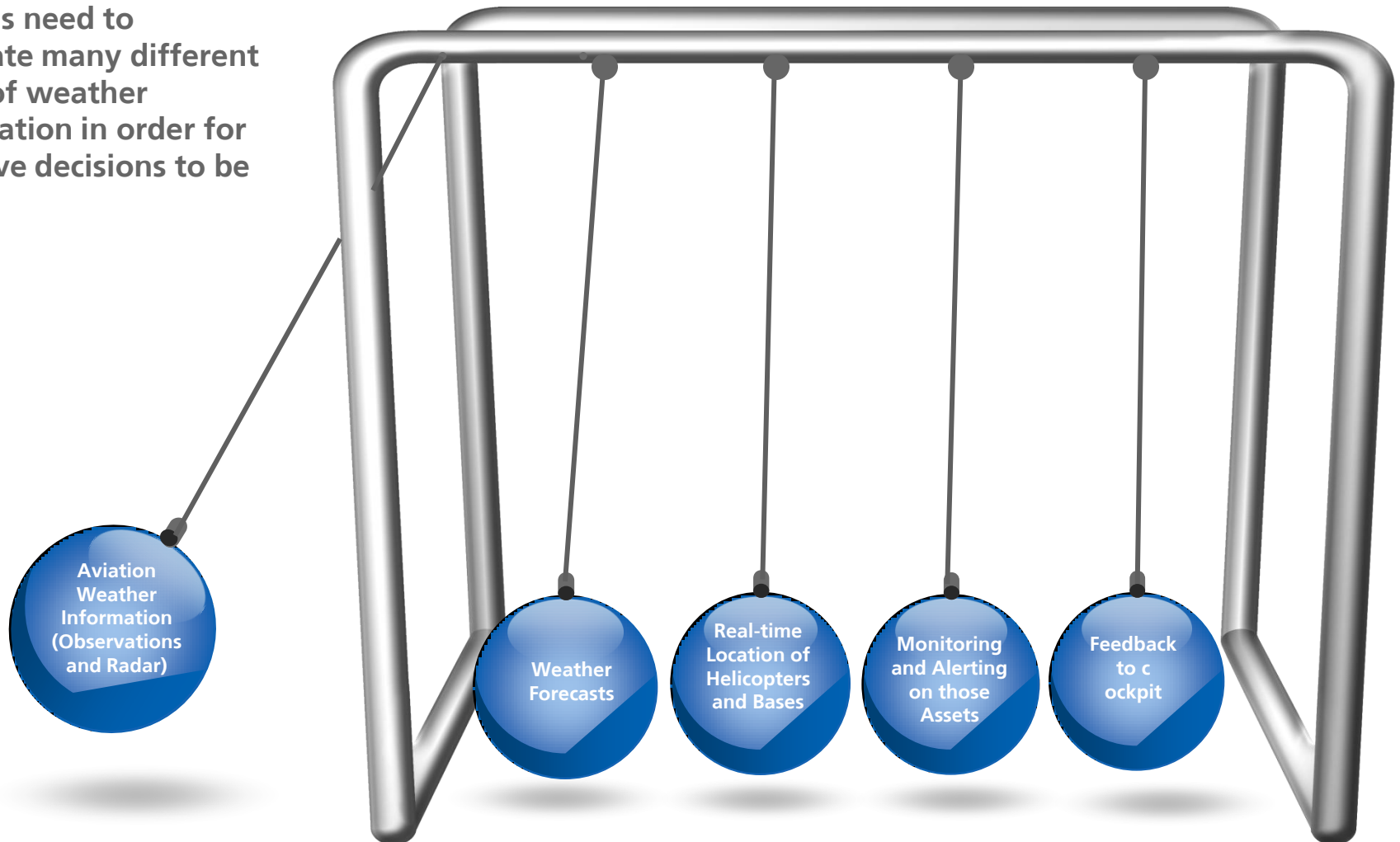
A trusted leader in the Helicopter industry

75% of the helicopter operators in the US use Telvent



Helicopter Weather Building Blocks

Helicopter weather systems need to integrate many different types of weather information in order for effective decisions to be made



Weather Safety Implications

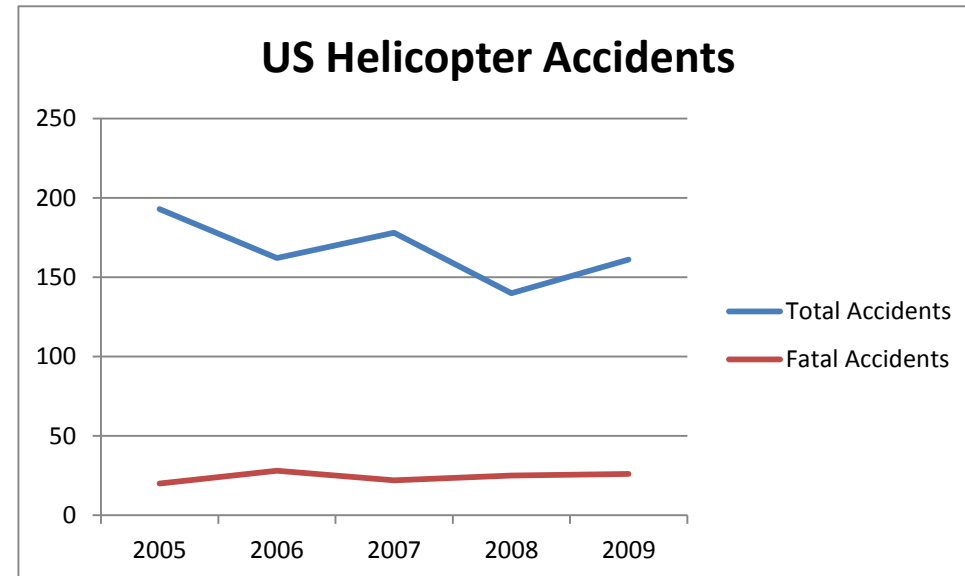
It is a fact that weather may;

- Reduce visibility
- Create icing
- Reduce aircraft performance



Telvent can provide pilots with; accurate data and weather forecast, packaged into a single source of weather information for departure en route and destination

- Weather is a factor in over 1/3 of all helicopter accidents
- Quick go/no-go decisions in marginal weather conditions
- Rapidly changing weather conditions once the decision is made
- Pilots who were not prepared for the weather they encountered



US statistics courtesy of Rotor.com

Weather Briefing Systems Example: AviationSentry Online

■ A weather briefing tool:

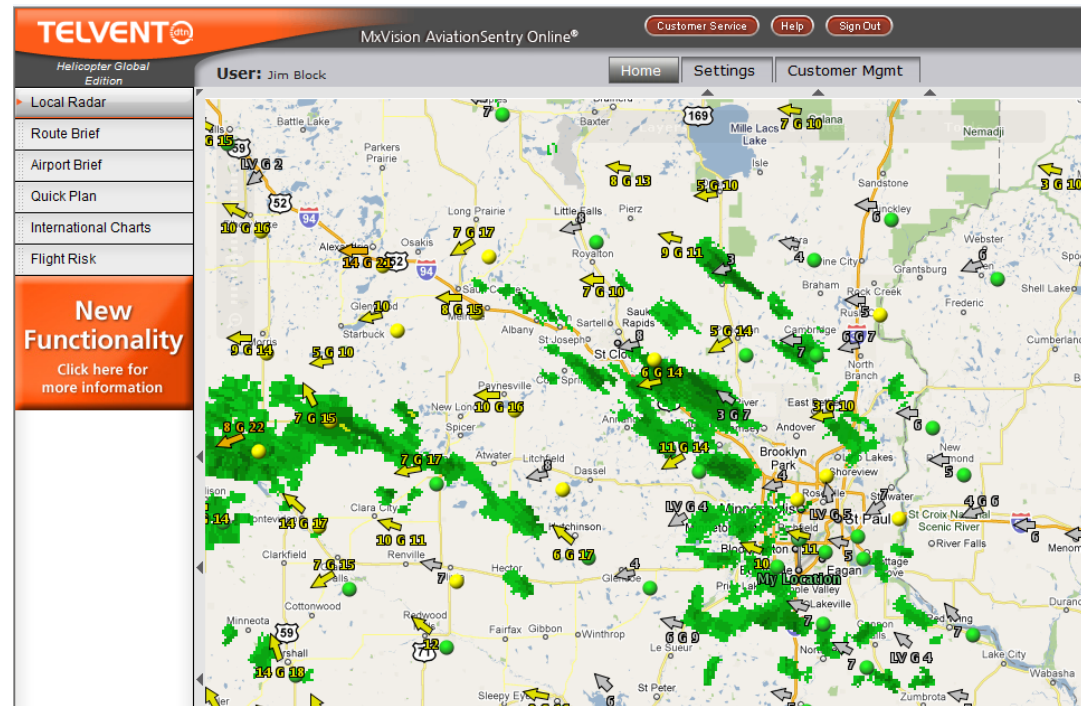
- Provides situational awareness for pilots/dispatch in one web application

- ▶ Observations, Visibility Analyses, Radar
- ▶ Forecasts
- ▶ Asset Location

■ QICP certified by the US FAA to insure:

- Reliability
- Accessibility
- Security

■ Designed to provide operational aviation weather information



Comparison to free internet weather

<i>Capability</i>	<i>Free Internet</i>	<i>Operational Systems</i>	<i>Benefit</i>
Update Frequency	15-30 minutes	5 minutes	Be sure that your decisions are based on the most current information
Age of images	15-30 minutes	5 minutes	Is there a time-stamp on the images? If not-how do you know how old it is?
Rain/snow information	Sometimes	Yes	No guessing whether its rain, snow or ice
Pop-up ads restricted	No	Yes	No annoying distractions or spy-ware worries
Plot your location on the display	No	Yes	Know where the weather is in relation to you, without guessing
Smallest base map at full resolution	500 km+	0.5 km	Both full map and data resolution is critical to accurate location and timing
QICP certified by the US FAA	Sometimes	Always	Certified as reliable, accurate, and secure
Legal for commercial use	Sometimes	Always	Many sites have a legal disclaimer stating that their information should not be used for operational decision making

Ineffective Solutions (And Dangerous):

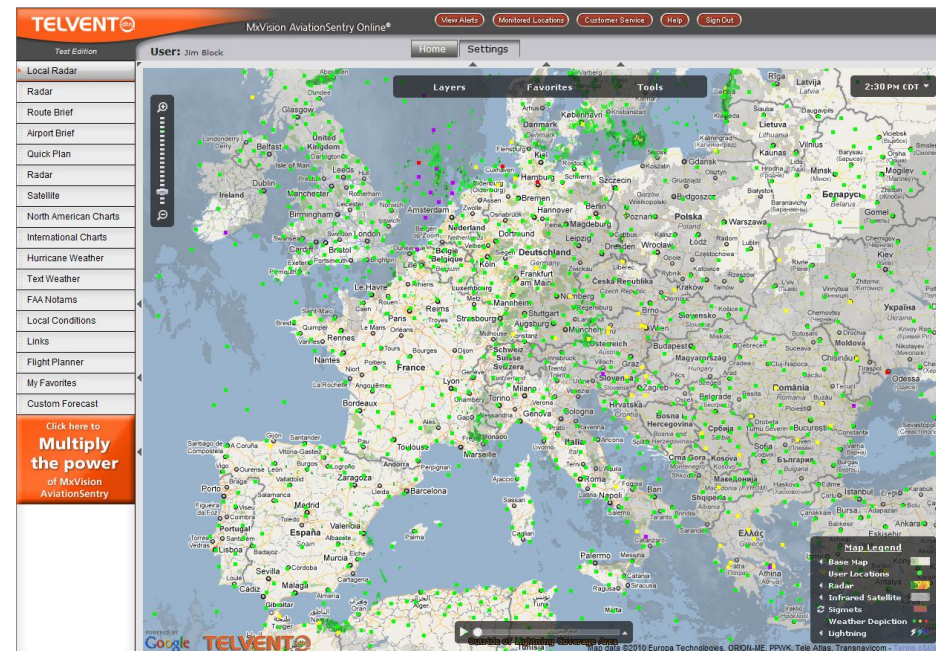
What DOES NOT Work:

- Watch TV, or look out the window:
 - On top of you without time to respond
- Monitor radar alone, and guess whether it is accompanied by hazardous weather
 - Too many false alarms, too many misses – very dangerous!
- Look at weather on free sites.
 - Most are not intended for operational decision making, and do not offer the most current or up to date information

Effective Solutions:

What WORKS:

- Real-time aviation weather information including up to the minute aviation forecasts
- Rules-based decision aides
- Weather check-lists



Helicopter Weather Safety "Best Practices"


Flight Acceptance guidelines:

1. Establish weather thresholds for accepting flights: Use a tool to objectively evaluate all weather criteria
2. Have a common operating picture: Use a single source of weather for both pilots and dispatchers/comm's
3. Monitor flights and weather after launch: Keep tabs on evolving or developing weather

Flight Risk Assessment

Weather	Current		Forecast	
Starting Point	No	Yes	Deteriorating	Improving
Clear	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yellow (Check Wx before departure)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
CIG within 500' VFR Wx mins	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wx at VFR mins	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wx below VFR mins	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enroute	No	Yes	Deteriorating	Improving
Clear	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yellow (Check Wx before departure)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
CIG within 500' VFR Wx mins	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wx at VFR mins	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wx below VFR mins	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Destination	No	Yes	Deteriorating	Improving
Clear	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yellow (Check Wx before departure)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
CIG within 500' VFR Wx mins	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wx at VFR mins	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wx below VFR mins	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
IFR	No	Yes	Deteriorating	Improving
	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>

Flight Profile	
Yes	Flight Conditions
<input type="checkbox"/>	Night
<input checked="" type="checkbox"/>	Scene, new LZ or no IAP within 5 miles
<input type="checkbox"/>	Concerns related to availability of fuel
<input checked="" type="checkbox"/>	Terrain (mountainous)
<input type="checkbox"/>	WX within 500' of mins at destination/at
<input checked="" type="checkbox"/>	Pilot not recent on IAP to be flown
<input type="checkbox"/>	Flight conducted over water
<input type="checkbox"/>	Winds > 30 kts, gusts > 15 kts
<input type="checkbox"/>	Severe WX, icing, thunderstorms

Overall Assessment

<p>Complete the Weather and Flight Profile sections of the Flight Risk Assessment form and choose Calculate Risk.</p>

Flight Risk – a weather checklist

Flight Risk Assessment

Weather	Current		Forecast	
	No	Yes	Deteriorating	Improving
Starting Point				
Clear	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yellow (Check Wx before departure)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
CIG within 500' VFR Wx mins	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wx at VFR mins	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wx below VFR mins	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enroute				
Clear	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yellow (Check Wx before departure)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
CIG within 500' VFR Wx mins	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wx at VFR mins	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wx below VFR mins	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Destination				
Clear	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yellow (Check Wx before departure)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
CIG within 500' VFR Wx mins	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wx at VFR mins	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wx below VFR mins	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>
IFR				
	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>

Flight Profile	
Yes	Flight Conditions
<input type="checkbox"/>	Night
<input checked="" type="checkbox"/>	Scene, new LZ or no IAP within 5 miles
<input type="checkbox"/>	Concerns related to availability of fuel
<input checked="" type="checkbox"/>	Terrain (mountainous)
<input type="checkbox"/>	WX within 500' of mins at destination/alt
<input checked="" type="checkbox"/>	Pilot not recent on IAP to be flown
<input type="checkbox"/>	Flight conducted over water
<input type="checkbox"/>	Winds > 30 kts, gusts > 15 kts
<input type="checkbox"/>	Severe WX, icing, thunderstorms

Overall Assessment



Flight risk assessment:

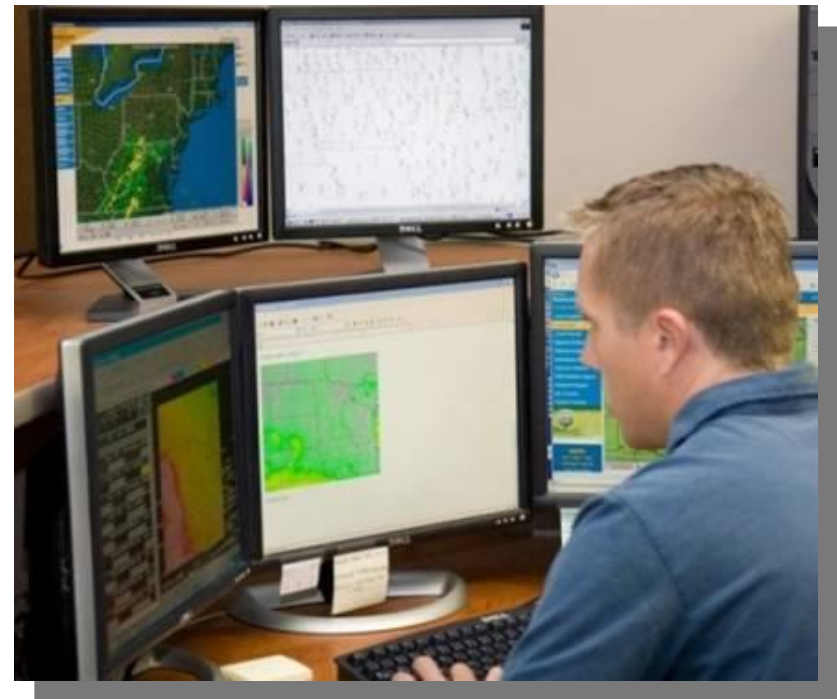
Exercise extreme caution and rebrief options. VFR flight is not recommended or flight should be rejected.

Flight profile assessment:

Flight rejected, risk is too high.

Common Operating Picture

- Standardize the distribution of weather information within an organization
 - Have everyone in the organization use the same weather information
- Standardize the decision making criteria
 - Make decisions about marginal or no-fly conditions a policy
 - Incorporate them into your Ops Specs
 - Use a weather system that displays weather using your criteria



Automated Monitoring and Alerting

- RotorWatch technology monitors aircraft both pre-flight and in-flight
- Continuously compares current aircraft positions to current and forecast weather
- Applies user-defined rules to determine if aircraft are currently, or will in the future, be impacted by weather
- Automatically alerts aircraft, dispatchers, and others

Asset Alert Thresholds

Select the Alert Parameters to monitor. Enter or select a value for the Caution and Warning alert thresholds where required. Click **Save Changes** to make changes permanent.

Asset Type: Helicopter Base ▼

Alert Radius: 10 nm

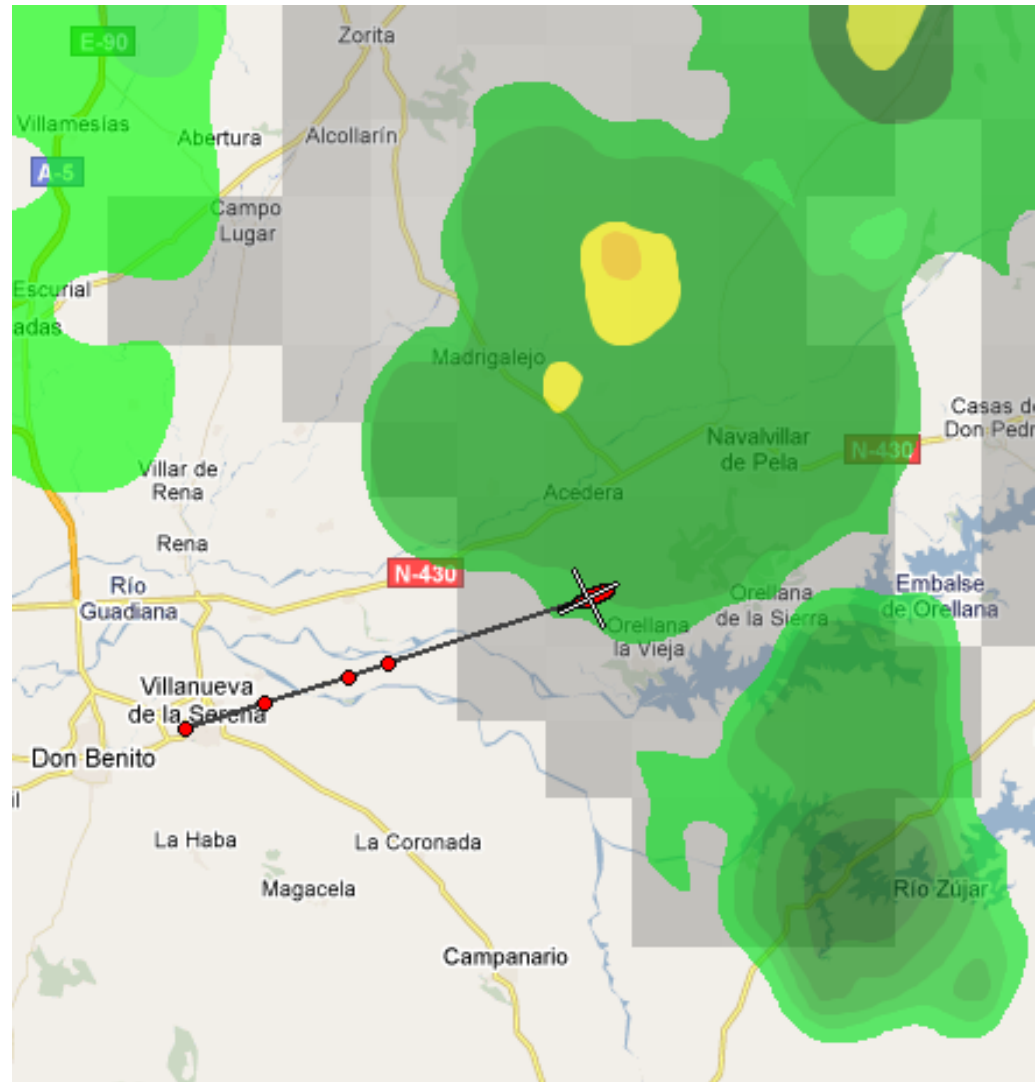
Maximum Flight Duration: 1 hour 30 minutes ▼

Alert Parameter	<input checked="" type="checkbox"/>	Caution ■	Warning ■
AIRMET Icing	<input checked="" type="checkbox"/>	Light ▼	Moderate ▼
AIRMET Turbulence	<input checked="" type="checkbox"/>	Light ▼	Moderate ▼
AIRMET IFR	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>
AIRMET Mountain Obscuration	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>
Convective SIGMET	<input checked="" type="checkbox"/>	<input type="radio"/>	<input checked="" type="radio"/>
Forecast Convection	<input checked="" type="checkbox"/>	Isolated ▼	Occasional ▼
TFR	<input checked="" type="checkbox"/>	<input type="radio"/>	<input checked="" type="radio"/>
Forecast Surface Wind (including gusts)	<input checked="" type="checkbox"/>	16 kts	24 kts
Forecast Ceiling	<input checked="" type="checkbox"/>	2000 ft	1000 ft
Forecast Visibility	<input checked="" type="checkbox"/>	3 miles	1 miles
Change Settings... Lightning	<input checked="" type="checkbox"/>	15 nm	5 nm
Current Radar	<input checked="" type="checkbox"/>	10dBZ ▼	20dBZ ▼
Future Radar	<input checked="" type="checkbox"/>	35dBZ ▼	45dBZ ▼

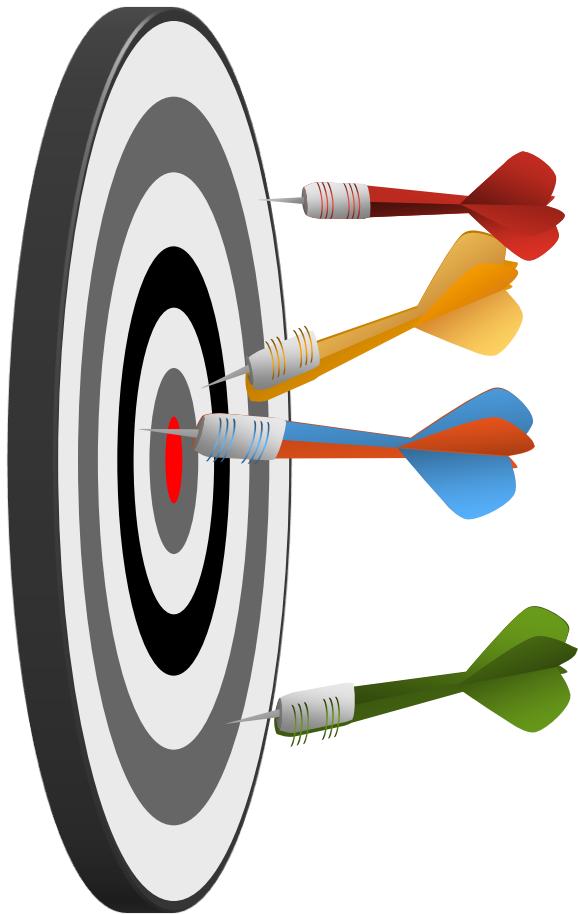
Save Changes

Automated Monitoring and Alerting RotorWatch

- All helicopters in one view along with current weather
- The color of each base or aircraft indicates its current weather alert status
 - Based on the user's alert criteria
- Useful for communications centers who monitor flights and are the "eyes" for active flights



Helicopter Weather Safety



■ Single Source

- Provide situational awareness for pilots/dispatch in one web application
 - ▶ Observations, Visibility Analyses, Radar
 - ▶ Forecasts
 - ▶ Asset Location
- Common Operational Picture: Both pilots and communications/flight followers have identical weather information

■ Safety

- Standardize go/no go decisions on a single platform
- Ensure compliance with JAR Ops III Ops Specs

■ Reliable

- QICP certification or equivalent

Thank you

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