

SkyScope: An Aviation Weather Visualization Tool

CPSC 533C Final Report
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SkyScope Review

- Input: Text Weather Report Data

SkyScope Review

- Output: Weather glyphs on a time line

SkyScope Review

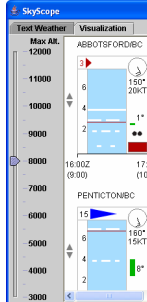
Recent Work

- Finished initial working prototype
- Collected feedback from potential users
- Redesigned parts of the system
- Implemented the changes
- Posted a SkyScope download page with an online tutorial

Some Design Changes

- Main window uses tabs instead of a SplitPane
- Temperature - Dew point spread
- Ceiling added to cloud layout
- Cause of red minimum condition indicator also appears in red
- Standard precipitation icons instead of text
- Maximum cloud display altitude slider
- Wind speed added to wind direction indicator

Maximum Cloud Display Altitude



- Slider controls the maximum altitude displayed
- High altitude settings display clouds at higher altitudes
- Low altitude settings display lower clouds on a larger scale

Wind Speed Indicator

- Wind speed was added to the wind direction indicator
 - Long perpendicular lines represent 10 knots of wind
 - Short lines represent 5 knots of wind
- This technique is consistent with some aviation weather maps



[SkyScope Demo]

Evaluation

- Strengths
 - Speed of understanding weather information
 - Little expertise is required
 - Trends are easily visible
 - Flexibility
- Weaknesses
 - Use of screen space
 - Occlusion
 - Red-green colourblind users may have difficulty

Informal User Feedback

- We demonstrated SkyScope to several licensed pilots
 - 2 recreational pilots
 - 3 flight instructors
 - Singapore Airlines Captain
 - 1 Internet user
- Many suggestions for additions and improvements were given
- Overall feedback was positive and enthusiastic

Conclusion

- Designed and implemented a novel visualization for aviation weather data
- We believe SkyScope dramatically reduces the time required to understand weather data
- User feedback has been very positive
- We believe the approach introduced by SkyScope will see regular use among recreational pilots