ADVANCEMENT AND EXPANSION OF REMOTE SENSING FOR SPILL RESPONSE

Mark Ploen

Efficiency Of Traditional Air Support

With the ability to survey large areas in a short time, rotary and fixed wing aircraft are efficient for spotting oil slicks and areas of concern.

Spotting areas of concern is only the beginning. The challenges of current air support are:

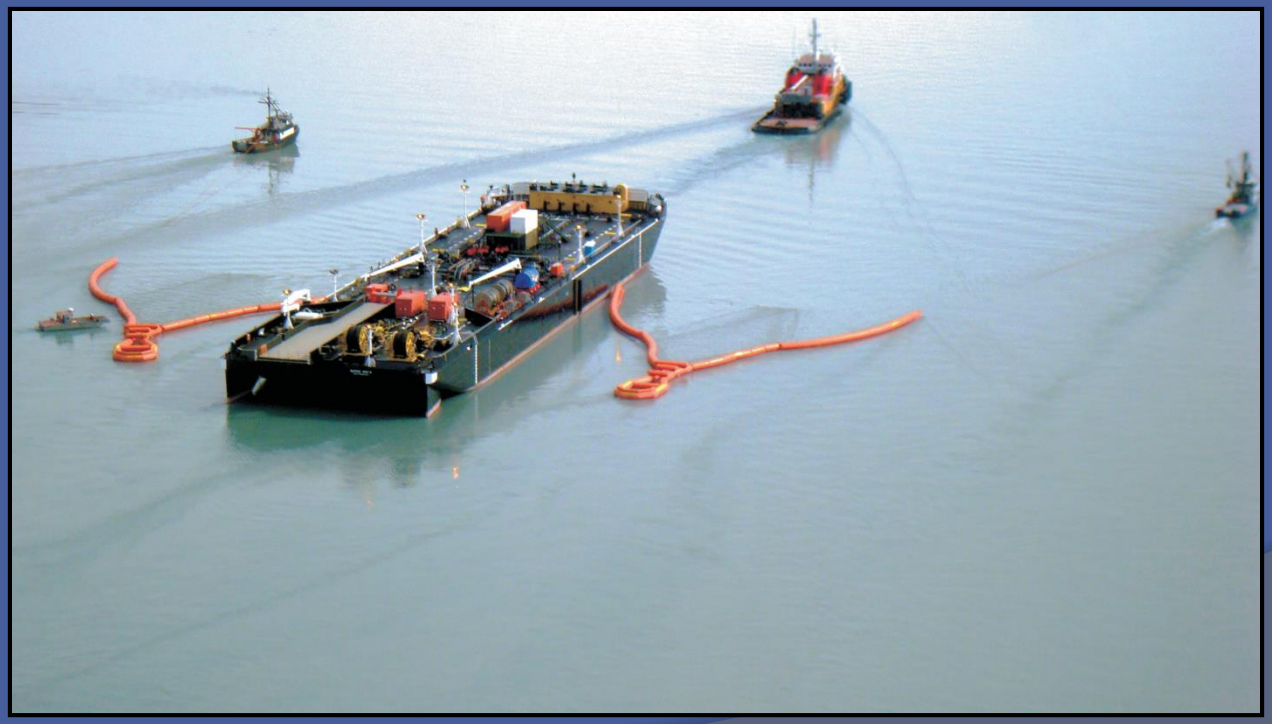
- High Cost
- Below Weather Minimums Mean High Risk to Pilots and Observers
- Limited Time on Station
- Limited to Day Time Operations in Areas
- Delay in Delivering Imagery to Boots in the Field and Command

Complementing Traditional Air Support

Aerostats are an effective platform for providing aerial surveillance in spill response. In addition to delivering imagery, the IGM Aerostat-IC version also acts as a communications relay, transmitting to other vessels in the response and also back to the command center for use in COP and NOP.

Systems Approach

Advances in oil recovery capabilities including fast skimming systems, such as the Buster technology, can be further improved by incorporating remote sensing systems. The encounter rate is enhanced by expanding the view and delivering imagery to a task force in near real time. This facilitates more efficient vectoring of response vessels to productive skimming areas increasing the recovery rate.



Systems Approach

Remote sensor deployment platforms vary from aerostats to small UAVs carrying a range of sensor payloads. The aerostat deployed sensor options have unique capabilities including long range wireless communication of live streaming video. It can also be used as a receiving station for information from other sources such as UAVs and manned flights.

Developing the Tool Kit

Multiple Platforms and Sensors Available

Right Tool for the Job

Joint Operations with A-IC and NOAA Pumas Feed the C.O.P.

Common Data Link Architecture

Efficiency

With continuous power through the tether, the IGM Aerostat-IC has the ability to stay aloft with minimal interruption for several days. This makes the system ideal for relaying data from multiple platforms and sensors.

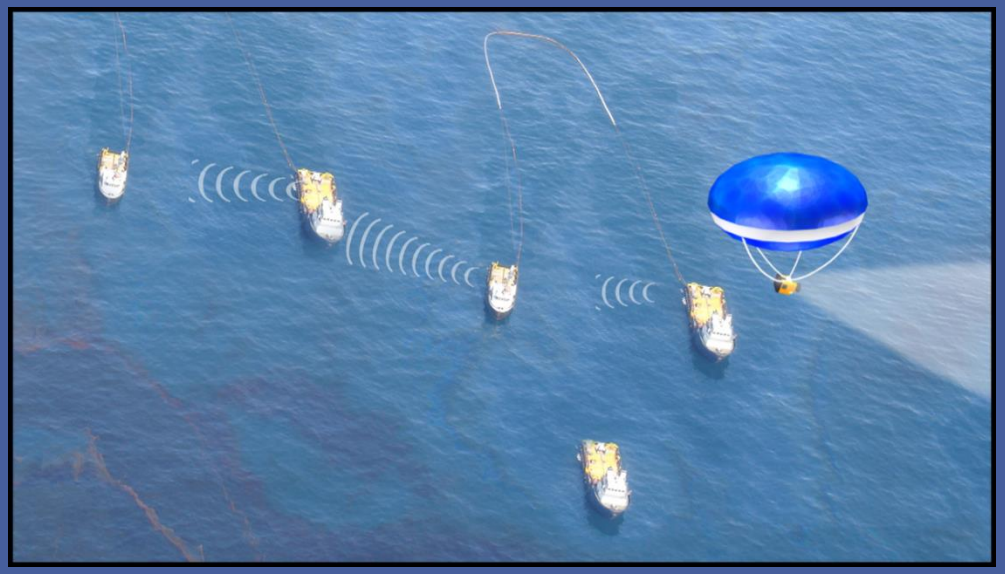
Efficiency

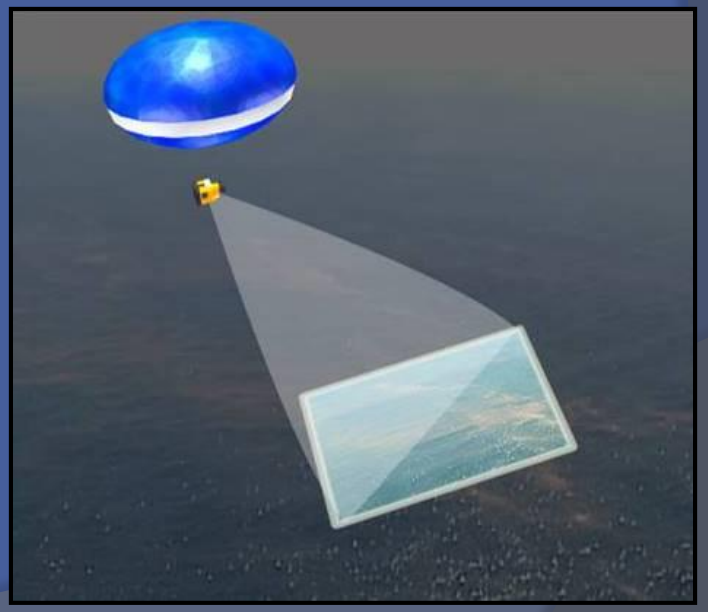
New lightweight Camera/IR technology now enables 24 hour surveillance and forms a perfect union with aerostats.

As sensor technology evolves, flexible mounting and integration capabilities allow for simple payload upgrades.

Efficiency

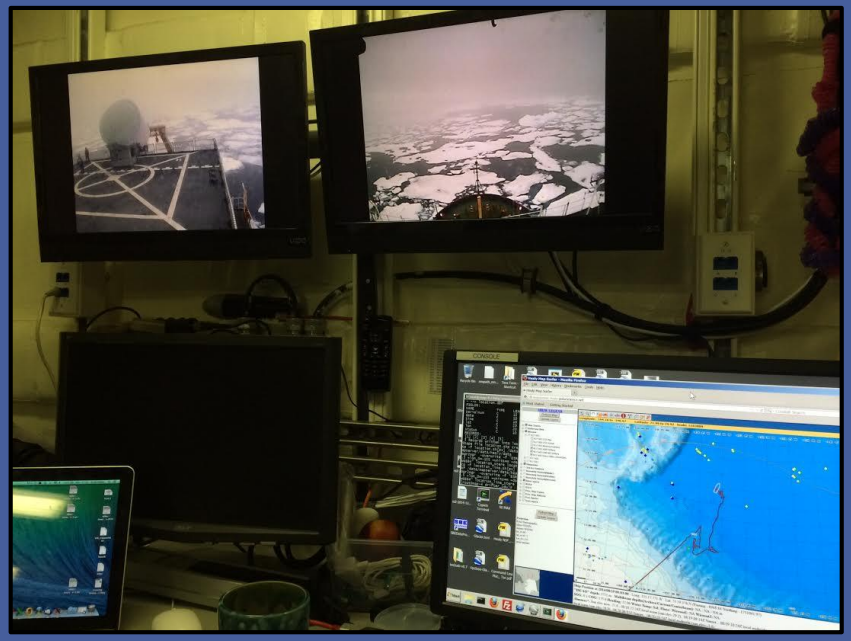
Geo-referenced imagery for vessel to vessel and vessel to command center communications means on-target and on time data. Real time video and tracking of hydrocarbons sent to multiple destinations allows for maximized situational awareness and rapid recovery.





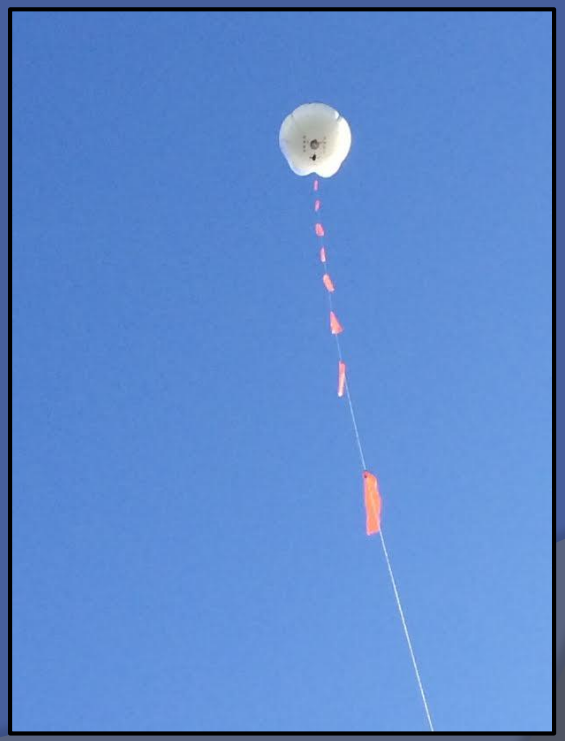
Expanding the COP

Multiple aerostats and other sensor platforms with integrated communication nodes means having access to different fields of view in real-time and on one user interface.



Improving Safety of Operations

Using Aerostats and other small UAS for tracking hydrocarbons during day and night operations means fewer “manned” flights will be required.



Conclusion

Utilizing remote sensing technologies such as the IGM Aerostat-IC and other UAS for executing aerial surveillance tasks can enable responders to more efficiently and safely do the job. As we move forward to further develop these technologies, new synergies will emerge bringing continuity and enabling expansion of the COP.