Cost Effective Control of your Coastal Waters

Olov Fäst
SSC Airborne Systems
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www.sscspace.com
SSC: A comprehensive space industry

- Founded in 1972
- ~650 employees (2012)
- ~100 M€ turnover (2012)
Since the start in 1972 SSC has launched 6 scientific satellites.
500 sounding rockets to 700 km altitude
550 high-altitude balloons - up to 1,2 million m³ volume
36 000 satellite contacts per year! using 9 antennas
SSC Airborne Systems

SSC Maritime Surveillance Systems used in >20 countries for:

- EEZ (Economic Zone Protection)
- Environmental Protection/Oil pollution
- Border and fishery control
- Ship traffic management
- Search and rescue
- Ice patrol
1970’s: Oil Spill detection
1980’s: Oil spills + general surveillance
Swedish Coast Guard CASA 212
1990’s: Fishery patrol: Three CASA 212-100 equipped for the Portuguese Air Force
For more than 30 years our systems have operated on different types of aircraft in Sweden, Norway, Poland, Greece, USA, Portugal, Canada, Estonia, India, Finland, Malaysia…….
Indian Coast Guard- Dornier 228
December 2009
Bombardier 415 for MMEA Malaysia 2010
MSS 6000 system with integrated:
SLAR, FLIR, AIS, DF, Cameras, SATCOM
MSS 6000 on Transport Canada Dash 8
In operation since December 2006

Photo Paul Minnaar, Transport Canada
MSS 6000 operated by Transport Canada

- SLAR
- IR/UV line scanner
- AIS
- EO/IR (FLIR)
- Still camera
- Video camera
- SATCOM
- Direction Finder

Recording data with the Dash 8 flying over the Gulf of Mexico

Photo: CBC-TV
Correlated observation and documentation
Effectively coordinated operations

EO Satellite (Envisat)
- background data

Command post
- overview
- coordination
- decision

Aircraft
- surveillance
- detection of anomalies
- identification
- analysis and interpretation
- report

Ship
- control
- sampling
- rescue
- control
- clean-up
- rescue

data link for images, reports and orders

Pictures by courtesy of ESA, Inmarsat and the Finnish Border Guard

www.sscspace.com
Finnish Border Guard- Dornier 228
Multi-mission upgrade in 2012
MSS 6000 upgrade in 2012

- Communication & reporting
- Dual Operator consoles
- AIS
- Search Radar
- DF
- IR/UV Scanner
- EO/IR

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MSS 6000 system with integrated:
Search radar, SLAR, IR/UV, AIS, Cameras, Satcom, FLIR, DF
Satellite image integration
Gulf of Mexico oil spill in 2010

Transport Canada operated their MSS 6000 equipped Dash 8 over the Gulf of Mexico spill in May-June 2010. Surveillance flights twice a day were invaluable support to response operations.
Gulf of Mexico oil spill on May 3

Overview of the spill produced on the day of arrival by Transport Canada’s aircraft using the SLAR sensor
Oil spill on 13 June
CLEAN UP OPERATIONS SUPPORT

Coordinates of recoverable oil sent to command centre for managing surface clean up operations
Communication and reporting

- Satellite data transmission system (high-speed INMARSAT)
- Radar and map images, photos, reports to command centre during flight
MSS 6000 for the Vietnam Marine Police
Data transmission network

Receives:
Mission order from MCC
Sends:
Position data, optional images
Incident report, optional images
Streaming video

MCC
Receives:
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Sends:
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After-action report
for archive or replay in MCC
After action report
After mission printout
After mission DVD

Removable disk

Mission data

S-band transmission

HF transmission

SATCOM

Inmarsat

Removable disk

Mission data

After action report

DVD

After mission printout

Operator

Operator

Operator

HF modem

S-band receiver
MSS 6000 Mission Command Centre
Mission overview at the MCC

- Missions, map layers, resources and diagrams
- Map
- Properties or functions such as filters
- Status bar
- Map tools
- Commander chat
- Image previews, recorded as well as live video and AIS ship information
The first of three CASA-212-400 aircraft for Vietnam Marine Police equipped with the MSS 6000
ENABLING YOU TO CONTROL AND PROTECT YOUR WATERS

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