

# Practical Application of Drift Modelling to Search and Rescue



### **Drift Modelling for Search and Rescue**

- Modelling Review by SAR Practitioners
- Determination of Targets
- Overall Search Area
- Optimal Sweep Width/Track Spacing
- Compromise (if required)
- Practical Track Spacing
- Determination of Search Assets
- Allocation and Search planning
- Additional considerations
- Validation of Drift planning



#### **Determination of Targets**

- Affects Drift Characteristics for modelling purposes
- Affects visual and electronic search track spacings

#### What am I searching for?



#### **Overall Search Area**



#### **Optimal Sweep Width/Track Spacing**

- Target Type + Size
- Search Asset Type
- Search Asset Speed
- Search Sensor Type
- Weather Conditions
- Sea/Swell State



Ideally Sweep Width (W) = Track Spacing (S) Track Spacing is the distance between adjacent search legs

## **Compromise (If Required)**

Do I have adequate search assets & search time available to search at a trackspacing which is equal to Sweep Width?

If no.....then I must Compromise.....

- Search Asset Speed Speed up cover more miles therefore bigger area – lower POD
- Widen Track spacing lower POD
- Reduce Search Area Target may not be within it



Effect on increasing Track Spacing

# **Practical Track Spacing**

- Track Spacing Calculator integrated into Nexus
- Last Light Calculator assists in calculating Search Time available
- Search Time Available (Search Assets)



Weather: WINDSc15 KTS

Details

Vability: | 20 Km

Visual Air Search

Land

NOTE: First Search Leg may be displaced ½ S into Search Area. Turns should be made outside Search Area Boundary

	Moon Have	Moon Set	Magnetic Variation	
Ш	152102 UTC JUN 2015	160808 UTC JUN 2015	5.5 E	
Ш				
Ш				

#### **Determination of Search Assets**

- Availability
- Suitability
- Transit Time
- Target Type
- Endurance
- Sensor Fit
- Search Speed











#### **Allocation and Search Planning**



## **Additional Considerations**

- Search Creep
- Position of sun
- Crew Fatigue
- Fuel Availability
- ue bility
- Future Weather Conditions
- Survivability

### **Validation of Drift Planning**

- SLDMB's
- BoM local Wx Observations
- Local Knowledge
- Surface drift observations from assets on scene



### Search Object Located

# • 3 Lives Saved





#### Importance of Accurate Environmental Drift Data

Underpins our Search planning

Timelag between validation info from SLDMB's means initial search is reliant on modelling data sets

# ACCURATE DATA = LIVES SAVED

Minimising personal loss/trauma to family/friends & socio-economic cost to community

