Practical Application of Drift Modelling to 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
JRCC Staff – Diverse Maritime Backgrounds – All
• Water Police
• Merchant Navy
• Royal Australian Navy
• Commercial Fishing

• None are oceanographers!!

Model Review by SAR Practitioners
Determination of Targets

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

What am I searching for?
Overall Search Area

- GIS Based
- NWM Integrated
- SARMAP areas can be imported as GIS layer

Search Area Boundary

V-Hull Skiff

V-Hull Skiff Swamped

Red Particles: Person in Water

Drift: 140500UTC to 150900UTC
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)
Determination of Search Assets

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

Day 1 Visual/Radar Search
Cairns Based AMSA D328

Day 1 Helicopter – Island/Reef Search
YHID Based - R700 B412

Search Object Located
SLDM Locations

PNG Coastline
Coastal Search by Helicopter

Day 2 Search

DAY 1 Search

Horn Island Airfield
Additional Considerations

- Search Creep
- Position of sun
- Crew Fatigue
- Fuel Availability
- 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
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