

Methods of Response – Booming



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Booms

- Booms are barriers that prevent oil from contacting oil-sensitive resources and containing oil prior to recovery
- Booms are produced in several types:
 - Offshore
 - Inshore skirt
 - Shore-sealing
- Booms are produced in standard lengths
 - Typically 10 metres or 20 metres



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Inshore Protection Who does What

- MCA – Resources, expertise, provides contractors
- EA – Equipment, expertise
- Local Authority – logistics, assistance, manpower
- Oil spill contractors – Equipment, expertise, manpower



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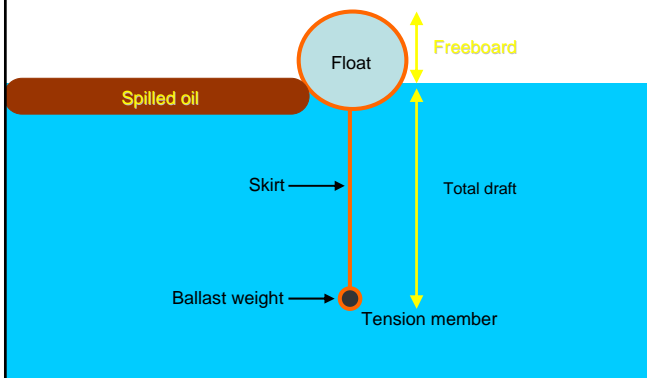
Boom deployment

- Technically complex
- Requires great expertise and manpower levels – mostly underestimated
- Significant H&S implications
- In major spills – insufficient resources
- Site prioritisation essential
- Think about oil recovery and temporary storage



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A typical skirted boom



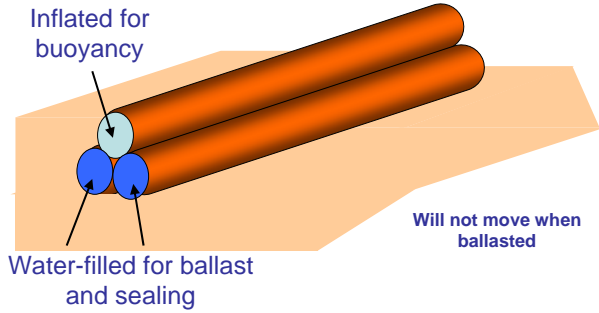
Skirted boom



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Shore-sealing boom

Useful for inter-tidal areas

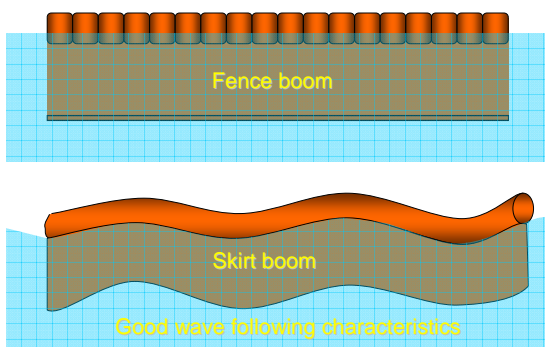


Shore-sealing boom



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Fence and inflatable booms



Boom Choice Considerations

- Stowage factor
 - Inflatable better than fence booms
- Wave following characteristics
 - Flexible better than rigid
- Near-shore or shore sealing
- Durability and maintenance
- Ease of deployment
- Cost



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Ancillary equipment

- MCA boom housed in 10 foot containers with all ancillaries required for deployment
- Deployment can fail on account of a missing shackle
- Ancillaries must be fit for purpose
 - Anchors, towing bridles, shackles, rope, chain, buoys, tirlor, blowers, water pumps, fixing screws, measuring rope or range finder



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Air blower



Towing Bridles



Tirfor



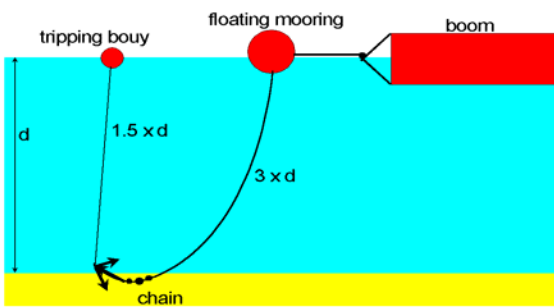
Water pump assembly



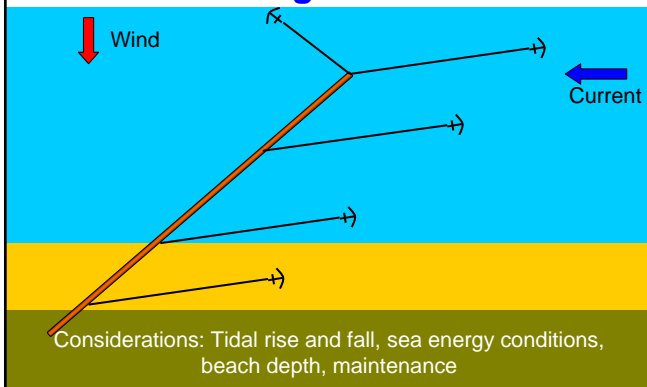
CAT Scanner



Deploying a boom in shallow water



Inshore booming, minimise oil migration



Moorings



Triple Holdfast

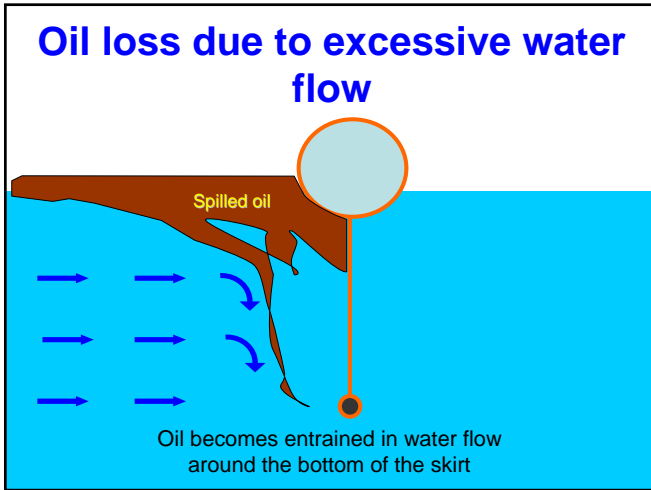


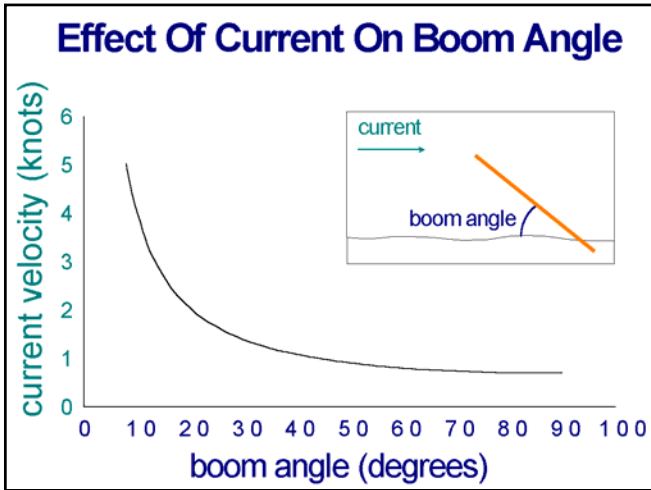
Boom Failures

- Oil loss due to excessive water flow
 - When water flow exceeds 0.75 – 1.0 knots, perpendicular to boom, oil loss is inevitable
- Boom tensile failure
- Drainage failure
 - Boom collection point is “full up”
- Splash-over failure
 - Waves take oil over boom



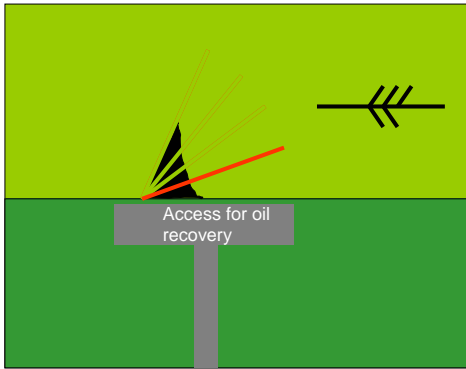
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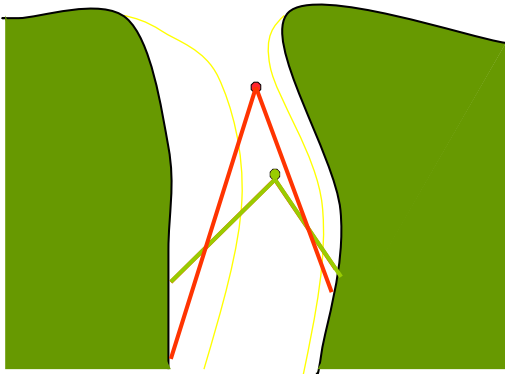


Current in Knots	Boom to bank angle	Length of boom in relation to river width
0.7	90°	1 x river width
1	45°	1.4 x river width
1.5	30°	2 x river width
2	20°	3 x river width
2.5	16°	3.5 x river width
3	15°	4.3 x river width
3.5	11°	5 x river width
4	10°	5.7 x river width
5	8°	7 x river width

Spur Boom Formation



Chevron Boom formation in High Flow Estuary



Excessive Flow



Fast Flowing Water



Weather Limitations



Difficult Terrain



Soft Mud



Boomsite Evaluation

- Environmental
- Socio economic
- Prioritised?
- Agreed between Local Authorities and Environmental Authorities?
- Detailed in contingency plan?
- Incident response may require decisions to be made in quick time



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Formal plan for each validation

