



Time To Rescue:

Challenges and opportunities

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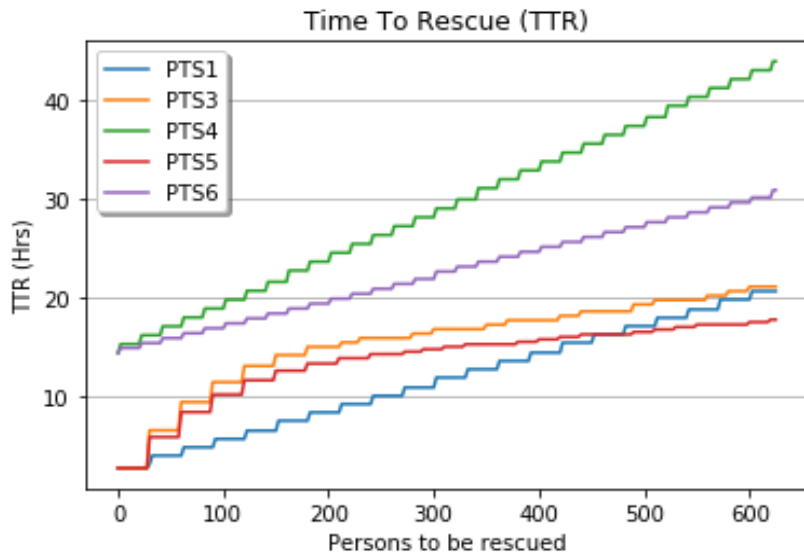
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- **Norwegian Coast Guard - Endre Barane**
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Paths to Survival

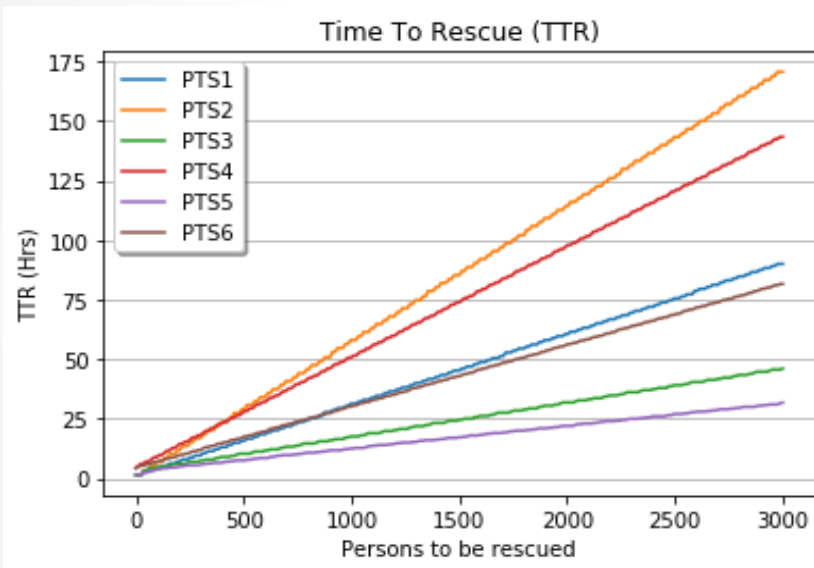
| Path to Survival | Evacuation From | Means Loading | Platform | Evacuated To | Means unloading |
|-------------------------|---------------------------------------|----------------------|---------------------|--|------------------------|
| PTS1 | Vessel of distress/ survival craft | Hoist | Helicopter | Shore/nearby vessel of opportunity | Walk |
| PTS2 | Survival craft | Hoist | Helicopter | Helicopter base | Walk |
| PTS3 | Survival craft | Hoist & crawl | Helicopter & FRC | SAR-vessel | Walk |
| PTS4 | Survival craft | Crawl | FRC | SAR-vessel | Walk |
| PTS5 | Shore | Walk | Helicopter & FRC | SAR-vessel | Walk |
| PTS6 | Vessel of distress/ shore | Walk | FRC | SAR-vessel | Walk |

Scenario 1 - small passenger vessel operating a in a remote region (200 nm from infrastructure)



| Path to Survival | Evacuation From | Means Loading | Platform | Evacuated To | Means unloading |
|------------------|---------------------------------------|------------------|---------------------|--|-----------------|
| PTS1 | Vessel of distress/ survival craft | Hoist | Helicopter | Shore/nearby vessel of opportunity | Walk |
| PTS2 | Survival craft | Hoist | Helicopter | Helicopter base | Walk |
| PTS3 | Survival craft | Hoist & crawl | Helicopter & FRC | SAR-vessel | Walk |
| PTS4 | Survival craft | Crawl | FRC | SAR-vessel | Walk |
| PTS5 | Shore | Walk | Helicopter & FRC | SAR-vessel | Walk |
| PTS6 | Vessel of distress/ shore | Walk | FRC | SAR-vessel | Walk |

Scenario 2 - a larger passenger vessel operating in vicinity of infrastructure and a SAR-vessel (50 nm)



| Path to Survival | Evacuation From | Means Loading | Platform | Evacuated To | Means unloading |
|------------------|---------------------------------------|------------------|---------------------|--|-----------------|
| PTS1 | Vessel of distress/ survival craft | Hoist | Helicopter | Shore/nearby vessel of opportunity | Walk |
| PTS2 | Survival craft | Hoist | Helicopter | Helicopter base | Walk |
| PTS3 | Survival craft | Hoist & crawl | Helicopter & FRC | SAR-vessel | Walk |
| PTS4 | Survival craft | Crawl | FRC | SAR-vessel | Walk |
| PTS5 | Shore | Walk | Helicopter & FRC | SAR-vessel | Walk |
| PTS6 | Vessel of distress/ shore | Walk | FRC | SAR-vessel | Walk |

Conclusion

- TTR is highly proportional with POB
- Preferred PTS for an incident in remote areas:
 - Less than abt 40 survivors - PTS2, utilizing helicopters, freighting the survivors directly back to the helicopter base.
 - More than abt 40 survivors - PTS5, establishing a temporary place of safety on shore/vessel of opportunity, utilizing helicopters in conjunction with SAR-vessels with helicopter support facilities.
- Increasing number of evacuation platforms reduces the TTR
- Access to helicopter support facilities is essential for prolonged operations involving helicopters.

Recommendation

- Strain on SAR/helicopter personnel is to be addressed for prolonged operations.
- The survivors should seek sheltered water/evacuate to onshore. This will increase the probability of efficient evacuation operations.
- A companion vessel (twin vessel operation) can function as a temporary place of safety.
- The government SAR portofolio should include establishment of mobile temporary places of safety.

| Operation | Minimum number of persons conducting operational tasks | Minimum number of persons allocated to the operation on a continuous basis (3 shifts) |
|--|--|---|
| FRC operation | | |
| FRC crew | 3 | 9 |
| Crane operators | 2 | 6 |
| Reception facilities (only registration) | 2 | 6 |
| Total FRC operation | 7 | 21 |
| Helicopter operation | | |
| Pilots | 2 | 6 |
| Winch operator | 1 | 3 |
| Mechanic | 1 | 3 |
| Vessel HKO + 2 NAVKIS | 3 | 9 |
| FDO (Flight Deck Officer) | 1 | 3 |
| FDA (Flight Deck Assistant) | 1 | 3 |
| FDM (Flight Deck Crew) | 4 | 12 |
| Mechanic preparing heli-fuel | 1 | 3 |
| Reception facilities (only registration, no medical treatment) | 2 | 6 |
| Total Helicopter operation | 16 | 48 |
| Total all transportation operations | 23 | 69 |



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