# CONTESTED LOGISTICS ENGINEERING OF SHINMAYWA US-2 IN SUPPORT OF DMO

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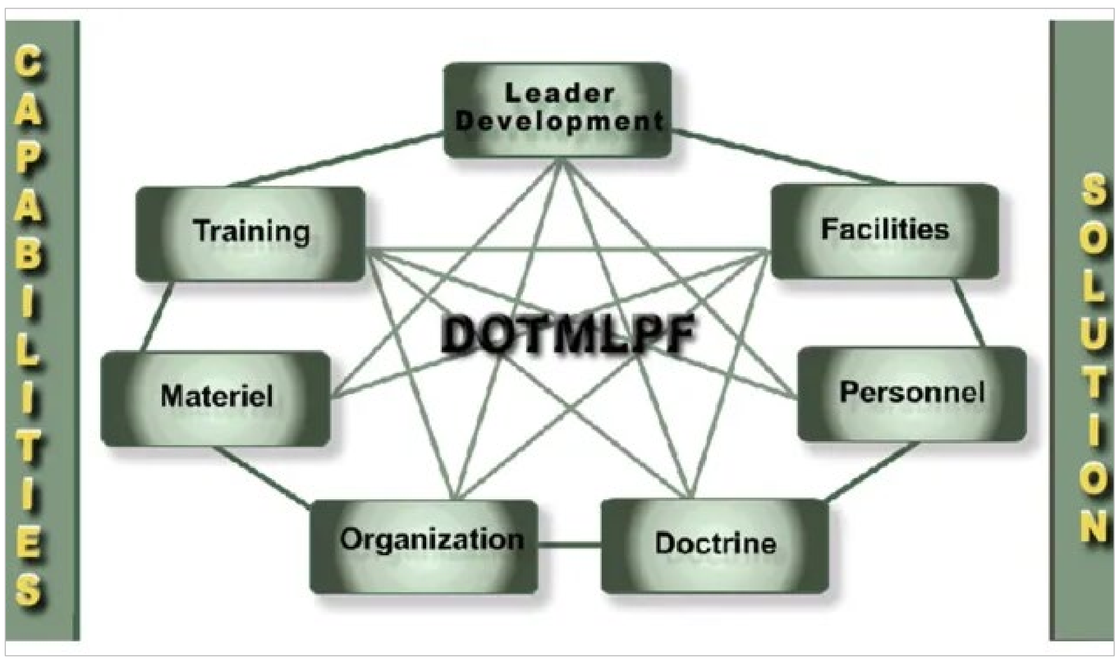
## Abstract


- This study examines integrating the ShinMaywa US-2 into the U.S. Navy's Pacific Fleet (PACFLT) to address Indo-Pacific challenges. Using the DOTmLPF-P framework, it highlights the US-2's potential to enhance logistics, reach, and interoperability, drawing on historical insights and addressing current operational needs with actionable recommendations.


*Shinmawya US-2 performing a sea take-off.*




*DAU: DOTmLPF-P Framework*

## Methods

- **Qualitative Research**: Evaluated the ShinMaywa US-2's naval integration.
- **DOTmLPF-P Framework**: Assessed operational, logistical, and policy dimensions.
- **Performance Metrics**: Analyzed range, cargo capacity, and suitability for remote operations.
- **Historical Insight**: Compared to PBY Catalina for context.
- **Strategic Alignment**: Examined compatibility with naval doctrines like DMO.
- **Political Feasibility**: Reviewed procurement, budget, and oversight factors.
- **Data Sources**: Used unclassified data for transparency.

## Results & Their Impact

- **Doctrine**: Supports DMO, enhancing flexibility and sea control.
- **Organization**: Minimal restructuring needed, aiding smooth integration.

| Phase | Activity | Description | Duration (weeks) | Dependency | O | M | P | TE (weeks) |
|---|---|---|---|---|---|---|---|---|
| 1 | A | Basic flight instruction | 6 | Start | 5 | 6 | 7 | 6 |
| 1 | B | Core maneuvers and navigation training | 8 | A | 7 | 8 | 9 | 8 |
| 2 | C | Transition to multi-engine | 4 | B | 3 | 4 | 5 | 4 |
| 2 | D | Advanced navigation and handling | 8 | C | 7 | 8 | 10 | 8.5 |
| 3 | E | Seaplane basics | 4 | D | 3 | 4 | 6 | 4.2 |
| 3 | F | Advanced water operations and SAR simulation | 6 | E | 5 | 6 | 8 | 6.2 |
| 4 | G | System-specific training for US-2 | 8 | F | 7 | 8 | 10 | 8.5 |
| 4 | H | Emergency water maneuvers | 6 | G | 5 | 6 | 8 | 6.2 |
| 5 | I | SAR fundamentals | 4 | H | 3 | 4 | 6 | 4.2 |
| 5 | J | Advanced SAR techniques | 8 | I | 7 | 8 | 10 | 8.5 |
| 6 | K | Mission qualification | 6 | J, Q | 5 | 6 | 8 | 6.2 |
| 6 | L | Joint exercises for operational readiness | 4 | K | 3 | 4 | 6 | 4.2 |
| 7 | M | Emergency resupply and joint logistics | 5 | L | 4 | 5 | 7 | 5 |
| 7 | N | Simulated joint operations | 5 | M | 4 | 5 | 7 | 5 |
| 8 | O | Amphibious takeoff and landing training | 6 | H | 5 | 6 | 8 | 6.2 |
| 8 | P | Rapid repair and remote maintenance | 4 | O | 3 | 4 | 6 | 4.2 |
| 8 | Q | Japan-based technical training | 8 | P | 7 | 8 | 10 | 8.5 |
| 9 | R | Contested airspace navigation | 4 | N, Q | 3 | 4 | 6 | 4.2 |
| 9 | S | Multinational coordination exercises | 2 | R | 1 | 2 | 3 | 2 |
| 9 | T | Emergency medical evacuation | 2 | S | 1 | 2 | 3 | 2 |
| 10 | U | Biannual refresher courses (recurring) | 2 | Independent | 1 | 2 | 3 | 2 |
| 10 | V | Joint exercise participation (recurring) | 2 | Independent | 1 | 2 | 3 | 2 |


*Fiscal Year 2022 Base Structure Support. Source: Nicastro (2023)*

- **Training**: Specialized programs ensure operational readiness.
- **Materiel**: Unique amphibious features fill logistical and rescue gaps.
- **Leadership**: Enhances decision-making for amphibious operations.
- **Personnel**: Requires skilled operators and maintainers.
- **Facilities**: Infrastructure upgrades enable sustained operations.

## Recommendations

- **Integrate US-2**: Prioritize US-2 deployment to address logistical gaps and enhance DMO capabilities.
- **Develop Training Programs**: Establish specialized training for operators and maintainers to ensure readiness.

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