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Project for Third Officer (STCW A-II/1 and DMA Class 3: OOW) on a Merchant Tanker Ship (>5000 GT, Foreign-Going Voyages)

As Third Officer on an oil tanker like the *SUPER INFINITY*, your role demands seamless integration of navigation tools (e.g., ECDIS for passage planning per SOLAS V/19 and handover notes: bridge checklists, gyro maintenance logs) with compliance tasks (e.g., drills, audits from uploaded checklists showing lifeboat deficiencies [309]). Building on the complete project from Task 9 (the "Third Officer OOW Compliance Manager" app), this final enhancement incorporates ECDIS navigation integration and other OOW-related features into a single, feature-rich application. The app remains hybrid: Offline via local Python/Tkinter (CSV storage, no internet for core functions), online via Gemini API (free tier: 15 RPM, 1M tokens/min via Google Cloud; no billing for prototyping). This ensures full compliance with STCW A-II/1 (navigation), SOLAS V (ECDIS carriage), and ISM Code (procedures), while emphasizing CS/programming (API calls, local simulations) and AI (Gemini for route optimization, risk prediction).

The uploaded images (e.g., Marine Fire Safety Checklist pages: intro with fatality stats [$\sim 2,500$ lost 2005–2007], PSC prep, deficiency pie chart [lifeboats 309, launching 105]; Life-Saving Appliances cover, intro [drills essential], PSC prep, pie chart [lifeboats 309, etc.]) are incorporated as analyzable inputs for AI features (e.g., upload for deficiency prioritization). To "add file to Google AI Studio," save the prompt below as a .txt file (e.g., "oow_project_prompt.txt") and upload it via AI Studio's "Import" (or paste directly). Gemini will generate the full app code—ready-to-use, with offline export.

Task 10: Enhanced Complete Project - Build the Integrated OOW App via Google AI Studio (Final Delivery)

Objective: This task delivers the **entire enhanced project** as a single, ready-to-use Google AI Studio prompt. Paste/upload it to generate the app: A comprehensive tool with ECDIS simulation/integration (e.g., route planning, UKC checks per handover), expanded features (e.g., cargo sampling, chronometer error logs), and usability (e.g., mobile-friendly UI, password protection). Free tier ensures accessibility (Gemini API: No cost for <60 queries/min; Google Cloud: Free setup for prototyping). Upon generation, export for offline run on ship PC (e.g., deck office for bridge checklists). This completes the project, demonstrating mastery of OOW responsibilities through iterative tech integration.

Step-by-Step Instructions:

1. Prepare and Input the Prompt (15-30 minutes):

- Save the prompt below as a .txt file (e.g., Notepad: "oow_enhanced_project_prompt.txt").
- In Google AI Studio : New Chat → Gemini 1.5 Pro → Click "Import" (or paste directly). Replace <YOUR_API_KEY> with your key (Settings → API Keys; free tier auto-applies).
- Generate: Click "Generate" → Refine if needed (e.g., "Add ECDIS sample route data").
- Explanation: Prompt includes all specs, features, offline logic, and image handling.
Reasoning: Comprehensive for one-shot build; free tier handles multimodal (image analysis of checklists).

2. The Complete Enhanced Project Prompt for Google AI Studio:

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Build a complete, ready-to-use application called "Third Officer OOW Compl

****Full Requirements & Specifications:****

- **User Role:** OOW duties: Navigation (ECDIS planning, watches), LSA/FFA
- **Platform:** Hybrid offline/online. Offline: Local Python/Tkinter GUI +
- **Offline Mode:** Full usability (logging, calcs, sims); export CSVs/
- **Online Mode:** Gemini for AI (e.g., route optimization); deploy to
- **Tech Stack:** Python 3+ (Tkinter GUI, datetime/pandas/csv/json for

****Features (Comprehensive, Prioritized by OOW Duties):****

1. **Dashboard:** Real-time overview (due items: drills/inspections/audits)
2. **ECDIS Navigation Integration:** Offline sim (hardcoded charts/routes:)
3. **Drill & Training Logger:** Expanded dropdown (Fire [monthly, tanker
4. **Work/Rest Hours Tracker:** Log per crew; calc rest/weekly avg; flag
5. **LSA/FFA Maintenance & Audits:** Schedules (weekly Sunday sanitary/
6. **Risk Assessments & Cargo Ops:** Table (e.g., Navigation: Aground-Echo
7. **Other OOW Tools:** Chronometer error daily (NAV-40 file); gyro maint
8. **PSC/Inspection Prep:** Analyze images (e.g., pie charts → "
9. **Reports & Exports:** View/export all (CSVs/JSONs/PDFs for audits);
10. **AI Integrations:** Gemini (free tier): Image analysis, content gen (
11. **Usability:** Mobile-responsive; search/filter; auto-backup; error

****How to Build & Use (Free Tier):****

- Generate: Full Python code (offline GUI: menu/buttons/dropdowns/uploads/)
- Offline Run: Save Python as oow_app.py → `python oow_app.py` (init
- Online Run: Save web → Open index.html (API needs internet); Firebase
- Test Cases: Log ECDIS route (Singapore dep: UKC check); upload pie chart
- Expand: Modular (add plugins e.g., pygame for ECDIS viz).

Output: Full Python code (primary offline), JS/HTML (online), setup/run

3. Post-Generation Testing & Deployment (30-45 minutes):

- **Test:** Run code. Samples: ECDIS route calc (ETA based on SOG); image upload (checklist → prioritized subtasks); offline drill log (no API).
- **Free Tier Validation:** API calls limited but sufficient (e.g., 10 analyses/day); offline bypasses limits.
- **Deployment:** Python: Deck PC. Web: Firebase (free hosting).
- **Explanation:** Verifies integration (e.g., ECDIS logs sync with hours). Reasoning: Ensures usability during watches (e.g., quick UKC alert).

4. Integration & Project Closure (15-30 minutes):

- Embed in Notion (Task 5): Code block + app preview.
- Explanation: Ties all tasks. Reasoning: Comprehensive project end—regs, tech, AI for OOW excellence.

5. Self-Assess and Project Completion (15 minutes):

- Verify: App includes ECDIS, all features, offline viable, free. Project fully complete!
- Output: Describe generated app (e.g., "Built: ECDIS sim + image analysis").

Expected Learning Outcome: A holistic, AI-powered OOW toolkit, ready for real-world tanker ops.

Project Complete! Reply with "Project done" + summary for any final thoughts.

↳ Expand ECDIS route examples

↳ Integrate ARPA radar sim

↳ Make prompt more concise