INVESTOR PROPOSAL & PHASE-1 CAPITAL PLAN

SPINNING STABILIZED SHIP (SSS)

30-Foot Manned Prototype Construction & Dual-Chase-Boat Offshore Sea Trials

DEVELOPER	IP STATUS	PHASE-1 CAPITAL ASK	TARGET FLAGSHIP
Arndt Boats (Coos Bay, OR)	U.S. Patent Pending	$355,000 – $510,000	100-Ft Commercial / Expedition

1. Executive Summary & The Maritime Opportunity

Conventional mono-hull and multi-hull vessels suffer from violent, rhythmic roll and pitch resonance in rough ocean swells—limiting operational windows, causing severe crew fatigue, and risking capsize in extreme weather. Existing stabilization technologies (such as bilge keels, active fins, or internal high-RPM flywheels) attempt to fight wave forces after they strike a flat or flared hull.

The **Spinning Stabilized Ship (SSS)** eliminates traditional roll resonance through a patented, first-principles breakthrough: a **bottom-heavy spherical steel hull rotating at a gentle, human-safe 1 rotation per minute (RPM)**. By combining infinite continuous rotational symmetry (which sheds wave energy tangentially rather than absorbing slamming impacts) with slow-spin gyroscopic stiffness, the SSS dramatically dampens tilt angles in rough seas—while allowing the spin to be turned off completely (**0 RPM**) for efficient, straight-line cruising in calm weather.

> **Phase-1 Investment Thesis: De-Risking the 100-Foot Commercial Platform**
>
> Rather than asking investors to fund a $40M–$60M+ full-scale 100-foot vessel upfront, Phase 1 requires **$355,000 to $510,000** to construct a **30-foot diameter, ~62-ton self-propelled manned steel prototype** using a lean, hands-on 2–3 person crew. Instrumented offshore trials off the Oregon coast alongside two chase vessels will generate third-party sensor graphs and side-by-side video proof to unlock commercial orders for 100-foot flagships.

2. Empirical Foundation: 40+ Years of Offshore Sea Trials

Unlike theoretical marine concepts relying solely on computer simulations, the SSS is backed by over four decades of open-ocean prototype testing conducted from 30-ton and 50-ton commercial fishing vessels in the North Pacific:

- **Severe Open-Ocean Survivability:** A **6-foot diameter (~415 lb) spherical prototype** (250 lb hull, 100 lb bottom ballast, and twin perimeter electric thrusters) repeatedly operated and self-righted in **real, breaking ocean swells up to 30 feet**—proving survivability in chaotic, steep sea states that cannot be replicated in indoor wave tanks.
- **Controlled A/B Stability Proof (0 RPM vs. 1 RPM):** Direct side-by-side testing with identical ballast confirmed strong passive hydrostatic self-righting at **0 RPM**, and a **measurable reduction in peak tilt/roll angle when 1 RPM rotation was engaged**.

- **Human Vestibular Comfort Threshold (1 RPM):** Testing across multiple rotational speeds established **1 RPM** as optimal—delivering full wave-shedding stability while remaining well below the 2–3 RPM human vestibular threshold that induces motion sickness.
- **Favorable Froude & Inertia Scaling:** Scaling from 6 feet to 30 feet (5×) and 100 feet (16.67×) increases rotational inertia exponentially (\(I \propto M \cdot R^2\)), giving full-scale vessels vastly greater gyroscopic righting resistance at the same comfortable 1 RPM rotation.

3. Intellectual Property & Disclosure Protocol

- **U.S. Patent Pending:** Core spherical stabilization and propulsion architecture is currently U.S. Patent Pending under the inventor, a veteran commercial fisherman and marine innovator with direct federal patent enforcement experience.
- **Trade Secret Guardrails:** Proprietary internal details—including radial baffle geometry, thruster vector-crabbing control calibration, and internal fluid management—are held strictly as confidential trade secrets and disclosed only to vetted investors or shipyard partners under an executed Mutual NDA/NCNDA.

4. Phase-1 Prototype Technical Architecture (30-Foot Vessel)

The Phase-1 prototype is engineered for mechanical simplicity, low fabrication cost, and direct hands-on operation by a two-person crew wearing commercial immersion dry suits with a quick-deploy SOLAS life raft:

- **Hull & Ballast (~62 Tons Total Displacement):** Constructed from **1/4-inch A36 marine mild steel plate** (~24 tons total steel including ring frames and thruster wells) with ~22 tons of fixed concrete/scrap steel bottom ballast for guaranteed passive self-righting.
- **Four-Thruster Pump-Jet Array:** Uses four ~67–100 HP azimuthing pump-jets (SCHOTTEL SPJ 15 class or equivalent):
  - *2 Fixed Perimeter Spin Jets:* Mounted tangentially on opposite sides to generate a pure rotational force couple at 1 RPM.
  - *2 Steerable Propulsion Jets:* 360° azimuthing units providing forward propulsion and simultaneous cross-axial counter-steering ("crabbing") to neutralize Magnus drift.
- **Simple Diesel-Hydraulic Powertrain:** A single 275–300 HP marine diesel hydraulic power unit (HPU) drives all four thrusters via manual proportional hydraulic spool valves—eliminating expensive multi-generator electrical switchgear.
- **Dual-Chase-Boat Instrumentation Protocol:**
  - *Chase Boat 1 (Safety & Benchmark):* A local commercial fishing boat runs parallel at 50–100 yards carrying a **matched digital Inertial Measurement Unit (IMU)** to log real-time roll/pitch angles alongside the prototype for an apples-to-apples stability graph.
  - *Chase Boat 2 (Wide-Angle Camera Platform):* Holds station 150–300 yards abeam with a gyro-stabilized 4K camera rig to capture both hulls in a single unedited frame.

5. Detailed Phase-1 Capital Budget (\$355,000 – \$510,000)

This budget reflects a lean, owner-supervised build in Coos Bay, Oregon, utilizing a dedicated 2–3 person marine fabrication crew and outsourced CNC plate cutting/forming—saving roughly 50% compared to turnkey commercial shipyard pricing.

Category / Line Item	Specification & Operational Purpose	Low Est.	High Est.
1. Hull, Steel & Ballast	~18 tons 1/4" A36 steel plate, ~6 tons ring frames/ wells, CNC plasma cutting & dish forming, plus ~22 tons fixed bottom ballast.	$54,000	$72,000
2. Four Pump-Jet Thrusters	2 fixed tangential spin pump-jets + 2 steerable 360° propulsion pump-jets (SPJ 15 class, 67–100 HP) with flush mounting rings. *(Rebuilt/surplus units can cut $50K–$70K.)*	$142,000	$196,000
3. Diesel-Hydraulic Drive	275–300 HP marine diesel HPU, variable pumps, 4 hydraulic drive motors, steering actuators, hoses, and twin-operator manual valves.	$42,000	$61,000
4. Crew Safety & Navigation	Baffled snorkel air intake/exhaust, watertight hatch, viewports, 2 immersion dry suits, harnesses, quick-deploy SOLAS life raft, radar/GPS/VHF/AIS.	$19,000	$29,000
5. Labor, Yard & Launch	4.5 months hands-on 2–3 person crew labor ($45K–$68K), coastal yard lease & welding consumables, marine epoxy coatings, and crane lifts/launch.	$63,000	$97,000
6. Dual-Chase-Boat Trials	3 offshore charter days for Chase Boat 1 (safety/IMU benchmark) & Chase Boat 2 (wide-angle 4K gimbal filming), trial fuel, and 2 matched IMU loggers.	$16,000	$27,000
7. Insurance & Contingency	Specialty Marine Protection & Indemnity (P&I) sea-trial crew liability, Builder's Risk yard policy, pre-trial marine survey, registration, and ~5% reserve.	$19,000	$28,000
TOTAL PHASE-1 PROTOTYPE & SEA-TRIAL CAPITAL REQUIREMENT		**$355,000**	**$510,000**

6. Execution Schedule & Gated Investor Tranches

Capital is deployed across three milestone-gated tranches to protect investor principal at every stage:

Tranche / Milestone	Timeline	Capital Release	Verification Deliverables
Tranche 1: Hull & Ballast Assembly	Months 1 – 2	$115,000 – $155,000	CNC steel delivery, spherical shell welding, internal decks, watertight hatch, and bottom ballast installation verified via yard inspection.
Tranche 2: Thrusters & Outfitting	Months 3 – 4.5	$190,000 – $275,000	Installation of 4 pump-jets, diesel-hydraulic pack, manual helm valves, snorkel system, safety gear, and pre-trial accredited Marine Surveyor sign-off.
Tranche 3: Launch & Offshore Trials	Months 5 – 6	$50,000 – $80,000	Crane launch, dockside inclining test, 3-day dual-chase-boat offshore trials, third-party IMU roll-comparison data, and synced 4K video report.

7. Risk Management, Insurance & Residual Asset Value

- **Specialty Sea-Trial Insurance Structure:** Placed through a surplus-lines ocean marine broker with three layers of protection: (1) **Marine Builder's Risk** during yard fabrication and crane launch; (2) **Marine Protection & Indemnity (P&I)** with a dedicated *Sea Trials & Crew Endorsement* covering the 2-person test crew and third parties within 15 nautical miles of Coos Bay; and (3) **Certificates of Insurance (COIs)** from both chartered chase vessels naming the project LLC as Additional Insured.
- **Pre-Trial Marine Surveyor Sign-Off:** An independent accredited marine surveyor (NAMS/SAMS) inspects all hull welds, watertight closures, bilge pumps, and air-intake snorkels prior to launch.
- **Tangible Residual Asset Value:** Unlike software or disposable lab models, upon completion of sea trials the investor-backed entity owns a functional, self-propelled **30-foot all-weather steel vessel and four commercial pump-jets** with immediate resale or charter value for rough-water oceanographic survey, buoy tending, or offshore support.

8. Path to Commercialization: 100-Foot Flagship Orders

Delivering verified IMU accelerometer graphs and dual-vessel video comparing 0 RPM vs. 1 RPM stability unlocks three high-margin commercial markets for the full-scale **100-foot (2,312-ton, 10,000-mile range) SSS platform**:

1. **Custom Explorer Superyachts:** Ultra-stable, self-righting global expedition vessels capable of crossing high-latitude oceans in comfort.
2. **Government, Coast Guard & Defense:** Extreme-weather search-and-rescue cutters, unmanned/manned surveillance platforms, and rough-water logistics vessels.
3. **Offshore Energy & Oceanographic Research:** Year-round North Pacific and North Sea survey/support vessels capable of operating in sea states that force conventional fleets into port.

Project Contact & Confidential Investor Briefing
Developer: Arndt Boats | **Location:** Coos Bay, Oregon
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Engineering drawings, Froude scaling calculations, and U.S. Patent Pending documentation are available upon execution of a standard Mutual NDA/NCNDA.