REGENT

A sustainable maritime mobility solution for coastal communities REGENT Craft Inc. Proprietary 2021



Meet the REGENT seaglider

seaglider (n) - all electric wing-in-ground effect (WIG) vessel known as a "flying boat"

- REGENT is an original equipment manufacture selling vehicles to operators (airlines, ferry companies, governments) for passenger, freight, tourism, emergency services (resiliency), air ambulance & defense
- Enters service around 2025/26 after completing type 1 certification led by the US
 Coast Guard (primary) and FAA (secondary)
- 3 modes of operation: Float, FOIL and FLY.
- Starts on hull in harbor (0-20 mph), moves to hydrofoil (20-40mph) for wave tolerance and then transitions to flight (flying about 30 feet over the ocean)
- The vehicle an fly up to 180 mph and has a range of 180 miles using existing battery technology (equivalent to a tesla car battery)
- Highly advanced flights and traffic/marine mammal avoidance systems



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REGENT is first to unlock commercial viability of ground-effect vehicles



Past Attempts

Flown in the 1960's, Russian Ekranoplans proved feasibility of fast, near-ocean flight



Hydrofoils

Perfected over last decade, hydrofoils enable comfortable operations in stormy seas



Advanced Batteries

High-energy batteries developed for EVs give enough range for regional mission



Distributed Power

Electrification enables low-speed takeoff powered by distributed electric motors



Drone Technologies

Digital flight control systems, now ubiquitous, enable safe, near-surface flight

REGENT integrates recent technologies to solve the poor takeoff performance endemic to all ground-effect vehicles before it





Why build one?

Airplanes: At altitude



Seagliders: In ground effect



Seagliders fly a few feet over water on a cushion of air trapped between the wing and the surface -creating huge energy efficiencies



Double the range of electric aircraft

Always over a safe place to land

Combines the best of parts of airplanes and boats but without a high cost of operations



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3-mode operation enables wave tolerance and crowded harbor navigation

	******	2 3-5 ft	3 5-30 ft
	Float	Foil	Fly
Speed	< 15 kts	15 - 40 kts	40 - 160 kts
Max wave height	2-3 ft	3-5 ft Previous ground-effect vehicles have lacked this intermediate mode.	<u>Unlimited</u> , always 5-30 ft above wave peak



Seagliders fulfill multiple goals for island communities



Sustainable Inter Island Passenger Service with opportunities to service under served communities









Vehicle specifications





	Viceroy	Monarch
Passengers	12	50-100
Payload	3,500 lbs (1,600 kg)	12k-25k lbs (5.5k-11k kg)
Entry to Service	2025	2028
Operational Range	180 mi (300 km) (with existing li-ion batteries*)	pprox 500 mi (800 km) (with future battery or hydrogen tech
Cruise Speed	180 mph (300 kph)	180 mph (300 kph)
Wingspan	60 ft (18 m)	≈100 ft (30 m)
Max weight	19,500 lbs (8,900 kg)	70k-110k lbs (32k-50k kg

*Existing batteries defined by 210 Wh/kg pack-level energy density



Viceroy 3-view and Dimensions







Passenger Interior

Comfortably seating 12 passengers with 34-inch seat pitch









Cargo 'Slick' Interior

Viceroy is modular and can be quickly adapted to carry both cargo and special freight







Cargo Capability

Payload	3,500 lbs, 18% of gross weight
Volume	900 ft ³



Special Missions

Viceroy is the ideal platform for govt missions. Air Ambulance, Maritime Patrol, Search & Rescue





Various customization options



















REGENT Traffic, Obstacle, and Marine Mammal Detection

Hull and Foil-borne Mode

Sensor system observes surface traffic, underwater obstacles and marine mammals

Wing-borne Mode

Airborne detection of surface traffic and obstacles utilizing radar and computer vision

Maritime Primary Radar: Detecting surface traffic and coastlines

Forward Looking Sonar: Primary means for maritime mammal detection Sonar and infrared systems for detecting and safely avoiding whales on surface and underwater

Infrared Camera Computer Vision: Non-cooperative traffic detection and tracking

AIS Position Reporting: Maritime standard Automated Identification System

Viceroy Exterior Takeoff Noise Comparison



XREGENT



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15

¹/₄ Scale Concept Demonstrator Sea Trials Underway







Maritime traffic awareness system testing



Aerodynamic and hydrodynamic modeling





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An Early Analysis of Hawaii Challenges and Opportunities got us excited...

~100k flights6.8M passengers530k+ metric ton of CO₂

Hawaiian Airlines accounts for ~90% of total CO₂ emissions

Domestic **aviation** (including departures to U.S. mainland) account for **3.5M** metric ton of CO_2^{1}

Domestic **marine** transportation accounts for **0.5M** metric ton of CO₂¹



Challenges:

- Limited airline competition leading to higher fares and less choice/access for residents/ under-served communities
- Increasing **road congestion** (estimated annual cost of \$690M²)
- Existing infrastructure / **climate change** make residents and under-served communities vulnerable
- Medical evac from remote areas can be very expensive

Opportunities:

- Supplement remote fixed wing network with options closer to where people live and work
- Intra-Island connectors (alleviate road congestion)
- Inter-Island Connections (point to point leisure travel)
- New form of low -cost high speed medical evacuation/remote hospital
- At least one existing marina/dock & 29 publicly accessible marina on each island

¹Hawaii Greenhouse Gas Emissions Report, Hawaii State Department of Health, April 2021 ²The Costs of the Vehicle Economy in Hawaii, Ulupono Initiative/ICF, January 2021

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So, we came to Hawaii and started by listening

We met with hundreds of people across private, public and civil groups.

The key themes that emerged from our meetings include:

- Climate Change & Community Resiliency
- Concern about high prices of good and services
- Lack of affordable housing and vulnerable under served communities
- Strong desire for more affordable and convenient Inter Island transportation solutions (closer to where residents live and work)
- Electric aviation has strong support from local environmental groups



We Engaged State and Local Officials on Behalf of Local Businesses



Governor Ige



Lt Governor Green



Jade Butay Department of Transportation



Ross Higashi Deputy Dir of Airports



Major Gen Hara Suzanne Case State of Hawaii, Dept Chair, DNLR





Sen Ron Kouichi



Rep Aaron

Johanson

Rep Scott Saiki Sen Glenn Wakai House Speaker Chair Energy Econ Dev & Tourism



Rep Henry Aquino House Chr Trans Committee

Mike McLarty DBE



Scott Glenn Chief Energy Officer



of Defense & National Guard









Senator Inouye Transportation & Ways and Means



Senator Chris Lee Transportation



Mayor Rot's Office **Rick Blangiardi** Mayor of Hawaii Mayor of Honolulu County



Mayor Kawakami Mayor of Kau'ai



Mayor Victorino Mayor of Maui

Strong Partnerships within Private Sector and Civic Organizations Started to Form



Over \$4.6B in provisional orders, including firm deposits

Ferry Companies



One of world's largest ferry companies (\$4.5B revenue) servicing France to UK



Italian fast ferry company with 30 ship fleet



Croatian fast ferry company servicing Adriatic islands



Regional airline servicing New England, Miami/Caribbean,



Exploring bringing seagliders to Hawaii

Airlines



One of the largest regional airlines in North America flying for American Airlines and United



Land and sea air charter company servicing Northeast, Florida, and Bahamas



Bahamas seaplane operator servicing inter-island routes

REGENT's leadership team has strong record & complementary skill-set



Billy Thalheimer Co-Founder & CEO



Michael Klinker Co-Founder & CTO



Bryan Baker Lead Designer



Adam Triolo Director, Commercial **Business** Development



Ted Lester Director, Systems, Safety, Certification



Director, Engineering



Tom Harari Director, Finance, Ops & Strategic Partnerships















Eric Del Balso





Dennis Muilenburg

CEO, New Vista Acquisition Corp. Former CEO, Boeing





Seaplane and Aviation Consultant Former Managing Dir. Trans Maldivian Airways







CEO, Adriatic Fast Ferries Former President, Interferry Conference

Mark Bishop

INEOS TEAMUK

Principal, Waterfront Composite Solutions Former Designer, America's Cup Team UK



Anne Marie Pellerin



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Managing Partner, Lam-Lha Security Innovation Former Sr. Exec., US Dept. Homeland Sec. / TSA



General Partner, Kohala Ventures

Former Sr. Director Global Partnerships, Yahoo



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