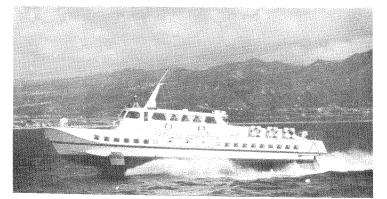
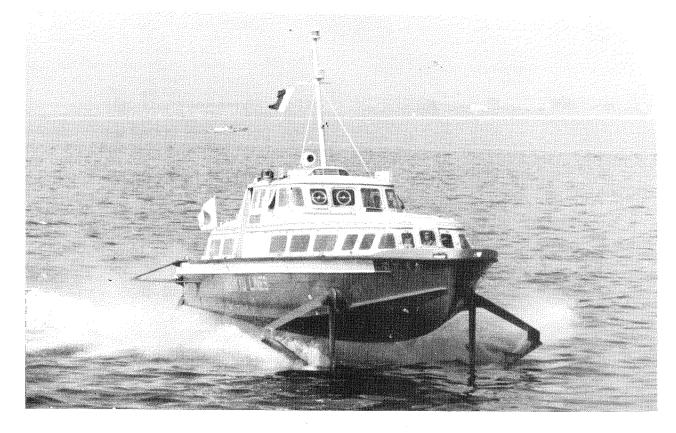
HYDROFOIL OPERATORS

Freccia Adriatica, operated by Aliscafi, Messina, in conjunction with Condor Ltd, Guernsey, on the Geurnsey-St Malo route

in association with Societe Aliscafi, Messina) Office addresses and telephone numbers: 1 Joffre Street, San Juan, Puerto Rico Telephone: (809) 724-7570 PO Box 3185, St. Thomas, Virgin Islands Telephone (809) 744-6535 c/o J. R. O'Neal, Tortola, British Virgin Islands Telephone: Tortola 2292 Type(s): 1 PT 50 (Rodriquez) Services: See United States Hydrofoils Corporation Trinidad & Tobago Hydrolines (A subsidiary of International Hydrolines, Inc) 34 Sackville Street, Port-of-Spain, Trinidad Type(s): Raketa, 1; Kometa, 1 (Sormovo) Services: See International Hydrolines, Inc, USA Bahama Hydro Lines Ltd VICE-PRESIDENT SALES AND OPERATIONS: S. Panunzio Type(s): Dolphin, 1 (Blohm and Voss/Grumman) Route: Freeport (Grand Bahama Island)-Miami Beach ASIA JAPAN Biwako Kisen Co Ltd Type(s): PT 3A, 1 (Hitachi) Route: Biwa Lake Kyushu Shosen Co Ltd Type(s): PT 3A, 1 (Hitachi) Route: Misumi-Shimabara Nishisskutajimamura Kotsubu Type(s): PT 3A, 1 (Hitachi) Route: Kagoshima-Hakamakoshi Innoshima Suichu Yokusen Co Ltd Type(s): PT 3A, 1; PT 3B, 1; PT 5, 2 (Hitachi) Route: Onomichi-Innoshima



Neitetsu Kaijo Kanko Co Ltd Type(s): PT 20, 2 (Hitachi) Route: Nagoya-Gamagori; Toyohsahi-Toba Kansai Kisen Co Ltd Type(s): PT 20, 2; PT 50, 1 (Hitachi) Route: Osaka-Takamatsu Setonaikai Kisen Co Ltd Type(s): PT 20, 3 (Hitachi); MH 30, (Mitsubishi) Route: Matsuyama-Hiroshima; Onomichi-Imabari Hankyu Maikai Kisen Co Ltd Type(s): PT 20, 2 (Hitachi) Route: Kobe-Naruto Iwasaki Kisen Co Ltd Type(s): PT 20, 1 (Hitachi) Route: Matsuyama-Hiroshima Neitetsu Kaijo Kanko Ço Ltd Type(s): PT 50, 1 (Hitachi) Route: Nagoya-Gamagori Nihon Kosokusen Co Ltd Type(s): PT 50, 1 (Hitachi) Route: Enoshima-Atami Shimakatsuurakankokisen Type(s): MH 30, 3 Route: Gamagori-Toba-Nagoya



One of two Hitachi PT 20s owned by Hankyu Lines, Kobe, and operated between Kobe and Naruto

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HYDROFOIL OPERATORS

HONG KONG Shun Tak Co Type(s): PT 20, 1 (Rodriquez) Route: Hong Kong-Macao Hong Kong Macao Hydrofoil Co Type(s): PT 20, 4; PT 40, 4 (Rodriquez)

Type(s): P1 20, 4; P1 40, 4 (Rodriquez) Route: Hong Kong-Macao Far East Hydrofoil Co

Type(s): PT 50, 3 (Hitachi) Route: Hong Kong-Macao INDONESIA

Indonesian Government Type(s): PT 20, 1 (Rodriquez) Service: Patrol CEYLON

Royal Ceylon Navy Type(s): Waterman, 1 (International Aquavion) Communications and patrol

AUSTRAL ASIA

AUSTRALIA Port Jackson & Manly Steamship Co, Sydney Type(s): PT 20, 1: PT 50,1 (Hitachi and Rodriquez) Route: Sydney bay and coastal services NEW ZEALAND Kerridge Odeon Corporation Type(s): PT 20, 1 (Rodriquez) Route: Auckland-Waiheke Island

EUROPE

CHANNEL ISLANDS Condor Hydrofoil Services, Guernsey Type(s): PT 50, 1 (Rodriquez) A second PT 50 is being operated on the route in association with Societa Aliscafi, Messina Route: Guernsey-Jersey-St Malo

DENMARK

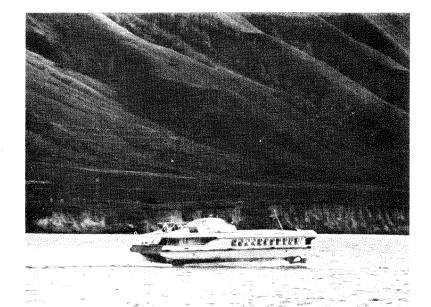
Dampskipsselskapet Oresund Type(s): PT 50, 2 (1 Rodriquez, 1 Westermoen) Route: Copenhagen-Malmo FINLAND Paijanteen Kantosiipi Oy

Type(s): Raketa, 1 (Krasnoye Sormovo) Route: Lahti-Jyvaskyla, across Lake Paijane

GERMANY Water Police

Type(s): PT 4, 3 (German Shipyard) Route: Patrol service on the Rhine





A Raketa 50-seat passenger ferry on the Irtysh river

HAMBURG TRANSPORT DEPT Type(s): Seaflight P46, 2 (Seaflight) Routes: In Hamburg harbour GREECE John Latsis Type: PT 50 (Rodriquez)

Route: Athens-Passalimini-Hydra HUNGARY

Hungarian Navigation Company Type(s): Raketa, 2 (Krasnoye-Sormovo) Route: Budapest-Vienna ITALY

ENIT Type(s): P 46, 2 (Seaflight) Route: Cruise routes

\$NAV, Messina Type(s): PT 50, 3; PT 20, 1 (Rodriquez) Route: Naples-Capri-Ischia

Aliscafi SpA Type(s): PT 20, 6; PT 50, 3 (Rodriquez) Route: Messino-Reggio-Isole Liparre SAS, Trapani

Type(s): PT 50, 1; PT 20, 3 (Rodriquez) Route: Trapani-Egadi Islands

Tourist Ferryboat Co Type(s): P 46, 2; H 57, 1 (Seaflight) Routes: Messina-Reggio Calabria Adriatica SpA di Navigazione

Venezia Type(s): PT 50, 1 (Rodriquez)

Route: Tremoli-Isoledi Tremiti Ministry of Transport, Milan Type(s): PT 20, 3 (Rodriquez)

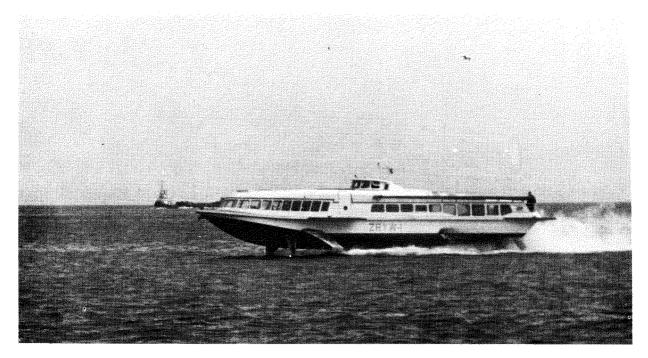
Route: Lake Garda Compagnia di Navigazione

Type(s): PT 20, 1 (Rodriquez) Route: Lake Maggiore

Compagina di Navigazione Type(s): PT 20, 1 (Rodriquez)

Route: Lake Como Lauro Navigation Ge Type(s): H 57, 2 (Seaflight) Routes: Naples-Capri; Naples-Ischia

Seaflight H57 operators include two Italian companies, Tourist Ferryboat Co and Lauro Navigation Co. and one in the United Kingdom—Red Funnel Steamers of Southampton



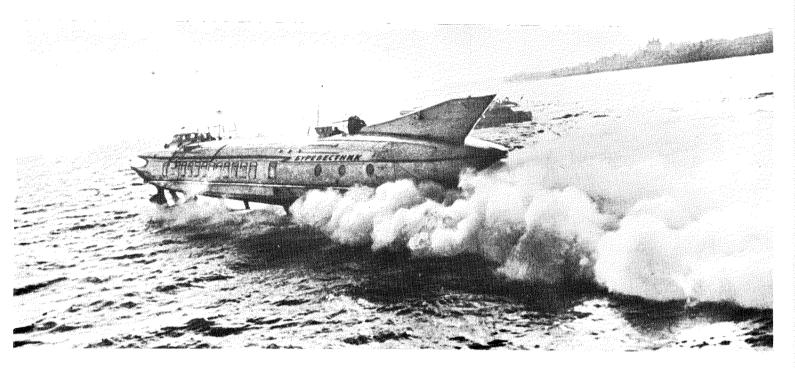
The 76-seat ZRYW-1, operated for the Polish Central Board of Inland Navigation in the Firth of Szczecin

Fiera Internationale Genoa

Type(s): PT 20, 1 (Rodriquez) Liguria Riviera, Genoa Operator: SAS and SNAV Type(s): PT 50, 1 (Rodriquez) Route: Palermo-Eolain Islands Societa Sirena, Palermo Type(s): PT 50, 2; PT 20, 1 Route: Palermo-Ustica Societa Tosco Sarda di Nav Porto Ferraio Type(s): PT 20, 2 Route: Piombino-R, Matina-P. Azzutto MALTA Malta Aliscafi Ltd Type(s): PT 20, 1 (Rodriquez) Route: Malta-Gozo NORWAY Stavangerske Dampskibsselskab Type(s): PT 50, 2; PT 20, 1 (Rodriquez) Route: Stavanger-Haugesund-Bergen Hardanger Sunnhordelandske Dampskibsselskap Box 268, 5001, Bergen Type(s): PT 20, 1 (Rodriquez) Route: Bergen-Tittelsness Hydrofoilrutene, Oslo Type(s): PT 20, 2 (Westermoen) Route: Oslofjord Haanes Rederi, A/S V. strandgt, 42, Kristiansand 4600 Type(s): PT 50 Flipper, PT 50 Tumleren (Westermoen) Services: Charter work in Scandinavian waters Fosen Trafikklag A/S Skansekaia 6, Trondheim Type(s): PT 20 Nisen Services: Trondheim area Joh. Presthus Rederi Bergen Type(s): PT 150, 2 (Westermoen-under construction) Services: Canary Islands POLAND **Central Board of Inland Navigation** Type(s): ZRYW-1 Route: Szczecin-Swinoujscie SWEDEN **AB** Sundfart Maimo Type(s): PT 50, 1; PT 20, 2 (Westermoen) Route: Copenhagen-Malmo

Svenska Rederiaktiebolaget Oeresund Type(s): PT 50, 2 (Rodriquez) Route: Copenhagen-Malmo Gothenburg-Friedrishahvn Line Type(s): PT 150 (Westermoen) Route: Gothenburg-Aalborg-Fredrikshavn SWITZERLAND Societé de Nay, sur le Lac Leman Type(s): PT 20, 1 (Rodriquez) Route: Lake Leman **Red Funnel Steamers Ltd** Type(s): Seaflight H57 Route: Southampton-Cowes Speed Hydrofoils Ltd 7 Gilham House, Silwood Street, London E.S.16 Telephone: Bermondsey 5574 Managing Director: W. T. Ludgrove Type(s): Volga, 2 (Sormovo/Batumi) Service: Tourist trips, Greenwich **Taurus Yacht Services Ltd** 52 Portchester Road, Bournemouth Telephone: Bournemouth 20419 Managing Director: Maurice Cutler Type(s): Volga, 1 (Sormovo/Batumi) Service: Tourist trips, Boscombe Pier, Poole Harbour William Hudson Ltd 8 Lloyds Avenue, London, EC3. Telephone: 01-488 3171 Type: Watermans (International Aquavion) Services: Company transport on the Thames YUGOSLAVIA Split Airport/Globtour Type(s): Kometa, 6 (Sormovo) Route: Pula-Dubrovnik NORTH AFRICA EGYPT Ministry of Commerce, Cairo Type(s): PT 20, 3 (Rodriquez) Route: Abu Simbel-Asswan Suez Canal Administration Type(s): PT 4, 1 (Werf Gusto) Route: Suez Canal MOROCCO Transports Touristiques Intecontinentaux, Tangier Type(s): Kometa, 1 (Sormovo design) Routes: Tangier-Algeciras, Tangier-Marbella

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The 150-passenger Burevestnik during trials on the Volga. The craft cruises at 52-53 knots and is now operating between Gorky and Kuibyshev

PACIFIC PHILIPPINES Tourist Hotel and Travel Corporation Type(s): PT 20, 2 (Rodriquez) Route: Manila-Corregidor Philippine Navy Type(s): PAT 20, 2 (Rodriquez); PT 32, 2 (Hitachi) Coastal Patrol Sundaharya Corp, Djakarta Type(s): PT 20 Route: Indonesian Coast

SOVIET UNION Ministry of the River Fleet

The Soviet Ministry of the River Fleet operates well over 1,000 hydrofoil passenger ferries on routes which cover practically all the major rivers, lakes, canals and reservoirs from Central Russia to Siberia and the Far East.

In 1958, when hydrofoils were first introduced to the rivers of the USSR, they carried ten thousand passengers. By 1968 the number of passengers carried had grown to three million. During the current navigation season (1969-70) there are 80 hydrofoil services on the Volga alone, operated by vessels of the Raketa, Meteor, Sputnik and Burevestnik series. The Burevestnik prototype is now operating between Gorky and Kuibyshev, a distance of 435 miles (700 km). The craft is powered by gas-turbine driven waterjet units and has a service speed of 52-53 knots (95-97 km/h).

In addition to the many hundreds of craft on inland waterways employing the Alexeyev shallow draft submerged foil system, Strela-type craft, with surface-piercing foils, operate in the Gulf of Finland, and supported by Kometas and Vikhrs, provide yearround services between ports on the Black Sea.

Strelas were expected to be joined in 1969 by the new gas-turbine

powered Typhoon, built by a Leningrad yard. The craft seats 90 passengers, and has an autostabilised foil system.

Two new hydrofoil passenger ferry designs were announced in 1969—the Cyclone, a gas-turbine powered craft with seats for 250 and capable of 38 knots and the Voskhod (Sunrise), a Raketa replacement. The Voskhod will provide greater comfort and improved facilities for passengers and crew and air-conditioning will be installed. As with the Raketa, a family of variants will be available to suit a wide variety of operating and traffic conditions. Construction of this craft will start in 1971. Fastest of the series will be the Voskhod 3, powered by a gas-turbine and capable of 43 knots.

The Raketa has given excellent service and has extremely low operating costs. The cost of carrying passengers on the craft is stated by a leading transport writer, Dmitry Sasorov, to be lower than that of either displacement-type passenger ferries or automobiles. Similar low-cost operation is demonstrated by the 260-passenger Sputnik on the Moscow-Astrakhan route. It has been found that the cost of operating a Sputnik on this service is only 8% of that of the latest displacement-type passenger ferry of the United Volga Steamship Line. Time-saving is one of the most important considerations. Sasorov says that in many cases, hydrofoils take passengers to their destinations faster than trains. For example, a Raketa service covers the 516 miles (800 km) from Gorky to Kazan in 12 hours, while trains take 20 hours for the same journey. Price of the tickets is the same, however, whether the journey is undertaken by hydrofoil or rail.

The Meteor service from Moscow to Sormovo takes 13 hours 40 minutes to cover 559 miles (900 km). A conventional passenger ship requires about three days to cover this distance.

In March 1969, a Raketa of the Soviet Danube Shipping Administration inaugurated a new high speed international passenger service on the Danube. The craft completed the first round voyage from Izmail to the Rumanian ports of Galati, Braila and Girugiu and the Bulgarian port of Ruse. In April a Meteor, with twice the Raketa's seating capacity, was put into service on the same route.