ALASKA LEGISLATURE COMMITTEE FILES 1983-1984 0072

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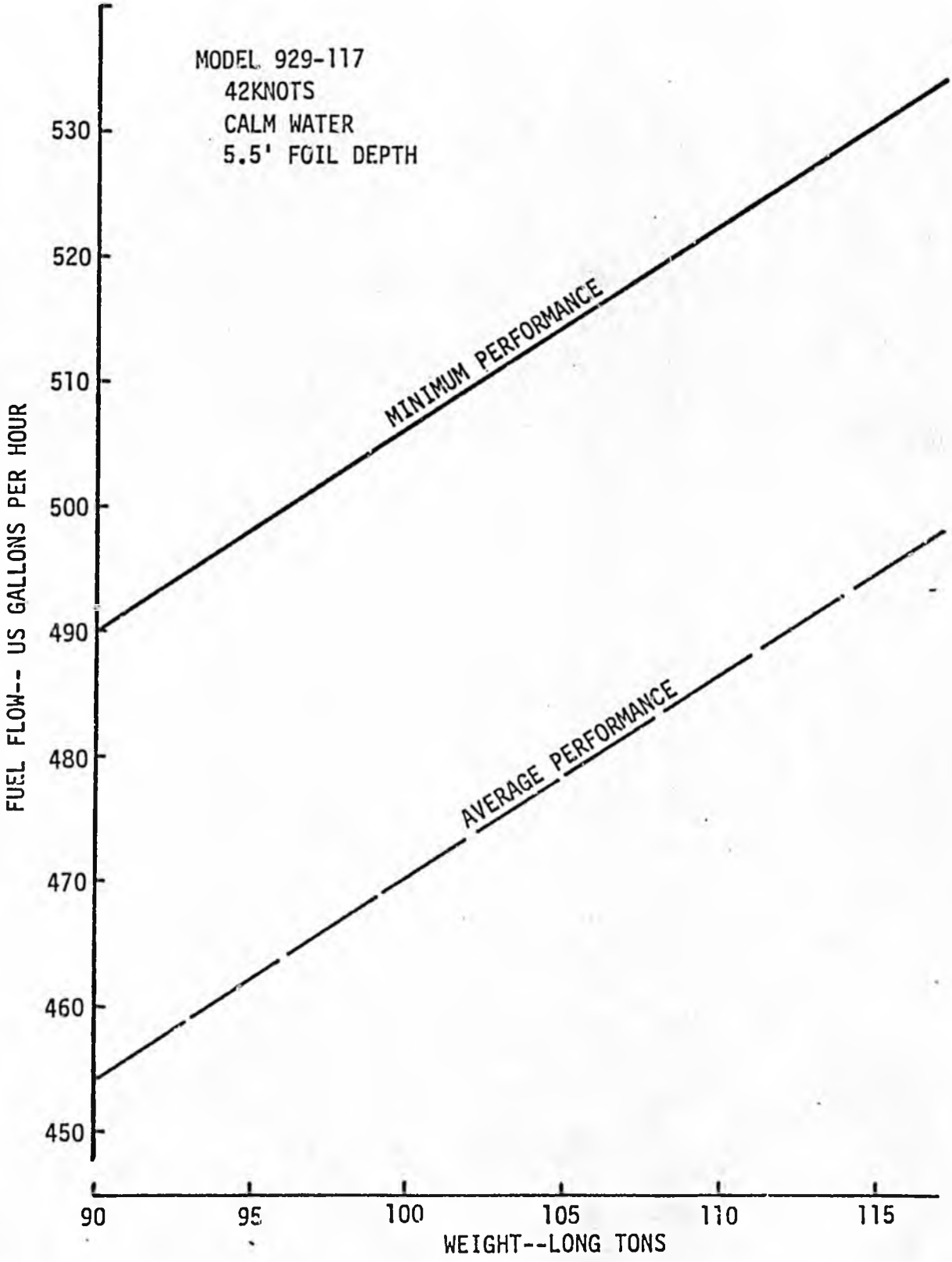


FIGURE 1-3 FOILBORNE CRUISE FUEL CONSUMPTION

APPENDIX II - MAJOR EQUIPMENT IDENTIFICATION

The following major equipment or Boeing-selected equivalent equipment shall be insorporated in the boat.

EQUIPMENT	MANUFACTURER	MODEL/PART NO.
GAS TURBINE	DETROIT DIESEL ALLISON DIVISION	501-KF
PROPULSOR	ROCKETDYNE DIVISION OF ROCKWELL INT.,	R1G-0002
DIESEL	PERKINS ENGINES LTD.	T6.354
GENERATOR	KATO	4P1-100C M
AIR CONDITIONING MACHINERY	LEAR SIEGLER, INC.	607200-51
PUMPS		
HYDRAULIC	ABEX CORP.	65082 (PRIMARY)
		P2V07-070-041-1-L01-1A04 (SECONDARY)
SEAWATER	BARBER NICHOLS ENGRG CO	BMS 601
BILGE	M. P. PUMPS, INC.	SELF PRIMING CENTRIFUGAL PUMP
FIRE	BARBER NICHOLS ENGRG CO	BMS602 FIREMAIN PUMP
FIRE PUMP MOTOR	ABEX, CO	68256 MOTOR
FUEL	ROPER PUMP CO.	GA-1AM-16 (DIRECT COUPLED DRIVE MOTOR)
BOW THRUSTER	SCHOTTEL	S320-22008
GYROCOMPASS	ROBERTSON	SKR-80M
AIR COMPRESSORS	GAST MFG. CO.	5HCD-22C-M606 5HCD-55-M606 4HCC-59M-504X
HORN	KAHLENBURG BROS. CO.,	1131S3
MAGNETIC COMPASS	THE EASTERN CO., DANFORTH DIVISION	C680BKA, WITH 2° CARD
ANCHOR: 250LB (LWT) SUPERIOR HOLDING POWER	BALDT ANCHOR & CHAIN	81102-25012

EQUIPMENT	MANUFACTURER	MODEL/PART NO.
HALON FIRE PROTECTION SYSTEM		
HALON CONTAINER AND DISCHARGE VALVE	SYSTRON DONNER	3763
NOZZLE	SYSTRON DONNER	4440-12A
HEAT DETECTOR	SYSTRON DONNER	2001-20-800/225-22
HEAT DETECTOR	SYSTRON DONNER	3001-21-900/300-15
WINDSHIELD WIPER	SINGER COMPANY, KEARFOTT MARINE PRODUCTS	KS-1385-WDU
SEATS	AIRCRAFT FURNISHINGS LTD.	(BOEING SPEC NO. S320-26008)
LIFERAFTS (42 MAN)	RFD-PATTEN INC.	(BOEING SPEC NO. S320-26001-3)
LIFE PRESERVERS	R. PERRY & CO. LTD.	3600-15-001
HYDRAULIC ACTUATORS		
FLAP, FWD AND AFT OUTBOARD	SERGENT INDUSTRIES (WESTERN HYDRAULICS)	7-4060
FLAP, AFT INBD	SERGENT INDUSTRIES) (WESTERN HYDRAULICS)	7-4070
STRUT STEERING	SERGENT INDUSTRIES (WESTERN HYDRAULICS)	7-4072
RETRACTION AFT	BENDIX CORP*	2579840
RETRACTION FWD	BENDIX CORP**	2579805
INVERTER	MAGNETIC CIRCUIT ELEMENTS	C1200X2 (BOEING SPEC NO. S320-14087-2)
NAVIGATION LIGHTS	AQUA-SIGNAL	
MASTHEAD		33087-003/305
ANCHOR		33037-013/306
STERN		33034-003/305
STARBOARD		33059-103/305
PORT		33060-203/305

EQUIPMENT	MANUFACTURER	MODEL/PART NO.
VERTICAL GYROSCOPE	LEAR SIEGLER	156465-01-02
RATE GYROSCOPE	LEAR SIEGLER	156464-01-01
ACCELEROMETERS	SYSTRON DONNER	4310A-2-P91B
RADAR (PRIMARY)	DECCA	RM916A
FIRE FIGHTING EQUIPMENT:		
SPRAY NOZZLE	ROCKWOOD SYSTEMS CORP	SG-71-1-1/2 NOZZLE (510-0623)
EXTENSION WATER APPLICATOR	ROCKWOOD SYSTEMS CORP	10-06744

*OPTIONAL: A. P. HYDRAULICS NO. AP2579840

**OPTIONAL: A. P. HYDRAULICS NO. AP2579805

APPENDIX III - EQUIPMENT SUGGESTED FOR BOAT OPERATION NOT FURNISHED BY BOEING

In addition to the items listed in this specification, the following are suggested equipment for operations, but are not supplied by Boeing.

ITEM	QUANTITY
Beam Gun/Hand Signalling Lamp	1
Pike Poles - 10 - 12'	2
Flashlights	4
Safety Harness	1
Safety Lines - 1/2" x 25' nylon	1
Stretcher - Floating	1
Wool Blanket	1
Asbestos Gloves	2 pr.
Ear Muffs - Noise Suppression in Engine Spaces	2 pr.
Heaving Line - 1/4" Cotton	2
Drip Cans - 1 pint	3
Drip Cans - 1 quart	3
Bullhorn	1
Lint Free Cloths	1 doz.
Rags, Wiping	2 doz.
Small Plastic Bags	1 doz.
Plastic Bottles - 5 gallons	2
Aerosol Oil (WD-40 or equiv.) - 8 oz.	2
Tape - 2" White Cloth	2 rolls
Tape - 2" Masking	2 rolls
Tape - Oil Proof	2 rolls
Chemical - Toilet Charging, DG 19	2 pkg.
Navigation Charts and Instruments	As Reqd

APR 14 83

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

P.O. BOX 1467
JUNEAU, ALASKA 99802
PHONE: 364-4339

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
Deputy Commissioner/Southeast Region

April 12, 1983

The Honorable Pappy H. Moss
Chairman, Senate Transportation Committee
Alaska State Legislature
Pouch V
Juneau, AK 99811

Dear Senator Moss:

In response to SB 217, making a special appropriation to DOT&PF for the purchase of three hydrofoils, the Department desires to present it's comments and recommendation.

Boeing Marine Systems personnel have completed an economic assessment of Jetfoil service in Southeast Alaska based on a 3-boat service scenario. DOT&PF staff has worked closely with Boeing in the preparation of the report and, for the most part, our input has been incorporated into the final document. The following are our general impression of the proposed project, brief comments on those sections of the report that we feel need to be carefully considered, and a recommendation for action.

We feel that the economic assessment is based on sound methods and procedures. Traffic forecasts were developed by Boeing for low, medium and high scenarios, an approach that we found appropriate, considering the subjective nature of the exercise. We would have preferred to see a concise summary and presentation of vital factors and findings, but considering the complexity of the service proposal, the 17 page "Summary of Results" may be the only viable alternative.

Recognizing the lack of any actual experience on which to base traffic estimates, we feel that Boeing's passenger projections are optimistic and we tend to favor the low scenario (26% average load factor). We concede that this is a subjective judgement, difficult to support with actual numbers, based almost exclusively on our years of local knowledge. For this reason, we have concluded that a long term (one year minimum) trial under actual operating conditions is the only reasonable method of obtaining necessary base traffic data.

There is no acceptable method to produce credible freight projections without actual experience or a detailed analysis of vehicle and freight movements. Due to time constraints Boeing chose to present a range of freight scenarios, an approach that is acceptable if the limitations and short comings of such figures are understood. Even more so than the passenger projections, and for the same reasons, we feel that the

freight market scenarios presented are optimistic. Unfortunately, even a one year test trial will not provide any base data inasmuch as the basic freight handling infrastructure is not in place. Boeing does plan to complete a vehicle and freight market analysis later this year, but even preliminary data from this study is not yet available.

Any analysis of potential freight markets must also consider the substantial capital outlay necessary for shore facilities. The Department estimates shore facility cost at $26,000,000 and have included the annual cost of this investment in the attached cost-revenue relationship summary. Boeing's calculations do not include this figure.

At present, the marine highway system handles cargo only to the extent of transporting vans or other freight hauling vehicles under the same conditions as passenger automobiles. On the other hand, Boeing conceives the Jetfoil freight scenario as a container or pallet type of operation with shoreside agents and infrastructure very similar to existing services provided in the private sector.

Boeing's report also summarizes the possible impact of Jetfoil service on the existing Marine Highway System. In considering implementation of the proposed changes, political ramifications cannot be overlooked. For example, increased passenger and vehicle capacity on the Mainline system is achieved only with a significant reduction in direct southbound service from Sitka, a change that is physically possible but is likely to meet with considerable opposition from the residents affected.

In summary, the Boeing economic assessment is based on reasonable methods and assumptions and is acceptable with the above mentioned comments. Because of the weaknesses in base data and the resulting inability to develop a better technical analysis it is recommended that a committment to purchase the Jetfoil vessels not be undertaken without the benefit of at least one year, one boat trial demonstration under actual operation conditions.

Sincerely,

Jonathan W. Scribner

Jonathan W. Scribner
Acting Deputy Commissioner

cc: Daniel A. Casey, Commissioner, DOT&PF
Emil Notti, Office of the Governor
Senator Bill Ray

DAC:RTM:tas

SUMMARY

Cost-Revenue Relationships

CAPITAL COSTS (1)

3 Jetfoil Vessels	$49,200,000
Spares	5,800,000
Full Facilities (2)	26,000,000
TOTAL	$81,000,000

ANNUAL OPERATING COSTS (1)

Crew	$2,280,000
Fuel	4,481,000
Maintenance	1,836,000
Insurance	984,000
Indirect	2,002,000
Materials	1,327,000
Capital Recovery (10% @ 20 years) (2)	10,882,000
TOTAL	$23,792,000

REVENUES (1)

	Low	Medium	High
Passengers	$3,265,000	$5,020,000	$6,975,000
Freight	1,445,000	4,213,000	9,360,000
TOTAL	$4,710,000	$9,233,000	$16,335.000

COST-REVENUE RELATIONSHIPS (2)

	Low	Medium	High
$ Deficit	$19,082,000	$14,559,000	$7,457,000
% Subsidy	80%	61%	31%

Note: Source of data and calculations
(1) Boeing
(2) Department of Transportation and Public Facilities

BOEING MARINE SYSTEMS
Tele: (206) 237-5387, Telex: 32-9430
P.O. Box 3707 M.S. 61-50
Seattle, Washington 98124
A Division of The Boeing Company

April 18, 1983
H-1400-PJB-269

Senator Pappy Moss
State Capitol
Pouch V
Juneau, Alaska 99811

Dear Senator Moss:

To confirm our conversation of last week relative to an alternate approach for the purchase of JETFOILS, I am pleased to confirm that we will offer the State of Alaska a proposal for the purchase of one JETFOIL for delivery in May 1985, and for an estimated price of $22,800,000. This estimated price includes an escalation rate of 8 percent from the 1982 mid-year base price.

The JETFOIL will be manufactured to the same customized Alaska configuration as described in the March 1 proposal H-1100-LTRA-170.

A follow-up proposal based on this single JETFOIL offer will be forthcoming in substitution for our March 1, 1983 proposal.

Very truly yours,

Paul J. Baumgaertner

Paul J. Baumgaertner
Regional Sales Director

cc: Senator Bill Ray
Senator Don Bennett
Deputy Commissioner John Scribner

BOEING

DATE: 4/12/83 SPONSOR:

SUBJECT(S): SB 201, SB 217

Please Check One

NAME	REPRESENTING	ADDRESS	PHONE	Observer	Witness		
R. E. Bateman	The Boeing Company	Box 3707 Seattle Wa	(206)237-0220		✓		

BOEING MARINE SYSTEMS
A DIVISION OF THE BOEING COMPANY

February 7, 1983

The Honorable D. A. Casey
Commissioner
Department of Transportation
and Public Facilities
State of Alaska
Pouch Z
Juneau, Alaska 99811

Dear Sir:

We are pleased to offer three Boeing jetfoils customized to what we believe are specific State of Alaska's transportation requirements. The deliveries are ASD Seattle, as follows:

#1 August 1985
#2 April 1986
#3 August 1986

The customized configuration is defined in the enclosed attachment. The not to exceed prices are as follows:

(3) Customized Jetfoils	$46.1 M
Boat Optional Equipment Allowance	4.5 M
Initial Spares & Product Support Equipment	3.5 M
Contingency	.9 M
	$55.0 M

Prices are quoted in 1982 dollars and will be subject to escallation incurred to time of delivery and local and state taxes. A complete proposal and specification will be available March 1, 1983.

The product support services included are operating crew and maintenance training and initial onsite technical support. The jetfoil will be constructed to ABS standards and will have U.S. Coast Guard approval.

The shore terminal and related facilities capital and equipment are not included in the above boat prices.

We look forward to working with you and developing a jetfoil configuration that is satisfactory to the State of Alaska. Definitive contract signing is proposed for July 1, 1983.

Very truly yours,

P. J. Baumgaertner
Regional Director of Sales
M.S. 61-50
P. O. Box 3707
Seattle, Washington 98120

BOEING MARINE SYSTEMS

P.O. Box 3707
Seattle, Washington 98124

A Division of The Boeing Company

March 9, 1983
H-1100-LTRA-170

STATE OF ALASKA
Department of Transportation and Public Facilities
Pouch Z
Juneau, Alaska 99811

Attention: The Honorable D. A. Casey, Commissioner

Subject: Proposal for Sale of Three (3) Boeing Model 929-1XX JETFOILS.

Gentlemen:

By this proposal, The Boeing Company ("Boeing) is pleased to offer to manufacture and sell three (3) Boeing Model 929-1XX JETFOIL Passenger Boats (the "JETFOILS" or "JETFOIL", as appropriate) to the State of Alaska, acting by and through its Department of Transportation and Public Facilities ("Buyer"), subject to terms and conditions set forth below.

1. Subject Matter

The JETFOILS shall be manufactured by Boeing to comply with Boeing Specification D320-52034-1 dated March 9, 1983, describing a Boeing Model 929 JETFOIL with full load displacement of 117 long tons, and by this reference incorporated herein as though set forth in full). Said specification is subject to revision to:

(a)Incorporate changes required to obtain regulatory agency approval.

(b)Incorporate other changes mutually agreed upon prior to signing the definitive Purchase Agreement referred to herein in paragraph 5, "Definitive Purchase Agreement." The JETFOIL configuration for Buyer's use may require a different interior configuration, revised payload distribution, or other special features, and resolution of configuration and its impact on price and schedule will be accomplished during the period of definitization referred to herein in paragraph 5, "Definitive Purchase Agreement."

(c)Incorporate changes developed by Boeing without Buyer's consent where such changes do not affect the purchase price or delivery schedule or adversely affect JETFOIL performance.

2. Delivery

One (1) JETFOIL shall be delivered by Boeing to Buyer alongside a dock selected by Boeing in Seattle or Renton, Washington, U.S.A. during or before each of the months set forth in the following schedule:

May	1985
December	1985
August	1986

3. Price

(a) Basic Price

The Basic Price (in 1982 Dollars) of each JETFOIL shall be SIXTEEN MILLION FOUR HUNDRED THOUSAND DOLLARS (U.S. $16,400,000). Such Basic Price is subject to adjustment to reflect the price effect of changes referred to in clauses (a) and (b) of paragraph 1 above prior to the date Boeing and Buyer enter into a definitive Purchase Agreement.

(b) Purchase Price

The Purchase Price of each JETFOIL shall be the Basic Price thereof (i) adjusted for any changes mutually agreed upon subsequent to the date Boeing and Buyer enter into a definitive Purchase Agreement, and (ii) adjusted thereafter for economic fluctuations in accordance with the provisions of Attachment B hereto (Price Adjustments Due to Economic Fluctuations).

(c) Spare Parts, Support Equipment and Product Support Services

The Basic Price set forth in paragraph 3(a) above does not include any amount for the spare parts and support equipment which Buyer will be required to purchase to support operation of the JETFOILS. For Buyer's planning purposes, however, Boeing estimates that the aggregate cost (in 1982 U.S. Dollars) of spare parts and support equipment, as well as extra training or other support purchased from Boeing, for the three JETFOILS will be approximately FIVE MILLION EIGHT HUNDRED THOUSAND DOLLARS ($5,800,000). Boeing estimates that such costs, as actually expended in delivery year dollars contemporaneously with the three JETFOIL deliveries, will be as follows:

First JETFOIL	(May 1985)	- $5,200,000
Second JETFOIL	(December 1985)	- $ 500,000
Third JETFOIL	(August 1986)	- $1,600,000

4. Payment

(a) Advance Payment Base Price

Each JETFOIL shall have an Advance Payment Base Price depending on its scheduled delivery month, as indicated below:

Scheduled Delivery Month	Advance Payment Base Price
May 1985	$20,279,000
December 1985	$21,210,000
August 1986	$22,327,000

Each Advance Payment Base Price shall be adjusted at the time of execution of the definitive Purchase Agreement to reflect the price effect, if any, of the changes referred to in clauses (a) and (b) of paragraph 1 above.

(b) Advance Payments

Buyer shall pay to Boeing Advance Payments for each JETFOIL in an amount equal to seventy percent (70%) of the Advance Payment Base Price therefor, in accordance with the following schedule:

Due Date of Payment	May 1985 JETFOIL	December 1985 JETFOIL	August 1986 JETFOIL
Concurrently with signing of the definitive Purchase Agreement	$ 2,027,900	$ 2,121,000	$ 2,232,700
November 1, 1983	$ 2,027,900	------	------
February 1, 1984	$ 3,041,850	------	------
May 1, 1984	$ 3,041,850	------	------
June 1, 1984	------	$ 2,121,000	------
September 1, 1984	------	$ 3,181,500	------
November 1, 1984	$ 4,055,800	------	------
December 1, 1984	------	$ 3,181,500	------
February 1, 1985	------	------	$ 2,232,700
May 1, 1985	------	------	$ 3,349,050
June 1, 1985	------	$ 4,242,000	------
August 1, 1985	------	------	$ 3,349,050
February 1, 1986	------	------	$ 4,465,400
TOTAL	$14,195,300	$14,847,000	$15,628,900

(c) Final Payment

The balance of the Purchase Price shall be paid at the time of delivery of each JETFOIL.

5. Definitive Purchase Agreement

(a) Following acceptance of this offer by Buyer, Boeing and Buyer shall use their best efforts to enter into a definitive Purchase Agreement covering the detailed terms and conditions of sale of the JETFOILS. The definitive Purchase Agreement shall include the terms and conditions of this offer, together with the terms and conditions not inconsistent herewith contained in Boeing's standard form of JETFOIL Purchase Agreement (Attachment C hereto). It is further contemplated that Boeing and Buyer will also enter into a Product Support General Terms Agreement substantially in the form of Attachment D hereto, pursuant to which Boeing will provide the initial provisioning of spare parts and support equipment described in paragraph 3(c) as well as continuing product support after the JETFOIL deliveries.

(b) Selection of Buyer options and unique features shall be subject to price, specification, payload, and schedule adjustments as part of the Purchase Agreement definitization.

(c) It is contemplated that Boeing and Buyer will sign the definitive Purchase Agreement on or before July 1, 1983. In the event the parties cannot reach agreement and do not sign a definitive Purchase Agreement on or before said date, all obligations and rights of Boeing and Buyer, respectively, with respect to the JETFOILS shall automatically terminate.

6. Termination

Prior to signing the definitive Purchase Agreement, either party shall have the right, exercisable by written or telegraphic notice to the other, to terminate all obligations and rights of Boeing and Buyer, respectively, with respect to the JETFOILS.

7. Acceptance of Offer

(a) Written or telegraphic notice of Buyer's acceptance of this offer, must be received by Boeing from Buyer on or before July 1, 1983, the date on which this offer shall otherwise expire. Such date coincides with the date previously stated for execution of the definitive Purchase Agreement. Boeing therefore requests the courtesy of Buyer's response at the earliest practicable time, in order to efficiently allocate its resources and schedule business discussions with Buyer.

(b) This offer is subject to other commitments, dispositions, and sales prior to acceptance by Buyer of this offer.

If this offer meets with your acceptance, please sign in the space provided below and return one (1) signed copy.

Very truly yours,

THE BOEING COMPANY

By _____
A. P. Schneider
Contracts Manager
BOEING MARINE SYSTEMS
A Division of The Boeing Company

ACCEPTED AND AGREED TO this
___ day of _____, 1983

STATE OF ALASKA
Department of Transportation and Public Facilities

By _____

Title _____

Attachments: A - Boeing Detail Specification D320-52034-1 dated March 9, 1983
B - Price Adjustments Due to Economic Fluctuations
C - Purchase Agreement
D - Product Support General Terms Agreement

PRICE ADJUSTMENTS DUE TO ECONOMIC FLUCTUATIONS

(a) The Purchase Price of the JETFOIL shall be determined at the time of delivery in accordance with the following formula:

$$PP = BP \times [L + M]$$

(b) The following definitions shall apply herein:

PP = Purchase Price of the JETFOIL

BP = Basic Price of the JETFOIL (in 1982 Dollars) adjusted for any changes mutually agreed upon subsequent to the date Boeing and Buyer execute the Purchase Agreement.

$$L = .7 \times \left[\frac{A}{AA} \times (1 + F)\right]$$

A = The arithmetic average of the Hourly Earnings Index as reflected in the "Average Gross Hourly Earnings of Production Workers in Aircraft Companies" (Standard Industrial Classification Code 3721 - Aircraft) published by the Bureau of Labor Statistics, U.S. Department of Labor, for the fifth, sixth and seventh months prior to the month of scheduled JETFOIL delivery.

AA = Hourly Earnings Index for January 1982 (S.I.C. Code 3721).

F = .01 x [Calendar Year of Delivery minus 1982]

Note: The Hourly Earnings Index does not reflect changes in costs of fringe benefits. F compensates for such changes.

$$M = .3 \times \left[\frac{B}{BB}\right]$$

B = The arithmetic average of the "Metals and Metal Products Index" (Standard Industrial Classification Code 10) published by the Bureau of Labor Statistics, U.S. Department of Labor, for the fifth, sixth and seventh months prior to the month of scheduled JETFOIL delivery.

BB = Metals and Metal Products Index for January 1982 (S.I.C. Code 10).

(c) In addition, it is understood that at the time of JETFOIL delivery to Buyer, Boeing may be unable to precisely determine the Purchase Price of the JETFOIL under the escalation provisions above because values of the applicable indexes may not be released by the Bureau of Labor Statistics, or if released, may be adjusted at a later date by such Bureau. Accordingly, the parties agree as follows:

PRICE ADMUSTMENTS DUE TO ECONOMIC FLUCTUATIONS
Page 2

(i) The Purchase Price of the JETFOIL shall be determined at the time of delivery in accordnce with the escalation provisions set forth above. "Final" values of the Hourly Earnings and Metals and Metal Products Indexes shall be used, or if "final" values have not been released for the applicable months, "preliminary" values shall be used. If no Index value has been released for an applicable month, the "preliminary" value first available for the nearest preceding month shall be used. The payment by Buyer to Boeing of the Purchase Price so determined shall be deemed payment for such JETFOIL and title shall be conveyed to Buyer upon delivery.

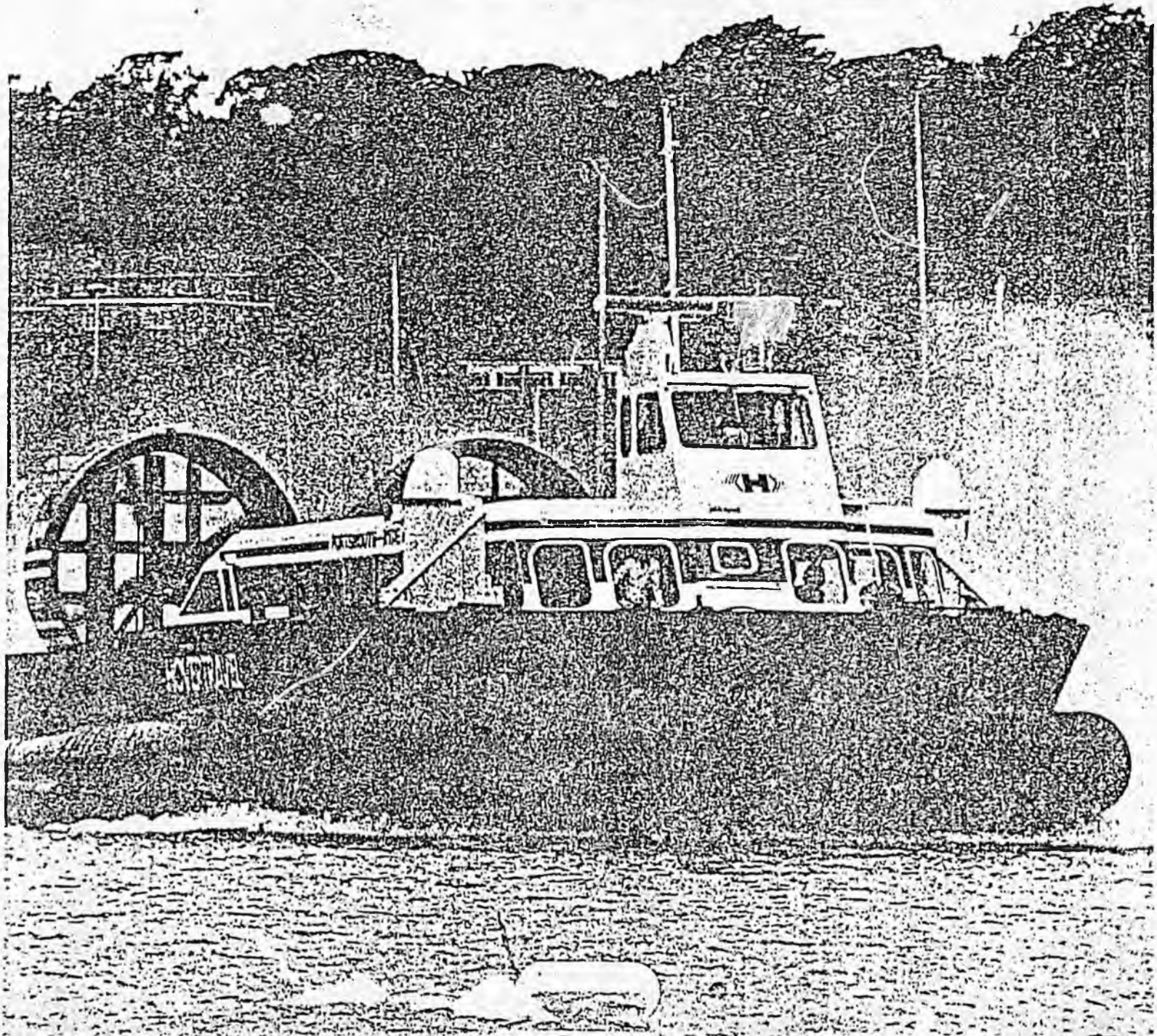
(ii) Subsequent to delivery of the JETFOIL, Boeing may from time to time make adjustments to the Purchase Price so determined to reflect any changes in escalation amounts resulting from changes in Hourly Earnings or Metals and Metal Products Index values used to determine the Purchase Price. If the U.S. Department of Labor revises any previously released Indexes or data utilized in determining or adjusting the Purchase Price by removing or replacing such Indexes or data, or by describing such revision by footnote, appendix or by any other method, the revised values shall be applied for purposes of adjusting the Purchase Price. Such adjustment(s) by Boeing, if any, shall be made within twelve (12) months after delivery of such JETFOIL.

(iii) If the U.S. Department of Labor substantially revises the methodology (in contrast to benchmark adjustments or other corrections of previously released data) or discontinues any of the Indexes referred to above, the parties shall select a substitute for the revised or discontinued Index, such substitute Index to lead in application to the same Purchase Price determination or adjustment, as applicable, insofar a possible, as would have been achieved by continuing the use of the original Index as it may have fluctuated had it not been revised or discontinued. Appropriate revision of the formula shall be made to accomplish this result. In the event escalation provisions are made non-enforceable or otherwise renedered null and void by any agency of the United States Government, the parties agree, to the extent they may lawfully do so, to equitably determine or adjust, as applicable, the Purchase Price to reflect an allowance for increases in labor and material costs occurring since January 1982 which is consistent with the applicable provisions hereof.

(iv) If required, Boeing shall submit either a supplemental invoice or refund the amounts due Buyer to reflect any periodic increase or decrease, respectively, in the Purchase Price of the JETFOIL from that determined at the time of delivery of such JETFOIL. Any payments due Boeing or Buyer shall be made with reasonable promptness.

AP 1·88

Civil & Commercial Roles



Full Cabin Version (Production Standard)

Up to 101 passengers can be carried in aircraft type seats on sheltered water routes. The weight allowance for each passenger and their luggage is 90 kg.

With a full passenger complement of 101 the AP1-88 has an endurance of 2.2 hours. This can be extended to 5.25 hours by a reduction of the payload to 91 passengers.

Special operations requiring even greater endurance and range can be accomplished by using overload fuel tankage and a further reduction of the payload.

Full Cabin Version (Luxury Standard)

Customisation of the AP1-88 interior can be carried out to the operators requirements, within the craft's all up weight of 36,300 lbs.

Included in the range of specialist fittings and equipment available are full air conditioning, galley, bar and toilet facilities.

Half Cabin Version

In this version up to 40 passengers may be carried in the cabin, and logistic loads or equipment on the deck. Access to the deck is by a ramp allowing light vehicles to be driven aboard. A platform can be fitted at the stem to allow deployment of towed equipment.

Roles

- Airfield coast rescue
- Survey work
- Search and rescue
- Navigation aid maintenance and deployment
- Inshore oil field support

Logistic Support Variant

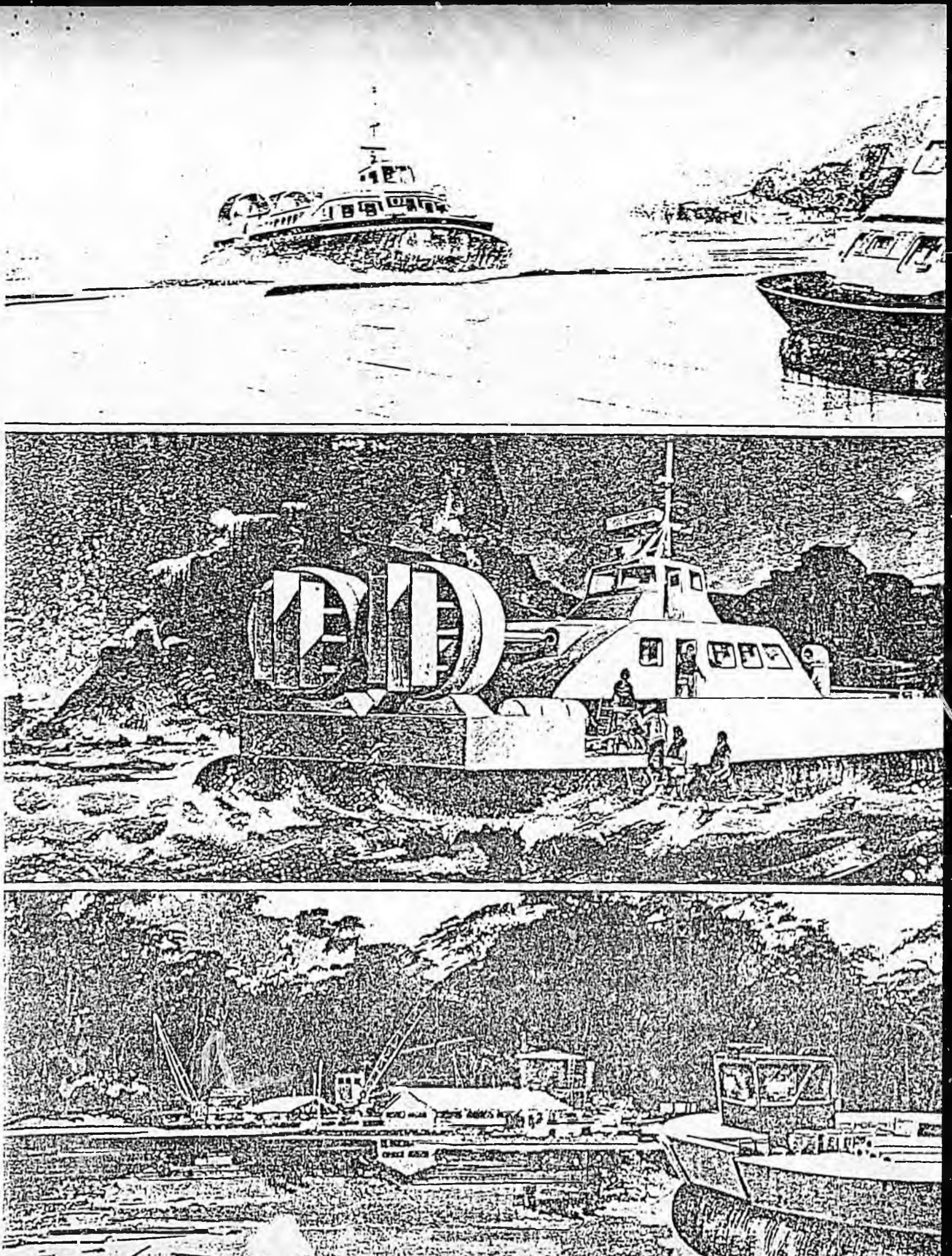
The AP1-88 logistic support hovercraft is an amphibious vehicle capable of operating in the open sea and in confined shallow waterways. In the latter environment the craft can operate easily over floating debris, swamps, mudflats, reefs and sand banks.

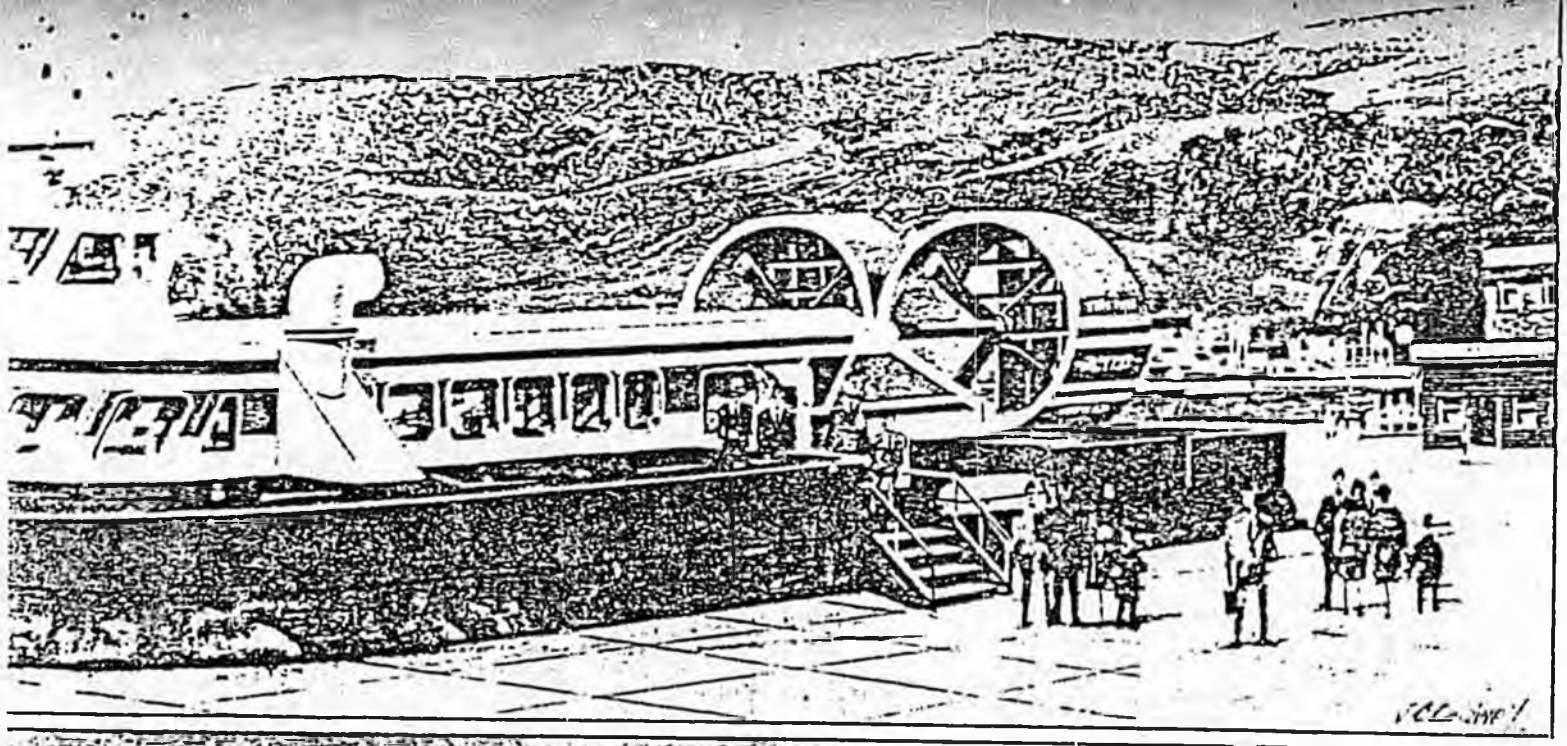
The Logistic Support craft has a flat deck 15 metres long and 4.8 metres wide; access is by a bow ramp 2.7 metres wide.

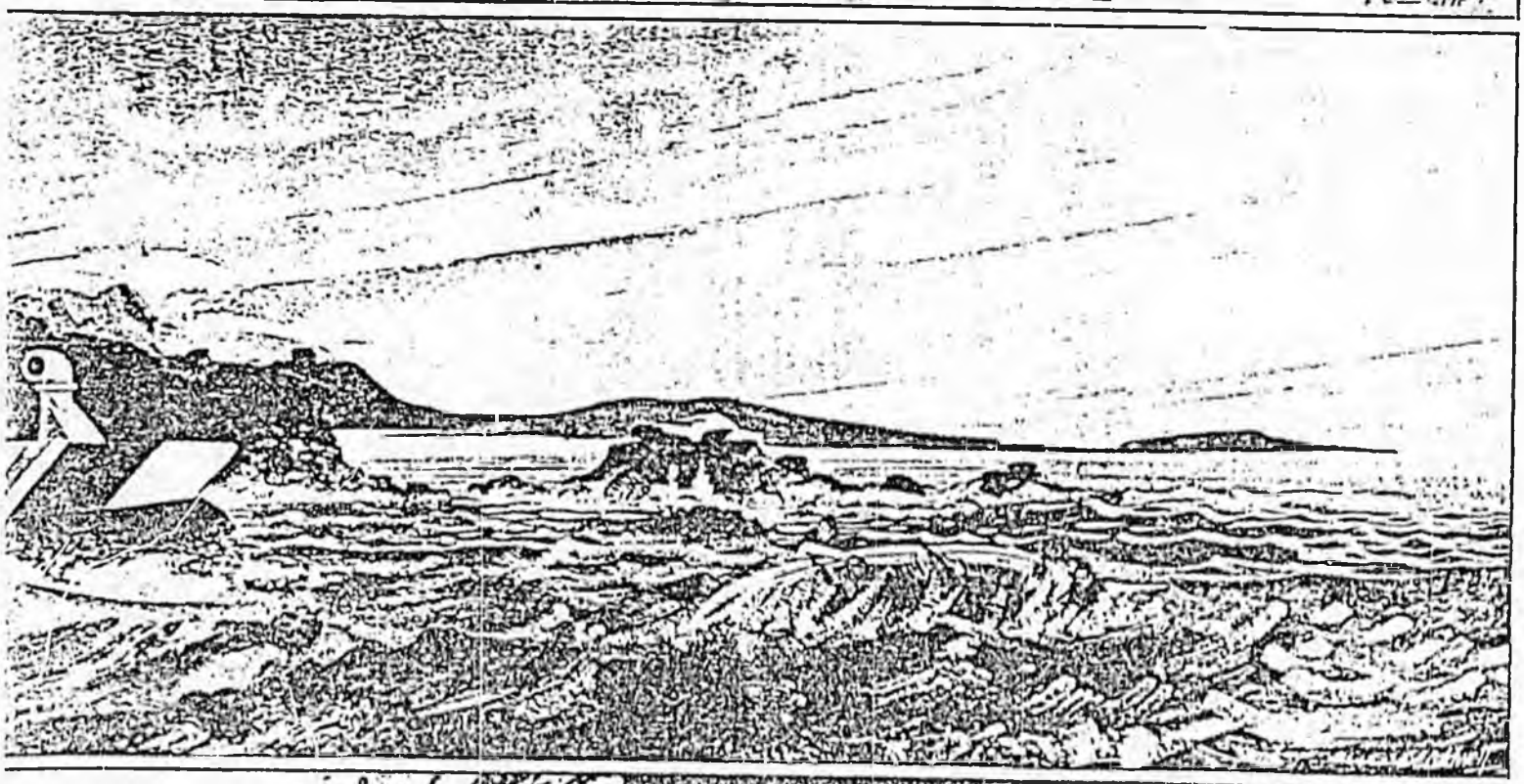
The bow ramp allows vehicles to be driven on and off the craft.

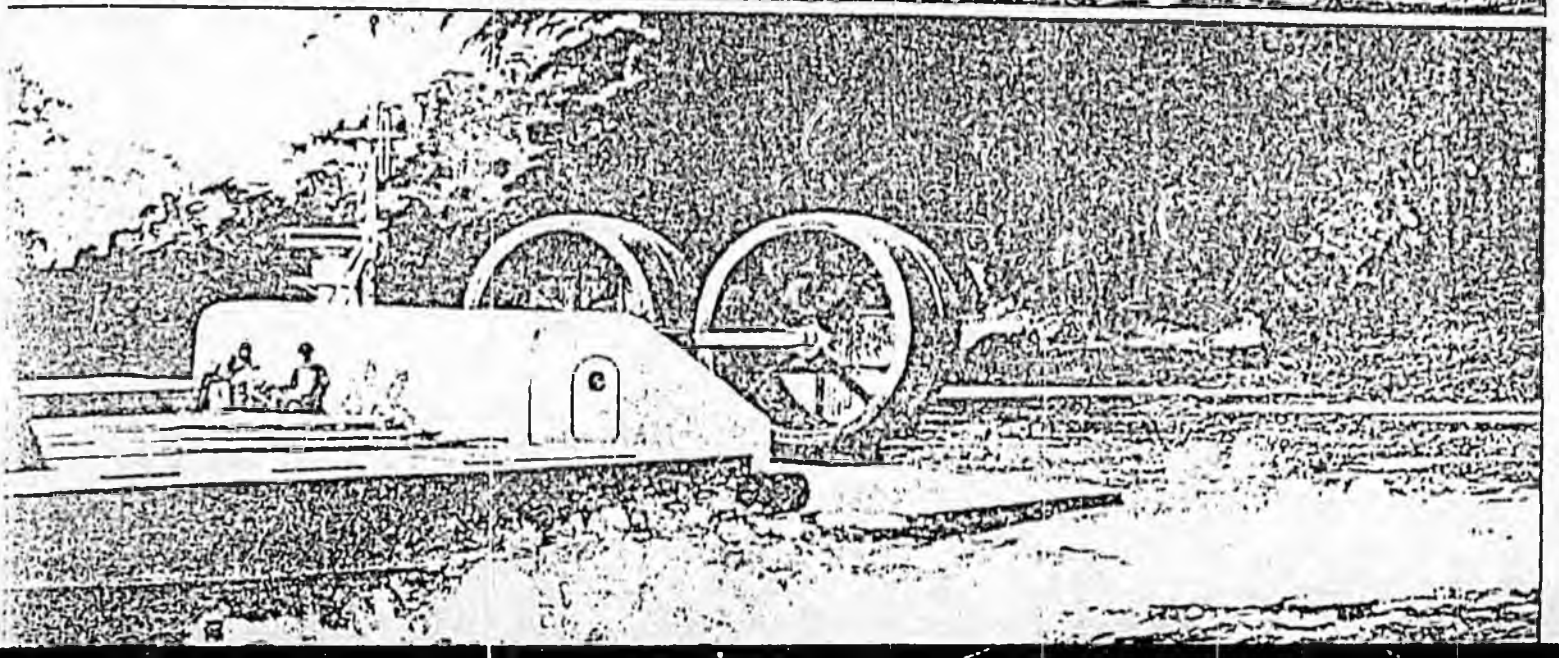
Subject to overall payload the craft can accommodate:

- Wheeled vehicles, axle loadings up to 1,800 kg
- Drill pipe and casing up to 45 ft. long
- General freight
- Removable modules for specialist roles such as

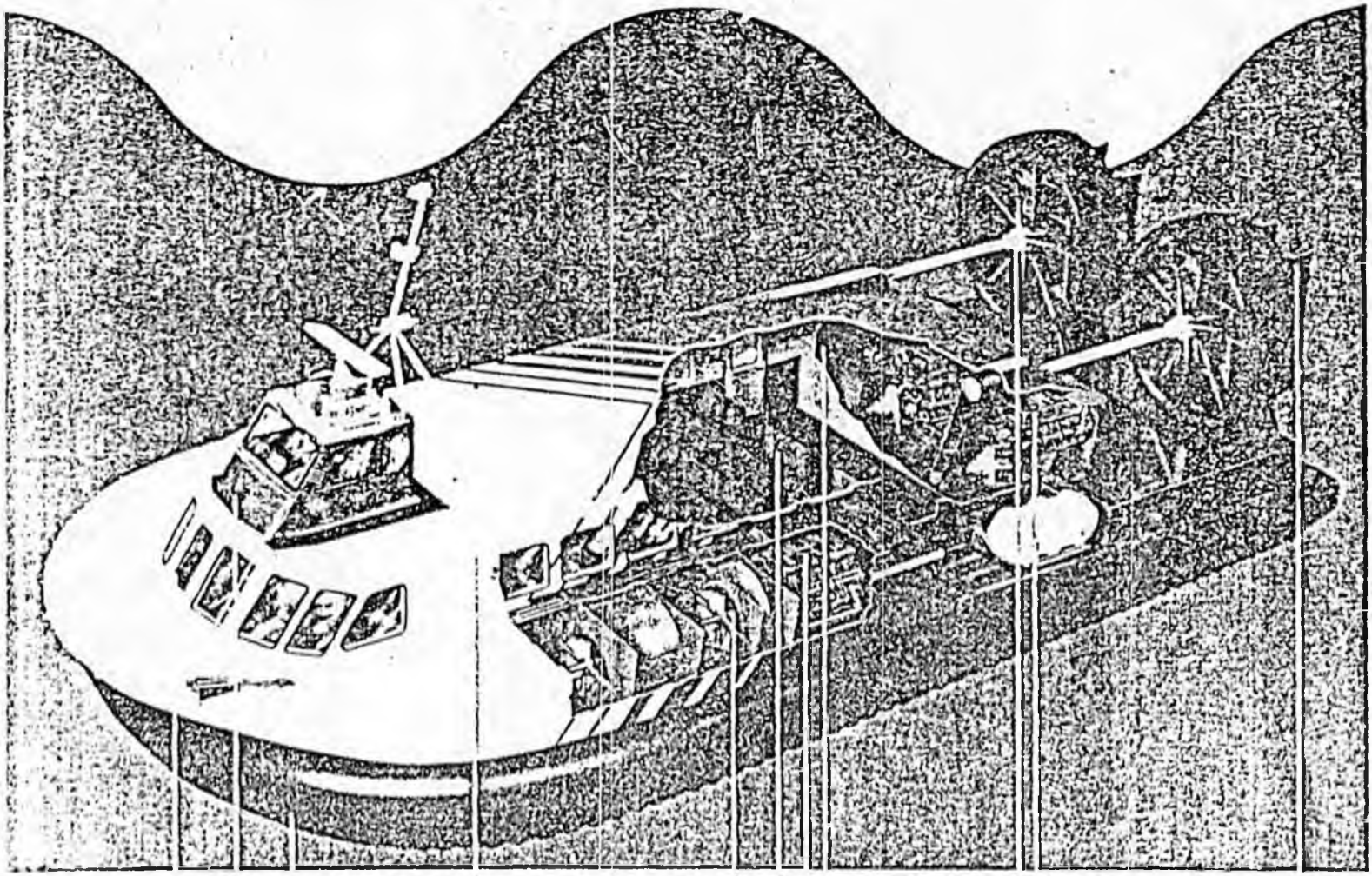








Engineering Description



The main buoyancy tank is of welded light alloy construction and is sub-divided into a number of watertight compartments.

Box structures on each side at the forward end house the lift engines and also the fans and their volutes. A loading ramp is fitted at the bow, in the open deck variants, and in the passenger version there are doors on either side towards the rear of the cabin.

Power is supplied by four marine diesel engines, two directly driving the lift fans and two driving the propulsors through toothed belts. The

Trim control is obtained principally by fuel ballast transfer, with additional pitch control from elevators.

Directional control is obtained by use of aerodynamic rudders mounted on the rear of the propeller shrouds aided by swivelling bow thrusters and differential propeller thrust. The bow thrusters contribute to the forward thrust in the straight-ahead position.

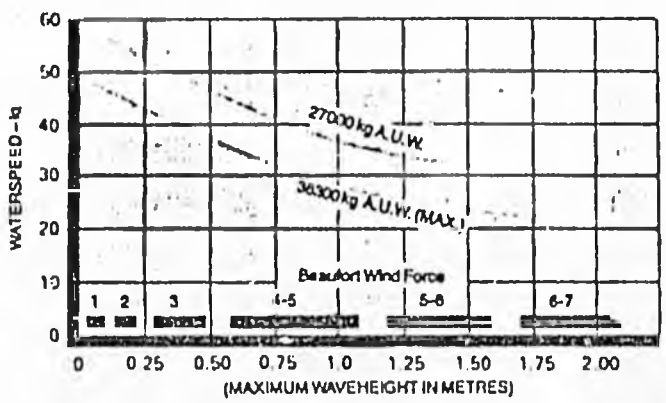
In the passenger version the crew cockpit is located at the forward end of the superstructure but is moved to the starboard side forward in the open-deck variant.

Leading Particulars

Length overall	77.3 ft.	(23,55 m)
Beam overall	33.0 ft.	(10,1 m)
Height (on landing pads)	26.0 ft.	(7,95 m)
Height (hovering)	29.2 ft.	(8,9 m)
Mean cushion depth	4.0 ft.	(1,2 m)
Cabin length	47.2 ft.	(14,4 m)
Cabin beam	15.7 ft.	(4,8 m)
Cabin headroom	6.5 ft.	(1,98 m)
Engines	Lift: 2 x Deutz BF12L413FC marine diesels (428 hp cont. each) Propulsion: 2 x Deutz BF12L413FC marine diesels (428 hp cont. each)	
Propulsion	2 x 9.0 ft. (2,74 m) dia.	shrouded propellers
Fans	8 x 2.75 ft. (0,84 m) dia.	centrifugal type
Maximum operating weight	80,000 lb	(36,300 kg)
Maximum disposable load (open deck version)	23,800 lb	(10,800 kg)
Maximum fuel capacity (including ballast allowance)	800 Imp. gall.	(3,600 litres)
Total fuel consumption at continuous power	76 gall./hr.	(345 litres/hr.)
Maximum number of passenger seats (cabin variant)	101	
Maximum calm water speed	58 kt	(114 km/hr.)

TYPICAL VARIATION OF BEAMWIND WATERSPEED WITH WAVEHEIGHT

27000 – 36300 kg AUW
CONTINUOUS POWER RATING
AMBIENT TEMPERATURE UP TO 15°C



BRITISH HOVERCRAFT

STATE OF ALASKA
FISCAL NOTE

Revision Date , 1983

I. REQUEST
Bill/Resolution No.: SB 217
Title: Approp. for Hydrofoil Purchase
Sponsor: Moss
Requestor: Senate Transportation Committee

II. FISCAL DETAIL
Agency Affected: DOT&PF
Program Category Affected:
BRU, Program or Subprogram(s) Affected:

EXPENDITURES/REVENUES: (Thousands of Dollars)

	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88
OPERATING						
100 PERSONAL SERVICES				2,838.0	4,730.0	5,675.0
200 TRAVEL				15.0	25.0	30.0
300 CONTRACTUAL				651.0	1,085.0	1,300.0
400 COMMODITIES				2,262.0	3,770.0	4,525.0
500 EQUIPMENT				684.0	1,140.0	1,370.0
600 LAND & STRUCTURES						
700 GRANTS, CLAIMS, ETC						
TOTAL OPERATING	-0-	-0-	-0-	6,450.0	10,750.0	12,900.0
CAPITAL		16,400.0	50,979.0	21,310.0	8,427.0	-0-
REVENUE	-0-	-0-	-0-	2,355.0	3,925.0	4,710.0

FUNDING: (Thousands of Dollars)

GENERAL FUND		16,400.0	50,979.0	25,405.0	15,252.0	8,190.0
FEDERAL FUNDS						
OTHER (Specify Source)						

POSITIONS:

FULL-TIME				24	40	48
PART-TIME				7	12	14
TEMPORARY						

III. SOURCE OF FUNDS TO OFFSET FISCAL IMPACT OF BILL:
$63,816,000 of the capital expenditures are provided by SB 217. The sponsor has not identified the source of funds for the remaining capital and operating expenditures.

*Total operating costs does not include $10,882,000 per year capital recovery cost based on the total capital outlay at 10% for 20 years.

IV. ANALYSIS: Attach a separate page for any Analysis

Prepared By: [signature] Phone: 364-4339
Division: Jonathan W. Scribner, Acting Dep. Comm., S.E. Region Date: April 11, 1983

Approved by Commissioner: [signature] Date: 4/11/83
Department: Transportation and Public Facilities

Distribution:
Original to Legislative Finance
Copy to Office of Management and Budget (for Legislature introduced bills)
Copy to Department (for Governor introduced bills)
Copy to Sponsor
Copy to Requestor (if different from Sponsor)

3/8/83

FISCAL NOTE ANALYSIS

SB 217
Purchase of 3 Hydrofoils

The analysis is based on the 3-boat service scenario outline in "Economic Assessment of Jetfoil Service for Southeast Alaska" Prepared by Boeing Marine Systems personnel in cooperation with Department of Transportation and Public Facilities staff.

In summary, the proposal calls for a 3-boat Jetfoil fleet, operating in Southeast Alaska, with passenger and freight service to 17 communities. For purposes of the fiscal analysis it was assumed that Boat No. 1 would be delivered in May, 1985, Boat No. 2 in December, 1985 and Boat No. 3 in August, 1986. The analysis also includes an expenditure of $26,000,000 for construction of necessary shore facilities, $7,300,000 in spare parts and support equipment, annual operating costs of $4,300,000 per boat per year and annual revenues of $1,570,000 per year per boat. Expenditures and revenues by fiscal year can be summarized as follows:

FY 84 - Advance payments on boat purchase. No operations.

FY 85 - Final purchase of Boat No. 1, advance payments on Boats No. 2 and 3, construction of 3/4 of shore facilities, No operations.

FY 86 - Final purchase of Boat No. 2, advance payments on Boat No. 3, construction of 1/4 of shore facilities. Boat No. 1 operates full year, Boat No. 2 operates 1/2 year.

FY 87 - Final purchase of Boat No. 3. Boats 1 and 2 operate full year, Boat 3 operates 1/2 year.

FY 88 - Full operations.

SB 217 TITLE & SPONSOR SUMMARY 11:00 6/27/83 PAGE 1 OF

AMENDED TITLE:
AN ACT MAKING A SPECIAL APPROPRIATION TO THE DEPARTMENT
OF TRANSPORTATION AND PUBLIC FACILITIES FOR THE
PURCHASE OF THREE HYDROFOILS FOR THE MARINE HIGHWAY SYSTEM;
AND PROVIDING FOR AN EFFECTIVE DATE

GENERAL DOLLARS: $63,816,000 (APPROP)

PRIME SPONSOR: MOSS.

OTHER DOLLARS: $0

CO-SPONSORS:

CURRENT STATUS: 5/06/83 IN (S) FINANCE

SB 217 SENATE ACTION 11:01 6/27/83 PAGE 2 OF

DATE	SEQ	PAGE	LEGISLATIVE ACTION
03/29/83	01	0528	FIRST READING -- COMMITTEE REPORTS
05/06/83	02	0912	TRAN -- CS02, NR02
			FINANCE
			RULES
****	**	**	*** *** ***

STATE OF ALASKA
FISCAL NOTE

Revision Date , 1983

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IV. ANALYSIS: Attach a separate page for any Analysis

Prepared By: [signature] Phone: 364-4339
Division: Jonathan W. Scribner, Acting Dep. Comm., S.E. Region Date: April 11, 1983

Approved by Commissioner: [signature] Date: 4/11/83
Department: Transportation and Public Facilities

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3/8/83

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FY 88 - Full operations.

COMMITTEE REPORT

SENATE

FURTHER: FINANCE

3/29/83

Date: May 5, 1983

Mr. President:

The Committee on TRANSPORTATION has had SB 217

Making a Special appropriation to the Department of Transportation and Public Facilities for the purchase of three hydrofoils for the Marine Highway System; eff. date

under consideration and (a majority of the committee) (the committee) reports it back with the following recommendations:

[ ] do pass [ ] do not pass

[ ] do pass with attached amendments(s)

[X] replace with CS for ______ [ ] same title [X] new title

and recommends ______

[ ] AND attaches a "Letter of Intent" [ ] New Fiscal Note

[ ] reports it back without recommendation

[ ] referred to the ______ Committee

MEMBERS SIGNING DO PASS

H. Pappy Moss

Bob Ziegler

MEMBERS HAVING OTHER RECOMMENDATIONS:

[signature]

[signature]

H. Pappy Moss

CHAIRMAN

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

P.O. BOX 1467
JUNEAU, ALASKA 99802
PHONE: 364-4339

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
Deputy Commissioner/Southeast Region

April 12, 1983

The Honorable Pappy H. Moss
Chairman, Senate Transportation Committee
Alaska State Legislature
Pouch V
Juneau, AK 99811

Dear Senator Moss:

In response to SB 217, making a special appropriation to DOT&PF for the purchase of three hydrofoils, the Department desires to present it's comments and recommendation.

Boeing Marine Systems personnel have completed an economic assessment of Jetfoil service in Southeast Alaska based on a 3-boat service scenario. DOT&PF staff has worked closely with Boeing in the preparation of the report and, for the most part, our input has been incorporated into the final document. The following are our general impression of the proposed project, brief comments on those sections of the report that we feel need to be carefully considered, and a recommendation for action.

We feel that the economic assessment is based on sound methods and procedures. Traffic forecasts were developed by Boeing for low, medium and high scenarios, an approach that we found appropriate, considering the subjective nature of the exercise. We would have preferred to see a concise summary and presentation of vital factors and findings, but considering the complexity of the service proposal, the 17 page "Summary of Results" may be the only viable alternative.

Recognizing the lack of any actual experience on which to base traffic estimates, we feel that Boeing's passenger projections are optimistic and we tend to favor the low scenario (26% average load factor). We concede that this is a subjective judgement, difficult to support with actual numbers, based almost exclusively on our years of local knowledge. For this reason, we have concluded that a long term (one year minimum) trial under actual operating conditions is the only reasonable method of obtaining necessary base traffic data.

There is no acceptable method to produce credible freight projections without actual experience or a detailed analysis of vehicle and freight movements. Due to time constraints Boeing chose to present a range of freight scenarios, an approach that is acceptable if the limitations and short comings of such figures are understood. Even more so than the passenger projections, and for the same reasons, we feel that the

freight market scenarios presented are optimistic. Unfortunately, even a one year test trial will not provide any base data inasmuch as the basic freight handling infrastructure is not in place. Boeing does plan to complete a vehicle and freight market analysis later this year, but even preliminary data from this study is not yet available.

Any analysis of potential freight markets must also consider the substantial capital outlay necessary for shore facilities. The Department estimates shore facility cost at $26,000,000 and have included the annual cost of this investment in the attached cost-revenue relationship summary. Boeing's calculations do not include this figure.

At present, the marine highway system handles cargo only to the extent of transporting vans or other freight hauling vehicles under the same conditions as passenger automobiles. On the other hand, Boeing conceives the Jetfoil freight scenario as a container or pallet type of operation with shoreside agents and infrastructure very similar to existing services provided in the private sector.

Boeing's report also summarizes the possible impact of Jetfoil service on the existing Marine Highway System. In considering implementation of the proposed changes, political ramifications cannot be overlooked. For example, increased passenger and vehicle capacity on the Mainline system is achieved only with a significant reduction in direct southbound service from Sitka, a change that is physically possible but is likely to meet with considerable opposition from the residents affected.

In summary, the Boeing economic assessment is based on reasonable methods and assumptions and is acceptable with the above mentioned comments. Because of the weaknesses in base data and the resulting inability to develop a better technical analysis it is recommended that a committment to purchase the Jetfoil vessels not be undertaken without the benefit of at least one year, one boat trial demonstration under actual operation conditions.

Sincerely,

Jonathan W. Scribner

Jonathan W. Scribner
Acting Deputy Commissioner

cc: Daniel A. Casey, Commissioner, DOT&PF
Emil Notti, Office of the Governor
Senator Bill Ray

DAC:RTM:tas

SUMMARY

Cost-Revenue Relationships

CAPITAL COSTS (1)

3 Jetfoil Vessels	$49,200,000
Spares	5,800,000
Full Facilities (2)	26,000,000
TOTAL	$81,000,000

ANNUAL OPERATING COSTS (1)

Crew	$2,280,000
Fuel	4,481,000
Maintenance	1,836,000
Insurance	984,000
Indirect	2,002,000
Materials	1,327,000
Capital Recovery (10% @ 20 years) (2)	10,882,000
TOTAL	$23,792,000

REVENUES (1)

	Low	Medium	High
Passengers	$3,265,000	$5,020,000	$6,945,000
Freight	1,445,000	4,213,000	9,390,000
TOTAL	$4,710,000	$9,233,000	$16,335,000

COST-REVENUE RELATIONSHIPS (2)

	Low	Medium	High
$ Deficit	$19,082,000	$14,559,000	$7,457,000
% Subsidy	80%	61%	31%

Note: Source of data and calculations
(1) Boeing
(2) Department of Transportation and Public Facilities

M E M O R A N D U M

Date: March 24, 1983

Subject: Hydrofoil Appropriation Bill Drafts

To: Senator H. Pappy Moss, Chairman
Senate Transportation Committee

From: M. Clyde Stoltzfus
Professional Aide

Attached you will find two drafts for the hydrofoil appropriation. Per your request I insisted on including language which would have specified the specifications which would be required to receive the vessel under consideration. As you can see from the attached memo, such language makes the Bill constitutionally suspect. The other draft represents an appropriate appropriation bill.

STATE OF ALASKA
THE LEGISLATURE

LEGISLATIVE AFFAIRS AGENCY

POUCH Y STATE CAPITOL
JUNEAU, ALASKA 99811
907-465-3800

M E M O R A N D U M

March 24, 1893

SUBJECT: Appropriation Bill For Hydrofoils
(Work Order No. 13-1079)

TO: Senator Pappy Moss

FROM: James H. Lear
Legislative Counsel JHL

You have requested our office to draft a bill making a special appropriation to the Department of Transportation and Public Facilities for the purchase of hydrofoils for the Marine Highway System. The first draft delivered in response to your request specifically omitted the substantive language that accompanied the bill request because Article II, section 13, Constitution of the State of Alaska, as implemented by AS 24.30.030, prohibits the inclusion of substantive matters in appropriation bills.

Clyde Stoltzfus reviewed the initial draft and advised our office that you wished to include the substantive material that was submitted with the bill request. Accordingly, that matter is incorporated into the enclosed draft. However, please be advised that it is the opinion of this office that the enclosed draft is not confined to appropriation matters and, therefore, is subject to constitutional challenge.

JHL:csh

Enclosure
12/005

BOEING MARINE SYSTEMS
A DIVISION OF THE BOEING COMPANY

February 7, 1983

The Honorable D. A. Casey
Commissioner
Department of Transportation
and Public Facilities
State of Alaska
Pouch Z
Juneau, Alaska 99811

Dear Sir:

We are pleased to offer three Boeing jetfoils customized to what we believe are specific State of Alaska's transportation requirements. The deliveries are ASD Seattle, as follows:

#1 August 1985
#2 April 1986
#3 August 1986

The customized configuration is defined in the enclosed attachment. The not to exceed prices are as follows:

(3) Customized Jetfoils	$46.1 M
Boat Optional Equipment Allowance	4.5 M
Initial Spares & Product Support Equipment	3.5 M
Contingency	.9 M
	$55.0 M

Prices are quoted in 1982 dollars and will be subject to escallation incurred to time of delivery and local and state taxes. A complete proposal and specification will be available March 1, 1983.

The product support services included are operating crew and maintenance training and initial onsite technical support. The jetfoil will be constructed to ABS standards and will have U.S. Coast Guard approval.

The shore terminal and related facilities capital and equipment are not included in the above boat prices.

We look forward to working with you and developing a jetfoil configuration that is satisfactory to the State of Alaska. Definitive contract signing is proposed for July 1, 1983.

Very truly yours,

P. J. Baumgaertner
Regional Director of Sales
M.S. 61-50
P. O. Box 3707
Seattle, Washington 98120

Assessment of JETFOIL Service for Alaska

Alaska Legislature Hearing

April 12, 1983

ALASKA LEGISLATIVE HEARING

JETFOIL PROPOSAL

MR. CHAIRMAN AND MEMBERS OF THE SENATE TRANSPORTATION COMMITTEE --

FIGURE 1

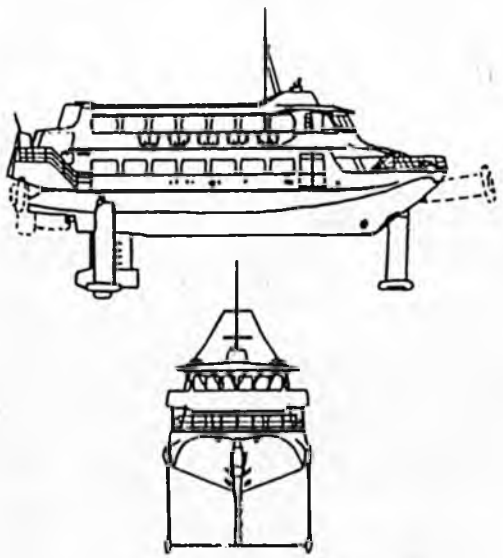
I AM PAUL BAUMGAERTNER, REGIONAL SALES DIRECTOR FOR BOEING MARINE SYSTEMS, A DIVISION OF THE BOEING COMPANY. I HAVE BEEN WITH THE BOEING COMPANY FOR APPROXIMATELY TWENTY YEARS AND FOR THE LAST EIGHT YEARS, I HAVE WORKED ON VARIOUS SALES ACTIVITIES IN BOEING MARINE SYSTEMS.

I WOULD LIKE TO PRESENT TO YOU TODAY, A PROPOSAL FOR THE PURCHASE OF THREE JETFOILS BY THE STATE OF ALASKA, CONFIGURATED FOR ALL YEAR SERVICE IN SOUTHEAST ALASKA. IN SUPPORT OF THIS PROPOSAL, I WOULD ALSO LIKE TO SHOW YOU HOW THESE CRAFT, IN CONJUNCTION WITH

YOUR CONVENTIONAL FERRIES, CAN SIGNIFICANTLY IMPROVE SERVICE IN SOUTHEAST ALASKA FOR FRIEGHT AND VEHICLES, AS WELL AS PASSENGERS. THIS PRESENTATION WILL ALSO SHOW THE OPERATING COSTS OF THE JETFOIL RELATIVE TO CONVENTIONAL FERRIES AND THE RESULTING ECONOMICS.

THE JETFOIL CONFIGURATION (FIGURE 2) PROPOSED FOR THE STATE OF ALASKA, AS IT APPEARS FROM THE EXTERIOR, LOOKS VERY SIMILAR TO THE JETFOIL THAT VISITED SOUTHEAST ALASKA LAST AUGUST AND SEPTEMBER FOR THE PUBLIC DEMONSTRATIONS AND THIS WINTER IN JANUARY FOR THE TECHNICAL TRIALS. THE HULL IS OF ALUMINUM CONSTRUCTION WITH THE STRUTS AND FOILS MADE OF WELDED CORROSION RESISTANT STEEL. THE JETFOIL IS APPROXIMATELY 90 FEET LONG WITH A BEAM OF 30 FEET. WHEN THE JETFOIL IS ON THE HULL WITH STRUTS AND FOILS EXTENDED, THE BOAT DRAWS ABOUT 17 FEET OF WATER FOR ENTRANCE TO SHALLOW HARBORS, THE STRUTS AND FOILS CAN BE RETRACTED, IN WHICH CASE, ONLY 10 FEET OF WATER IS NECESSARY. WHEN THE JETFOIL IS FOILBORNE AT NORMAL CRUISE SPEED OF 43 KNOTS (OR 50 MPH) THE BOAT IS


ARIES



"ARIES" JETFOIL DATA

Seating arrangement	160 seats*
Cruise speed	43 knots (50 mph)
Overall length, foils extended	90 feet (27.4 metres)
foils retracted	101 feet (30.8 metres)
Beam	31 feet (9.5 metres)
Hullborne draft, foils extended	17 feet (5.2 metres)
foils retracted	5.5 feet (1.7 metres)
Propulsion	
Engine	2 gas turbine engines Detroit Diesel Allison 501-K20A
Waterjet	2 Rockwell Rocketdyne "Powerjet 20" 24000 gallons water per minute each

*Other Jetfoil arrangements up to 316 seats

BOEING JETFOIL MODEL 929-100

The Jetfoil's design lifts the hull above the waves, creating a smooth comfortable ride. The horizontal "foils" operate like wings as they glide through the water under the surface, carrying the craft safely above the sea on narrow vertical struts.

The Jetfoil has twin gas turbine engines each 3,700 hp. Propulsion is by waterjet – the engines drive high performance pumps that force water through nozzles at the rear of the craft. At cruise speed, the Jetfoil is guided by automatically controlled flaps on the foils. Sensing devices gather and correlate information about wave height, hull attitude, speed, and other variables, then feed that information into a computer. The computer then adjusts control surfaces to provide smooth, level flight and quick response.

Forward and aft struts can be lifted near the docking area, permitting operation in water, as shallow as ten feet. With foils in the water, the Jetfoil will accelerate to foilborne speed in less than two minutes. The Jetfoil banks into turns, so lateral forces on passengers are very low. The craft is designed to cruise at 43 knots, or about 50 miles per hour; at that speed, it can turn at a rate of about six degrees per second, for a turn diameter of less than 1,500 feet. The Jetfoil can cruise close to small craft with little or no disturbance, since very little surface wake is created by the passing Jetfoil.

"There's no other ride on earth quite like it"

SUPPORTED BY THE LIFT GENERATED BY THE FOILS (OR WINGS) BENEATH THE WATER'S SURFACE. BECAUSE THE HULL DOES NOT DISPLACE WATER WHEN FOILBORNE, VERY LITTLE WAKE HITS THE SHORE. ENVIRONMENTALLY, THE JETFOIL LEAVES LITTLE WAKE, HAS LITTLE NOISE AND ALL FLUIDS ARE RETAINED IN THE HULL.

LAST SUMMER'S 99 PUBLIC DEMO TRIPS AND THE RESCUE OF THE MAJESTIC EXPLORER CRUISE SHIP PASSENGERS, AND THIS WINTER'S 16 TECHNICAL DEMONSTRATION TRIPS, ILLUSTRATE THE JETFOIL'S OPERATIONAL CAPABILITY IN SOUTHEAST ALASKAN WATERS AND CLIMATE. THE JETFOIL DID NAVIGATE THE WRANGELL NARROWS THREE TIMES FOILBORNE AND DURING TWO OF THOSE TRIPS, ONE OF THE ALASKA MARINE HIGHWAY CAPTAINS WAS AT THE WHEEL, RUNNING THE JETFOIL. INCIDENTALLY, DURING THE LAST TRANSIT OF WRANGELL NARROWS, IT WAS NECESSARY FOR THE CAPTAIN TO PASS A LOG BOOM AND TWO TUGS IN MID-CHANNEL. THIS WAS DONE WITHOUT INCIDENT.

THE PERIL STRAITS LEADING OUT TO SITKA WAS ALSO SUCCESSFULLY NAVIGATED AND IN ONE CASE, IT WAS DONE BY AN ALASKA FERRY CAPTAIN. ALL THESE TRIPS WERE DONE USING STANDARD SAFETY PROCEDURES AND NAVIGATION RULES.

THIS LAST JANUARY (FIGURE 3) PROVIDED THE OPPORTUNITY TO DEMONSTRATE THE JETFOIL IN SEVERE WEATHER. ALTHOUGH THIS RECENT WINTER WAS NOT AS SEVERE AS THE PREVIOUS WINTER, NOR SOME OTHER WINTERS, IT DID PROVIDE THE OPPORTUNITY FOR GOOD TEST CONDITIONS ON SPECIFIC DAYS. ON SUNDAY, JANUARY 23, 1983, WE HAD AN ESPECIALLY GOOD DAY FOR TESTING. AS YOUR LOCAL WEATHERMAN PUT IT, "IT WAS A TYPICAL TAKU CONDITION, WHICH USUALLY CAN HAPPEN SEVERAL TIMES DURING THE WINTER IN LYNN CANAL." THE AIR TEMPERATURE WAS 20°F AND THE WIND WAS BLOWING 40 TO 50 KNOTS FROM THE NORTH AND GUSTING TO 70 KNOTS. FOR A CONVENTIONAL VESSEL, THIS IS A PERFECT ICING CONDITION. WIND BLOWN SPRAY AND WAVES BREAKING OVER THE HULL OF A CONVENTIONAL VESSEL WITH TEMPERATURES BELOW FREEZING CAN CAUSE A SIGNIFICANT ICE BUILDUP. ON THAT DAY, THE JETFOIL LEFT

THE DOCK IN JUNEAU AT 9:30 A.M. AND ARRIVED IN HAINES TWO AND ONE-HALF HOURS LATER. IT WAS A TYPICAL TRIP TIME FOR A SCHEDULED SERVICE. THE JETFOIL MADE A DOCKING IN HAINES AT THE SMALL BOAT HARBOR AND THEN RETURNED TO LYNN CANAL FOR ADDITIONAL TESTING IN THE SEVEREST SEAS WE COULD FIND. THE RESULT WAS THAT THE BOAT WAS TESTED FOR 6 HOURS 40 MINUTES IN LYNN CANAL (IN SERVICE, A ROUND TRIP FROM JUNEAU TO HAINES AND SKAGWAY AND RETURN IS APPROXIMATELY 6 HOURS), WITH STEADY 40 - 50 KNOT WINDS, GUSTING TO 70 KNOTS, AIR TEMPERATURES OF 20°F, AND WAVE HEIGHTS UP TO 10 FEET. THE JETFOIL RAN SUCCESSFULLY IN THESE CONDITIONS WITH MAXIMUM ICE BUILDUP OF APPROXIMATELY ONE INCH IN SOME PLACES ON THE STERN OF THE BOAT, AS SHOWN HERE. UNFORTUNATELY, NO PICTURES ARE AVAILABLE OF THE JETFOIL UNDERWAY THAT DAY. WE HAD A CAMERAMAN STANDING BY, HOWEVER, NO LIGHT PLANES OR HELICOPTERS WERE WILLING TO FLY. THIS IS NOT ONLY TRUE OF THAT SUNDAY, BUT OTHER DAYS AS WELL. FOR ALL DEMOS, JETFOIL HAD 100% TRIP COMPLETION RATE FOR BOTH WINTER AND SUMMER TRIPS. LAST AUGUST, ON FOUR SPECIFIC DAYS WHEN AIRCRAFT

CEILINGS AT JUNEAU AIRPORT WERE LOW AND ALASKA AIRLINES CANCELLED TRIPS, THE JETFOIL WAS OPERATING AND PROVIDING PUBLIC DEMONSTRATIONS.

THE JETFOIL DEMONSTRATIONS NOT ONLY PROVIDED A GOOD OPPORTUNITY TO TEST THE OPERATIONAL FEASIBILITY AS DISCUSSED, BUT LAST SUMMER'S DEMOS IN ELEVEN COMMUNITIES OF SOUTHEAST ALASKA PROVIDED AN EXCELLENT FORUM FOR DETERMINING THE PUBLIC PERCEPTION OF TRANSPORTATION NEEDS IN SOUTHEAST ALASKA AND THEIR REACTION TO THE JETFOIL'S ABILITY TO FULFILL THOSE NEEDS. FIGURE 4

GILMORE RESEARCH GROUP OF SEATTLE SURVEYED NOT ONLY 15,600 PASSENGERS ABOARD THE JETFOIL, BUT ALSO RANDOMLY SAMPLED THE GENERAL POPULATION BEFORE AND AFTER THE DEMONSTRATIONS TO DETERMINE THEIR ASSESSMENTS. HIGHLIGHTS OF THE RESULTS ARE SHOWN IN FIGURE 5

JETFOIL Alaska Summer Demonstration

Passenger Traffic

- 15,585 passengers (27% of total Southeast Alaska residents participated)
- 99% average load factor
- 85% of ticket holders used tickets
  - All tickets were picked up before demonstration
- 14% of onboard passengers were from standby line
  - Haines highest, 22%; Hoonah lowest, 8%
  - Standby passengers left on dock, 20-40/trip

Figure 4

JETFOIL Alaska Summer Demonstration

Passenger Surveys Results

- 90% of residents indicated interest in trying JETFOIL because of its perceived benefits over current transportation (e.g., speed, frequency, scheduling, etc.)

- JETFOIL demo riders were representative of all Southeast Alaska residents (51% female; 39% ages 35-64; 44% white collar; 90% residents)

- 75% of Southeast Alaska residents say they will likely use the JETFOIL if implemented (92% of JETFOIL demo riders will use it)

- 99% of small community residents on board favor JETFOIL introduction

- 66% of heavy ferry users will use JETFOIL more ofter than regular ferry if it is impelmented

Figure 5

THE GENERAL CONSENSUS WAS VERY FAVORABLE, INDICATING A HIGH SHARE OF THE MARKET WOULD USE THE JETFOIL AND IN FACT, WOULD TRAVEL MORE FREQUENTLY. THUS, SHOWING CONSIDERABLY MORE TRAFFIC DEMAND THAN IS BEING MET WITH CURRENT SERVICES.

FROM THESE DEMOS AND FROM DISCUSSIONS WITH VARIOUS STATE AND LOCAL OFFICIALS, WE HAVE PUT TOGETHER A JETFOIL CONFIGURATION WHICH WE BELIEVE MEETS THE NEEDS OF THIS AREA. THE EXTERIOR OF THIS BOAT IS SHOWN IN FIGURE 6. THE MAJOR CHANGE IS THE REMOVAL OF WINDOWS ON THE LOWER AFT DECK AND THE INSERTION OF A CARGO OPENING FOR LOADING FREIGHT CONTAINERS LIKE THE ALASKA AIRLINE IGLOOS AND ALSO PASSENGER VEHICLES.

THE PASSENGER COMPARTMENT WILL BE VERY SIMILAR TO WIDE BODY AIRCRAFT, AS SHOWN IN FIGURE 7. EIGHT ABREAST SEATING WITH DOUBLE AISLES SIMILAR TO WIDE BODY AIRCRAFT WILL BE USED. SEATS WILL HAVE RECLINE AND FOOD TRAYS FOR AIRLINE TYPE FOOD SERVICE. TOTAL SEAT CAPACITY PROPOSED IS 135, LOCATED ON THE UPPER DECK AND LOWER MAIN DECK AS SHOWN IN FIGURE 8.

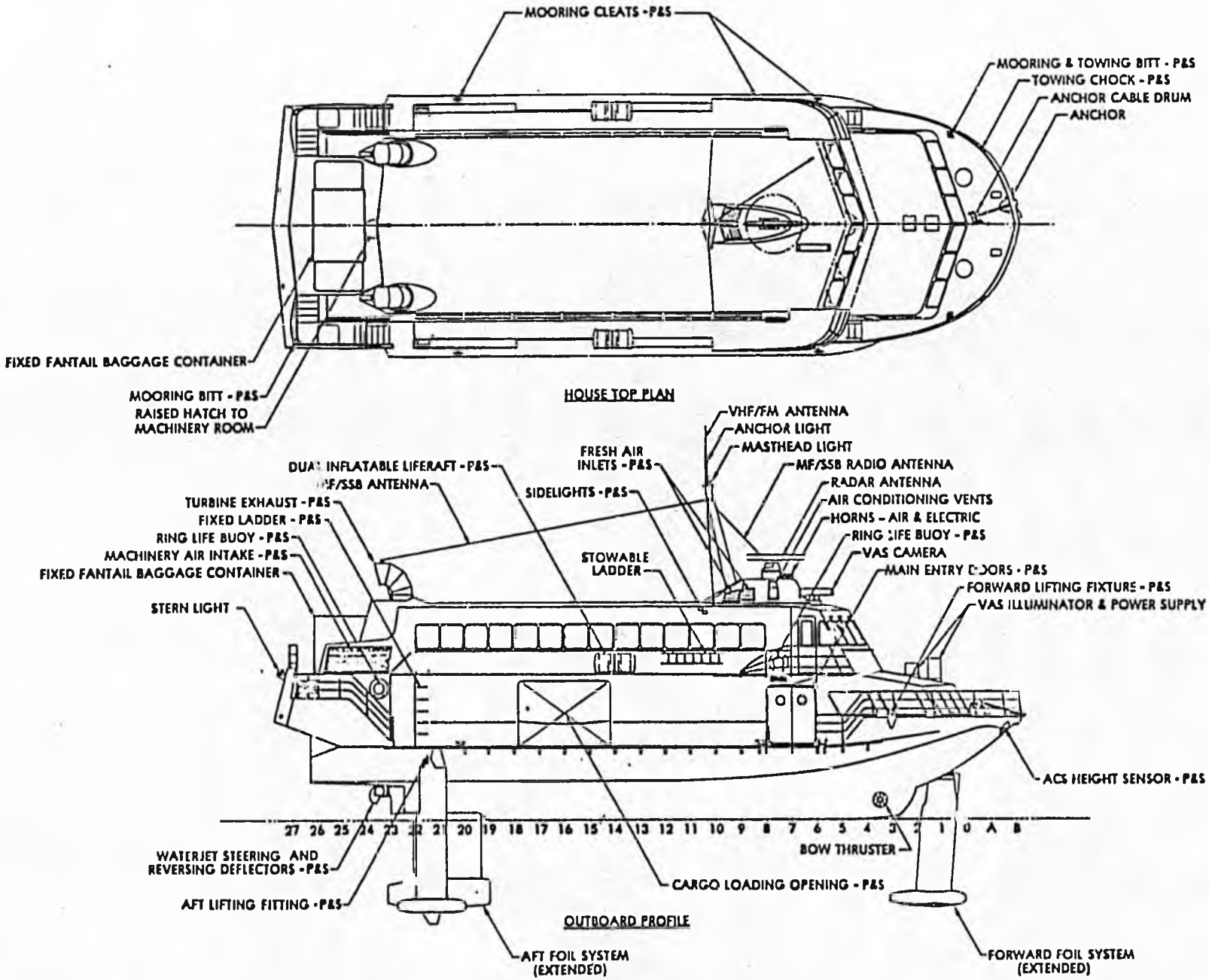
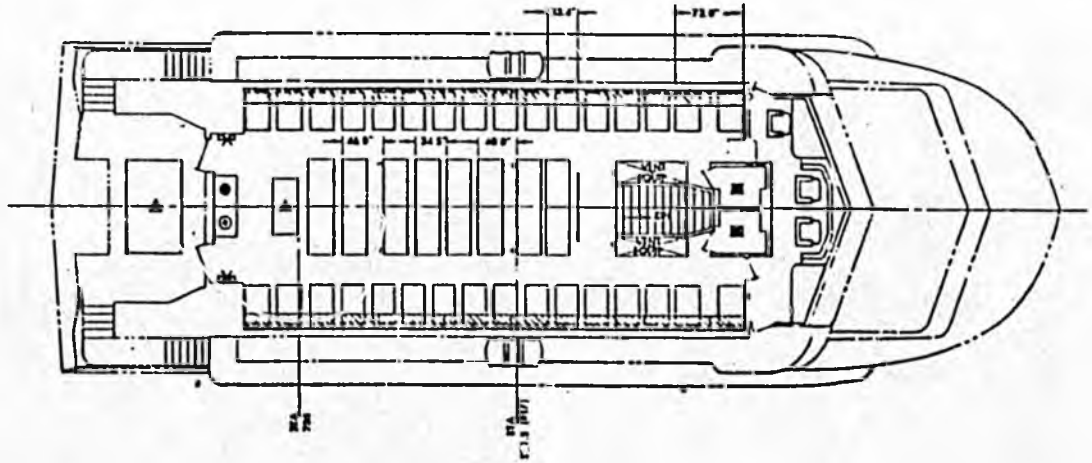

MOORING CLEATS - P&S
MOORING & TOWING BITT - P&S
TOWING CHOCK - P&S
ANCHOR CABLE DRUM
ANCHOR
FIXED FANTAIL BAGGAGE CONTAINER
MOORING BITT - P&S
RAISED HATCH TO MACHINERY ROOM
HOUSE TOP PLAN
VHF/FM ANTENNA
ANCHOR LIGHT
MASTHEAD LIGHT
MF/SSB RADIO ANTENNA
RADAR ANTENNA
AIR CONDITIONING VENTS
HORNS - AIR & ELECTRIC
RING LIFE BUOY - P&S
VAS CAMERA
MAIN ENTRY DOORS - P&S
FORWARD LIFTING FIXTURE - P&S
VAS ILLUMINATOR & POWER SUPPLY
FRESH AIR INLETS - P&S
DUAL INFLATABLE LIFERAFT - P&S
MF/SSB ANTENNA
SIDELIGHTS - P&S
TURBINE EXHAUST - P&S
FIXED LADDER - P&S
RING LIFE BUOY - P&S
MACHINERY AIR INTAKE - P&S
FIXED FANTAIL BAGGAGE CONTAINER
STOWABLE LADDER
STERN LIGHT
ACS HEIGHT SENSOR - P&S
27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 A B
BOW THRUSTER
WATERJET STEERING AND REVERSING DEFLECTORS - P&S
AFT LIFTING FITTING - P&S
CARGO LOADING OPENING - P&S
OUTBOARD PROFILE
AFT FOIL SYSTEM (EXTENDED)
FORWARD FOIL SYSTEM (EXTENDED)

Figure 6



UPPER DECK PLAN

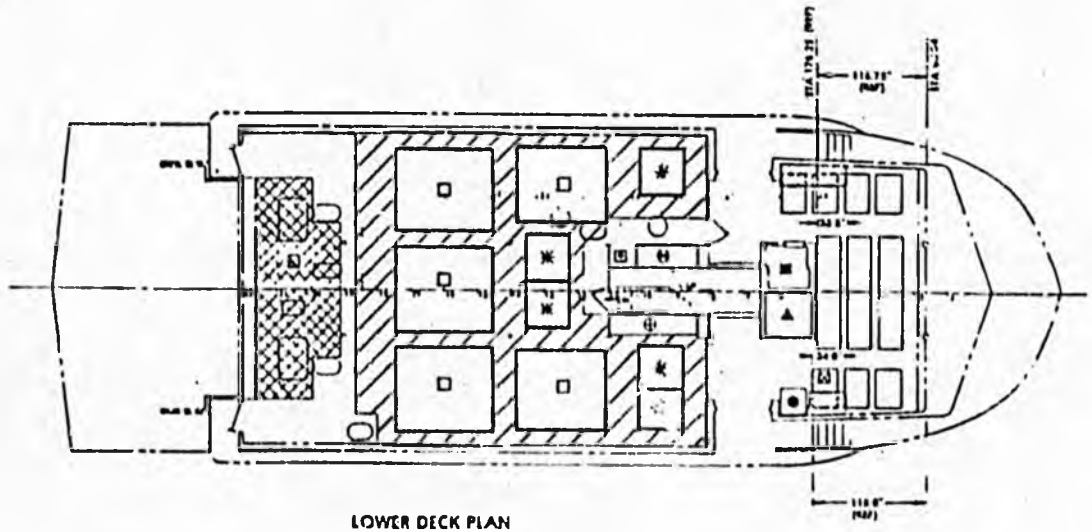
PASSENGER SEATS (19.5" WIDE)

TOTAL SEATING CAPACITY 335

- TIEDOWN HARDWARE
- SHELVED PARCELS
- FULL SIZE AUTO
- COMPACT AUTO
- CONTAINER (ALASKA AIRLINE TYPE)
- CARGO (BULK/NET)
- PALLETS (SMALL CONTAINERS)
- FIRE HOSE
- LAVATORY
- GALLEY
- MICROWAVE OVEN & STORAGE
- CREW SEAT
- CREW JUMP SEAT
- LUGGAGE RACK (63" WIDE)
- FANTAIL BAGGAGE (APPROX. 300 FT²)
- OVERHEAD STOWAGE B/L (APPROX. 190 FT³)

ALLOWABLE DECK LOAD ——— 75 LBS/FT²
HAND TRUCKS ONLY

ALLOWABLE DECK LOAD ——— 150 LBS/FT²
MAX. WHEEL LOAD UNDERWAY—1300 LBS
MAX. WHEEL LOAD DURING LOADING/UNLOADING ——— 3600 LBS



LOWER DECK PLAN

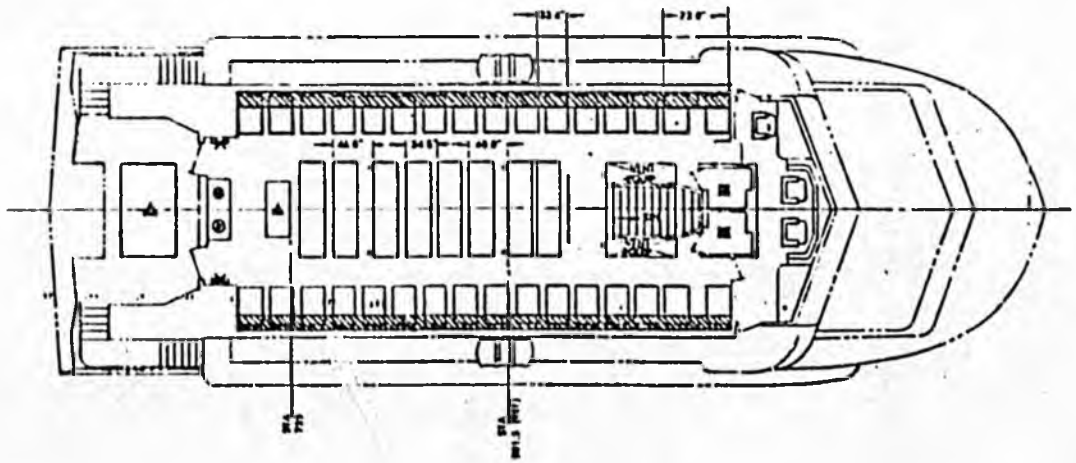
PROPOSED ALASKA MARINE HIGHWAY JETFOIL CONFIGURATION
INTERIOR ARRANGEMENT

Figure B

BECAUSE OF THE CONCERN SOME PEOPLE EXPRESSED DURING THE SUMMER DEMO ABOUT THE SEAT SPACING, THE 135 SEAT ARRANGEMENT HAS INCREASED THE SEAT PITCH BY AT LEAST 2 INCHES ON ALL ROWS. THESE SEATS, LIKE AIRCRAFT SEATS, ARE MOUNTED IN TRACKS AND THEREFORE, CAN BE REARRANGED DEPENDING ON THE OPERATOR'S DESIRES.

FOR LUGGAGE STOWAGE, OVERHEAD LUGGAGE COMPARTMENTS, LARGER THAN 737 OR 727 AIRCRAFT, WHICH CAN SUPPORT A REGULAR SUITCASE OR BACKPACK, ARE LOCATED THROUGHOUT THE PASSENGER CABIN. ON THE FANTAIL IS A LARGE BAGGAGE CONTAINER FOR ADDITIONAL STORAGE OF APPROXIMATELY 600 CUBIC FEET CAPACITY.

THE FREIGHT/VEHICLE COMPARTMENT ON THE MAIN AFT DECK HAS THE CAPACITY OF CARRYING APPROXIMATELY 25 TONS OF FREIGHT OR VEHICLES. THIS CAN HANDLE ALASKA AIRLINE IGLOOS (MAXIMUM OF 5), SMALLER CONTAINERS, BULK FREIGHT, AND/OR PASSENGER VEHICLES (MAXIMUM OF 3). VARIOUS COMBINATIONS ARE POSSIBLE AS SHOWN IN FIGURE 9.

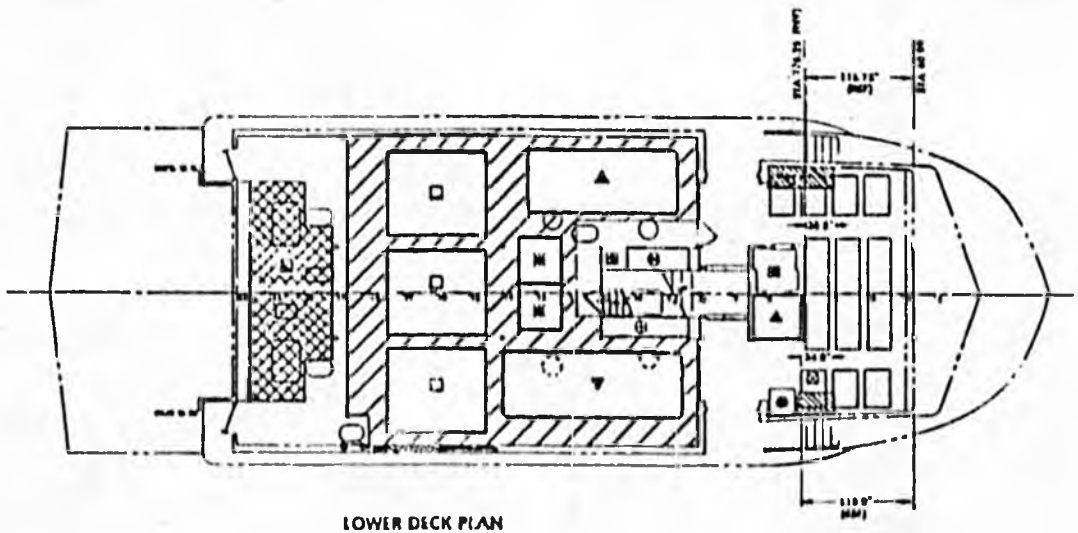


UPPER DECK PLAN

PASSENGER SEATS (19.5" WIDE)

TOTAL SEATING CAPACITY 138

- TIEDOWN HARDWARE
- SHELVED PARCELS
- FULL SIZE AUTO
- COMPACT AUTO
- CONTAINER (ALASKA AIRLINE TYPE)
- CARGO (BULK/NET)
- PALLETS (SMALL CONTAINERS)
- HEL HOSE
- LAVATORY
- GALLEY
- MICROWAVE OVEN & STORAGE
- CREW SEAT
- CREW JUMP SEAT
- LUGGAGE RACK (63" WIDE)
- FANTAIL BAGGAGE (APPROX. 300 FT²)
- OVERHEAD STOWAGE BINS (APPROX. 190 FT³)
- ALLOWABLE DECK LOAD ——— 75 LBS/FT² HAND TRUCKS ONLY
- ALLOWABLE DECK LOAD ——— 150 LBS/FT² MAX. WHEEL LOAD UNDERWAY-1200 LBS MAX. WHEEL LOAD DURING LOADING/UNLOADING ——— 3600 LBS



LOWER DECK PLAN

PROPOSED ALASKA MARINE HIGHWAY JETFOIL CONFIGURATION

INTERIOR ARRANGEMENT

Figure 9

IN THIS CASE, 2 VEHICLES ARE CARRIED TOGETHER WITH 3 ALASKA AIRLINE IGLOOS, 2 SMALL CONTAINERS, AND BULK FREIGHT IN THE STERN. THE FREIGHT LOAD WILL ALSO VARY DEPENDING ON PASSENGER LOADS AND TRIP LENGTH. LIKE ALASKA AIRLINES' 737 AIRCRAFT WHERE PASSENGER LOADS ARE TRADED FOR FREIGHT LOADS, THE SAME THING APPLIES HERE. FOR TRIPS WHERE A FULL LOAD OF PASSENGERS ARE EXPECTED, (135) AND THE TRIP LENGTH IS 90 NAUTICAL MILES, THE MAXIMUM FREIGHT CAPACITY IS 19 TONS. FOR DAYS WHEN LIGHTER PASSENGER LOADS ARE EXPECTED OR OFF SEASON, THE FREIGHT CAPACTY COULD BE 25 TONS.

THIS IS THE SAME CONFIGURATION AS STATED IN THE PROPOSAL SUBMITTED TO COMMISSIONER D. A. CASEY ON MARCH 9, 1983. AS STATED IN THE CONTRACT PROPOSAL, THE PRICE OF THE THREE BOATS AT DELIVERY IS ANTICIPATED TO BE $63,816,000 BASED ON PROJECTED ESCALATION OF 8% PER YEAR AND THE PRICE FOR SPARE PARTS AND SUPPORT EQUIPMENT WHICH CAN BE PURCHASED AT DELIVERY IS APPROXIMATELY $7,300,000. AS

SHOWN IN THE CONTRACT PROPOSAL, IT IS OUR NORMAL PRACTICE TO DEVELOP A BASE PRICE AS WE DID IN THIS PROPOSAL IN 1982 DOLLARS AND THEN CONTRACT WITH AN ESCALATION CLAUSE WHICH IS BASED ON NATIONAL LABOR AND MATERIAL INDICES, WHICH BOTH THE CUSTOMER AND OURSELVES CAN VERIFY. THIS WORKS TO THE BENEFIT OF THE CUSTOMER AND OURSELVES AND IS STANDARD PRACTICE IN AIRCRAFT PURCHASES. THIS ELIMINATES THE ALLOWANCE THAT THE MANUFACTURER NEEDS TO INCLUDE TO COVER INFLATION AND THUS BENEFITS THE CUSTOMER.

THE SERVICE THAT CAN BE PROVIDED BY THIS CRAFT IN SOUTHEAST ALASKA ANNUALLY IS SHOWN IN FIGURES 10 AND 11

EXAMPLES OF DAILY JETFOIL SCHEDULES TO PROVIDE THIS TYPE OF SERVICE IS SHOWN IN FIGURE 12

THESE TYPES OF DAILY SCHEDULES ORGANIZED INTO A WEEKLY CYCLE ARE SHOWN IN FIGURE 13

JETFOIL Service Synopsis

- It is proposed that the JETFOILS be based primarily in Juneau. A secondary overnight base will be Ketchikan (4 nights per week). Service will be reduced to two JETFOILS in winter.

- JETFOILS will provide passenger, freight, and vehicle service on weekly cycles to 17 communities of Southeast Alaska

- Types of daily schedules:
  - Juneau, Sitka, Angoon, Tenakee, Hoonah, and return
  - Juneau, Haines, Skagway, Juneau, Glacier Bay, and return
  - Juneau, Excursion Inlet, Hoonah, Elfin Cove, Pelican, and return
  - Juneau, Kake, Petersburg, Wrangell, and return
  - Juneau, Petersburg, Wrangell, Hollis, Ketchikan, Metlakatla, and Ketchikan
  - Ketchikan, Metlakatla, Ketchikan, Hollis, Wrangell, Hollis, Ketchikan, Metlakatla, and Ketchikan
  - Ketchikan, Metlakatla, Ketchikan, Hollis, Wrangell, Petersburg, and Juneau

- JETFOIL trip times:

Haines to Juneau	2:25
Skagway to Juneau	3:30 (with stop)
Sitka to Juneau	4:05 & 7:25 (with three stops)
Hoonah to Juneau	1:50
Kake to Juneau	2:25
Petersburg to Juneau	2:45
Wrangell to Juneau	4:25 (with stop)
Ketchikan to Juneau	8:55 (with three stops)
Angoon to Sitka (also Kae-Psg)	1:45
Ketchikan to Petersburg	5:40 (with two stops)
Ketchikan to Hollis	1:05

Figure 10

JETFOIL Service Synopsis

(Continued)

- Jetfoil service will be during normal hours (7:30 a.m. to 11:00 p.m.)

- Service can be provided from downtown waterfront

- Number of weekly departures from each community generally range from six to eight (Juneau – 22, Pelican and Elfin Cove – 1)

- Number of days per week each community gets service generally ranges between three and six (Juneau – 7; Pelican, Elfin Cove, and Excursion Inlet – 1)

- Morning and evening service

  4 per week – Hoonah

  3 per week – Haines, Skagway, Tenakee, Angoon, Sitka

  2 per week – Glacier Bay, Kake, Petersburg, Hollis, Metlakatla, Ketchikan

  1 per week – Excursion Inlet

- Day trips to communities with twice-a-day JETFOIL service generally allows a visit of 3 to 9 hours

Figure 11

JETFOIL Schedules

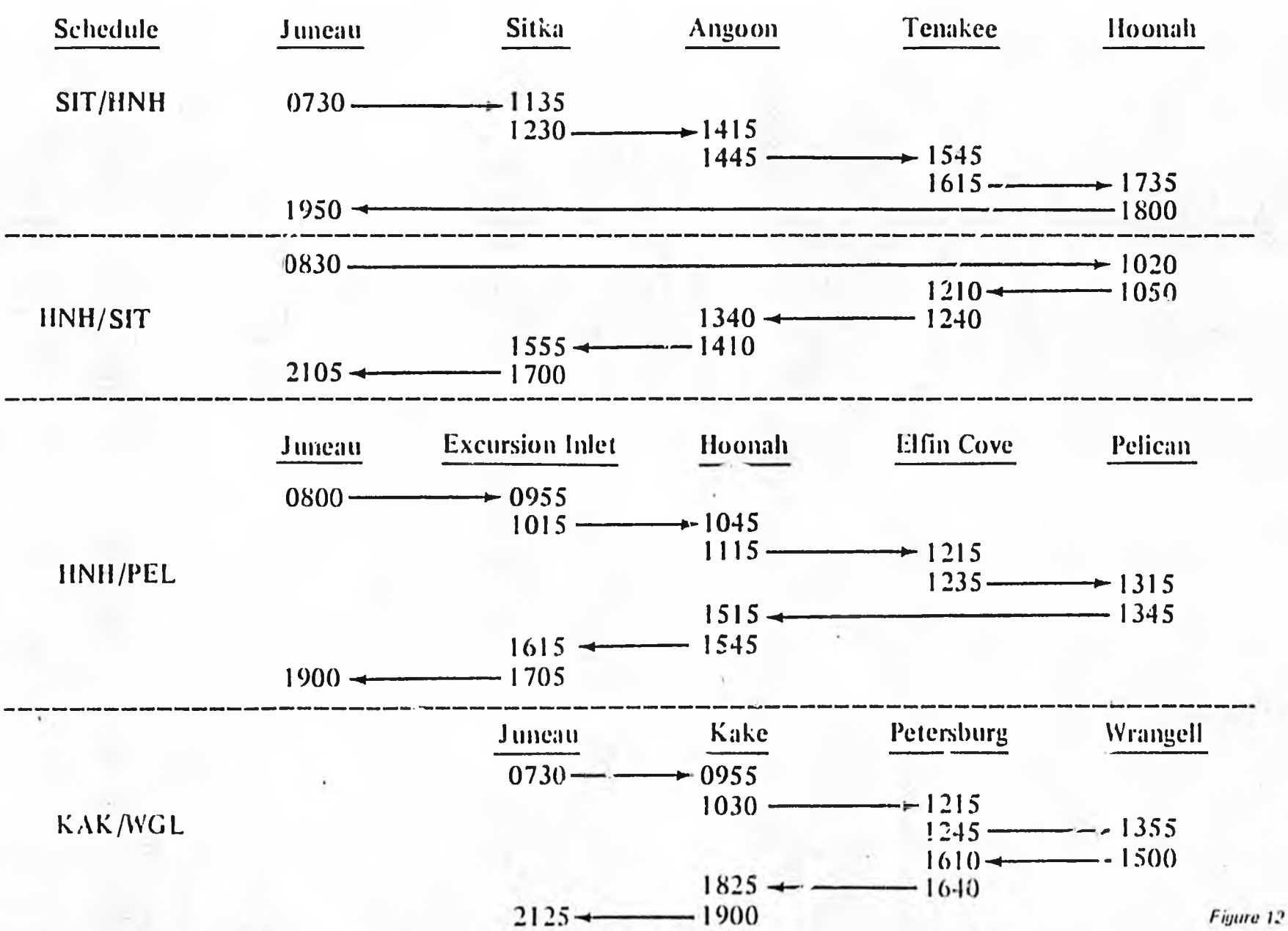


Figure 12

JETFOIL Summer Schedule

	Boat No. 1	Boat No. 2	Boat No. 3
Monday	HNH/SIT	SIT/HNH	JNU/KTN
Tuesday	SGY/GLB	GLB/SGY	MET/WGL
Wednesday	HNH/SIT	SIT/HNH	KTN/JNU
Thursday	HNH/PEL	KAK/WGL	2 SGY
Friday	HNH/SIT	SIT/HNH	JNU/KTN
Saturday	SIT/HNH	KAK/WGL	MET/WGL
Sunday	SGY/GLB	GLB/SGY	KTN/JNU

Figure 13

THE PROPOSED WINTER SCHEDULE IS SIMILAR TO SUMMER, BUT IS CUT BACK TO A TWO BOAT SERVICE CONSISTENT WITH TRAFFIC DEMANDS. CONVENTIONAL FERRY SERVICE IS NORMALLY CUT APPROXIMATELY IN HALF. ADDITIONAL DETAILS OF THE PROPOSED SERVICE ARE SHOWN IN THE FINAL REPORT, ECONOMIC ASSESSMENT OF JETFOIL SERVICE FOR SOUTHEAST ALASKA, H-1400-201, MARCH 1983.

THE JETFOIL SERVICE, AS SUGGESTED HERE, PROVIDES SERVICE TO ALL SOUTHEAST ALASKA, BUT EMPHASIZES ADDITIONAL SERVICE TO SMALL COMMUNITIES AND EXPECIALLY TO THE COMMUNITIES TO THE WEST OF JUNEAU. BECAUSE OF THIS, THERE ARE SIGNIFICANT CHANGES THAT, I BELIEVE, CAN BE MADE TO THE CONVENTIONAL FERRY SERVICE THAT CAN ENHANCE THE OVERALL IMPACT OF ADDING JETFOIL SERVICE. THESE CHANGES I WOULD LIKE TO DISCUSS HERE.

THE IMPROVED JETFOIL SERVICE TO THE SMALL COMMUNITIES LIKE HOONAH, TENAKEE, ANGOON, PELICAN AND KAKE RELIEVES THE FERRY LE CONTE IN PROVIDING ALL THE SERVICE TO THESE COMMUNITIES AND ALLOWS IT TO

INCREASE FREQUENCY OF DIRECT SERVICE TO SITKA FROM JUNEAU. THIS, IN TURN, ALLOWS THREE OF THE MAINLINE FERRIES TO BY-PASS SITKA AND PROVIDE INCREASED FREQUENCY OF SERVICE BETWEEN PRINCE RUPERT AND HAINES, WHERE THE GREATEST DEMAND FOR VEHICLE SERVICE IS LOCATED. THE CHANGES TO CONVENTIONAL FERRY SCHEDULE ARE SUMMARIZED IN FIGURE 14

FOR THE MAINLINE FERRIES, THE ANALYSIS OF THE SCHEDULE REVISION IS SHOWN IN FIGURE 15

AS I MENTIONED, THE SCHEDULE FOR THE LE CONTE WAS REVISED TO INCREASE SITKA SERVICE. THIS IS SHOWN IN FIGURE 16

THE AURORA FERRY CONTINUES TO SERVE HOLLIS, KETCHIKAN, PRINCE RUPERT, AND JUNEAU AS CURRENTLY, BUT ALSO ADDS SERVICE TO MATLAKATLA AS SHOWN IN FIGURE 17

Summary of
Proposed Southeast Alaska Ferry Service
(July)

JETFOIL Service

2 JETFOILS –	Serve Northern Panhandle (based in Juneau and service to Skagway, Haines, Hoonah, Sitka, Tenakee, Angoon, Excursion Inlet, Elfin Cove, Pelican, Kake, Petersburg, and Wrangell)
1 JETFOIL –	Service Mainline and Southern Panhandle (Petersburg, Wrangell, Hollis, Ketchikan, Metlakatla, Haines, and Skagway)

Ferryboat Service

Columbia –	Seattle to Skagway service including Sitka (same as current)
Taku –	Prince Rupert to Skagway (increased frequency and excludes Sitka)
Malaspina –	Prince Rupert to Skagway (increased frequency and excludes Sitka)
Matanuska –	Prince Rupert to Skagway (increased frequency and excludes Sitka)
Le Conte –	Juneau to Sitka (increased Sitka service and reduce Hoonah, Tenakee, Angoon, and Kake service)
Aurora –	Ketchikan to Hollis, Metlakatla, Prince Rupert and Juneau service (increased frequency and adds Metlakatla service)
Chilkat –	No service

Figure 14

Mainline Ferry Service

Transit Time

Prince Rupert to Skagway, without Sitka
(Includes Ketchikan, Wrangell, Petersburg, Juneau and Haines)
Time: 32:45

Prince Rupert to Skagway with Sitka, etc.
Time: 49:15

Net time savings excluding Sitka
17:30

Time savings per month

Mainline ferry averages 4 Sitka trips per month
4 x 17.5 = 70 hours

Extra round trip requirements

Turnaround time (YPR)	3.5 hours
YPR - SGY	32.75
Turnaround time (SGY)	1.5
SGY - YPR	32.75
Total	70.00 hours

Figure 15

Proposed
Le Conte Ferry Schedule
(Weekly – Summer)

Week Day	Sitka	Hoonah, Tenakee & Angoon	Auke Bay	Kake	Petersburg
Monday, Tuesday,	1800	←	0800		
Saturday, Sunday *	2000	→	0600		
Wednesday	2330/W	← Stops ←	0800/W		
Thursday	0130/T	→ Stops →	1700/T		
Thursday			2300/T	→ 0600/F	
Friday				0700/F	→ 1130/F
				2200/F	← 1750/F
			0600/SA	← 2300/F	
Saturday *	2300/SA	← Stops ←	0800/SA		
Sunday	0130/SU	→ Stops →	1700/SU		

* Alternate week schedule

Figure 16

Proposed
Aurora Schedule
(Weekly)

Weekday	Prince Rupert	Metlakatla	Ketchikan	Hollis	Juneau (via WGL & PSG)
			1000 ←	0715	
Wednesday & Friday		1155 ←	1045		
		1230 →	1[illegible]		
			15[illegible] →	1815	
Friday			2145F ←	1900	
		2340 ←	2230		
Saturday	0615S ←	2415			
	0630 →	1430			
		1515 →	1625		
			1730 →	2015	
Sunday				2100 →	1530SU
Monday				1100M ←	1730
			1445 ←	1200	
		1640 ←	1530		
		1715 →	1825		
			1930 →	2215	
Tuesday & Thursday			1000 ←	0715	
			1045 →	1330	Thursday only
			1715 ←	1430	Thursday only
			1800 →	2045	

Figure 17

THE IMPACT OF THESE FERRY SERVICE CHANGES AND THE JETFOIL SERVICE ON THE COMMUNITIES OF SOUTHEAST ALASKA IS SHOWN IN FUGURE 18

BASED ON THE JETFOIL SERVICE JUST DISCUSSED, ANNUAL OPERATING COSTS OF A THREE JETFOIL SERVICE HAVE BEEN ESTIMATED. THESE COSTS ARE BASED ON SOUTHEAST ALASKA MARINE HIGHWAY LABOR RATES AND FUEL RATES. THESE COSTS ARE IN CURRENT 1983 DOLLARS TO FACILITATE ESTIMATES AND FOR COMPARISON TO THE ALASKA FERRY SYSTEM. ALL ESTIMATES HAVE BEEN EXTENSIVELY DISCUSSED AND REVIEWED IN DETAIL WITH THE APPROPRIATE PERSONNEL IN THE ALASKA DEPARTMENT OF TRANSPORTATION AND ALASKA MARINE HIGHWAY. A SUMMARY OF THE COST BUILDUP IS SHOWN IN FIGURE 19

AS I MENTIONED, THESE COSTS ARE IN 1983 DOLLARS AND ARE CONSERVATIVELY ESTIMATED FOR A STAND ALONE OPERATION. FOR COMPARISON TO CONVENTIONAL FERRIES, THE 1982 OPERATING COSTS FOR

Impact of Proposed Service
(Summer)

- New service – three communities (Excursion Inlet, Elfin Cove, Glacier Bay)
- Weekly service – four communities (Pelican plus above three communities)
- Morning and evening JETFOIL service – (thirteen communities)
- Capacity impact:

	Passenger Service* (Trips available per month)	Vehicles* July Capacity	Vehicles* July** Load Factor
Mainline service (Juneau-Ketchikan)	+ 37%	+17%	63%
Sitka service	+133%	+21%	57%
Hoonah service (including Angoon and Tenakee)	+250%	– 5%	46%
Hollis service	+ 83%	+24%	45%
Metlakatla service	+ 49%	+22%	18%
Skagway service	+ 95%	+ 9%	42%

* Jetroil and ferry boat service
** No credit taken for transfer of freight from vehicles (vans) to containers

Figure 18

Summary of JETFOIL Operating Costs
(1983 Dollars)

	Annual Cost
Operating Crew 3 crews/boat 6 members/crew Captain @ $58,900	$ 2,279,700
Fuel $1.10/gallon 485 gallons/hour 8400 hours/year	4,481,400
Maintenance Consumable/repairable parts: $158/hour Labor: 29 personnel for 3 boats	3,163,200
Insurance 2% of hull value	984,000
Indirect costs (overhead and shoreside) Labor General manager @ $65,000 Juneau: 19 personnel Other: 16 manhours/departure	1,562,100
Other Advertising Equipment Supplies and uniforms Facilities Travel	440,000
Total	$12,910,400

Figure 19

SOUTHEAST ALASKA FERRIES HAVE BEEN USED AND ADJUSTED UPWARD 8% FOR CURRENT DOLLARS. THE COMPARISON WITH THE JETFOIL IS SHOWN IN FIGURE 20

WHEN CONSIDERING A SPECIFIC NUMBER OF PASSENGERS THAT WILL TRAVEL FROM A COMMUNITY, AND ESPECIALLY IF THAT NUMBER OF PASSENGERS IS SMALL, A MORE APPROPRIATE COMPARISON IS FIGURE 21

ALTHOUGH CAPITAL COST RECOVERY IS NOT NORMALLY INCLUDED IN THE FERRY SYSTEM COST ACCOUNTING, WE BELIEVE IT IS WORTHWHILE TO MAKE A COMPARISON. THIS IS SHOWN IN FIGURE 22

FOR AN ASSESSMENT OF JETFOIL REVENUE, AN ANALYSIS OF HISTORICAL FERRY TRAFFIC FOR PASSENGERS AND VEHICLES, JET AIRCRAFT TRAFFIC AND AIR TAXI TRAFFIC HAS BEEN MADE FOR SOUTHEAST ALASKA. THE RESULTS ARE SHOWN IN FIGURE 23

Operating Cost Comparison

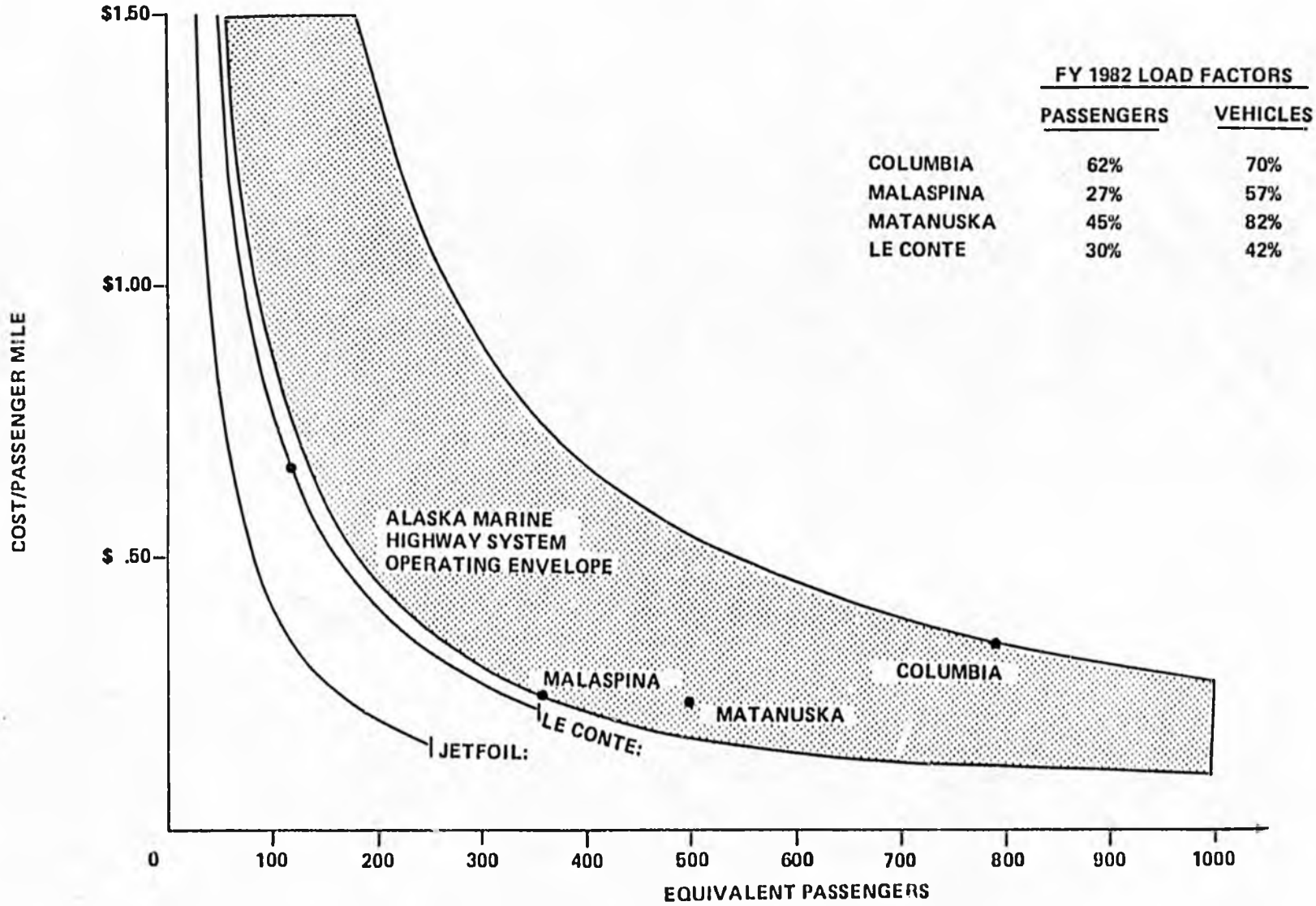
Boat	Total* Equivalent Passenger Capacity	Annual Operating Distance	Estimated 1983 Costs	Cost Per Nautical Mile	Cost Per Nautical Seat Mile
Mainline Ferries (4)	1,002	260,000 nmi (Average 65,000 nmi)	$38,000,000 (Average $9,500,000)	$146	$.15
Secondary Ferries (2)	355	126,000 nmi (Average 62,000 nmi)	$10,400,000 (Average $5,200,000)	$ 83	$.23
Fleet Average (Weighted)	786	386,000 nmi (Average 64,000 nmi)	$48,400,000 (Average $8,076,000)	$125	$.16
JETFOIL	256	316,800 nmi (Average 105,600)	$12,900,000 (Average $4,300,000)	$ 41	$.16

* Equivalent passenger capacity has been used in order to make a meaningful economic comparison of each vessel. The equivalent passenger capacity represents revenue for an all passenger vessel equivalent to revenue generated by a mixed passenger, vehicle, and freight configuration

**Based on fiscal year 1982 utilization (mainline – 33 months; secondary – 17 months). 1983 costs estimated using fiscal year 1982 costs plus 8%

Figure 20

Operating Cost vs Passengers



	FY 1982 LOAD FACTORS	
	PASSENGERS	VEHICLES
COLUMBIA	62%	70%
MALASPINA	27%	57%
MATANUSKA	45%	82%
LE CONTE	30%	42%

ASSUMES A PASSENGER:VEHICLE REVENUE TRADE-OFF OF 3:1

● DENOTES EXPECTED EQUIVALENT PASSENGER LOADS (BASED ON FY 1982 DATA)

Figure 21

Capital Cost Comparison

Productivity

	Purchase Price	Annual Distance	Equivalent Revenue Passenger Capacity	$/Passenger Nautical Mile
Jetfoil	$18.3 Million ($55M ÷ 3)	105,600 nmi	256 (135 pax plus 19 tons freight)	$.68
Replacement Vessel (Tustumena)	$47.5 Million (estimate)	65,000 nmi *	848 (500 pax plus 116 vehicles)	$.86

Payback

	Annual ** Amortization	Additional $/Passenger Mile Required 20 Year Payback
JETFOIL	$1.6M ÷ 105,600 nmi ÷ 256 passengers =	$.06
Replacement Vessel (Tustumena)	$4.1M ÷ 65,000 nmi ÷ 848 passengers =	$.07

* Mainline ferries average (1978-1982)

**Assumes 20-year payback at 6% interest (estimated long term Alaska government bond rate)

Figure 22

Total Passenger Traffic

1982 – Southeast Alaska

Region	Ferry		Air		Total
	Walk-on	Motorist	Jet	Air Taxi	
Juneau-Skagway	40,412	35,912	–	42,588	118,912
Juneau-Gustavus	–	–	23,431	1,820	25,251
Juneau-Sitka	25,161	8,096	32,351	45,994	111,602
Juneau-Ketchikan	23,229	14,510	37,117	21,255	96,111
Ketchikan–Metlakatla/Hollis	20,299	19,696	–	62,552	102,547
Total without Prince Rupert*	109,101	78,214	92,899	174,209	454,423
Percent of total	41%		20%	39%	
Total with Prince Rupert*	125,304	98,084	92,899	175,964	492,251
Percent of total	45%		19%	36%	

* Excluding passengers with origin or destination in Seattle which do not disembark from the ferry at any intermediate ports in Southeast Alaska (all ports but Haines and Skagway)

Figure 23

TRAFFIC GROWTH RATES FOR VARIOUS SEGMENTS OF THE MARKET WERE ESTIMATED BASED ON HISTORICAL RATES, CONSULTATION WITH THE ALASKA DEPARTMENT OF LABOR, COMMUNITY AND REGIONAL AFFIARS, AND DIVISION OF TOURISM. THIS WAS EXAMINED FOR EACH OF THE 17 COMMUNITIES THAT WILL HAVE JETFOIL SERVICE AND EACH OF THE 32 MAJOR MARKET SEGMENTS. SUMMARY OF RESULTS ARE SHOWN IN FIGURE 24

AS SHOWN IN FIGURE 25 FOR JET AIR TRAFFIC, AS AN EXAMPLE, THE TRAFFIC PROJECTIONS FOLLOWED THE ESTABLISHED TREND LINE WELL.

TOTAL PASSENGER MARKET SIZE FOR THE YEAR 1986 WHEN THREE JETFOILS WILL BE IN SERVICE IS PROJECTED TO BE 590,000 AS SHOWN IN FIGURE 26

PASSENGER FARE LEVELS FOR JETFOIL WERE ESTABLISHED BASED ON A TIME/COST ANALYSIS OF EACH OF EIGHT MAJOR ROUTES. THIS ANALYSIS INCLUDED CONSIDERATION OF GROUND TIME AND COST TO/FROM THE TERMINALS, CHECKIN AND BAGGAGE PICKUP TIME, FOOD COSTS, AND

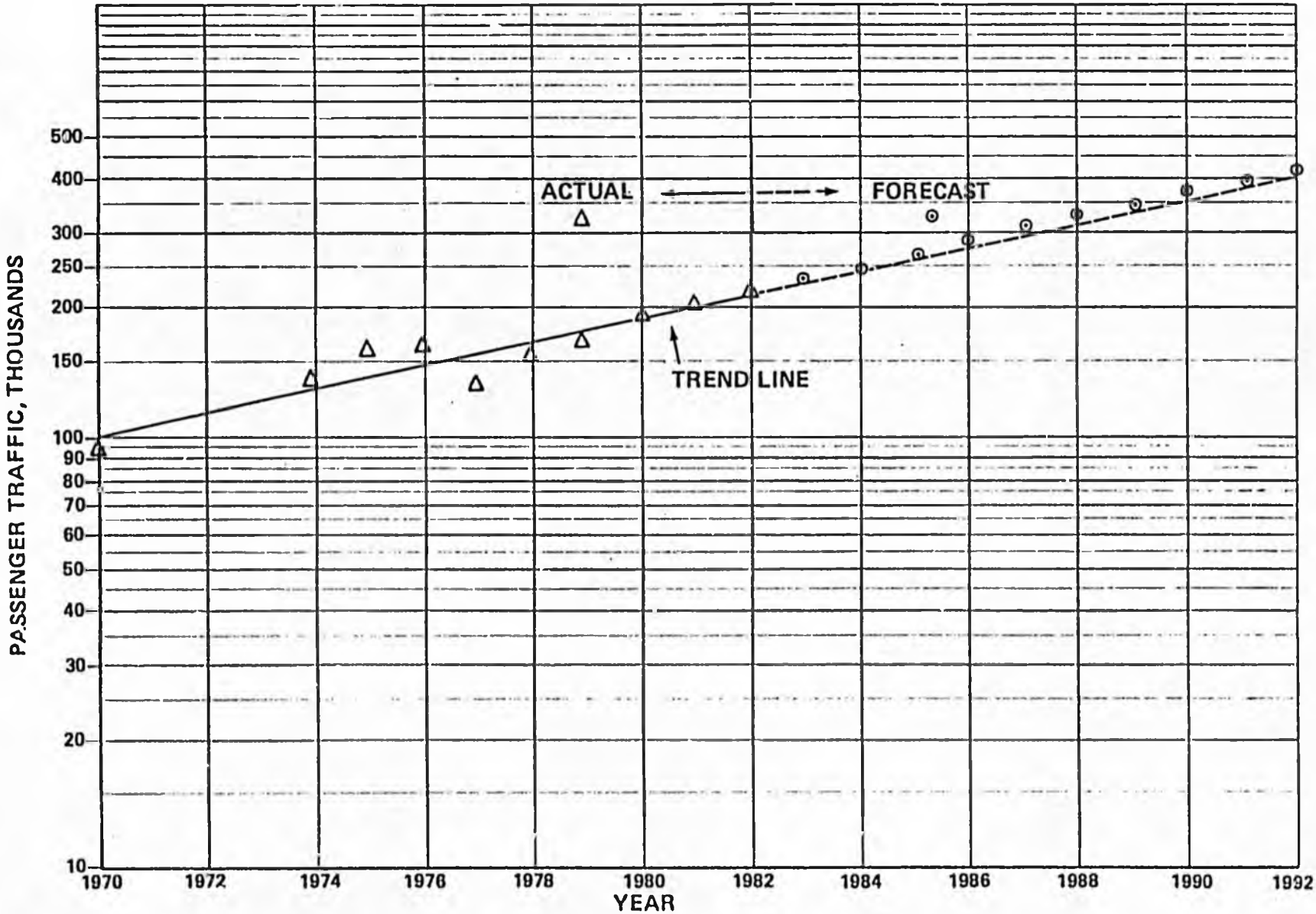
Traffic Forecasts Summary
(Growth Per Year)

	Historical Growth	Projection		
	1975-1982	1983-1985	1986-1990	1990-1995
Total visitors – Statewide (Division of Tourism)	9%	13% Est.	Not Available	Not Available
Ferry Passengers	7%	5% Est.	7% Est.	5% Est.
Jet Air Passengers	5%	3% Est.	5% Est.	4% Est.
Employment – Statewide (Department of Labor)	3% (4% SE)	5% Est.	5%*	Not Available
Population – Statewide (U.S. Census Forecast)	4% (3% SE)	2%	1.5%	1%

* Alaska Pacific Bank Forecast

Figure 24

Annual Ferry Passengers
Southeast Alaska
Actual and Forecasted Traffic*



• SOURCE: ALASKA STATE DEPARTMENT OF TRANSPORTATION, ORIGIN AND DESTINATION STATISTICS. TRAFFIC FORECAST BASED ON PAST TRENDS AND ANTICIPATED FUTURE ENVIRONMENT.

Figure 25

Forecasted Passenger Traffic Demand

1986 – Southeast Alaska

Region	Ferry		Air		Total
	Walk-on	Motorist	Jet	Air Taxi	
Juneau-Skagway	49,918	44,443	–	49,284	143,645
Juneau-Gustavus	–	–	30,985	1,264**	32,249
Juneau-Sitka	33,534	11,005	38,571	50,244	133,354
Juneau-Ketchikan	28,615	17,905	42,747	21,553	110,820
Ketchikan-Metlakatla/Hollis	26,306	26,487	–	70,185	122,978
Total without Prince Rupert *	138,373	99,840	112,303	192,530	543,046 (443,000 Walk-on)
Percent of total	44%		21%	35%	
Total with Prince Rupert *	158,912	124,706	112,303	194,447	590,368 (466,000 Walk-on)
Percent of total	48%		19%	33%	

* Excluding Seattle

**Just Peak Season

Figure 26