

**Experimental Investigation of a New
Series of Planing Hulls**

by

GABRIEL DELGADO-SALDIVAR

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Errata

Page	Says	Should say
3	Brown [28]	and Brown [3]
3	Mandel [20]	Mandel [4]
3	always parallel to z_0	always parallel to y_0
4	direction parallel to z_0	direction parallel to y_0
5	Savitsky [27]	Savitsky [5]
5	document [27]	document [5]
5	Almeter [2]	Almeter [6]
6	Gerritsma [19]	Gerritsma [8]
7	Fridsma [12]	Fridsma [9]
7	Compton [9]	Compton [10]
8	1974 [15]	1974 [11]
8	Almeter [2]	Almeter [6]
9	such as [4],[5],[14],[16] and [24]	such as [12],[13],[14] and [15]
44	reference [20]	reference [19]
44	Opel [24]	Opel [14]
62	work [13],[27]	work [5],[24]
62	methods [22],[26]	methods [1],[25]
63	Brown [28]	Brown [3]
65	such as [3],[10],[21],[25] and [27]	such as [26],[27],[28] and [29]

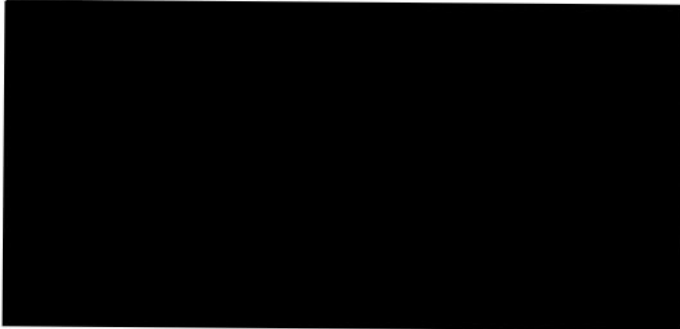
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This work is dedicated completely to the memory of my Mother, Luz Maria, who encouraged me to continue in my education, but who unfortunately had to depart when

I was half way down the road.

To you, wherever you are, with all my love.

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NOTATION AND SYMBOLS

A_p	Projected Planing Area
B	Beam
B_{PTR}	Beam on the Transom
B_{PX}	Maximum Beam on the Chine
B_{CY}	Buoyant Force
C_v, CV	Velocity Coefficient based on Chine Beam $V/\sqrt{gB_{PX}}$
C_D, CDL	Displacement Coefficient $W/\rho.B^3$ (Based on Maximum Beam)
$C_{f\infty}$	Wave Making Resistance Coefficient for Infinite Depth
C_{fh}	Wave Making Resistance Coefficient for Finite Depth
C_{SP}	Cruising Speed
C_T	Total Resistance Coefficient $R_T/(0.5\rho.V^2W_{SPH})$
D	Drag Force
D_B, DB	Bow Depth
D_C, DC	Chine Depth at the Intersection with the Stem
F	Total Hydrodynamic Force
Fn_v	Froude Number based on Volume $V/\sqrt{gW^{1/3}}$
g	Gravitational Constant
h	Tank Depth
H	Sinkage
HP	Installed Horse Power
K	Tank Width
L	Lift Force

L_C , LC	Wetted Length of the Chine
L_B , LB	Bow Length
L_{CC} , LCC	Length of Constant Beam on Chine
L_{CD} , LCD	Length of Constant Beam on Deck
L_C , LC	Chine Length
L_{CG} , LCG	Longitudinal Position of the Centre of Gravity
L_K , LK	Wetted Length of the Keel.
L_{OA} , LOA	Length Overall.
L_{PP} , LPP	Length Between Perpendiculars
Rn	Reynolds Number $V \cdot L / \nu$
ρ , RHO	Specific Weight of Water
R_T , RT	Total Resistance
t	Draught
T	Thrust Force
V, VEL	Velocity
V_{CR}	Critical Speed for Shallow Water Effects.
V_{CG} , VCG	Vertical Position of the Centre of Gravity
V/\sqrt{L}	Velocity Parameter where V in Knots and L in Feet
W, DIS	Weight Displacement
W_{SPH} , WSPH	Hull Bottom Wetted Surface
o, x, y, z	Body Fix Coordinate System
o_o , x_o , y_o , z_o	Space Fix Coordinate System
∇	Volume Displacement
α_1 , ALFA1	Stem Angle to Base Line

β , BETA	Deadrise Angle
τ , TAO	Relative Planing Angle
TAO(Abs)	Absolute Planing Angle
τ_0	Static trim Angle

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And last, but not least I should say that the innocence of my two children, Gaby and Cristi, played an important role throughout this work. They truly believed that during the past two years I was working hard, and almost made me feel that this was true, although in reality I was only playing with toy boats.

ABSTRACT

In reviewing the state-of-the-art in planing hull testing it was observed that the hulls tested cannot be considered representative of the modern high-speed Small Craft. This is because the length-beam ratio is too high for modern forms, the deadrise angle is not varied systematically, and some series use dated or prismatic forms. A data base was generated containing general information from several hundred recently-built boats in a length range from 15 to 85 feet and a displacement range of 1,000 to 150,000 lbs. The lines of several boats have been studied to determine shape parameters for the parent hull and ranges to be covered by a series which has been developed in this research. The series consists of 9 models with a systematic variation of the length-beam ratio from 2.5 to 3.5 and deadrise angle from 12° to 24°. Weight displacements and L_{CG} location are as well varied systematically resulting in a total of 210 test conditions for the series at 10 speeds each. The towing tank performance and instrumentation were validated by testing a hull previously tested at another towing tank under the same conditions. All the conditions tested are presented in tabular and graphical forms and recommendations for future research are also made.

1.0 INTRODUCTION

The research and design of planing hull forms is in no way a new topic in the nautical sciences. For many years before boats capable of reaching speeds of 100 mph or more were conceived, designers have been looking for hull lines, machinery and configurations that would allow higher speeds while at the same time producing good seakeeping characteristics, to a point where power boats, fast patrol crafts, recreational boats, rescue craft, fast fishing boats, and other planing boats, are now common around any port, harbour or marina.

Designs have evolved greatly over the years and higher speeds can be easily obtained with the combination of light-weight materials and power plants, as well as the propulsion systems developed over the past 15 years. But information on the performance of planing hulls, specifically experimental data, has not been studied systematically in recent years, or if it has, it is not available in the public domain.

The absence of new published experimental data is the main reason for developing the present research work, with the idea of supplying naval architects with qualitative and, if possible, quantitative information on the calm water performance of typical modern planing hull shapes, and in the future to study the seakeeping performance of these hulls.

1.1 PLANING CRAFT DEFINITION

Several definitions of a planing craft may be found in the literature, Mercier and Savitsky [1] define a planing hull as a small, high-speed boat operating at Fn_v greater than 2.0, with the following characteristics:

- a) transom stern ;
- b) hard chines;
- c) straight buttock lines in the aft section; and a
- d) combination of load and centre of gravity position that will ensure positive trim and complete emergence of the bow when planing.

At Fn_v less than 2.0, it is unlikely that full planing will be achieved. Hulls which run at these speeds are commonly referred to as semi-planing or semi-displacement vessels.

Du Cane [2] defines planing craft as a vessel where the objective of the designer is to induce planing by making use of the dynamic lift generated by the bottom of the hull running over the water surface. Planing occurs when the speed is sufficient for the boat to move toward the surface and the hull acts as a plane in some extent. True planing is the velocity condition at which the flow separates from the transom and chines.

1.2 STAGES OF PLANING MOTION

Savitsky and Brown [28] consider four different stages in the motion of a high speed boat:

- a) At zero or low speed the craft behaves as a displacement hull. The entire lift is obtained by buoyancy.

- b) When velocity and geometry result in $C_v = 0.5$, the first evidence of dynamic effects arise, the transom ventilates, i.e. a separation of flow on the transom occurs so the transom is considered to be "dry", but the bow is still immersed.

- c) At $0.5 < C_v < 1.5$, the flow has separated from the forward half length of the chine, while a considerable wet-side still exists for the aft half length. At this speed the vessel is considered to be semi-planing. There is not a sufficient rise in the centre of gravity to allow bow emergence.

- d) When $C_v > 1.5$, the planing boat develops a dynamic lift that results in a rise of the center of gravity, positive trim, bow emergence and almost complete separation of flow on the chines.

1.3 ACTING FORCES

Referring to Figure 1.1 for the coordinate system used throughout this work, according to Mandel [20] every water-borne vehicle may be considered to be acting upon four independent forces as shown in Figure 1.2:

- i) Weight W . This force is generated by the gravity and is always parallel to z_0 .

ii) Buoyancy B_{cy} . This is the force resulting from the amount of fluid displaced by the hull, and will always have a direction parallel to z_0 in opposite direction to W .

iii) Thrust T . This is the force exerted by the vehicle's propulsor. Its direction is a function of the propulsion system and the vehicle orientation.

iv) Total hydrodynamic force F . This is the force exerted by the fluid on the vehicle. For fluid-borne vehicles F may be resolved into the lift component L normal to vehicle velocity, and the drag component D , parallel to the vehicle's velocity. Its direction will be a function of the propulsion system arrangement, hull shape and vehicle orientation.

In the case of vehicles moving with constant speed and direction, the sum of the four acting forces B_{cy} , F , W and T , as well as the moment of these forces on the vehicle must be equal to zero. For slow speed displacement ships, W and B_{cy} are in the same order and in balance, so the ship appears to be acting only by D and T . The weight W of slow moving vehicles is usually supported almost entirely by the buoyancy component, and the lift contribution L is almost negligible.

In the case of high-speed boats, the buoyancy component may become very small or almost negligible depending on the speed, so the weight is supported greatly by the lift component L of the total hydrodynamic force. However, this class of boats depends on buoyancy for support at zero or low speed. This complicates the description of their hydrodynamic behaviour, so performance prediction relies on experimental results as well as numerical methods derived from the experimental results.

1.4 EXPERIMENTAL WORK ON PLANING BOATS

The towing of models to obtain performance data has been carried out by researchers for many years, with different scopes of research, objectives and installations. Some of the work addresses a wide range of boats, and other research is very specific designs or applications. Probably the first reported work on planing hulls was done at the beginning of this Century, when floats for hydroplanes were tested to observe their behaviour and to improve subsequent designs. Direct application to planing boats did not begin until the 1930's; Savitsky [27] outlined most of the experimental and numerical work which was performed before the 1960's. Much of this work had very limited circulation, and it was not until the commonly-used document [27] was published, that results of the early research were made available in the form of a method to predict the hydrodynamic behaviour of planing hulls in calm water.

Recently Almeter [2] made a review of the-state-of-the-art of planing hull research, summarizing the systematic series, as well as numerical and empirical methods, for mainly those developed after 1960. The systematic series addressed in Almeter's review and that are readily available are now described.

1.4.1 SERIES 62

In 1963, Clement and Blount [7] presented the results for systematic tests on five planing boats. The authors considered that the parameters affecting the performance of planing hulls are L/B ratio, hull size and displacement, and L_{CG} location. The deadrise angle was not considered as a varying parameter. The main particulars for this series are as follows:

$$\beta = 12.5^\circ$$

$$B_{PTR} = 65\% \text{ of maximum chine beam}$$

$$2.0 < L/B < 7.0$$

$$0.2 < Fn_v < 6.0$$

$$0.0 < L_{CG} < 12\% \text{ aft } A_p \text{ centroid}$$

Each model was tested at four displacements and four L_{CG} locations, with a total of 80 conditions at several speeds. The results for resistance, sinkage, trim, wetted chine and keel length were presented in graphical and tabular forms as well as a simplified prediction method. It is important to quote part of the written discussions from the document because it contains some of the reasons for developing a new series:

"The narrowed transom improves the performance in quartering seas, and reduces the tendency to broach, but limits the engine space. It may be preferable to continue to the maximum beam to the stern. The slamming tendency can be eliminated to a considerable extent by raising the run of the chine, thereby presenting a deeper vee to the incoming wave. It is suggested to conduct a test with the range of variables and model size, but on a series in deadrise of 5°, 10°, 15°, 20° and 25°. This data is needed before the mechanisms of planing hulls can be fully understood. The effect of deadrise angle is as important as the L/B ratio."

1.4.2 MODIFIED 62 SERIES

In 1982, Kuening and Gerritsma [19] performed a systematic test of identical models of the Series 62 but varied the deadrise angle from 12.5° to 25°. The idea of this experiment was to add data to the original experiment. No attempt was made to use a more up-to-date model. Five models were built and tested under the same conditions except for speed due to the limitation of facilities.

1.4.3 FRIDSMA'S ROUGH WATER TESTS

In 1969, Fridsma [12] performed experiments on motions of planing hulls in waves. The experiments were carried out on a series of constant deadrise models, prismatic hulls, and included a calm water test of all the models, from where the test conditions for the rough water experiments were selected. Unconventional forms were used because Fridsma considered that incorporating a more realistic bow shape would throw another variable into the research and would complicate the evaluation. The series covered the range:

$$4.0 < L/B < 6.0$$

$$0.0 < V/\sqrt{L} < 6.0$$

$$50.0 < L_{CG} < 80.0\% \text{ aft Station 0 (Fwd. end)}$$

$$\beta = 10^\circ, 20^\circ \text{ and } 30^\circ$$

Nine models were built, and the results for the calm water experiments are presented in graphical forms.

1.4.4 NAVAL ACADEMY SERIES

In 1986, Compton [9] tested a series of semi-planing hulls, consisting of six models, three with round bilge and three similar models incorporating a hard chine. The main objective of this experiment was to obtain a direct comparison of the behaviour of round bilge vessels with respect to hard chine hulls. Although the series does not consider a wide range of models, parameters such as L_{CG} , displacement and velocity were varied systematically. The L_{CG} location was varied from 45% to 35% of the length measured from the transom, and three displacements per model. The results were presented in a graphical form, and include resistance, trim and sinkage.

1.4.5 SERIES 65

This series was tested by Holling and Hubble in 1974 [15], and two different parent hulls were considered. Series 65A was designed to investigate its application to hydrofoil hulls, and featured a very narrow transom beam. Series 65B is a planing hull series that features constant deadrise and constant beam in the aft section of the hull. This series was tested over a wide span of displacements, L/B ratios, and deadrise angles, covering the ranges:

$$2.5 < L/B < 9.5$$

$$21^\circ < \beta < 37^\circ$$

$$0.0 < C_v < 6.0$$

$$0.1 < C_D < 1.7$$

The hull shapes were deep-vee, and results were presented in tabular and graphical forms.

1.4.6 SERIES BK AND MBK

According to Almeter [2], the BK series are a very extensive series tested in Russia during the 1960's and oriented towards large patrol boats. The hull shape resembles the "PT" boats used by the USA during the Second World War. The main parameters of the series are as follows:

$$3.75 < L/B < 7.0$$

$$12^\circ < \beta < 21^\circ$$

$$0.43 < C_D < 0.85$$

$$0.35 < L_{CG}/L_{PP} < .45$$

$$1.0 < Fn_v < 4.5$$

The MBK series was also tested by the Russians and, although it resembles the BK series in approach and methodology, the parent hull is different and the series largely represent an addition to the BK series.

The ranges covered by the MBK series were:

$$2.5 < L/B < 3.75$$

$$7^\circ < \beta < 18^\circ$$

$$0.158 < C_D < 0.352$$

$$0.35 < L_{CG}/L_{PP} < 0.45$$

$$1.0 < F_{n_v} < 4.5$$

Clearly there is a great amount of additional experimental work published and unpublished on the performance of planing hulls, such as [4], [5], [14], [16] and [24] among others. Furthermore there must be a great amount of test data at research and experimental centres around the world that may not be available for public domain. However, the research work described in Section 1.4 addresses the planing hull series most widely referred to in research and design.

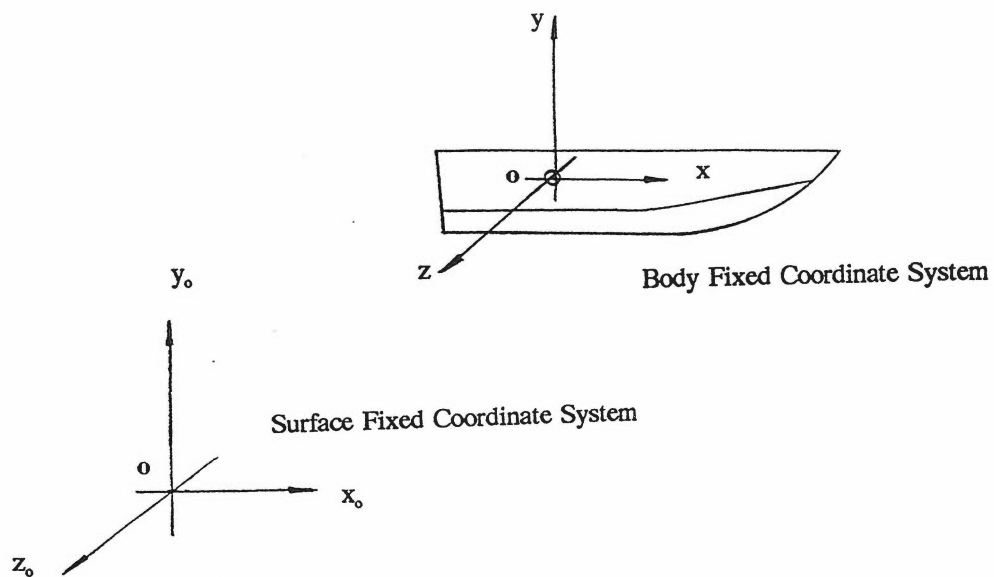


Figure 1.1 Coordinate System.

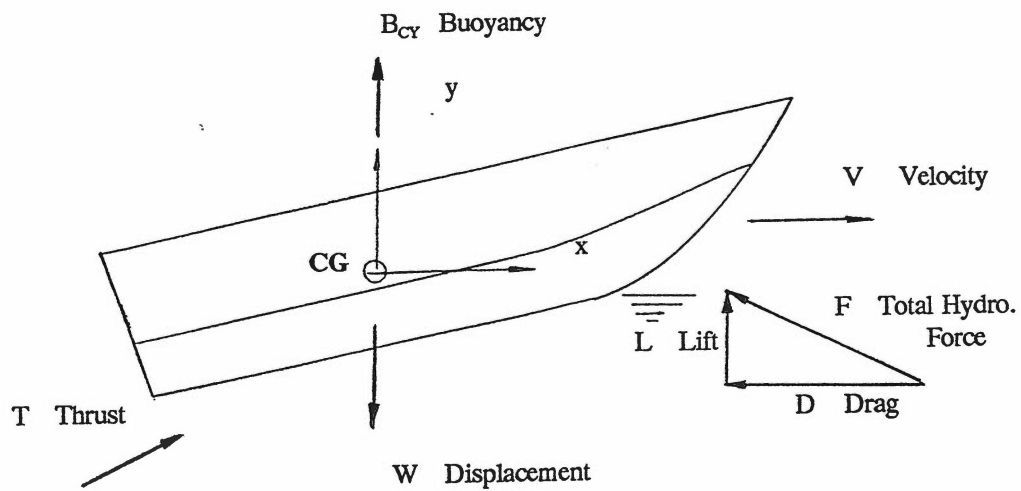


Figure 1.2 Acting Forces

2.0 SERIES DESIGN.

In reviewing the experimental work on planing hulls it is noted that the most widely addressed series do not necessarily represent a modern small craft hull shape; Series 62 is typical of the design of the 1960's, with a narrow transom and relatively large L/B ratio. Modified Series 62 follows the same trend. Series 65B features deep-vee hull shapes and was tested with a systematic variation of L/B ratio and deadrise angle, but low deadrise angle values were not considered. Fridsma's series can not be used in the design because it represents a prismatic, non-realistic hull shape. The U.S. Naval Academy series may not be considered to be a pure planing series. Finally, with series MBK, low L/B ratio and low deadrise were considered. Furthermore, the hull shapes were typical of boats designed a few decades ago.

For this reason it is believed that a new series for planing hulls is needed to aid designers and researchers in studying the performance of this category of vessels. This conclusion was also made by Almeter [6] who stated that the typical fast boat had 23° deadrise angle and recommended that a new series be based on L/B ratio variations.

2.1 HULL PARAMETER DATA BASE.

To design the new series of planing hulls, recent hull design specifications and technical data were collected from two main sources:

- a) serials, journals and publications; and
- b) nearly 50 boat designers and builders, who were contacted for data on their designs.

The final data base contained a total of 306 boats, from 83 boat builders and designers, and hulls in the range of 16.0 to 85.0 ft. (4.8 to 26.0 m) in length, displacements from 1000 to 150,000 lb. (0.5 to 70 tonnes) and speeds from 12 to 70 knots. All the designs are deep-vee hulls, and most of them have constant beam and constant deadrise on the aft section of the hull. This is an important characteristic of a modern planing hull shape.

Semi-displacement hull designs were also included in the data base, as were the fast and light racing boats. This was done to cover both extremes during the analysis. The types of boats considered were mainly: pilot boats, rescue vessels, fast patrol boats, pleasure boats, sport fishing boats, ocean cruisers, yachts, and racing boats.

Two analyses were performed on the data base. At first the characteristics of boats with their dimensional properties were considered. Secondly a parametric analysis was conducted.

2.1.1 DIMENSIONAL PARAMETRIC ANALYSIS.

A number of combinations of hull parameters were plotted to examine their trends and patterns. In some cases no obvious patterns could be observed, whereas in others the relationship between each other was very clear. The most important findings are discussed in the following:

The length versus beam plot given in Figure 2.1 shows an almost linear relation between these two parameters with a proportion in the order of 3:1 given by:

$$B=0.243.L_{CA}+2.93$$

The plot of length versus deadrise angle is given in Figure 2.2, where a great scattering distribution of data is observed, but it can be noted that as the length increases the deadrise angle tends to decrease. From Figure 2.3 it is seen that as the length increases, the displacement increases constantly in a trend as:

$$W=19.L_{QA}^2-117.L_{QA}-3778$$

The length versus cruising speed plot, Figure 2.4, shows also great scattering of data. This may be expected for a fixed size of vessel of the same length, as the designed cruising speed may be very different. The speed depends on the operational requirements of the boat, but it is interesting to note from Figure 2.5 that as the length increases, the installed power also increases in a constant form. This means that for a given length, the vessels have the same order of installed power, but the speed varies considerably.

The two last figures presented for this part of the analysis indicate that, for a given displacement, the installed power shows a clear increasing changing pattern, as observed on Figure 2.6, and an important fact is observed from Figure 2.7 where it is very clear that as the velocity increases the deadrise tends to increase, although scattered data are observed.

Several conclusions may be obtained from this part of analysis:

- a) The length varies with the beam in a ratio 3:1.
- b) As the length increases, the following changes occur::
 - deadrise angle decreases
 - displacement increases

- cruising velocity decreases
 - installed power increases
- c) As the displacement increases the installed power does too, but not necessarily the speed.
- d) As the cruising speed increases, there is a clear tendency for the deadrise angle to increase.

2.1.2 NON-DIMENSIONAL PARAMETRIC ANALYSIS.

The data were also analyzed in a non-dimensional form. Several authors have determined that the main parameters affecting the performance of a planing boat are the centre of gravity location, beam, length and deadrise angle. The data base does not include the centre of gravity location because it was not given in this analysis. This means that in this series it would be a variable for each test condition.

From the previous work on planing hulls, it has been observed that there are several ways to define a speed coefficient. The most commonly used expressions are:

- a) V/\sqrt{L} (where V in knots and L in ft)
- b) V/\sqrt{gL} (V, L, B, g and W for expressions b, c and d must be in a consistent system of units in terms of ft/sec, ft, ft²/sec, ft³, or m/sec, m, m²/sec, m³).
- c) V/\sqrt{gB}
- d) $V/\sqrt{g\nabla^{1/3}}$

It was decided that the speed coefficient selected in this analysis should not include a parameter that changes with speed. Thus the expression chosen was (c), understanding that the wetted beam

would not vary significantly with speed. If C_v is the time dependant coefficient, the function is defined as:

$$C_v = f(L/B, \beta, C_D)$$

All the boats in the data base were non-dimensionalized, and the coefficients were plotted in several combinations, with the following results:

a) Coefficient distribution.

The L/B distribution is given in Figure 2.8. It is observed that 87% of the boats are within the range of $2.4 < L/B < 3.8$, with a concentration in the range of 2.8 to 3.2.

Figure 2.9 shows that the deadrise angle in 91% of the boats is in the range 12° to 25° , with a maximum at 18° .

Figure 2.10 gives the distribution of the velocity coefficient. It is found that 89% of the boats are in the range of 1.2 to 3.6.

Figure 2.11 shows that the displacement coefficient of 99% of the boats is within the range 0.06 to 0.25.

b) Non-dimensional coefficients results.

Figure 2.12 shows that, regardless of the C_v coefficient, the L/B ratio is in range of 2.0 to 4.0, with a concentration at $L/B = 3.0$. It is also observed that the designs with a high L/B ratio are also the boats that have a high C_v coefficient.

From Figure 2.13 it is observed that as the velocity coefficient C_v increases, the deadrise angle β also increases.

Figure 2.14 indicates that, as the velocity coefficient C_v increases, the displacement coefficient C_D decreases, but after C_v equal 4.0, C_D tends to increase. This, together with the results obtained from Figure 2.12 indicate the slender and fast boats are also the more heavily loaded, and this is also confirmed on Figure 2.15, where clearly the displacement coefficient C_D is increasing with respect to L/B ratio.

2.2 MAIN PARTICULARS OF THE SERIES

From the results of analysis, the characteristics for the series to be studied are defined as follows:

L/B ratio.

From Figures 2.1 and 2.12 it can be seen that most of the boats analyzed will be covered within the range:

$$2.5 < L/B < 3.5$$

Deadrise angle (β)

The range for this parameter is not as clear as the L/B ratio, as shown in the scattering distribution of data points in all the related figures. Nevertheless, from Figures 2.2, 2.9 and 2.13 the typical deadrise angle will be in the range:

$$12^\circ < \beta < 24^\circ$$

Displacement coefficient

This range is set based on the results from Figures 2.11, 2.14 and 2.15, from which:

$$0.05 < C_D < .25$$

The actual displacement coefficient used during the experiments was dependent on the L/B ratio, as observed from Figure 2.15, so that each model was tested at different C_D values.

Velocity coefficient

The typical velocity coefficient, for the L/B ratio range selected, is in the range:

$$1.2 < C_v < 3.6$$

However, the model size and the carriage velocity have restricted C_v to a maximum of 2.75 for the experiments.

The final characteristics for the series are given in Table 2.1 below.

Table 2.1 Characteristics for the Series.

<u>Coefficient</u>	<u>Low</u>	<u>Medium</u>	<u>High</u>
L/B	2.5	3.0	3.5
B	12.0 °	18.0 °	24.0 °
C_D	0.05		0.25
C_v	1.2		2.75

With these values, most of the high C_v designs were excluded. At the same time these vessels have the highest L/B ratio as well as the highest C_D coefficient. Furthermore, many of these vessels have the highest deadrise angle. Other vessels excluded are the low deadrise angle boats (less than 12°). Reviewing the data base, it was observed that the vessel types excluded are the high speed racing boats and the heavy loaded ocean cruisers.

2.3 PARENT HULL DEFINITION.

In designing the parent hull for this series it is intended to design a hull which is representative of the typical planing craft presently built, based on dimensions and shape but not on performance.

From Table 2.1, using the middle values, the main parameters to design the parent hull are L/B

ratio of 3.0 and deadrise angle of 18° . Additional characteristics that may be specified for a typical planing boat are:

- a) Constant beam and deadrise in the aft section of the hull;
- b) Transom stern; and
- c) Hard chine (single chine).

2.3.1 HULL SHAPE PARAMETERS.

The selection of shape parameters was made by carrying out an analysis of several Lines Plans and General Arrangements. For obvious reasons, most boat designers and builders did not supply hull form information, and only a few were made available. This, together with the information from several marine journals data on a total of 46 hulls was gathered and entered into a data base. The data measured are defined in Figure 2.16.

All the measurements were non-dimensionalized as percentages of L_{OA} and were plotted as a function of L_{OA}/B ratio. Figures 2.17 to 2.23 are the plots for this data base, and most of them show certain scattering in patterns, hence it is not possible to determine an exact trend, but they certainly provide a reference for the selection of proportions at a L/B ratio of 3.0, which as stated above, was chosen as a main parameter for the parent hull.

To select the shape parameters a straight line curve fit was obtained for Figures 2.17 to 2.22, and the intersection with L_{OA}/B equal to 3.0 was considered as the proportion for the parent hull. With this approach the length of the chine L_C as a percentage of the length overall L_{OA} is 91.8% as obtained from Figure 2.17, and following this procedure, from Figure 2.18, L_{CD} is found to be in the order of 51.2% of L_{OA} ; the length of the chine with a constant beam L_{CC} , extends on 41.0%

of L_{OA} as shown on Figure 2.19; from Figure 2.20 the length of the bow L_B is 37% of L_{OA} measured from the forward end of the hull, the typical depth at the forward end D_B is 18.2% of L_{OA} as obtained from Figure 2.21, and the height of the chine in the intersection with the bow D_C is 10.7% of L_{OA} as observed on Figure 2.22. The last value obtained from these plots is α_1 , this is, the angle between the bow and the base line, resulting in 42.5 degrees as obtained from Figure 2.23. The shape proportions for the parent hull are then summarized in table 2.2 below:

Table 2.2 Parent Hull Proportions in Percentage of L_{OA}

L_C	Chine Length	91.2%
L_{CD}	Length of Constant Beam on Deck	51.2%
L_{CC}	Length of Constant Beam on Chine	41.0%
L_B	Bow Length	37.0%
D_B	Depth at Forward End	18.2%
D_C	Chine Height	10.7%
α_1	Bow Angle	42.5°

2.3.2 HULL DEVELOPMENT.

Due to the geometric limit of the towing tank the maximum beam B was selected as 230 mm, resulting in the following dimensions being selected for the parent hull:

Table 2.3 Parent Hull Dimensions

$L_{OA} = 690$ mm	$B = 230$ mm
$L_{CH} = 629$ mm	$L_{CD} = 353$ mm
$L_{CC} = 283$ mm	$L_B = 255$ mm
$D_B = 125$ mm	$D_C = 74$ mm
$\alpha_1 = 42.5^\circ$	$\beta = 18^\circ$

These dimensions were used to develop the preliminary lines. Once the lines were faired, they were entered into the program AUTOPLEX to obtain a hull shape with developable surfaces. The final lines are given in Figure 2.24. The typical planing hull has deck sheer and transom rake, but for convenience of construction and testing, the deck line is considered parallel to the base line, and the transom perpendicular to the base line.

It was decided to incorporate chine spray strakes extending over the total length of the chine. The typical width of these strakes is in the order of 5% to 10% of the total beam on the chine. In our case, it was selected as 7% of the maximum beam for the length of constant beam with constant deadrise angle, and reducing its width towards the forward end.

2.4 SERIES DEVELOPMENT

In order to develop a series of geosim models, the L/B ratio and the deadrise angle were varied in the following manner:.

2.4.1 L/B VARIATION.

This parameter is relatively easy to modify if a linear transformation is performed over the x axis, the length of the hull was stretched or shrunk to obtain the desired length, with the following results for the L/B ratio selected on Table 2.1:

<u>L/B</u>	<u>Total length</u>
2.5	575 mm
3.0	690 mm
3.5	805 mm

2.4.2 DEADRISE ANGLE VARIATION

The variation of this parameter could have been done by one or more of the following:

- a) stretch or shrink the parent hull in the y direction.;
- b) raise or lower the chine line;
- c) raise or lower the base line.

However, it was decided to raise and lower the base line to obtain the 12° and 24° deadrise angles, respectively. With this arrangement the chine profile and plan view, as well as the bow angle remain the same for each L/B ratio, and the bow keeps the same curvature, but the height of the intersection between the chine and the bow will be modified. Using this approach most of the main parameters for the series hulls remain unaltered.

The lines and offset tables for all the hulls of the series are included in Appendix A. From these it is observed that the body plan for all hulls with the same deadrise angle keep the same shape, and the beam on the chine and the deck remain the same for all models. In the plan view, it is observed that all the hulls maintain the chine and deck lines for a given L/B ratio. In profile, all the models for a given L/B ratio keep the same chine profile as well and almost hold the same bow curvature. With this, the part of the hull that will change is the shape of the hull below the chine for each L/B ratio.

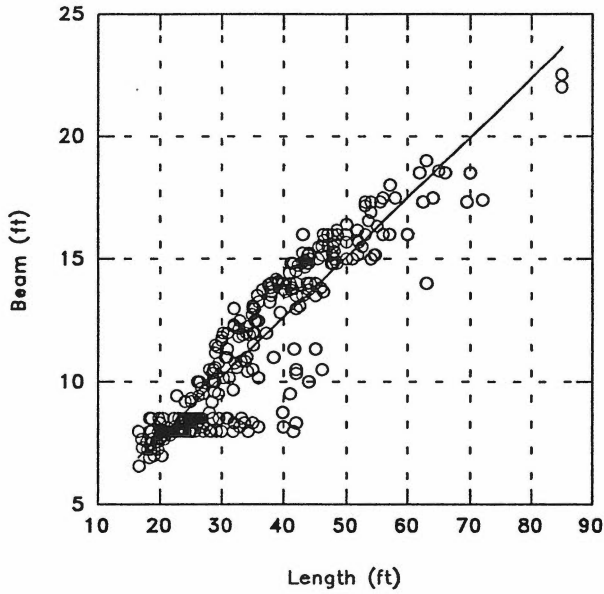


Figure 2.1 Length vs Beam

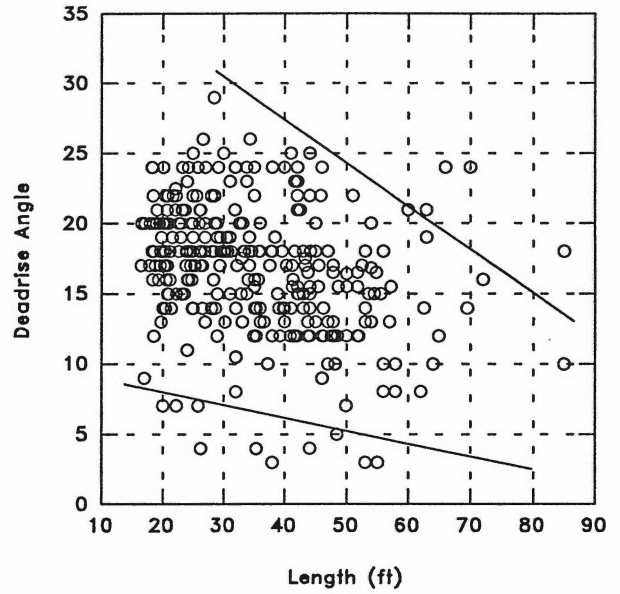


Figure 2.2 Length vs Deadrise

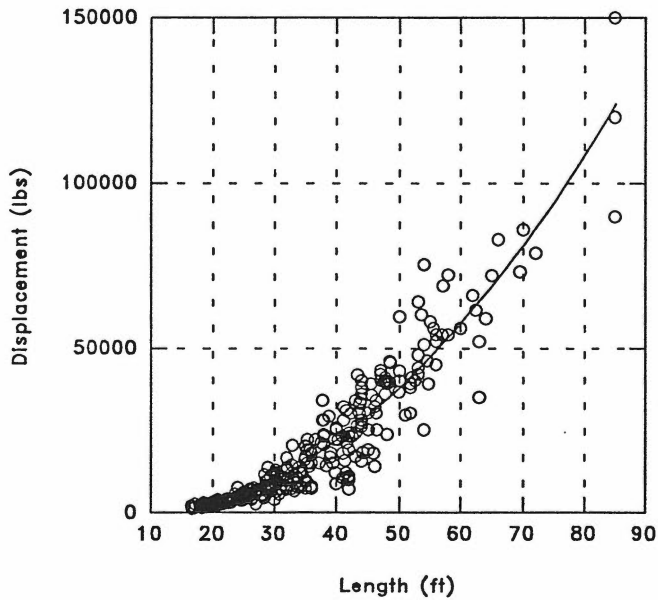


Figure 2.3 Length vs Displacement

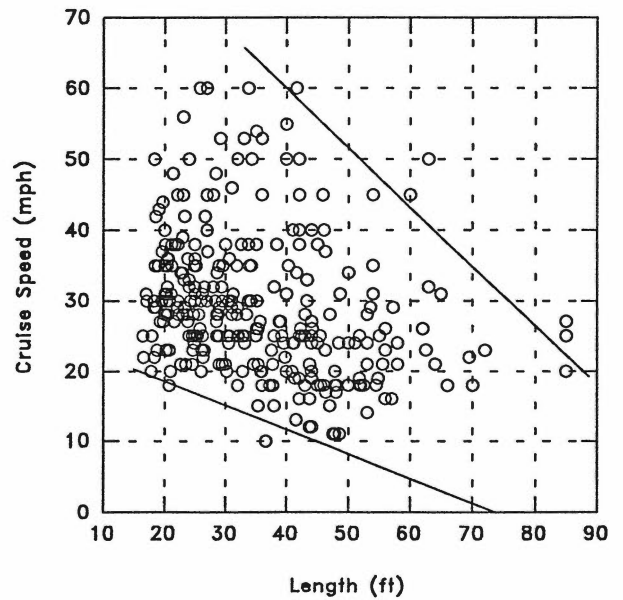


Figure 2.4 Length vs Cruising Speed

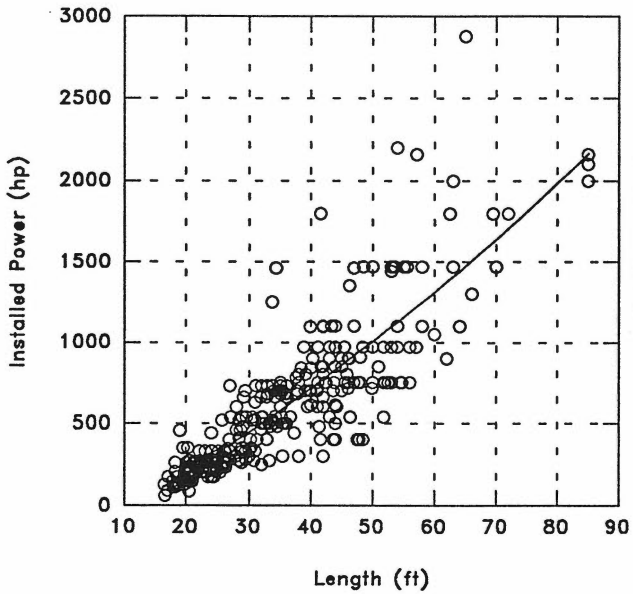


Figure 2.5 Length vs Installed Power.

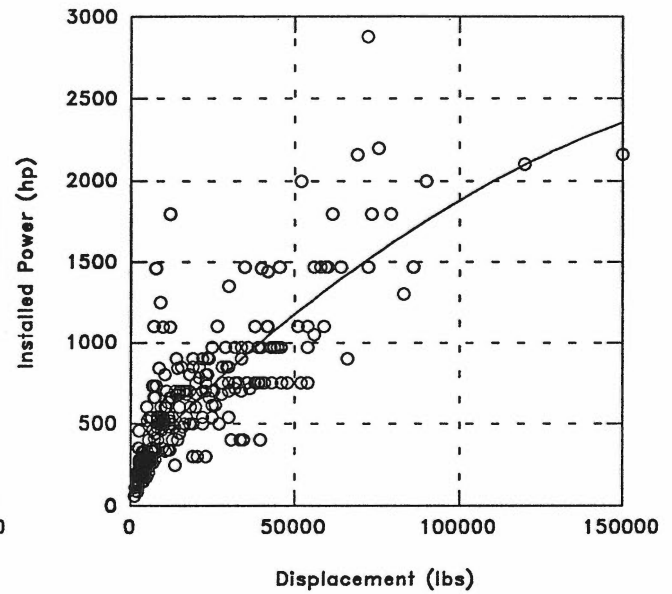


Figure No. 2.6 Displacement vs Installed Power.

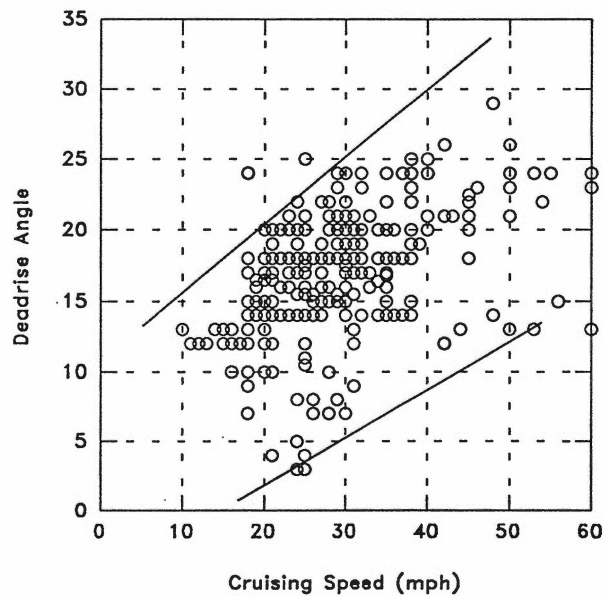


Figure 2.7 Cruising Speed vs Deadrise angle.

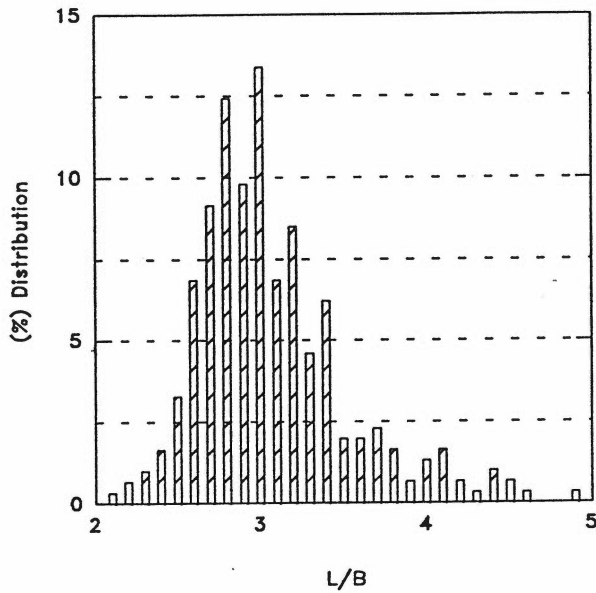


Figure 2.8 L/B Distribution

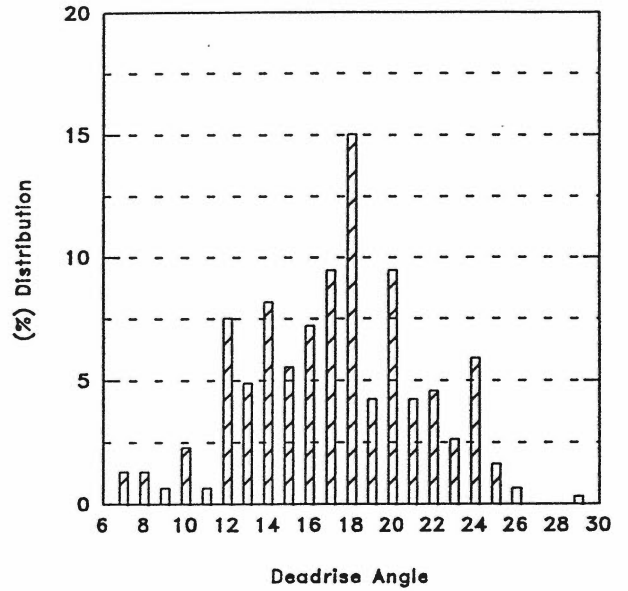


Figure 2.9 Deadrise Angle Distribution

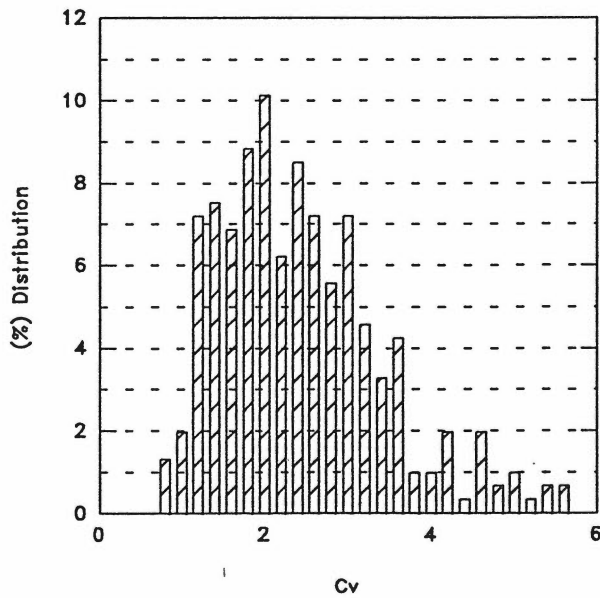


Figure 2.10 Velocity Coefficient Distribution

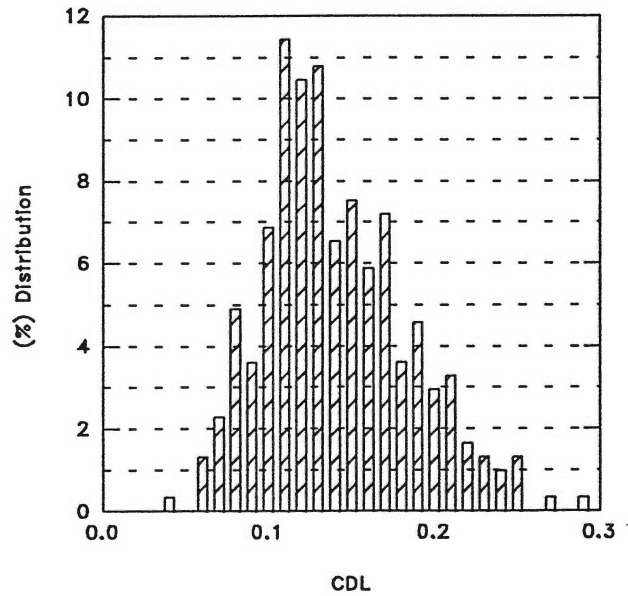
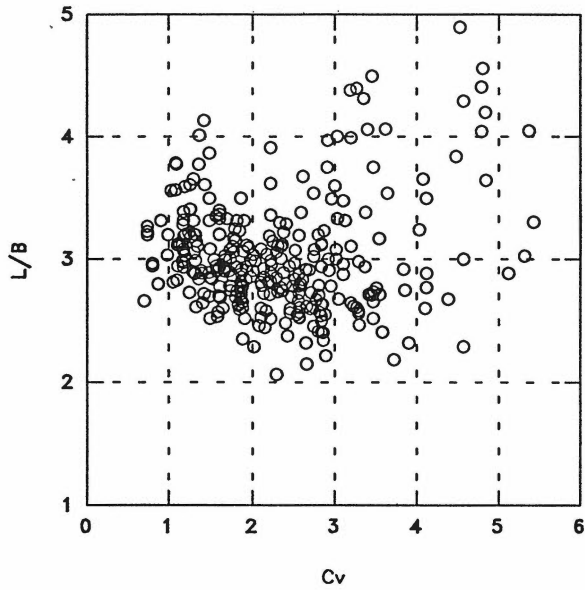
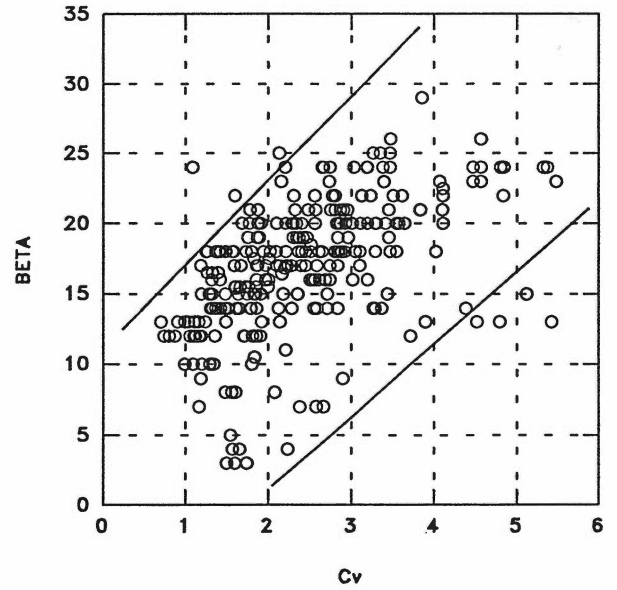
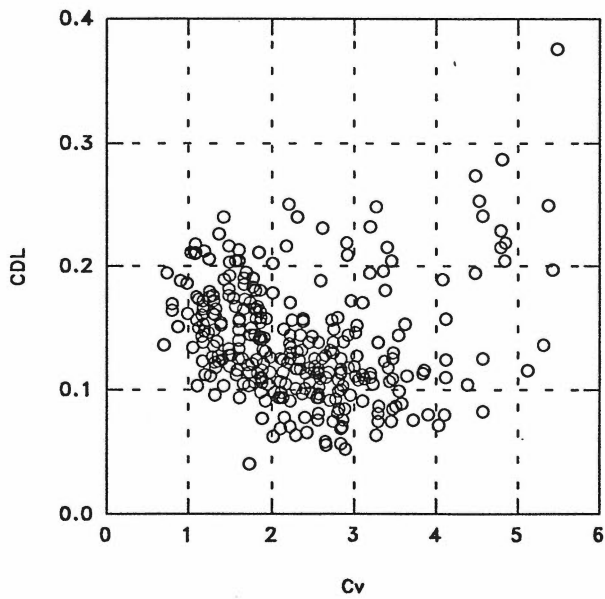
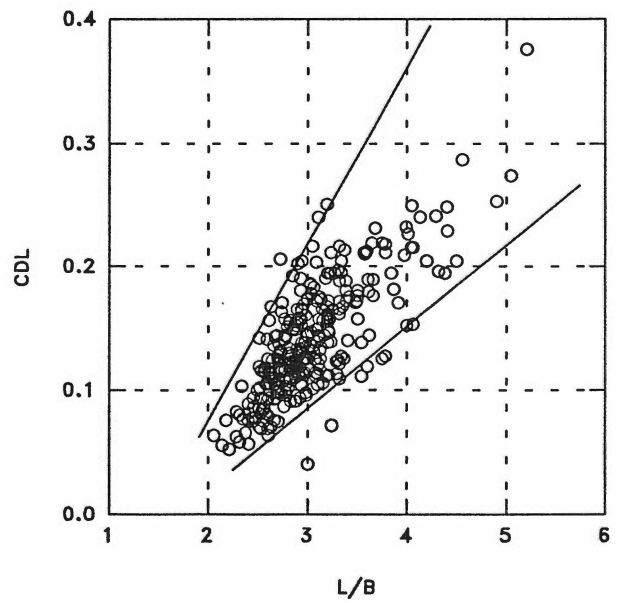
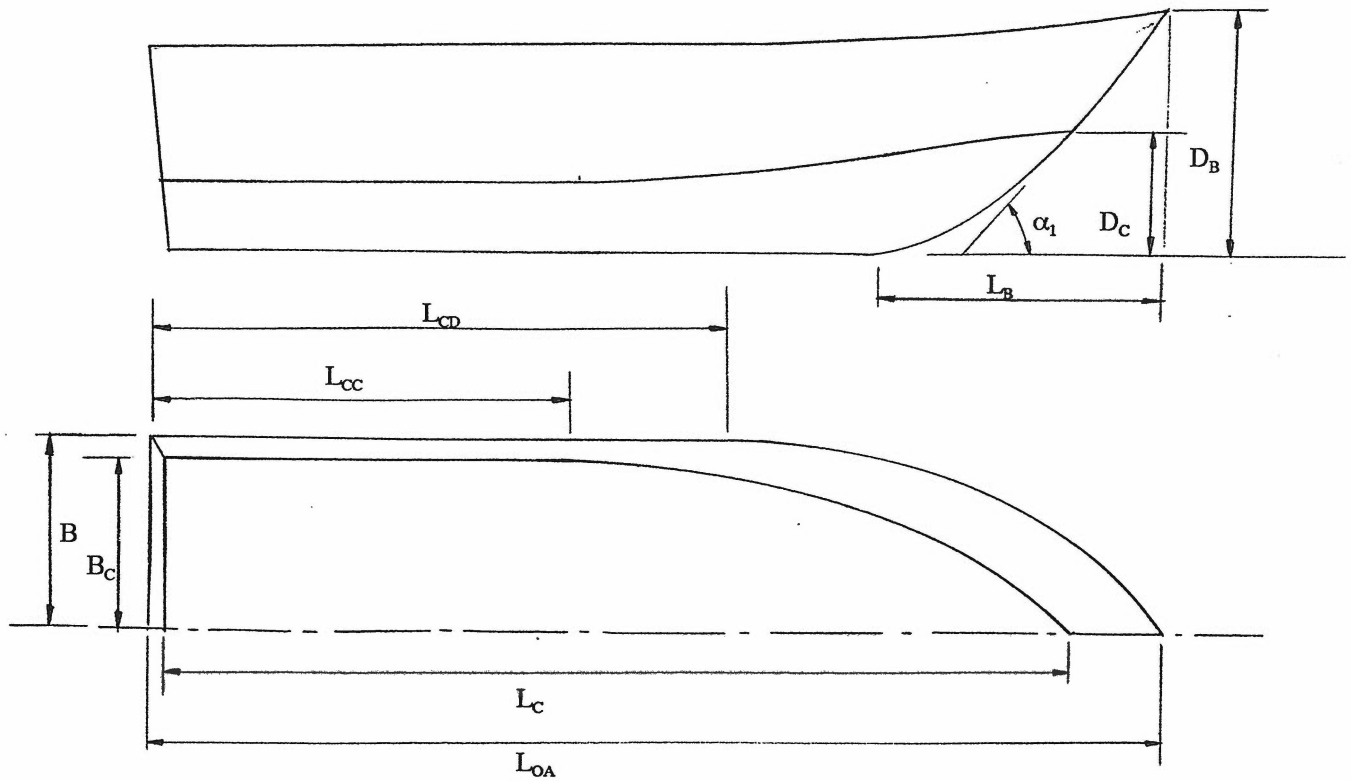


Figure 2.11 Displacement Coefficient Distribution.

Figure 2.12 C_v vs L/B Figure 2.13 C_v vs $BETA$ Figure 2.14 C_v vs CDL Figure 2.15 L/B vs CDL



- L_{OA} Length overall
- L_B Bow length
- L_C Chine length
- L_{CD} Constant beam length on deck
- L_{CC} Constant beam length on chine
- D_B Bow height (depth)
- D_C Chine height at the intersection with the bow.
- α_1 Bow angle
- B Beam

Figure 2.16 Definition of Hull Shape Measurements

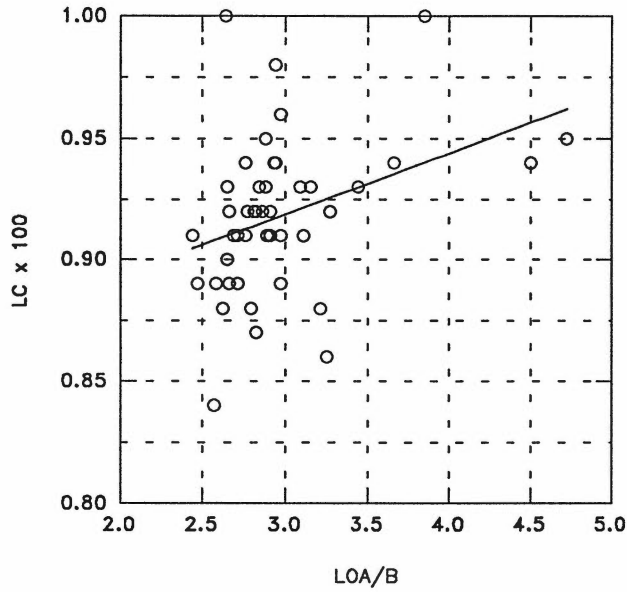


Figure 2.17 LOA/B vs LC as % LOA

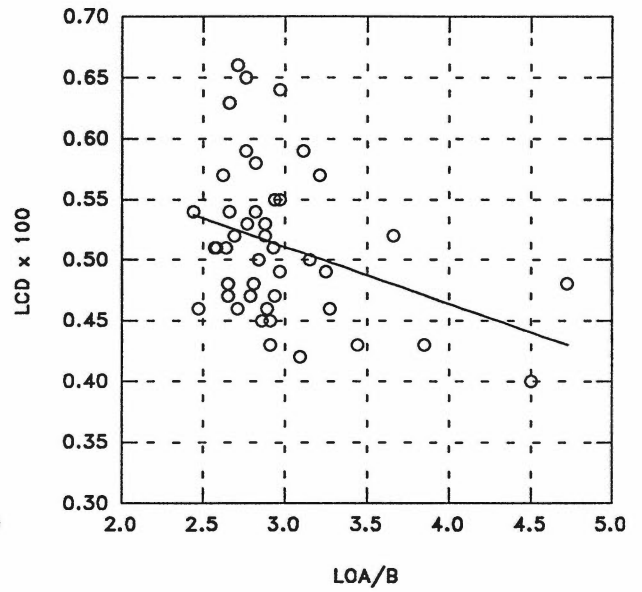


Figure 2.18 LOA/B vs LCD as % LOA

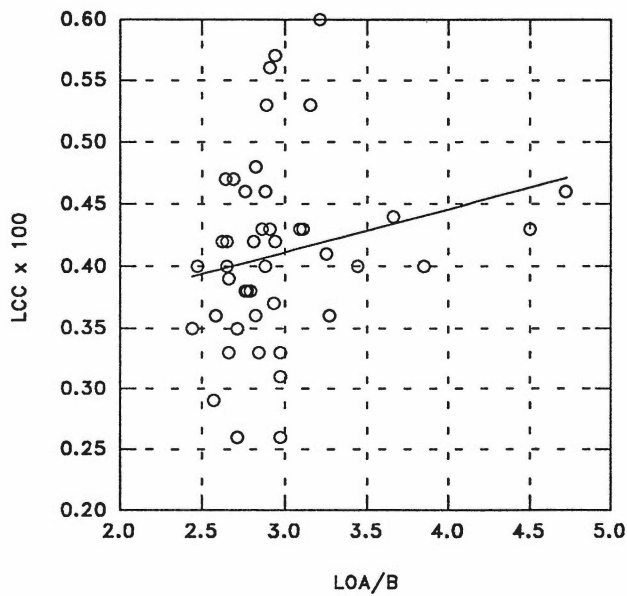


Figure 2.19 LOA/B vs LCC as % LOA

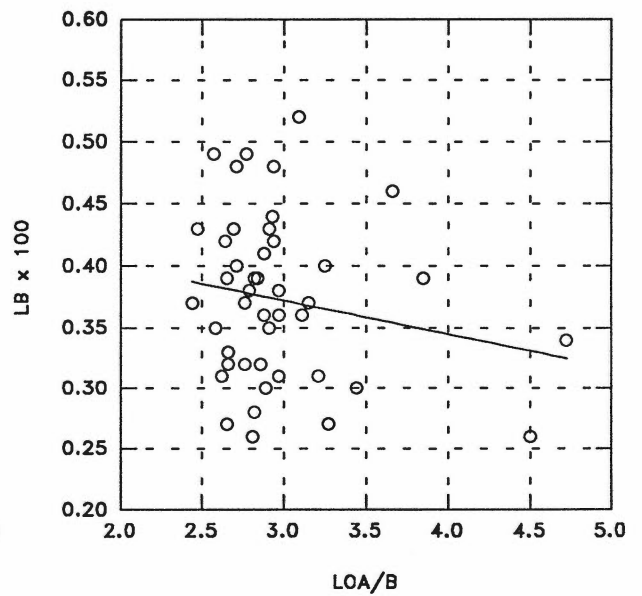


Figure 2.20 LOA/B vs LB as % LOA

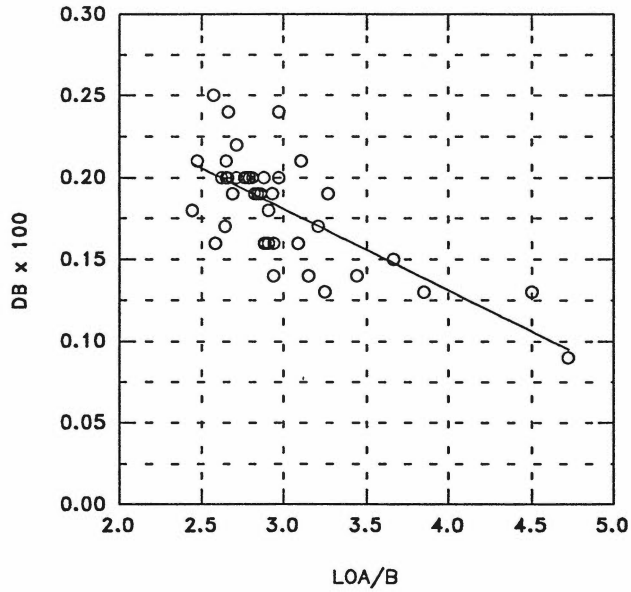


Figure 2.21 LOA/B vs DB as % LOA

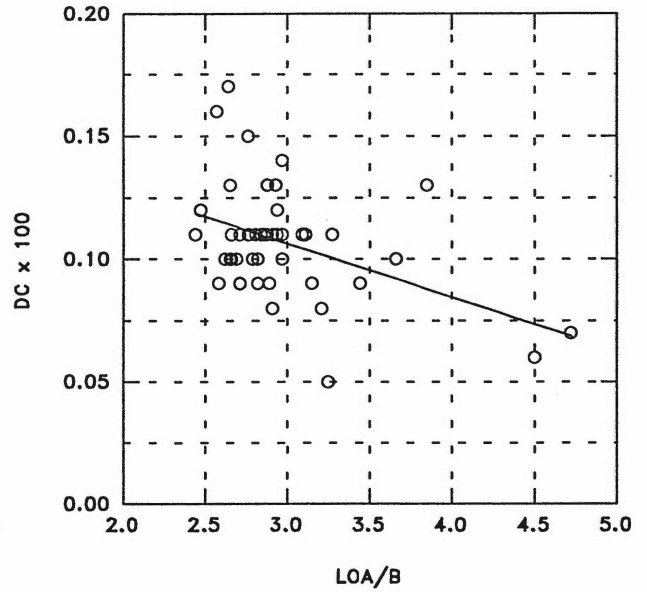


Figure 2.22 LOA/B vs DC as % LOA

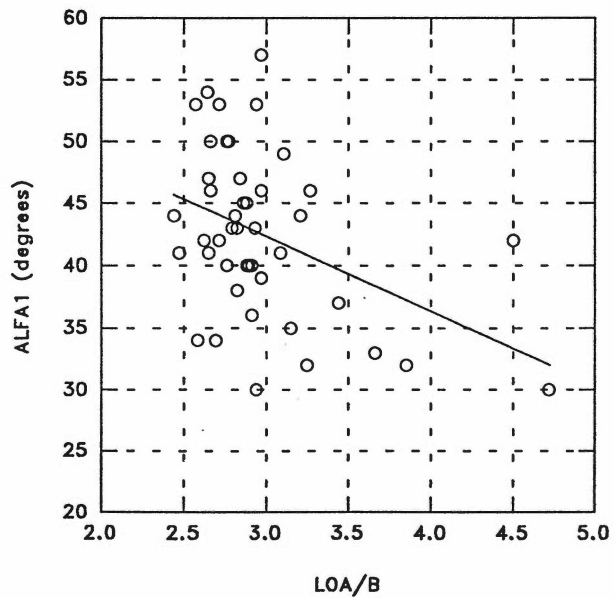


Figure 2.23 LOA/B vs Angle of the Stem to Base Line.

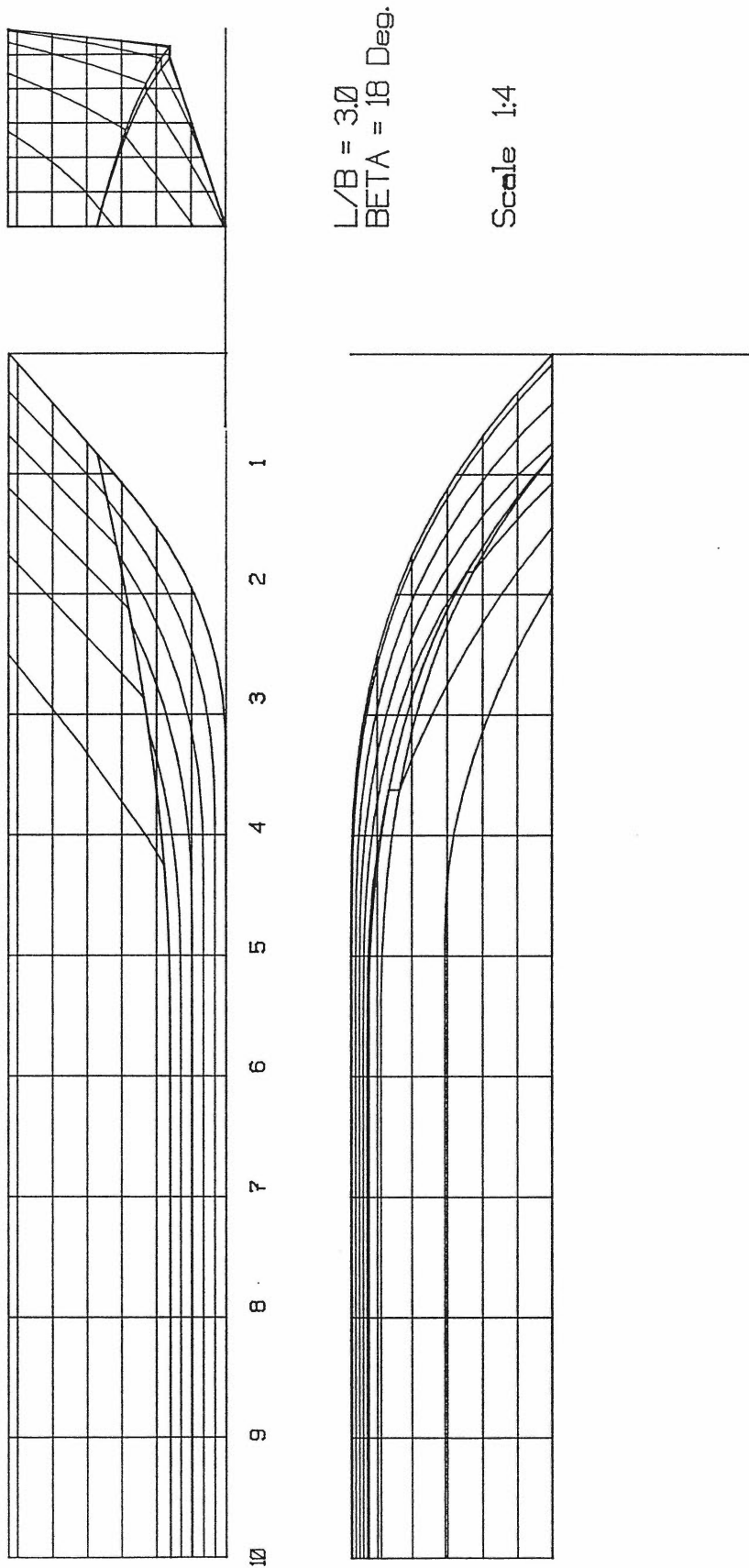


Figure 2.24 Parent Hull Lines

3.0 EXPERIMENT DESIGN

3.1 FACILITIES

3.1.1 TOWING TANK

The Towing Tank at TUNS has dimensions of 27.0m. x 0.9m. x 1.0m. with length, width and depth respectively. The tank has a 1.8 m. viewing window located at the end close to the control room. A computer-controlled wave maker/absorber is installed at each end of the tank. The electric motor-driven carriage has recently been upgraded and is able to reach a maximum speed of 4.0m/s within the tank length limit. It is controlled by a computer, and has very good velocity repeatability.

3.1.2 DATA ACQUISITION

The tank facilities can be completely operated from the Control Room. Two computer systems control the carriage and perform the data acquisition; video recording can also be controlled from the Control Room using up to four cameras.

For all experiments the models only had three degrees of freedom, i.e. surge, heave and pitch, and the data were collected with the following instruments:

- a) Forward velocity in the x direction was measured by an optical encoder driven by a belt to the rear axle.

- b) The force was measured by a 2.5 kg. load cell installed on the heave shaft of the tow

post. Figure 3.1 gives a representation of the tow post arrangement. It is noted that with this arrangement the load cell measures the horizontal component or drag force D of the total hydrodynamic force F .

c) The sinkage in the y direction was obtained with a sonic probe mounted on the carriage, measuring the distance to a reflective plate mounted by an attachment to the model. With this device the collected data represented the rise or sinkage of the centre of gravity. The sinkage value showed negative whenever the model was in a rising condition.

d) The trim was measured by means of a Relative Voltage Differential Transducer, (RVDT), mounted on the bottom of the heave shaft which was attached to the model. The shaft of the RVDT passes through the pivot point or the vertical centre of gravity, V_{CG} , of the models. The static trim was recorded for all the test conditions.

e) Video recording of all the runs was made to assist in troubleshooting whenever required.

f) As indicated by the 19TH International Towing Tank Conference [17], underwater photographs of the runs at all speeds were taken, from which the wetted surface area was computed. Black and white negatives were used and analyzed with a negative viewer. Figure 3.2 shows a typical photograph from the series.

3.2 MODEL CONSTRUCTION

All the models were built using a transverse framing system with 2.0 mm plywood for the hull and 6.0 mm plywood for the frames. All the models had developable surfaces. The hulls were coated with epoxy, primer and enamel to obtain a smooth finish. Station lines and numbers were painted on the sides and bottom. Water lines were omitted due to the number of L_{CG} and displacements tested. All the models were fitted with an integral spray strake at the chine. No additional spray strakes were fitted. This can be the subject for extensive research in the future, investigating the effect of number of strakes, angle, length, etc. on performance. No decks were fitted, i.e. the models are "open".

3.3 TEST CONDITIONS

3.3.1 DISPLACEMENTS

Table 2.1 indicated that the load coefficients C_D at which the models should be tested was in the range of 0.05 to 0.25. At the same time it was observed from Figure 2.15 that the displacement coefficient, C_D , varies depending on the L/B ratio. Each model's test conditions were chosen based on its L/B ratio. Table 3.1 gives the C_D values selected, and these were varied during the testing at increments of $\Delta C_D = 0.05$

Table No. 3.1 Test Displacement Coefficients

$\underline{L/B}$	$\underline{C_D}_{MIN}$	$\underline{C_D}_{MAX}$
2.5	0.5	0.20
3.0	0.10	0.25
3.5	0.10	0.30

Due to the weight of the models, some geometric restrictions and the position of the centre of gravity, it was not possible to obtain all of the minimum conditions. Section 4.0 provides all the conditions tested.

3.3.2 CENTRE OF GRAVITY

In Section 2.1.2, it was stated that the location of the longitudinal position of the centre of gravity, L_{CG} , was to be considered as a test variable. Almeter [6] indicates that the typical L_{CG} is located from 25% to 35% of L_C measured from the transom. From the data collected it was observed that the L_{CG} was located typically at 30% of L_{OA} from the transom. Fridsma's series [9] was tested at 30% to 50% of L_{OA} from the transom, Compton's series [10] was tested at 8% of L_{OA} from midships, and the MBK series [6] was tested at 35% to 45% of the wetted length. But then all these series were not typical of the small craft hull shape and configurations. It was decided to test each model at three L_{CG} locations, 25%, 30% and 35% of L_{OA} measured from the transom. Larger values resulted in an unrealistic trim by the bow, and smaller values gave very high static trim, which were considered unrealistic as well. Table 3.2 gives the values for L_{CG} on each model.

Table 3.2 L_{CG} Position for the models..
(Cm. from Transom)

<u>LCG/LOA</u>	<u>L/B RATIO</u>		
	<u>2.5</u>	<u>3.0</u>	<u>4.0</u>
0.25	14.37	17.25	20.12
0.30	17.25	20.70	24.15
0.35	20.12	24.15	28.17

The vertical centre of gravity was chosen to be 30% of B (maximum beam), i.e. 70.0 mm from the base line. The heave shaft was attached to the model in such a way that the pivot point was at the vertical centre of gravity. When ballasting the models to obtain the displacement and centre of gravity, the vertical position of the centre of gravity, V_{CG} , was measured by hanging the model. In most cases the real centre of gravity was obtained close to 30% of B, but some others were within an error of 5% B. All these values were recorded and are included in Appendix B.

3.3.3 VELOCITY RANGE

The velocity coefficient, C_v , was a restriction for the experiment. As given on Section 2.0, ideally a C_v of 3.6 was needed to cover the complete analysis. This means that the carriage had to run at 5.4 m/s, but the tank length is only 27.0m long. Although the carriage is capable of running at these speeds, it was determined that the maximum speed at which a significant data could be collected was 3.93 m/s. With this restriction the maximum test C_v was 2.75. Ten speeds were tested, starting at $C_v = 0.50$ (0.72 m/s) up to 2.75 (3.93 m/s) with increments of 0.25. With this the effects on displacement, pre-planing and planing regimes were studied.

3.3.4 THRUST LINES

In most of the experimental work, the thrust line is considered to be passing through the centre of gravity, which is a very close approximation for most of the propeller driven boats. In this work it was decided to test all the conditions at two thrust lines:

- i) thrust line passing through the centre of gravity, and
- ii) thrust line parallel to, and lying on the keel or base line.

The last was chosen as a reasonable compromise to many possible configurations for boats propelled by stern drives, jet propulsion or twin propellers. The method to test this thrust line is illustrated in Figure 3.3. The models were first tested with the thrust line passing through the centre of gravity. The drag D is approximate to the x component of T , i.e. T_x . If the Planing Angle τ is also known, and if the thrust line is moved to assume that it is parallel to the base line, a trimming moment M_{TT} can be computed. The thrust line compensation is obtained by moving a known weight w to a position within the model that would create an equivalent trimming moment. This trimming moment was computed for each velocity tested, and for each condition.

With the above considerations, the total number of runs for the series was in the order of 2500, including the tank calibration, repeatability runs and turbulence stimulation analysis.

3.4 TANK SIZE EFFECTS

During the preparation of the experiments, questions were raised regarding the effects of shallow water and tank wall, and also the aerodynamic effects on the results. These issues were addressed as follows.

3.4.1 SHALLOW WATER EFFECTS

During the literature review it was found that the work most addressed on this issue was done by Sturtzel and Graff [18,19], as well as Kirsch [20]. The critical velocity for our series is:

$$V_{CR} = \sqrt{gh}$$

$$V_{CR} = 3.13 \text{ m/s} \quad \text{for a tank depth, } h, \text{ equal to } 1.0 \text{ m.}$$

If the Draft (t) of the models is assumed to be in the order of 10 cm, then:

$$t/h = 0.1$$

From Figure 15 of Reference [18] it was determined that the increase in wave-making resistance is in the order of 3% to 5%.

From Reference [19], it was obtained that for $L/h = 0.805$ (for $L/B = 3.5$), $C_{th}/C_{fco} = 1.0$, as shown in Figure 3.4. This means that the increase in wave-making resistance is almost negligible for this configuration.

Kirsch's work [20] was also studied, but unfortunately the range of her work does not cover the

range of this series.

3.4.2 TANK WALL EFFECT

The work by Millward [21] and Kirsch [20] were studied to try to determine the effect of the proximity of tank walls on the results of our tests, but once again their ranges of results do not cover the ranges of our work. Millward's closest values are for $L/h = 2.0$, $t/L = 0.04$, and $K/h = 1.67$. Our numbers are $L/h = 0.805$, $t/L = 0.08$ and $K/h = 0.90$. Kirsch did not consider L/B lower than 5.0.

3.4.3 AERODYNAMIC EFFECTS

It has been recommended by the 19TH ITTC [17] to perform aerodynamic tests on the carriage to determine the effect of the air flow on the test results.. At this stage, no study of this has been performed, hence the effect could not be predicted.

The effect of an "open" model which has no deck or superstructure fitted may become relevant at C_v values above 2.0. But it is common practice to work with "open" models for towing tank tests. In our case, it was decided to work with this condition so long as the models were representative of any type of fast monohull.

3.5 TURBULENCE STIMULATION

Turbulence stimulator are used as a means to artificially increase the turbulence level of flow, thus avoiding laminar flow for low Reynolds number. Ideally the stimulator will provide constant turbulence stimulation with minimum parasitic drag. There are several devices that may be used, such as trip wires, studs and sand strips [22]. Also it has been indicated by the 19TH ITTC that

Hama strips are promising devices, and have been used some research facilities. Simoes Re [23] used these devices for the previous experimental work at TUNS. It was also decided to use Hama strips for this work. The shape selected was 10 mm wide strips with saw-tooth shape 8.0 mm per side and a thickness of 0.5 mm.

The position for the Hama strips was determined after testing the parent hull at $L_{CG} = 25\%$ and displacement coefficients of 0.10, 0.15 and 0.20. Figure 3.5 gives the results for $C_D = 0.15$ and 0.20. For the strips installed on Stations 4 and 7 of the model, the resistance was increased at all speeds. When the strip on Station 7 was removed the resistance was increased at low and medium speeds (hump speeds), but at high speed (relatively high Reynolds number) it remained unaltered as compared with the bare hull results. Therefore the Hama strip was only installed on Station 4 of the model for all experiments.

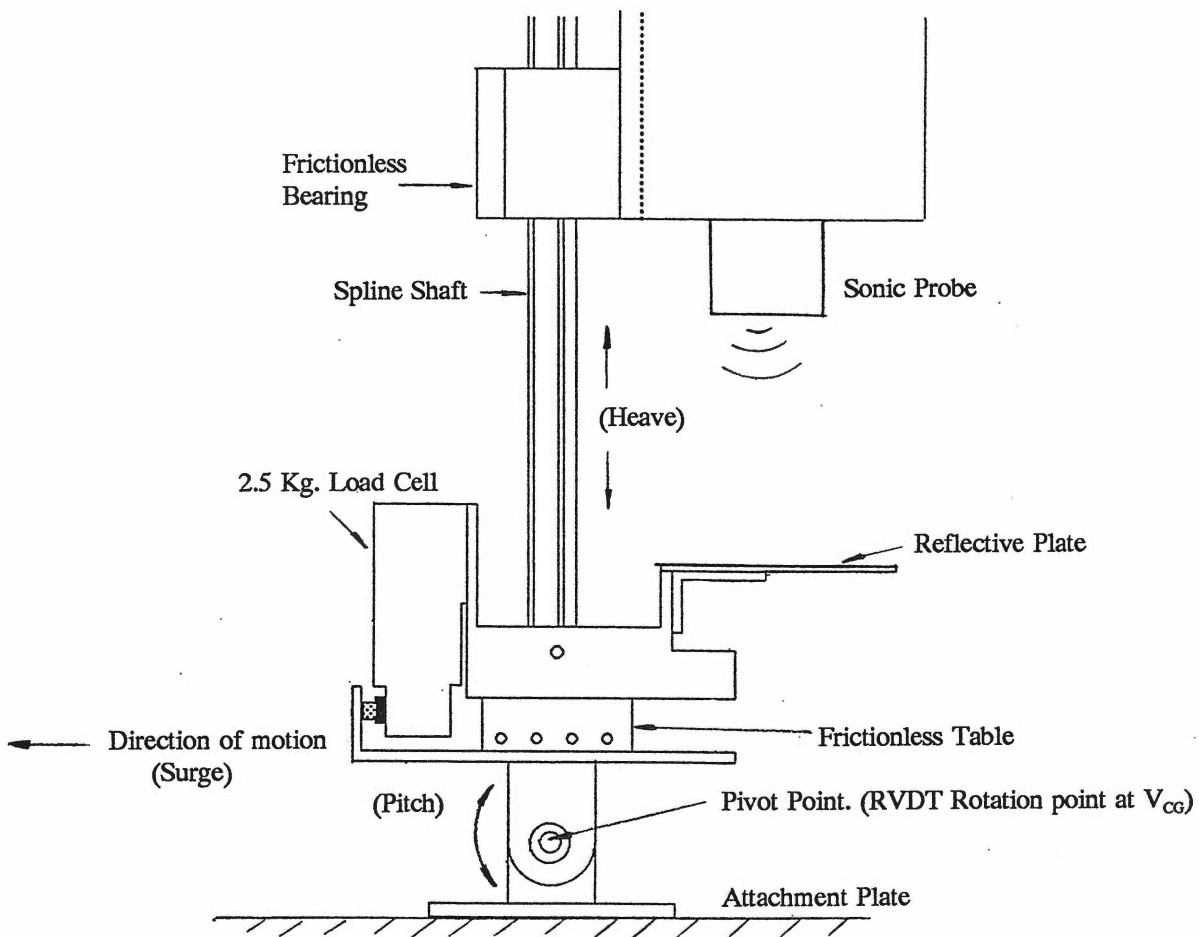


Figure 3.1 Tow Post Arrangement

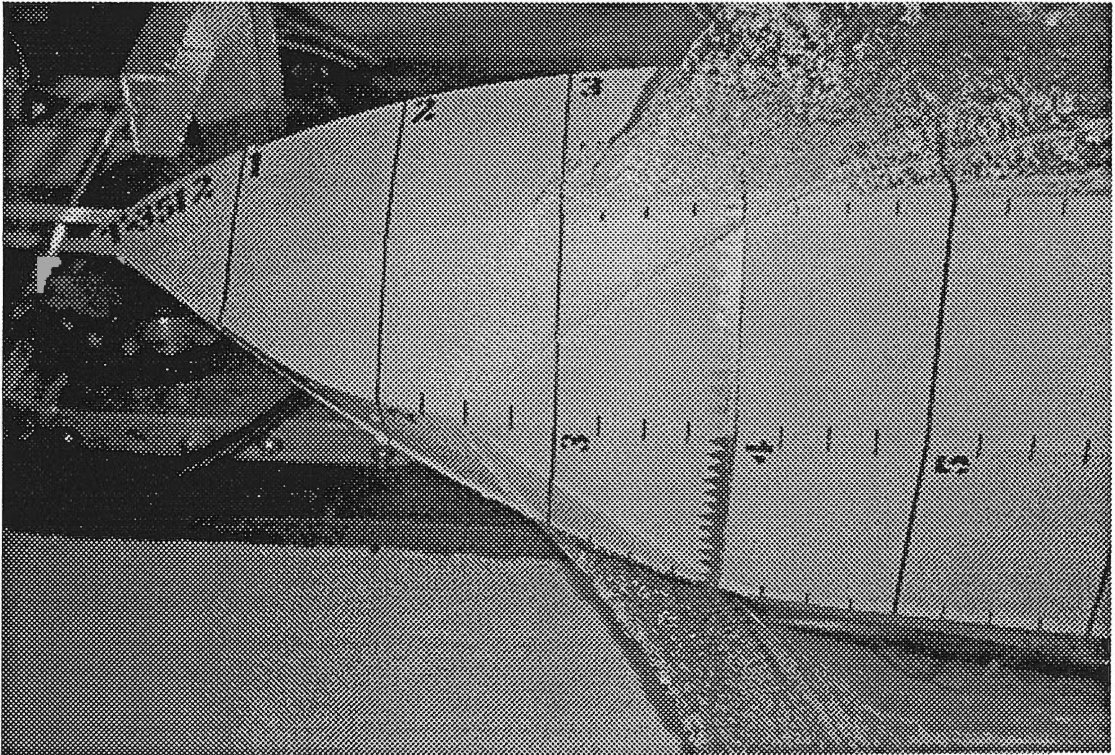
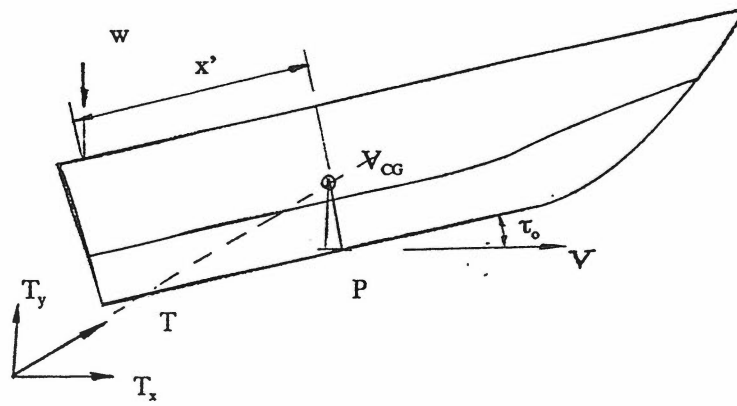


Figure 3.2 Underwater Photograph



τ_o = Absolute trim angle

T = Thrust

T_x = x Component of the thrust (drag)

T_y = y Component of the thrust

M_{TT} = Trim moment on the hull due to T_x assuming a thrust line passing through P or parallel to base line

$$M_{TT} = T_x \cdot \cos \tau_o \cdot V_{CG}$$

x' = Known Distance.

w = Added weight to compensate for thrust line

$$w = M_{TT} / (x' \cdot \cos \tau_o)$$

Figure 3.3 Thrust Line Compensation.

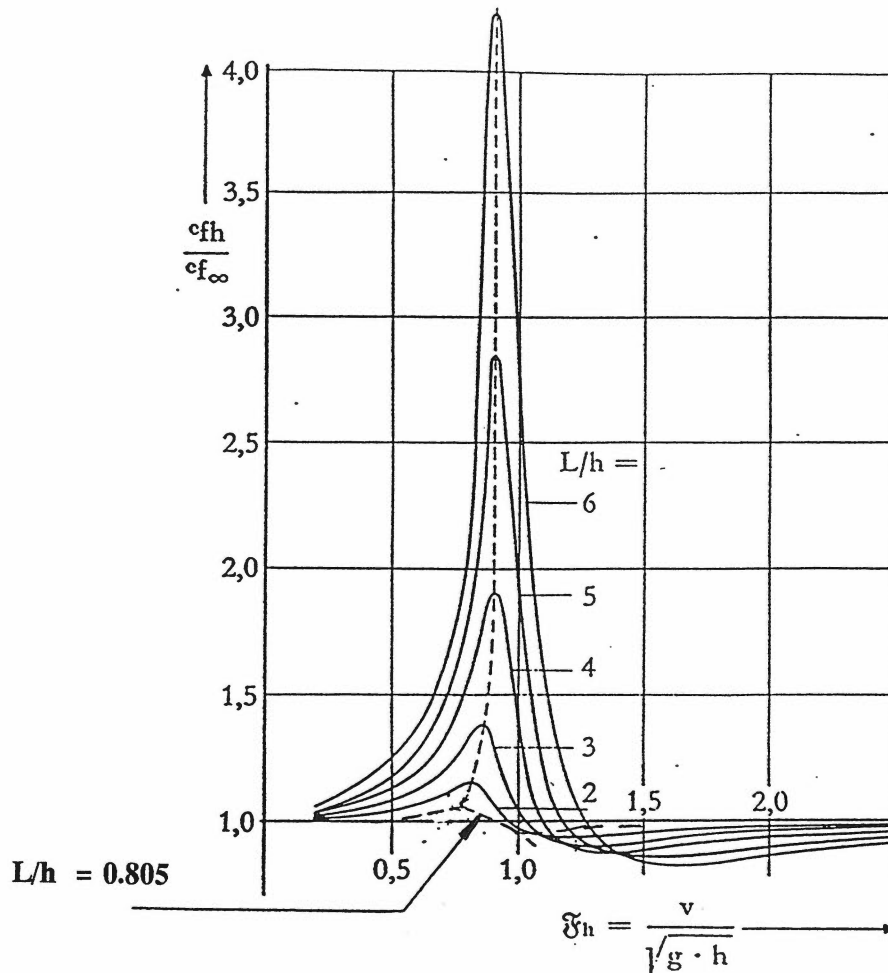
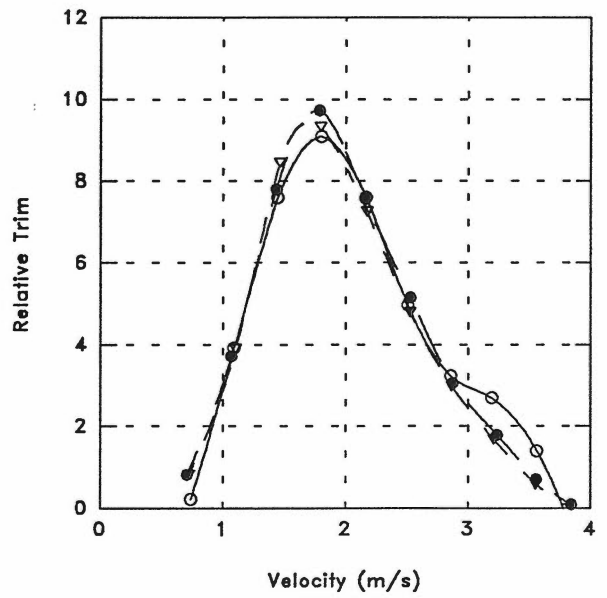
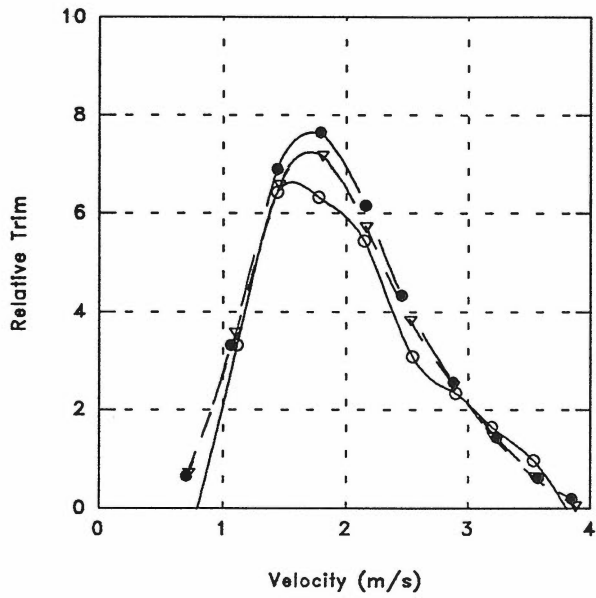
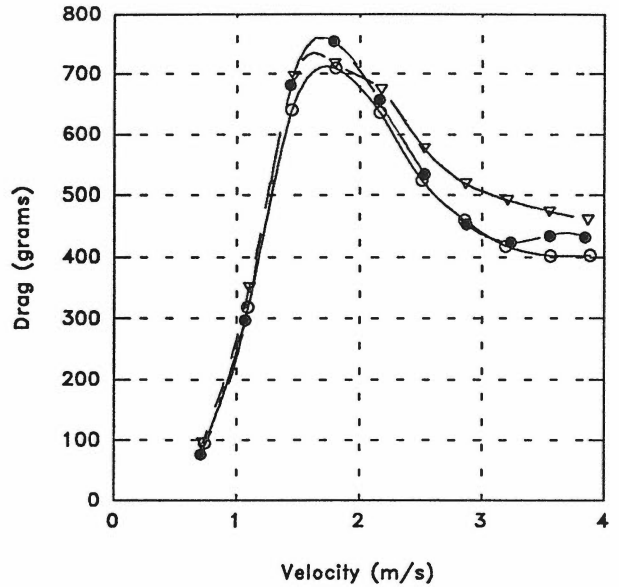
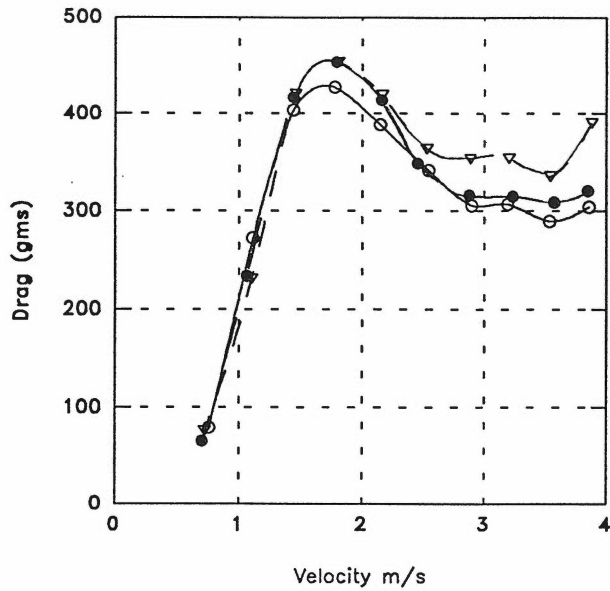


Abb. 12 Verhältniszahlen der Wellenwiderstandsbeiwerte von Flach- zu Tiefwasser für verschiedene L/h -Werte

$$\begin{aligned} Fn_h &= 1.0 \\ V_{CR} &= 3.13 \text{ m/s} \\ L/h &= 0.805 \\ C_{FH}/C_{F\infty} &= 1.0 \end{aligned}$$

Figure 3.4 Shallow Water Effect on the Wave Making Resistance
(From Fig 12. Reference [20])

L/B = 3.0 ; BETA = 18 Deg.



CDL = 0.15

CDL = 0.20

- Bare Hull
- Hama Strip on St. 4
- ▽ Hama Strip on St. 4 & 7

Figure 3.5 Turbulence Stimulation Tests

4.0 TEST OF THE SERIES

4.1 TANK CALIBRATION

As mentioned previously, there are various tank effects that might affect experimental results and that were not possible to predict, such as shallow water, tank wall and aerodynamic effects. In order to ensure reliability of the test results, a well known hull previously tested at other experimental facilities was selected to test again at the TUNS tank for calibration.

One of the objectives of this tank calibration was to avoid uncertainty introduced by testing a geosim model with a different scale, so it was chosen to test a hull of identical dimensions to one with published data. The hull selected was a prismatic hull tested by Fridsma [9] at the Davidson Laboratory of the Stevens Institute of Technology. This selection was made because the beam of the test model was very similar to the beam of the models of TUNS series, and that the L/B ratio of the smallest model was 4.0 which was close to the maximum L/B ratio of 3.5 for TUNS models. Another fact was that the shape of Fridsma's model had a constant beam and deadrise /angle on the aft section of the hull. The model had a L/B ratio of 4.0, a deadrise angle of 20°, a beam of 9 inches and built with the same transverse framing as TUNS models.

Figure 4.1 gives the body plan and lines equations. Fridsma fitted his models with a thin celluloid strip projecting 0.030" below the chine. The objective of this strip was to avoid the "wrapping" of water on the sides of the hull. The TUNS model for the tank calibration was fitted with similar strips, and in the same form as on Fridsma's experiments. No turbulence stimulators were used.

Six test conditions were chosen from Fridsma's work:

$$C_D = 0.304 \text{ (} W = 8\text{lbs) and } L_{CG} = 30\%, 35\% \text{ and } 40\% \text{ of } L_{OA}.$$

$$C_D = 0.608 \text{ (} W = 16\text{lbs) and } L_{CG} = 35\%, 40\% \text{ and } 45\% \text{ of } L_{OA}.$$

Each condition was tested at 12 speeds in the V/\sqrt{L} range from 1.0 to 4.0. All the runs were performed for a second time to check repeatability in the data acquisition. Fridsma's original work did not include numerical results for the calm water experiments, so the data used for comparison were read from the graphical results.

The results obtained at TUNS were encouraging, and showed very close agreement with those of the Davidson Laboratory. Only two conditions were selected to show TUNS results, but most of the experiments gave the same level of agreement:

a) Figure 4.2 shows the results of the tests at $C_D = 0.304$ and L_{CG} at 30% from transom. It is observed that the R_T/W curve gives a very close agreement with the original data. The H/B value or the rise of the centre of gravity seems to be lower than Fridsma's results, mainly in the high speed range. Trim is above the original data for low V/\sqrt{L} values, but at higher V/\sqrt{L} values are in close agreement.

b).- Figure 4.3 gives the results for $C_D = 0.608$ and $L_{CG} = 40\%$. Included in this last graph are the values obtained by Opel [24] for a geosim model on a larger scale tested at the British Columbia Ocean Research Centre. Both figures show a very close agreement on the resistance curve, although Opel's data tend to be slightly above the original values. The rise of the centre of gravity as well as the trim angle show good agreement.

4.2 FINAL TEST RANGES

4.2.1 VARYING DISPLACEMENT AND CENTRE OF GRAVITY

Each model was tested over a different range of displacement coefficients. Each C_D was tested for 10 velocities, and each velocity was tested at the two thrust lines described in Section 3.3.4. Table 4.1 gives the summary of the displacement coefficients at which each model was tested.

The location of the longitudinal position of the centre of gravity, L_{CG} , was determined by the moments of reactions with the aid of a weighing scale, and the vertical position, V_{CG} , was determined by hanging the model as shown in Figure 4.4. This method is simple and there is no need to draw water lines on the hull. The model was set a zero heel, and this was verified with the aid of a bubble level. The change of displacements was achieved by adding equal weights at equal distances forward and backwards from the centre of gravity, and at a height as close as possible to the vertical centre of gravity. To obtain this, the amount of weights required to achieve the following C_D value, as listed in Table 4.1, were prepared in advance. Following this procedure, 54 to 90 runs could be performed before removing the model from the tow post to change the L_{CG} position.

Once the model was attached to the tow post at a certain L_{CG} , all the displacements were tested by assuming that the thrust line was passing through the centre of gravity. After the thrust line through the centre of gravity was tested, the compensation moments were calculated as shown on Figure 3.3, and the runs for the thrust line through, or parallel to the keel were performed.

Table No. 4.1 Summary of Test Displacement Coefficients.

β	12°									
L/B	2.5			3.0				3.5		
L_{CG}	<u>35%</u>	<u>30%</u>	<u>25%</u>	<u>35%</u>	<u>30%</u>	<u>25%</u>	<u>35%</u>	<u>30%</u>	<u>25%</u>	
	0.075	0.835	0.10	0.10	0.10	0.11	0.10	0.10	0.12	
	0.10	0.10	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
	0.15	0.15	0.20	0.20	0.20	0.20	0.20	0.20	0.20	
	0.20	0.20		0.25	0.25	0.25	0.25	0.25	0.25	
							0.30	0.30		
β	18°									
L/B	2.5			3.0				3.5		
L_{CG}	<u>35%</u>	<u>30%</u>	<u>25%</u>	<u>35%</u>	<u>30%</u>	<u>25%</u>	<u>35%</u>	<u>30%</u>	<u>25%</u>	
	0.086	0.086	0.086	0.114	0.114	0.114	0.12	0.12	0.12	
	0.10	0.10	0.10	0.15	0.15	0.15	0.15	0.15	0.15	
	0.15	0.15	0.15	0.20	0.20	0.20	0.20	0.20	0.20	
							0.25	0.25	0.25	
							0.30	0.30		
β	24°									
L/B	2.5			3.0			3.5			
L_{CG}	<u>35%</u>	<u>30%</u>	<u>25%</u>	<u>35%</u>	<u>30%</u>	<u>25%</u>	<u>35%</u>	<u>30%</u>	<u>25%</u>	
	0.075	0.10	0.10	0.10	0.10	0.11	0.10	0.10	0.117	
	0.10	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
	0.15	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	
	0.20			0.25	0.25	0.25	0.25	0.25	0.25	
							0.30	0.30		

4.2.2 STATIC TRIM.

When the model was at rest (Velocity = 0.0), the static trim for each test condition was measured and recorded. With this it was possible to give the relative trim as well as the absolute trim.

4.2.3 TEST VELOCITIES.

Each condition was tested at 10 velocities as given in Table 4.2, covering the displacement, pre-planing and planing speeds.

Table 4.2 Summary of Test Velocities.

C_v	(m/s)	C_v	(m/s)
0.50	0.72	1.75	2.51
0.75	1.08	2.00	2.88
1.00	1.44	2.25	3.23
1.25	1.78	2.50	3.57
1.50	2.15	2.75	3.93

Initially the runs were made at alternating velocities, i.e. first a low speed run was tested, and then a high speed run. After several conditions had been recorded, it was observed that the results were not affected by alternating speeds, therefore the remaining conditions were performed at increasing velocities. The time interval between runs was maintained constant at five to six minutes and at the beginning of the day, or whenever the tests were interrupted, two "wake-up" runs were performed before the data collection was continued.

The slowest speed at $C_v = 0.50$ was not tested for the thrust line on keel because after several tests the same results were obtained as with thrust line through the centre of gravity.

4.3 DATA PRESENTATION.

4.3.1 RAW DATA.

During testing, after each run ended, the raw data file was pre-processed to obtain the raw values for the run. With this, the data could be viewed in case there had been a malfunction or an error during the test, and thus determine if the run needed to be repeated. A computer program collected the values from a file, accessed the calibration files, and displayed the results on screen. Figure 4.5 is an example of how the data was displayed, from which the time interval for analysis was selected. The program gave the average over time and stored the values into a file. The standard deviation of the analysis was also recorded. Figure 4.6 is the typical information in a

pre-processed file. It is noted that the water temperature was an input for each test condition. All the files for each run have been backed up, for future research work.

Underwater black and white photographs were obtained on approximately 85% of the runs. The camera was installed at mid-length of the tank and was triggered by an electronic sensor activated as the carriage ran over it. An underwater video camera was also tested, but proved to be not useful at the high velocity tests.

The load cell as well as the RVDT were calibrated periodically to check for any deviation that required the update of the calibration files, but this was never needed.

4.3.2 DATA ANALYSIS

After the underwater films were developed, each pre-processed data file was converted into the Series Data File. Each underwater photograph was interpreted to give values for the wetted length of the keel L_K and of the chine L_C . A computer program was written to read the raw data file, to input L_C and L_K , to compute the wetted surface area W_{SPH} and non-dimensional coefficients for each run, and to write a data file with the processed information.

4.3.3 TABULAR AND GRAPHICAL RESULTS

All the series data files and plots are included in Appendix B. The following is a description of the information contained on each table or graph.

a) Tabular Data.

For each model at a given L_{CG} position and thrust line, all the displacements tested are printed in the same table. Figure 4.7 gives the results for $L/B = 3.0$, $\beta = 12^\circ$, $L_{CG} = 25\%$

and thrust line through the centre of gravity. The page heading gives the main particulars for the model, i.e. model geometry and L_{CG} position. Each sub-heading gives the displacement data, V_{CG} position, static trim, and water properties.

After the sub-heading, test data including the dimensional results are presented:

V	Velocity (m/s)
R_T	Total Resistance (gms)
H	Sinkage (cm) where (+) means sinkage and (-) means rise
TAO	Relative trim (Degrees). This value is the difference between the static or zero velocity trim and the running trim.
L_C	Wetted length of the chine as read from the underwater photographs
L_K	Wetted length of the keel
W_{SPH}	Bottom wetted surface area as computed with L_C and L_K .

The coefficients are also included and calculated in non-dimensional terms of chine beam

B_{PX} :

C_V	Velocity Coefficient (Beam Froude Number)
C_T	Total resistance Coefficient.
R_T/W	Resistance/Displacement
H/B_{PX}	Non-dimensional sinkage.
TAO (Abs.)	= Static + Relative trim.
C_{WSPH}	Wetted area coefficient.

With this, four displacements tested for this condition, i.e. $C_D = 0.11, 0.15, 0.20$ and 0.25 , each with their own sub-heading of main particulars and run data, are printed in one table.

b) Graphical Results

All the non-dimensional coefficients for each table were plotted as five graphs in one figure. As indicated in Section 2.1.2, the coefficient C_v changes with time, so all other coefficients are plotted as a function of C_v . Figure 4.8 is an example to show how the data are plotted. The figure displays five graphs of C_v versus the five coefficients C_T , R_T/W , TAO, H/B and C_{WSPH} respectively.

In both tabular and graphical presentations, and whenever observed, porpoising was also recorded. In the case presented in Figure 4.8, at $C_D = 0.25$ and $C_v = 2.75$, the model presented this dynamic instability. The tabular data has an indication "*** Porpoising" after $C_v = 2.50$, and the plot displays the symbol **P** at the speed before which porpoising became evident.

4.4 REPRODUCIBILITY OF EXPERIMENTS

Once the series was completely tested, a check for reproducibility of results was performed to prove that after certain periods, the tests could be modelled and repeated, and the same results would be obtained. Note that reproducibility is not the same as repeatability. Reproducibility means try to re-create the same conditions at which a model was previously tested, such as W , L_{CG} , Velocity, etc, and obtain the same results; whereas repeatability means to perform the same test without having changed any parameter and obtain the same results. The model with $L/B = 3.5$ and $\beta = 18^\circ$ was chosen to be tested, with two centre of gravity locations and three displacements as indicated in Table 4.3 below:

Table No. 4.3 Test Conditions for Reproducibility

L/B	= 3.5		
β	= 18°		
$\frac{L_{CG}}{C_D}$		<u>30%</u>	<u>35%</u>
		0.15	0.15
		0.20	0.20
		0.25	0.25

Each condition was tested with thrust line passing through C.G. and five speeds for each case. Figure 4.9 gives the graphical results of these runs, where the solid line represents the original runs, and the hollow symbols represent the reproduced ones. It is observed that a very close agreement was obtained for resistance, trim and sinkage on all six conditions tested .

4.5 STANDARD DEVIATION ANALYSIS

An analysis of the standard deviation of data acquisition was carried out to determine the accuracy range of the series data. The four parameters velocity, resistance, sinkage and trim, were studied on all the runs performed for the model with a L/B of 3.5 and deadrise angle of 18°. All the deviation files were analyzed and the following results were obtained.

a) Velocity Standard Deviation

The velocity analysis presented a very small deviation in all of the 296 runs performed on the model. 274 of the runs were in the order of 0% to 1% in deviation, and only 12 gave a value in the order of 2%.

b).- Resistance Standard Deviation

In this case, 248 runs gave a deviation of 10% or less, concentrating mainly in the 2% to 6%. Only 12 runs gave a standard deviation above 10% of the average, and in every single case this happened at a C_v of 0.50.

c).- Sinkage Standard Deviation

From the total of runs, 259 data points showed a deviation below 10%, mainly in the range of 1% to 5%. Only in 37 cases the standard deviation was above 10%, of which 33 cases happened at a C_v 1.25 and 1.50.

d).- Trim Standard Deviation

For the trim angle analysis, in 262 cases the deviation was less than 10%, mainly in the order of 1% to 6%. In 34 cases the deviation was greater than 10%, of which 13 cases were at $C_v = 2.5$ to 2.75 , and the remaining 21 cases were at $C_v = 0.50$ and 0.75 . No case was observed in the range of $C_v = 1.0$ to 1.25 .

$$L/B = 4.0$$

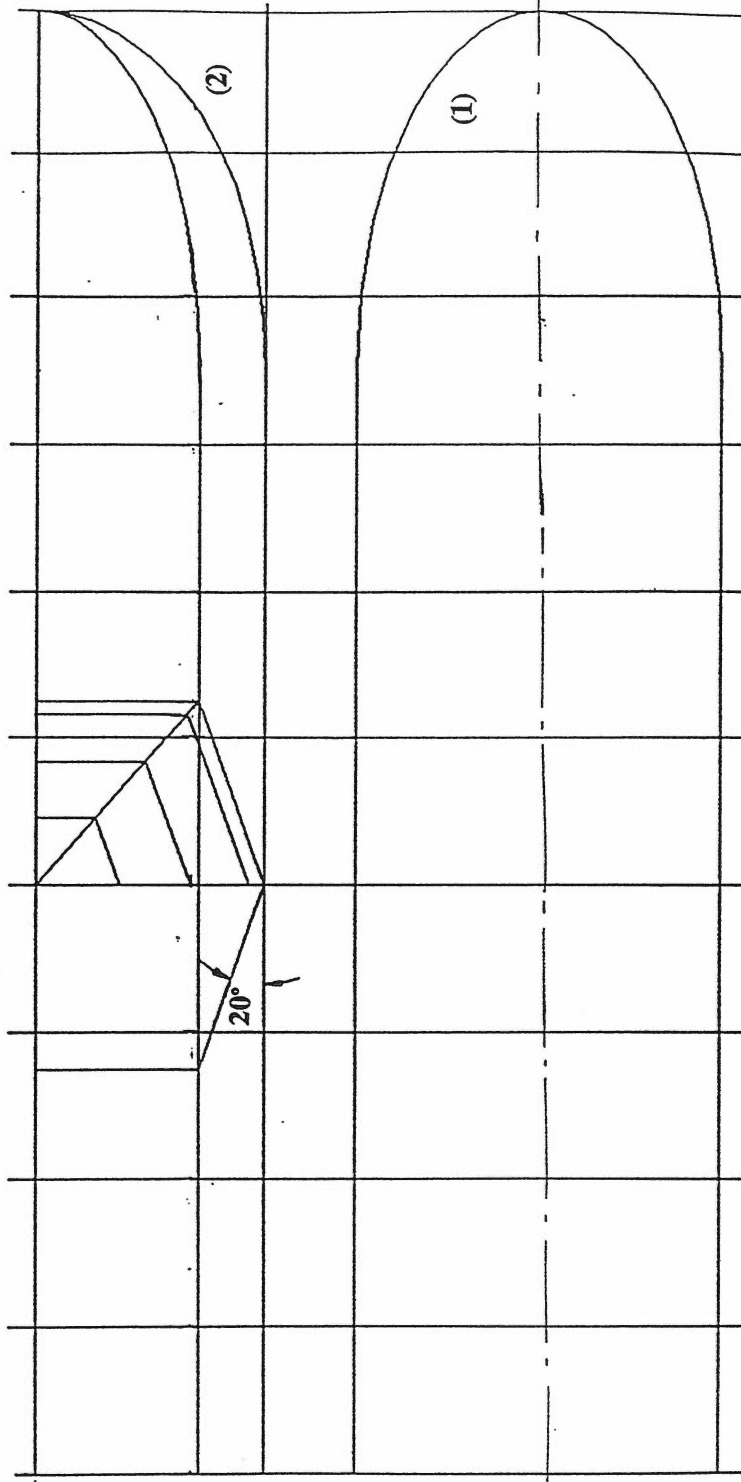
$$\beta = 20^\circ$$

$$L_{OA} = 36''$$

$$B = 9''$$

$$(1) (X/9)^2 + (Y/4.5)^2 = 1$$

$$(2) (X/9)^2 + (8Y/4.5)^2 = 1$$



4

Figure 4.1 Fridsma's Prismatic Hull

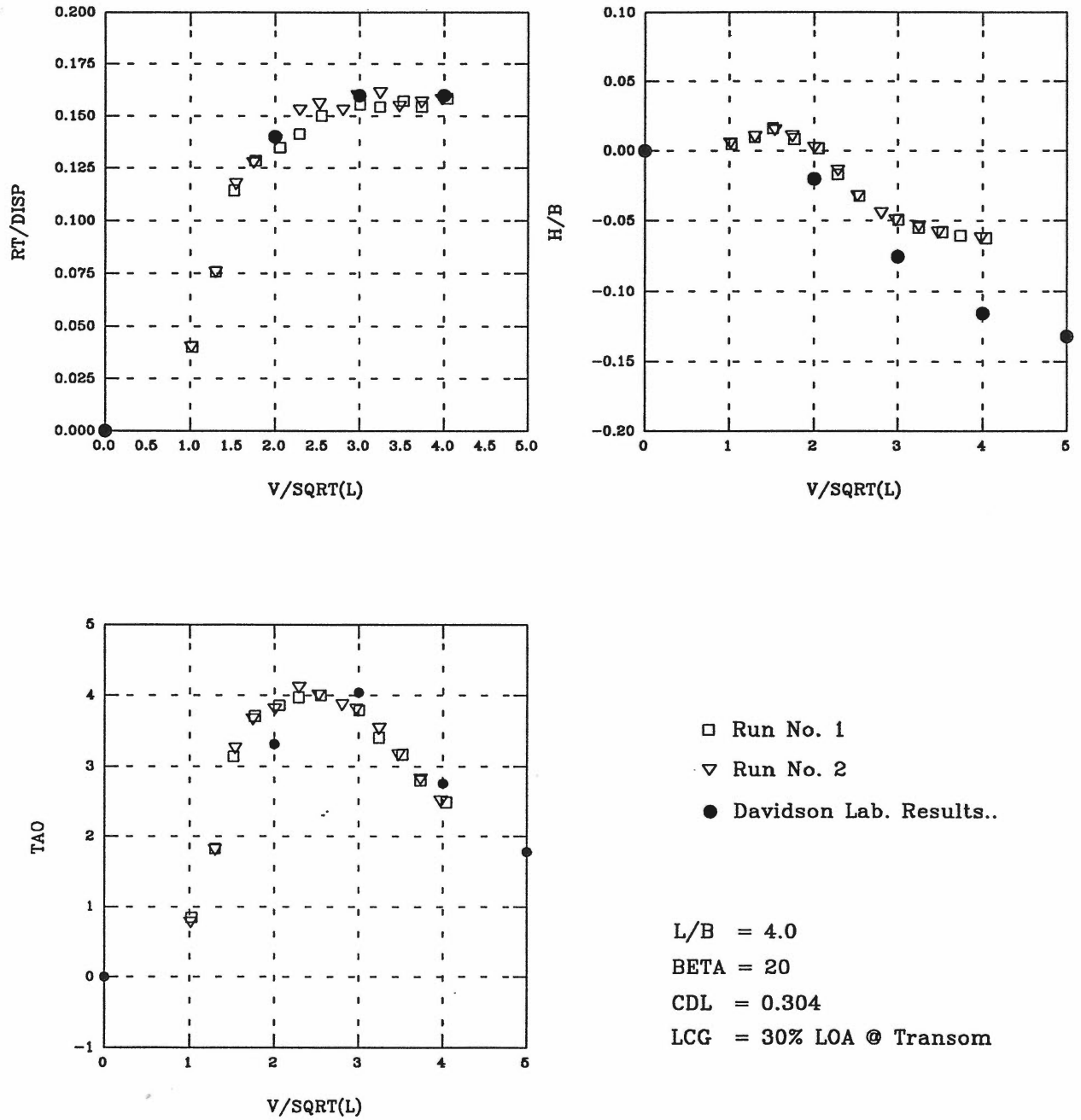


Figure 4.2 Towing Tank Calibration

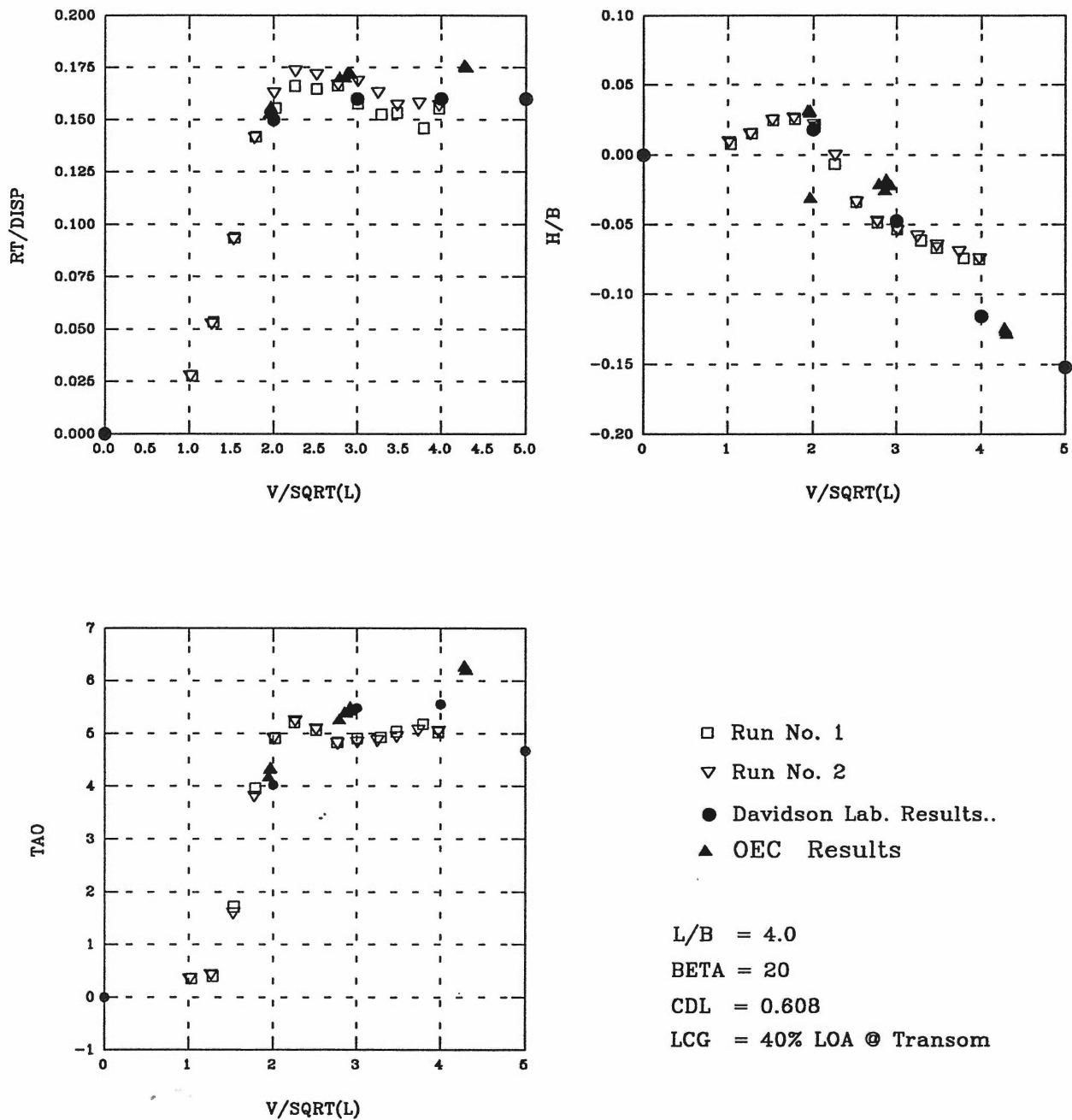
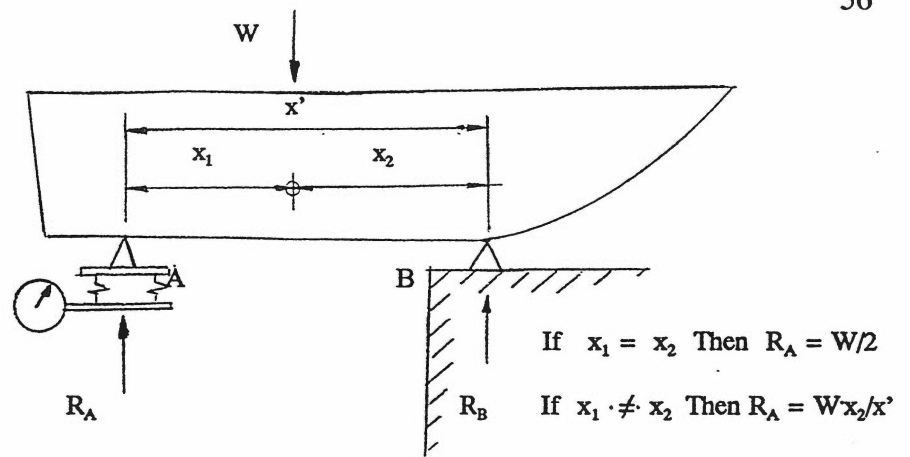
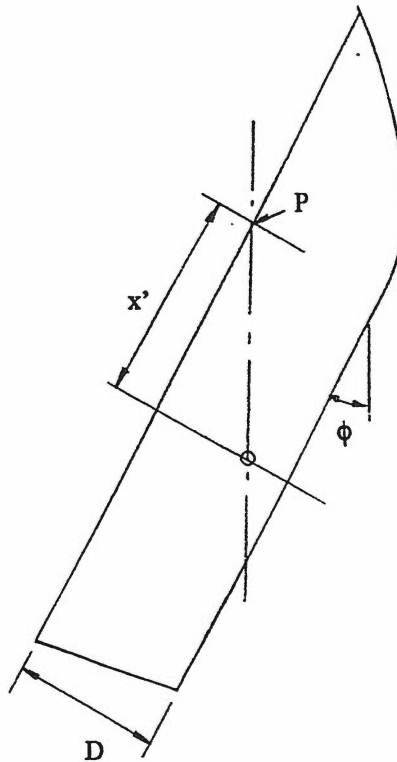


Figure 4.3 Towing Tank Calibration



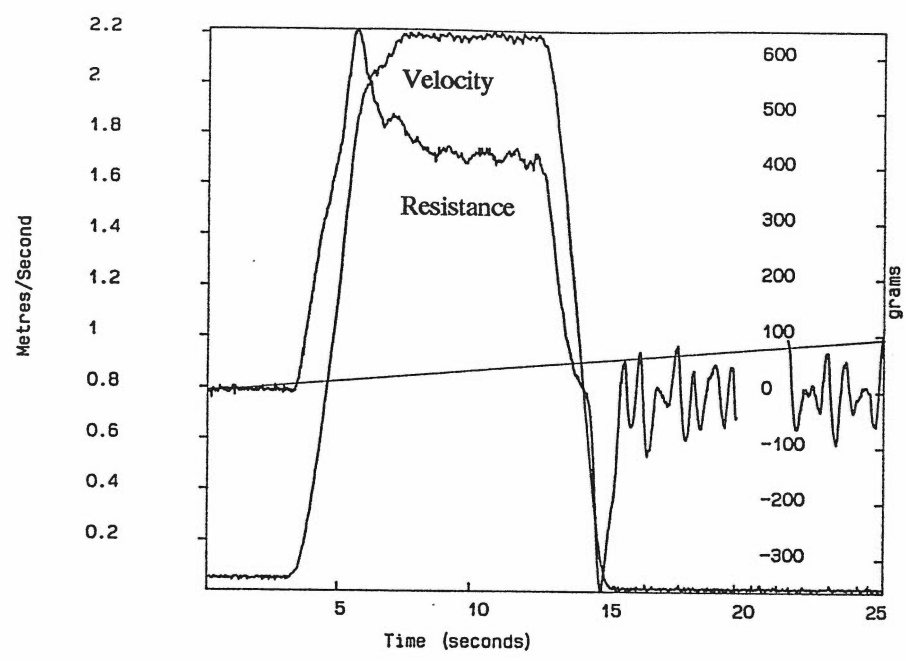
To obtain the desired L_{CG} , ballast the model until the desired W is obtained. Position the model as shown, and move the weights inside the model until R_A is obtained. R_A can be pre-determined as indicated in the figure.



To measure V_{CG} , hang the model from a fixed point P , measure the angle ϕ and compute:

$$V_{CG} = D - x' \tan(\phi)$$

Figure 4.4 Displacement and Center of Gravity Determination



Sinkage and Trim

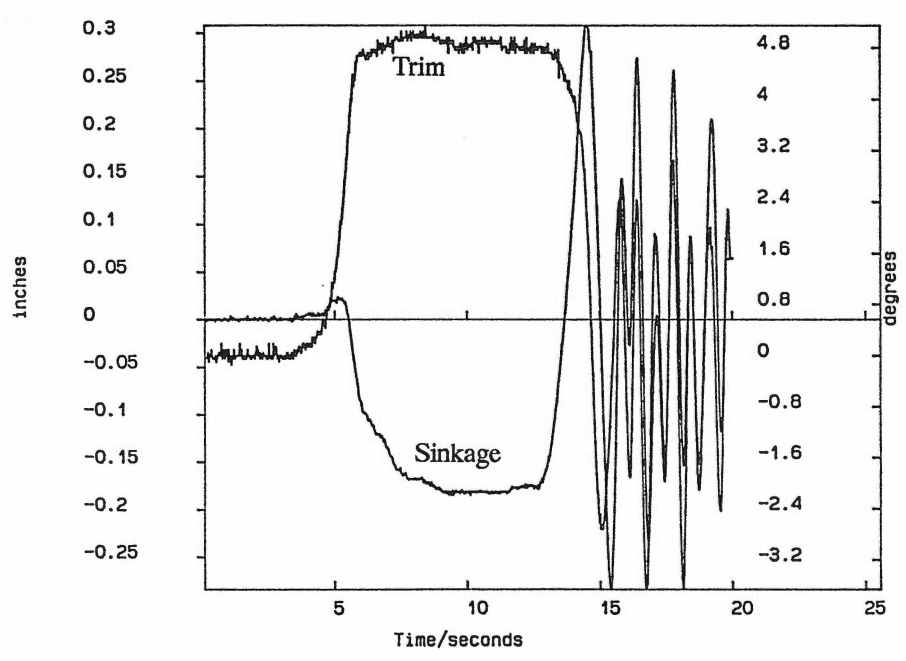


Figure 4.5 Raw Data Display Printout
(Time interval is determined from these images)

m 1 21 1324 23 997.540497 0.000932 9.347029e-007

Series T. September 2, 1992

Model and Water Parameters and Coefficients

Units (cm/feet): m , Scale Factor: 1
 Model Beam: 21 , Model Disp(gms): 1324
 Water Temp (deg C): 23 , Water Density (Kg/m³): 997.540497
 Water Viscosity: 0.000932 , Kinematic Viscosity: 9.347029e-007

Vel(m/s)	EVel(m/s)	Force(gm)	Heave(cm)	Pitch(deg)	Fn	Force/disp	Heave/beam
0.718062	0.721895	52.517471	0.026249	0.722639	0.500286	0.039666	0.00125
1.085014	1.091821	165.24469	0.05067	3.416215	0.755947	0.124807	0.002413
1.47071	1.46304	228.431183	-0.03343	5.332665	1.024667	0.172531	-0.001592
1.81984	1.813686	226.69838	-0.144734	5.39462	1.267912	0.171222	-0.006892
2.180472	2.19456	210.134232	-0.247004	4.263574	1.51917	0.158712	-0.011762
2.559242	2.551814	199.271347	-0.284859	2.956167	1.783065	0.150507	-0.013565
3.274605	3.275462	189.52655	-0.29075	1.192157	2.28147	0.143147	-0.013845
3.627017	3.59764	201.295715	-0.291474	0.537147	2.527001	0.152036	-0.01388
3.946524	3.918857	237.154755	-0.294013	0.214692	2.749607	0.17912	-0.014001

a .- Pre-Processed Data File

Vel,stddev	Frc,std	Frc,inter	Heave,std	Heave,intr	Pitch,std	Pitch,intr)
0.008283	4.638415	0.0166	0.002277	-3.76	0.072697	2.24158
0.01212	5.894955	0.0166	0.001021	-3.76	0.09388	2.24158
0.008908	6.348612	0.0166	0.001155	-3.76	0.093143	2.24158
0.011756	5.347516	0.0166	0.001257	-3.76	0.081386	2.24158
0.01302	13.856941	0.0166	0.004115	-3.76	0.083139	2.24158
0.014797	8.156363	0.0166	0.008495	-3.76	0.067772	2.24158
0.012082	16.714451	0.0166	0.004418	-3.76	0.080044	2.24158
0.020163	18.682917	0.0166	0.003865	-3.76	0.097508	2.24158
0.015147	20.481842	0.0166	0.003048	-3.76	0.089939	2.24158
0.019194	19.283854	0.0166	0.002998	-3.76	0.084444	2.24158

b .- Standard Deviation File

Figure 4.6 Raw Data Files Example

Model No. T-3012
 L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 12.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 25.00 % LOA 17.25 cm @ Transom

Displacement DIS 1324.0 gms Disp. Coeff. CDL 0.11
 VCG Position 25.13 % B 5.78 cm @ Base Line
 Static trim TAOo 4.10 deg
 Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm2	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
1.078	195.2	0.30	4.10	34.16	42.78	824.5	0.751	40.062220	0.147	0.014	8.20	1.870
1.458	290.3	-0.50	6.90	24.84	32.78	617.6	1.016	43.492170	0.219	-0.024	11.00	1.401
1.803	273.7	-1.34	6.31	20.36	27.60	514.1	1.256	32.194940	0.207	-0.064	10.41	1.166
2.172	249.8	-1.90	4.89	17.94	26.56	477.1	1.513	21.823380	0.189	-0.091	8.99	1.082
2.555	216.7	-2.11	2.90	15.40	25.99	443.7	1.780	14.705900	0.164	-0.100	7.00	1.006
2.907	203.5	-2.11	1.99	13.41	26.06	423.1	2.025	11.194150	0.154	-0.100	6.09	0.959
3.273	189.8	-2.08	0.97	11.52	26.67	409.4	2.280	8.514046	0.143	-0.099	5.07	0.928
3.628	201.5	-2.01	0.13	9.87	27.80	403.8	2.528	7.455128	0.152	-0.096	4.23	0.916
3.957	242.0	-1.96	-0.14	8.63	29.33	406.8	2.757	7.468892	0.183	-0.093	3.96	0.923

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 25.57 % B 5.88 cm @ Base Line
 Static trim TAOo 5.29 deg

Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.086	271.6	0.36	4.30	34.50	43.13	831.9	0.757	54.41037	0.149	0.017	9.59	1.886
1.449	510.8	-0.61	8.85	27.12	28.64	597.7	1.009	80.10178	0.280	-0.029	14.14	1.355
1.812	472.5	-1.88	8.20	21.39	26.91	517.8	1.262	54.69332	0.259	-0.089	13.49	1.174
2.182	417.2	-2.41	6.05	17.46	26.01	466.0	1.520	36.98385	0.229	-0.115	11.34	1.057
2.561	339.1	-2.82	3.74	15.53	25.88	443.8	1.784	22.91281	0.186	-0.134	9.03	1.006
2.918	301.5	-2.83	2.09	13.80	26.56	432.7	2.033	16.09876	0.165	-0.135	7.38	0.981
3.285	278.3	-2.75	1.24	12.77	29.67	454.9	2.288	11.15254	0.153	-0.131	6.53	1.032
3.629	265.6	-2.52	0.15	8.63	30.36	417.9	2.528	9.48877	0.146	-0.120	5.44	0.948

** Porpoising

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.20
 VCG Position 26.35 % B 6.06 cm @ Base Line
 Static trim TAOo 6.99 deg
 Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm2	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
1.079	358.2	0.33	4.71	36.57	43.47	855.9	0.752	70.658950	0.147	0.015	11.70	1.941
1.455	860.2	-0.69	11.58	27.60	31.74	636.1	1.014	125.646900	0.354	-0.033	18.57	1.44
1.805	832.8	-2.25	10.81	23.11	27.60	543.7	1.257	92.496540	0.342	-0.107	17.80	1.233
2.174	688.7	-3.33	7.66	20.70	25.88	499.3	1.515	57.379550	0.283	-0.158	14.65	1.132
2.551	543.8	-3.76	4.50	18.97	25.19	473.4	1.778	34.708190	0.224	-0.179	11.49	1.073
2.921	455.1	-3.49	2.34	17.25	25.32	456.4	2.035	22.988410	0.187	-0.166	9.33	1.035
3.291	373.0	-3.68	0.79	15.53	25.53	440.1	2.293	15.385920	0.153	-0.175	7.78	0.998

** Porpoising

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.25
 VCG Position 25.91 % B 5.96 cm @ Base Line
 Static trim TAOo 7.90 deg
 Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm2	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
1.081	429.7	0.34	4.99	37.95	45.20	887.8	0.753	81.455480	0.141	0.016	12.89	2.013
1.448	1184.3	-0.44	11.49	30.02	33.81	684.1	1.009	162.395800	0.389	-0.021	19.39	1.55
1.794	1101.9	-2.02	9.99	27.60	30.70	625.0	1.250	107.773200	0.362	-0.096	17.89	1.41
2.166	1010.2	-3.74	7.93	22.77	27.25	536.3	1.509	78.932640	0.332	-0.178	15.83	1.216
2.519	804.1	-4.58	5.33	20.36	25.53	491.9	1.755	50.660590	0.264	-0.218	13.23	1.115
2.897	652.3	-4.34	2.66	18.29	24.50	458.6	2.019	33.324460	0.214	-0.207	10.56	1.040
3.252	586.8	-4.57	-0.02	17.25	26.91	473.4	2.265	23.056260	0.193	-0.218	7.88	1.073

** Porpoising

L/B = 3.0 ; $\beta = 12^\circ$; $L_{CG} = 25\%$ From transom ; Thrust Line : Center of Gravity

Figure 4.7 Series Tabular Data Format

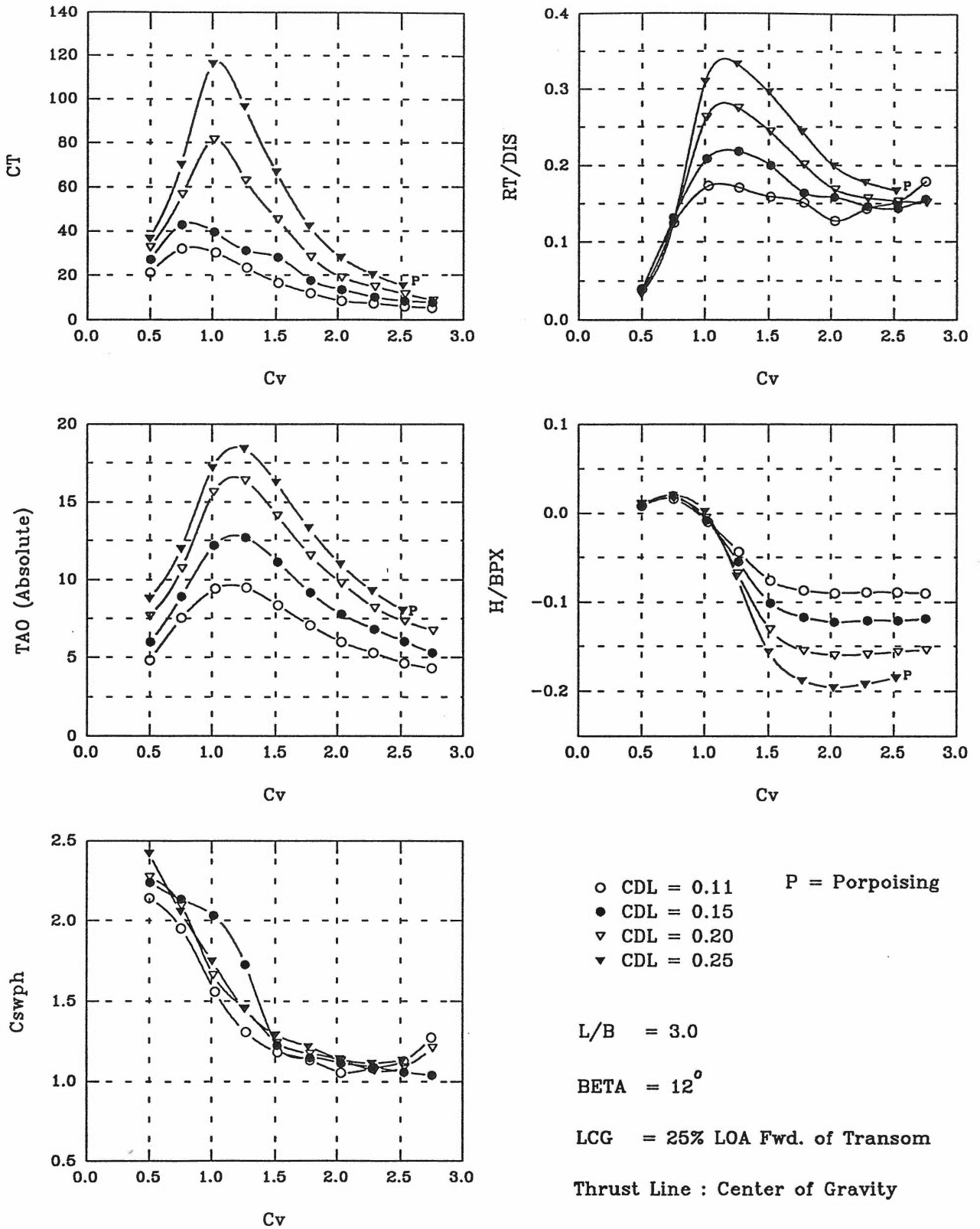
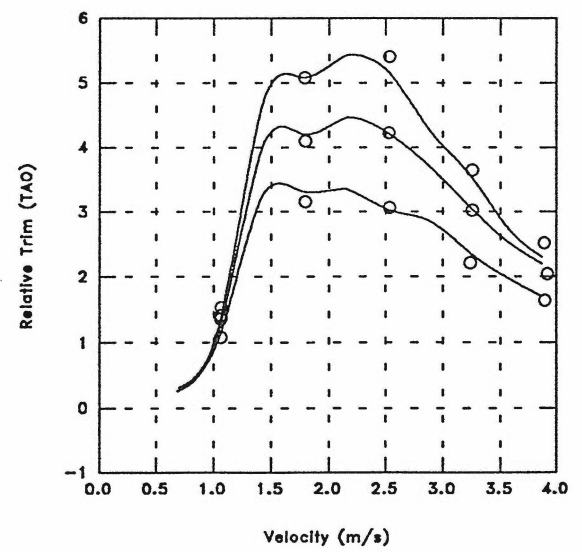
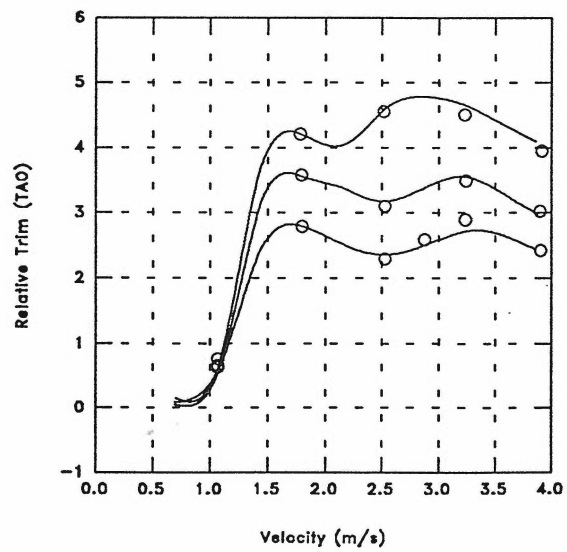
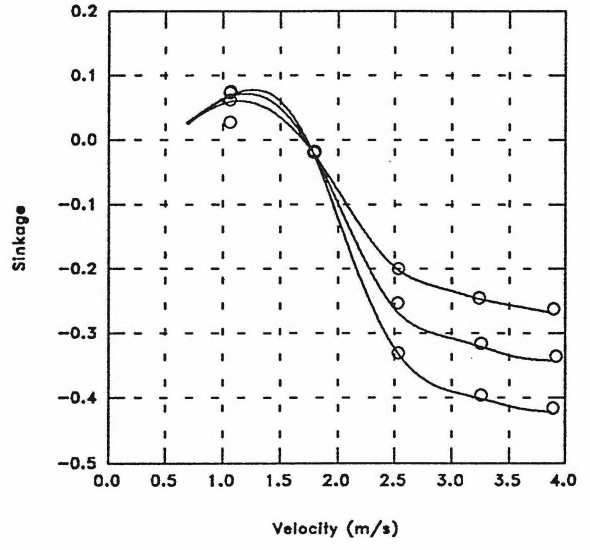
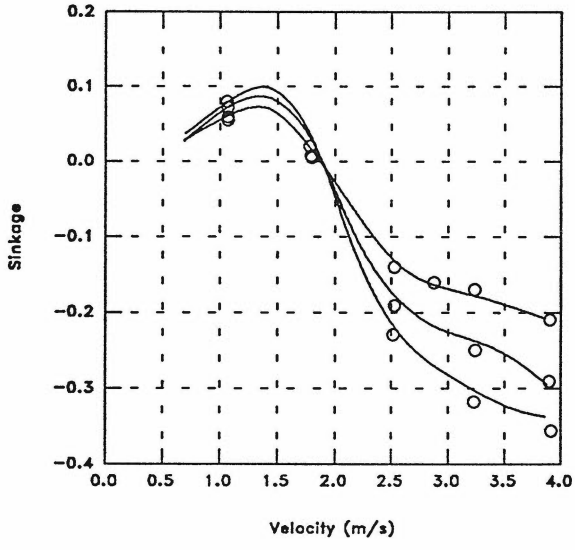
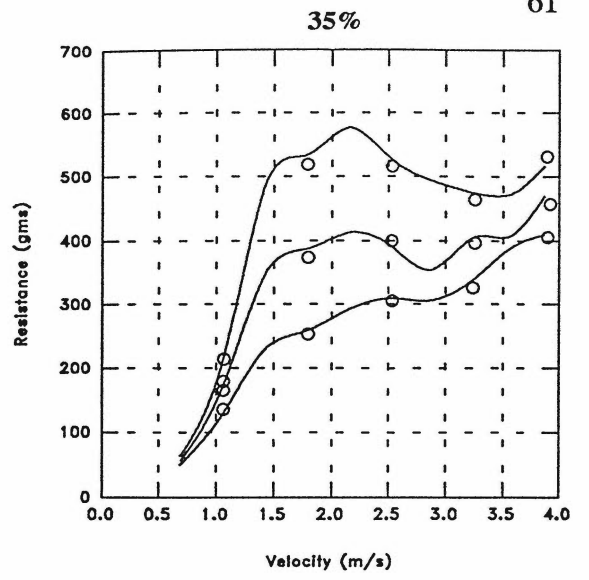
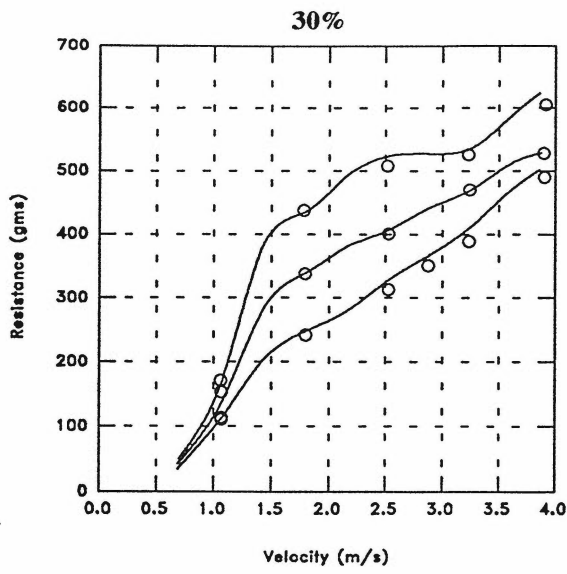


Figure 4.8 Series Graphical Format



— Original Data ○ Reproducibility Runs

Figure 4.9 Reproducibility Runs. $L/B = 3.0$; $\beta = 18^\circ$; $L_{CG} = 30\%$ and 0.35%

5.0 DISCUSSIONS OF THE RESULTS

The testing of a systematic series will always raise the question of the need for this type of information, given that existing statistical and empirical prediction methods, as well as computational methods can predict the performance of marine vehicles to a certain extent. This experimental work was still required considering that:

- a) Numerical or statistical methods rely on experimental data to define curves, patterns, empirical formulas and their related coefficients. On a review of some existing methods, it was observed that various methods had been developed by considering the work addressed in Section 1.0, as well as results from earlier work [13,27], and in some cases there has been an amalgamation of planing, semi-displacement, hard chine and round bottom hulls series to develop these methods [22,26]. Incorporation of new data, based on newer hull shapes is advisable in order to update or redefine coefficients and equations,
- b) Computational methods will always require experimental data for validation. Still now there are conditions that have not been solved and must be approximated by linear theory.

It is considered that this series can provide services to research, academia and industry by presenting the data in simple tabular and graphical forms that may allow naval architects and researchers to predict performance of their new designs, giving quantitative data which are available to create new methods or to update existing prediction methods, and to validate numerical and theoretical methods and models, and introducing qualitative patterns and trends that

of planing craft and the effect of the hull parameters and proportions; or to improve and optimize designs.

5.1 DATA RELIABILITY

The question of the towing tank size and the reliability of results had to be addressed and answered to ensure that the results could be used with a good level of confidence.

From the results obtained during the tank calibration, Section 4.1, it is noted that testing a model of identical size, and as far as possible reproducing the experiment conditions, gave practically the same results as the Davidson Laboratory at the Stevens Institute of Technology. The results indicate that high speed tests can be performed in the small tank facilities to obtain reasonably reliable results.

5.2 SERIES RESULTS

As obtained from Table 4.1, testing nine models with a total of 210 conditions produced the final results of the series. Intensive analysis and cross reference will be needed to obtain definite quantitative values as well as qualitative patterns and trends. Nevertheless, some initial findings must be discussed here:

5.2.1 DISPLACEMENT TO PLANING RANGE TRANSITION

Many runs were video recorded with the camera installed in the rear end of the carriage. Close observation to the transom showed that it always ventilated between $C_v = 0.75$ to 1.0. This value seems to be slightly higher than the value of $C_v = 0.5$ indicated by Savitsky and Brown [28].

5.2.2 RESISTANCE CURVES

The resistance coefficient curves show in all cases a very uniform family of curves for all displacement conditions. The hump is very easily distinguished, and it is important to observe that once in the planing range, the C_T curves tend to converge to the same value regardless the displacement.

The displacement and pre-planing ranges of the R_T/W curves show a clear hump, very much dependent on the displacement. But once in the planing range for C_v greater than 1.50, the curves cross to each other, and the high C_D conditions give a lower R_T/W value, meaning that it becomes more efficient in terms of power/displacement. These indications could be useful in determining the overall efficiency of designs and for optimizing powering and propulsion systems.

It is noted that at very low C_D values, and in almost all the conditions tested, the R_T/W curve is very unstable. The curve seems to be oscillatory and could give indications of potential problems in propulsion system design and performance prediction, although it needs to be further investigated.

5.2.3 TRIM ANGLE CURVES

The trim angle curves also display a uniform family of curves in most graphs. The maximum angle occurs in the proximity of $C_v = 1.5$. As already described by others, there is a very close relation between the trim angle and the total resistance. It is also noted that under certain load conditions a double hump occurs in the trim angle, which seems to be dependent on L_{CG} and L/B ratio. It is clearly observed at $L_{CG} = 35\%$ from the transom and $L/B = 3.5$ and to a lesser extent at $L/B = 3.0$. As the L_{CG} moves aft to 30% and 25%, or $L/B = 2.5$, it tends to disappear.

5.2.4 SINKAGE CURVES

In almost all the cases the sinkage of the centre of gravity became negative (rise) at a C_v between 1.0 and 1.25. This range agrees well with the ranges stated by Savitsky and Brown [28]. It is noted that this transition from sinkage to rise is independent of τ , L/B , β and W . It can be seen that the transition happens at the same value for each condition tested on all the displacements, and that in all the cases at a C_v in the order of 2.0, the rise of the centre of gravity is constant, i.e. there is practically no rate of change, but it is noticed that the gradient in trim angle and resistance is still significant.

5.2.5 WETTED SURFACE CURVES

The wetted surface area coefficient C_{WSPH} in all the conditions tested is observed to follow not only the same family, but also the same values regardless the displacement. In the same manner that the sinkage becomes stable at C_v in the order of 2.0, the wetted surface coefficient, C_{WSPH} , seems to become constant at this same C_v value.

5.2.6 PORPOISING CONDITIONS

This is one of the several dynamic instabilities on high speed planing mono-hulls, and is characterized by a pitch motion in calm water, of increasing frequency and amplitude, which is very uncomfortable for crew and passengers, and it can cause severe structural and systems damage, if not a total loss of the vessel. Several authors have addressed this topic and work has been performed since several decades ago, such as [3], [10], [21], [25] and [27] among others.

Table 5.1 is a summary of the conditions at which porpoising was recorded in all the tests. However, other conditions most probably would have shown this instability if higher speeds had

Table 5.1 is a summary of the conditions at which porpoising was recorded in all the tests. However, other conditions most probably would have shown this instability if higher speeds had been possible to achieve in the towing tank.

Table No. 5.1 Summary of Porpoising Conditions.

<u>L/B</u>	<u>β</u>	<u>L_{CG}</u>	<u>C_D</u>	<u>C_v</u>	<u>Thrust Line</u>
2.5	12	25%	0.10	2.75	C.Gravity
2.5	12	25%	0.15	2.25	C.Gravity
2.5	12	25%	0.20	2.25	C.Gravity
2.5	12	25%	0.10	2.00	B.Line
2.5	12	25%	0.15	2.00	B.Line
2.5	12	25%	0.20	2.00	B.Line
3.0	12	25%	0.25	2.75	C.Gravity
3.0	12	25%	0.15	2.75	B.Line
3.0	12	25%	0.20	2.50	B.Line
3.0	12	25%	0.25	2.50	B.Line
2.5	18	25%	0.15	2.25	B.Line
2.5	24	25%	0.20	2.00	C.Gravity
2.5	24	25%	0.20	2.25	B.Line
3.0	24	25%	0.25	2.25	B.Line

It is clear that the L_{CG} has a major influence in this instability, only at 25% L_{OA} porpoising was observed. The L/B ratio also seems to be important, it was observed at a L/B of 2.5 and in some cases at L/B of 3.0, but never at L/B of 3.5. The deadrise angle had an influence, most cases occurred on the $\beta = 12^\circ$ models. The thrust line location also has an effect on this instability. If porpoising was observed for a certain condition with the thrust line through the centre of gravity, in most cases it would be observed for the thrust line passing through the base line at a lower C_v value.

5.3 PRELIMINARY CROSS ANALYSIS OF THE DATA

In a preliminary cross analysis of the series certain pattern effects have been observed and must be mentioned here, but they should not be considered as definite conclusions until a further

extensive analysis is performed.

The series data should be cross-analyzed in all combinations of the main variables of the hulls to determine definite patterns and trends. There are a great number of possible combinations of variables, and in several cases analyzed the following observations are made:

5.3.1 EFFECT OF THE CENTRE OF GRAVITY LOCATION

Figure 5.1 is an example of the effect of the position of the centre of gravity, when C_D , L/B and β remain constant. It is noted that the C_T curves are significantly higher for the L_{CG} at 25% from transom, and reduces significantly as L_{CG} moves forward to 30% and 35%. The trim angle also displays this behaviour. The rise of the centre of gravity is also higher as L_{CG} is aft, and reduces as L_{CG} moves Forward.

5.3.2 EFFECT OF THE L/B RATIO

Figure 5.2 presents a case when L_{CG} , β and C_D remain constant, and L/B is the variable. Very clearly, the slenderer models have lower C_T values, lower the trim angles, and lower rise in the centre of gravity. This may mean that for a given displacement, if there is no restriction in the L/B Ratio, it seems to be preferable to select higher L/B ratios.

5.3.3 EFFECT OF THE THRUST LINE

The effect of the thrust line is presented in an example of Figure 5.3. In the cases studied, it was noted that when the thrust line passed through the centre of gravity, the C_T curve seemed to be lower than the case with the thrust line through the base line. However, at the planing speed, it was always determined that the C_T curve for the base line condition became lower than the centre

of gravity condition. In the cases studied, this change occurred typically in the range of 1.25 to 2.25. The trim angle in the same manner would cross, which explained why the C_T values became lower. But this change most of the time happened at lower C_v than the C_T change. The raise of the centre of gravity seemed to be always smaller in the centre of gravity condition.

This type of combination analysis, as well as others, such as effect of deadrise angle, etc. will be required for the series. Once completed, a better understanding on the performance of planing hulls may be acquired.

5.4 REPRODUCIBILITY RESULTS

This part of the work indicates that the experiment can be reproduced if the conditions and all the required information is recorded and supplied. In fact, during the test of the models with 24° in deadrise, the load cell was permanently damaged. A new cell was installed, calibrated and the test continued. In this way, the reproduction runs were performed with a new load cell. It was observed on Figure 4.9 that practically the same results were obtained.

5.5 ERROR ANALYSIS RESULTS

The standard deviation in the runs were analyzed to explain whenever the deviation exceeded 10%. After reviewing the data it was determined that:

- a) The resistance deviation exceeded 10% only at $C_v = 0.50$, and this is the displacement range of the towing. The typical resistance was in the order of 30 to 100 gms. The deviation values for the resistance at this speed were in the order of 3 to 15 gms, which

are a relatively small value, but when compared to relatively low resistance, it gave a relatively high deviation.

b) The sinkage was observed to have deviations up to 80% at speeds where $C_v = 1.25$ to 1.50. This was the transition zone, where $H \approx 0$, and the deviation in these cases was noted to be in the order of tenths of millimetre. Although for such relatively low values, the deviation can certainly represent a large percentage when $H \approx 0$. It can be considered that these deviations are irrelevant.

c) The high trim angle deviations occurred at low and high C_v values. These cases are considered similar to the resistance deviations. The resulting relative trims at such speeds are relatively small, so any variation above 0.1 to 0.3 degrees, typical in such cases, may represent a very high deviation, although a small relative value.

In an overall sense, it may be considered that the deviation of acquired data of the series is within good ranges or may be considered irrelevant.

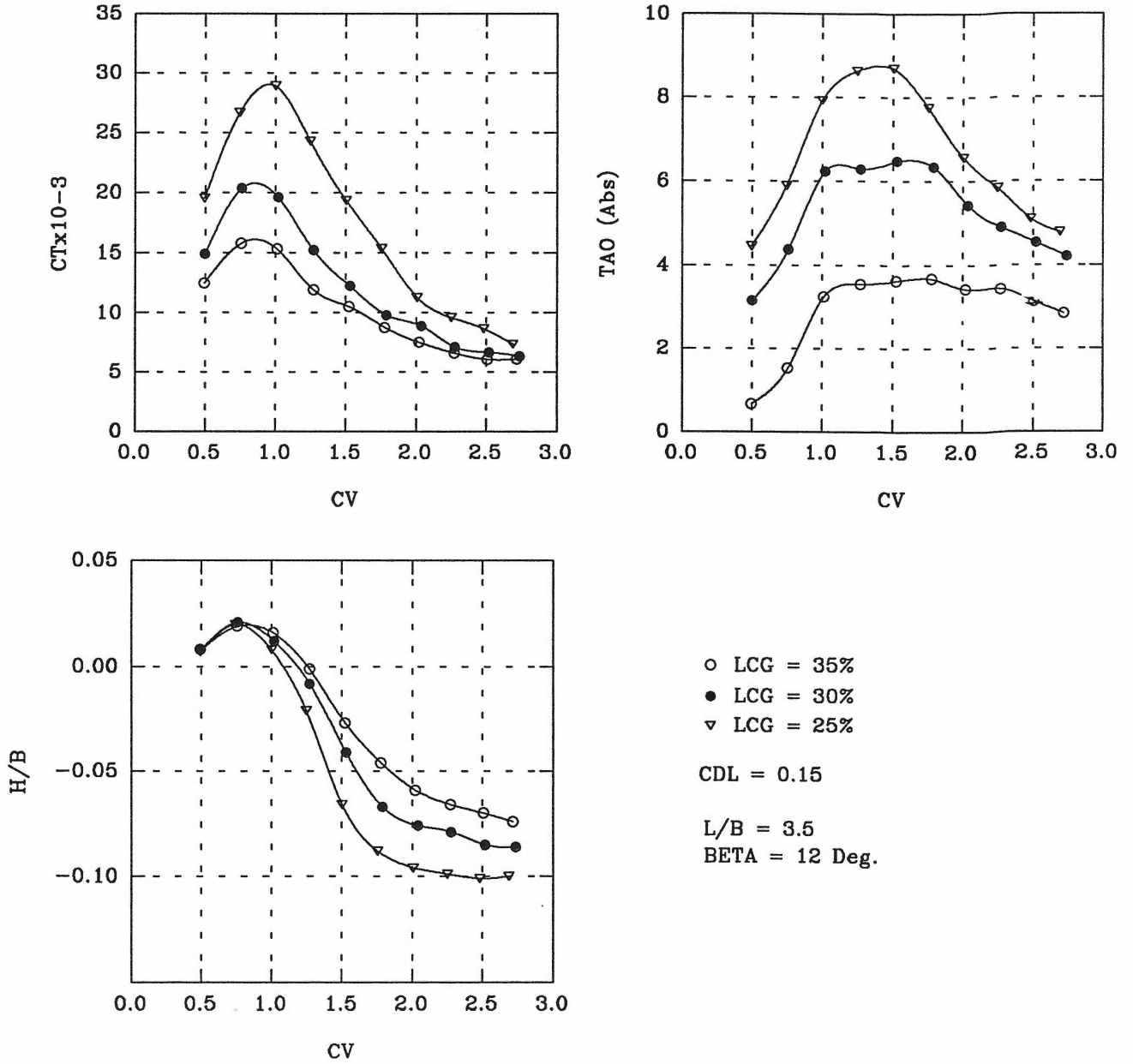


Figure 5.1 Effect of L_{CG} Position

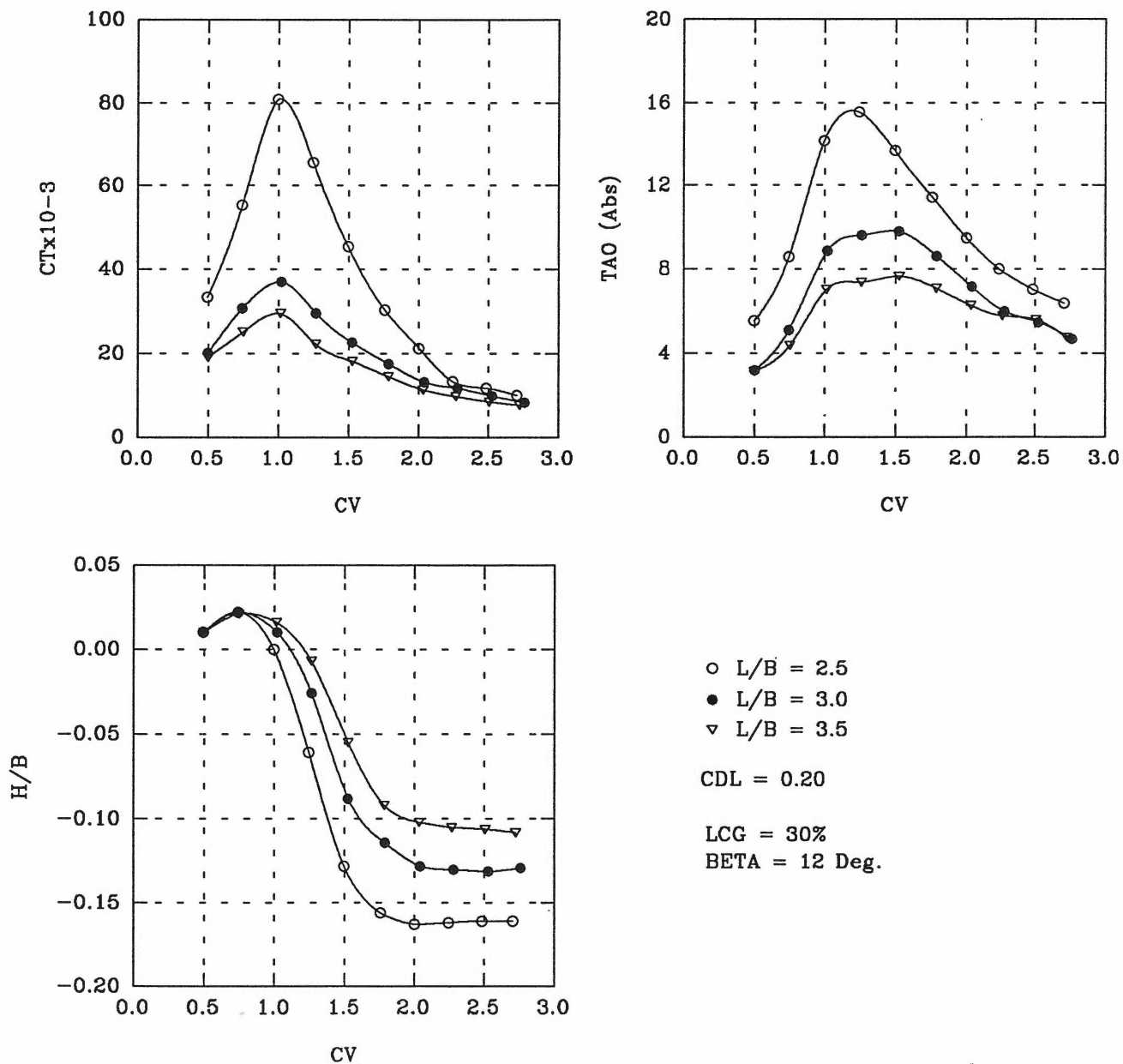


Figure 5.2 Effect of L/B Ratio

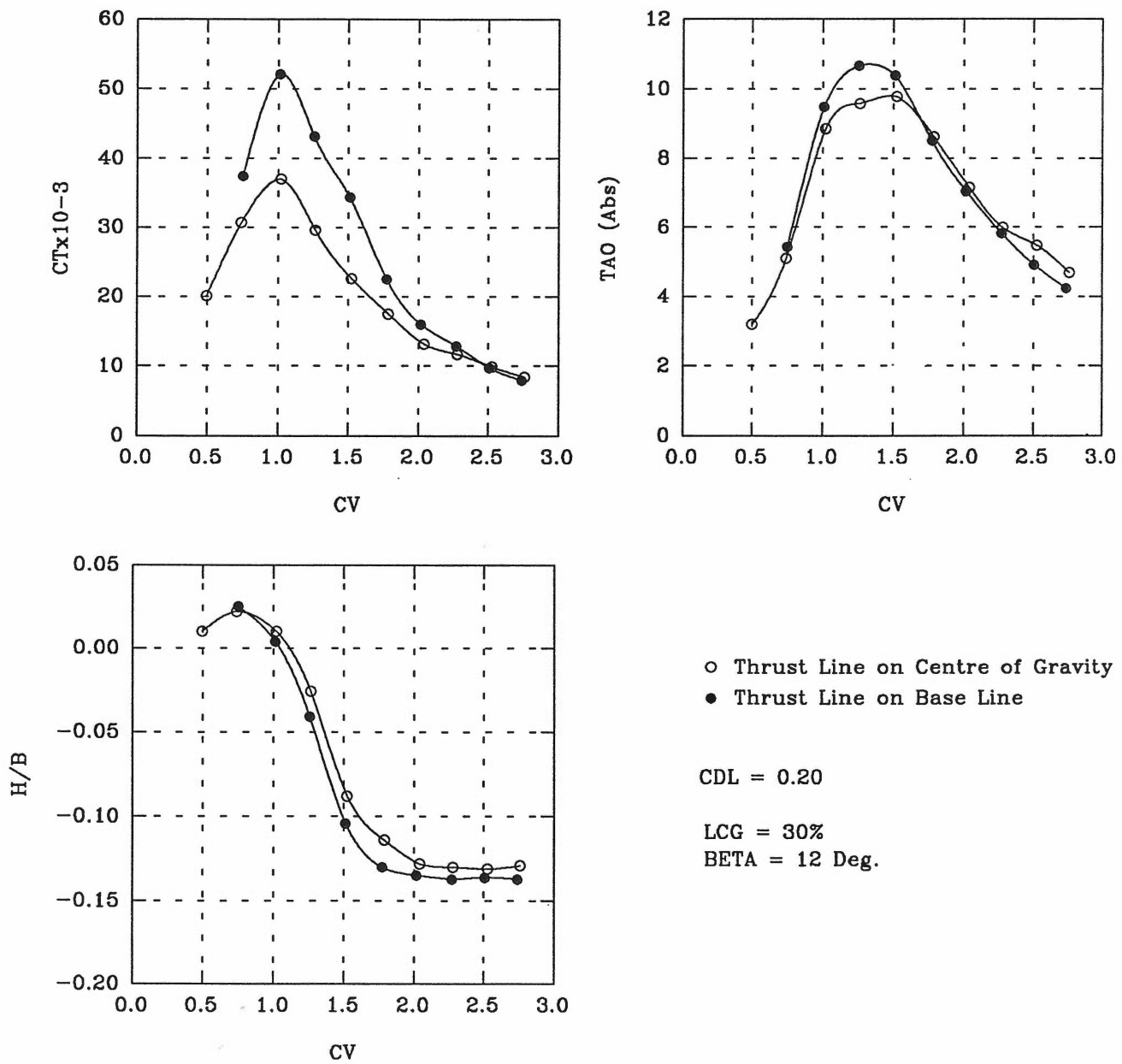


Figure 5.3 Effect of Thrust Line

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the review of existing experimental work, it is found that the small high speed planing mono-hull has not been completely represented by the available series. Therefore, a new series of planing hulls was designed and developed, based on the geometry of typical modern day existing designs. Nine models were built to represent small high speed craft with L/B ratios of 2.5, 3.0 and 3.5, and deadrise angles of 12°, 18° and 24°, representing patrol boats, rescue craft, fast fishing boats and pleasure craft, among others. The series was tested only in calm water for a range of displacement, centre of gravity location, thrust line and velocity determined from an analysis of existing hulls and recommendations set by other researchers, with a total of 2,500 runs approximately at 210 test conditions over a time period of approximately 8 months.

The TUNS Towing Tank has proved to give reliable results for testing high speed hulls of small craft, based on the comparison with experiments performed at other reputable experimental facilities.

The data acquisition was very constant, and a high level of repeatability was obtained as observed from the tank calibration results. Several conditions were reproduced after a period of time, and excellent results were obtained. Underwater photographs gave very good results. Video recording systems were of great help in the determination of porpoising, and the displacement to planing transition range of speeds.

Turbulence stimulation was provided by means of Hama strips installed at Station 4 on all the hulls. This configuration was chosen after testing several conditions on the parent hull. Hama

strips seem to be adequate for high speed model testing.

Data are presented in tabular and graphical forms and are readily available for further work, design or research. The following is a list of additional investigation that is considered needed for future research of this series:

- A complete cross analysis of the data, similar to the figures discussed in Section 5.3 should be performed to obtain qualitative patterns of the small planing hull with low L/B ratios.
- A prediction method can be developed for this series exclusively to represent the low L/B values and deep vee hulls. This method could be manually based on interpolation over the curves, and/or statistically based on regression analysis of the data.
- Existing prediction methods can be re-defined or re-analyzed to include or update coefficients or equations that may seem relevant from this work.
- Lift coefficients must be evaluated, and this may be done by evaluating the rise of the centre of gravity and the change of the trim angle.

Additional future experimental work with these models is recommended as:

- a study of the effect of the size and number of lifting or spray strake, and

- selecting the "best" calm water conditions for each model, and then testing such conditions in regular or irregular waves.

Other suggested investigations may include an evaluation of the porpoising conditions observed during this work and a comparison to limits determined by other researchers, and a possible re-definition of these limits.

Although the tank calibration gave good results as compared with results obtained by the Davidson's Laboratory, following the recommendations of the 19TH ITTC, it is worthwhile to investigate further the effects of the tank size on the testing results, i.e. shallow water and tank wall effects in the displacement range of speeds, and aerodynamic effects in the planing range. Turbulence stimulation devices for high speed small models should also be further studied.

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APPENDIX A LINES AND OFFSETS FOR THE SERIES MODELS

(Note: Station 6 to 10 have the same offsets)

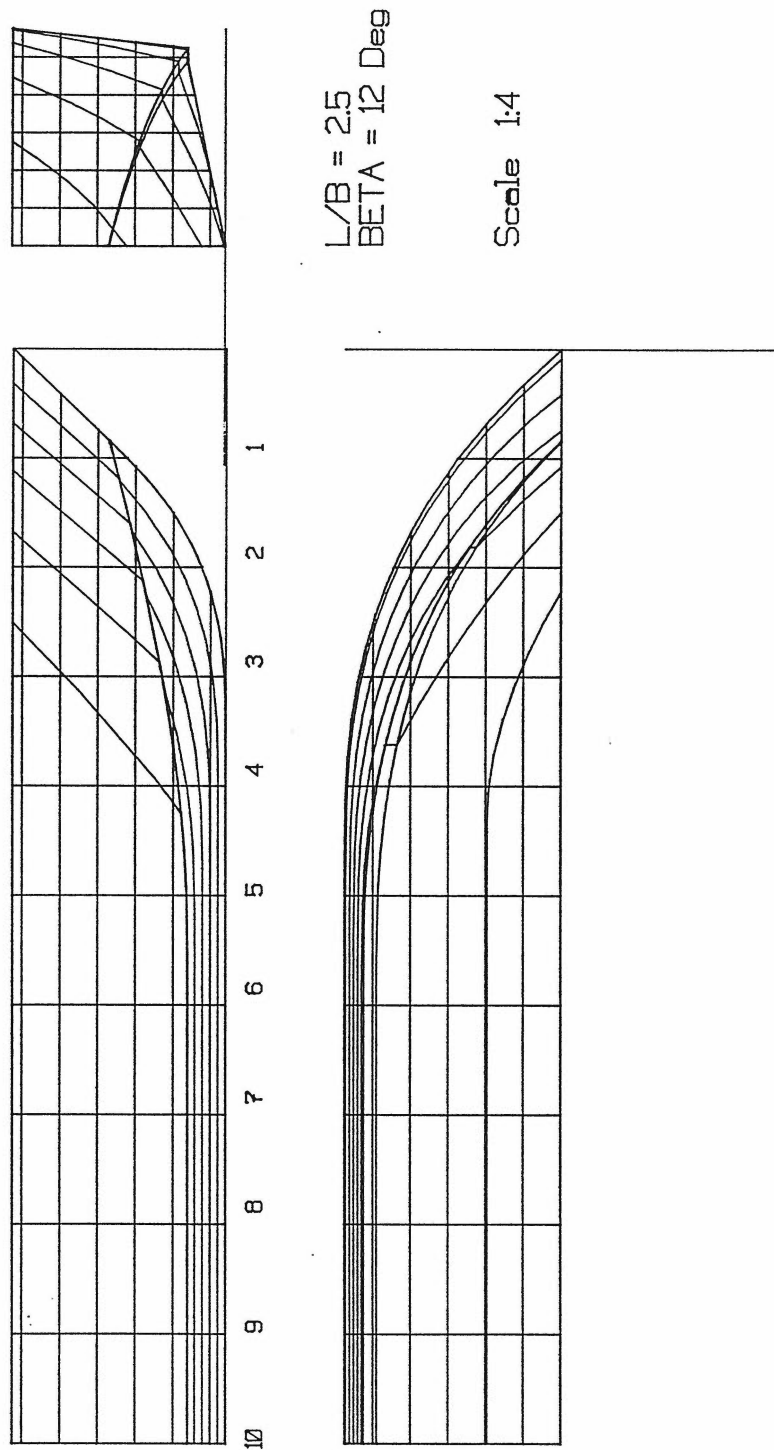


Figure A.1 Lines Plan L/B = 2.5 ; $\beta = 12^\circ$

Table A.1 Hull Offsets. L/B = 2.5 ; $\beta = 12^\circ$

L/B = 2.5 BETA = 12 Deg.

Station = 1.00 Xposition = 0.0575
 Sheer Line Height = 0.1130 Half-Breadth = 0.0550
 Chine 1 Height = 0.0596 Half-Breadth = 0.0096
 Chine 2 Height = 0.0596 Half-Breadth = 0.0089
 Buttock 0.0000 Height = 0.1120

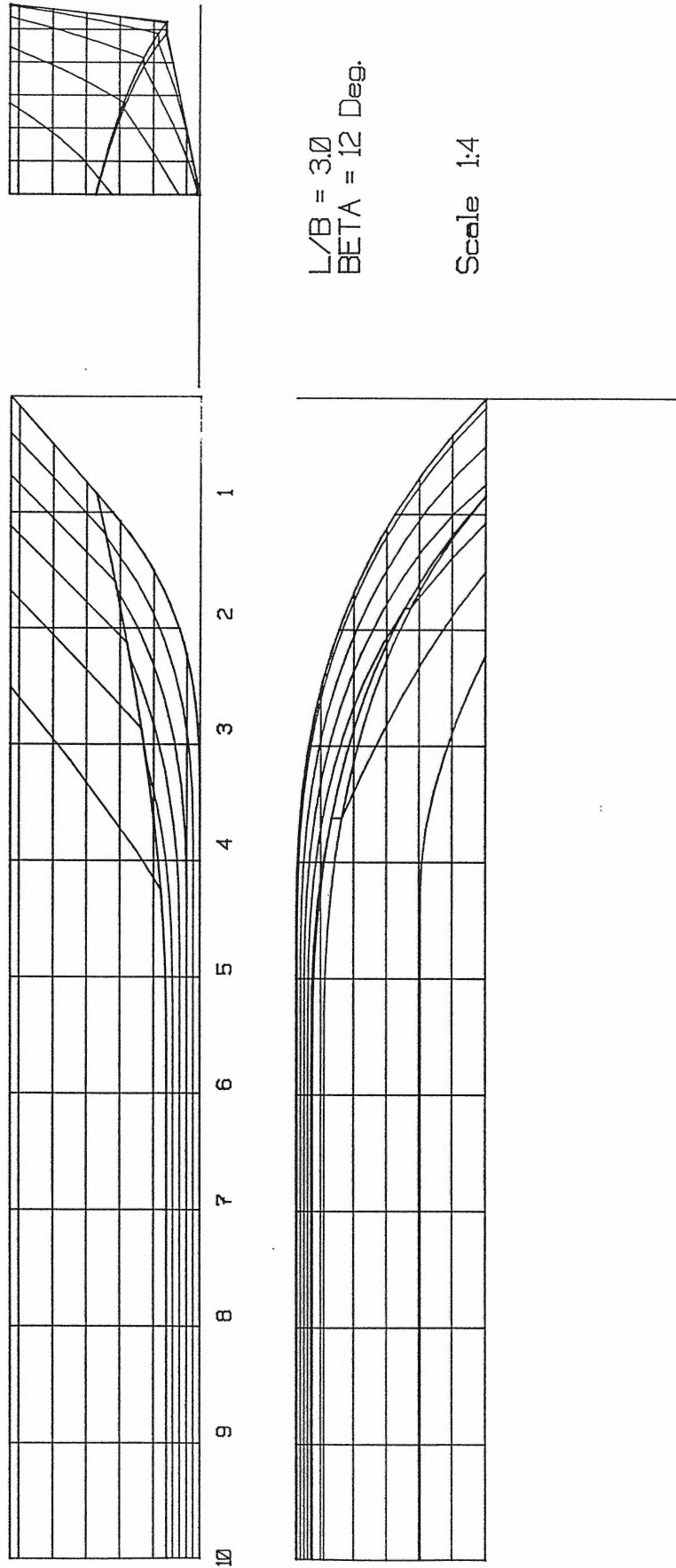
Station = 2.00 Xposition = 0.1150
 Sheer Line Height = 0.1130 Half-Breadth = 0.0891
 Chine 1 Height = 0.0455 Half-Breadth = 0.0557
 Chine 2 Height = 0.0455 Half-Breadth = 0.0520
 Waterline 0.0280 Half-Breadth = 0.0255
 Waterline 0.0480 Half-Breadth = 0.0572
 Waterline 0.0680 Half-Breadth = 0.0686
 Waterline 0.0880 Half-Breadth = 0.0783
 Waterline 0.1080 Half-Breadth = 0.0870
 Buttock 0.0000 Height = 0.0125
 Buttock 0.0200 Height = 0.0245
 Buttock 0.0400 Height = 0.0374
 Buttock 0.0600 Height = 0.0525
 Buttock 0.0800 Height = 0.0918

Station = 3.00 Xposition = 0.1725
 Sheer Line Height = 0.1130 Half-Breadth = 0.1074
 Chine 1 Height = 0.0338 Half-Breadth = 0.0829
 Chine 2 Height = 0.0338 Half-Breadth = 0.0775
 Waterline 0.0080 Half-Breadth = 0.0226
 Waterline 0.0280 Half-Breadth = 0.0664
 Waterline 0.0480 Half-Breadth = 0.0880
 Waterline 0.0680 Half-Breadth = 0.0947
 Waterline 0.0880 Half-Breadth = 0.1008
 Waterline 0.1080 Half-Breadth = 0.1061
 Buttock 0.0000 Height = 0.0006
 Buttock 0.0200 Height = 0.0070
 Buttock 0.0400 Height = 0.0152
 Buttock 0.0600 Height = 0.0247
 Buttock 0.0800 Height = 0.0338
 Buttock 0.1000 Height = 0.0854

Station = 4.00 Xposition = 0.2300
 Sheer Line Height = 0.1130 Half-Breadth = 0.1142
 Chine 1 Height = 0.0251 Half-Breadth = 0.0978
 Chine 2 Height = 0.0251 Half-Breadth = 0.0914
 Waterline 0.0080 Half-Breadth = 0.0382
 Waterline 0.0280 Half-Breadth = 0.0985
 Waterline 0.0480 Half-Breadth = 0.1029
 Waterline 0.0680 Half-Breadth = 0.1069
 Waterline 0.0880 Half-Breadth = 0.1105
 Waterline 0.1080 Half-Breadth = 0.1135
 Buttock 0.0000 Height = 0.0000
 Buttock 0.0200 Height = 0.0041
 Buttock 0.0400 Height = 0.0085
 Buttock 0.0600 Height = 0.0139
 Buttock 0.0800 Height = 0.0207
 Buttock 0.1000 Height = 0.0346

Station = 5.00 Xposition = 0.2875
 Sheer Line Height = 0.1130 Half-Breadth = 0.1150
 Chine 1 Height = 0.0206 Half-Breadth = 0.1042
 Chine 2 Height = 0.0206 Half-Breadth = 0.0972
 Waterline 0.0080 Half-Breadth = 0.0392
 Waterline 0.0280 Half-Breadth = 0.1052
 Waterline 0.0480 Half-Breadth = 0.1077
 Waterline 0.0680 Half-Breadth = 0.1101
 Waterline 0.0880 Half-Breadth = 0.1123
 Waterline 0.1080 Half-Breadth = 0.1145
 Buttock 0.0000 Height = 0.0000
 Buttock 0.0200 Height = 0.0041
 Buttock 0.0400 Height = 0.0082
 Buttock 0.0600 Height = 0.0122
 Buttock 0.0800 Height = 0.0165
 Buttock 0.1000 Height = 0.0206

Station = 6.00 Xposition = 0.3450
 Sheer Line Height = 0.1130 Half-Breadth = 0.1150
 Chine 1 Height = 0.0200 Half-Breadth = 0.1050
 Chine 2 Height = 0.0200 Half-Breadth = 0.0980
 Waterline 0.0080 Half-Breadth = 0.0392
 Waterline 0.0280 Half-Breadth = 0.1059
 Waterline 0.0480 Half-Breadth = 0.1080
 Waterline 0.0680 Half-Breadth = 0.1102
 Waterline 0.0880 Half-Breadth = 0.1123
 Waterline 0.1080 Half-Breadth = 0.1145
 Buttock 0.0000 Height = 0.0000
 Buttock 0.0200 Height = 0.0041
 Buttock 0.0400 Height = 0.0082
 Buttock 0.0600 Height = 0.0122
 Buttock 0.0800 Height = 0.0163
 Buttock 0.1000 Height = 0.0200



$L/B = 3.0$
BETA = 12 Deg.

Scale 1:4

Figure A.2 Lines Plan $L/B = 3.0 ; \beta = 12^\circ$

Table A.2 Hull Offsets, L/B = 3.0 ; $\beta = 12^\circ$

L/B = 3.0 BETA = 12 Deg.

Station = 1.00 Xposition = 0.0690
 Sheer Line Height = 0.1130 Half-Breadth = 0.0550
 Chine 1 Height = 0.0596 Half-Breadth = 0.0096
 Chine 2 Height = 0.0596 Half-Breadth = 0.0089
 Buttock 0.0000 Height = 0.1122

Station = 2.00 Xposition = 0.1380
 Sheer Line Height = 0.1130 Half-Breadth = 0.0891
 Chine 1 Height = 0.0455 Half-Breadth = 0.0557
 Chine 2 Height = 0.0455 Half-Breadth = 0.0520
 Waterline 0.0280 Half-Breadth = 0.0255
 Waterline 0.0480 Half-Breadth = 0.0572
 Waterline 0.0680 Half-Breadth = 0.0686
 Waterline 0.0880 Half-Breadth = 0.0783
 Waterline 0.1080 Half-Breadth = 0.0870
 Buttock 0.0000 Height = 0.0125
 Buttock 0.0200 Height = 0.0245
 Buttock 0.0400 Height = 0.0374
 Buttock 0.0600 Height = 0.0525
 Buttock 0.0800 Height = 0.0918

Station = 3.00 Xposition = 0.2070
 Sheer Line Height = 0.1130 Half-Breadth = 0.1074
 Chine 1 Height = 0.0338 Half-Breadth = 0.0829
 Chine 2 Height = 0.0338 Half-Breadth = 0.0775
 Waterline 0.0080 Half-Breadth = 0.0226
 Waterline 0.0280 Half-Breadth = 0.0664
 Waterline 0.0480 Half-Breadth = 0.0880
 Waterline 0.0680 Half-Breadth = 0.0947
 Waterline 0.0880 Half-Breadth = 0.1008
 Waterline 0.1080 Half-Breadth = 0.1061
 Buttock 0.0000 Height = 0.0006
 Buttock 0.0200 Height = 0.0070
 Buttock 0.0400 Height = 0.0152
 Buttock 0.0600 Height = 0.0247
 Buttock 0.0800 Height = 0.0338
 Buttock 0.1000 Height = 0.0854

Station = 4.00 Xposition = 0.2760
 Sheer Line Height = 0.1130 Half-Breadth = 0.1142
 Chine 1 Height = 0.0251 Half-Breadth = 0.0978
 Chine 2 Height = 0.0251 Half-Breadth = 0.0914

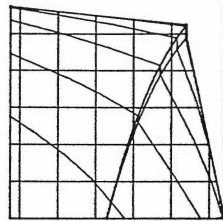
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 Waterline 0.0280 Half-Breadth = 0.0985
 Waterline 0.0480 Half-Breadth = 0.1029
 Waterline 0.0680 Half-Breadth = 0.1069
 Waterline 0.0880 Half-Breadth = 0.1105
 Waterline 0.1080 Half-Breadth = 0.1135
 Buttock 0.0000 Height = 0.0000
 Buttock 0.0200 Height = 0.0041
 Buttock 0.0400 Height = 0.0085
 Buttock 0.0600 Height = 0.0139
 Buttock 0.0800 Height = 0.0207
 Buttock 0.1000 Height = 0.0346

Station = 5.00 Xposition = 0.3450
 Sheer Line Height = 0.1130 Half-Breadth = 0.1150
 Chine 1 Height = 0.0206 Half-Breadth = 0.1042
 Chine 2 Height = 0.0206 Half-Breadth = 0.0972

Waterline 0.0080 Half-Breadth = 0.0392
 Waterline 0.0280 Half-Breadth = 0.1052
 Waterline 0.0480 Half-Breadth = 0.1077
 Waterline 0.0680 Half-Breadth = 0.1101
 Waterline 0.0880 Half-Breadth = 0.1123
 Waterline 0.1080 Half-Breadth = 0.1145
 Buttock 0.0000 Height = 0.0000
 Buttock 0.0200 Height = 0.0041
 Buttock 0.0400 Height = 0.0082
 Buttock 0.0600 Height = 0.0122
 Buttock 0.0800 Height = 0.0165
 Buttock 0.1000 Height = 0.0206

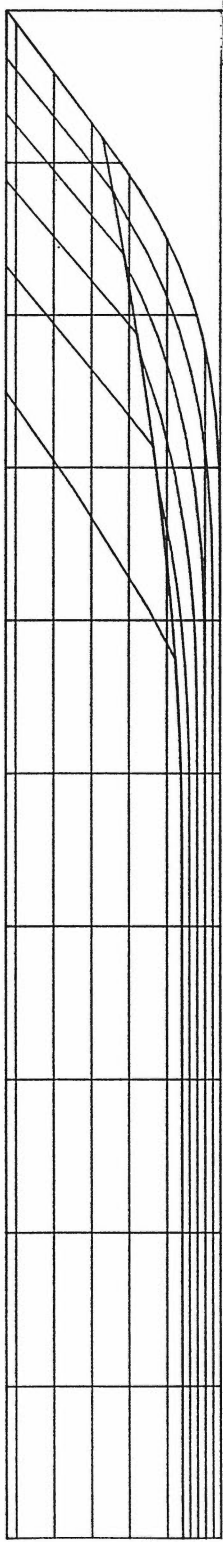
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 Chine 1 Height = 0.0200 Half-Breadth = 0.1050
 Chine 2 Height = 0.0200 Half-Breadth = 0.0980

Waterline 0.0080 Half-Breadth = 0.0392
 Waterline 0.0280 Half-Breadth = 0.1059
 Waterline 0.0480 Half-Breadth = 0.1080
 Waterline 0.0680 Half-Breadth = 0.1102
 Waterline 0.0880 Half-Breadth = 0.1123
 Waterline 0.1080 Half-Breadth = 0.1145
 Buttock 0.0000 Height = 0.0000
 Buttock 0.0200 Height = 0.0041
 Buttock 0.0400 Height = 0.0082
 Buttock 0.0600 Height = 0.0122
 Buttock 0.0800 Height = 0.0163
 Buttock 0.1000 Height = 0.0200



$L/B = 3.5$
 $BETA = 12 \text{ Deg.}$

Scale 1:4



1
2
3
4
5
6
7
8
9
10

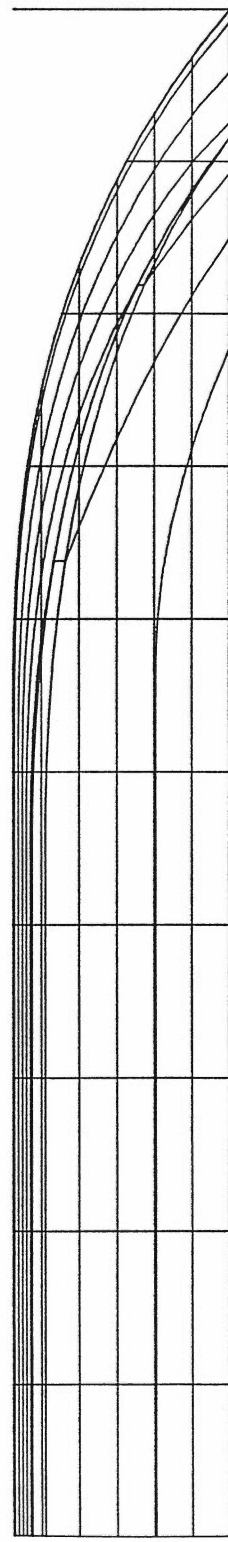


Figure A.3
Lines Plan $L/B = 3.5 ; \beta = 12^\circ$

Table A.3 Hull Offsets. L/B = 3.5 ; $\beta = 12^\circ$

L/B = 3.5 BETA = 12 Deg.

Station = 1.00 Xposition = 0.0805
 Sheer Line Height = 0.1130 Half-Breadth = 0.0550
 Chine 1 Height = 0.0596 Half-Breadth = 0.0096
 Chine 2 Height = 0.0596 Half-Breadth = 0.0089
 Buttock 0.0000 Height = 0.1123

Station = 2.00 Xposition = 0.1610
 Sheer Line Height = 0.1130 Half-Breadth = 0.0891
 Chine 1 Height = 0.0455 Half-Breadth = 0.0558
 Chine 2 Height = 0.0455 Half-Breadth = 0.0520

Waterline 0.0280 Half-Breadth = 0.0255
 Waterline 0.0480 Half-Breadth = 0.0573
 Waterline 0.0680 Half-Breadth = 0.0686
 Waterline 0.0880 Half-Breadth = 0.0783
 Waterline 0.1080 Half-Breadth = 0.0870
 Buttock 0.0000 Height = 0.0125
 Buttock 0.0200 Height = 0.0245
 Buttock 0.0400 Height = 0.0374
 Buttock 0.0600 Height = 0.0525
 Buttock 0.0800 Height = 0.0918

Station = 3.00 Xposition = 0.2415
 Sheer Line Height = 0.1130 Half-Breadth = 0.1074
 Chine 1 Height = 0.0338 Half-Breadth = 0.0829
 Chine 2 Height = 0.0338 Half-Breadth = 0.0775

Waterline 0.0080 Half-Breadth = 0.0226
 Waterline 0.0280 Half-Breadth = 0.0664
 Waterline 0.0480 Half-Breadth = 0.0880
 Waterline 0.0680 Half-Breadth = 0.0947
 Waterline 0.0880 Half-Breadth = 0.1008
 Waterline 0.1080 Half-Breadth = 0.1061
 Buttock 0.0000 Height = 0.0006
 Buttock 0.0200 Height = 0.0070
 Buttock 0.0400 Height = 0.0152
 Buttock 0.0600 Height = 0.0247
 Buttock 0.0800 Height = 0.0338
 Buttock 0.1000 Height = 0.0854

Station = 4.00 Xposition = 0.3220
 Sheer Line Height = 0.1130
 Chine 1 Height = 0.0251
 Chine 2 Height = 0.0251

Waterline 0.0080 Half-Breadth = 0.1142
 Waterline 0.0280 Half-Breadth = 0.0978
 Waterline 0.0480 Half-Breadth = 0.0914
 Waterline 0.0680 Half-Breadth = 0.0382
 Waterline 0.0880 Half-Breadth = 0.0985
 Waterline 0.1080 Half-Breadth = 0.1029
 Buttock 0.0000 Half-Breadth = 0.1069
 Buttock 0.0200 Half-Breadth = 0.1105
 Buttock 0.0400 Half-Breadth = 0.1135
 Buttock 0.0600 Height = 0.0000
 Buttock 0.0800 Height = 0.0041
 Buttock 0.1000 Height = 0.0085
 Height = 0.0139
 Height = 0.0207
 Height = 0.0346

Station = 5.00 Xposition = 0.4025
 Sheer Line Height = 0.1130 Half-Breadth = 0.1150
 Chine 1 Height = 0.0206 Half-Breadth = 0.1042
 Chine 2 Height = 0.0206 Half-Breadth = 0.0972

Waterline 0.0080 Half-Breadth = 0.0392
 Waterline 0.0280 Half-Breadth = 0.1052
 Waterline 0.0480 Half-Breadth = 0.1077
 Waterline 0.0680 Half-Breadth = 0.1101
 Waterline 0.0880 Half-Breadth = 0.1123
 Waterline 0.1080 Half-Breadth = 0.1145
 Buttock 0.0000 Height = 0.0000
 Buttock 0.0200 Height = 0.0041
 Buttock 0.0400 Height = 0.0082
 Buttock 0.0600 Height = 0.0123
 Buttock 0.0800 Height = 0.0165
 Buttock 0.1000 Height = 0.0206

Station = 6.00 Xposition = 0.4830
 Sheer Line Height = 0.1130 Half-Breadth = 0.1150
 Chine 1 Height = 0.0200 Half-Breadth = 0.1050
 Chine 2 Height = 0.0200 Half-Breadth = 0.0980

Waterline 0.0080 Half-Breadth = 0.0392
 Waterline 0.0280 Half-Breadth = 0.1059
 Waterline 0.0480 Half-Breadth = 0.1080
 Waterline 0.0680 Half-Breadth = 0.1102
 Waterline 0.0880 Half-Breadth = 0.1123
 Waterline 0.1080 Half-Breadth = 0.1145
 Buttock 0.0000 Height = 0.0000
 Buttock 0.0200 Height = 0.0041
 Buttock 0.0400 Height = 0.0082
 Buttock 0.0600 Height = 0.0122
 Buttock 0.0800 Height = 0.0163
 Buttock 0.1000 Height = 0.0200

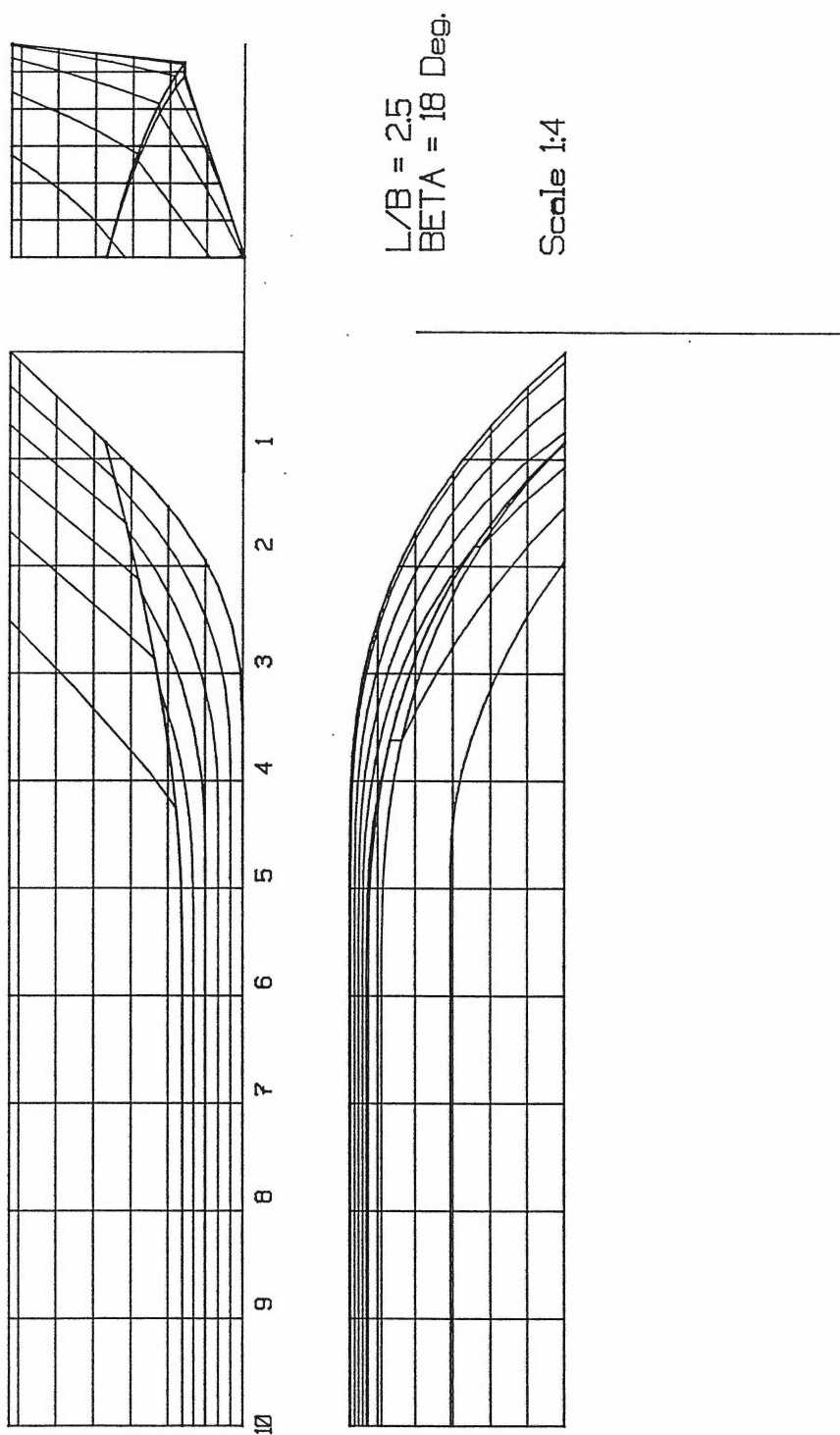


Figure A.4 Lines Plan $L/B = 2.5$; $\beta = 18^\circ$

L/B = 2.5 BETA = 18 Deg.

Station = 1.00 Xposition = 0.0575
 Sheer Line Height = 0.1250 Half-Breadth = 0.0550
 Chine 1 Height = 0.0716 Half-Breadth = 0.0096
 Chine 2 Height = 0.0716 Half-Breadth = 0.0089
 Buttock 0.0000 Height = 0.1240

Station = 2.00 Xposition = 0.1150
 Sheer Line Height = 0.1250 Half-Breadth = 0.0891
 Chine 1 Height = 0.0575 Half-Breadth = 0.0557
 Chine 2 Height = 0.0575 Half-Breadth = 0.0520
 Waterline 0.0200 Half-Breadth = 0.0023
 Waterline 0.0400 Half-Breadth = 0.0291
 Waterline 0.0600 Half-Breadth = 0.0573
 Waterline 0.0800 Half-Breadth = 0.0686
 Waterline 0.1000 Half-Breadth = 0.0783
 Waterline 0.1200 Half-Breadth = 0.0870
 Buttock 0.0000 Height = 0.0184
 Buttock 0.0200 Height = 0.0331
 Buttock 0.0400 Height = 0.0483
 Buttock 0.0600 Height = 0.0645
 Buttock 0.0800 Height = 0.1038

Station = 3.00 Xposition = 0.1725
 Sheer Line Height = 0.1250 Half-Breadth = 0.1074
 Chine 1 Height = 0.0458 Half-Breadth = 0.0829
 Chine 2 Height = 0.0458 Half-Breadth = 0.0775
 Waterline 0.0200 Half-Breadth = 0.0364
 Waterline 0.0400 Half-Breadth = 0.0686
 Waterline 0.0600 Half-Breadth = 0.0880
 Waterline 0.0800 Half-Breadth = 0.0947
 Waterline 0.1000 Half-Breadth = 0.1008
 Waterline 0.1200 Half-Breadth = 0.1061
 Buttock 0.0000 Height = 0.0010
 Buttock 0.0200 Height = 0.0108
 Buttock 0.0400 Height = 0.0222
 Buttock 0.0600 Height = 0.0345
 Buttock 0.0800 Height = 0.0458
 Buttock 0.1000 Height = 0.0974

Station = 4.00 Xposition = 0.2300
 Sheer Line Height = 0.1250 Half-Breadth = 0.1142
 Chine 1 Height = 0.0371 Half-Breadth = 0.0978
 Chine 2 Height = 0.0371 Half-Breadth = 0.0914
 Waterline 0.0200 Half-Breadth = 0.0562
 Waterline 0.0400 Half-Breadth = 0.0985
 Waterline 0.0600 Half-Breadth = 0.1029
 Waterline 0.0800 Half-Breadth = 0.1069
 Waterline 0.1000 Half-Breadth = 0.1105
 Waterline 0.1200 Half-Breadth = 0.1135
 Buttock 0.0000 Height = 0.0000
 Buttock 0.0200 Height = 0.0065
 Buttock 0.0400 Height = 0.0135
 Buttock 0.0600 Height = 0.0216
 Buttock 0.0800 Height = 0.0312
 Buttock 0.1000 Height = 0.0466

Station = 5.00 Xposition = 0.2875
 Sheer Line Height = 0.1250 Half-Breadth = 0.1150
 Chine 1 Height = 0.0326 Half-Breadth = 0.1042
 Chine 2 Height = 0.0326 Half-Breadth = 0.0972
 Waterline 0.0200 Half-Breadth = 0.0612
 Waterline 0.0400 Half-Breadth = 0.1052
 Waterline 0.0600 Half-Breadth = 0.1077
 Waterline 0.0800 Half-Breadth = 0.1101
 Waterline 0.1000 Half-Breadth = 0.1123
 Waterline 0.1200 Half-Breadth = 0.1145
 Buttock 0.0000 Height = 0.0000
 Buttock 0.0200 Height = 0.0065
 Buttock 0.0400 Height = 0.0131
 Buttock 0.0600 Height = 0.0196
 Buttock 0.0800 Height = 0.0263
 Buttock 0.1000 Height = 0.0326

Station = 6.00 Xposition = 0.3450
 Sheer Line Height = 0.1250 Half-Breadth = 0.1150
 Chine 1 Height = 0.0320 Half-Breadth = 0.1050
 Chine 2 Height = 0.0320 Half-Breadth = 0.0980
 Waterline 0.0200 Half-Breadth = 0.0612
 Waterline 0.0400 Half-Breadth = 0.1059
 Waterline 0.0600 Half-Breadth = 0.1080
 Waterline 0.0800 Half-Breadth = 0.1102
 Waterline 0.1000 Half-Breadth = 0.1123
 Waterline 0.1200 Half-Breadth = 0.1145
 Buttock 0.0000 Height = 0.0000
 Buttock 0.0200 Height = 0.0065
 Buttock 0.0400 Height = 0.0131
 Buttock 0.0600 Height = 0.0196
 Buttock 0.0800 Height = 0.0261
 Buttock 0.1000 Height = 0.0320

Table A.4 Hull Offsets, L/B = 2.5 ; $\beta = 18^\circ$

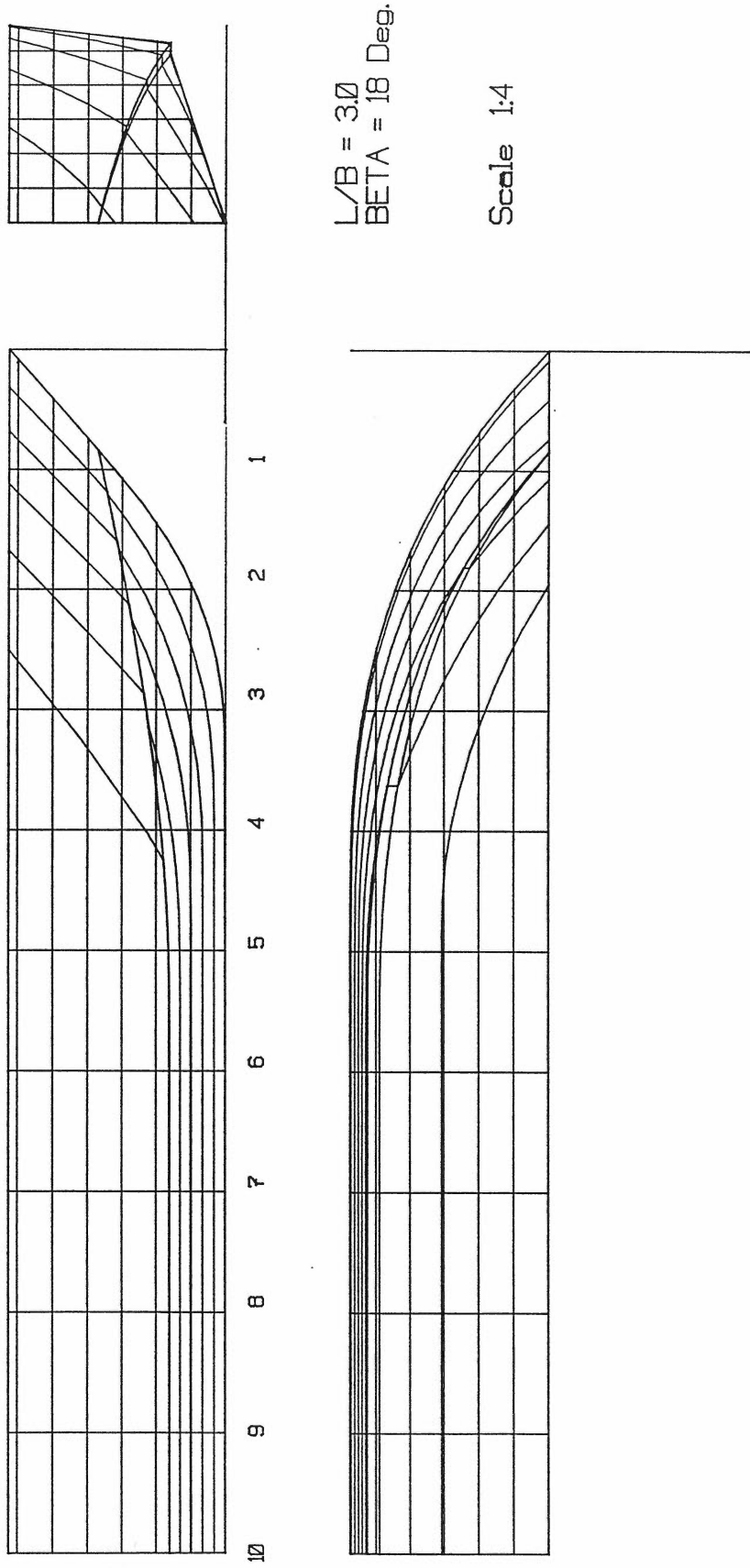


Figure A.5 Lines Plan $L/B = 3.0 ; \beta = 18^\circ$

L/B = 3.0 BETA = 18 Deg.

Station = 1.00 Xposition = 0.0690
 Sheer Line Height = 0.1250 Half-Breadth = 0.0550
 Chine 1 Height = 0.0716 Half-Breadth = 0.0096
 Chine 2 Height = 0.0716 Half-Breadth = 0.0089
 Buttock 0.0000 Height = 0.1242

Station = 2.00 Xposition = 0.1380
 Sheer Line Height = 0.1250 Half-Breadth = 0.0891
 Chine 1 Height = 0.0575 Half-Breadth = 0.0557
 Chine 2 Height = 0.0575 Half-Breadth = 0.0520

Waterline 0.0200 Half-Breadth = 0.0023
 Waterline 0.0400 Half-Breadth = 0.0292
 Waterline 0.0600 Half-Breadth = 0.0573
 Waterline 0.0800 Half-Breadth = 0.0686
 Waterline 0.1000 Half-Breadth = 0.0783
 Waterline 0.1200 Half-Breadth = 0.0870
 Buttock 0.0000 Height = 0.0184
 Buttock 0.0200 Height = 0.0331
 Buttock 0.0400 Height = 0.0483
 Buttock 0.0600 Height = 0.0645
 Buttock 0.0800 Height = 0.1038

Station = 3.00 Xposition = 0.2070
 Sheer Line Height = 0.1250 Half-Breadth = 0.1074
 Chine 1 Height = 0.0458 Half-Breadth = 0.0829
 Chine 2 Height = 0.0458 Half-Breadth = 0.0775

Waterline 0.0200 Half-Breadth = 0.0364
 Waterline 0.0400 Half-Breadth = 0.0687
 Waterline 0.0600 Half-Breadth = 0.0880
 Waterline 0.0800 Half-Breadth = 0.0948
 Waterline 0.1000 Half-Breadth = 0.1007
 Waterline 0.1200 Half-Breadth = 0.1061
 Buttock 0.0000 Height = 0.0010
 Buttock 0.0200 Height = 0.0108
 Buttock 0.0400 Height = 0.0222
 Buttock 0.0600 Height = 0.0345
 Buttock 0.0800 Height = 0.0458
 Buttock 0.1000 Height = 0.0976

Station = 4.00 Xposition = 0.2760
 Sheer Line Height = 0.1250 Half-Breadth = 0.1142
 Chine 1 Height = 0.0371 Half-Breadth = 0.0978
 Chine 2 Height = 0.0371 Half-Breadth = 0.0914

Waterline 0.0200 Half-Breadth = 0.0563
 Waterline 0.0400 Half-Breadth = 0.0985
 Waterline 0.0600 Half-Breadth = 0.1029
 Waterline 0.0800 Half-Breadth = 0.1070
 Waterline 0.1000 Half-Breadth = 0.1104
 Waterline 0.1200 Half-Breadth = 0.1135
 Buttock 0.0000 Height = 0.0000
 Buttock 0.0200 Height = 0.0065
 Buttock 0.0400 Height = 0.0135
 Buttock 0.0600 Height = 0.0216
 Buttock 0.0800 Height = 0.0313
 Buttock 0.1000 Height = 0.0463

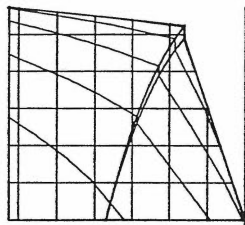
Station = 5.00 Xposition = 0.3450
 Sheer Line Height = 0.1250 Half-Breadth = 0.1150
 Chine 1 Height = 0.0326 Half-Breadth = 0.1042
 Chine 2 Height = 0.0326 Half-Breadth = 0.0972

Waterline 0.0200 Half-Breadth = 0.0612
 Waterline 0.0400 Half-Breadth = 0.1052
 Waterline 0.0600 Half-Breadth = 0.1077
 Waterline 0.0800 Half-Breadth = 0.1101
 Waterline 0.1000 Half-Breadth = 0.1123
 Waterline 0.1200 Half-Breadth = 0.1145
 Buttock 0.0000 Height = 0.0000
 Buttock 0.0200 Height = 0.0065
 Buttock 0.0400 Height = 0.0131
 Buttock 0.0600 Height = 0.0196
 Buttock 0.0800 Height = 0.0263
 Buttock 0.1000 Height = 0.0326

Station = 6.00 Xposition = 0.4140
 Sheer Line Height = 0.1250 Half-Breadth = 0.1150
 Chine 1 Height = 0.0320 Half-Breadth = 0.1050
 Chine 2 Height = 0.0320 Half-Breadth = 0.0980

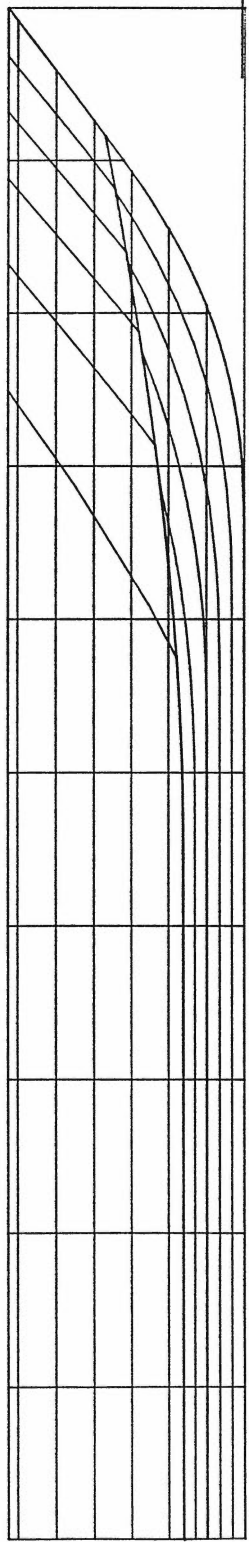
Waterline 0.0200 Half-Breadth = 0.0612
 Waterline 0.0400 Half-Breadth = 0.1059
 Waterline 0.0600 Half-Breadth = 0.1080
 Waterline 0.0800 Half-Breadth = 0.1102
 Waterline 0.1000 Half-Breadth = 0.1123
 Waterline 0.1200 Half-Breadth = 0.1145
 Buttock 0.0000 Height = 0.0000
 Buttock 0.0200 Height = 0.0065
 Buttock 0.0400 Height = 0.0131
 Buttock 0.0600 Height = 0.0196
 Buttock 0.0800 Height = 0.0261
 Buttock 0.1000 Height = 0.0320

Table A.5 Hull Offsets, L/B = 3.0 ; $\beta = 18^\circ$



$L/B = 3.5$
 $BETA = 18 \text{ Deg.}$

Scale 1:4



1
2
3
4
5
6
7
8
9
10

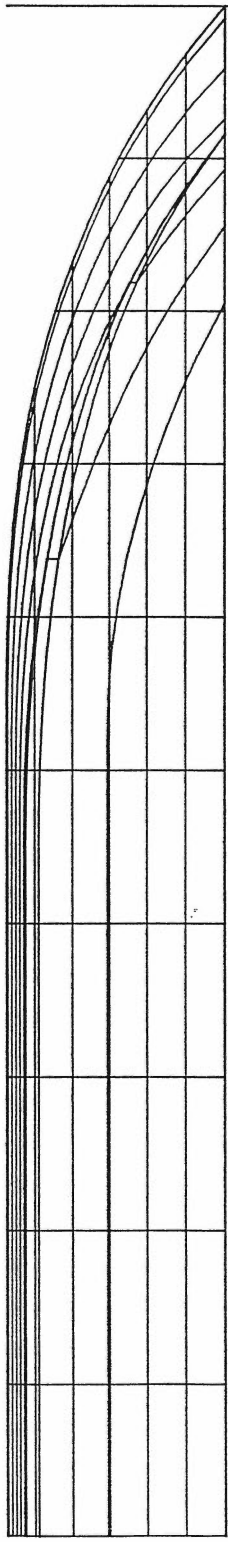


Figure A.6
Lines Plan $L/B = 3.5$; $\beta = 18^\circ$

Table A.6 Hull Offsets, L/B = 3.5 ; $\beta = 18^\circ$

L/B = 3.5 BETA = 18 Deg.

Station = 1.00 Xposition = 0.0805

Sheer Line	Height = 0.1250	Half-Breadth = 0.0550
Chine 1	Height = 0.0716	Half-Breadth = 0.0096
Chine 2	Height = 0.0716	Half-Breadth = 0.0089
Buttock	0.0000	Height = 0.1243

Station = 2.00 Xposition = 0.1610

Sheer Line	Height = 0.1250	Half-Breadth = 0.0891
Chine 1	Height = 0.0575	Half-Breadth = 0.0557
Chine 2	Height = 0.0575	Half-Breadth = 0.0520
Waterline	0.0200	Half-Breadth = 0.0023
Waterline	0.0400	Half-Breadth = 0.0291
Waterline	0.0600	Half-Breadth = 0.0573
Waterline	0.0800	Half-Breadth = 0.0686
Waterline	0.1000	Half-Breadth = 0.0783
Waterline	0.1200	Half-Breadth = 0.0870
Buttock	0.0000	Height = 0.0184
Buttock	0.0200	Height = 0.0331
Buttock	0.0400	Height = 0.0483
Buttock	0.0600	Height = 0.0645
Buttock	0.0800	Height = 0.1038

Station = 3.00 Xposition = 0.2415

Sheer Line	Height = 0.1250	Half-Breadth = 0.1074
Chine 1	Height = 0.0458	Half-Breadth = 0.0829
Chine 2	Height = 0.0458	Half-Breadth = 0.0775
Waterline	0.0200	Half-Breadth = 0.0364
Waterline	0.0400	Half-Breadth = 0.0686
Waterline	0.0600	Half-Breadth = 0.0880
Waterline	0.0800	Half-Breadth = 0.0947
Waterline	0.1000	Half-Breadth = 0.1008
Waterline	0.1200	Half-Breadth = 0.1061
Buttock	0.0000	Height = 0.0010
Buttock	0.0200	Height = 0.0108
Buttock	0.0400	Height = 0.0222
Buttock	0.0600	Height = 0.0345
Buttock	0.0800	Height = 0.0458
Buttock	0.1000	Height = 0.0974

Station = 4.00 Xposition = 0.3220

Sheer Line	Height = 0.1250	Half-Breadth = 0.1142
Chine 1	Height = 0.0371	Half-Breadth = 0.0978
Chine 2	Height = 0.0371	Half-Breadth = 0.0914
Waterline	0.0200	Half-Breadth = 0.0562
Waterline	0.0400	Half-Breadth = 0.0985
Waterline	0.0600	Half-Breadth = 0.1029
Waterline	0.0800	Half-Breadth = 0.1069
Waterline	0.1000	Half-Breadth = 0.1105
Waterline	0.1200	Half-Breadth = 0.1135
Buttock	0.0000	Height = 0.0000
Buttock	0.0200	Height = 0.0065
Buttock	0.0400	Height = 0.0135
Buttock	0.0600	Height = 0.0216
Buttock	0.0800	Height = 0.0312
Buttock	0.1000	Height = 0.0466

Station = 5.00 Xposition = 0.4025

Sheer Line	Height = 0.1250	Half-Breadth = 0.1150
Chine 1	Height = 0.0326	Half-Breadth = 0.1042
Chine 2	Height = 0.0326	Half-Breadth = 0.0972
Waterline	0.0200	Half-Breadth = 0.0612
Waterline	0.0400	Half-Breadth = 0.1052
Waterline	0.0600	Half-Breadth = 0.1077
Waterline	0.0800	Half-Breadth = 0.1101
Waterline	0.1000	Half-Breadth = 0.1123
Waterline	0.1200	Half-Breadth = 0.1145
Buttock	0.0000	Height = 0.0000
Buttock	0.0200	Height = 0.0065
Buttock	0.0400	Height = 0.0131
Buttock	0.0600	Height = 0.0196
Buttock	0.0800	Height = 0.0263
Buttock	0.1000	Height = 0.0326

Station = 6.00 Xposition = 0.4830

Sheer Line	Height = 0.1250	Half-Breadth = 0.1150
Chine 1	Height = 0.0320	Half-Breadth = 0.1050
Chine 2	Height = 0.0320	Half-Breadth = 0.0980
Waterline	0.0200	Half-Breadth = 0.0613
Waterline	0.0400	Half-Breadth = 0.1059
Waterline	0.0600	Half-Breadth = 0.1080
Waterline	0.0800	Half-Breadth = 0.1102
Waterline	0.1000	Half-Breadth = 0.1123
Waterline	0.1200	Half-Breadth = 0.1145
Buttock	0.0000	Height = 0.0000
Buttock	0.0200	Height = 0.0065
Buttock	0.0400	Height = 0.0131
Buttock	0.0600	Height = 0.0196
Buttock	0.0800	Height = 0.0261
Buttock	0.1000	Height = 0.0320

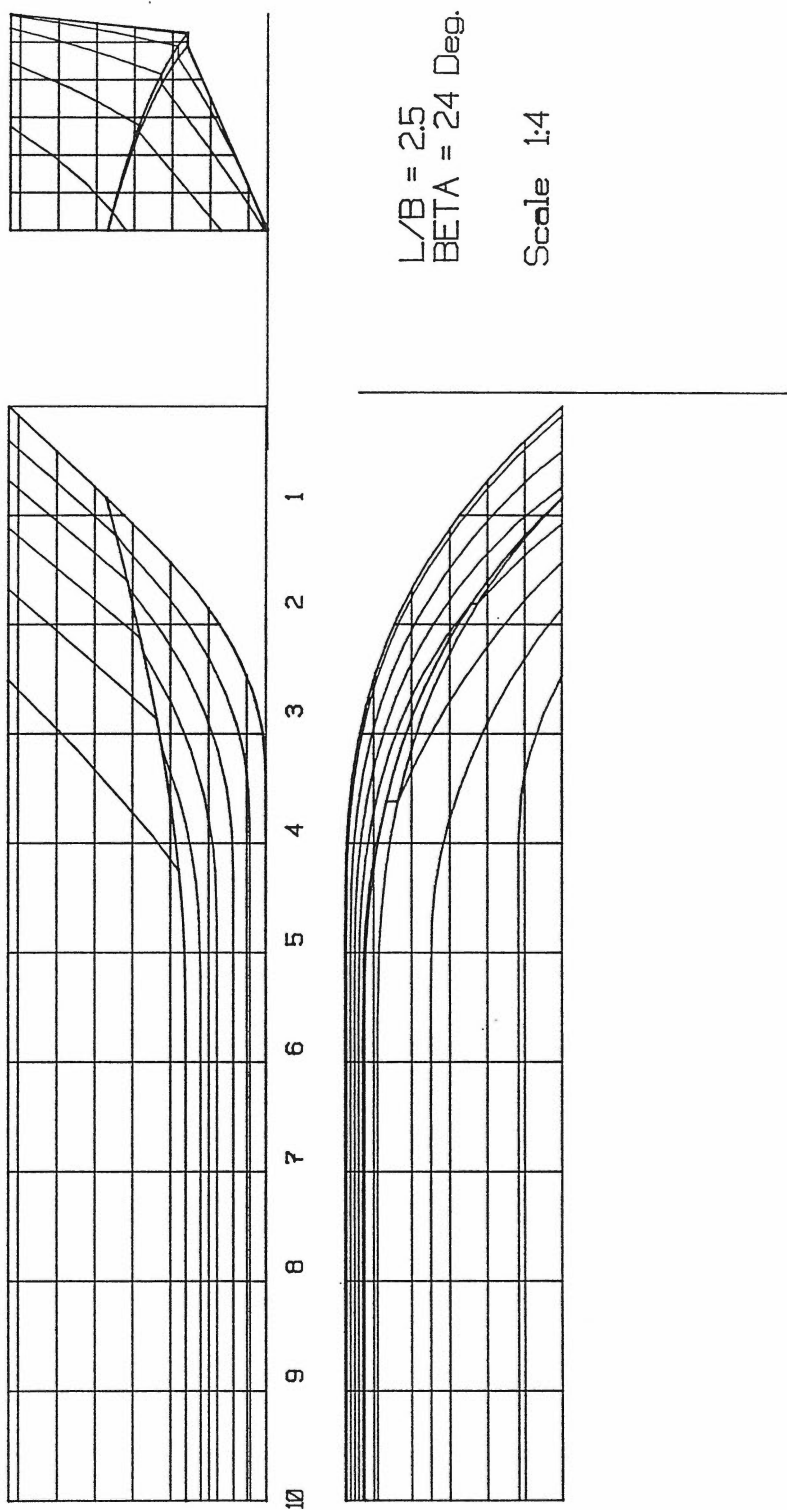
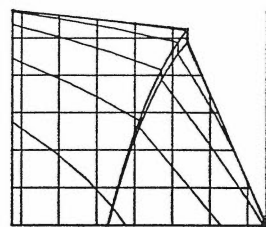


Figure A.7 Lines Plan $L/B = 2.5$; $\beta = 24^\circ$

L/B = 2.5 BETA = 24 Deg

Station = 1.00	Xposition = 0.0575		Station = 4.00	Xposition = 0.2300	
Sheer Line	Height = 0.1350	Half-Breadth = 0.0550	Sheer Line	Height = 0.1350	Half-Breadth = 0.1142
Chine 1	Height = 0.0816	Half-Breadth = 0.0096	Chine 1	Height = 0.0471	Half-Breadth = 0.0978
Chine 2	Height = 0.0816	Half-Breadth = 0.0089	Chine 2	Height = 0.0471	Half-Breadth = 0.0914
Buttock	0.0000	Height = 0.1340	Waterline	0.0100	Half-Breadth = 0.0233
			Waterline	0.0300	Half-Breadth = 0.0633
			Waterline	0.0500	Half-Breadth = 0.0985
Station = 2.00	Xposition = 0.1150		Waterline	0.0700	Half-Breadth = 0.1029
Sheer Line	Height = 0.1350	Half-Breadth = 0.0891	Waterline	0.0900	Half-Breadth = 0.1069
Chine 1	Height = 0.0675	Half-Breadth = 0.0557	Waterline	0.1100	Half-Breadth = 0.1105
Chine 2	Height = 0.0675	Half-Breadth = 0.0520	Waterline	0.1300	Half-Breadth = 0.1135
Waterline	0.0300	Half-Breadth = 0.0070	Buttock	0.0000	Height = 0.0000
Waterline	0.0500	Half-Breadth = 0.0310	Buttock	0.0200	Height = 0.0086
Waterline	0.0700	Half-Breadth = 0.0573	Buttock	0.0400	Height = 0.0176
Waterline	0.0900	Half-Breadth = 0.0686	Buttock	0.0600	Height = 0.0280
Waterline	0.1100	Half-Breadth = 0.0783	Buttock	0.0800	Height = 0.0400
Waterline	0.1300	Half-Breadth = 0.0870	Buttock	0.1000	Height = 0.0566
Buttock	0.0000	Height = 0.0243			
Buttock	0.0200	Height = 0.0408	Station = 5.00	Xposition = 0.2875	
Buttock	0.0400	Height = 0.0575	Sheer Line	Height = 0.1350	Half-Breadth = 0.1150
Buttock	0.0600	Height = 0.0745	Chine 1	Height = 0.0426	Half-Breadth = 0.1042
Buttock	0.0800	Height = 0.1138	Chine 2	Height = 0.0426	Half-Breadth = 0.0972
			Waterline	0.0100	Half-Breadth = 0.0233
Station = 3.00	Xposition = 0.1725		Waterline	0.0300	Half-Breadth = 0.0699
Sheer Line	Height = 0.1350	Half-Breadth = 0.1074	Waterline	0.0500	Half-Breadth = 0.1052
Chine 1	Height = 0.0558	Half-Breadth = 0.0829	Waterline	0.0700	Half-Breadth = 0.1077
Chine 2	Height = 0.0558	Half-Breadth = 0.0775	Waterline	0.0900	Half-Breadth = 0.1101
Waterline	0.0100	Half-Breadth = 0.0138	Waterline	0.1100	Half-Breadth = 0.1123
Waterline	0.0300	Half-Breadth = 0.0428	Waterline	0.1300	Half-Breadth = 0.1145
Waterline	0.0500	Half-Breadth = 0.0699	Buttock	0.0000	Height = 0.0000
Waterline	0.0700	Half-Breadth = 0.0880	Buttock	0.0200	Height = 0.0086
Waterline	0.0900	Half-Breadth = 0.0947	Buttock	0.0400	Height = 0.0171
Waterline	0.1100	Half-Breadth = 0.1008	Buttock	0.0600	Height = 0.0257
Waterline	0.1300	Half-Breadth = 0.1061	Buttock	0.0800	Height = 0.0345
Buttock	0.0000	Height = 0.0015	Buttock	0.1000	Height = 0.0426
Buttock	0.0200	Height = 0.0141			
Buttock	0.0400	Height = 0.0280	Station = 6.00	Xposition = 0.3450	
Buttock	0.0600	Height = 0.0427	Sheer Line	Height = 0.1350	Half-Breadth = 0.1150
Buttock	0.0800	Height = 0.0558	Chine 1	Height = 0.0420	Half-Breadth = 0.1050
Buttock	0.1000	Height = 0.1074	Chine 2	Height = 0.0420	Half-Breadth = 0.0980
			Waterline	0.0100	Half-Breadth = 0.0233
			Waterline	0.0300	Half-Breadth = 0.0700
			Waterline	0.0500	Half-Breadth = 0.1059
			Waterline	0.0700	Half-Breadth = 0.1080
			Waterline	0.0900	Half-Breadth = 0.1102
			Waterline	0.1100	Half-Breadth = 0.1123
			Waterline	0.1300	Half-Breadth = 0.1145
			Buttock	0.0000	Height = 0.0000
			Buttock	0.0200	Height = 0.0086
			Buttock	0.0400	Height = 0.0171
			Buttock	0.0600	Height = 0.0257
			Buttock	0.0800	Height = 0.0343
			Buttock	0.1000	Height = 0.0420

Table A.7 Hull Offsets, L/B = 2.5 ; $\beta = 24^\circ$



$L/B = 3.0$
 $BETA = 24 \text{ Deg.}$

Scale 1:4

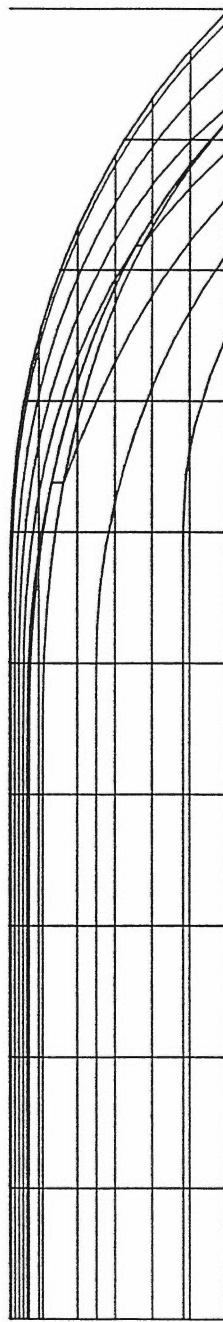
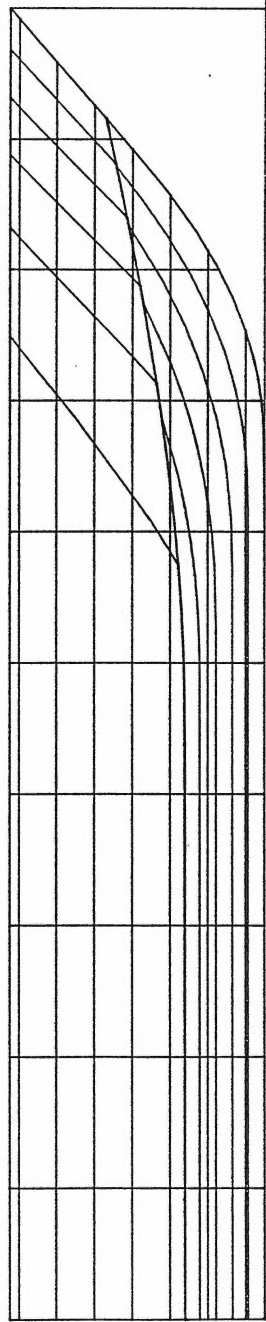


Figure A.8 Lines Plan $L/B = 3.0$; $\beta = 24^\circ$

L/B = 3.0 BETA = 24 Deg.

Station = 1.00 Xposition = 0.0690
 Sheer Line Height = 0.1350
 Chine 1 Height = 0.0816
 Chine 2 Height = 0.0816
 Buttock 0.0000

Half-Breadth = 0.0550
 Half-Breadth = 0.0096
 Half-Breadth = 0.0089
 Height = 0.1342

Station = 2.00 Xposition = 0.1380
 Sheer Line Height = 0.1350
 Chine 1 Height = 0.0675
 Chine 2 Height = 0.0675

Half-Breadth = 0.0891
 Half-Breadth = 0.0557
 Half-Breadth = 0.0520
 Half-Breadth = 0.0070
 Half-Breadth = 0.0310
 Half-Breadth = 0.0573
 Half-Breadth = 0.0686
 Half-Breadth = 0.0783
 Half-Breadth = 0.0870
 Height = 0.0243
 Height = 0.0408
 Height = 0.0575
 Height = 0.0745
 Height = 0.1138

Waterline 0.0300
 Waterline 0.0500
 Waterline 0.0700
 Waterline 0.0900
 Waterline 0.1100
 Waterline 0.1300
 Buttock 0.0000
 Buttock 0.0200
 Buttock 0.0400
 Buttock 0.0600
 Buttock 0.0800

Station = 3.00 Xposition = 0.2070
 Sheer Line Height = 0.1350
 Chine 1 Height = 0.0558
 Chine 2 Height = 0.0558

Half-Breadth = 0.1074
 Half-Breadth = 0.0829
 Half-Breadth = 0.0775
 Half-Breadth = 0.0138
 Half-Breadth = 0.0428
 Half-Breadth = 0.0699
 Half-Breadth = 0.0880
 Half-Breadth = 0.0947
 Half-Breadth = 0.1008
 Half-Breadth = 0.1061
 Height = 0.0015
 Height = 0.0141
 Height = 0.0280
 Height = 0.0427
 Height = 0.0558
 Height = 0.1074

Waterline 0.0100
 Waterline 0.0300
 Waterline 0.0500
 Waterline 0.0700
 Waterline 0.0900
 Waterline 0.1100
 Waterline 0.1300
 Buttock 0.0000
 Buttock 0.0200
 Buttock 0.0400
 Buttock 0.0600
 Buttock 0.0800
 Buttock 0.1000

Station = 4.00 Xposition = 0.2760
 Sheer Line Height = 0.1350
 Chine 1 Height = 0.0471
 Chine 2 Height = 0.0471

Half-Breadth = 0.1142
 Half-Breadth = 0.0978
 Half-Breadth = 0.0914
 Half-Breadth = 0.0233
 Half-Breadth = 0.0633
 Half-Breadth = 0.0985
 Half-Breadth = 0.1029
 Half-Breadth = 0.1069
 Half-Breadth = 0.1105
 Half-Breadth = 0.1135
 Height = 0.0000
 Height = 0.0086
 Height = 0.0176
 Height = 0.0280
 Height = 0.0400
 Height = 0.0566

Waterline 0.0100
 Waterline 0.0300
 Waterline 0.0500
 Waterline 0.0700
 Waterline 0.0900
 Waterline 0.1100
 Waterline 0.1300
 Buttock 0.0000
 Buttock 0.0200
 Buttock 0.0400
 Buttock 0.0600
 Buttock 0.0800
 Buttock 0.1000

Station = 5.00 Xposition = 0.3450
 Sheer Line Height = 0.1350
 Chine 1 Height = 0.0426
 Chine 2 Height = 0.0426

Half-Breadth = 0.1150
 Half-Breadth = 0.1042
 Half-Breadth = 0.0972
 Half-Breadth = 0.0233
 Half-Breadth = 0.0699
 Half-Breadth = 0.1052
 Half-Breadth = 0.1077
 Half-Breadth = 0.1101
 Half-Breadth = 0.1123
 Half-Breadth = 0.1145
 Height = 0.0000
 Height = 0.0086
 Height = 0.0171
 Height = 0.0257
 Height = 0.0345
 Height = 0.0426

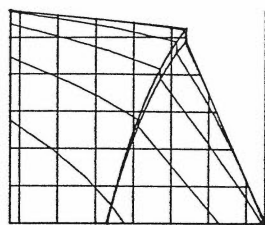
Waterline 0.0100
 Waterline 0.0300
 Waterline 0.0500
 Waterline 0.0700
 Waterline 0.0900
 Waterline 0.1100
 Waterline 0.1300
 Buttock 0.0000
 Buttock 0.0200
 Buttock 0.0400
 Buttock 0.0600
 Buttock 0.0800
 Buttock 0.1000

Station = 6.00 Xposition = 0.4140
 Sheer Line Height = 0.1350
 Chine 1 Height = 0.0420
 Chine 2 Height = 0.0420

Half-Breadth = 0.1150
 Half-Breadth = 0.1050
 Half-Breadth = 0.0980
 Half-Breadth = 0.0233
 Half-Breadth = 0.0700
 Half-Breadth = 0.1059
 Half-Breadth = 0.1080
 Half-Breadth = 0.1102
 Half-Breadth = 0.1123
 Half-Breadth = 0.1145
 Height = 0.0000
 Height = 0.0086
 Height = 0.0171
 Height = 0.0257
 Height = 0.0343
 Height = 0.0420

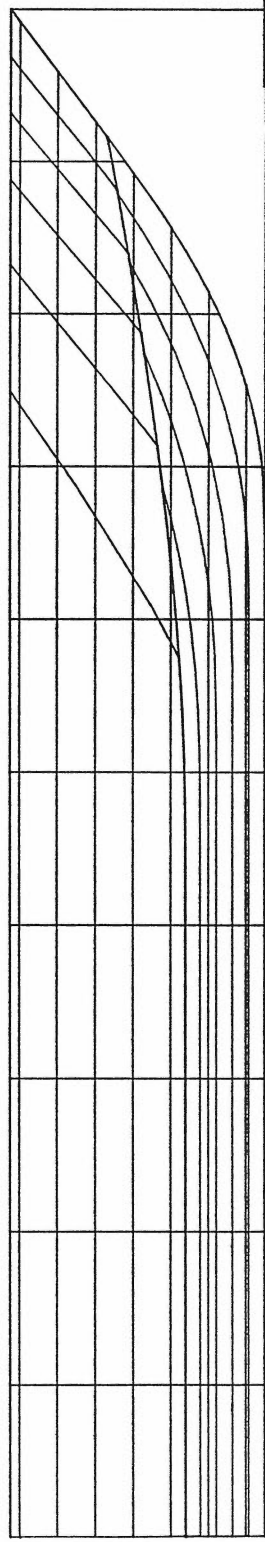
Waterline 0.0100
 Waterline 0.0300
 Waterline 0.0500
 Waterline 0.0700
 Waterline 0.0900
 Waterline 0.1100
 Waterline 0.1300
 Buttock 0.0000
 Buttock 0.0200
 Buttock 0.0400
 Buttock 0.0600
 Buttock 0.0800
 Buttock 0.1000

Table A.8 Hull Offsets, L/B = 3.0 ; $\beta = 24^\circ$



$L/B = 3.5$
 $\beta = 24 \text{ Deg.}$

Scale 1:4



1
2
3
4
5
6
7
8
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10

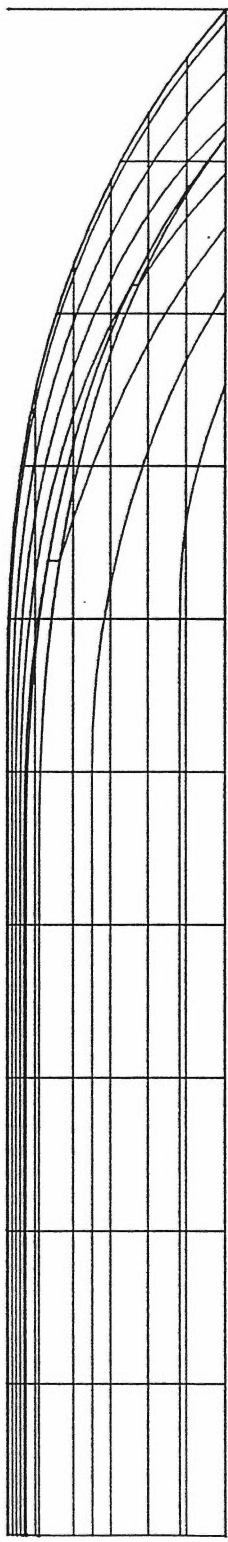


Figure A.9
Lines Plan $L/B = 3.5$; $\beta = 24^\circ$

L/B = 3.5 BETA = 24 Deg.

Station = 1.00 Xposition = 0.0805
 Sheer Line Height = 0.1350 Half-Breadth = 0.0550
 Chine 1 Height = 0.0816 Half-Breadth = 0.0096
 Chine 2 Height = 0.0816 Half-Breadth = 0.0089
 Buttock 0.0000 Height = 0.1343

Station = 2.00 Xposition = 0.1610
 Sheer Line Height = 0.1350 Half-Breadth = 0.0891
 Chine 1 Height = 0.0675 Half-Breadth = 0.0557
 Chine 2 Height = 0.0675 Half-Breadth = 0.0520
 Waterline 0.0300 Half-Breadth = 0.0070
 Waterline 0.0500 Half-Breadth = 0.0310
 Waterline 0.0700 Half-Breadth = 0.0573
 Waterline 0.0900 Half-Breadth = 0.0686
 Waterline 0.1100 Half-Breadth = 0.0783
 Waterline 0.1300 Half-Breadth = 0.0870
 Buttock 0.0000 Height = 0.0243
 Buttock 0.0200 Height = 0.0408
 Buttock 0.0400 Height = 0.0575
 Buttock 0.0600 Height = 0.0745
 Buttock 0.0800 Height = 0.1138

Station = 3.00 Xposition = 0.2415
 Sheer Line Height = 0.1350 Half-Breadth = 0.1074
 Chine 1 Height = 0.0558 Half-Breadth = 0.0829
 Chine 2 Height = 0.0558 Half-Breadth = 0.0775
 Waterline 0.0100 Half-Breadth = 0.0138
 Waterline 0.0300 Half-Breadth = 0.0428
 Waterline 0.0500 Half-Breadth = 0.0699
 Waterline 0.0700 Half-Breadth = 0.0880
 Waterline 0.0900 Half-Breadth = 0.0947
 Waterline 0.1100 Half-Breadth = 0.1008
 Waterline 0.1300 Half-Breadth = 0.1061
 Buttock 0.0000 Height = 0.0015
 Buttock 0.0200 Height = 0.0141
 Buttock 0.0400 Height = 0.0280
 Buttock 0.0600 Height = 0.0427
 Buttock 0.0800 Height = 0.0558
 Buttock 0.1000 Height = 0.1074

Station = 4.00 Xposition = 0.3220
 Sheer Line Height = 0.1350
 Chine 1 Height = 0.0471
 Chine 2 Height = 0.0471
 Waterline 0.0100
 Waterline 0.0300
 Waterline 0.0500
 Waterline 0.0700
 Waterline 0.0900
 Waterline 0.1100
 Waterline 0.1300
 Buttock 0.0000
 Buttock 0.0200
 Buttock 0.0400
 Buttock 0.0600
 Buttock 0.0800
 Buttock 0.1000

Half-Breadth = 0.1142
 Half-Breadth = 0.0978
 Half-Breadth = 0.0914
 Half-Breadth = 0.0233
 Half-Breadth = 0.0633
 Half-Breadth = 0.0985
 Half-Breadth = 0.1029
 Half-Breadth = 0.1069
 Half-Breadth = 0.1105
 Half-Breadth = 0.1135
 Height = 0.0000
 Height = 0.0086
 Height = 0.0176
 Height = 0.0280
 Height = 0.0400
 Height = 0.0566

Station = 5.00 Xposition = 0.4025
 Sheer Line Height = 0.1350
 Chine 1 Height = 0.0426
 Chine 2 Height = 0.0426
 Waterline 0.0100
 Waterline 0.0300
 Waterline 0.0500
 Waterline 0.0700
 Waterline 0.0900
 Waterline 0.1100
 Waterline 0.1300
 Buttock 0.0000
 Buttock 0.0200
 Buttock 0.0400
 Buttock 0.0600
 Buttock 0.0800
 Buttock 0.1000

Half-Breadth = 0.1150
 Half-Breadth = 0.1042
 Half-Breadth = 0.0972
 Half-Breadth = 0.0233
 Half-Breadth = 0.0699
 Half-Breadth = 0.1052
 Half-Breadth = 0.1077
 Half-Breadth = 0.1101
 Half-Breadth = 0.1123
 Half-Breadth = 0.1145
 Height = 0.0000
 Height = 0.0086
 Height = 0.0171
 Height = 0.0257
 Height = 0.0345
 Height = 0.0426

Station = 6.00 Xposition = 0.4830
 Sheer Line Height = 0.1350
 Chine 1 Height = 0.0420
 Chine 2 Height = 0.0420
 Waterline 0.0100
 Waterline 0.0300
 Waterline 0.0500
 Waterline 0.0700
 Waterline 0.0900
 Waterline 0.1100
 Waterline 0.1300
 Buttock 0.0000
 Buttock 0.0200
 Buttock 0.0400
 Buttock 0.0600
 Buttock 0.0800
 Buttock 0.1000

Half-Breadth = 0.1150
 Half-Breadth = 0.1050
 Half-Breadth = 0.0980
 Half-Breadth = 0.0233
 Half-Breadth = 0.0700
 Half-Breadth = 0.1059
 Half-Breadth = 0.1080
 Half-Breadth = 0.1102
 Half-Breadth = 0.1123
 Half-Breadth = 0.1145
 Height = 0.0000
 Height = 0.0086
 Height = 0.0171
 Height = 0.0257
 Height = 0.0343
 Height = 0.0420

Table A.9 Hull Offsets, L/B = 3.5 ; $\beta = 24^\circ$

APPENDIX B SERIES RESULTS (TABLES AND FIGURES)

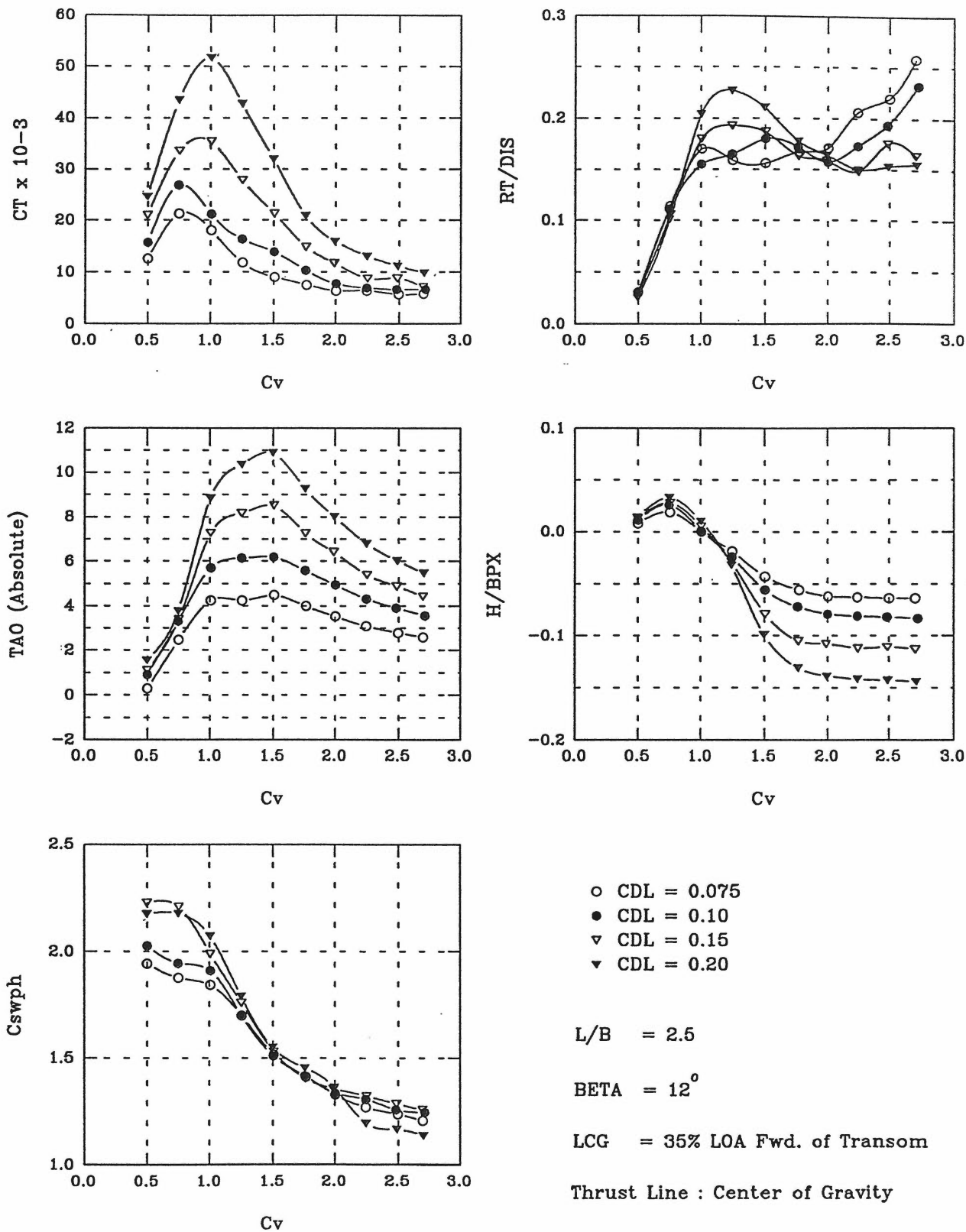


Figure B.1

Model No. T-2512
 L/B Ratio 2.5 Length Overall LOA 57.50 cm
 Deadrise 12.00 deg Breath (Deck) B 23.00 cm
 LCG Position 35.00 % LOA Breath (Chine) BPX 21.00 cm
 20.13 cm @ Transom

Displacement DIS 916.0 gms Disp. Coeff. CDL 0.0755
 VCG Position 25.96 % B 5.97 cm @ Base Line
 Static trim TAOo 0.15 deg
 Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.716	28.0	0.17	0.15	30.19	49.45	856.7	0.499	12.56501	0.031	0.008	0.30	1.943
1.079	104.3	0.39	2.33	30.76	46.63	827.4	0.752	21.28791	0.114	0.019	2.48	1.876
1.443	155.5	-0.01	4.10	31.63	44.56	812.2	1.006	18.07777	0.170	-0.000	4.25	1.842
1.799	145.5	-0.41	4.10	27.31	42.55	749.1	1.254	11.79671	0.159	-0.019	4.25	1.699
2.162	143.3	-0.90	4.33	23.00	39.39	668.8	1.507	9.01136	0.156	-0.043	4.48	1.517
2.536	153.0	-1.19	3.84	19.55	38.53	622.6	1.767	7.51637	0.167	-0.056	3.99	1.412
2.874	156.6	-1.29	3.38	16.39	38.24	585.6	2.003	6.36500	0.171	-0.062	3.53	1.328
3.225	188.5	-1.33	2.94	13.80	38.41	559.7	2.247	6.36847	0.206	-0.063	3.09	1.269
3.586	201.6	-1.34	2.64	11.79	39.10	545.5	2.498	5.65217	0.220	-0.064	2.79	1.237
3.871	236.0	-1.35	2.43	10.06	39.62	532.6	2.697	5.81487	0.258	-0.064	2.58	1.208

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1002
 VCG Position 25.65 % B 5.90 cm @ Base Line
 Static trim TAOo 0.78 deg
 Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.716	36.6	0.24	0.13	32.77	50.60	893.0	0.499	15.72333	0.030	0.011	0.91	2.025
1.071	134.5	0.54	2.53	33.64	47.04	858.4	0.746	26.87962	0.111	0.026	3.31	1.946
1.442	189.1	0.02	4.92	34.50	44.85	842.5	1.005	21.21219	0.155	0.001	5.70	1.910
1.794	201.0	-0.50	5.35	29.33	40.71	749.7	1.250	16.37837	0.165	-0.024	6.13	1.700
2.159	218.7	-1.17	5.41	24.44	37.66	665.6	1.504	13.86161	0.180	-0.056	6.19	1.509
2.524	209.1	-1.50	4.81	21.10	37.15	624.4	1.758	10.34138	0.172	-0.072	5.59	1.416
2.874	191.0	-1.66	4.16	18.69	36.22	588.7	2.002	7.72809	0.157	-0.079	4.94	1.335
3.227	210.7	-1.70	3.54	17.25	36.51	576.3	2.248	6.90498	0.173	-0.081	4.32	1.307
3.564	236.4	-1.73	3.13	14.38	37.38	554.8	2.483	6.59704	0.194	-0.082	3.91	1.258
3.895	282.5	-1.74	2.79	12.94	38.35	549.8	2.714	6.65974	0.232	-0.083	3.57	1.247

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 26.35 % B 6.06 cm @ Base Line
 Static trim TAOo 1.01 deg
 Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.714	53.4	0.27	0.10	46.00	51.75	982.0	0.497	21.00190	0.029	0.013	1.11	2.227
1.080	194.3	0.58	2.39	46.58	51.18	974.7	0.752	33.61171	0.106	0.028	3.40	2.210
1.441	328.5	0.10	6.26	37.66	46.00	877.8	1.004	35.43981	0.180	0.005	7.27	1.990
1.792	352.6	-0.60	7.15	31.63	41.11	775.6	1.249	27.84192	0.193	-0.029	8.16	1.759
2.162	341.3	-1.66	7.50	26.74	36.22	674.8	1.506	21.28440	0.187	-0.079	8.51	1.530
2.527	298.3	-2.20	6.25	23.29	34.50	619.5	1.761	14.82909	0.163	-0.105	7.26	1.405
2.852	290.4	-2.27	5.41	21.28	34.50	597.9	1.987	11.74716	0.159	-0.108	6.42	1.356
3.231	271.0	-2.36	4.39	19.55	34.79	582.5	2.251	8.76542	0.148	-0.112	5.40	1.321
3.568	321.9	-2.33	3.87	17.83	35.08	567.1	2.486	8.76935	0.176	-0.111	4.88	1.286
3.869	299.1	-2.37	3.42	16.39	35.36	554.8	2.695	7.08450	0.164	-0.113	4.43	1.258

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2004
 VCG Position 25.96 % B 5.97 cm @ Base Line
 Static trim TAOo 1.46 deg
 Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.713	61.0	0.30	0.10	40.25	51.75	960.0	0.496	24.61729	0.025	0.014	1.56	2.177
1.074	244.8	0.69	2.32	40.54	51.75	960.5	0.748	43.45512	0.101	0.033	3.78	2.178
1.437	496.8	0.21	7.39	40.83	47.15	914.1	1.002	51.72669	0.204	0.010	8.85	2.073
1.791	551.1	-0.67	8.91	33.93	40.25	789.1	1.248	42.79681	0.227	-0.032	10.37	1.789
2.150	514.3	-2.09	9.44	28.46	35.36	684.1	1.498	31.98117	0.211	-0.099	10.90	1.551
2.525	433.5	-2.75	7.81	25.30	34.50	641.0	1.759	20.86532	0.178	-0.131	9.27	1.453
2.861	398.3	-2.93	6.56	23.00	33.06	601.0	1.993	15.92786	0.164	-0.139	8.02	1.363
3.224	364.0	-2.99	5.34	15.81	33.35	527.0	2.246	13.06921	0.150	-0.142	6.80	1.195
3.571	372.6	-3.01	4.56	14.38	33.64	514.7	2.488	11.16407	0.153	-0.143	6.02	1.167
3.878	378.1	-3.02	4.01	12.94	33.93	502.4	2.702	9.84081	0.155	-0.144	5.47	1.139

Table B.1 L/B = 2.5 ; β = 12° ; L_{CG} = 35% ; Thrust Line : Centre of Gravity

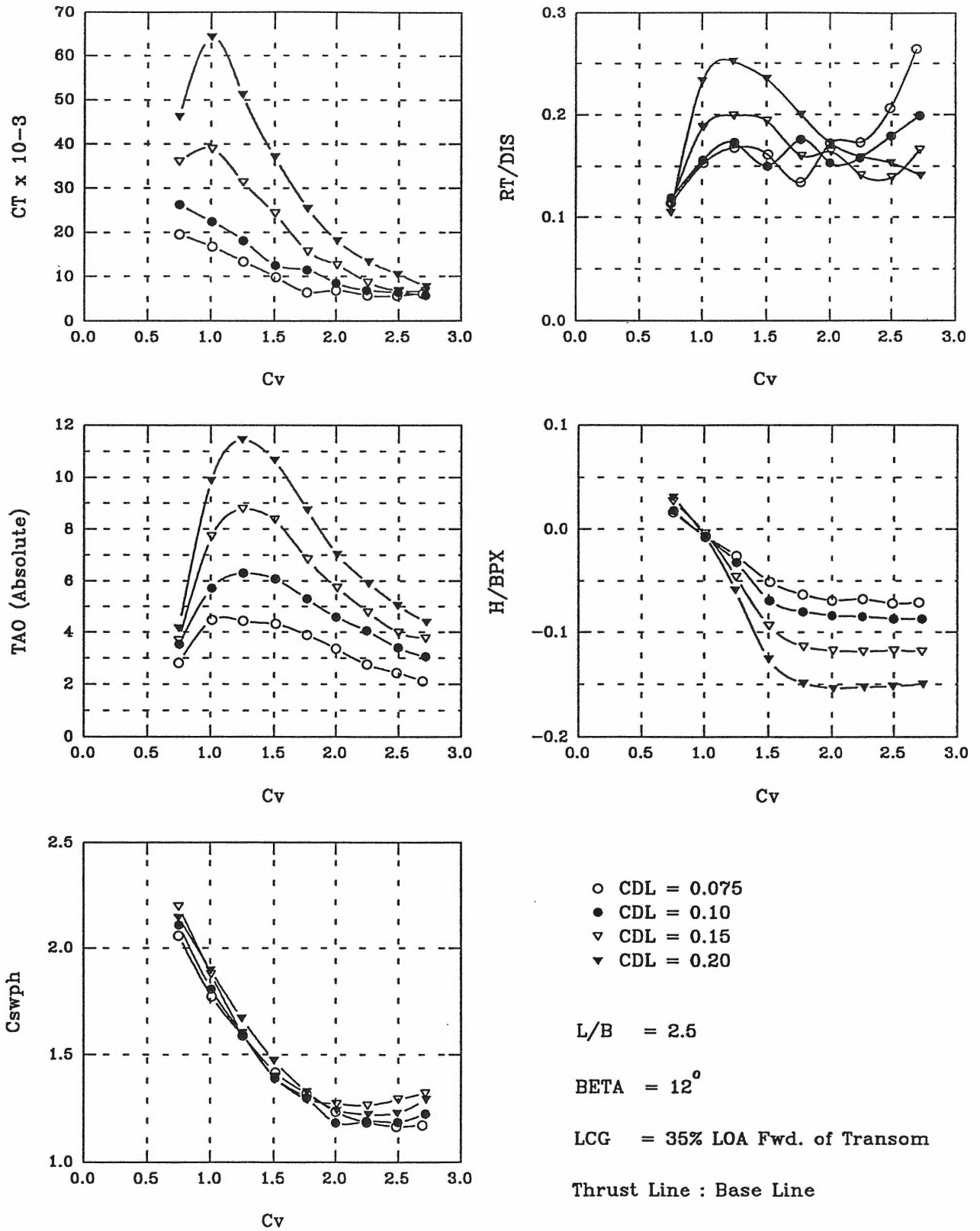


Figure B.2

Model No. T-2512

L/B Ratio 2.5 Length Overall LOA 57.50 cm
 Deadrise 12.00 deg Breath (Deck) B 23.00 cm
 Breath (China) BPX 21.00 cm
 LCG Position 35.00 % LOA 20.13 cm @ Transom

Displacement DIS 916.0 gms Disp. Coeff. CDL 0.0755
 VCG Position 25.96 % B 5.97 cm @ Base Line
 Static trim TAOo 0.15 deg

Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.075	104.0	0.34	2.66	37.38	48.88	907.5	0.749	19.49859	0.114	0.016	2.81	2.058
1.453	140.5	-0.14	4.32	29.90	43.13	781.0	1.012	16.76721	0.153	-0.007	4.47	1.771
1.801	154.1	-0.54	4.28	25.59	39.73	700.1	1.255	13.34903	0.168	-0.026	4.43	1.588
2.173	147.4	-1.08	4.17	20.99	37.26	624.4	1.514	9.82890	0.161	-0.051	4.32	1.416
2.533	122.4	-1.32	3.74	18.40	35.94	582.5	1.765	6.44159	0.134	-0.063	3.89	1.321
2.871	157.2	-1.46	3.21	15.41	35.42	544.9	2.000	6.88369	0.172	-0.069	3.36	1.236
3.232	158.6	-1.44	2.60	12.94	35.88	523.3	2.252	5.70342	0.173	-0.068	2.75	1.187
3.570	188.7	-1.51	2.29	10.64	37.38	514.7	2.488	5.65494	0.206	-0.072	2.44	1.167
3.865	241.4	-1.48	1.96	9.20	39.10	517.8	2.693	6.13830	0.264	-0.071	2.11	1.174

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1002
 VCG Position 25.65 % B 5.90 cm @ Base Line
 Static trim TAOo 0.78 deg

Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.078	144.3	0.39	2.74	40.25	48.88	929.9	0.751	26.26179	0.119	0.018	3.52	2.109
1.446	189.2	-0.16	4.95	31.63	43.13	796.9	1.007	22.34358	0.156	-0.008	5.73	1.807
1.801	210.0	-0.66	5.52	27.03	38.47	701.9	1.255	18.15075	0.173	-0.032	6.30	1.592
2.166	182.8	-1.44	5.31	22.14	35.08	613.3	1.509	12.50151	0.150	-0.069	6.09	1.391
2.532	214.3	-1.67	4.52	19.55	33.93	573.3	1.764	11.46661	0.176	-0.080	5.30	1.300
2.870	186.0	-1.76	3.81	15.75	32.95	522.1	2.000	8.50261	0.153	-0.084	4.59	1.184
3.227	191.7	-1.78	3.27	15.24	33.75	525.2	2.248	6.89459	0.158	-0.085	4.05	1.191
3.582	217.6	-1.82	2.61	12.94	35.94	523.9	2.496	6.36454	0.179	-0.087	3.39	1.188
3.900	241.7	-1.82	2.27	11.79	38.70	541.2	2.717	5.77623	0.199	-0.087	3.05	1.227

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 26.35 % B 6.06 cm @ Base Line
 Static trim TAOo 1.01 deg

Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.072	204.2	0.56	2.67	46.00	50.03	968.6	0.747	36.06066	0.112	0.027	3.68	2.196
1.446	342.9	-0.09	6.71	35.65	42.55	827.5	1.007	38.97839	0.188	-0.004	7.72	1.876
1.793	362.4	-0.96	7.77	28.75	37.09	705.6	1.249	31.40461	0.199	-0.046	8.78	1.600
2.158	353.7	-1.97	7.35	24.44	33.06	616.4	1.504	24.22852	0.194	-0.094	8.36	1.398
2.539	292.4	-2.39	5.82	21.56	31.63	570.2	1.769	15.64102	0.160	-0.114	6.83	1.293
2.882	298.6	-2.48	4.73	20.13	32.20	560.9	2.008	12.60404	0.164	-0.118	5.74	1.272
3.240	257.3	-2.49	3.77	18.97	33.12	558.5	2.257	8.63247	0.141	-0.119	4.78	1.266
3.590	253.6	-2.47	2.97	17.25	35.94	570.2	2.501	6.78858	0.139	-0.118	3.98	1.293
3.898	302.5	-2.50	2.75	13.80	40.60	583.2	2.716	6.71438	0.166	-0.119	3.76	1.322

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2004
 VCG Position 25.96 % B 5.97 cm @ Base Line
 Static trim TAOo 1.46 deg

Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.073	255.8	0.65	2.69	42.26	49.74	945.4	0.748	46.21377	0.105	0.031	4.15	2.144
1.440	566.2	-0.15	8.41	35.94	43.13	835.6	1.003	64.27564	0.233	-0.007	9.87	1.895
1.787	611.7	-1.24	9.99	30.88	38.06	736.3	1.245	51.13760	0.252	-0.059	11.45	1.670
2.156	570.7	-2.64	9.20	26.45	34.16	649.6	1.502	37.17763	0.235	-0.126	10.66	1.473
2.535	486.4	-3.13	7.28	23.00	31.63	585.6	1.767	25.40903	0.200	-0.149	8.74	1.328
2.884	418.2	-3.23	5.57	20.58	30.53	548.0	2.009	18.04750	0.172	-0.154	7.03	1.243
3.248	386.9	-3.21	4.45	19.55	30.82	540.0	2.263	13.35836	0.159	-0.153	5.91	1.224
3.579	371.3	-3.20	3.58	18.40	32.20	542.4	2.493	10.51205	0.153	-0.152	5.04	1.230
3.908	343.0	-3.15	2.93	18.40	34.85	570.8	2.723	7.73849	0.141	-0.150	4.39	1.294

Table B.2 L/B = 2.5 ; β = 12° ; L_{CG} = 35% ; Thrust Line : Base Line

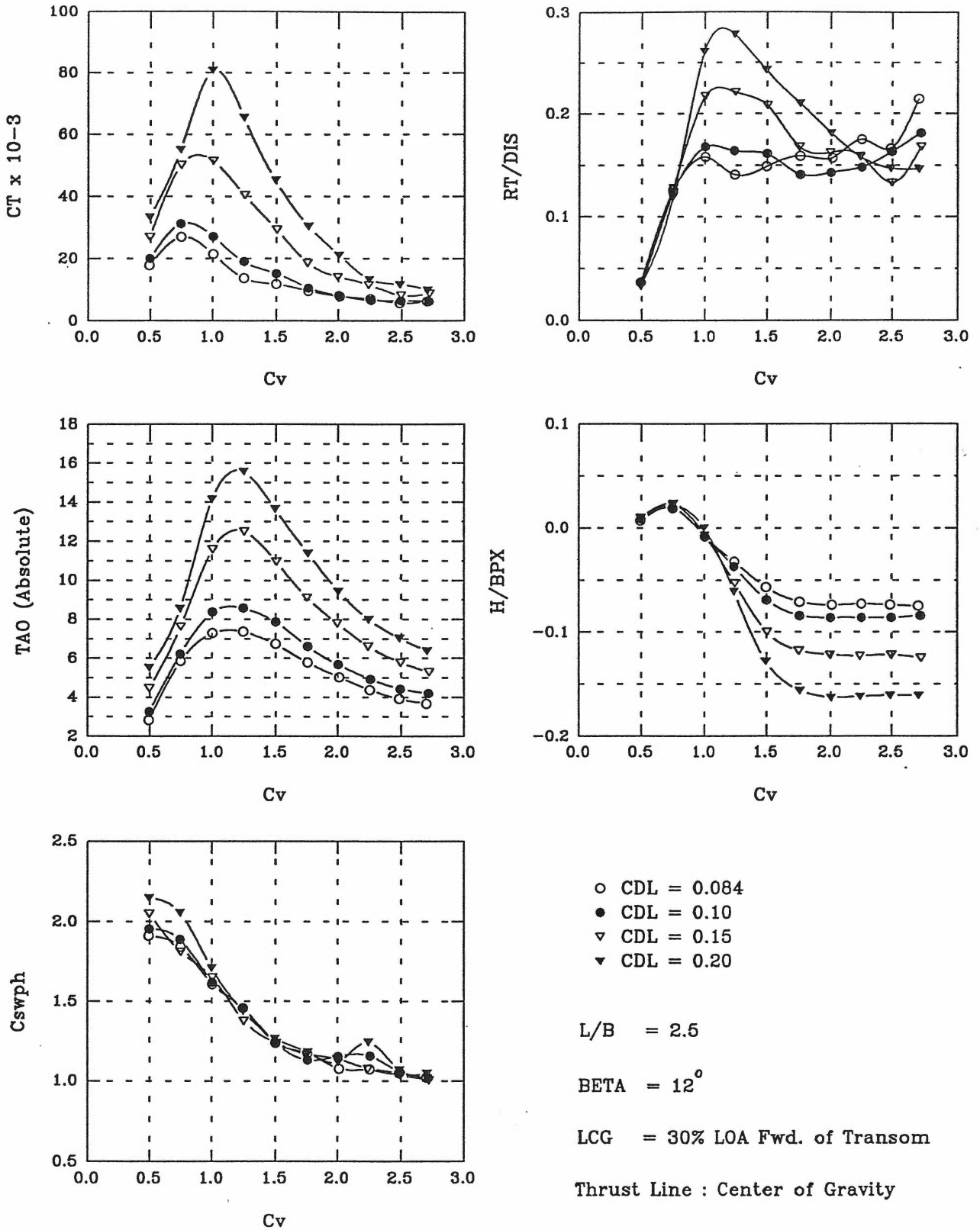


Figure B.3

Model No. T-2512
 L/B Ratio 2.5 Length Overall LOA 57.50 cm
 Deadrise 12.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 30.00 % LOA 17.25 cm @ Transom

Displacement DIS 1016.0 gms Disp. Coeff. CDL 0.0837
 VCG Position 26.00 % B 5.98 cm @ Base Line
 Static trim TAOo 2.44 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.705	38.0	0.15	0.38	30.19	48.30	842.7	0.492	17.81203	0.037	0.007	2.82	1.911
1.070	127.9	0.39	3.42	33.06	43.41	813.6	0.746	26.98876	0.126	0.019	5.86	1.845
1.441	160.7	-0.17	4.86	26.45	39.68	708.7	1.004	21.46666	0.158	-0.008	7.30	1.607
1.788	143.5	-0.67	4.93	24.15	35.77	642.2	1.246	13.73863	0.141	-0.032	7.37	1.456
2.152	151.6	-1.21	4.29	18.69	32.20	545.5	1.499	11.79434	0.149	-0.057	6.73	1.237
2.521	161.6	-1.50	3.34	15.81	32.49	517.8	1.757	9.65560	0.159	-0.071	5.78	1.174
2.885	159.3	-1.55	2.59	12.94	31.34	474.6	2.010	7.92556	0.157	-0.074	5.03	1.076
3.236	177.8	-1.53	1.93	12.36	31.74	472.8	2.254	7.05998	0.175	-0.073	4.37	1.072
3.567	168.7	-1.56	1.47	10.06	33.06	462.3	2.485	5.63939	0.166	-0.074	3.91	1.048
3.878	217.9	-1.57	1.23	7.19	34.85	450.6	2.702	6.31920	0.214	-0.075	3.67	1.022

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 25.52 % B 5.87 cm @ Base Line
 Static trim TAOo 2.83 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.714	44.6	0.18	0.44	31.63	48.88	862.1	0.497	19.99125	0.037	0.009	3.27	1.955
1.067	150.5	0.40	3.38	35.36	43.30	832.9	0.743	31.21819	0.124	0.019	6.21	1.889
1.442	204.6	-0.17	5.56	27.89	38.81	714.8	1.004	27.08033	0.168	-0.008	8.39	1.621
1.786	199.1	-0.77	5.74	25.30	34.79	644.1	1.244	19.05171	0.164	-0.037	8.57	1.460
2.158	196.3	-1.45	5.05	19.26	31.63	545.5	1.503	15.19123	0.161	-0.069	7.88	1.237
2.522	171.5	-1.76	3.77	16.39	30.19	499.3	1.757	10.61922	0.141	-0.084	6.60	1.132
2.872	173.9	-1.81	2.84	15.81	31.63	508.5	2.001	8.15296	0.143	-0.086	5.67	1.153
3.240	179.4	-1.80	2.10	14.38	33.18	509.8	2.257	6.58938	0.148	-0.086	4.93	1.156
3.580	198.2	-1.80	1.60	10.35	33.06	465.4	2.494	6.53341	0.163	-0.086	4.43	1.055
3.901	219.7	-1.76	1.36	8.63	33.35	450.0	2.718	6.30675	0.181	-0.084	4.19	1.020

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 25.96 % B 5.97 cm @ Base Line
 Static trim TAOo 4.02 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.712	62.8	0.21	0.45	35.94	49.45	904.0	0.496	26.94083	0.034	0.010	4.47	2.050
1.070	234.3	0.48	3.61	32.54	42.55	799.6	0.746	50.30636	0.128	0.023	7.63	1.813
1.438	395.3	-0.15	7.59	30.48	37.66	728.2	1.002	51.59458	0.217	-0.007	11.61	1.651
1.796	403.0	-1.11	8.49	25.01	31.63	607.1	1.251	40.46749	0.221	-0.053	12.51	1.377
2.161	379.2	-2.11	6.96	21.56	29.33	545.5	1.505	29.27465	0.208	-0.100	10.98	1.237
2.510	307.0	-2.48	5.10	19.26	28.75	514.7	1.749	18.61902	0.168	-0.118	9.12	1.167
2.863	295.7	-2.57	3.78	18.11	28.75	502.4	1.994	14.11892	0.162	-0.122	7.80	1.139
3.214	289.4	-2.58	2.58	15.53	28.75	474.6	2.240	11.60240	0.159	-0.123	6.60	1.076
3.579	242.9	-2.55	1.77	13.86	28.75	456.8	2.494	8.16212	0.133	-0.122	5.79	1.036
3.905	305.9	-2.63	1.27	12.65	28.75	443.8	2.721	8.88589	0.168	-0.125	5.29	1.006

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2003
 VCG Position 25.65 % B 5.90 cm @ Base Line
 Static trim TAOo 5.00 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.709	80.8	0.22	0.53	40.25	50.60	948.0	0.494	33.35146	0.033	0.010	5.53	2.150
1.064	288.6	0.46	3.56	41.69	46.00	906.7	0.742	55.21972	0.119	0.022	8.56	2.056
1.429	634.0	0.01	9.14	32.20	38.53	754.1	0.996	80.89526	0.261	0.000	14.14	1.710
1.786	675.6	-1.29	10.57	26.45	32.77	634.8	1.245	65.56350	0.278	-0.061	15.57	1.439
2.145	591.8	-2.68	8.67	23.00	29.04	557.8	1.494	45.34174	0.243	-0.128	13.67	1.265
2.520	510.8	-3.28	6.41	20.70	27.89	520.9	1.756	30.36225	0.210	-0.156	11.41	1.181
2.874	439.4	-3.41	4.45	18.69	27.31	493.1	2.003	21.20628	0.181	-0.163	9.45	1.118
3.219	385.4	-3.40	2.99	23.29	27.89	548.6	2.243	13.32799	0.158	-0.162	7.99	1.244
3.567	358.1	-3.39	2.03	15.81	28.18	471.5	2.485	11.73298	0.147	-0.161	7.03	1.069
3.883	354.5	-3.38	1.38	14.38	28.75	462.3	2.705	9.99966	0.146	-0.161	6.38	1.048

Table B.3 L/B = 2.5 ; β = 12° ; L_{CG} = 30% ; Thrust Line : Centre of Gravity

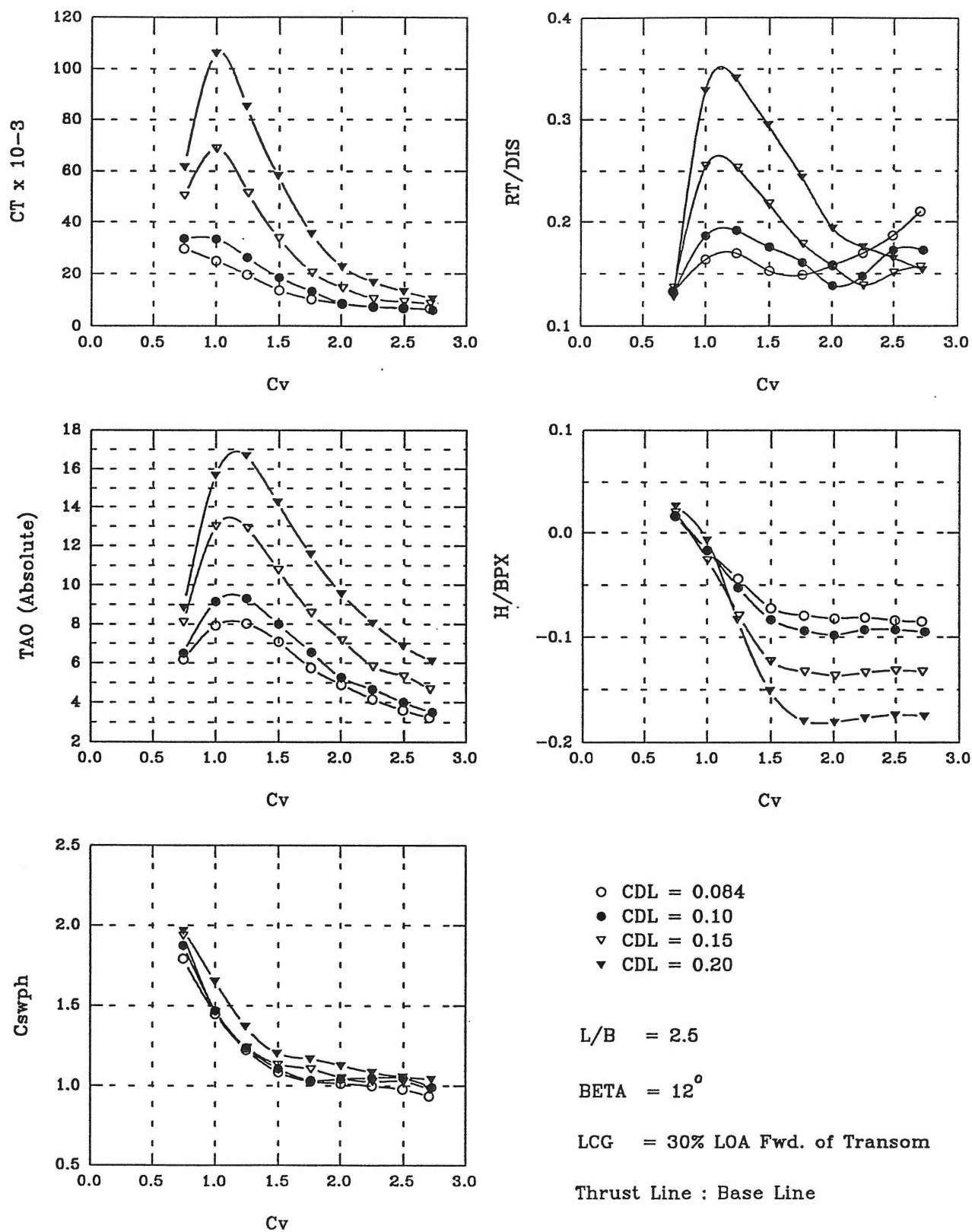


Figure B.4

Model No. T-2512
 L/B Ratio 2.5 Length Overall LOA 57.50 cm
 Deadrise 12.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 30.00 % LOA 17.25 cm @ Transom

Displacement DIS 1016.0 gms Disp. Coeff. CDL 0.0837
 VCG Position 26.00 % B 5.98 cm @ Base Line
 Static trim TAOO 2.44 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.066	135.5	0.33	3.74	30.76	43.13	788.9	0.742	29.74020	0.133	0.016	6.18	1.789
1.436	167.0	-0.36	5.48	24.44	35.08	637.9	1.000	24.96678	0.164	-0.017	7.92	1.447
1.790	172.8	-0.93	5.59	20.13	30.19	539.4	1.247	19.65450	0.170	-0.044	8.03	1.223
2.156	155.0	-1.52	4.65	16.39	28.18	477.7	1.502	13.71887	0.153	-0.072	7.09	1.083
2.528	150.9	-1.67	3.30	14.38	27.89	453.1	1.761	10.24793	0.149	-0.079	5.74	1.027
2.878	160.7	-1.73	2.46	12.36	29.33	446.9	2.005	8.53538	0.158	-0.082	4.90	1.013
3.232	172.8	-1.71	1.73	10.64	30.48	440.7	2.252	7.37959	0.170	-0.081	4.17	0.999
3.577	189.6	-1.76	1.17	8.63	31.63	431.5	2.492	6.75502	0.187	-0.084	3.61	0.978
3.884	212.9	-1.77	0.78	6.33	32.20	413.0	2.706	6.72025	0.210	-0.085	3.22	0.936

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 25.52 % B 5.87 cm @ Base Line
 Static trim TAOO 2.83 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.066	160.7	0.35	3.68	33.06	44.56	825.7	0.743	33.64467	0.132	0.017	6.51	1.872
1.436	227.4	-0.35	6.33	25.30	35.08	647.1	1.000	33.51771	0.187	-0.017	9.16	1.467
1.788	232.9	-1.09	6.48	20.99	29.90	545.5	1.246	26.25798	0.192	-0.052	9.31	1.237
2.157	213.9	-1.74	5.15	18.11	27.31	487.0	1.502	18.57147	0.176	-0.083	7.98	1.104
2.530	195.2	-1.97	3.72	15.24	27.31	456.1	1.763	13.14401	0.161	-0.094	6.55	1.034
2.875	168.5	-2.05	2.43	14.09	28.75	459.2	2.003	8.72374	0.139	-0.098	5.26	1.041
3.229	180.0	-1.95	1.84	13.22	29.90	462.3	2.249	7.34256	0.148	-0.093	4.67	1.048
3.582	210.3	-1.96	1.17	10.64	32.49	462.3	2.496	6.96735	0.173	-0.093	4.00	1.048
3.917	210.4	-1.99	0.67	8.34	32.49	437.6	2.729	6.16051	0.173	-0.095	3.50	0.992

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 25.96 % B 5.97 cm @ Base Line
 Static trim TAOO 4.02 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.069	249.6	0.41	4.07	35.94	44.85	853.0	0.745	50.36994	0.137	0.020	8.09	1.934
1.437	465.8	-0.55	8.99	27.03	33.06	644.1	1.001	68.85185	0.255	-0.026	13.01	1.460
1.799	461.5	-1.66	8.87	22.43	28.46	545.5	1.253	51.39265	0.253	-0.079	12.89	1.237
2.151	397.3	-2.57	6.75	19.55	27.03	499.3	1.498	33.82472	0.218	-0.123	10.77	1.132
2.532	325.8	-2.80	4.55	18.11	27.31	487.0	1.764	20.51271	0.179	-0.133	8.57	1.104
2.886	286.3	-2.89	3.13	16.39	26.74	462.3	2.011	14.62116	0.157	-0.137	7.15	1.048
3.238	253.5	-2.80	1.81	14.66	27.60	453.1	2.256	10.49231	0.139	-0.134	5.83	1.027
3.589	274.7	-2.78	1.31	13.51	28.75	453.1	2.500	9.25454	0.151	-0.132	5.33	1.027
3.889	286.6	-2.79	0.64	12.36	27.89	431.5	2.710	8.63207	0.157	-0.133	4.66	0.978

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2003
 VCG Position 25.65 % B 5.90 cm @ Base Line
 Static trim TAOO 5.00 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.069	310.4	0.56	3.85	37.38	45.14	867.1	0.745	61.58997	0.128	0.026	8.85	1.966
1.429	801.3	-0.16	10.67	31.63	36.51	727.4	0.996	106.06650	0.329	-0.007	15.67	1.649
1.779	829.3	-1.75	11.69	25.88	30.48	604.0	1.239	85.32388	0.341	-0.083	16.69	1.370
2.138	717.5	-3.16	9.25	22.14	27.31	530.1	1.490	58.21661	0.295	-0.151	14.25	1.202
2.521	592.6	-3.78	6.56	20.70	27.31	514.7	1.757	35.61149	0.244	-0.180	11.56	1.167
2.876	472.9	-3.81	4.55	18.97	27.31	496.2	2.004	22.65710	0.194	-0.181	9.55	1.125
3.231	427.3	-3.72	3.05	17.25	27.31	477.7	2.251	16.84490	0.176	-0.177	8.05	1.083
3.580	402.2	-3.64	1.87	16.10	27.31	465.4	2.494	13.25300	0.165	-0.174	6.87	1.055
3.910	373.8	-3.67	1.09	14.38	28.46	459.2	2.724	10.46826	0.154	-0.175	6.09	1.041

Table B.4 L/B = 2.5 ; β = 12° ; L_{ca} = 30% ; Thrust Line : Base Line

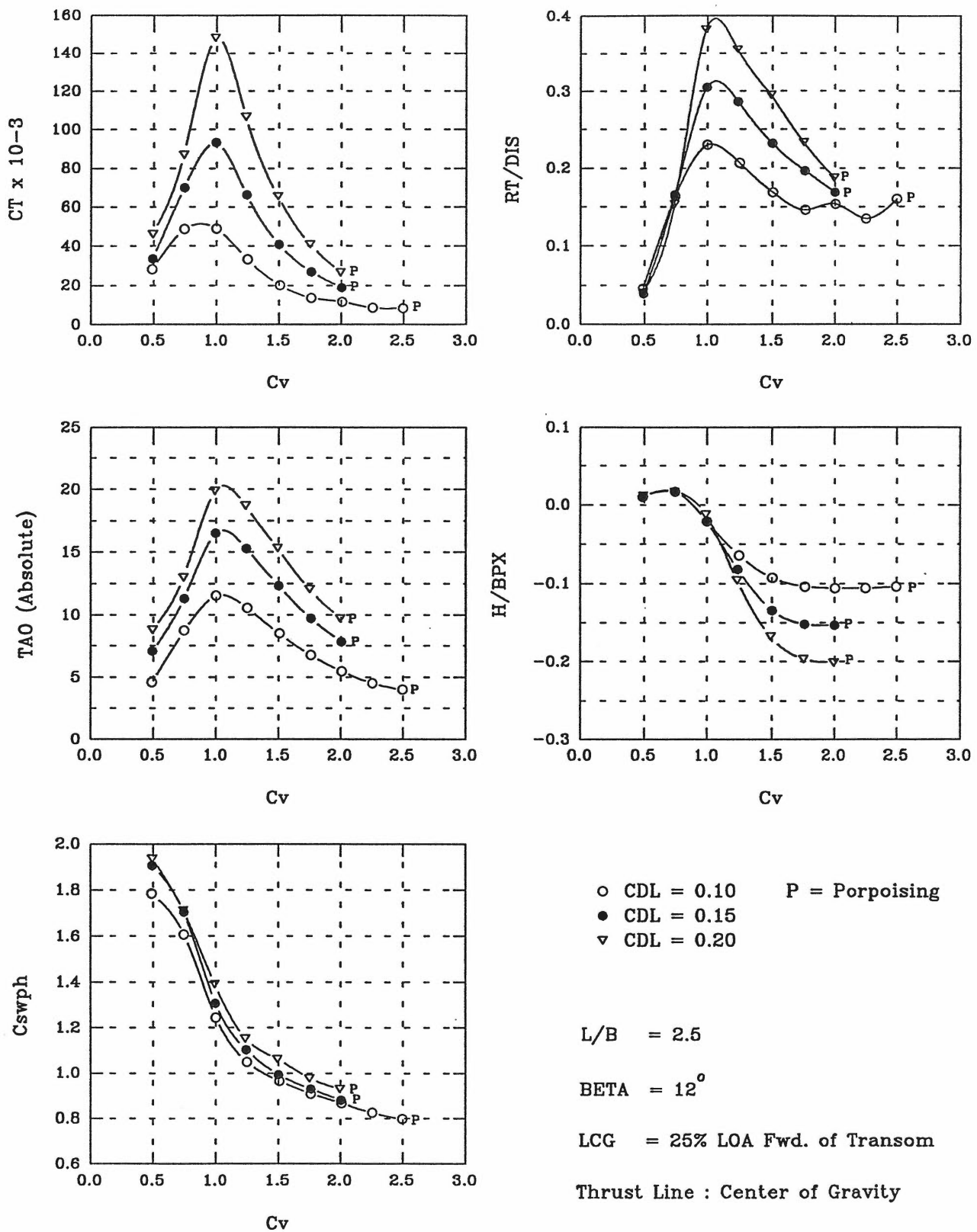


Figure B.5

Model No. T-2512

L/B Ratio 2.5
 Deadrise 12.00 deg
 LCG Position 25.00 % LOA

Length Overall LOA 57.50 cm
 Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 14.38 cm @ Transom

Displacement DIS 1216.0 gms
 VCG Position 29.04 % B
 Static trim TAOo 3.75 deg
 Water Temp. 21.00 deg C

Disp. Coeff. CDL 0.1001
 6.68 cm @ Base Line
 Density 997.994 kg/m3
 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.700	55.4	0.21	0.84	27.31	46.00	786.7	0.488	28.24616	0.046	0.010	4.59	1.784
1.068	199.7	0.35	4.97	28.75	37.38	708.7	0.744	48.58704	0.164	0.017	8.72	1.607
1.432	279.6	-0.45	7.80	21.85	29.33	548.6	0.998	48.85535	0.230	-0.021	11.55	1.244
1.792	251.3	-1.34	6.81	17.54	25.59	462.3	1.249	33.26605	0.207	-0.064	10.56	1.048
2.163	205.3	-1.95	4.75	14.66	25.01	425.3	1.507	20.28635	0.169	-0.093	8.50	0.964
2.525	177.5	-2.19	3.01	12.94	24.44	400.7	1.759	13.66265	0.146	-0.104	6.76	0.909
2.878	187.6	-2.22	1.72	11.50	24.15	382.2	2.005	11.64585	0.154	-0.106	5.47	0.867
3.232	164.7	-2.22	0.77	9.78	24.15	363.7	2.252	8.52508	0.135	-0.106	4.52	0.825
3.582	194.0	-2.19	0.25	8.63	24.15	351.3	2.496	8.46018	0.160	-0.104	4.00	0.797

** Porpoising

Displacement DIS 1825.0 gms
 VCG Position 27.61 % B
 Static trim TAOo 5.97 deg
 Water Temp. 21.00 deg C

Disp. Coeff. CDL 0.1503
 6.35 cm @ Base Line
 Density 997.994 kg/m3
 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.708	72.0	0.23	1.10	33.06	46.00	840.7	0.493	33.59923	0.039	0.011	7.07	1.906
1.064	303.8	0.36	5.34	31.63	38.81	751.4	0.741	70.18169	0.166	0.017	11.31	1.704
1.426	556.0	-0.45	10.54	24.44	29.33	576.3	0.994	93.22369	0.305	-0.021	16.51	1.307
1.781	521.1	-1.73	9.31	20.13	25.30	487.0	1.241	66.31448	0.286	-0.082	15.28	1.104
2.156	423.5	-2.82	6.37	17.25	23.58	437.6	1.502	40.91587	0.232	-0.134	12.34	0.992
2.523	359.1	-3.19	3.76	15.24	23.00	409.9	1.758	27.05080	0.197	-0.152	9.73	0.929
2.872	309.3	-3.20	1.87	13.22	23.00	388.3	2.001	18.97946	0.169	-0.153	7.84	0.881

** Porpoising

Displacement DIS 2432.0 gms
 VCG Position 27.78 % B
 Static trim TAOo 7.65 deg
 Water Temp. 21.50 deg C

Disp. Coeff. CDL 0.2003
 6.39 cm @ Base Line
 Density 997.885 kg/m3
 Kin. Viscosity 0.9682E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.704	99.6	0.26	1.18	34.50	46.00	854.4	0.491	46.20199	0.041	0.012	8.83	1.937
1.058	373.7	0.36	5.36	31.63	39.10	754.4	0.737	87.05890	0.154	0.017	13.01	1.711
1.417	928.9	-0.25	12.24	26.45	30.76	613.3	0.988	148.23870	0.382	-0.012	19.89	1.391
1.771	864.2	-2.01	11.04	21.56	25.88	508.5	1.234	106.58160	0.355	-0.096	18.69	1.153
2.140	716.6	-3.54	7.66	19.26	24.44	468.5	1.491	65.68763	0.295	-0.168	15.31	1.062
2.509	565.9	-4.14	4.42	16.96	23.29	431.5	1.748	40.97174	0.233	-0.197	12.07	0.978
2.861	456.8	-4.22	2.08	15.24	23.00	409.9	1.993	26.77615	0.188	-0.201	9.73	0.929

** Porpoising

Table B.5 L/B = 2.5 ; $\beta = 12^\circ$; $L_{CG} = 25\%$; Thrust Line : Centre of Gravity

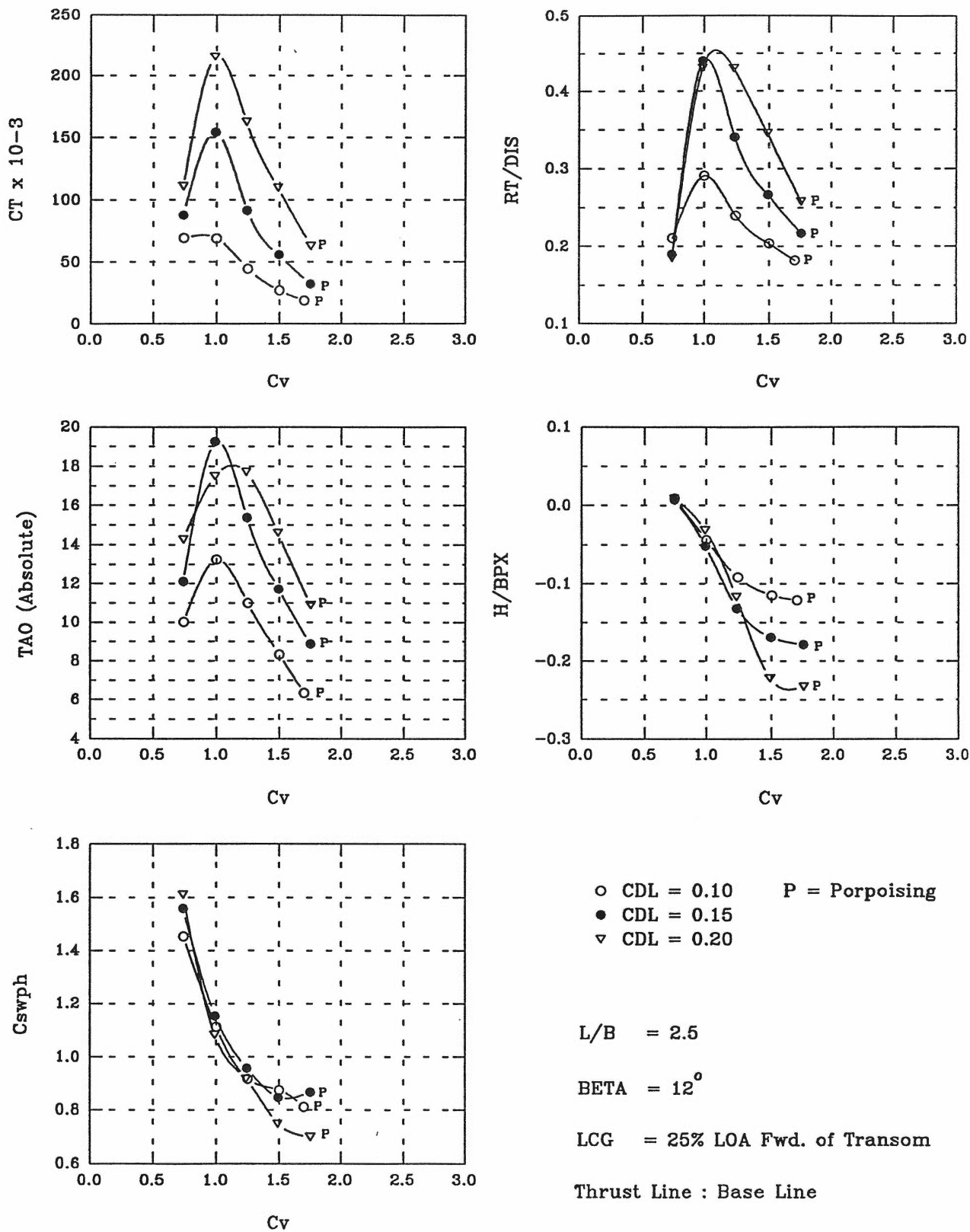


Figure B.6

Model No. T-2512
 L/B Ratio 2.5 Length Overall LOA 57.50 cm
 Deadrise 12.00 deg Breath (Deck) B 23.00 cm
 LCG Position 25.00 % LOA Breath (Chine) BPX 21.00 cm
 14.38 cm @ Transom
 Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1002
 VCG Position 29.04 % B 6.68 cm @ Base Line
 Static trim TAOo 3.75 deg
 Water Temp. 21.50 deg C Density 997.885 kg/m3 Kin. Viscosity 0.9682E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.065	256.3	0.18	6.27	25.88	33.93	641.0	0.742	69.27111	0.211	0.009	10.02	1.453
1.433	353.5	-0.92	9.48	20.13	25.59	490.0	0.999	69.02124	0.291	-0.044	13.23	1.111
1.789	292.1	-1.94	7.24	15.81	21.85	403.7	1.246	44.45838	0.240	-0.092	10.99	0.916
2.158	248.3	-2.42	4.58	14.09	21.85	385.3	1.503	27.21386	0.204	-0.115	8.33	0.874
2.526	221.7	-2.54	2.59	11.50	21.85	357.5	1.700	19.10296	0.182	-0.121	6.34	0.811

** Porpoising
 Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 27.61 % B 6.35 cm @ Base Line
 Static trim TAOo 5.97 deg
 Water Temp. 21.50 deg C Density 997.885 kg/m3 Kin. Viscosity 0.9682E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.061	346.3	0.16	6.14	28.75	35.36	687.2	0.739	88.03172	0.190	0.007	12.11	1.558
1.419	803.8	-1.07	13.28	21.56	25.88	508.5	0.989	154.35010	0.440	-0.051	19.25	1.153
1.779	623.1	-2.78	9.42	17.54	21.85	422.2	1.239	91.68023	0.341	-0.132	15.39	0.957
2.145	487.3	-3.55	5.77	14.66	20.13	372.9	1.495	55.81160	0.267	-0.169	11.74	0.846
2.516	396.1	-3.76	2.90	14.38	21.28	382.2	1.753	32.20027	0.217	-0.179	8.87	0.867

** Porpoising
 Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2003
 VCG Position 27.78 % B 6.39 cm @ Base Line
 Static trim TAOo 7.65 deg
 Water Temp. 21.50 deg C Density 997.885 kg/m3 Kin. Viscosity 0.9682E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.059	449.5	0.19	6.62	30.19	36.22	710.2	0.738	111.07100	0.185	0.009	14.27	1.610
1.415	1048.3	-0.66	9.84	20.13	24.44	477.7	0.986	215.62240	0.431	-0.031	17.49	1.083
1.770	1046.6	-2.46	10.08	16.67	20.99	403.7	1.233	162.66910	0.430	-0.117	17.73	0.916
2.135	840.5	-4.66	6.96	10.64	20.13	329.8	1.488	109.92790	0.346	-0.222	14.61	0.748
2.514	626.4	-4.88	3.25	8.63	20.13	308.2	1.752	63.20726	0.258	-0.233	10.90	0.699

** Porpoising

Table B.6 L/B = 2.5 ; $\beta = 12^\circ$; $L_{CG} = 25\%$; Thrust Line : Base Line

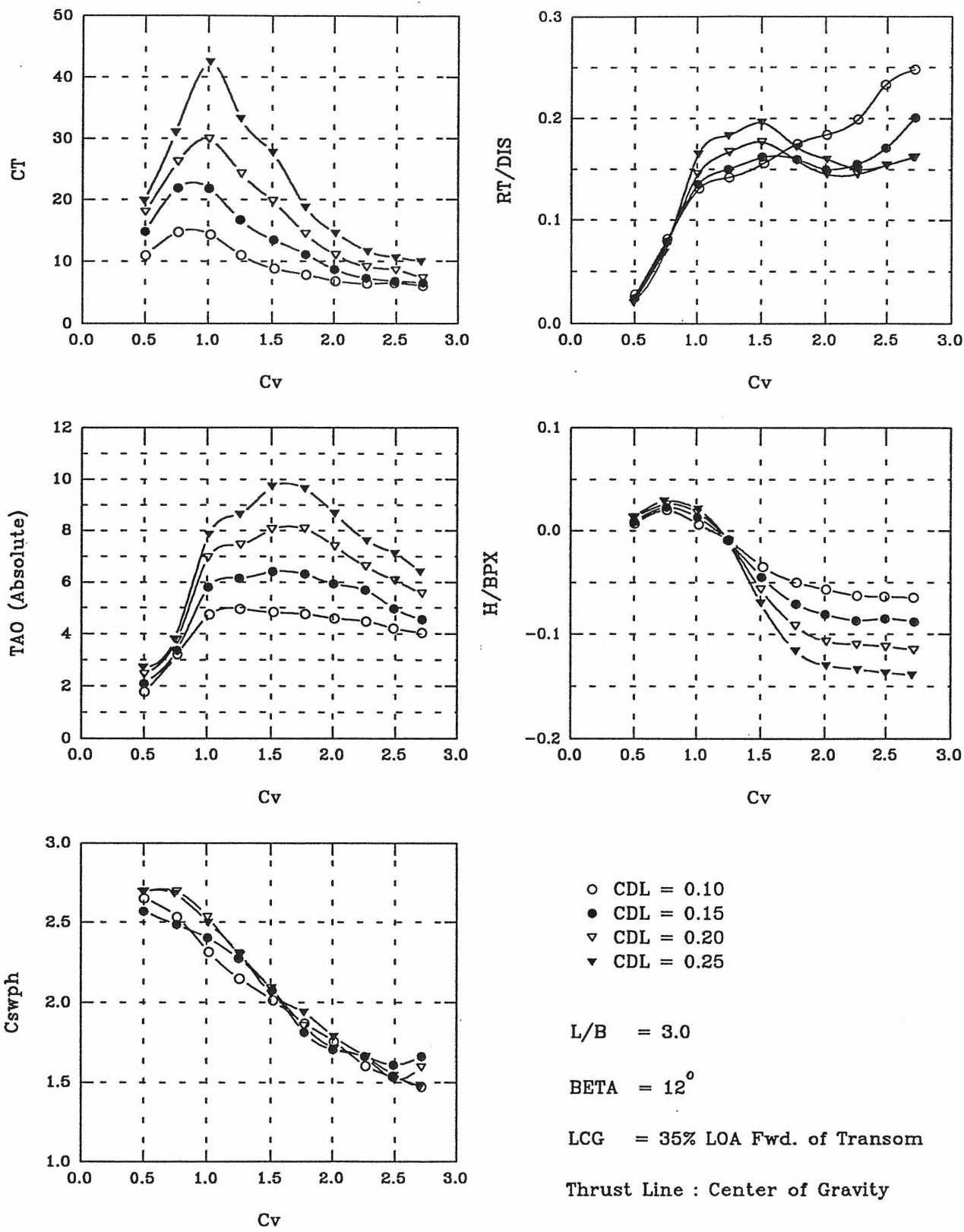


Figure B.7

Model No. T-3012

L/B Ratio 3.0 Length Overall LOA 69.00 cm

Deadrise 12.00 deg Breath (Deck) B 23.00 cm

LCG Position 35.00 % LOA 24.15 cm @ Transom Breath (Chine) BPX 21.00 cm

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Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.10

VCG Position 24.74 % B 5.69 cm @ Base Line

Static trim TAOo 1.60 deg

Water Temp. 22.50 deg C Density 997.658 kg/m³ Kin. Viscosity 0.9457E-06 m²/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm ²	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
0.725	34.3	0.15	0.17	53.68	61.69	1169.0	0.505	10.952970	0.028	0.007	1.77	2.651
1.093	100.1	0.42	1.62	48.30	58.65	1117.1	0.761	14.753810	0.082	0.020	3.22	2.533
1.461	158.9	0.13	3.15	41.40	54.51	1019.0	1.018	14.361430	0.131	0.006	4.75	2.311
1.806	172.8	-0.19	3.36	36.22	52.30	946.4	1.258	11.014900	0.142	-0.009	4.96	2.146
2.183	189.3	-0.74	3.23	32.78	50.03	887.6	1.521	8.797648	0.156	-0.035	4.83	2.013
2.550	212.8	-1.05	3.17	29.33	47.54	823.9	1.776	7.812627	0.175	-0.050	4.77	1.868
2.886	223.3	-1.20	3.00	25.88	46.23	773.0	2.011	6.819765	0.184	-0.057	4.60	1.753
3.254	242.1	-1.31	2.89	21.74	44.16	706.4	2.267	6.363119	0.199	-0.063	4.49	1.602
3.568	283.3	-1.35	2.62	19.87	43.33	677.5	2.486	6.460609	0.233	-0.064	4.22	1.536
3.898	301.0	-1.37	2.44	17.94	42.57	648.7	2.716	6.005923	0.248	-0.065	4.04	1.471

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.15

VCG Position 24.61 % B 5.66 cm @ Base Line

Static trim TAOo 1.95 deg

Water Temp. 22.50 deg C Density 997.658 kg/m³ Kin. Viscosity 0.9457E-06 m²/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm ²	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
0.717	43.8	0.19	0.15	45.54	62.10	1133.1	0.499	14.806400	0.024	0.009	2.10	2.569
1.086	144.1	0.49	1.42	45.20	59.00	1096.4	0.757	21.929040	0.079	0.023	3.37	2.486
1.447	246.5	0.26	3.85	44.85	55.89	1059.3	1.008	21.851360	0.135	0.013	5.80	2.402
1.795	274.1	-0.20	4.20	40.71	53.48	1001.5	1.251	16.708870	0.150	-0.009	6.15	2.271
2.170	295.4	-0.95	4.46	35.88	49.68	915.0	1.512	13.478110	0.162	-0.045	6.41	2.075
2.543	292.5	-1.48	4.36	30.36	44.16	798.7	1.771	11.140990	0.160	-0.071	6.31	1.811
2.875	273.5	-1.70	3.98	26.91	43.13	750.8	2.003	8.664077	0.150	-0.081	5.93	1.702
3.244	283.0	-1.83	3.74	25.53	42.78	732.3	2.260	7.223189	0.155	-0.087	5.69	1.661
3.574	313.0	-1.79	3.03	23.32	42.78	708.6	2.490	6.799475	0.171	-0.085	4.98	1.607
3.901	366.2	-1.84	2.61	22.43	45.89	732.3	2.718	6.463918	0.201	-0.088	4.56	1.661

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.20

VCG Position 24.52 % B 5.64 cm @ Base Line

Static trim TAOo 2.30 deg

Water Temp. 22.50 deg C Density 997.658 kg/m³ Kin. Viscosity 0.9457E-06 m²/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm ²	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
0.719	56.1	0.26	0.15	62.10	62.10	1188.0	0.501	17.996400	0.023	0.013	2.45	2.694
1.088	187.5	0.56	1.48	62.10	62.10	1188.0	0.758	26.227330	0.077	0.026	3.78	2.694
1.442	353.4	0.37	4.65	52.79	56.24	1117.1	1.005	29.926020	0.145	0.018	6.95	2.533
1.805	406.7	-0.21	5.15	44.85	51.06	1011.2	1.258	24.269700	0.167	-0.010	7.45	2.293
2.159	431.6	-1.19	5.76	37.95	48.30	920.2	1.504	19.788930	0.177	-0.057	8.06	2.087
2.537	386.6	-1.94	5.77	33.12	43.13	817.1	1.767	14.460920	0.159	-0.092	8.07	1.853
2.888	352.6	-2.25	5.09	28.98	41.40	754.4	2.012	11.021820	0.145	-0.107	7.39	1.711
3.245	353.6	-2.32	4.31	27.60	40.36	728.6	2.261	9.065616	0.145	-0.110	6.61	1.652
3.582	374.0	-2.35	3.76	24.15	38.30	669.4	2.496	8.561684	0.154	-0.112	6.06	1.518

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.25

VCG Position 25.70 % B 5.91 cm @ Base Line

Static trim TAOo 2.54 deg

Water Temp. 22.50 deg C Density 997.658 kg/m³ Kin. Viscosity 0.9457E-06 m²/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm ²	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
0.706	59.8	0.27	0.18	62.10	62.10	1188.0	0.492	19.830990	0.020	0.013	2.72	2.694
1.060	209.8	0.60	1.26	61.41	61.41	1182.1	0.739	31.051030	0.069	0.029	3.80	2.680
1.452	501.6	0.43	5.31	48.99	56.93	1101.8	1.012	42.469430	0.165	0.021	7.85	2.498
1.797	555.8	-0.21	6.09	44.85	51.75	1017.9	1.252	33.239190	0.183	-0.010	8.63	2.308
2.160	594.9	-1.47	7.19	38.30	46.58	905.6	1.505	27.700880	0.196	-0.070	9.73	2.054
2.537	524.5	-2.44	7.10	34.78	44.99	854.5	1.768	18.752880	0.172	-0.116	9.64	1.938
2.886	486.3	-2.73	6.13	31.19	42.16	786.1	2.010	14.609270	0.160	-0.130	8.67	1.783
3.257	457.4	-2.82	5.07	28.98	39.33	732.2	2.269	11.582590	0.150	-0.134	7.61	1.660
3.581	469.9	-2.88	4.57	25.88	37.61	680.5	2.495	10.591270	0.154	-0.137	7.11	1.543
3.876	491.3	-2.91	3.86	24.84	35.54	647.2	2.700	9.939482	0.162	-0.139	6.40	1.468
3.897	392.9	-2.42	3.26	24.15	41.40	702.7	2.715	7.239856	0.162	-0.115	5.56	1.593

Table B.7 L/B = 3.0 ; $\beta = 12^\circ$; $L_{CG} = 35\%$; Thrust Line : Centre of Gravity

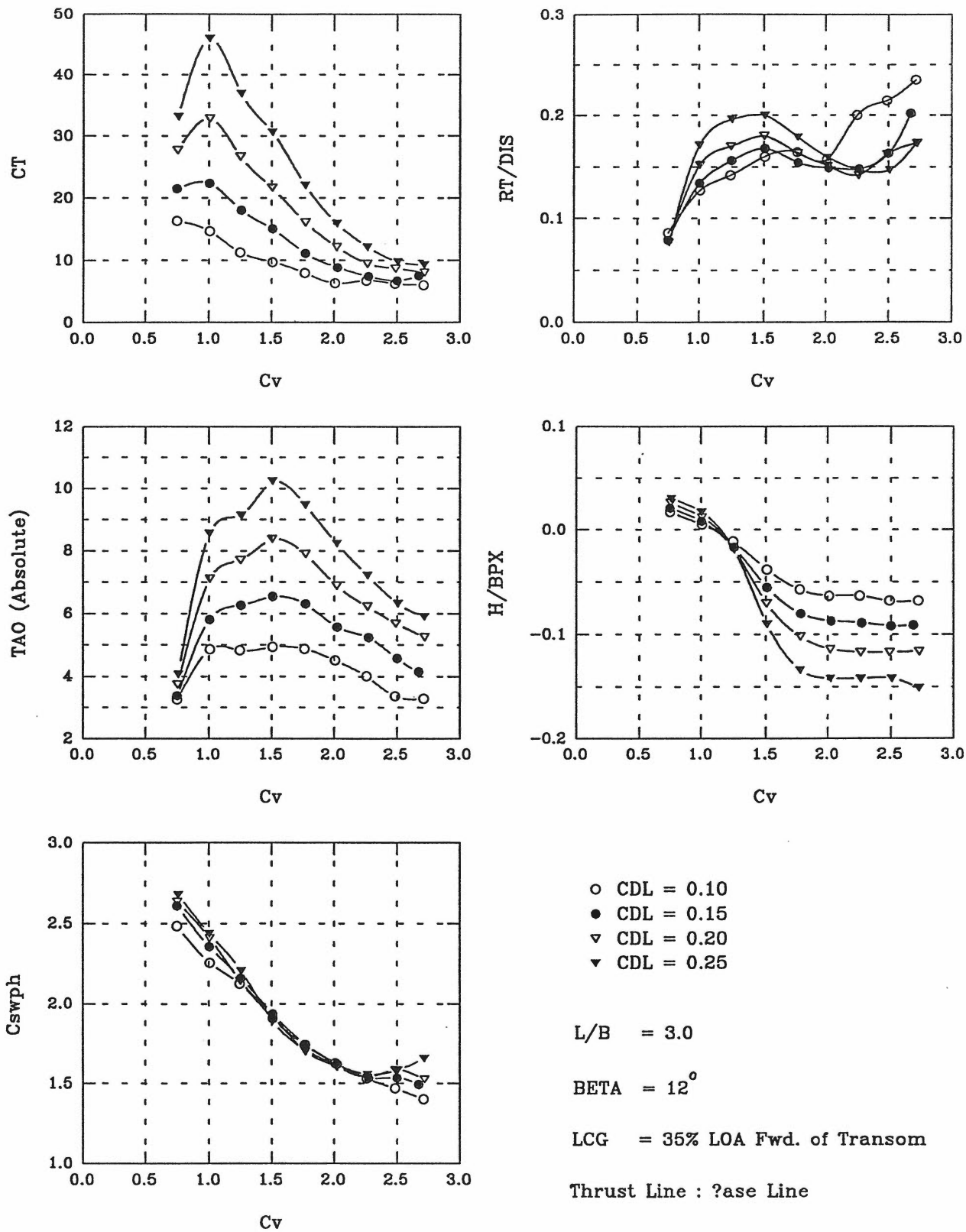


Figure B.8

Model No. T-3012

L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 12.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 35.00 % LOA 24.15 cm @ Transom

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.10
 VCG Position 24.74 % B 5.69 cm @ Base Line
 Static trim TAOO 1.60 deg
 Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm2	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
1.074	104.9	0.36	1.66	46.58	57.96	1095.6	0.748	16.337790	0.086	0.017	3.26	2.484
1.444	155.0	0.11	3.26	39.68	53.82	995.0	1.006	14.688210	0.127	0.005	4.86	2.256
1.791	172.3	-0.22	3.23	35.88	51.75	937.3	1.248	11.268600	0.142	-0.011	4.83	2.125
2.164	194.9	-0.79	3.34	30.77	47.82	842.3	1.508	9.715542	0.160	-0.038	4.94	1.910
2.535	199.4	-1.20	3.28	26.77	44.85	767.8	1.766	7.947016	0.164	-0.057	4.88	1.741
2.883	190.5	-1.31	2.91	23.18	43.75	717.5	2.009	6.279883	0.157	-0.063	4.51	1.627
3.240	243.2	-1.33	2.41	19.87	43.13	675.3	2.257	6.746351	0.200	-0.063	4.01	1.531
3.569	260.3	-1.44	1.76	18.97	41.40	647.2	2.487	6.209010	0.214	-0.068	3.36	1.468
3.895	286.3	-1.44	1.68	15.53	42.09	617.6	2.713	6.009213	0.235	-0.068	3.28	1.401

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.15
 VCG Position 24.61 % B 5.66 cm @ Base Line
 Static trim TAOO 1.95 deg
 Water Temp. 22.00 deg C Density 997.772 kg/m3 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm2	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
1.074	144.9	0.45	1.43	50.54	61.14	1149.6	0.748	21.491320	0.079	0.021	3.38	2.607
1.439	244.6	0.17	3.86	44.16	54.51	1039.4	1.003	22.346270	0.134	0.008	5.81	2.357
1.803	284.0	-0.37	4.32	38.30	51.06	952.7	1.256	18.038100	0.156	-0.017	6.27	2.160
2.166	305.9	-1.15	4.60	33.47	46.23	854.0	1.509	15.012550	0.168	-0.055	6.55	1.937
2.544	280.6	-1.69	4.36	29.33	42.44	769.2	1.773	11.081860	0.154	-0.080	6.31	1.744
2.907	271.9	-1.83	3.62	25.96	40.76	715.2	2.025	8.847587	0.149	-0.087	5.57	1.622
3.262	270.0	-1.87	3.29	24.15	38.99	676.8	2.273	7.372148	0.148	-0.089	5.24	1.535
3.588	297.3	-1.94	2.62	22.43	40.71	676.8	2.500	6.710089	0.163	-0.092	4.57	1.535
3.837	369.3	-1.90	2.20	21.39	40.02	658.3	2.673	7.493907	0.202	-0.091	4.15	1.493

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.20
 VCG Position 24.52 % B 5.64 cm @ Base Line
 Static trim TAOO 2.30 deg
 Water Temp. 22.00 deg C Density 997.772 kg/m3 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm2	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
1.078	190.3	0.54	1.45	55.20	59.34	1160.5	0.751	27.746540	0.078	0.026	3.75	2.632
1.443	369.6	0.26	4.81	46.23	55.20	1062.9	1.005	32.836180	0.152	0.012	7.11	2.410
1.794	413.6	-0.37	5.41	40.32	48.43	945.2	1.250	26.735700	0.170	-0.017	7.71	2.143
2.159	437.1	-1.46	6.08	34.85	44.51	850.0	1.504	21.699830	0.180	-0.070	8.38	1.927
2.542	395.8	-2.14	5.60	30.36	39.68	750.7	1.771	16.050570	0.163	-0.102	7.90	1.702
2.900	367.9	-2.40	4.59	26.97	39.08	708.1	2.020	12.150490	0.151	-0.114	6.89	1.606
3.251	344.9	-2.45	3.93	24.94	38.34	678.3	2.265	9.456527	0.142	-0.117	6.23	1.538
3.572	392.9	-2.46	3.39	25.19	40.02	699.0	2.489	8.660318	0.162	-0.117	5.69	1.585
3.904	419.9	-2.44	2.96	23.46	39.33	673.1	2.720	8.050286	0.173	-0.116	5.26	1.526

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.25
 VCG Position 25.70 % B 5.91 cm @ Base Line
 Static trim TAOO 2.54 deg
 Water Temp. 22.00 deg C Density 997.772 kg/m3 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm2	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
1.087	235.0	0.64	1.53	55.55	62.10	1179.9	0.757	33.173700	0.077	0.030	4.07	2.676
1.439	520.3	0.35	6.02	47.61	55.20	1074.8	1.003	45.971050	0.171	0.017	8.56	2.437
1.804	595.2	-0.41	6.61	41.40	50.03	972.7	1.257	36.955170	0.196	-0.019	9.15	2.206
2.164	609.6	-1.89	7.70	35.54	42.44	834.7	1.508	30.659940	0.200	-0.090	10.24	1.893
2.540	545.6	-2.81	6.94	31.40	38.99	754.3	1.770	22.041760	0.179	-0.134	9.48	1.711
2.901	484.9	-2.98	5.70	28.84	37.61	712.3	2.021	15.905450	0.159	-0.142	8.24	1.615
3.251	448.0	-2.97	4.68	27.25	36.78	686.4	2.265	12.144220	0.147	-0.142	7.22	1.557
3.598	447.9	-2.98	3.78	27.12	38.02	698.3	2.507	9.744821	0.147	-0.142	6.32	1.583
3.900	525.9	-3.17	3.37	27.95	40.36	732.3	2.717	9.282331	0.173	-0.151	5.91	1.660

Table B.8 L/B = 3.0 ; β = 12° ; LCG = 35% ; Thrust Line : Base Line

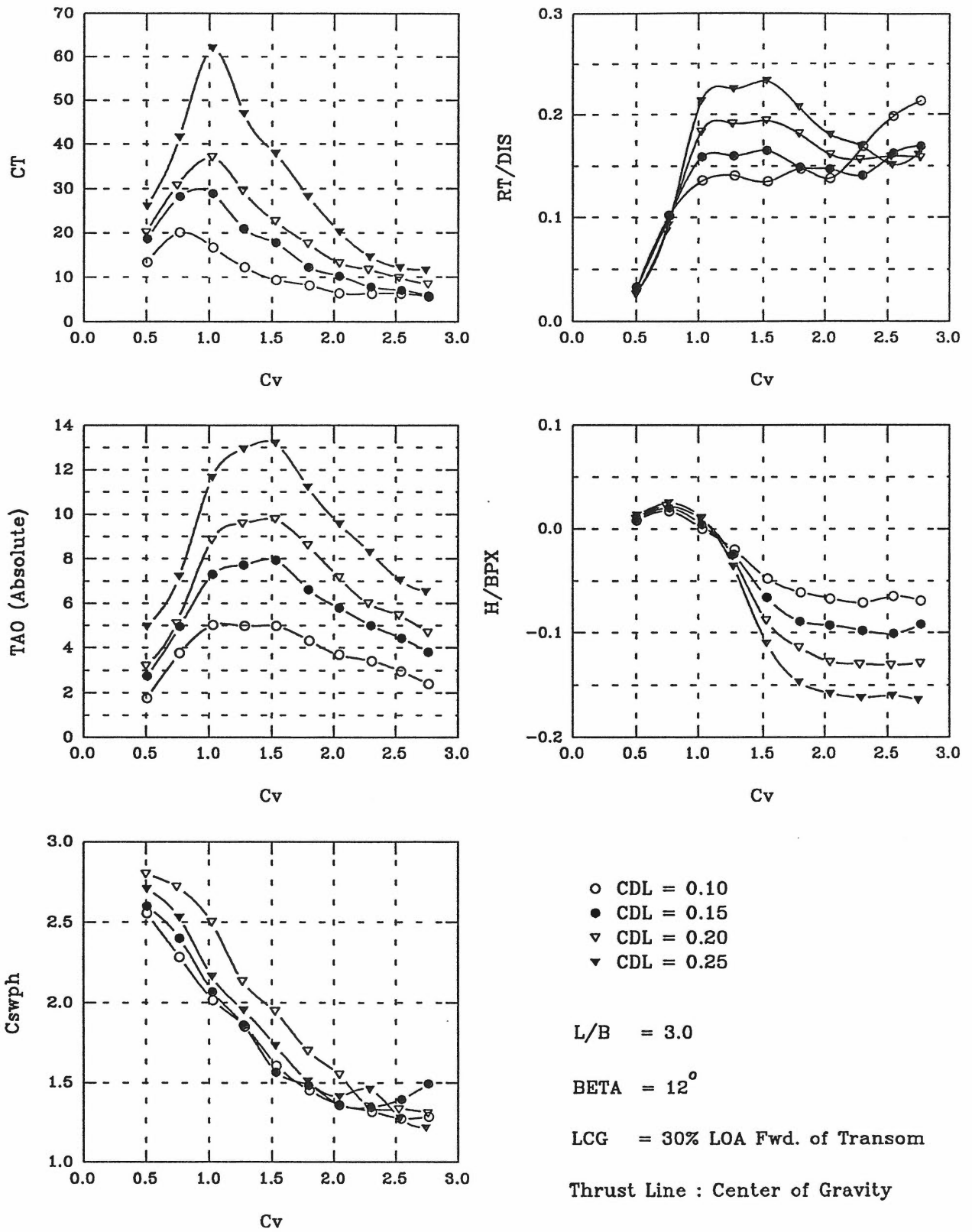


Figure B.9

Model No. T-3012
 L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 12.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 30.00 % LOA 20.70 cm @ Transom

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.10
 VCG Position 23.43 % B 5.39 cm @ Base Line
 Static trim TAOo 1.21 deg
 Water Temp. 22.00 deg C Density 997.772 kg/m3 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm2	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
0.726	40.4	0.17	0.56	46.85	60.63	1126.6	0.506	13.383770	0.033	0.008	1.77	2.555
1.101	124.4	0.36	2.56	40.57	54.17	1007.3	0.767	20.016760	0.102	0.017	3.77	2.284
1.480	164.9	0.01	3.82	34.26	48.72	889.2	1.031	16.652230	0.136	0.000	5.03	2.016
1.841	172.0	-0.43	3.77	30.02	46.23	817.2	1.282	12.212990	0.141	-0.020	4.98	1.853
2.206	164.4	-1.00	3.76	25.11	41.03	709.0	1.537	9.364541	0.135	-0.048	4.97	1.608
2.590	178.2	-1.28	3.11	22.08	37.61	639.8	1.804	8.166175	0.147	-0.061	4.32	1.451
2.934	167.4	-1.41	2.48	18.90	37.04	599.6	2.044	6.378232	0.138	-0.067	3.69	1.360
3.312	205.8	-1.48	2.21	17.25	36.92	580.6	2.308	6.351510	0.169	-0.071	3.42	1.317
3.653	241.1	-1.36	1.74	15.64	36.76	561.8	2.545	6.324517	0.198	-0.065	2.95	1.274
3.972	258.7	-1.45	1.20	15.12	37.80	567.3	2.767	5.683949	0.213	-0.069	2.41	1.286

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.15
 VCG Position 23.70 % B 5.45 cm @ Base Line
 Static trim TAOo 2.34 deg
 Water Temp. 22.00 deg C Density 997.772 kg/m3 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
0.728	57.7	0.19	0.41	41.40	58.65	1146.6	0.507	18.659872	0.032	0.009	2.75	2.600
1.101	184.2	0.43	2.62	44.85	55.89	1059.3	0.767	28.208370	0.101	0.020	4.96	2.402
1.473	290.6	0.08	4.97	37.34	48.10	912.0	1.026	28.880220	0.159	0.004	7.31	2.068
1.830	292.4	-0.50	5.39	32.78	43.82	820.8	1.275	20.908120	0.160	-0.024	7.73	1.861
2.198	300.8	-1.39	5.59	27.60	36.92	691.6	1.531	17.708640	0.165	-0.066	7.93	1.568
2.579	271.1	-1.88	4.27	25.19	35.88	654.6	1.797	12.243020	0.149	-0.089	6.61	1.484
2.929	268.8	-1.96	3.47	22.90	33.02	599.4	2.041	10.277240	0.147	-0.093	5.81	1.359
3.306	257.1	-2.06	2.66	22.57	32.77	593.2	2.303	7.799926	0.141	-0.098	5.00	1.345
3.655	296.2	-2.12	2.09	23.51	33.88	615.2	2.547	7.084871	0.162	-0.101	4.43	1.395
3.970	308.6	-1.94	1.48	25.38	35.99	657.9	2.766	5.854745	0.169	-0.092	3.82	1.492

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.20
 VCG Position 23.87 % B 5.49 cm @ Base Line
 Static trim TAOo 2.73 deg
 Water Temp. 23.00 deg C Density 997.541 kg/m3 Kin. Viscosity 0.9347E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.714	64.3	0.22	0.46	60.80	0.00	1234.8	0.497	20.094010	0.026	0.010	3.19	2.800
1.063	211.7	0.45	2.37	54.03	64.81	1199.8	0.741	30.691400	0.087	0.022	5.10	2.721
1.463	444.6	0.21	6.12	48.30	57.27	1102.7	1.020	37.026450	0.183	0.010	8.85	2.500
1.812	464.8	-0.55	6.85	39.33	48.99	941.1	1.263	29.579830	0.191	-0.026	9.58	2.134
2.187	472.0	-1.84	7.05	35.93	44.37	859.1	1.524	22.595260	0.194	-0.088	9.78	1.948
2.565	439.0	-2.39	5.88	34.50	42.44	749.7	1.787	17.500380	0.181	-0.114	8.61	1.700
2.929	392.5	-2.70	4.43	27.04	36.76	684.0	2.041	13.155960	0.161	-0.128	7.16	1.551
3.271	378.8	-2.72	3.26	22.08	33.47	595.4	2.279	11.694950	0.156	-0.130	5.99	1.350
3.624	387.6	-2.75	2.74	20.94	33.88	587.7	2.525	9.876659	0.159	-0.131	5.47	1.333
3.962	384.8	-2.70	1.95	19.32	34.50	577.0	2.760	8.358156	0.158	-0.129	4.68	1.308

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.25
 VCG Position 25.17 % B 5.79 cm @ Base Line
 Static trim TAOo 4.41 deg
 Water Temp. 23.00 deg C Density 997.541 kg/m3 Kin. Viscosity 0.9347E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm2	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
0.725	83.0	0.26	0.54	55.55	63.83	1194.5	0.505	26.040980	0.027	0.013	4.95	2.709
1.094	282.6	0.53	2.80	49.68	57.96	1115.2	0.762	41.631550	0.093	0.025	7.21	2.529
1.466	646.6	0.24	7.25	41.40	48.30	954.9	1.021	61.978260	0.213	0.011	11.66	2.165
1.826	685.3	-0.75	8.53	36.64	43.95	861.6	1.272	46.934600	0.225	-0.036	12.94	1.954
2.192	709.9	-2.31	8.80	31.95	39.40	764.7	1.527	37.987520	0.233	-0.110	13.21	1.734
2.566	629.8	-3.10	6.82	27.60	34.50	665.7	1.788	28.258830	0.207	-0.147	11.23	1.510
2.931	548.9	-3.31	5.16	24.63	33.53	623.5	2.042	20.156750	0.180	-0.158	9.57	1.414
3.289	515.0	-3.41	3.89	24.15	35.88	643.5	2.291	14.550420	0.169	-0.162	8.30	1.459
3.639	458.4	-3.37	2.62	20.63	31.88	562.9	2.535	12.096360	0.151	-0.160	7.03	1.276
3.937	489.8	-3.44	2.12	18.97	31.05	536.3	2.743	11.590540	0.161	-0.164	6.53	1.216

Table B.9 L/B = 3.0 ; β = 12° ; L_{CG} = 30% ; Thrust Line : Centre of Gravity

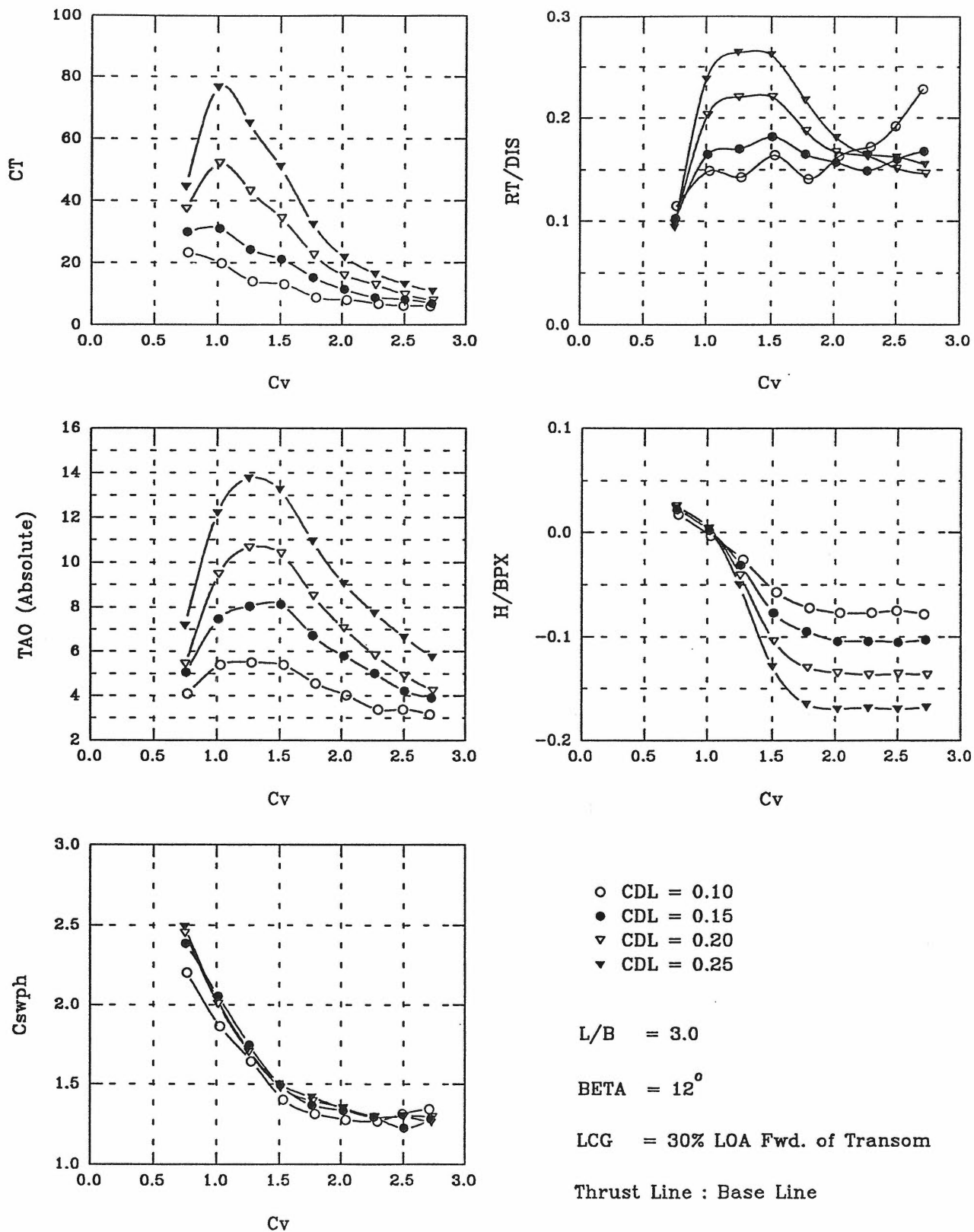


Figure B.10

Model No. T-3012

L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 12.00 deg Breath (Deck) B 23.00 cm
 LCG Position 30.00 % LOA 20.70 cm @ Transom Breath (Chine) BPX 21.00 cm

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.10
 VCG Position 23.43 % B 5.39 cm @ Base Line
 Static trim TAOo 1.21 deg
 Water Temp. 23.00 deg C Density 997.541 kg/m³ Kin. Viscosity 0.9347E-06 m²/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm ²	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
1.100	139.6	0.36	2.88	37.95	53.13	971.3	0.766	23.352580	0.115	0.017	4.09	2.202
1.476	181.2	-0.07	4.18	31.62	44.98	821.0	1.028	19.926440	0.149	-0.003	5.39	1.862
1.831	173.4	-0.54	4.28	27.60	40.02	724.9	1.276	14.032730	0.143	-0.026	5.49	1.644
2.197	198.8	-1.20	4.17	22.77	34.85	617.6	1.531	13.119640	0.164	-0.057	5.38	1.401
2.573	171.3	-1.52	3.35	20.03	33.91	578.3	1.792	8.800810	0.141	-0.072	4.56	1.311
2.927	198.7	-1.61	2.81	18.29	34.16	562.2	2.039	8.111470	0.163	-0.077	4.02	1.275
3.292	209.1	-1.62	2.17	17.60	34.50	558.5	2.294	6.795667	0.172	-0.077	3.38	1.266
3.580	233.7	-1.57	2.18	16.42	37.61	579.2	2.494	6.192637	0.192	-0.075	3.39	1.313
3.896	276.8	-1.63	1.96	15.53	39.68	591.7	2.714	6.062381	0.228	-0.078	3.17	1.342

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.15
 VCG Position 23.70 % B 5.45 cm @ Base Line
 Static trim TAOo 2.34 deg
 Water Temp. 23.50 deg C Density 997.421 kg/m³ Kin. Viscosity 0.9240E-06 m²/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm ²	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
1.086	188.6	0.47	2.72	44.85	55.20	1051.6	0.757	29.921620	0.103	0.022	5.06	2.385
1.454	301.8	0.05	5.13	37.95	46.92	905.8	1.013	31.008560	0.165	0.002	7.47	2.054
1.806	310.0	-0.65	5.70	31.40	40.36	769.1	1.258	24.308280	0.170	-0.031	8.04	1.744
2.168	332.4	-1.61	5.78	25.88	35.54	658.3	1.510	21.133240	0.182	-0.077	8.12	1.493
2.537	302.0	-1.99	4.39	23.11	33.12	602.8	1.767	15.311370	0.165	-0.095	6.73	1.367
2.896	287.2	-2.19	3.46	21.74	33.12	588.0	2.018	11.455520	0.157	-0.104	5.80	1.333
3.251	271.6	-2.19	2.67	19.32	33.81	569.6	2.265	8.871968	0.149	-0.104	5.01	1.292
3.597	292.0	-2.21	1.88	17.25	33.12	540.0	2.506	8.222618	0.160	-0.105	4.22	1.224
3.910	306.1	-2.16	1.57	16.42	36.22	564.4	2.724	6.977256	0.168	-0.103	3.91	1.280

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.20
 VCG Position 23.87 % B 5.49 cm @ Base Line
 Static trim TAOo 2.73 deg
 Water Temp. 23.50 deg C Density 997.421 kg/m³ Kin. Viscosity 0.9240E-06 m²/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm ²	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.077	238.5	0.52	2.70	46.92	56.24	1079.9	0.751	37.423010	0.098	0.025	5.43	2.449
1.451	493.6	0.07	6.75	37.61	45.20	884.3	1.011	52.127910	0.203	0.004	9.48	2.005
1.802	534.3	-0.86	7.94	32.09	37.95	750.6	1.255	43.137010	0.220	-0.041	10.67	1.702
2.169	535.3	-2.18	7.66	27.25	33.47	650.9	1.511	34.378640	0.220	-0.104	10.39	1.476
2.544	454.4	-2.73	5.78	24.84	32.43	613.9	1.773	22.488080	0.187	-0.130	8.51	1.392
2.896	405.9	-2.83	4.32	23.11	31.00	595.3	2.018	15.994260	0.167	-0.135	7.05	1.350
3.259	395.7	-2.88	3.09	21.39	31.74	569.6	2.271	12.866680	0.163	-0.137	5.82	1.292
3.596	367.7	-2.87	2.18	20.36	33.12	573.3	2.506	9.756967	0.151	-0.136	4.91	1.300
3.928	353.9	-2.87	1.50	19.32	33.81	569.6	2.737	7.921918	0.146	-0.137	4.23	1.292

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.25
 VCG Position 25.17 % B 5.79 cm @ Base Line
 Static trim TAOo 4.41 deg
 Water Temp. 23.00 deg C Density 997.541 kg/m³ Kin. Viscosity 0.9347E-06 m²/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm ²	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
1.073	286.5	0.50	2.76	48.99	56.58	1098.3	0.747	44.584800	0.094	0.024	7.17	2.490
1.437	722.6	0.08	7.80	39.33	44.85	898.2	1.001	76.593330	0.238	0.004	12.21	2.037
1.791	803.4	-1.05	9.36	32.78	37.95	758.0	1.248	65.016970	0.264	-0.050	13.77	1.719
2.152	796.6	-2.72	8.84	28.29	33.47	662.0	1.499	51.129620	0.262	-0.129	13.25	1.501
2.534	658.9	-3.47	6.54	25.88	32.43	625.0	1.766	32.282770	0.217	-0.165	10.95	1.417
2.894	549.3	-3.57	4.65	23.81	31.40	591.7	2.017	21.793210	0.181	-0.170	9.06	1.342
3.250	503.3	-3.56	3.33	22.08	31.05	569.6	2.264	16.456970	0.165	-0.169	7.74	1.292
3.589	492.0	-3.58	2.24	20.70	32.43	569.6	2.501	13.188720	0.162	-0.170	6.65	1.292
3.918	471.1	-3.53	1.33	19.67	32.09	554.8	2.730	10.878110	0.155	-0.168	5.74	1.258

Table B.10 L/B = 3.0 ; β = 12° ; L_{CG} = 30% ; Thrust Line : Base Line

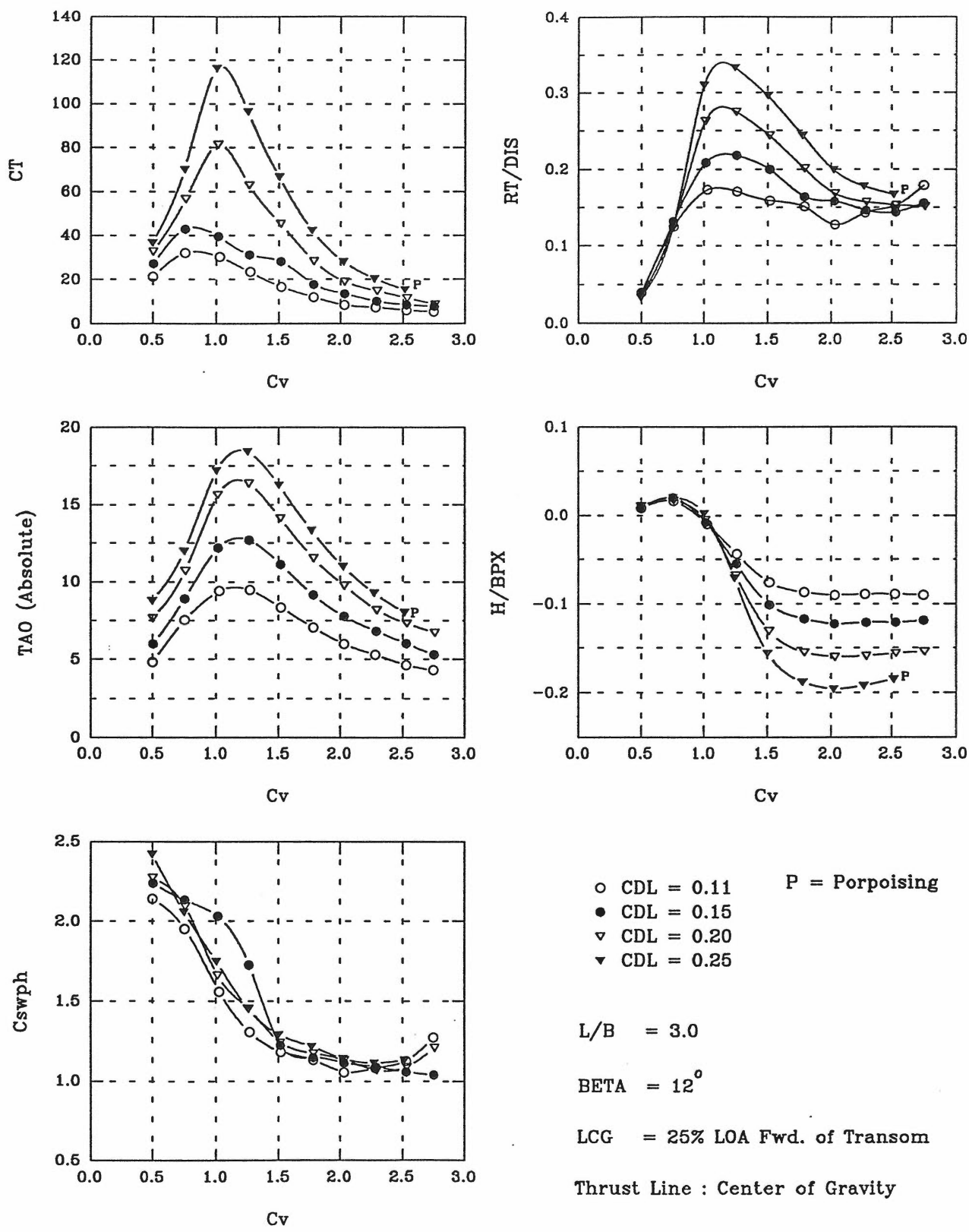


Figure B.11

Model No. T-3012
 L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 12.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 25.00 % LOA 17.25 cm @ Transom

Displacement DIS 1324.0 gms Disp. Coeff. CDL 0.11
 VCG Position 25.13 % B 5.78 cm @ Base Line
 Static trim TAOo 4.10 deg
 Water Temp. 23.00 deg C Density 997.541 kg/m3 Kin. Viscosity 0.9347E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm2	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
0.718	52.5	0.17	0.72	32.78	55.20	943.8	0.500	21.226800	0.040	0.008	4.82	2.140
1.085	165.2	0.33	3.42	34.16	46.23	861.4	0.756	32.048640	0.125	0.016	7.52	1.953
1.471	228.4	-0.22	5.33	27.60	36.57	687.9	1.025	30.195730	0.173	-0.010	9.43	1.560
1.820	226.7	-0.93	5.39	22.43	31.40	577.0	1.268	23.335210	0.171	-0.044	9.49	1.308
2.180	210.1	-1.59	4.26	19.32	29.33	521.5	1.519	16.669800	0.159	-0.076	8.36	1.182
2.559	199.3	-1.84	2.96	17.25	29.33	499.3	1.783	11.985140	0.151	-0.087	7.06	1.132
2.916	168.4	-1.89	1.87	14.70	28.70	465.3	2.032	8.371337	0.127	-0.090	5.97	1.055
3.275	189.5	-1.87	1.19	13.80	30.70	477.1	2.281	7.286501	0.143	-0.089	5.29	1.082
3.627	201.3	-1.88	0.54	14.63	31.74	497.1	2.527	6.054693	0.152	-0.089	4.64	1.127
3.947	237.2	-1.89	0.21	20.70	31.74	562.2	2.750	5.327358	0.179	-0.090	4.31	1.275

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1504
 VCG Position 25.57 % B 5.88 cm @ Base Line
 Static trim TAOo 5.29 deg
 Water Temp. 23.00 deg C Density 997.541 kg/m3 Kin. Viscosity 0.9347E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.725	71.5	0.18	0.68	37.26	55.20	986.9	0.505	27.14708	0.039	0.009	5.97	2.238
1.082	240.1	0.42	3.63	37.05	51.06	940.8	0.754	42.88171	0.132	0.020	8.92	2.133
1.456	381.0	-0.17	6.91	36.92	46.92	895.6	1.014	39.47685	0.209	-0.008	12.20	2.031
1.813	397.3	-1.15	7.41	29.67	41.40	761.8	1.263	31.20150	0.218	-0.055	12.70	1.727
2.179	365.2	-2.11	5.84	21.39	28.98	540.0	1.518	28.01965	0.200	-0.101	11.13	1.224
2.561	300.1	-2.47	3.88	18.97	28.29	506.7	1.785	17.75813	0.164	-0.117	9.17	1.149
2.913	287.8	-2.58	2.49	16.97	28.84	491.1	2.029	13.58193	0.158	-0.123	7.78	1.114
3.288	267.0	-2.55	1.51	15.53	29.33	480.8	2.290	10.10449	0.146	-0.121	6.80	1.090
3.631	263.5	-2.53	0.72	13.87	29.60	466.0	2.530	8.43726	0.144	-0.121	6.01	1.057
3.949	284.1	-2.50	-0.01	12.77	30.02	458.6	2.751	7.81192	0.156	-0.119	5.28	1.040

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.20
 VCG Position 26.35 % B 6.06 cm @ Base Line
 Static trim TAOo 6.99 deg
 Water Temp. 23.00 deg C Density 997.541 kg/m3 Kin. Viscosity 0.9347E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.719	85.9	0.23	0.67	38.99	55.20	1002.9	0.501	32.584470	0.035	0.011	7.66	2.274
1.087	314.3	0.36	3.73	38.64	47.96	923.4	0.758	56.611350	0.129	0.017	10.72	2.094
1.451	638.8	-0.11	8.65	31.40	36.92	732.2	1.011	81.483180	0.263	-0.005	15.64	1.660
1.805	669.6	-1.42	9.39	26.87	33.01	641.8	1.258	62.988620	0.275	-0.068	16.38	1.455
2.174	594.6	-2.75	7.14	22.77	28.29	547.4	1.515	45.196140	0.244	-0.131	14.13	1.241
2.561	489.1	-3.26	4.55	20.70	27.60	517.8	1.784	28.329260	0.201	-0.155	11.54	1.174
2.917	409.2	-3.36	2.77	18.97	27.60	499.3	2.032	18.941380	0.168	-0.160	9.76	1.132
3.292	382.6	-3.34	1.20	16.45	27.53	471.5	2.294	14.727310	0.157	-0.159	8.19	1.069
3.634	372.5	-3.27	0.33	15.53	29.33	480.8	2.532	11.536930	0.153	-0.156	7.32	1.090
3.959	366.6	-3.24	-0.29	15.31	34.46	533.5	2.758	8.625912	0.151	-0.154	6.70	1.210

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.25
 VCG Position 25.91 % B 5.96 cm @ Base Line
 Static trim TAOo 7.90 deg
 Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm2	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
0.711	100.8	0.23	0.89	42.78	57.96	1067.7	0.495	36.710950	0.033	0.011	8.79	2.421
1.074	373.9	0.42	4.07	37.03	47.87	906.7	0.749	70.243430	0.123	0.020	11.97	2.056
1.437	941.8	0.04	9.31	32.02	39.92	771.0	1.001	116.324200	0.310	0.002	17.21	1.74
1.792	1012.1	-1.49	10.53	27.60	32.43	643.5	1.248	96.370170	0.333	-0.071	18.43	1.459
2.158	901.3	-3.29	8.37	24.15	28.98	569.6	1.503	66.838500	0.296	-0.156	16.27	1.292
2.540	742.9	-3.94	5.42	22.43	27.60	536.3	1.769	42.243210	0.244	-0.188	13.32	1.216
2.901	605.2	-4.11	3.10	19.67	27.25	503.0	2.021	28.120070	0.199	-0.196	11.00	1.141
3.260	540.5	-4.04	1.39	18.63	27.25	491.9	2.271	20.339100	0.178	-0.192	9.29	1.115
3.608	506.8	-3.89	0.13	18.29	28.29	499.3	2.514	15.334360	0.167	-0.185	8.03	1.132

** Porpoising

Table B.11 L/B = 3.0 ; β = 12° ; Lcg = 25% ; Thrust Line : Centre of Gravity

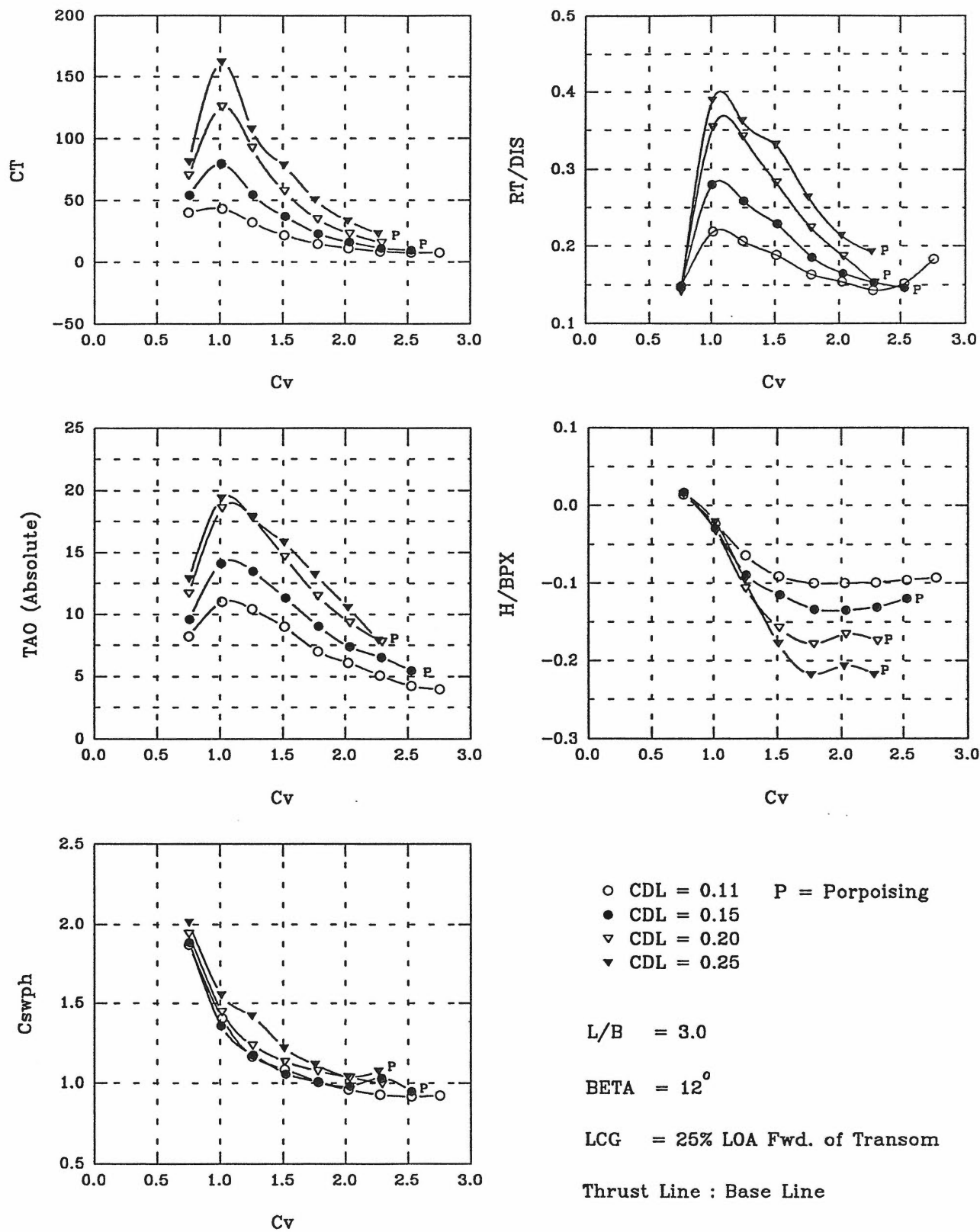


Figure B.12

Model No. T-3012
 L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 12.00 deg Breath (Deck) B 23.00 cm
 LCG Position 25.00 % LOA Breath (Chine) BPX 21.00 cm
 17.25 cm @ Transom

Displacement DIS 1324.0 gms Disp. Coeff. CDL 0.11
 VCG Position 25.13 % B 5.78 cm @ Base Line
 Static trim TAOo 4.10 deg
 Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm2	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
1.078	195.2	0.30	4.10	34.16	42.78	824.5	0.751	40.062220	0.147	0.014	8.20	1.870
1.458	290.3	-0.50	6.90	24.84	32.78	617.6	1.016	43.492170	0.219	-0.024	11.00	1.401
1.803	273.7	-1.34	6.31	20.36	27.60	514.1	1.256	32.194940	0.207	-0.064	10.41	1.166
2.172	249.8	-1.90	4.89	17.94	26.56	477.1	1.513	21.823380	0.189	-0.091	8.99	1.082
2.555	216.7	-2.11	2.90	15.40	25.99	443.7	1.780	14.705900	0.164	-0.100	7.00	1.006
2.907	203.5	-2.11	1.99	13.41	26.06	423.1	2.025	11.194150	0.154	-0.100	6.09	0.959
3.273	189.8	-2.08	0.97	11.52	26.67	409.4	2.280	8.514046	0.143	-0.099	5.07	0.928
3.628	201.5	-2.01	0.13	9.87	27.80	403.8	2.528	7.455128	0.152	-0.096	4.23	0.916
3.957	242.0	-1.96	-0.14	8.63	29.33	406.8	2.757	7.468892	0.183	-0.093	3.96	0.923

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 25.57 % B 5.88 cm @ Base Line
 Static trim TAOo 5.29 deg

Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.086	271.6	0.36	4.30	34.50	43.13	831.9	0.757	54.41037	0.149	0.017	9.59	1.886
1.449	510.8	-0.61	8.85	27.12	28.64	597.7	1.009	80.10178	0.280	-0.029	14.14	1.355
1.812	472.5	-1.88	8.20	21.39	26.91	517.8	1.262	54.69332	0.259	-0.089	13.49	1.174
2.182	417.2	-2.41	6.05	17.46	26.01	466.0	1.520	36.98385	0.229	-0.115	11.34	1.057
2.561	339.1	-2.82	3.74	15.53	25.88	443.8	1.784	22.91281	0.186	-0.134	9.03	1.006
2.918	301.5	-2.83	2.09	13.80	26.56	432.7	2.033	16.09876	0.165	-0.135	7.38	0.981
3.285	278.3	-2.75	1.24	12.77	29.67	454.9	2.288	11.15254	0.153	-0.131	6.53	1.032
3.629	265.6	-2.52	0.15	8.63	30.36	417.9	2.528	9.48877	0.146	-0.120	5.44	0.948

** Porpoising

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.20
 VCG Position 26.35 % B 6.06 cm @ Base Line
 Static trim TAOo 6.99 deg
 Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm2	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
1.079	358.2	0.33	4.71	36.57	43.47	855.9	0.752	70.658950	0.147	0.015	11.70	1.941
1.455	860.2	-0.69	11.58	27.60	31.74	636.1	1.014	125.646900	0.354	-0.033	18.57	1.44
1.805	832.8	-2.25	10.81	23.11	27.60	543.7	1.257	92.496540	0.342	-0.107	17.80	1.233
2.174	688.7	-3.33	7.66	20.70	25.88	499.3	1.515	57.379550	0.283	-0.158	14.65	1.132
2.551	543.8	-3.76	4.50	18.97	25.19	473.4	1.778	34.708190	0.224	-0.179	11.49	1.073
2.921	455.1	-3.49	2.34	17.25	25.32	456.4	2.035	22.988410	0.187	-0.166	9.33	1.035
3.291	373.0	-3.68	0.79	15.53	25.53	440.1	2.293	15.385920	0.153	-0.175	7.78	0.998

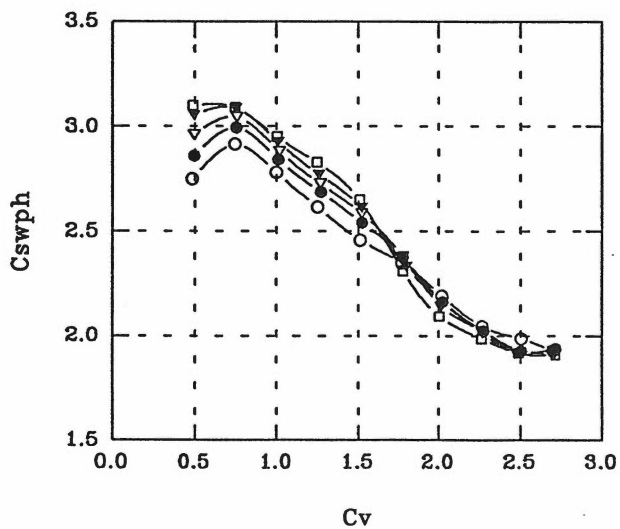
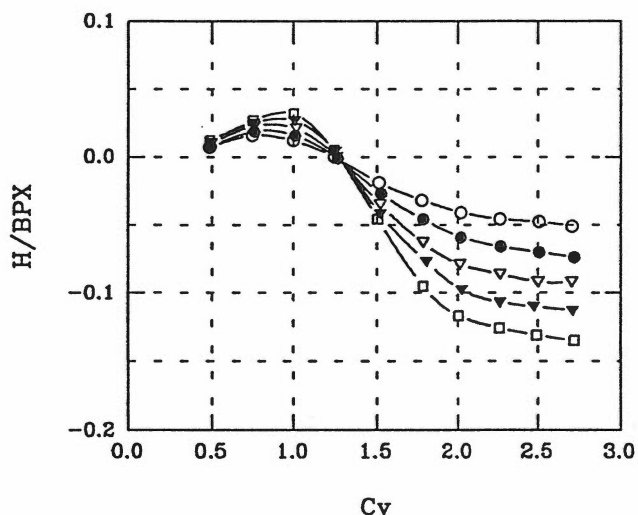
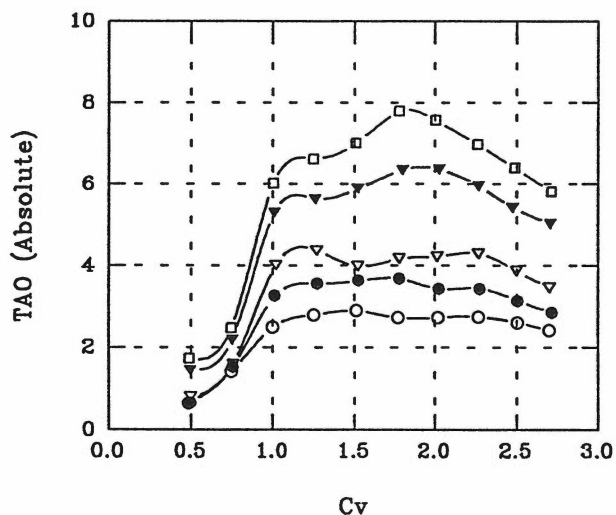
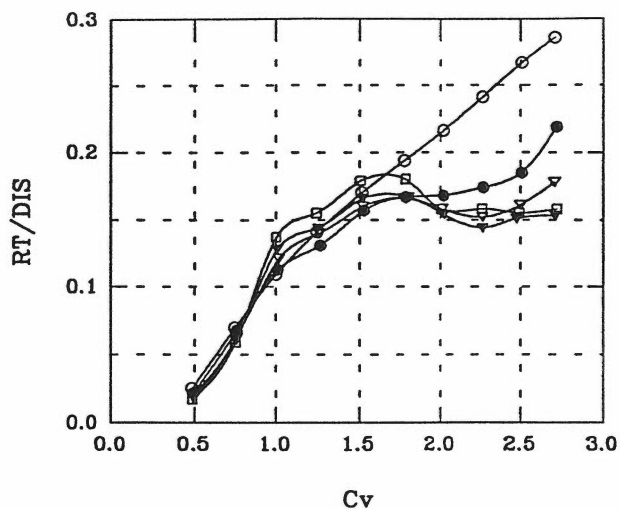
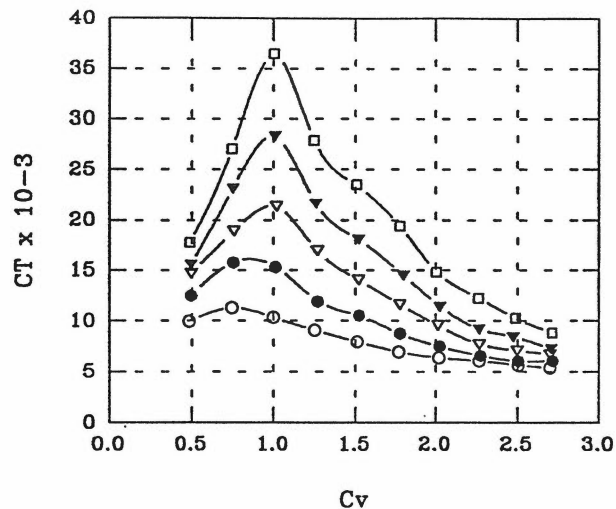
** Porpoising

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.25
 VCG Position 25.91 % B 5.96 cm @ Base Line
 Static trim TAOo 7.90 deg
 Water Temp. 22.50 deg C Density 997.658 kg/m3 Kin. Viscosity 0.9457E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	WSPH cm2	CSP	CT x10-3	RT/DIS	H/BPX	TAO Total	Cwsph
1.081	429.7	0.34	4.99	37.95	45.20	887.8	0.753	81.455480	0.141	0.016	12.89	2.013
1.448	1184.3	-0.44	11.49	30.02	33.81	684.1	1.009	162.395800	0.389	-0.021	19.39	1.55
1.794	1101.9	-2.02	9.99	27.60	30.70	625.0	1.250	107.773200	0.362	-0.096	17.89	1.41
2.166	1010.2	-3.74	7.93	22.77	27.25	536.3	1.509	78.932640	0.332	-0.178	15.83	1.216
2.519	804.1	-4.58	5.33	20.36	25.53	491.9	1.755	50.660590	0.264	-0.218	13.23	1.115
2.897	652.3	-4.34	2.66	18.29	24.50	458.6	2.019	33.324460	0.214	-0.207	10.56	1.040
3.252	586.8	-4.57	-0.02	17.25	26.91	473.4	2.265	23.056260	0.193	-0.218	7.88	1.073

** Porpoising

Table B.12 L/B = 3.0 ; β = 12° ; L_{CG} = 25% ; Thrust Line : Base Line



- CDL = 0.10
- CDL = 0.15
- ▽ CDL = 0.20
- ▼ CDL = 0.25
- CDL = 0.30

L/B = 3.5

BETA = 12°

LCG = 35% LOA Fwd. of Transom

Thrust Line : Center of Gravity

Figure B.13

Model No. T-3512		L/B Ratio 3.5		Length Overall LOA 80.50 cm								
Deadrise 12.00 deg		Breath (Deck) B 23.00 cm		Breath (Chine) BPX 21.00 cm								
LCG Position 35.00 % LOA		28.18 cm @ Transom										
Displacement DIS 1216.0 gms		Disp. Coeff. CDL 0.1002										
VCG Position 23.74 % B		5.46 cm @ Base Line										
Static trim TAOo 0.45 deg												
Water Temp. 22.50 deg C		Density 997.770 kg/m3		Kin. Viscosity 0.9568E-06 m2/s								
Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.696	29.8	0.14	0.19	44.68	68.43	1211.0	0.485	9.99391	0.025	0.007	0.64	2.746
1.071	84.6	0.34	0.96	55.14	67.62	1284.7	0.746	11.27674	0.070	0.016	1.41	2.913
1.433	132.5	0.26	2.04	50.31	65.61	1225.2	0.999	10.34976	0.109	0.012	2.49	2.778
1.794	171.8	0.00	2.34	45.08	63.19	1153.5	1.250	9.09928	0.141	0.000	2.79	2.616
2.172	206.2	-0.41	2.44	39.04	61.99	1083.4	1.514	7.93130	0.170	-0.019	2.89	2.457
2.545	236.4	-0.66	2.27	36.22	60.38	1035.8	1.773	6.92631	0.194	-0.032	2.72	2.349
2.900	262.8	-0.86	2.28	31.80	58.36	966.8	2.020	6.35776	0.216	-0.041	2.73	2.192
3.252	293.1	-0.96	2.29	28.18	55.95	901.8	2.266	6.04399	0.241	-0.046	2.74	2.045
3.595	325.1	-1.01	2.15	25.76	55.95	875.9	2.505	5.64671	0.267	-0.048	2.60	1.986
3.878	347.6	-1.06	1.96	22.94	56.35	850.0	2.702	5.34833	0.286	-0.051	2.41	1.927
Displacement DIS 1825.0 gms		Disp. Coeff. CDL 0.1503										
VCG Position 24.22 % B		5.57 cm @ Base Line										
Static trim TAOo 0.41 deg												
Water Temp. 20.50 deg C		Density 998.101 kg/m3		Kin. Viscosity 0.9916E-06 m2/s								
Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.709	40.3	0.18	0.25	50.72	68.43	1260.3	0.494	12.50605	0.022	0.008	0.66	2.858
1.083	124.5	0.39	1.11	60.38	68.43	1321.0	0.755	15.77950	0.068	0.019	1.52	2.995
1.452	205.9	0.33	2.84	54.34	65.21	1252.0	1.012	15.33485	0.113	0.016	3.25	2.839
1.823	239.1	-0.01	3.14	48.30	63.19	1184.6	1.270	11.93361	0.131	-0.001	3.55	2.686
2.187	286.6	-0.56	3.22	44.28	60.78	1120.4	1.524	10.51553	0.157	-0.027	3.63	2.540
2.554	303.9	-0.96	3.27	39.45	58.36	1048.4	1.779	8.73710	0.167	-0.046	3.68	2.377
2.901	305.7	-1.24	3.02	34.62	54.34	953.4	2.021	7.48723	0.168	-0.059	3.43	2.162
3.263	317.6	-1.38	3.03	30.99	52.33	893.2	2.273	6.56711	0.174	-0.066	3.44	2.025
3.597	337.9	-1.47	2.73	28.18	51.12	850.0	2.506	6.03842	0.185	-0.070	3.14	1.927
3.898	399.8	-1.55	2.44	26.97	52.73	854.3	2.716	6.05346	0.219	-0.074	2.85	1.937
Displacement DIS 2432.0 gms		Disp. Coeff. CDL 0.2003										
VCG Position 24.48 % B		5.63 cm @ Base Line										
Static trim TAOo 0.56 deg												
Water Temp. 20.50 deg C		Density 998.101 kg/m3		Kin. Viscosity 0.9916E-06 m2/s								
Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.712	49.5	0.20	0.24	55.55	69.23	1305.2	0.496	14.70475	0.020	0.010	0.80	2.960
1.086	152.4	0.48	1.03	62.79	69.23	1342.9	0.757	18.90206	0.063	0.023	1.59	3.045
1.460	294.4	0.45	3.45	55.55	66.01	1270.9	1.017	21.37193	0.121	0.021	4.01	2.882
1.815	341.3	-0.00	3.81	50.72	63.19	1202.3	1.265	16.93219	0.140	-0.000	4.37	2.726
2.184	388.8	-0.73	3.43	46.69	60.38	1139.5	1.521	14.06397	0.160	-0.035	3.99	2.584
2.553	402.9	-1.32	3.61	41.86	56.35	1050.2	1.779	11.57070	0.166	-0.063	4.17	2.381
2.888	383.5	-1.65	3.66	36.22	51.92	944.7	2.012	9.56829	0.158	-0.079	4.22	2.142
3.252	370.5	-1.81	3.74	33.41	49.91	893.1	2.266	7.71164	0.152	-0.086	4.30	2.025
3.587	391.0	-1.93	3.31	30.59	48.30	845.7	2.499	7.06321	0.161	-0.092	3.87	1.918
3.877	433.1	-1.94	2.91	30.19	49.11	850.0	2.701	6.66400	0.178	-0.092	3.47	1.927
Displacement DIS 3042.0 gms		Disp. Coeff. CDL 0.2505										
VCG Position 25.83 % B		5.94 cm @ Base Line										
Static trim TAOo 1.17 deg												
Water Temp. 20.50 deg C		Density 998.101 kg/m3		Kin. Viscosity 0.9916E-06 m2/s								
Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.710	53.7	0.23	0.28	60.38	71.24	1346.7	0.494	15.55545	0.018	0.011	1.45	3.054
1.080	187.0	0.53	1.02	67.62	70.84	1361.4	0.752	23.16228	0.061	0.025	2.19	3.087
1.446	388.5	0.57	4.12	58.36	66.41	1291.2	1.007	28.30371	0.128	0.027	5.29	2.928
1.802	437.4	0.07	4.46	53.13	63.19	1221.6	1.256	21.66349	0.144	0.004	5.63	2.770
2.182	505.0	-0.87	4.72	48.30	59.97	1151.4	1.520	18.10287	0.166	-0.042	5.89	2.611
2.583	506.5	-1.61	5.18	41.86	54.34	1028.9	1.799	14.50697	0.167	-0.077	6.35	2.333
2.905	468.0	-2.05	5.19	38.24	50.72	953.3	2.024	11.43325	0.154	-0.098	6.36	2.162
3.251	439.2	-2.25	4.79	34.62	48.30	888.7	2.265	9.19308	0.144	-0.107	5.96	2.015
3.551	458.9	-2.31	4.25	32.20	46.69	845.7	2.474	8.45895	0.151	-0.110	5.42	1.918
3.884	466.9	-2.38	3.86	30.99	47.50	841.4	2.706	7.23218	0.153	-0.113	5.03	1.908

Table B.13 L/B = 3.5 ; β = 12° ; L_{ca} = 35% ; Thrust Line : Centre of Gravity (1/2)

Displacement DIS 3640.0 gms Disp. Coeff. CDL 0.2998
 VCG Position 27.70 % B 6.37 cm @ Base Line
 Static trim TAOo 1.48 deg
 Water Temp. 22.00 deg C Density 997.772 kg/m3 Kin. Viscosity ¹²⁶ 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.699	60.3	0.25	0.25	66.41	71.64	1366.6	0.487	17.74718	0.017	0.012	1.73	3.099
1.074	215.7	0.57	0.99	68.43	70.84	1362.6	0.748	27.01488	0.059	0.027	2.47	3.090
1.438	499.8	0.66	4.53	59.57	66.82	1301.5	1.002	36.50232	0.137	0.032	6.01	2.951
1.789	565.4	0.11	5.14	54.74	64.40	1246.8	1.247	27.85047	0.155	0.005	6.62	2.827
2.163	653.1	-0.97	5.53	49.91	60.38	1167.8	1.507	23.50511	0.179	-0.046	7.01	2.648
2.554	656.9	-2.00	6.31	42.67	52.73	1019.7	1.779	19.42542	0.180	-0.095	7.79	2.312
2.876	574.7	-2.46	6.09	37.84	48.30	923.1	2.004	14.80392	0.158	-0.117	7.57	2.093
3.247	574.7	-2.65	5.50	35.02	46.69	875.8	2.262	12.24173	0.158	-0.126	6.98	1.986
3.573	563.6	-2.76	4.91	33.00	45.89	845.7	2.489	10.26769	0.155	-0.131	6.39	1.918
3.897	573.6	-2.84	4.33	31.80	46.69	841.4	2.715	8.82929	0.158	-0.135	5.81	1.908

Table B.13 L/B = 3.5 ; $\beta = 12^\circ$; $L_{CG} = 35\%$; Thrust Line : Centre of Gravity (2/2)

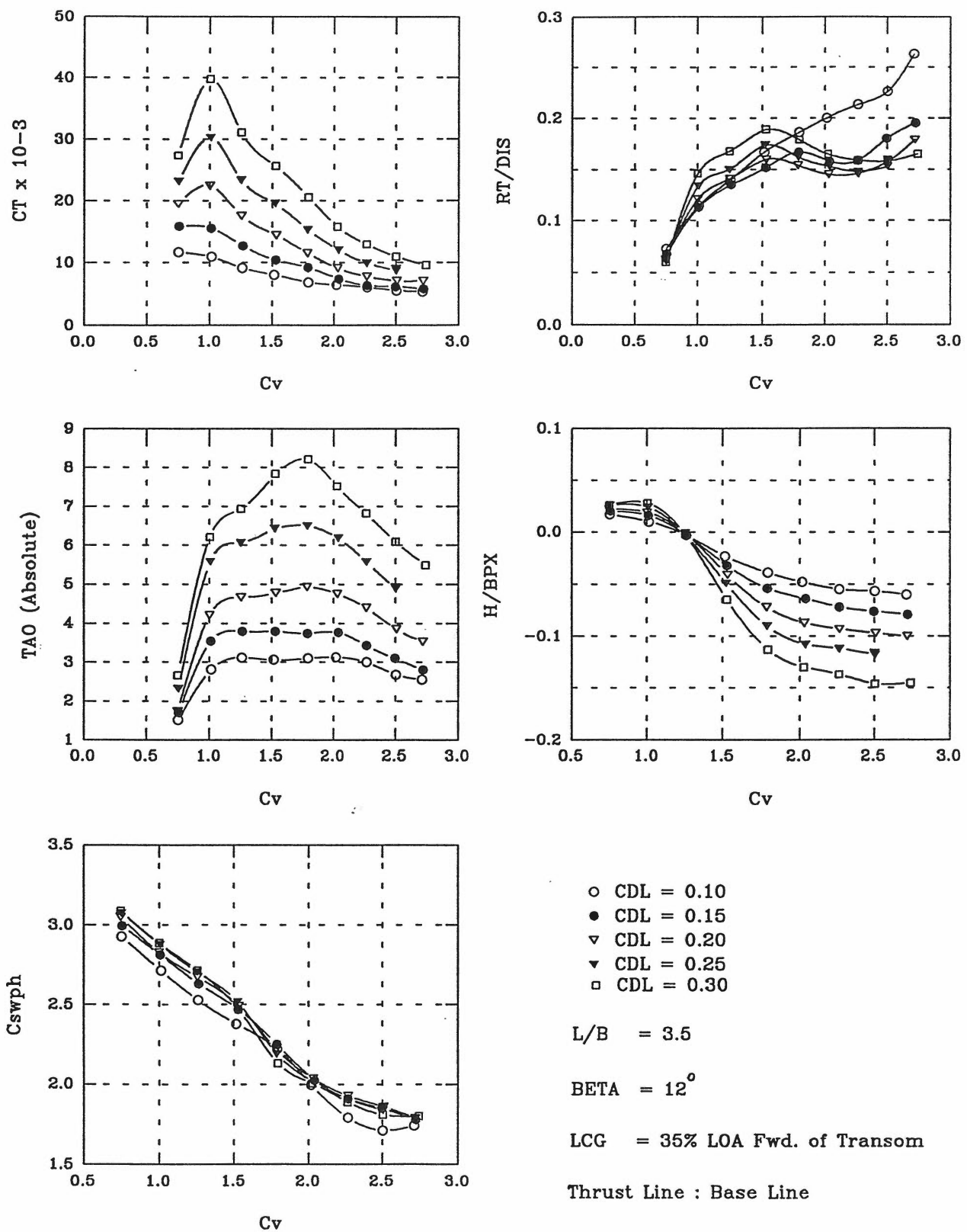


Figure B.14

Model No. T-3512

L/B Ratio 3.5 Length Overall LOA 80.50 cm
 Deadrise 12.00 deg Breath (Deck) B 23.00 cm
 LCG Position 35.00 % LOA 28.18 cm @ Transom Breath (Chine) BPX 21.00 cm

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1002
 VCG Position 23.74 % B 5.46 cm @ Base Line
 Static trim TAOo 0.45 deg
 Water Temp. 22.00 deg C

Density 997.772 kg/m3 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.079	89.0	0.36	1.07	55.95	67.62	1291.4	0.752	11.64022	0.073	0.017	1.52	2.928
1.454	140.3	0.21	2.36	48.30	64.40	1197.0	1.013	10.90853	0.115	0.010	2.81	2.714
1.809	169.7	-0.06	2.67	42.26	61.99	1114.4	1.260	9.15411	0.140	-0.003	3.12	2.527
2.176	203.4	-0.48	2.61	37.43	60.38	1048.7	1.516	8.05469	0.167	-0.023	3.06	2.378
2.570	226.8	-0.82	2.65	34.21	57.16	979.4	1.791	6.89249	0.186	-0.039	3.10	2.221
2.895	243.2	-1.01	2.68	28.98	53.13	880.2	2.017	6.48103	0.200	-0.048	3.13	1.996
3.255	259.2	-1.16	2.55	24.55	49.11	789.6	2.268	6.09318	0.213	-0.055	3.00	1.790
3.593	275.4	-1.20	2.23	22.14	48.30	755.1	2.504	5.55456	0.226	-0.057	2.68	1.712
3.894	319.8	-1.25	2.10	20.13	51.52	768.0	2.713	5.40076	0.263	-0.060	2.55	1.742

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 24.22 % B 5.57 cm @ Base Line
 Static trim TAOo 0.41 deg
 Water Temp. 22.00 deg C

Density 997.772 kg/m3 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.084	124.9	0.42	1.30	60.38	68.43	1321.0	0.755	15.81400	0.068	0.020	1.71	2.995
1.448	205.9	0.33	3.13	53.53	64.80	1241.0	1.009	15.55006	0.113	0.016	3.54	2.814
1.814	246.9	-0.06	3.39	46.69	62.39	1160.5	1.264	12.70549	0.135	-0.003	3.80	2.631
2.196	277.8	-0.68	3.39	42.26	59.57	1088.6	1.530	10.41081	0.152	-0.032	3.80	2.468
2.565	305.7	-1.12	3.34	36.22	56.35	992.1	1.787	9.21195	0.167	-0.054	3.75	2.250
2.926	288.9	-1.35	3.36	32.60	50.72	893.1	2.039	7.42825	0.158	-0.064	3.77	2.025
3.257	289.6	-1.51	3.02	29.38	49.11	841.4	2.269	6.38273	0.159	-0.072	3.43	1.908
3.582	328.8	-1.59	2.69	27.37	48.70	815.5	2.496	6.18030	0.180	-0.076	3.10	1.849
3.905	355.1	-1.66	2.39	24.95	48.30	785.3	2.721	5.83015	0.195	-0.079	2.80	1.781

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2003
 VCG Position 24.48 % B 5.63 cm @ Base Line
 Static trim TAOo 0.56 deg
 Water Temp. 22.00 deg C

Density 997.772 kg/m3 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.070	152.7	0.47	1.18	63.19	69.23	1345.7	0.746	19.48884	0.063	0.022	1.74	3.051
1.436	293.8	0.40	3.65	54.34	64.80	1247.7	1.000	22.45171	0.121	0.019	4.21	2.829
1.800	341.8	-0.03	4.11	48.70	62.39	1179.2	1.254	17.59161	0.141	-0.001	4.67	2.674
2.198	389.8	-0.86	4.22	44.68	58.36	1098.7	1.532	14.43777	0.160	-0.041	4.78	2.491
2.557	375.2	-1.52	4.37	39.04	52.33	979.1	1.782	11.52433	0.154	-0.072	4.93	2.220
2.914	353.4	-1.83	4.20	34.62	49.11	897.4	2.030	9.12041	0.145	-0.087	4.76	2.035
3.254	356.0	-1.95	3.84	31.80	47.50	850.0	2.267	7.77813	0.146	-0.093	4.40	1.927
3.599	383.1	-2.04	3.30	29.38	47.09	819.8	2.508	7.09402	0.158	-0.097	3.86	1.859
3.901	434.6	-2.10	2.97	27.37	46.29	789.6	2.718	7.11386	0.179	-0.100	3.53	1.790

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2506
 VCG Position 25.83 % B 5.94 cm @ Base Line
 Static trim TAOo 1.17 deg
 Water Temp. 22.00 deg C

Density 997.772 kg/m3 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.077	185.3	0.54	1.15	66.41	70.04	1356.6	0.751	23.13291	0.061	0.026	2.32	3.076
1.444	407.7	0.51	4.41	56.35	65.21	1269.5	1.006	30.30042	0.134	0.024	5.58	2.879
1.796	457.6	-0.04	4.90	51.12	61.99	1193.4	1.251	23.37558	0.150	-0.002	6.07	2.706
2.186	529.3	-1.03	5.26	46.69	57.56	1110.2	1.523	19.61399	0.174	-0.049	6.43	2.517
2.563	494.1	-1.89	5.33	39.45	50.72	966.2	1.785	15.30969	0.162	-0.090	6.50	2.191
2.922	464.2	-2.27	5.02	35.82	47.09	888.7	2.036	12.03069	0.153	-0.108	6.19	2.015
3.252	449.6	-2.36	4.41	32.60	45.89	841.4	2.266	9.93722	0.148	-0.112	5.58	1.908

Table B.14 L/B = 3.5 ; β = 12° ; Lcg = 35% ; Thrust Line : Base Line (1/2)

Displacement DIS 3640.0 gms
 VCG Position 27.70 % B
 Static trim TAOo 1.48 deg
 Water Temp. 22.00 deg C

Disp. Coeff. CDL 0.2998
 6.37 cm @ Base Line

Density 997.772 kg/m3 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.072	217.8	0.55	1.18	67.62	70.84	1361.4	0.747	27.37846	0.060	0.026	2.66	3.087
1.438	532.5	0.59	4.73	57.16	65.21	1273.1	1.002	39.77097	0.146	0.028	6.21	2.887
1.798	612.4	-0.04	5.46	51.52	61.99	1196.7	1.253	31.13462	0.168	-0.002	6.94	2.714
2.195	686.2	-1.36	6.36	46.29	55.95	1089.4	1.530	25.69900	0.189	-0.065	7.84	2.470
2.572	650.0	-2.37	6.74	39.45	48.30	940.4	1.792	20.54666	0.179	-0.113	8.22	2.132
2.908	599.0	-2.72	6.04	36.22	46.29	884.4	2.026	15.75160	0.165	-0.130	7.52	2.005
3.249	579.5	-2.88	5.34	33.41	44.28	832.7	2.264	12.96132	0.159	-0.137	6.82	1.888
3.592	574.3	-3.06	4.61	30.99	43.47	798.2	2.503	10.96182	0.158	-0.146	6.09	1.810
3.933	598.9	-3.05	4.01	29.78	44.28	793.9	2.740	9.58879	0.165	-0.145	5.49	1.800
3.592	466.6	-2.47	3.72	30.59	45.08	811.2	2.503	8.76441	0.153	-0.118	4.89	1.839
3.589	485.4	-2.44	3.76	30.99	45.48	819.8	2.501	9.03668	0.160	-0.116	4.93	1.859

Table B.14 L/B = 3.5 ; $\beta = 12^\circ$; $L_{CG} = 35\%$; Thrust Line : Base Line (2/2)

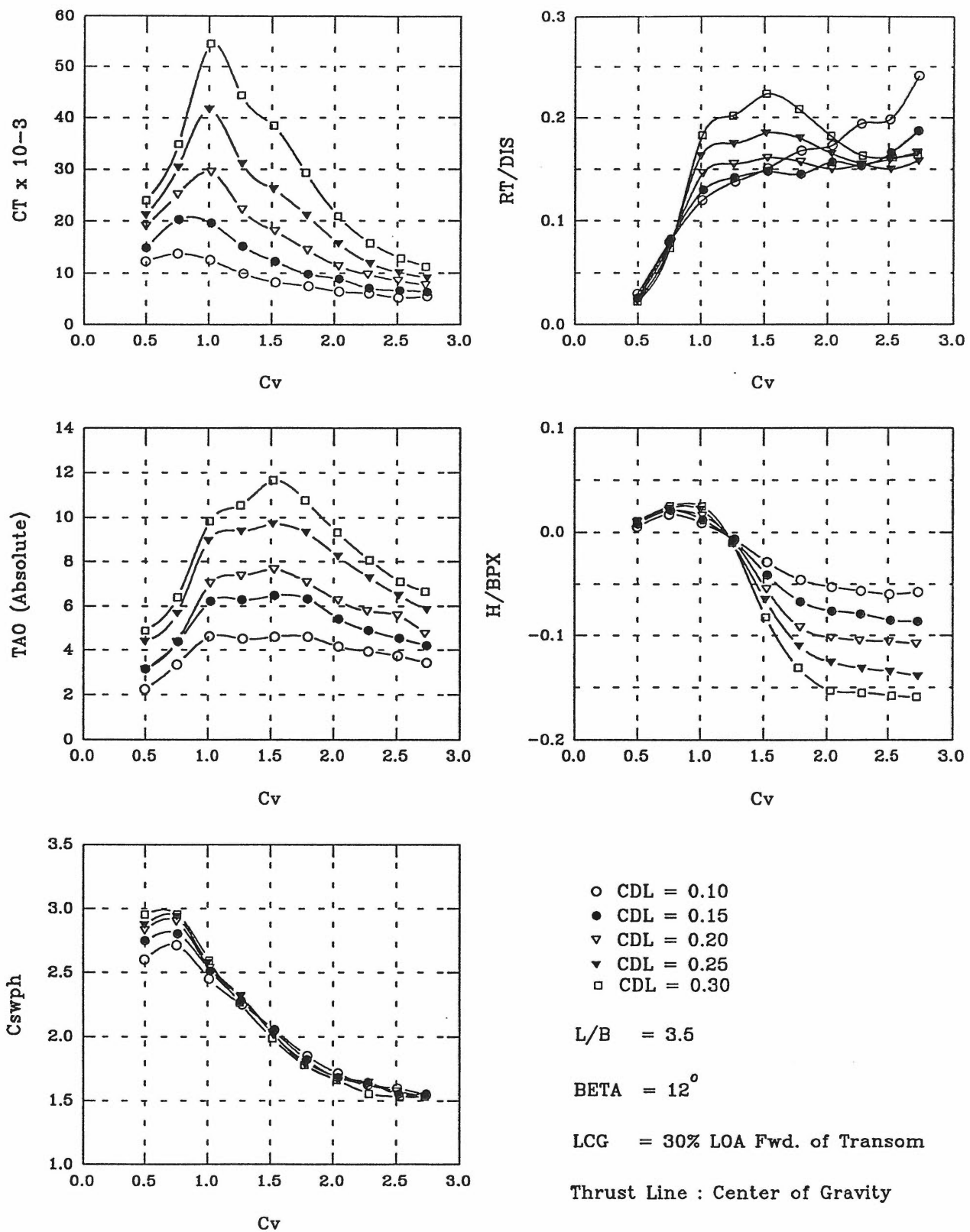


Figure B.15

Model No. T-3512
 L/B Ratio 3.5 Length Overall LOA 80.50 cm
 Deadrise 12.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 30.00 % LOA 24.15 cm @ Transom

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 23.74 % B 5.46 cm @ Base Line
 Static trim TAOo 1.95 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.711	36.2	0.12	0.29	40.25	66.41	1147.4	0.496	12.25748	0.030	0.005	2.24	2.602
1.077	97.3	0.36	1.40	48.30	64.40	1197.0	0.750	13.78761	0.080	0.017	3.35	2.714
1.452	145.6	0.18	2.67	41.06	59.97	1081.7	1.012	12.54673	0.120	0.009	4.62	2.453
1.832	167.9	-0.15	2.56	36.22	56.35	992.1	1.276	9.91455	0.138	-0.007	4.51	2.250
2.198	183.9	-0.60	2.66	32.20	52.33	906.1	1.531	8.25954	0.151	-0.029	4.61	2.055
2.575	204.8	-0.97	2.66	28.18	47.90	815.5	1.794	7.44432	0.168	-0.046	4.61	1.849
2.925	210.1	-1.11	2.21	24.15	46.29	755.1	2.038	6.39317	0.173	-0.053	4.16	1.712
3.270	235.4	-1.20	2.00	21.73	45.08	716.3	2.278	6.04366	0.194	-0.057	3.95	1.624
3.602	240.9	-1.25	1.79	19.32	46.29	703.3	2.510	5.18992	0.198	-0.060	3.74	1.595
3.929	293.2	-1.21	1.48	16.10	47.50	681.7	2.738	5.47570	0.241	-0.058	3.43	1.546

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 24.22 % B 5.57 cm @ Base Line
 Static trim TAOo 2.73 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.716	47.0	0.16	0.43	46.29	67.22	1211.3	0.499	14.90206	0.026	0.008	3.16	2.747
1.089	151.7	0.44	1.65	52.33	65.21	1235.7	0.759	20.35482	0.083	0.021	4.38	2.802
1.462	236.6	0.26	3.50	43.47	60.38	1108.5	1.019	19.62158	0.130	0.012	6.23	2.514
1.824	258.9	-0.17	3.56	39.04	54.74	1005.0	1.271	15.21731	0.142	-0.008	6.29	2.279
2.193	270.4	-0.86	3.75	35.02	49.11	901.7	1.528	12.26567	0.148	-0.041	6.48	2.045
2.569	263.8	-1.40	3.61	30.59	44.28	802.5	1.790	9.78939	0.145	-0.067	6.34	1.820
2.925	286.1	-1.60	2.70	26.97	42.26	742.1	2.038	8.86103	0.157	-0.076	5.43	1.683
3.267	278.4	-1.66	2.17	24.95	42.67	724.9	2.276	7.07278	0.153	-0.079	4.90	1.644
3.617	303.2	-1.78	1.80	21.73	42.26	686.0	2.520	6.64077	0.166	-0.085	4.53	1.556
3.925	340.4	-1.81	1.48	20.53	43.47	686.0	2.735	6.33230	0.187	-0.086	4.21	1.556

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2003
 VCG Position 24.48 % B 5.63 cm @ Base Line
 Static trim TAOo 2.81 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.713	61.7	0.21	0.33	50.31	67.62	1248.3	0.497	19.11661	0.025	0.010	3.14	2.831
1.074	188.6	0.45	1.55	55.95	66.41	1278.7	0.748	25.13652	0.078	0.021	4.36	2.899
1.456	355.9	0.33	4.22	46.69	58.36	1118.5	1.014	29.50705	0.146	0.016	7.03	2.536
1.811	377.8	-0.15	4.56	41.86	53.53	1020.4	1.262	22.18498	0.155	-0.007	7.37	2.314
2.188	391.9	-1.16	4.85	36.22	46.69	888.7	1.524	18.10931	0.161	-0.055	7.66	2.015
2.561	382.8	-1.93	4.27	31.80	42.26	793.9	1.784	14.45283	0.157	-0.092	7.08	1.800
2.917	364.7	-2.14	3.46	28.58	40.65	742.1	2.033	11.35047	0.150	-0.102	6.27	1.683
3.252	374.9	-2.21	2.96	26.57	40.25	716.3	2.266	9.72966	0.154	-0.105	5.77	1.624
3.596	387.9	-2.24	2.78	24.55	40.25	694.7	2.505	8.48975	0.159	-0.106	5.59	1.575
3.909	404.6	-2.26	1.94	22.54	40.65	677.4	2.723	7.68447	0.166	-0.108	4.75	1.536

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2505
 VCG Position 25.83 % B 5.94 cm @ Base Line
 Static trim TAOo 4.00 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.709	68.6	0.20	0.38	52.33	68.02	1267.2	0.494	21.16014	0.023	0.010	4.38	2.873
1.077	232.5	0.49	1.68	58.36	66.82	1295.1	0.751	30.41054	0.076	0.023	5.68	2.937
1.434	496.3	0.45	4.96	48.70	58.36	1137.9	0.999	41.67450	0.163	0.022	8.96	2.580
1.811	531.9	-0.22	5.38	43.07	52.73	1023.7	1.262	31.13187	0.175	-0.011	9.38	2.321
2.172	562.4	-1.37	5.71	37.47	46.17	896.4	1.513	26.15323	0.185	-0.065	9.71	2.033
2.553	548.1	-2.31	5.32	32.60	40.65	785.3	1.779	21.05131	0.180	-0.110	9.32	1.781
2.916	501.3	-2.65	4.26	29.60	39.03	735.7	2.032	15.75110	0.165	-0.126	8.26	1.668
3.280	472.9	-2.77	3.28	28.18	39.45	724.9	2.285	11.91985	0.155	-0.132	7.28	1.644
3.610	456.5	-2.83	2.49	25.39	38.03	679.8	2.515	10.12993	0.150	-0.135	6.49	1.542
3.926	481.9	-2.91	1.84	24.15	39.04	677.4	2.735	9.07303	0.158	-0.139	5.84	1.536

Table B.15 L/B = 3.5 ; β = 12° ; L_{CG} = 30% ; Thrust Line : Centre of Gravity (1/2)

Displacement DIS 3640.0 gms
 VCG Position 27.70 % B
 Static trim TAOo 4.57 deg
 Water Temp. 21.50 deg C

Disp. Coeff. CDL 0.2998
 6.37 cm @ Base Line

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Density 997.885 kg/m3 Kin. Viscosity 0.9682E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
0.713	81.0	0.23	0.31	56.35	68.43	1303.3	0.497	24.02470	0.022	0.011	4.88	2.955
1.082	271.1	0.52	1.83	58.36	67.62	1303.0	0.754	34.93466	0.074	0.025	6.40	2.955
1.451	667.9	0.53	5.27	49.51	58.36	1144.3	1.011	54.54755	0.183	0.025	9.84	2.595
1.804	733.5	-0.22	5.97	42.88	50.48	998.2	1.257	44.37803	0.202	-0.010	10.54	2.264
2.178	813.0	-1.73	7.10	37.43	44.28	875.7	1.518	38.47286	0.223	-0.082	11.67	1.986
2.543	755.7	-2.75	6.19	32.98	40.16	784.0	1.772	29.31563	0.208	-0.131	10.76	1.778
2.910	661.8	-3.21	4.76	30.19	38.24	733.5	2.028	20.94871	0.182	-0.153	9.33	1.663
3.283	594.7	-3.26	3.50	27.33	36.64	685.7	2.287	15.81829	0.163	-0.155	8.07	1.555
3.629	585.6	-3.32	2.54	26.16	37.03	677.4	2.528	12.90612	0.161	-0.158	7.11	1.536
3.913	595.6	-3.34	2.09	25.76	37.43	677.4	2.726	11.29022	0.164	-0.159	6.66	1.536

Table B.15 L/B = 3.5 ; $\beta = 12^\circ$; $L_{CG} = 30\%$; Thrust Line : Centre of Gravity (2/2)

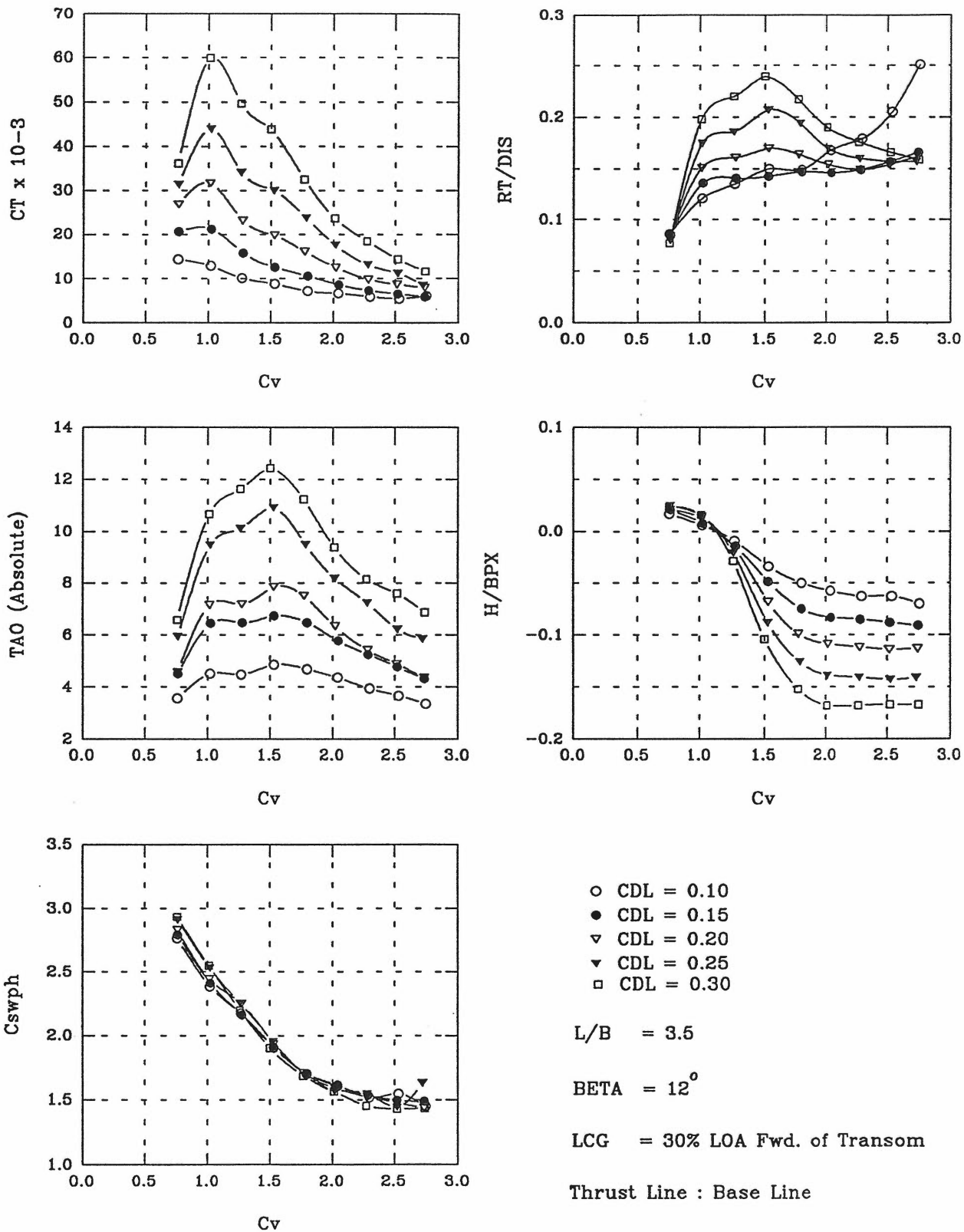


Figure B.16

Model No. T-3512

L/B Ratio 3.5 Length Overall LOA 80.50 cm
 Deadrise 12.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 30.00 % LOA 24.15 cm @ Transom

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 23.74 % B 5.46 cm @ Base Line
 Static trim TAOO 1.95 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.087	105.1	0.36	1.61	50.72	64.80	1218.9	0.758	14.32987	0.086	0.017	3.56	2.764
1.461	147.0	0.13	2.56	39.85	58.36	1052.7	1.018	12.86797	0.121	0.006	4.51	2.387
1.824	163.8	-0.19	2.53	35.02	54.34	957.7	1.271	10.10701	0.135	-0.009	4.48	2.172
2.201	182.3	-0.71	2.91	30.19	48.30	841.4	1.533	8.79854	0.150	-0.034	4.86	1.908
2.577	180.7	-1.06	2.74	26.16	43.87	750.8	1.796	7.12351	0.149	-0.050	4.69	1.702
2.925	204.2	-1.21	2.41	22.94	43.47	711.9	2.038	6.58743	0.168	-0.058	4.36	1.614
3.300	217.7	-1.32	1.99	20.13	42.26	668.8	2.299	5.87859	0.179	-0.063	3.94	1.517
3.635	249.8	-1.32	1.72	18.11	45.48	681.7	2.532	5.45255	0.205	-0.063	3.67	1.546
3.948	305.1	-1.48	1.41	15.70	43.87	638.6	2.750	6.02681	0.251	-0.070	3.36	1.448

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 24.22 % B 5.57 cm @ Base Line
 Static trim TAOO 2.73 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.095	154.8	0.45	1.79	52.33	64.80	1231.3	0.763	20.61249	0.085	0.021	4.52	2.792
1.469	247.8	0.16	3.73	41.86	57.56	1063.2	1.024	21.21988	0.136	0.008	6.46	2.411
1.833	257.7	-0.30	3.75	37.43	51.52	953.3	1.277	15.82126	0.141	-0.014	6.48	2.162
2.197	260.1	-1.03	4.02	32.20	46.29	841.4	1.531	12.58539	0.143	-0.049	6.75	1.908
2.579	268.6	-1.58	3.76	28.18	41.86	750.8	1.797	10.57396	0.147	-0.075	6.49	1.702
2.931	265.9	-1.75	3.04	25.76	40.25	707.6	2.042	8.59752	0.146	-0.083	5.77	1.605
3.279	271.1	-1.79	2.53	22.94	40.25	677.4	2.285	7.31729	0.149	-0.085	5.26	1.536
3.616	286.2	-1.85	2.04	21.73	39.85	660.2	2.519	6.51830	0.157	-0.088	4.77	1.497
3.930	303.4	-1.92	1.59	20.13	41.06	655.8	2.738	5.88851	0.166	-0.091	4.32	1.487

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2003
 VCG Position 24.48 % B 5.63 cm @ Base Line
 Static trim TAOO 2.81 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.093	203.4	0.45	1.76	54.34	64.80	1247.7	0.761	26.83727	0.084	0.021	4.57	2.829
1.454	367.4	0.28	4.36	44.28	56.75	1077.8	1.013	31.70681	0.151	0.013	7.17	2.444
1.829	390.8	-0.36	4.38	40.73	51.92	992.4	1.274	23.14512	0.161	-0.017	7.19	2.250
2.196	414.4	-1.42	5.04	34.94	44.68	853.4	1.530	19.79175	0.170	-0.068	7.85	1.935
2.541	398.2	-2.08	4.70	30.35	40.01	754.2	1.770	16.07990	0.164	-0.099	7.51	1.710
2.896	374.1	-2.30	3.53	27.05	38.32	700.7	2.018	12.51255	0.154	-0.109	6.34	1.589
3.276	361.8	-2.35	2.61	24.95	37.84	673.1	2.282	9.84886	0.149	-0.112	5.42	1.526
3.608	375.2	-2.39	2.07	22.94	37.84	651.5	2.514	8.69407	0.154	-0.114	4.88	1.477
3.926	393.9	-2.38	1.56	20.85	38.32	634.3	2.735	7.92205	0.162	-0.113	4.37	1.438

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2506
 VCG Position 25.83 % B 5.94 cm @ Base Line
 Static trim TAOO 4.00 deg
 Water Temp. 22.00 deg C Density 997.772 kg/m3 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.092	244.4	0.52	1.95	57.72	66.01	1284.0	0.761	31.41273	0.080	0.025	5.95	2.912
1.460	532.8	0.32	5.48	47.82	57.07	1116.6	1.017	44.03257	0.175	0.015	9.48	2.532
1.810	566.3	-0.44	6.12	41.94	51.04	994.7	1.261	34.16512	0.186	-0.021	10.12	2.256
2.190	630.9	-1.85	6.93	36.22	44.19	862.0	1.525	30.02067	0.207	-0.088	10.93	1.955
2.558	588.8	-2.66	5.51	31.23	38.32	745.6	1.782	23.72647	0.194	-0.126	9.51	1.691
2.889	517.2	-2.91	4.19	28.09	36.55	692.9	2.013	17.57944	0.170	-0.139	8.19	1.571
3.268	485.9	-2.96	3.24	26.65	37.03	682.6	2.277	13.10374	0.160	-0.141	7.24	1.548
3.618	476.5	-2.99	2.23	23.83	35.58	636.9	2.521	11.23788	0.157	-0.143	6.23	1.444
3.905	478.2	-2.97	1.86	22.46	44.60	718.8	2.721	8.57551	0.157	-0.141	5.86	1.630

Table B.16 L/B = 3.5 ; β = 12° ; L_{CG} = 30% ; Thrust Line : Base Line (1/2)

Displacement DIS 3640.0 gms Disp. Coeff. CDL 0.2998
 VCG Position 27.70 % B 6.37 cm @ Base Line
 Static trim TAOo 4.57 deg
 Water Temp. 22.00 deg C Density 997.772 kg/m3 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.087	281.5	0.51	2.01	57.72	66.90	1292.9	0.757	36.22531	0.077	0.024	6.58	2.932
1.450	719.1	0.33	6.11	48.62	57.07	1124.1	1.010	59.84660	0.198	0.016	10.68	2.549
1.810	802.3	-0.61	7.06	41.78	48.78	969.3	1.261	49.67960	0.220	-0.029	11.63	2.198
2.156	869.4	-2.17	7.86	36.14	42.10	838.7	1.502	43.86714	0.239	-0.104	12.43	1.902
2.538	791.5	-3.19	6.67	31.56	37.75	743.0	1.768	32.52461	0.217	-0.152	11.24	1.685
2.886	691.1	-3.52	4.82	28.74	35.74	691.2	2.010	23.60918	0.190	-0.168	9.39	1.567
3.260	638.9	-3.53	3.58	25.76	34.05	641.2	2.272	18.43203	0.176	-0.168	8.15	1.454
3.616	603.1	-3.51	3.02	24.55	34.29	630.8	2.520	14.37478	0.166	-0.167	7.59	1.430
3.935	579.8	-3.50	2.30	24.15	34.86	632.5	2.741	11.64228	0.159	-0.167	6.87	1.434

Table B.16 L/B = 3.5 ; $\beta = 12^\circ$; $L_{CG} = 30\%$; Thrust Line : Base Line (2/2)

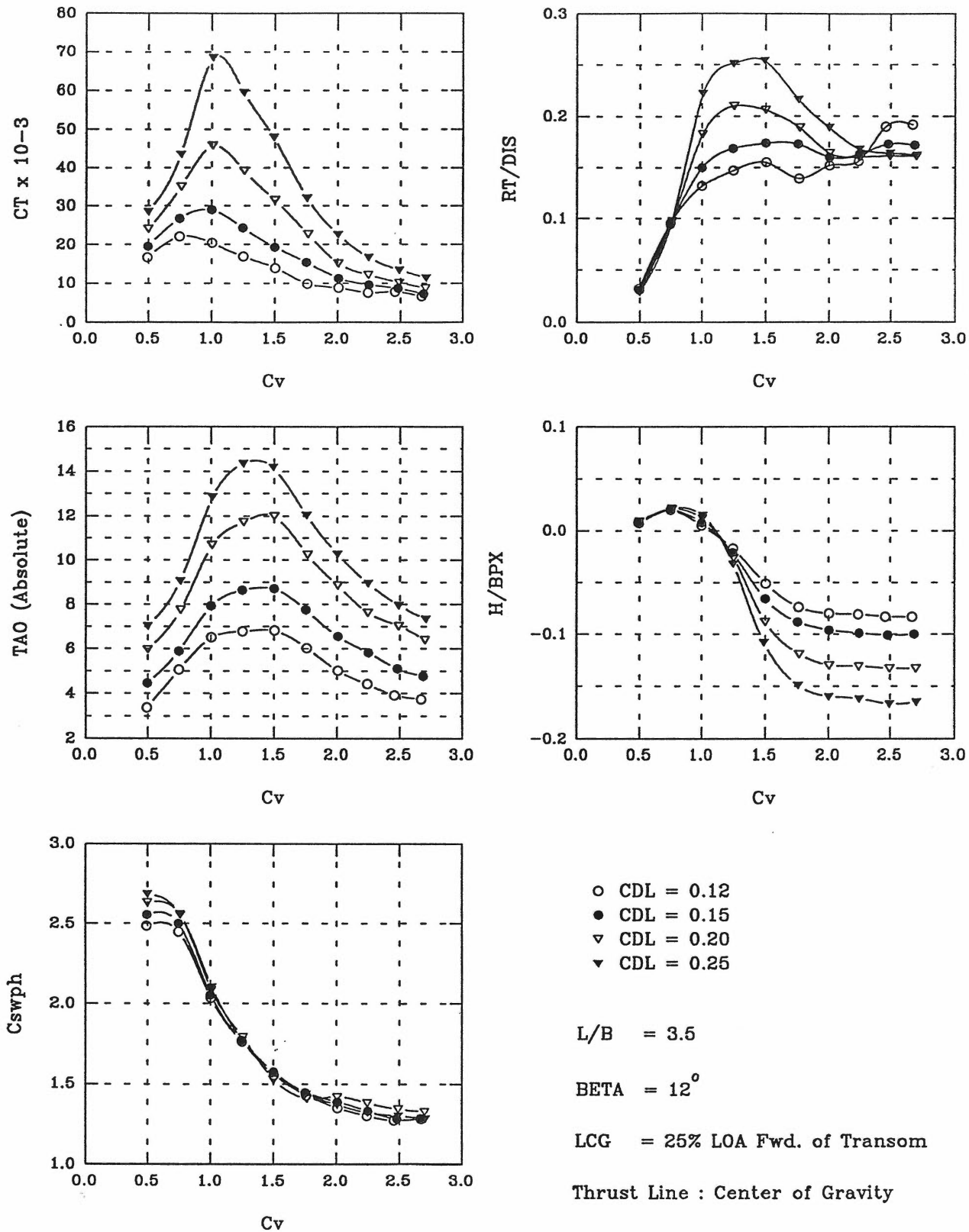


Figure B.17

Model No. T-3512		L/B Ratio 3.5		Length Overall LOA 80.50 cm		Breath (Deck) B 23.00 cm		Breath (Chine) BPX 21.00 cm							
Deadrise 12.00 deg		LCG Position 25.00 % LOA		20.13 cm @ Transom											
Displacement DIS 1458.0 gms		VCG Position 28.04 % B		Static trim TAOo 3.04 deg		Water Temp. 22.50 deg C		Density 997.658 kg/m3		Kin. Viscosity 0.9457E-06 m2/s					
Disp. Coeff. CDL 0.1201		6.45 cm @ Base Line													
Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph			
0.707	46.4	0.17	0.33	38.64	63.60	1096.5	0.493	16.63130	0.032	0.008	3.37	2.486			
1.073	139.3	0.42	2.02	42.26	58.77	1079.9	0.748	22.01466	0.096	0.020	5.06	2.449			
1.437	192.3	0.10	3.47	35.42	48.30	897.3	1.001	20.39407	0.132	0.005	6.51	2.035			
1.794	214.4	-0.37	3.74	30.19	42.26	776.7	1.250	16.87382	0.147	-0.017	6.78	1.761			
2.158	226.5	-1.08	3.78	26.16	37.84	686.0	1.504	13.93366	0.155	-0.051	6.82	1.556			
2.527	202.3	-1.55	3.00	22.54	36.22	630.0	1.761	9.88547	0.139	-0.074	6.04	1.428			
2.880	221.5	-1.69	1.98	20.13	35.42	595.4	2.006	8.82094	0.152	-0.080	5.02	1.350			
3.216	228.1	-1.71	1.38	18.11	35.42	573.9	2.241	7.55652	0.156	-0.081	4.42	1.301			
3.529	277.4	-1.75	0.88	15.70	36.63	560.9	2.459	7.80862	0.190	-0.083	3.92	1.272			
3.832	280.1	-1.75	0.71	14.89	37.84	565.2	2.670	6.63758	0.192	-0.083	3.75	1.282			
Displacement DIS 1825.0 gms		VCG Position 27.96 % B		Static trim TAOo 3.83 deg		Water Temp. 22.50 deg C		Density 997.658 kg/m3		Kin. Viscosity 0.9457E-06 m2/s					
Disp. Coeff. CDL 0.1503		6.43 cm @ Base Line													
Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph			
0.710	56.6	0.15	0.63	41.86	63.60	1128.0	0.495	19.56720	0.031	0.007	4.46	2.558			
1.069	171.2	0.42	2.07	44.28	59.17	1103.3	0.745	26.67980	0.094	0.020	5.90	2.502			
1.435	274.4	0.16	4.10	36.63	47.90	905.9	1.000	28.93713	0.150	0.008	7.93	2.054			
1.790	309.3	-0.44	4.80	31.40	41.46	781.0	1.247	24.30368	0.169	-0.021	8.63	1.771			
2.155	317.7	-1.39	4.87	28.58	36.22	694.7	1.502	19.36364	0.174	-0.066	8.70	1.575			
2.518	316.4	-1.84	3.92	24.15	35.42	638.6	1.754	15.36474	0.173	-0.088	7.75	1.448			
2.877	291.3	-2.03	2.73	22.14	35.02	612.7	2.005	11.29228	0.160	-0.096	6.56	1.389			
3.228	298.3	-2.07	2.01	20.13	34.62	586.8	2.249	9.59190	0.163	-0.099	5.84	1.331			
3.561	315.0	-2.12	1.27	18.11	34.62	565.2	2.481	8.64447	0.173	-0.101	5.10	1.282			
3.856	313.7	-2.10	0.95	17.31	35.42	565.2	2.687	7.33906	0.172	-0.100	4.78	1.282			
Displacement DIS 2432.0 gms		VCG Position 28.17 % B		Static trim TAOo 5.51 deg		Water Temp. 22.00 deg C		Density 997.772 kg/m3		Kin. Viscosity 0.9568E-06 m2/s					
Disp. Coeff. CDL 0.2003		6.48 cm @ Base Line													
Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph			
0.716	72.8	0.19	0.47	45.48	63.60	1161.5	0.499	24.06285	0.030	0.009	5.98	2.634			
1.091	239.3	0.45	2.24	47.09	58.77	1126.8	0.760	35.06549	0.098	0.021	7.75	2.555			
1.442	446.0	0.25	5.17	38.64	47.09	918.8	1.005	45.87440	0.183	0.012	10.68	2.084			
1.803	511.6	-0.54	6.22	33.00	40.65	789.6	1.256	39.19751	0.210	-0.026	11.73	1.790			
2.154	501.0	-1.84	6.49	28.18	34.62	673.1	1.501	31.52933	0.206	-0.088	12.00	1.526			
2.534	459.6	-2.51	4.73	24.95	33.00	621.3	1.765	22.66281	0.189	-0.119	10.24	1.409			
2.877	398.5	-2.72	3.34	24.55	33.81	625.6	2.004	15.13031	0.164	-0.130	8.85	1.419			
3.223	389.4	-2.75	2.12	22.30	34.53	609.2	2.245	12.10098	0.160	-0.131	7.63	1.382			
3.575	391.6	-2.78	1.52	21.09	34.21	592.8	2.491	10.16165	0.161	-0.133	7.03	1.344			
3.875	391.4	-2.79	0.90	20.37	34.21	585.1	2.700	8.76106	0.161	-0.133	6.41	1.327			
Displacement DIS 3042.0 gms		VCG Position 27.57 % B		Static trim TAOo 6.54 deg		Water Temp. 22.00 deg C		Density 997.772 kg/m3		Kin. Viscosity 0.9568E-06 m2/s					
Disp. Coeff. CDL 0.2506		6.34 cm @ Base Line													
Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph			
0.715	87.7	0.20	0.49	48.30	63.19	1184.6	0.498	28.46135	0.029	0.010	7.03	2.686			
1.086	295.7	0.46	2.52	47.90	58.36	1130.7	0.757	43.55815	0.097	0.022	9.06	2.564			
1.446	676.3	0.32	6.30	39.85	46.69	927.5	1.008	68.53592	0.222	0.015	12.84	2.103			
1.797	763.5	-0.67	7.81	33.81	39.04	780.9	1.252	59.53710	0.251	-0.032	14.35	1.771			
2.142	773.7	-2.27	7.64	29.38	35.02	690.4	1.492	48.03150	0.254	-0.108	14.18	1.565			
2.520	656.7	-3.13	5.50	26.16	33.00	634.3	1.756	32.06763	0.216	-0.149	12.04	1.438			
2.873	573.4	-3.37	3.74	24.15	32.20	604.1	2.002	22.61799	0.189	-0.160	10.28	1.370			
3.226	511.2	-3.40	2.40	22.14	32.20	582.5	2.247	16.58524	0.168	-0.162	8.94	1.321			
3.575	499.3	-3.51	1.42	21.33	32.20	573.9	2.491	13.38799	0.164	-0.167	7.96	1.301			
3.883	494.0	-3.47	0.81	19.72	33.00	565.2	2.705	11.39635	0.162	-0.165	7.35	1.282			

Table B.17 L/B = 3.5 ; $\beta = 12^\circ$; $L_{cc} = 25\%$; Thrust Line : Centre of Gravity

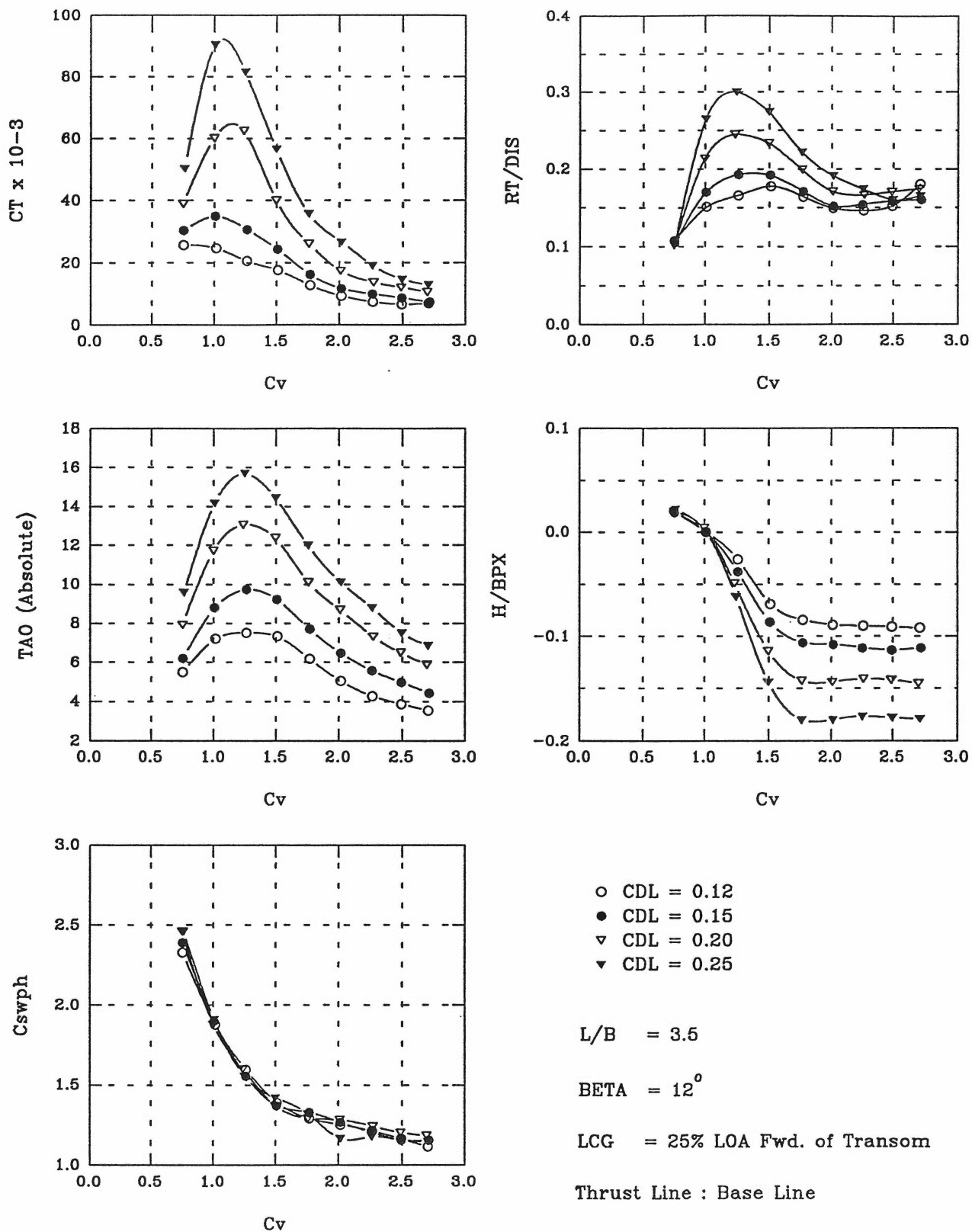


Figure B.18

Model No. T-3512

L/B Ratio 3.5 Length Overall LOA 80.50 cm
 Deadrise 12.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 25.00 % LOA 20.13 cm @ Transom

Displacement DIS 1458.0 gms Disp. Coeff. CDL 0.1201
 VCG Position 28.04 % B 6.45 cm @ Base Line
 Static trim TAOo 3.04 deg
 Water Temp. 22.00 deg C Density 997.772 kg/m3 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.082	157.0	0.41	2.46	40.25	55.55	1026.5	0.754	25.70817	0.108	0.020	5.50	2.328
1.454	220.6	0.01	4.17	32.60	44.68	828.4	1.013	24.76270	0.151	0.000	7.21	1.878
1.811	241.9	-0.54	4.48	27.37	38.24	703.3	1.262	20.61636	0.166	-0.026	7.52	1.595
2.174	259.3	-1.44	4.29	22.94	34.21	612.7	1.514	17.61012	0.178	-0.069	7.33	1.389
2.541	239.2	-1.76	3.15	20.53	32.60	569.5	1.770	12.79278	0.164	-0.084	6.19	1.291
2.890	218.0	-1.87	2.01	18.52	33.00	552.3	2.013	9.29330	0.149	-0.089	5.05	1.252
3.245	212.2	-1.89	1.24	16.90	33.00	535.0	2.261	7.40648	0.146	-0.090	4.28	1.213
3.576	222.0	-1.92	0.83	14.89	33.00	513.5	2.492	6.64757	0.152	-0.091	3.87	1.164
3.887	262.5	-1.94	0.50	12.48	33.41	491.9	2.708	6.94544	0.180	-0.092	3.54	1.115

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 27.96 % B 6.43 cm @ Base Line
 Static trim TAOo 3.83 deg
 Water Temp. 22.00 deg C Density 997.772 kg/m3 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.085	191.3	0.39	2.37	42.26	56.35	1054.1	0.756	30.32620	0.105	0.019	6.20	2.390
1.444	310.2	0.01	4.97	34.21	43.87	837.0	1.006	34.94438	0.170	0.001	8.80	1.898
1.812	352.6	-0.79	5.91	28.18	35.82	686.0	1.262	30.79546	0.193	-0.038	9.74	1.556
2.164	351.2	-1.81	5.41	24.15	32.20	604.1	1.508	24.41259	0.192	-0.086	9.24	1.370
2.540	312.5	-2.22	3.88	21.90	32.76	585.9	1.770	16.25291	0.171	-0.106	7.71	1.329
2.892	277.4	-2.28	2.65	19.80	32.28	558.3	2.015	11.68432	0.152	-0.108	6.48	1.266
3.239	281.8	-2.32	1.75	17.71	31.88	531.6	2.256	9.93840	0.154	-0.111	5.58	1.205
3.577	288.4	-2.36	1.15	15.62	31.88	509.1	2.492	8.70297	0.158	-0.113	4.98	1.155
3.898	291.1	-2.33	0.60	14.81	32.76	510.0	2.715	7.38876	0.160	-0.111	4.43	1.156

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2003
 VCG Position 28.17 % B 6.48 cm @ Base Line
 Static trim TAOo 5.51 deg
 Water Temp. 21.50 deg C Density 997.885 kg/m3 Kin. Viscosity 0.9682E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.076	248.6	0.41	2.43	45.48	56.35	1085.5	0.750	38.87409	0.102	0.020	7.94	2.461
1.431	519.3	0.08	6.22	35.02	42.26	828.4	0.997	60.16249	0.214	0.004	11.73	1.878
1.772	594.8	-1.04	7.56	28.58	26.97	595.4	1.235	62.53648	0.245	-0.049	13.07	1.350
2.149	568.0	-2.40	6.86	24.95	31.40	604.1	1.497	40.02685	0.234	-0.114	12.37	1.370
2.526	484.5	-3.00	4.61	22.54	30.59	569.5	1.760	26.21566	0.199	-0.143	10.12	1.291
2.881	415.9	-3.02	3.19	21.73	30.99	565.2	2.008	17.42571	0.171	-0.144	8.70	1.282
3.252	402.5	-2.97	1.82	19.32	31.80	548.0	2.266	13.65637	0.166	-0.141	7.33	1.243
3.569	414.4	-2.99	0.99	18.11	31.40	530.7	2.487	12.05264	0.170	-0.142	6.50	1.203
3.872	423.4	-3.04	0.37	17.31	31.40	522.1	2.697	10.63860	0.174	-0.145	5.88	1.184

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2506
 VCG Position 27.57 % B 6.34 cm @ Base Line
 Static trim TAOo 6.54 deg
 Water Temp. 21.50 deg C Density 997.885 kg/m3 Kin. Viscosity 0.9682E-06 m2/s

Vel m/s	RT gms	H cm	TAO deg	LC cm	LK cm	SWPH cm2	Cv	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cswph
1.092	331.2	0.47	3.04	46.29	55.55	1085.2	0.761	50.35249	0.109	0.022	9.58	2.461
1.444	806.5	0.02	7.63	36.22	42.26	841.3	1.006	90.44013	0.265	0.001	14.17	1.908
1.790	912.0	-1.29	9.17	30.19	33.81	686.0	1.247	81.55484	0.300	-0.062	15.71	1.556
2.151	834.0	-3.03	7.91	26.57	31.80	625.6	1.498	56.66972	0.274	-0.144	14.45	1.419
2.523	674.1	-3.78	5.46	23.75	30.59	582.5	1.758	35.73913	0.222	-0.180	12.00	1.321
2.889	581.6	-3.78	3.57	19.32	28.58	513.5	2.013	26.69096	0.191	-0.180	10.11	1.164
3.237	529.2	-3.72	2.26	19.80	28.58	518.6	2.256	19.14230	0.174	-0.177	8.80	1.176
3.581	487.5	-3.73	0.98	19.00	28.58	510.0	2.495	14.65902	0.160	-0.178	7.52	1.156
3.885	502.3	-3.76	0.33	17.31	29.78	504.8	2.707	12.96185	0.165	-0.179	6.87	1.145

Table B.18 L/B = 3.5 ; β = 12° ; LCG = 25% ; Thrust Line : Base Line

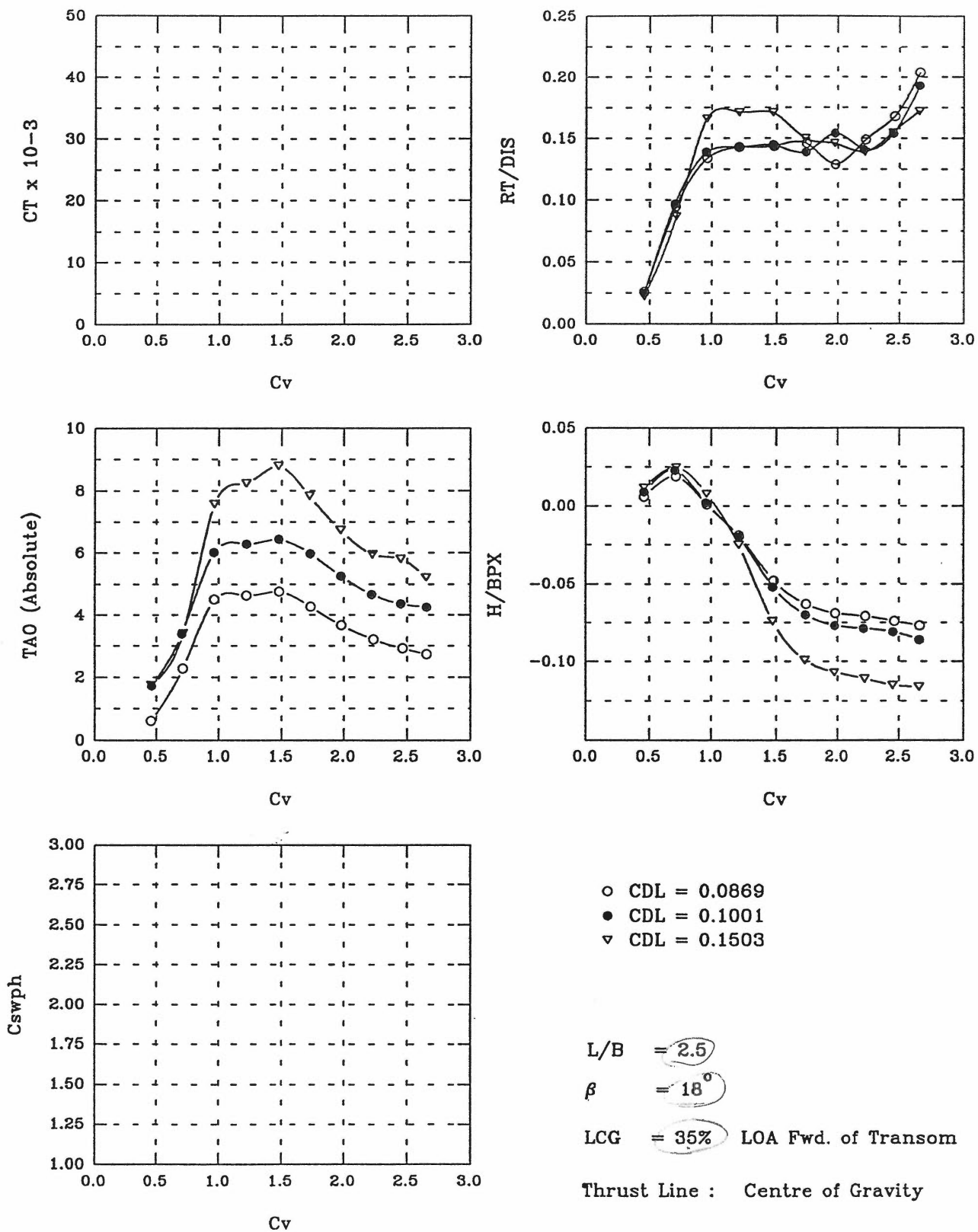


Figure B.19

Model No. T-2518	2.5	Length Overall LOA	57.50 cm									
L/B Ratio	18.00 deg	Breath (Deck) B	23.00 cm									
Deadrise		Breath (Chine) BPX	21.00 cm									
LCG Position	35.00 % LOA	20.13 cm @ Transom										
Displacement DIS	1055.0 gms	Disp. Coeff. CDL	0.0869									
VCG Position	25.13 % B	5.78 cm @ Base Line										
Static trim TAOo	0.53 deg											
Water Temp.	21.00 deg C	Density	997.994 kg/m3									
		Kin. Viscosity	0.9798E-06 m2/s									
Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.657	27.5	0.13	0.08	0.00	0.00	0.0	0.458	0.00000	0.026	0.006	0.61	0.000
1.023	100.7	0.40	1.76	0.00	0.00	0.0	0.713	0.00000	0.095	0.019	2.29	0.000
1.383	141.5	0.03	3.97	0.00	0.00	0.0	0.963	0.00000	0.134	0.001	4.50	0.000
1.746	150.5	-0.39	4.10	0.00	0.00	0.0	1.217	0.00000	0.143	-0.019	4.63	0.000
2.129	151.4	-1.00	4.23	0.00	0.00	0.0	1.483	0.00000	0.144	-0.048	4.76	0.000
2.491	154.1	-1.32	3.74	0.00	0.00	0.0	1.736	0.00000	0.146	-0.063	4.27	0.000
2.842	135.9	-1.45	3.14	0.00	0.00	0.0	1.980	0.00000	0.129	-0.069	3.67	0.000
3.205	157.5	-1.50	2.68	0.00	0.00	0.0	2.233	0.00000	0.149	-0.071	3.21	0.000
3.536	177.7	-1.56	2.39	0.00	0.00	0.0	2.464	0.00000	0.168	-0.074	2.92	0.000
3.811	214.7	-1.61	2.21	0.00	0.00	0.0	2.655	0.00000	0.204	-0.077	2.74	0.000
Displacement DIS	1216.0 gms	Disp. Coeff. CDL	0.1001									
VCG Position	24.91 % B	5.73 cm @ Base Line										
Static trim TAOo	1.64 deg											
Water Temp.	21.00 deg C	Density	997.994 kg/m3									
		Kin. Viscosity	0.9798E-06 m2/s									
Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.659	30.1	0.19	0.09	0.00	0.00	0.0	0.459	0.00000	0.025	0.009	1.73	0.000
1.009	118.4	0.48	1.74	0.00	0.00	0.0	0.703	0.00000	0.097	0.023	3.38	0.000
1.375	169.4	0.03	4.38	0.00	0.00	0.0	0.958	0.00000	0.139	0.002	6.02	0.000
1.749	173.9	-0.41	4.65	0.00	0.00	0.0	1.219	0.00000	0.143	-0.020	6.29	0.000
2.118	176.6	-1.08	4.80	0.00	0.00	0.0	1.476	0.00000	0.145	-0.052	6.44	0.000
2.488	169.1	-1.46	4.33	0.00	0.00	0.0	1.734	0.00000	0.139	-0.070	5.97	0.000
2.836	187.2	-1.62	3.62	0.00	0.00	0.0	1.976	0.00000	0.154	-0.077	5.26	0.000
3.182	171.9	-1.66	3.03	0.00	0.00	0.0	2.217	0.00000	0.141	-0.079	4.67	0.000
3.516	187.8	-1.71	2.72	0.00	0.00	0.0	2.450	0.00000	0.154	-0.081	4.36	0.000
3.809	234.7	-1.81	2.62	0.00	0.00	0.0	2.654	0.00000	0.193	-0.086	4.26	0.000
Displacement DIS	1825.0 gms	Disp. Coeff. CDL	0.1503									
VCG Position	25.13 % B	5.78 cm @ Base Line										
Static trim TAOo	1.72 deg											
Water Temp.	21.00 deg C	Density	997.994 kg/m3									
		Kin. Viscosity	0.9798E-06 m2/s									
Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.656	39.8	0.25	0.04	0.00	0.00	0.0	0.457	0.00000	0.022	0.012	1.76	0.000
1.025	158.6	0.53	1.69	0.00	0.00	0.0	0.714	0.00000	0.087	0.025	3.41	0.000
1.380	303.1	0.18	5.85	0.00	0.00	0.0	0.962	0.00000	0.166	0.008	7.57	0.000
1.745	312.1	-0.52	6.53	0.00	0.00	0.0	1.216	0.00000	0.171	-0.025	8.25	0.000
2.114	312.7	-1.55	7.09	0.00	0.00	0.0	1.473	0.00000	0.171	-0.074	8.81	0.000
2.476	274.3	-2.08	6.12	0.00	0.00	0.0	1.725	0.00000	0.150	-0.099	7.84	0.000
2.830	266.6	-2.24	5.02	0.00	0.00	0.0	1.971	0.00000	0.146	-0.107	6.74	0.000
3.192	253.7	-2.33	4.23	0.00	0.00	0.0	2.224	0.00000	0.139	-0.111	5.95	0.000
3.513	282.0	-2.41	4.09	0.00	0.00	0.0	2.448	0.00000	0.155	-0.115	5.81	0.000
3.802	313.6	-2.44	3.50	0.00	0.00	0.0	2.649	0.00000	0.172	-0.116	5.22	0.000

Table B.19 L/B = 2.5 ; $\beta = 18^\circ$; $L_{CG} = 35\%$; Thrust Line: Centre of Gravity

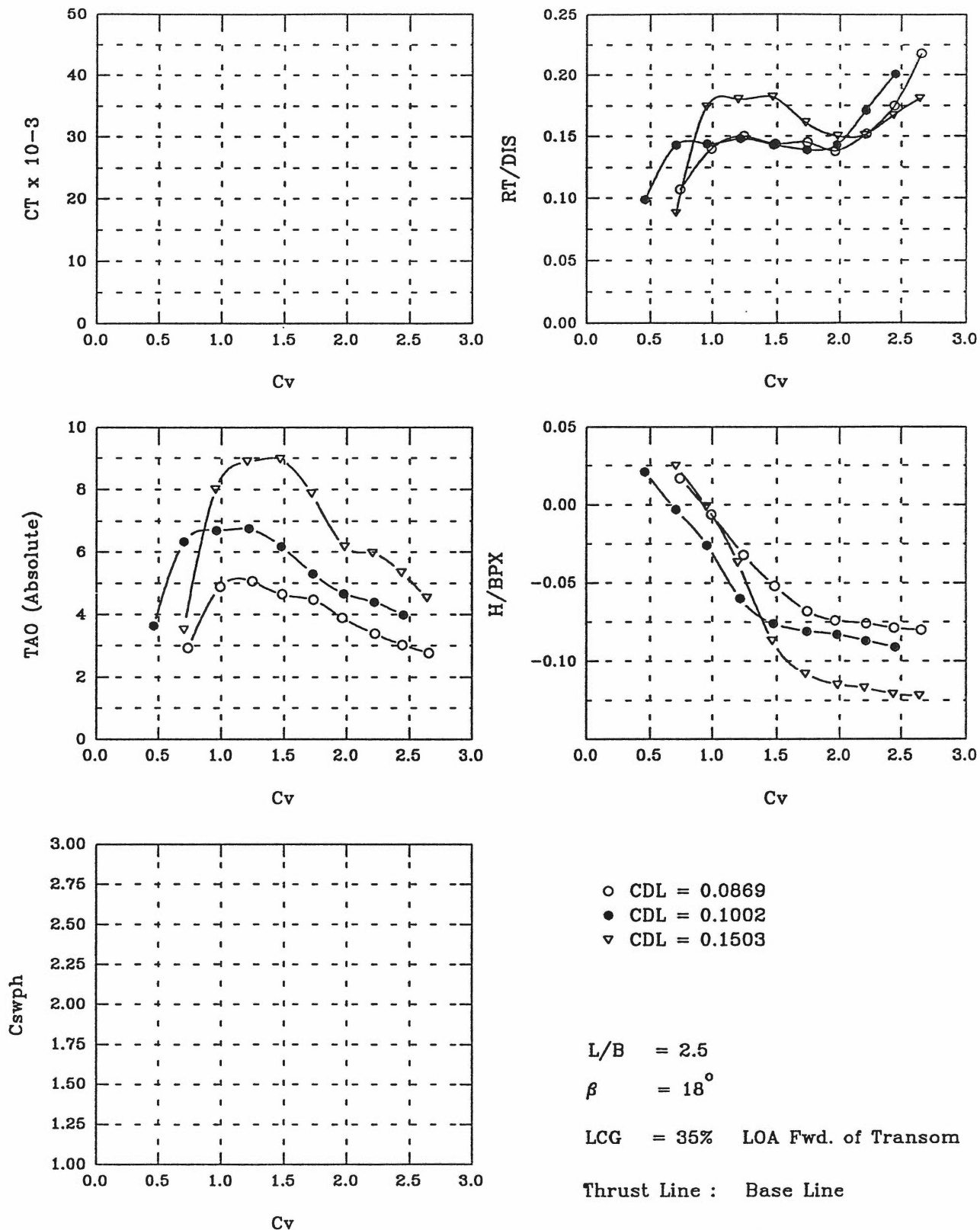


Figure B.20

Model No. T-2518
 L/B Ratio 2.5 Length Overall LOA 57.50 cm
 Deadrise 18.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 35.00 % LOA 20.13 cm @ Transom

Displacement DIS 1055.0 gms Disp. Coeff. CDL 0.0869
 VCG Position 25.13 % B 5.78 cm @ Base Line
 Static trim TAOo 0.53 deg
 Water Temp. 21.50 deg C Density 997.885 kg/m3 Kin. Viscosity 0.9682E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.055	113.2	0.36	2.39	0.00	0.00	0.0	0.735	0.00000	0.107	0.017	2.92	0.000
1.423	148.0	-0.12	4.36	0.00	0.00	0.0	0.991	0.00000	0.140	-0.006	4.89	0.000
1.788	158.2	-0.68	4.52	0.00	0.00	0.0	1.246	0.00000	0.150	-0.032	5.05	0.000
2.132	152.1	-1.09	4.11	0.00	0.00	0.0	1.486	0.00000	0.144	-0.052	4.64	0.000
2.492	153.0	-1.43	3.94	0.00	0.00	0.0	1.736	0.00000	0.145	-0.068	4.47	0.000
2.816	145.2	-1.56	3.37	0.00	0.00	0.0	1.962	0.00000	0.138	-0.074	3.90	0.000
3.188	160.3	-1.59	2.85	0.00	0.00	0.0	2.221	0.00000	0.152	-0.076	3.38	0.000
3.507	185.0	-1.65	2.50	0.00	0.00	0.0	2.444	0.00000	0.175	-0.079	3.03	0.000
3.810	230.2	-1.68	2.24	0.00	0.00	0.0	2.654	0.00000	0.218	-0.080	2.77	0.000

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1002
 VCG Position 24.91 % B 5.73 cm @ Base Line
 Static trim TAOo 1.64 deg
 Water Temp. 21.50 deg C Density 997.885 kg/m3 Kin. Viscosity 0.9682E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.003	120.3	0.44	1.99	0.00	0.00	0.0	0.699	0.00000	0.099	0.021	3.63	0.000
1.371	173.9	-0.06	4.69	0.00	0.00	0.0	0.955	0.00000	0.143	-0.003	6.33	0.000
1.725	175.0	-0.55	5.06	0.00	0.00	0.0	1.202	0.00000	0.144	-0.026	6.70	0.000
2.108	179.8	-1.25	5.11	0.00	0.00	0.0	1.469	0.00000	0.148	-0.060	6.75	0.000
2.459	174.5	-1.60	4.54	0.00	0.00	0.0	1.713	0.00000	0.143	-0.076	6.18	0.000
2.811	169.2	-1.71	3.66	0.00	0.00	0.0	1.959	0.00000	0.139	-0.081	5.30	0.000
3.168	173.4	-1.75	3.03	0.00	0.00	0.0	2.208	0.00000	0.143	-0.083	4.67	0.000
3.495	207.8	-1.83	2.76	0.00	0.00	0.0	2.435	0.00000	0.171	-0.087	4.40	0.000
3.782	245.0	-1.90	2.34	0.00	0.00	0.0	2.635	0.00000	0.201	-0.091	3.98	0.000

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 25.13 % B 5.78 cm @ Base Line
 Static trim TAOo 1.72 deg
 Water Temp. 21.50 deg C Density 997.885 kg/m3 Kin. Viscosity 0.9682E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.007	161.1	0.52	1.79	0.00	0.00	0.0	0.702	0.00000	0.088	0.025	3.51	0.000
1.363	317.0	-0.01	6.28	0.00	0.00	0.0	0.950	0.00000	0.174	-0.001	8.00	0.000
1.725	329.3	-0.79	7.17	0.00	0.00	0.0	1.202	0.00000	0.180	-0.037	8.89	0.000
2.103	333.0	-1.83	7.26	0.00	0.00	0.0	1.465	0.00000	0.182	-0.087	8.98	0.000
2.469	294.6	-2.27	6.15	0.00	0.00	0.0	1.720	0.00000	0.161	-0.108	7.87	0.000
2.842	273.8	-2.42	4.46	0.00	0.00	0.0	1.980	0.00000	0.150	-0.115	6.18	0.000
3.162	276.1	-2.45	4.25	0.00	0.00	0.0	2.203	0.00000	0.151	-0.117	5.97	0.000
3.494	305.2	-2.55	3.62	0.00	0.00	0.0	2.435	0.00000	0.167	-0.121	5.34	0.000
3.786	330.0	-2.56	2.82	0.00	0.00	0.0	2.638	0.00000	0.181	-0.122	4.54	0.000

Table B.20 L/B = 2.5 ; β = 18° ; L_{CG} = 35% ; Thrust Line: Base Line

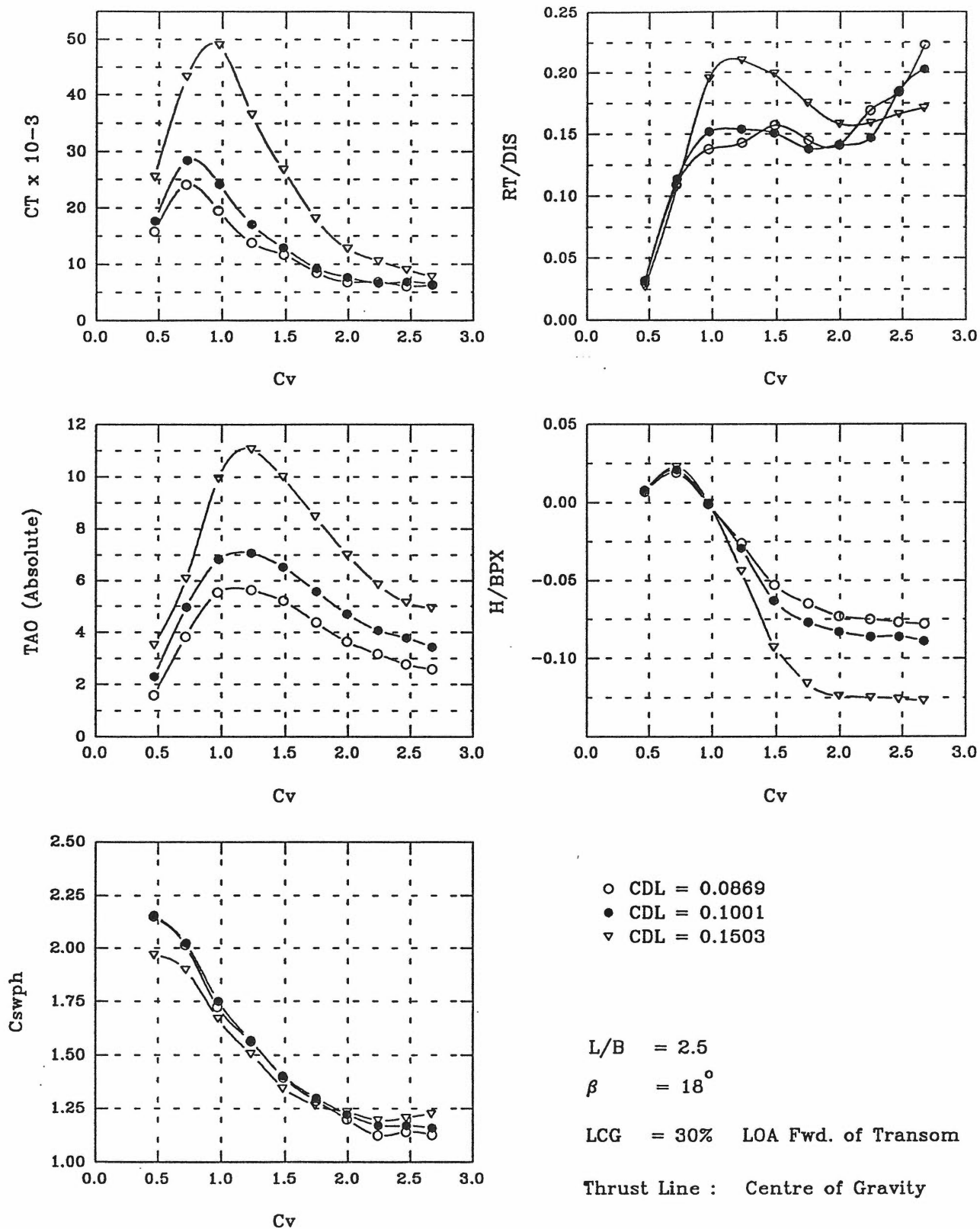


Figure B.21

Model No. T-2518

L/B Ratio 2.5 Length Overall LOA 57.50 cm
 Deadrise 18.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 30.00 % LOA 17.25 cm @ Transom

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Displacement DIS 1055.0 gms Disp. Coeff. CDL 0.0869
 VCG Position 25.87 % B 5.95 cm @ Base Line
 Static trim TAOo 1.27 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.669	33.9	0.14	0.32	31.63	52.89	947.0	0.466	15.76165	0.032	0.007	1.59	2.148
1.028	115.0	0.39	2.57	33.06	47.77	888.6	0.716	24.08283	0.109	0.019	3.84	2.015
1.391	146.0	-0.03	4.27	25.88	43.13	759.5	0.969	19.53279	0.138	-0.001	5.54	1.722
1.767	150.7	-0.55	4.36	22.43	40.25	689.4	1.231	13.76586	0.143	-0.026	5.63	1.563
2.133	165.2	-1.12	3.94	17.83	38.03	614.4	1.486	11.62414	0.157	-0.053	5.21	1.393
2.509	152.9	-1.37	3.11	14.66	36.80	566.1	1.748	8.43887	0.145	-0.065	4.38	1.284
2.857	149.1	-1.53	2.37	11.50	36.56	528.7	1.991	6.79113	0.141	-0.073	3.64	1.199
3.214	178.1	-1.58	1.91	7.76	37.27	495.3	2.239	6.84359	0.169	-0.075	3.18	1.123
3.540	194.6	-1.61	1.51	6.61	39.10	502.8	2.467	6.06960	0.184	-0.077	2.78	1.140
3.839	235.3	-1.63	1.31	4.31	40.79	496.4	2.675	6.32475	0.223	-0.078	2.58	1.126

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 25.61 % B 5.89 cm @ Base Line
 Static trim TAOo 1.97 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.670	38.4	0.18	0.34	31.63	53.14	950.8	0.467	17.70563	0.032	0.008	2.31	2.156
1.035	138.6	0.45	3.01	33.64	47.64	892.4	0.721	28.47129	0.114	0.021	4.98	2.023
1.397	185.4	-0.03	4.85	27.31	42.84	771.7	0.974	24.18729	0.152	-0.001	6.82	1.750
1.762	186.7	-0.62	5.10	23.00	39.86	691.4	1.228	17.09965	0.154	-0.029	7.07	1.568
2.127	183.4	-1.31	4.56	18.69	37.53	618.4	1.482	12.89327	0.151	-0.063	6.53	1.402
2.509	168.1	-1.61	3.61	15.81	36.22	572.4	1.748	9.17003	0.138	-0.077	5.58	1.298
2.859	171.7	-1.75	2.74	12.94	36.04	538.8	1.992	7.66605	0.141	-0.083	4.71	1.222
3.219	179.0	-1.80	2.11	10.06	36.87	516.3	2.243	6.57691	0.147	-0.086	4.08	1.171
3.545	225.4	-1.80	1.82	8.05	38.81	515.5	2.470	6.84013	0.185	-0.086	3.79	1.169
3.836	246.7	-1.86	1.47	5.75	40.68	510.9	2.673	6.44949	0.203	-0.089	3.44	1.159

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 25.61 % B 5.89 cm @ Base Line
 Static trim TAOo 3.24 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.667	50.1	0.15	0.27	31.63	47.27	867.9	0.465	25.46517	0.027	0.007	3.51	1.968
1.031	195.8	0.48	2.83	34.50	42.22	837.5	0.718	43.21615	0.107	0.023	6.07	1.899
1.395	356.4	-0.01	6.70	28.75	38.20	735.5	0.972	48.92541	0.195	-0.000	9.94	1.668
1.764	384.0	-0.91	7.82	25.01	35.36	663.8	1.229	36.54740	0.210	-0.044	11.06	1.505
2.123	362.5	-1.95	6.75	21.28	32.49	591.4	1.479	26.75076	0.199	-0.093	9.99	1.341
2.123	362.5	-1.95	6.75	21.28	32.49	591.4	1.479	26.75076	0.199	-0.093	9.99	1.341
2.495	318.7	-2.43	5.23	18.69	31.91	556.6	1.738	18.08218	0.175	-0.116	8.47	1.262
2.858	287.8	-2.59	3.76	16.39	33.06	544.0	1.991	12.73434	0.158	-0.124	7.00	1.233
3.215	290.9	-2.62	2.60	14.09	33.74	526.1	2.240	10.52127	0.159	-0.125	5.84	1.193
3.539	303.7	-2.65	1.91	12.36	35.94	531.3	2.466	8.97198	0.166	-0.126	5.15	1.205
3.830	312.5	-2.66	1.69	10.92	38.13	539.6	2.668	7.76190	0.171	-0.127	4.93	1.224

Table B.21 L/B = 2.5 ; $\beta = 18^\circ$; $L_{CG} = 30\%$; Thrust Line: Centre of Gravity

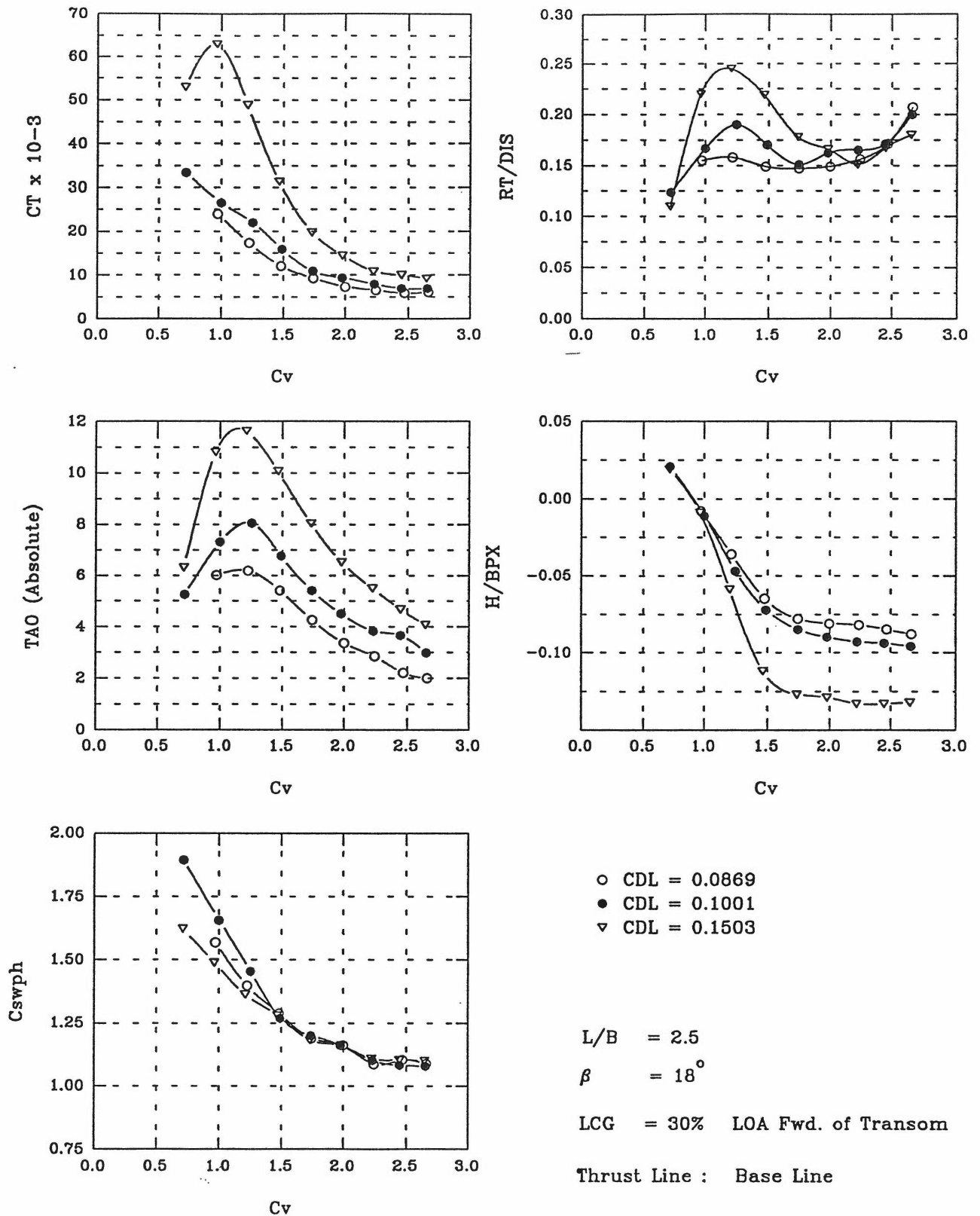


Figure B.22

Model No. T-2518

L/B Ratio 2.5 Length Overall LOA 57.50 cm
 Deadrise 18.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 30.00 % LOA 17.25 cm @ Transom

Displacement DIS 1055.0 gms Disp. Coeff. CDL 0.0869
 VCG Position 25.87 % B 5.95 cm @ Base Line
 Static trim TAOo 1.27 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.394	164.0	-0.16	4.74	24.67	38.24	691.6	0.972	23.97511	0.155	-0.008	6.01	1.568
1.753	166.4	-0.77	4.92	20.13	35.94	616.7	1.221	17.26743	0.158	-0.036	6.19	1.398
2.124	157.5	-1.36	4.14	16.79	34.90	568.6	1.480	12.06868	0.149	-0.065	5.41	1.289
2.502	155.2	-1.64	3.00	13.22	34.50	525.0	1.743	9.28533	0.147	-0.078	4.27	1.190
2.868	157.2	-1.71	2.09	11.50	35.09	512.4	1.998	7.33096	0.149	-0.081	3.36	1.162
3.219	164.9	-1.71	1.58	7.19	36.40	479.5	2.243	6.52430	0.156	-0.082	2.85	1.087
3.542	180.7	-1.78	0.94	5.75	38.53	487.0	2.468	5.81283	0.171	-0.085	2.21	1.104
3.821	218.0	-1.86	0.74	3.16	40.50	480.4	2.662	6.11204	0.207	-0.088	2.01	1.089

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 25.61 % B 5.89 cm @ Base Line
 Static trim TAOo 1.97 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.030	150.8	0.45	3.29	30.67	45.54	836.2	0.718	33.41932	0.124	0.021	5.26	1.896
1.436	202.8	-0.24	5.35	25.59	40.83	730.1	1.000	26.47791	0.167	-0.011	7.32	1.656
1.795	230.8	-1.00	6.09	21.26	37.03	641.2	1.250	21.96890	0.190	-0.047	8.06	1.454
2.139	206.6	-1.52	4.79	17.25	33.64	559.8	1.490	15.85929	0.170	-0.072	6.76	1.269
2.499	183.1	-1.78	3.44	14.66	33.53	530.1	1.741	10.87379	0.151	-0.085	5.41	1.202
2.834	196.4	-1.89	2.54	12.08	34.50	512.3	1.975	9.38158	0.162	-0.090	4.51	1.162
3.199	201.1	-1.94	1.87	10.06	34.16	486.4	2.229	7.94178	0.165	-0.093	3.84	1.103
3.512	208.4	-1.98	1.70	7.47	35.94	477.5	2.447	6.95466	0.171	-0.094	3.67	1.083
3.811	243.2	-2.02	1.01	5.17	38.07	475.7	2.655	6.92116	0.200	-0.096	2.98	1.079

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 25.61 % B 5.89 cm @ Base Line
 Static trim TAOo 3.24 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.021	200.9	0.41	3.07	29.82	35.35	715.2	0.712	52.93862	0.110	0.019	6.31	1.622
1.380	401.0	-0.20	7.57	26.49	33.27	657.0	0.962	62.96442	0.220	-0.009	10.81	1.490
1.731	447.9	-1.25	8.39	23.00	31.63	600.9	1.206	48.88689	0.245	-0.059	11.63	1.363
2.104	399.4	-2.35	6.83	20.52	30.84	564.9	1.466	31.38546	0.219	-0.112	10.07	1.281
2.486	324.4	-2.67	4.80	17.25	30.19	521.8	1.732	19.77070	0.178	-0.127	8.04	1.183
2.836	302.5	-2.71	3.28	15.53	31.05	512.3	1.976	14.43758	0.166	-0.129	6.52	1.162
3.189	275.0	-2.80	2.26	12.94	31.58	489.7	2.222	10.85422	0.151	-0.133	5.50	1.110
3.512	305.6	-2.80	1.45	11.21	33.06	487.0	2.447	9.99902	0.167	-0.133	4.69	1.104
3.801	328.6	-2.77	0.84	9.78	34.32	485.0	2.648	9.22038	0.180	-0.132	4.08	1.100

Table B.22 L/B = 2.5 ; $\beta = 18^\circ$; $L_{CG} = 30\%$; Thrust Line: Base Line

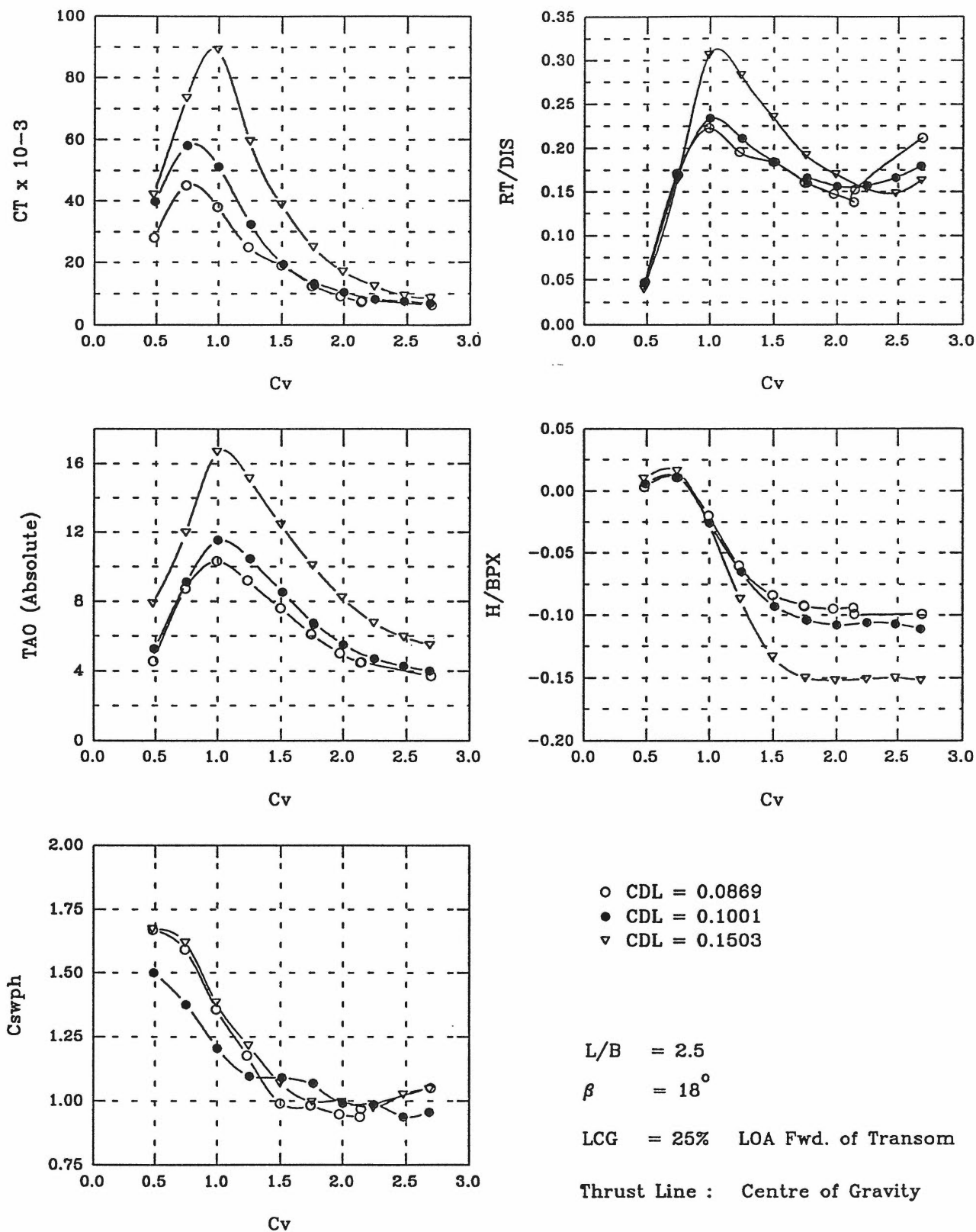


Figure B.23

Model No. T-2518

L/B Ratio 2.5 Length Overall LOA 57.50 cm
 Deadrise 18.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm

LCG Position 25.00 % LOA

14.38 cm @ Transom

Displacement DIS 1055.0 gms Disp. Coeff. CDL 0.0869
 VCG Position 25.96 % B 5.97 cm @ Base Line

Static trim TAOo 3.92 deg Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s
 Water Temp. 19.50 deg C

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.690	49.9	0.06	0.64	21.85	44.85	735.9	0.481	27.99144	0.047	0.003	4.56	1.669
1.061	180.9	0.24	4.81	25.01	38.81	701.6	0.739	45.02802	0.171	0.011	8.73	1.591
1.425	235.1	-0.43	6.40	20.43	34.02	598.9	0.992	38.01115	0.223	-0.020	10.32	1.358
1.771	206.7	-1.26	5.29	16.52	30.65	518.9	1.234	24.96577	0.196	-0.060	9.21	1.177
2.150	193.6	-1.76	3.68	12.36	27.31	436.4	1.498	18.86593	0.184	-0.084	7.60	0.990
2.500	169.5	-1.92	2.19	10.64	28.75	433.3	1.742	12.29673	0.161	-0.092	6.11	0.982
2.504	169.0	-1.96	2.16	10.64	28.75	433.3	1.744	12.22858	0.160	-0.093	6.08	0.982
2.832	155.4	-2.00	1.08	6.61	31.34	417.4	1.973	9.12601	0.147	-0.095	5.00	0.947
3.069	145.1	-1.97	0.55	6.04	31.63	414.3	2.138	7.30763	0.138	-0.094	4.47	0.939
3.079	160.5	-2.07	0.58	5.75	33.06	426.9	2.145	7.79508	0.152	-0.099	4.50	0.968
3.864	224.1	-2.07	-0.22	5.73	36.39	463.4	2.692	6.36566	0.212	-0.099	3.70	1.051

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 25.61 % B 5.89 cm @ Base Line

Static trim TAOo 4.45 deg Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s
 Water Temp. 20.00 deg C

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.701	57.9	0.12	0.81	23.58	29.18	580.2	0.489	39.88205	0.048	0.006	5.26	1.316
1.074	206.8	0.24	4.69	27.03	28.18	607.1	0.748	58.07320	0.170	0.011	9.14	1.377
1.436	285.0	-0.55	7.09	20.70	27.60	531.3	1.000	51.15565	0.234	-0.026	11.54	1.205
1.799	256.8	-1.35	6.00	16.39	27.60	483.9	1.253	32.23207	0.211	-0.065	10.45	1.097
2.171	223.9	-1.95	4.09	15.93	27.83	481.3	1.513	19.39039	0.184	-0.093	8.54	1.091
2.532	194.5	-2.19	2.20	14.66	28.18	471.2	1.764	12.65079	0.160	-0.104	6.65	1.069
2.525	202.1	-2.18	2.29	14.66	28.18	471.2	1.759	13.22416	0.166	-0.104	6.74	1.069
2.870	189.6	-2.26	1.06	9.49	30.19	436.4	2.000	10.36424	0.156	-0.108	5.51	0.990
3.226	190.9	-2.23	0.26	8.26	31.32	435.4	2.248	8.28098	0.157	-0.106	4.71	0.987
3.557	201.9	-2.25	-0.18	4.31	33.35	414.3	2.478	7.56907	0.166	-0.107	4.27	0.939
3.848	218.4	-2.32	-0.46	3.16	35.13	421.2	2.681	6.88013	0.180	-0.111	3.99	0.955

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 25.61 % B 5.89 cm @ Base Line

Static trim TAOo 6.81 deg Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s
 Water Temp. 20.00 deg C

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.682	73.5	0.21	1.06	27.03	40.13	737.8	0.475	42.03624	0.040	0.010	7.87	1.673
1.061	300.0	0.34	5.17	30.19	34.89	714.1	0.739	73.42946	0.164	0.016	11.98	1.619
1.420	557.6	-0.55	9.85	24.44	31.05	610.2	0.989	89.12012	0.306	-0.026	16.66	1.384
1.785	516.9	-1.82	8.32	20.41	28.31	535.9	1.244	59.48695	0.283	-0.087	15.13	1.215
2.147	428.0	-2.79	5.64	16.39	26.45	471.2	1.496	38.71648	0.235	-0.133	12.45	1.069
2.512	350.8	-3.15	3.27	14.09	25.88	439.6	1.750	24.85908	0.192	-0.150	10.08	0.997
2.853	310.4	-3.19	1.43	12.65	27.31	439.6	1.987	17.05494	0.170	-0.152	8.24	0.997
3.215	278.6	-3.16	-0.05	10.35	28.66	429.1	2.240	12.34355	0.153	-0.151	6.76	0.973
3.554	269.3	-3.14	-0.86	9.49	31.63	452.2	2.476	9.26881	0.148	-0.150	5.95	1.025
3.848	297.3	-3.18	-1.33	7.47	34.46	461.3	2.681	8.55335	0.163	-0.152	5.48	1.046

Table B.23 L/B = 2.5 ; $\beta = 18^\circ$; $L_{CG} = 25\%$; Thrust Line: Centre of Gravity

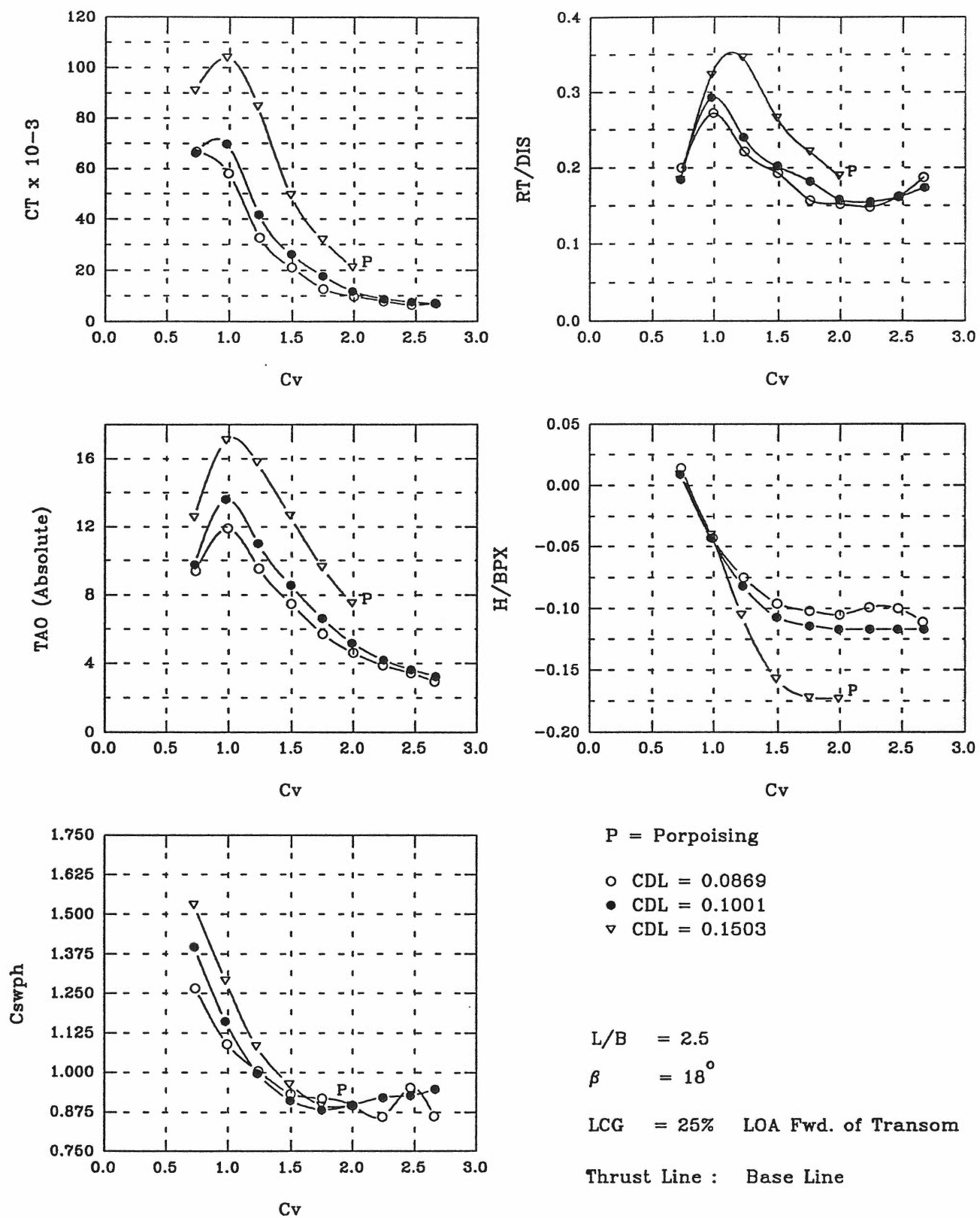


Figure B.24

Model No. T-2518
 L/B Ratio 2.5 Length Overall LOA 57.50 cm
 Deadrise 18.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 25.00 % LOA 14.38 cm @ Transom

Displacement DIS 1055.0 gms Disp. Coeff. CDL 0.0869
 VCG Position 25.96 % B 5.97 cm @ Base Line
 Static trim TAOo 3.92 deg
 Water Temp. 20.50 deg C Density 998.101 kg/m3 Kin. Viscosity 0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.054	210.7	0.30	5.48	24.44	26.32	558.3	0.734	66.80870	0.200	0.014	9.40	1.266
1.422	287.2	-0.90	7.98	17.84	25.83	480.4	0.991	58.09867	0.272	-0.043	11.90	1.089
1.776	232.7	-1.58	5.61	14.38	25.88	442.8	1.237	32.76419	0.221	-0.075	9.53	1.004
2.147	203.4	-2.02	3.57	11.50	25.88	411.1	1.496	21.10811	0.193	-0.096	7.49	0.932
2.511	165.3	-2.13	1.80	9.49	27.31	404.8	1.750	12.72887	0.157	-0.102	5.72	0.918
2.868	160.2	-2.20	0.69	7.76	28.18	395.3	1.998	9.68215	0.152	-0.105	4.61	0.896
3.215	156.7	-2.09	-0.04	4.60	29.91	379.6	2.240	7.84998	0.148	-0.099	3.88	0.861
3.541	171.0	-2.11	-0.49	6.35	31.81	419.8	2.467	6.38417	0.162	-0.100	3.43	0.952
3.816	197.3	-2.32	-0.98	0.86	33.69	380.0	2.659	7.00798	0.187	-0.111	2.94	0.862

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 25.61 % B 5.89 cm @ Base Line
 Static trim TAOo 4.45 deg
 Water Temp. 20.50 deg C Density 998.101 kg/m3 Kin. Viscosity 0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.041	224.6	0.19	5.29	24.55	31.45	615.9	0.725	66.21155	0.185	0.009	9.74	1.397
1.401	356.6	-0.90	9.16	19.26	27.31	512.3	0.976	69.68270	0.293	-0.043	13.61	1.162
1.768	291.9	-1.73	6.54	15.24	24.72	439.6	1.232	41.75806	0.240	-0.082	10.99	0.997
2.141	245.6	-2.25	4.12	12.31	24.27	402.3	1.491	26.19231	0.202	-0.107	8.57	0.912
2.509	221.4	-2.40	2.17	10.06	25.30	389.0	1.748	17.77198	0.182	-0.114	6.62	0.882
2.855	192.6	-2.46	0.74	8.63	27.31	395.3	1.989	11.74571	0.158	-0.117	5.19	0.896
3.218	188.1	-2.45	-0.26	8.17	28.75	406.1	2.242	8.79441	0.155	-0.117	4.19	0.921
3.538	195.9	-2.46	-0.81	8.40	28.75	408.6	2.465	7.53107	0.161	-0.117	3.64	0.927
3.827	212.1	-2.46	-1.21	9.20	28.75	417.5	2.666	6.81986	0.174	-0.117	3.24	0.947

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 25.61 % B 5.89 cm @ Base Line
 Static trim TAOo 6.81 deg
 Water Temp. 20.50 deg C Density 998.101 kg/m3 Kin. Viscosity 0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.036	335.1	0.19	5.76	28.18	33.21	674.7	0.722	90.99901	0.184	0.009	12.57	1.530
1.400	590.3	-0.84	10.28	23.47	28.26	569.1	0.976	104.00810	0.323	-0.040	17.09	1.290
1.751	631.6	-2.21	8.98	18.69	24.72	477.5	1.220	84.74731	0.346	-0.105	15.79	1.083
2.114	600.6	-3.91	5.86	15.63	23.16	426.7	1.473	61.93186	0.329	-0.186	12.67	0.968
2.131	485.4	-3.30	5.85	15.49	23.11	424.6	1.485	49.48265	0.266	-0.157	12.66	0.963
2.504	402.7	-3.62	2.81	12.94	23.00	395.3	1.744	31.94937	0.221	-0.172	9.62	0.896
2.850	344.9	-3.63	0.72	11.50	24.44	395.3	1.986	21.11404	0.189	-0.173	7.53	0.896

** Porpoising

Table B.24 L/B = 2.5 ; $\beta = 18^\circ$; $L_{cg} = 25\%$; Thrust Line : Base Line

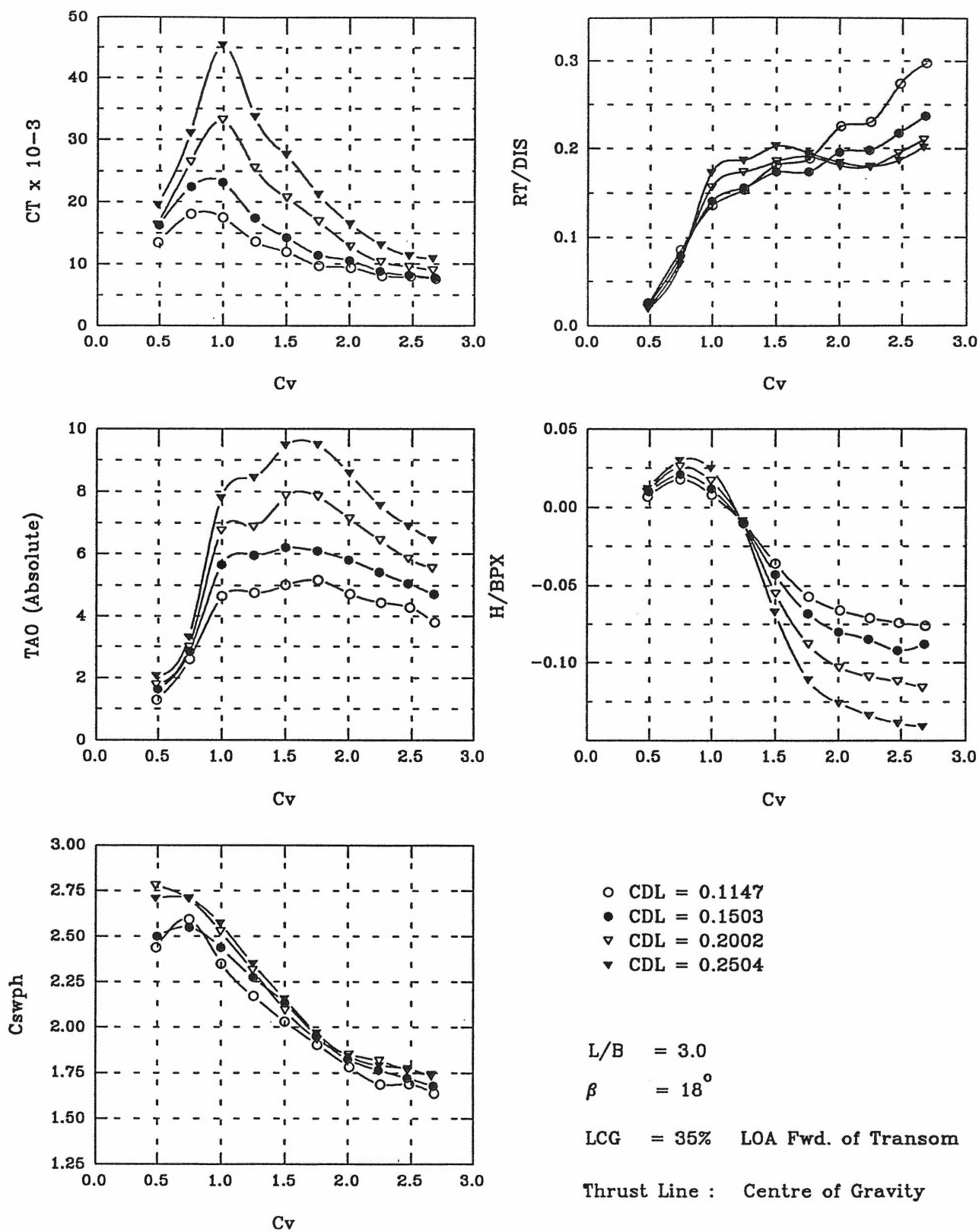


Figure B.25

Model No. T-3018
 L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 18.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 35.00 % LOA 24.15 cm @ Transom

Displacement DIS 1393.0 gms Disp. Coeff. CDL 0.1147
 VCG Position 29.26 % B 6.73 cm @ Base Line
 Static trim TAOo 1.25 deg
 Water Temp. 19.80 deg C Density 998.267 kg/m3 Kin. Viscosity 0.1009E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.698	36.0	0.15	0.04	34.50	61.89	1075.0	0.487	13.50519	0.026	0.007	1.29	2.438
1.070	120.0	0.39	1.35	48.30	58.24	1143.5	0.746	18.00398	0.086	0.018	2.60	2.593
1.435	189.9	0.18	3.39	39.68	55.20	1036.8	1.000	17.48697	0.136	0.008	4.64	2.351
1.799	214.9	-0.21	3.51	34.16	52.85	956.8	1.253	13.63633	0.154	-0.010	4.76	2.170
2.157	253.5	-0.76	3.76	30.36	50.99	895.0	1.503	11.96389	0.182	-0.036	5.01	2.030
2.527	263.8	-1.19	3.91	26.56	49.68	839.4	1.761	9.66970	0.189	-0.057	5.16	1.903
2.886	314.0	-1.39	3.48	22.43	48.99	785.9	2.011	9.42490	0.225	-0.066	4.73	1.782
3.239	320.4	-1.50	3.20	18.97	48.65	744.0	2.256	8.07083	0.230	-0.071	4.45	1.687
3.566	382.0	-1.56	3.04	18.29	49.34	744.3	2.484	7.93207	0.274	-0.074	4.29	1.688
3.854	414.5	-1.59	2.54	15.53	50.03	721.9	2.685	7.59784	0.298	-0.076	3.79	1.637

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 28.39 % B 6.53 cm @ Base Line
 Static trim TAOo 1.52 deg
 Water Temp. 19.80 deg C Density 998.267 kg/m3 Kin. Viscosity 0.1009E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.709	45.9	0.22	0.12	37.95	61.69	1103.4	0.494	16.25651	0.025	0.010	1.64	2.502
1.069	146.8	0.45	1.33	44.85	59.00	1124.9	0.745	22.44107	0.080	0.021	2.85	2.551
1.426	257.9	0.24	4.13	43.82	55.55	1075.8	0.994	23.16548	0.141	0.012	5.65	2.439
1.793	284.9	-0.21	4.44	37.74	53.82	1002.5	1.249	17.36895	0.156	-0.010	5.96	2.273
2.155	317.5	-0.91	4.68	33.47	52.10	940.8	1.501	14.28497	0.174	-0.043	6.20	2.133
2.518	318.2	-1.43	4.57	28.29	49.89	860.4	1.754	11.46251	0.174	-0.068	6.09	1.951
2.871	357.2	-1.68	4.29	24.84	48.30	804.5	2.000	10.58814	0.196	-0.080	5.81	1.824
3.217	361.0	-1.78	3.90	22.43	48.30	778.0	2.242	8.81085	0.198	-0.085	5.42	1.764
3.546	396.9	-1.93	3.54	20.70	48.30	759.0	2.471	8.17284	0.217	-0.092	5.06	1.721
3.843	432.2	-1.85	3.20	18.63	48.65	740.2	2.677	7.77126	0.237	-0.088	4.72	1.678

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 28.52 % B 6.56 cm @ Base Line
 Static trim TAOo 1.69 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.691	48.5	0.21	0.09	44.85	67.01	1226.0	0.481	16.28161	0.020	0.010	1.78	2.780
1.064	182.0	0.56	1.30	55.20	60.03	1193.8	0.741	26.48850	0.075	0.026	2.99	2.707
1.423	380.8	0.36	5.06	47.61	56.24	1115.0	0.992	33.13839	0.157	0.017	6.75	2.528
1.786	422.9	-0.20	5.17	42.09	51.64	1020.3	1.244	25.54617	0.174	-0.009	6.86	2.314
2.157	451.8	-1.16	6.18	35.45	48.69	922.4	1.503	20.69364	0.186	-0.055	7.87	2.092
2.519	463.4	-1.85	6.15	31.05	46.58	852.8	1.755	16.82501	0.191	-0.088	7.84	1.934
2.876	440.7	-2.16	5.45	27.98	46.23	816.1	2.004	12.83174	0.181	-0.103	7.14	1.851
3.226	437.9	-2.29	4.75	25.88	46.92	800.7	2.248	10.32523	0.180	-0.109	6.44	1.816
3.546	475.0	-2.36	4.16	23.46	47.27	778.0	2.471	9.54285	0.195	-0.112	5.85	1.764
3.821	511.4	-2.44	3.85	22.08	47.61	766.6	2.662	8.97832	0.210	-0.116	5.54	1.738

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2504
 VCG Position 27.70 % B 6.37 cm @ Base Line
 Static trim TAOo 1.95 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.692	56.8	0.25	0.11	51.75	62.10	1194.4	0.482	19.53178	0.019	0.012	2.06	2.708
1.061	212.6	0.63	1.35	59.00	61.07	1193.9	0.739	31.06665	0.070	0.030	3.30	2.707
1.419	527.4	0.52	5.84	49.68	56.93	1133.9	0.989	45.38473	0.173	0.025	7.79	2.571
1.789	568.5	-0.24	6.49	43.13	52.39	1036.4	1.246	33.69921	0.187	-0.011	8.44	2.350
2.149	617.5	-1.40	7.53	37.95	49.01	950.8	1.497	27.64867	0.203	-0.067	9.48	2.156
2.518	592.6	-2.33	7.55	32.78	46.23	867.5	1.754	21.17193	0.195	-0.111	9.50	1.967
2.873	561.3	-2.65	6.64	28.98	44.85	811.7	2.001	16.46877	0.185	-0.126	8.59	1.841
3.225	547.8	-2.81	5.61	26.91	44.85	789.4	2.247	13.11586	0.180	-0.134	7.56	1.790
3.548	568.5	-2.92	4.95	24.84	46.23	781.8	2.472	11.35547	0.187	-0.139	6.90	1.773
3.819	614.8	-2.96	4.50	22.77	46.58	762.8	2.661	10.86055	0.202	-0.141	6.45	1.730

Table B.25 L/B = 3.0 ; β = 18° ; L_{CG} = 35% ; Thrust Line: Centre of Gravity

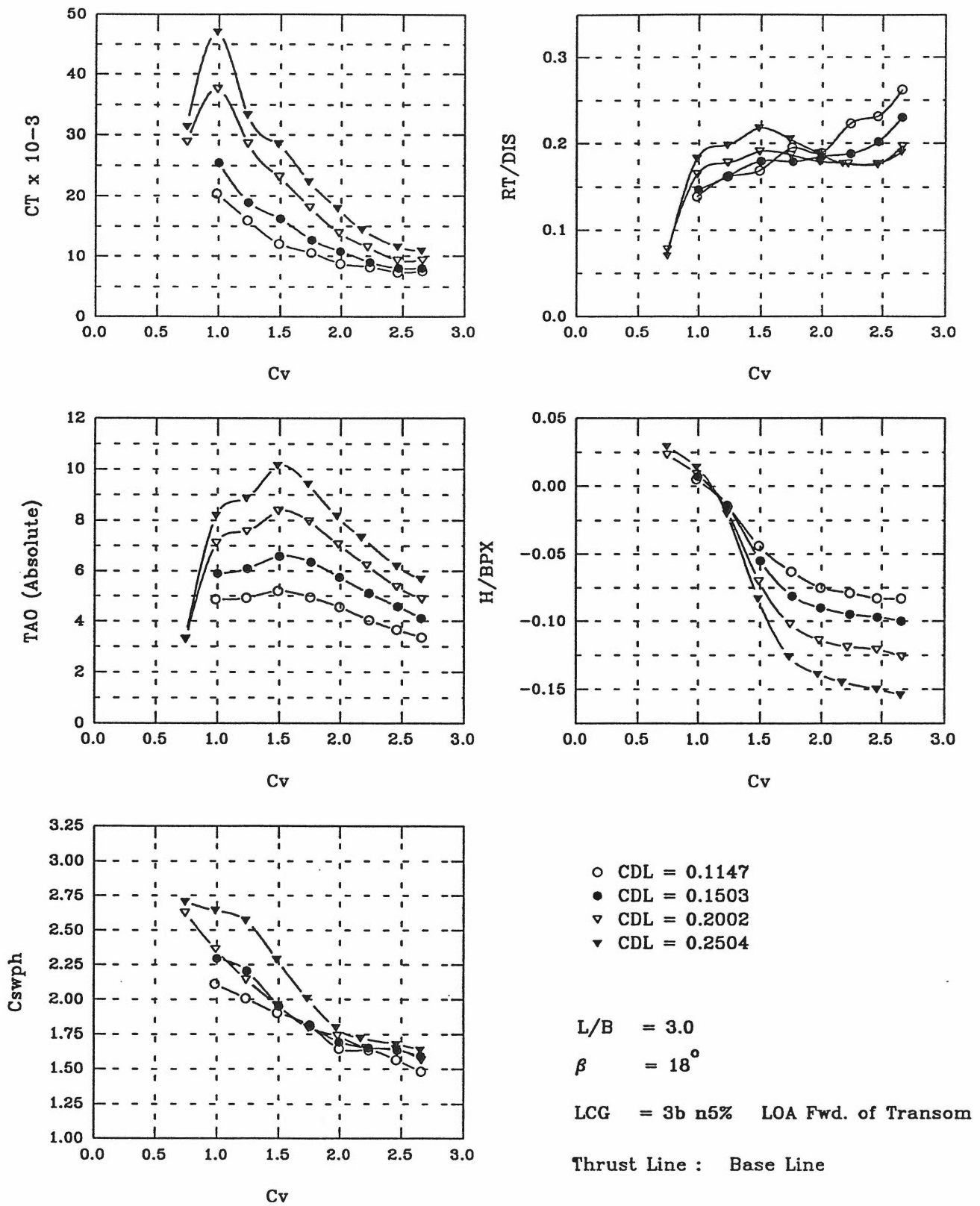


Figure B.26

Model No. T-3018

L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 18.00 deg Breath (Deck) B 23.00 cm
 LCG Position 35.00 % LOA 24.15 cm @ Transom Breath (Chine) BPX 21.00 cm

Displacement DIS 1393.0 gms Disp. Coeff. CDL 0.1147
 VCG Position 29.26 % B 6.73 cm @ Base Line
 Static trim TAOo 1.25 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.412	193.1	0.11	3.63	30.70	53.82	931.1	0.984	20.43168	0.139	0.005	4.88	2.111
1.774	226.0	-0.29	3.68	28.64	51.75	885.4	1.236	15.93364	0.162	-0.014	4.93	2.008
2.138	235.8	-0.92	3.95	26.56	49.68	839.4	1.490	12.07445	0.169	-0.044	5.20	1.903
2.514	271.9	-1.31	3.71	24.50	48.30	800.7	1.751	10.56055	0.195	-0.063	4.96	1.816
2.859	263.5	-1.57	3.32	19.32	46.58	724.8	1.992	8.73864	0.189	-0.075	4.57	1.644
3.206	310.4	-1.66	2.80	17.94	47.61	721.1	2.234	8.22965	0.223	-0.079	4.05	1.635
3.529	321.6	-1.74	2.41	15.18	47.61	690.7	2.459	7.34739	0.231	-0.083	3.66	1.566
3.816	364.7	-1.75	2.12	12.08	47.27	652.7	2.658	7.54245	0.262	-0.083	3.37	1.480

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 28.39 % B 6.53 cm @ Base Line
 Static trim TAOo 1.52 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.430	268.3	0.14	4.37	37.95	54.51	1012.2	0.997	25.46206	0.147	0.007	5.89	2.295
1.784	297.8	-0.32	4.57	36.22	52.44	972.3	1.243	18.92450	0.163	-0.015	6.09	2.205
2.154	329.1	-1.15	5.06	30.02	48.30	860.6	1.501	16.19799	0.180	-0.055	6.58	1.951
2.520	326.1	-1.69	4.83	25.88	46.58	797.0	1.756	12.66311	0.179	-0.081	6.35	1.807
2.861	337.0	-1.90	4.23	23.11	44.85	747.6	1.993	10.82373	0.185	-0.090	5.75	1.695
3.209	342.7	-2.00	3.60	21.39	44.85	728.6	2.235	8.97783	0.188	-0.095	5.12	1.652
3.537	367.8	-2.05	3.08	18.97	46.58	721.1	2.464	8.01629	0.202	-0.097	4.60	1.635
3.812	419.1	-2.11	2.60	16.22	47.61	702.1	2.656	8.07399	0.230	-0.100	4.12	1.592

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 28.52 % B 6.56 cm @ Base Line
 Static trim TAOo 1.69 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.059	190.6	0.49	1.61	43.69	62.34	1157.6	0.738	28.86681	0.078	0.023	3.30	2.625
1.416	400.1	0.19	5.41	39.47	55.78	1042.3	0.987	37.60378	0.165	0.009	7.10	2.363
1.774	432.8	-0.38	5.88	35.60	50.57	945.2	1.236	28.59488	0.178	-0.018	7.57	2.143
2.137	464.4	-1.47	6.69	32.03	46.65	864.1	1.489	23.13800	0.191	-0.070	8.38	1.959
2.496	455.5	-2.15	6.27	28.64	43.47	792.8	1.739	18.12077	0.187	-0.102	7.96	1.798
2.839	435.2	-2.40	5.37	26.22	43.47	766.6	1.978	13.84432	0.179	-0.114	7.06	1.738
3.177	429.5	-2.50	4.54	23.11	43.13	728.6	2.214	11.47690	0.177	-0.119	6.23	1.652
3.525	427.3	-2.55	3.69	21.39	44.51	724.8	2.456	9.32278	0.176	-0.121	5.38	1.644
3.816	478.2	-2.65	3.21	19.32	43.47	690.7	2.659	9.34202	0.197	-0.126	4.90	1.566

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2504
 VCG Position 27.70 % B 6.37 cm @ Base Line
 Static trim TAOo 1.95 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.056	212.8	0.62	1.34	55.20	60.03	1193.8	0.736	31.39283	0.070	0.029	3.29	2.707
1.412	556.2	0.30	6.23	50.37	59.69	1165.4	0.984	47.01761	0.183	0.014	8.18	2.643
1.768	601.1	-0.43	6.91	45.54	59.34	1134.1	1.232	33.31902	0.198	-0.020	8.86	2.572
2.128	663.5	-1.75	8.20	40.71	51.75	1009.1	1.483	28.53060	0.218	-0.083	10.15	2.288
2.483	622.4	-2.64	7.47	34.50	46.23	886.2	1.730	22.38868	0.205	-0.126	9.42	2.009
2.822	575.9	-2.91	6.21	30.02	42.09	792.5	1.966	17.93103	0.189	-0.139	8.16	1.797
3.112	538.8	-3.06	5.39	27.60	41.40	759.0	2.168	14.40343	0.177	-0.145	7.34	1.721
3.523	539.8	-3.15	4.25	25.88	41.40	740.0	2.455	11.55032	0.177	-0.150	6.20	1.678
3.804	577.2	-3.22	3.73	22.43	43.13	721.1	2.650	10.87099	0.190	-0.154	5.68	1.635

Table B.26 L/B = 3.0 ; $\beta = 18^\circ$; $L_{CG} = 35\%$; Thrust Line: Base Line

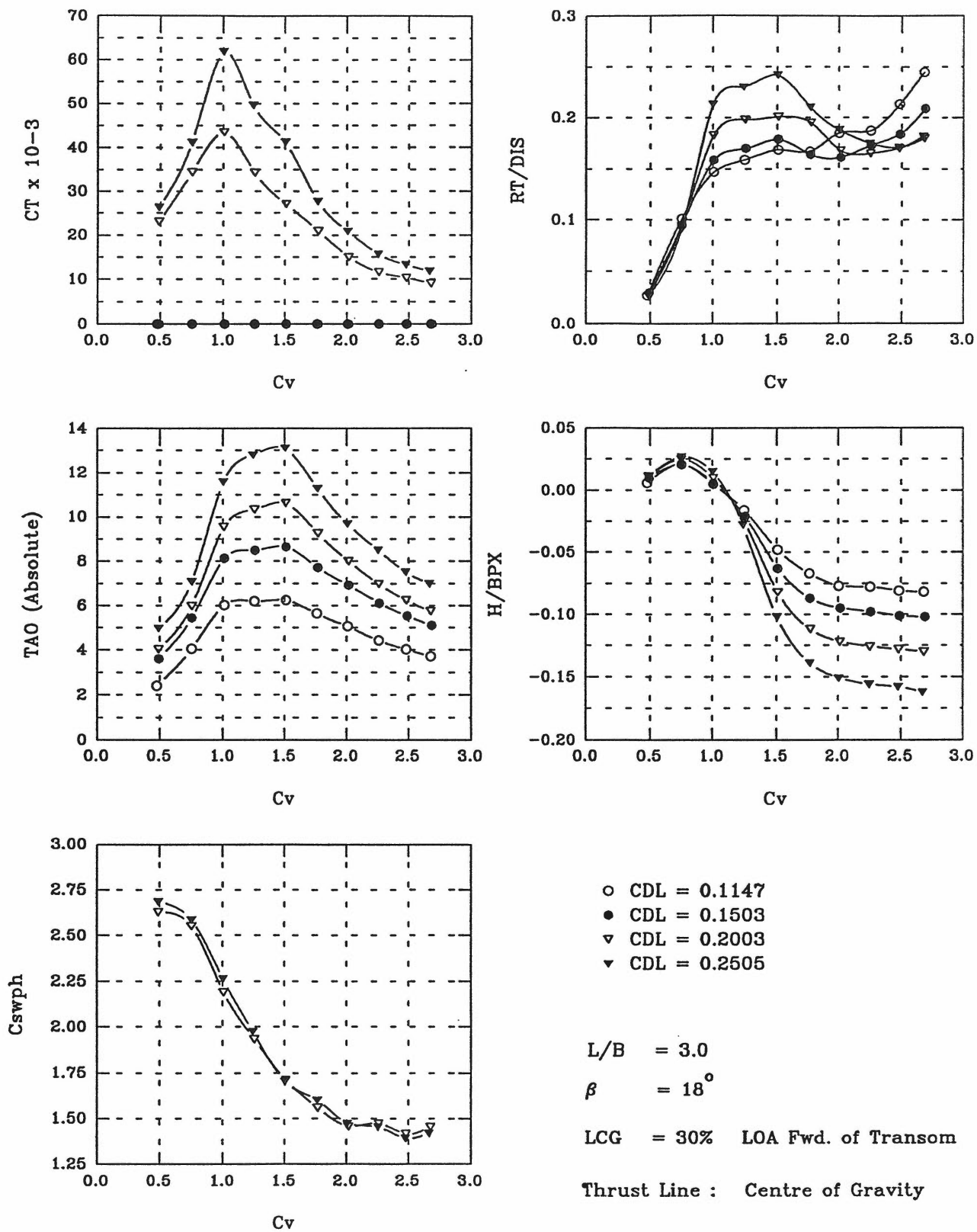


Figure B.27

Model No. T-3018

L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 18.00 deg Breath (Deck) B 23.00 cm
 LCG Position 30.00 % LOA 20.70 cm @ Transom Breath (Chine) BPX 21.00 cm

Displacement DIS 1393.0 gms Disp. Coeff. CDL 0.1147
 VCG Position 29.35 % B 6.75 cm @ Base Line
 Static trim TAOo 2.05 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.683	38.1	0.14	0.35	0.00	0.00	0.0	0.476	0.00000	0.027	0.006	2.40	0.000
1.078	140.8	0.45	2.01	0.00	0.00	0.0	0.751	0.00000	0.101	0.021	4.06	0.000
1.449	204.7	0.10	3.98	0.00	0.00	0.0	1.009	0.00000	0.147	0.005	6.03	0.000
1.797	220.8	-0.33	4.14	0.00	0.00	0.0	1.252	0.00000	0.159	-0.016	6.19	0.000
2.169	235.1	-1.00	4.19	0.00	0.00	0.0	1.511	0.00000	0.169	-0.048	6.24	0.000
2.533	232.8	-1.41	3.59	0.00	0.00	0.0	1.765	0.00000	0.167	-0.067	5.64	0.000
2.880	257.3	-1.61	3.01	0.00	0.00	0.0	2.006	0.00000	0.185	-0.077	5.06	0.000
3.243	260.5	-1.64	2.37	0.00	0.00	0.0	2.259	0.00000	0.187	-0.078	4.42	0.000
3.563	297.0	-1.71	1.98	0.00	0.00	0.0	2.482	0.00000	0.213	-0.081	4.03	0.000
3.857	341.8	-1.72	1.67	0.00	0.00	0.0	2.680	0.00000	0.245	-0.082	3.72	0.000

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 28.48 % B 6.55 cm @ Base Line
 Static trim TAOo 3.22 deg
 Water Temp. 20.50 deg C Density 998.101 kg/m3 Kin. Viscosity 0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.704	54.1	0.21	0.40	0.00	0.00	0.0	0.491	0.00000	0.030	0.010	3.62	0.000
1.079	173.6	0.45	2.23	0.00	0.00	0.0	0.752	0.00000	0.095	0.021	5.45	0.000
1.448	290.2	0.13	4.91	0.00	0.00	0.0	1.009	0.00000	0.159	0.006	8.13	0.000
1.803	311.0	-0.45	5.27	0.00	0.00	0.0	1.257	0.00000	0.170	-0.021	8.49	0.000
2.170	326.5	-1.31	5.43	0.00	0.00	0.0	1.512	0.00000	0.179	-0.063	8.65	0.000
2.541	300.1	-1.83	4.51	0.00	0.00	0.0	1.770	0.00000	0.164	-0.087	7.73	0.000
2.891	294.3	-2.00	3.70	0.00	0.00	0.0	2.014	0.00000	0.161	-0.095	6.92	0.000
3.248	315.6	-2.06	2.90	0.00	0.00	0.0	2.263	0.00000	0.173	-0.098	6.12	0.000
3.571	336.3	-2.13	2.31	0.00	0.00	0.0	2.488	0.00000	0.184	-0.101	5.53	0.000
3.860	381.1	-2.15	1.90	0.00	0.00	0.0	2.689	0.00000	0.209	-0.102	5.12	0.000

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2003
 VCG Position 28.52 % B 6.56 cm @ Base Line
 Static trim TAOo 3.55 deg
 Water Temp. 20.50 deg C Density 998.101 kg/m3 Kin. Viscosity 0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.701	66.8	0.24	0.48	40.02	64.31	1158.9	0.489	23.05169	0.027	0.011	4.03	2.628
1.076	228.5	0.53	2.43	48.30	56.58	1125.0	0.750	34.45943	0.094	0.025	5.98	2.551
1.444	445.7	0.22	6.00	37.95	50.37	966.0	1.006	43.50741	0.183	0.010	9.55	2.190
1.799	481.1	-0.51	6.79	32.78	44.85	852.5	1.253	34.28138	0.198	-0.025	10.34	1.933
2.167	488.3	-1.71	7.08	28.98	39.68	754.9	1.510	27.07678	0.201	-0.082	10.63	1.712
2.542	473.5	-2.35	5.71	24.17	38.34	687.6	1.771	20.95162	0.195	-0.112	9.26	1.559
2.889	409.3	-2.56	4.46	21.12	37.31	642.6	2.013	15.00311	0.168	-0.122	8.01	1.457
3.239	400.5	-2.65	3.43	20.01	38.99	648.9	2.257	11.56578	0.165	-0.126	6.98	1.472
3.560	412.7	-2.68	2.69	17.96	38.79	624.2	2.480	10.25411	0.170	-0.128	6.24	1.415
3.847	438.5	-2.74	2.20	17.25	41.06	641.4	2.680	9.08276	0.180	-0.130	5.75	1.454

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2505
 VCG Position 27.70 % B 6.37 cm @ Base Line
 Static trim TAOo 4.51 deg
 Water Temp. 20.50 deg C Density 998.101 kg/m3 Kin. Viscosity 0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.701	78.2	0.24	0.46	41.40	65.24	1184.7	0.489	26.36100	0.026	0.012	4.97	2.686
1.077	277.7	0.57	2.56	50.37	57.27	1140.5	0.750	41.29830	0.091	0.027	7.07	2.586
1.437	649.0	0.31	7.09	40.36	51.06	998.0	1.001	61.88522	0.213	0.015	11.60	2.263
1.783	698.9	-0.59	8.29	34.50	44.85	871.1	1.242	49.61108	0.230	-0.028	12.80	1.975
2.159	735.6	-2.14	8.60	29.33	38.99	751.0	1.504	41.31379	0.242	-0.102	13.11	1.703
2.536	638.8	-2.91	6.79	26.56	37.61	705.9	1.767	27.66258	0.210	-0.139	11.30	1.601
2.876	571.1	-3.17	5.18	22.80	36.28	649.8	2.004	20.88547	0.188	-0.151	9.69	1.474
3.232	532.7	-3.27	3.99	21.74	36.57	641.4	2.251	15.63390	0.175	-0.156	8.50	1.454
3.553	521.1	-3.31	3.01	19.48	36.31	613.7	2.476	13.22143	0.171	-0.158	7.52	1.392
3.830	552.6	-3.40	2.49	18.97	37.95	626.2	2.669	11.82572	0.182	-0.162	7.00	1.420

Table B.27 L/B = 3.0 ; β = 18° ; Lcg = 30% ; Thrust Line: Centre of Gravity

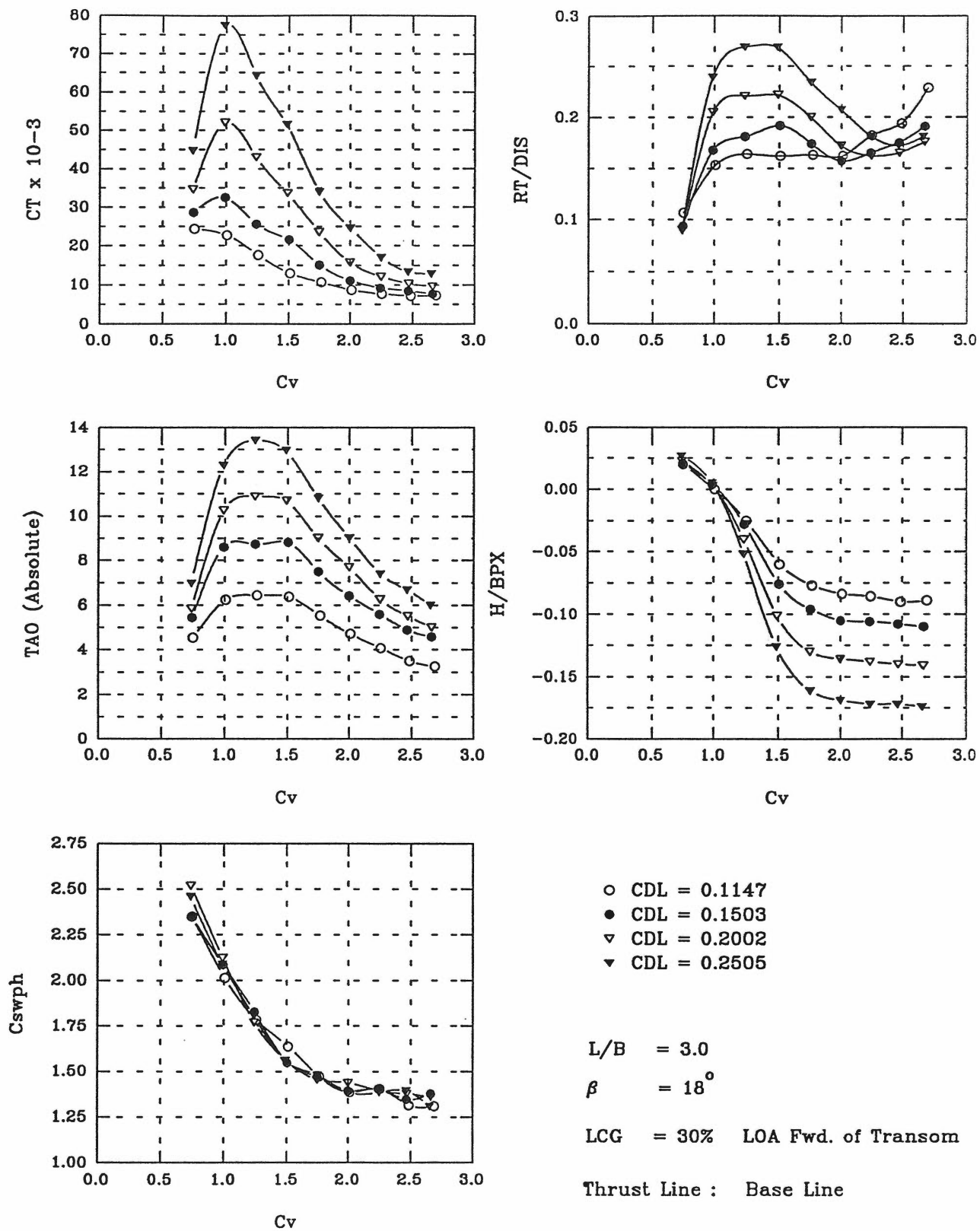


Figure B.28

Model No. T-3018
 L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 18.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 30.00 % LOA 20.70 cm @ Transom

Displacement DIS 1393.0 gms Disp. Coeff. CDL 0.1147
 VCG Position 29.35 % B 6.75 cm @ Base Line
 Static trim TAOo 2.05 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.077	148.4	0.42	2.48	39.68	55.20	1036.8	0.750	24.27681	0.107	0.020	4.53	2.351
1.443	213.6	0.00	4.19	31.05	49.68	887.4	1.006	22.71037	0.153	0.000	6.24	2.012
1.799	228.6	-0.53	4.39	25.88	45.58	786.0	1.253	17.66659	0.164	-0.025	6.44	1.782
2.170	225.3	-1.25	4.33	23.19	42.47	722.2	1.512	13.01892	0.162	-0.060	6.38	1.638
2.535	226.7	-1.62	3.49	19.32	39.68	648.9	1.766	10.68319	0.163	-0.077	5.54	1.472
2.885	225.1	-1.75	2.66	16.22	39.33	611.0	2.010	8.70030	0.162	-0.084	4.71	1.385
3.234	253.3	-1.81	2.03	14.84	41.40	618.6	2.253	7.69268	0.182	-0.086	4.08	1.403
3.567	270.5	-1.88	1.45	11.62	41.11	580.0	2.485	7.20213	0.194	-0.090	3.50	1.315
3.859	319.2	-1.88	1.21	9.32	43.13	576.8	2.688	7.30481	0.229	-0.089	3.26	1.308

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 28.48 % B 6.55 cm @ Base Line
 Static trim TAOo 3.22 deg
 Water Temp. 20.50 deg C Density 998.101 kg/m3 Kin. Viscosity 0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.066	171.3	0.44	2.23	39.62	55.22	1036.5	0.743	28.57424	0.094	0.021	5.45	2.350
1.420	307.1	0.07	5.39	34.50	49.34	920.5	0.989	32.54889	0.168	0.004	8.61	2.087
1.779	331.6	-0.60	5.51	29.56	43.71	805.4	1.239	25.57433	0.181	-0.028	8.73	1.826
2.160	349.7	-1.59	5.60	24.15	37.95	683.1	1.505	21.56031	0.192	-0.076	8.82	1.549
2.516	316.9	-2.01	4.27	21.74	37.26	648.9	1.753	15.16183	0.174	-0.096	7.49	1.472
2.870	286.9	-2.20	3.20	19.32	36.57	614.8	1.999	11.13807	0.157	-0.105	6.42	1.394
3.220	301.8	-2.24	2.39	17.25	38.99	618.6	2.243	9.25159	0.165	-0.106	5.61	1.403
3.540	319.4	-2.26	1.67	15.18	38.77	593.5	2.466	8.44126	0.175	-0.108	4.89	1.346
3.822	348.0	-2.31	1.36	13.80	41.40	607.2	2.663	7.71075	0.191	-0.110	4.58	1.377

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 28.52 % B 6.56 cm @ Base Line
 Static trim TAOo 3.55 deg
 Water Temp. 19.70 deg C Density 998.267 kg/m3 Kin. Viscosity 0.1011E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.060	219.9	0.48	2.30	47.61	55.89	1111.1	0.738	34.64159	0.090	0.023	5.85	2.519
1.418	498.9	0.06	6.70	38.42	47.22	936.2	0.988	52.06846	0.205	0.003	10.25	2.123
1.773	537.8	-0.84	7.33	30.70	40.36	781.0	1.235	43.04269	0.221	-0.040	10.88	1.771
2.138	539.5	-2.11	7.15	25.93	36.61	687.9	1.490	33.71162	0.222	-0.101	10.70	1.560
2.510	485.5	-2.73	5.46	23.11	35.19	641.4	1.748	23.62350	0.200	-0.130	9.01	1.454
2.867	417.5	-2.85	4.15	21.74	35.88	633.8	1.997	15.75404	0.172	-0.136	7.70	1.437
3.223	394.9	-2.91	2.72	19.67	36.22	614.8	2.246	12.15084	0.162	-0.138	6.27	1.394
3.542	400.4	-2.93	1.97	17.94	37.26	607.2	2.468	10.32899	0.165	-0.140	5.52	1.377
3.818	427.4	-2.96	1.45	16.56	37.95	599.6	2.660	9.60983	0.176	-0.141	5.00	1.360

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2505
 VCG Position 27.70 % B 6.37 cm @ Base Line
 Static trim TAOo 4.51 deg
 Water Temp. 19.80 deg C Density 998.267 kg/m3 Kin. Viscosity 0.1009E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.056	275.5	0.56	2.47	45.71	54.99	1084.6	0.736	44.78492	0.091	0.027	6.98	2.459
1.413	725.5	0.11	7.77	37.26	46.92	921.1	0.985	77.49544	0.239	0.005	12.28	2.089
1.773	817.7	-1.08	8.92	31.59	40.82	795.6	1.235	64.26863	0.269	-0.052	13.43	1.804
2.131	819.3	-2.65	8.45	27.25	35.19	686.9	1.485	51.62585	0.269	-0.126	12.96	1.558
2.510	712.2	-3.39	6.30	25.19	34.16	652.7	1.749	34.03570	0.234	-0.161	10.81	1.480
2.870	628.3	-3.55	4.52	21.74	33.81	611.0	1.999	24.53957	0.207	-0.169	9.03	1.385
3.227	551.8	-3.61	2.89	21.05	34.50	611.0	2.248	17.04791	0.181	-0.172	7.40	1.385
3.536	524.1	-3.62	2.18	19.67	36.22	614.8	2.463	13.40373	0.172	-0.172	6.69	1.394
3.806	549.4	-3.65	1.48	17.60	34.85	576.8	2.651	12.92424	0.181	-0.174	5.99	1.308

Table B.28 L/B = 3.0 ; β = 18° ; Lcg = 30% ; Thrust Line: Base Line

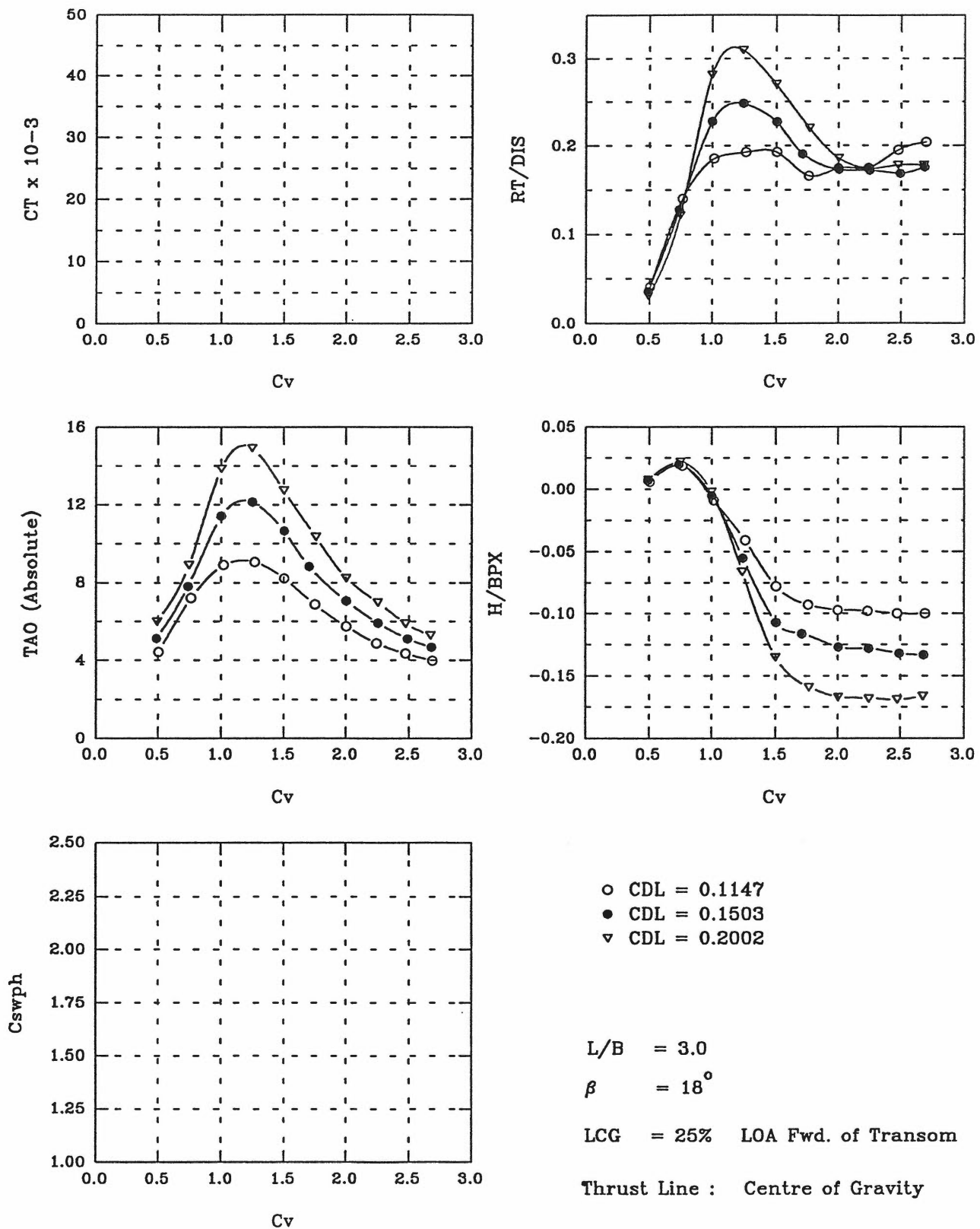


Figure B.29

Model No. T-3018

L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 18.00 deg Breath (Deck) B 23.00 cm
 LCG Position 25.00 % LOA 17.25 cm @ Transom Breath (Chine) BPX 21.00 cm

Displacement DIS 1393.0 gms Disp. Coeff. CDL 0.1147
 VCG Position 28.87 % B 6.64 cm @ Base Line
 Static trim TAOo 3.79 deg
 Water Temp. 19.50 deg C

Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.722	56.5	0.13	0.63	0.00	0.00	0.0	0.503	0.00000	0.041	0.006	4.42	0.000
1.096	195.2	0.40	3.41	0.00	0.00	0.0	0.763	0.00000	0.140	0.019	7.20	0.000
1.460	258.8	-0.19	5.13	0.00	0.00	0.0	1.017	0.00000	0.186	-0.009	8.92	0.000
1.818	269.2	-0.87	5.29	0.00	0.00	0.0	1.266	0.00000	0.193	-0.041	9.08	0.000
2.161	268.6	-1.64	4.43	0.00	0.00	0.0	1.506	0.00000	0.193	-0.078	8.22	0.000
2.520	230.7	-1.96	3.08	0.00	0.00	0.0	1.756	0.00000	0.166	-0.093	6.87	0.000
2.872	243.3	-2.04	1.96	0.00	0.00	0.0	2.001	0.00000	0.175	-0.097	5.75	0.000
3.219	244.3	-2.06	1.10	0.00	0.00	0.0	2.243	0.00000	0.175	-0.098	4.89	0.000
3.550	271.7	-2.10	0.56	0.00	0.00	0.0	2.473	0.00000	0.195	-0.100	4.35	0.000
3.861	284.0	-2.11	0.20	0.00	0.00	0.0	2.690	0.00000	0.204	-0.100	3.99	0.000

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 28.09 % B 6.46 cm @ Base Line
 Static trim TAOo 4.50 deg
 Water Temp. 19.50 deg C

Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.702	65.0	0.15	0.65	0.00	0.00	0.0	0.489	0.00000	0.036	0.007	5.15	0.000
1.061	234.0	0.42	3.32	0.00	0.00	0.0	0.739	0.00000	0.128	0.020	7.82	0.000
1.434	416.9	-0.10	6.91	0.00	0.00	0.0	0.999	0.00000	0.228	-0.005	11.41	0.000
1.789	453.2	-1.16	7.64	0.00	0.00	0.0	1.246	0.00000	0.248	-0.055	12.14	0.000
2.159	413.8	-2.25	6.15	0.00	0.00	0.0	1.504	0.00000	0.227	-0.107	10.65	0.000
2.451	348.8	-2.43	4.34	0.00	0.00	0.0	1.708	0.00000	0.191	-0.116	8.84	0.000
2.874	315.4	-2.66	2.56	0.00	0.00	0.0	2.003	0.00000	0.173	-0.127	7.06	0.000
3.234	314.3	-2.69	1.43	0.00	0.00	0.0	2.253	0.00000	0.172	-0.128	5.93	0.000
3.575	308.5	-2.77	0.61	0.00	0.00	0.0	2.491	0.00000	0.169	-0.132	5.11	0.000
3.848	320.5	-2.79	0.18	0.00	0.00	0.0	2.681	0.00000	0.176	-0.133	4.68	0.000

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 28.26 % B 6.50 cm @ Base Line
 Static trim TAOo 5.20 deg
 Water Temp. 19.50 deg C

Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.706	75.8	0.16	0.80	0.00	0.00	0.0	0.492	0.00000	0.031	0.008	6.00	0.000
1.069	296.8	0.46	3.72	0.00	0.00	0.0	0.745	0.00000	0.122	0.022	8.92	0.000
1.432	682.5	-0.05	8.67	0.00	0.00	0.0	0.998	0.00000	0.281	-0.002	13.87	0.000
1.785	754.1	-1.39	9.73	0.00	0.00	0.0	1.243	0.00000	0.310	-0.066	14.93	0.000
2.154	657.1	-2.84	7.55	0.00	0.00	0.0	1.501	0.00000	0.270	-0.135	12.75	0.000
2.529	534.2	-3.34	5.16	0.00	0.00	0.0	1.762	0.00000	0.220	-0.159	10.36	0.000
2.872	452.6	-3.51	3.05	0.00	0.00	0.0	2.001	0.00000	0.186	-0.167	8.25	0.000
3.234	423.0	-3.53	1.78	0.00	0.00	0.0	2.253	0.00000	0.174	-0.168	6.98	0.000
3.551	433.9	-3.54	0.70	0.00	0.00	0.0	2.474	0.00000	0.178	-0.169	5.90	0.000
3.838	432.1	-3.49	0.08	0.00	0.00	0.0	2.674	0.00000	0.178	-0.166	5.28	0.000

Table B.29 L/B = 3.0 ; $\beta = 18^\circ$; $L_{CG} = 25\%$; Thrust Line: Centre of Gravity

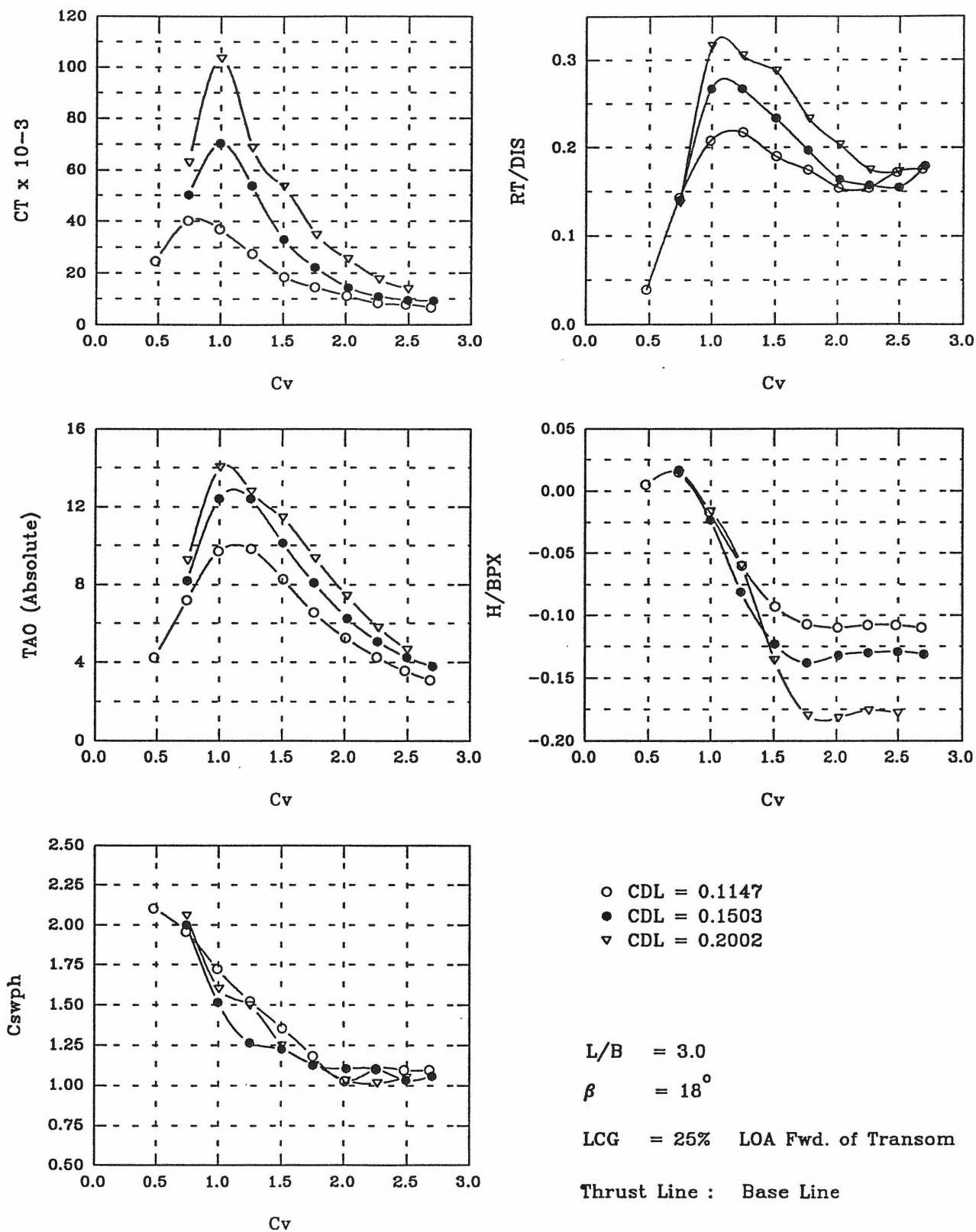


Figure B.30

Model No. T-3018
 L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 18.00 deg Breath (Deck) B 23.00 cm
 LCG Position 25.00 % LOA 17.25 cm @ Transom
 Breath (Chine) BPX 21.00 cm
 Displacement DIS 1393.0 gms Disp. Coeff. CDL 0.1147
 VCG Position 28.87 % B 6.64 cm @ Base Line
 Static trim TAOO 3.79 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.687	54.9	0.11	0.44	28.29	55.68	927.7	0.478	24.65967	0.039	0.005	4.23	2.104
1.060	199.3	0.31	3.40	31.05	47.61	864.1	0.739	40.32894	0.143	0.015	7.19	1.959
1.432	305.2	-0.37	6.17	27.81	41.33	760.5	0.998	38.44251	0.219	-0.017	9.96	1.724
1.421	290.2	-0.35	5.92	27.81	41.33	760.5	0.990	37.12512	0.208	-0.017	9.71	1.724
1.793	303.0	-1.26	6.03	24.84	36.22	671.7	1.249	27.56185	0.217	-0.060	9.82	1.523
2.164	265.0	-1.95	4.48	20.84	33.47	597.3	1.508	18.60822	0.190	-0.093	8.27	1.354
2.521	244.1	-2.25	2.76	15.53	31.81	520.7	1.756	14.49632	0.175	-0.107	6.55	1.181
2.883	214.1	-2.30	1.44	14.28	26.84	452.4	2.009	11.18998	0.154	-0.110	5.23	1.026
3.236	215.0	-2.26	0.47	10.35	33.81	485.8	2.255	8.30446	0.154	-0.108	4.26	1.101
3.555	239.9	-2.28	-0.22	8.63	35.19	482.0	2.477	7.74104	0.172	-0.108	3.57	1.093
3.847	244.5	-2.30	-0.69	7.93	35.88	482.0	2.680	6.73763	0.176	-0.110	3.10	1.093

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 28.09 % B 6.46 cm @ Base Line
 Static trim TAOO 4.50 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.064	255.3	0.36	3.69	32.78	47.61	882.6	0.742	50.18390	0.140	0.017	8.19	2.001
1.427	500.8	-0.53	8.23	26.22	34.50	667.9	0.994	72.38678	0.274	-0.025	12.73	1.515
1.428	486.8	-0.49	7.93	26.22	34.50	667.9	0.995	70.26306	0.267	-0.023	12.43	1.515
1.785	487.3	-1.69	7.93	21.39	29.33	557.9	1.244	53.88821	0.267	-0.081	12.43	1.265
2.161	425.7	-2.59	5.63	19.18	29.90	539.9	1.506	33.18024	0.233	-0.123	10.13	1.224
2.522	359.8	-2.89	3.58	16.56	28.64	497.1	1.757	22.36681	0.197	-0.138	8.08	1.127
2.896	299.2	-2.78	1.76	13.19	31.05	486.6	2.018	14.40831	0.164	-0.132	6.26	1.103
3.241	285.8	-2.73	0.57	12.08	32.09	485.8	2.258	11.00456	0.157	-0.130	5.07	1.101
3.579	282.9	-2.70	-0.25	9.61	31.80	455.5	2.494	9.52959	0.155	-0.129	4.25	1.033
3.877	329.3	-2.75	-0.69	7.93	34.50	466.8	2.701	9.22424	0.180	-0.131	3.81	1.058

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 28.26 % B 6.50 cm @ Base Line
 Static trim TAOO 5.20 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.070	333.0	0.30	4.03	35.54	47.27	907.6	0.745	63.01647	0.137	0.014	9.23	2.058
1.438	767.6	-0.33	8.83	28.64	35.54	705.7	1.002	103.43590	0.316	-0.016	14.03	1.600
1.793	742.1	-1.26	7.59	26.22	33.81	660.3	1.249	68.69774	0.305	-0.060	12.79	1.497
2.162	698.6	-2.86	6.24	21.06	28.91	549.7	1.506	53.45550	0.287	-0.136	11.44	1.246
2.536	564.9	-3.78	4.13	17.60	27.60	497.1	1.767	34.73394	0.232	-0.180	9.33	1.127
2.896	493.3	-3.82	2.21	15.18	26.10	454.1	2.017	25.46374	0.203	-0.182	7.41	1.030
3.252	424.5	-3.70	0.58	13.39	27.21	446.6	2.266	17.66030	0.175	-0.176	5.78	1.013
3.583	419.9	-3.73	-0.56	12.42	29.67	463.0	2.497	13.87978	0.173	-0.178	4.64	1.050

Table B.30 L/B = 3.0 ; β = 18° ; L_{CG} = 25% ; Thrust Line: Base Line

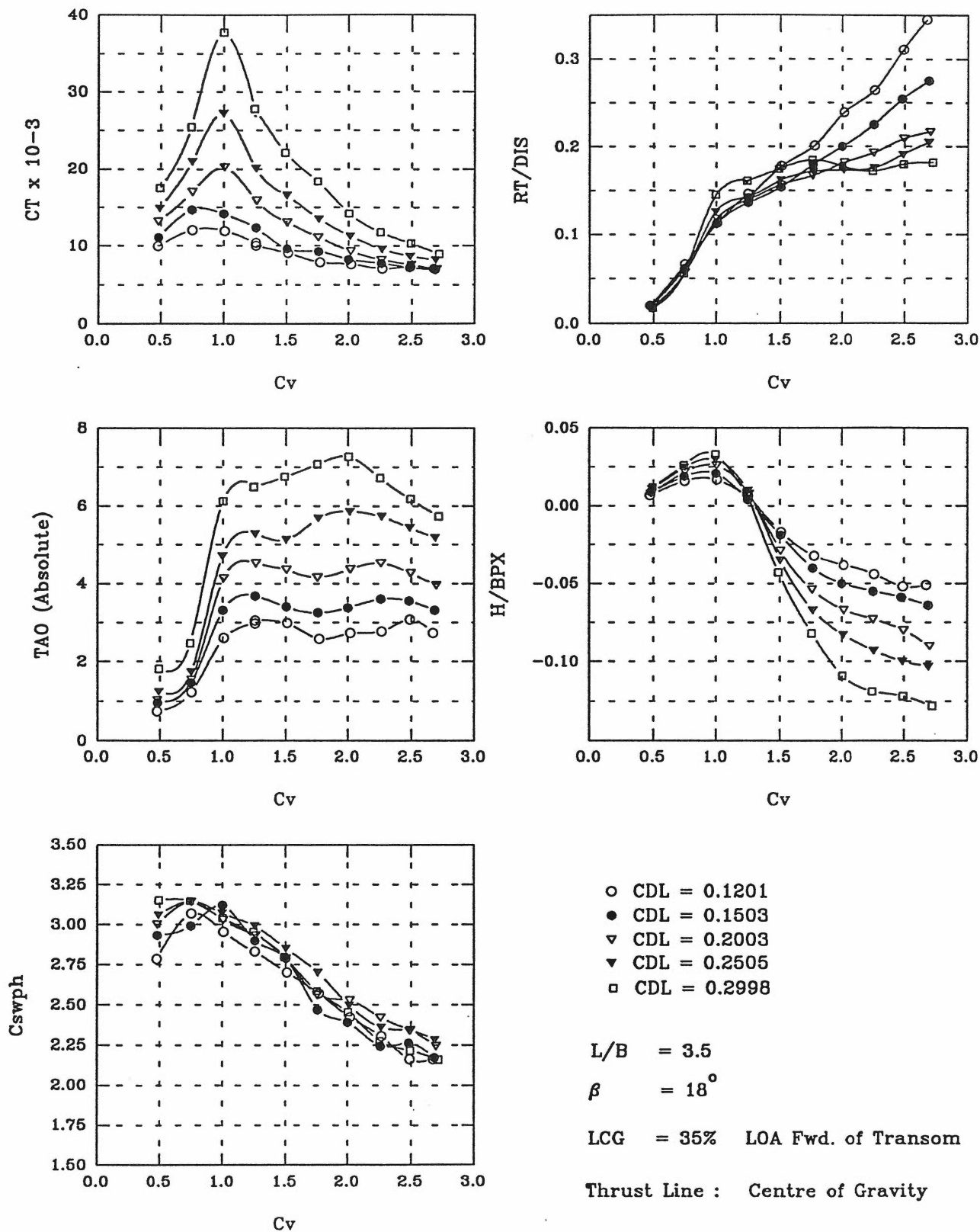


Figure B.31

Model No. T-3518
 L/B Ratio 3.5 Length Overall LOA 80.50 cm
 Deadrise 18.00 deg Breath (Deck) B 23.00 cm
 LCG Position 35.00 % LOA Breath (Chine) BPX 21.00 cm
 28.18 cm @ Transom
 Displacement DIS 1458.0 gms Disp. Coeff. CDL 0.1201
 VCG Position 26.96 % B 6.20 cm @ Base Line
 Static trim TAOo 0.70 deg
 Water Temp. 20.30 deg C Density 998.164 kg/m3 Kin. Viscosity 0.9964E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.682	28.8	0.15	0.04	43.07	68.43	1228.1	0.475	9.93115	0.020	0.007	0.74	2.785
1.075	95.9	0.33	0.51	60.38	68.43	1352.8	0.749	12.04408	0.066	0.016	1.22	3.068
1.446	165.5	0.36	1.90	54.34	66.82	1302.9	1.008	11.93068	0.113	0.017	2.60	2.954
1.798	213.5	0.14	2.27	48.30	66.01	1248.8	1.252	10.40120	0.146	0.007	2.97	2.832
1.801	206.7	0.14	2.35	48.30	66.01	1248.8	1.255	10.03193	0.142	0.007	3.05	2.832
2.171	258.9	-0.36	2.28	43.47	65.21	1191.7	1.512	9.06272	0.178	-0.017	2.98	2.702
2.543	293.6	-0.68	1.88	38.64	64.40	1134.0	1.771	7.87241	0.201	-0.032	2.58	2.571
2.894	348.9	-0.81	2.02	34.21	62.79	1068.7	2.017	7.65850	0.239	-0.038	2.73	2.423
3.250	385.2	-0.93	2.06	30.99	61.18	1015.9	2.265	7.05586	0.264	-0.044	2.77	2.304
3.572	453.9	-1.08	2.38	25.36	61.18	953.9	2.489	7.33129	0.311	-0.052	3.08	2.163
3.837	502.7	-1.07	2.04	24.95	61.58	954.1	2.673	7.03698	0.345	-0.051	2.74	2.163

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 26.87 % B 6.18 cm @ Base Line
 Static trim TAOo 0.88 deg
 Water Temp. 20.30 deg C Density 998.164 kg/m3 Kin. Viscosity 0.9964E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.688	34.4	0.18	0.08	49.11	69.23	1293.0	0.479	11.07708	0.019	0.009	0.96	2.932
1.071	113.2	0.39	0.58	56.35	66.82	1320.1	0.746	14.70522	0.062	0.019	1.46	2.993
1.433	203.6	0.45	2.43	63.19	69.23	1376.4	0.999	14.15303	0.112	0.021	3.31	3.121
1.798	248.3	0.09	2.80	47.50	64.40	1221.1	1.252	12.36847	0.136	0.004	3.68	2.769
2.161	280.5	-0.41	2.52	46.29	66.01	1228.9	1.505	9.61305	0.154	-0.019	3.40	2.787
2.527	328.5	-0.85	2.37	37.03	61.99	1089.5	1.761	9.28240	0.180	-0.040	3.25	2.470
2.870	365.4	-1.05	2.51	34.21	61.58	1055.0	2.000	8.26491	0.200	-0.050	3.38	2.392
3.242	410.3	-1.15	2.72	29.38	60.38	989.0	2.259	7.76001	0.225	-0.055	3.60	2.243
3.561	462.9	-1.24	2.67	30.19	60.38	997.8	2.481	7.19059	0.254	-0.059	3.55	2.263
3.857	502.3	-1.34	2.44	26.16	60.78	958.2	2.687	6.92502	0.275	-0.064	3.32	2.173

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2003
 VCG Position 27.26 % B 6.27 cm @ Base Line
 Static trim TAOo 0.98 deg
 Water Temp. 20.30 deg C Density 998.164 kg/m3 Kin. Viscosity 0.9964E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.688	42.0	0.17	0.05	52.33	70.04	1324.0	0.479	13.16023	0.017	0.008	1.02	3.002
1.075	138.4	0.47	0.56	68.43	70.04	1386.3	0.749	16.98169	0.057	0.022	1.54	3.143
1.441	286.2	0.54	3.17	58.36	67.62	1335.7	1.004	20.26992	0.118	0.026	4.14	3.029
1.806	340.7	0.16	3.55	54.34	66.01	1293.9	1.259	15.86076	0.140	0.008	4.52	2.934
2.160	381.3	-0.60	3.39	48.30	64.40	1229.2	1.505	13.06622	0.157	-0.029	4.36	2.787
2.519	406.1	-1.13	3.18	41.86	61.18	1130.1	1.755	11.12869	0.167	-0.054	4.16	2.563
2.893	442.4	-1.41	3.40	39.85	61.58	1115.0	2.016	9.31644	0.182	-0.067	4.37	2.528
3.241	468.9	-1.53	3.55	35.82	61.18	1067.5	2.258	8.22142	0.193	-0.073	4.53	2.421
3.579	508.7	-1.68	3.29	33.00	60.78	1033.1	2.494	7.55458	0.209	-0.080	4.27	2.343
3.874	528.3	-1.90	2.98	29.38	60.38	989.0	2.699	6.99609	0.217	-0.090	3.96	2.243

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2505
 VCG Position 26.61 % B 6.12 cm @ Base Line
 Static trim TAOo 1.09 deg
 Water Temp. 20.30 deg C Density 998.164 kg/m3 Kin. Viscosity 0.9964E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.700	50.1	0.24	0.15	55.14	70.44	1349.5	0.488	14.90563	0.016	0.011	1.24	3.060
1.073	170.6	0.52	0.65	68.43	70.44	1388.2	0.748	20.98718	0.056	0.025	1.74	3.148
1.426	382.1	0.63	3.62	60.78	68.43	1354.9	0.994	27.25003	0.126	0.030	4.71	3.072
1.797	435.5	0.20	4.20	56.35	66.82	1320.1	1.252	20.08816	0.143	0.010	5.28	2.993
2.158	493.2	-0.73	4.04	51.52	64.80	1257.5	1.503	16.55736	0.162	-0.035	5.13	2.851
2.528	523.2	-1.42	4.60	46.69	62.39	1191.0	1.761	13.51669	0.172	-0.067	5.69	2.701
2.888	527.0	-1.75	4.78	40.25	59.97	1101.1	2.012	11.28075	0.173	-0.083	5.86	2.497
3.248	535.2	-1.96	4.64	35.02	59.57	1040.6	2.263	9.57955	0.176	-0.093	5.73	2.360
3.568	579.8	-2.10	4.36	34.21	59.57	1032.1	2.486	8.67115	0.191	-0.100	5.44	2.340
3.858	623.7	-2.17	4.10	32.20	59.17	1006.2	2.688	8.18768	0.205	-0.103	5.18	2.282

Table B.31 L/B = 3.5 ; β = 18° ; L_{CG} = 35% ; Thrust Line: Centre of Gravity (1/2)

Displacement DIS 3640.0 gms
 VCG Position 28.13 % B
 Static trim TAOo 1.75 deg
 Water Temp. 21.50 deg C

Disp. Coeff. CDL 0.2998
 6.47 cm @ Base Line

Density 997.885 kg/m3 Kin. Viscosity 0.9682E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.706	61.7	0.24	0.06	68.43	70.84	1390.0	0.492	17.49934	0.017	0.012	1.81	3.152
1.064	203.5	0.55	0.72	68.43	70.44	1388.2	0.741	25.47478	0.056	0.026	2.47	3.148
1.431	527.3	0.69	4.37	59.57	67.62	1341.2	0.997	37.74709	0.145	0.033	6.12	3.041
1.783	585.2	0.16	4.74	55.95	65.61	1303.4	1.242	27.76654	0.161	0.008	6.49	2.956
1.784	586.5	0.18	4.75	55.95	65.61	1303.4	1.243	27.78606	0.161	0.009	6.50	2.956
2.139	635.4	-0.91	5.01	50.72	63.19	1233.9	1.490	22.12623	0.175	-0.043	6.76	2.798
2.518	675.1	-1.72	5.33	44.68	59.57	1139.8	1.754	18.36375	0.185	-0.082	7.08	2.585
2.876	647.3	-2.29	5.52	40.65	57.96	1082.3	2.004	14.21975	0.178	-0.109	7.27	2.454
3.232	627.7	-2.49	4.98	36.22	55.14	1003.7	2.252	11.77185	0.172	-0.119	6.73	2.276
3.577	656.7	-2.57	4.43	33.81	55.14	977.9	2.492	10.31780	0.180	-0.122	6.18	2.217
3.902	661.2	-2.69	3.98	31.40	55.14	951.9	2.718	8.97025	0.182	-0.128	5.73	2.159

Table B.31 L/B = 3.5 ; $\beta = 18^\circ$; $L_{CG} = 35\%$; Thrust Line: Centre of Gravity (2/2)

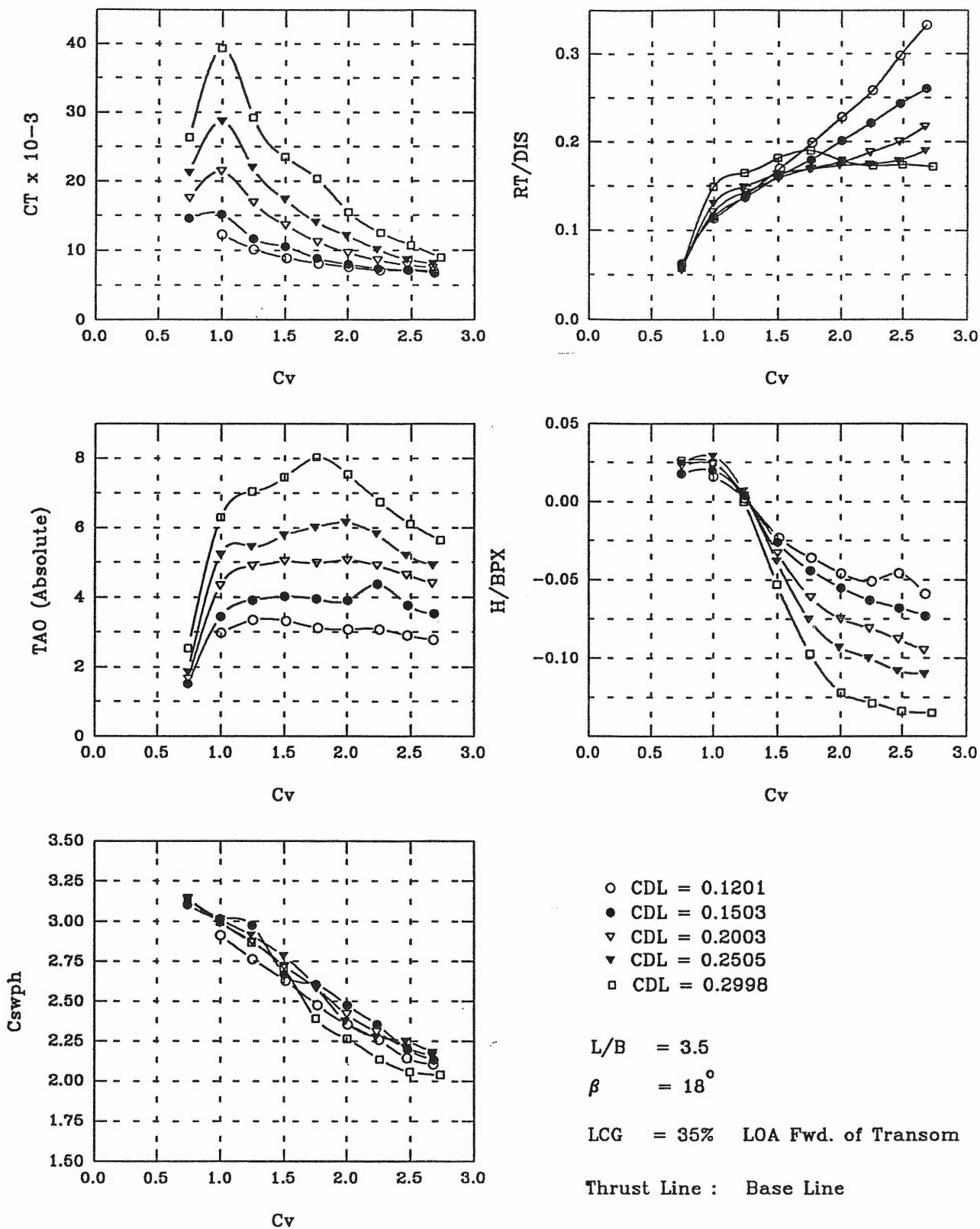


Figure B.32

Model No. T-3518

L/B Ratio 3.5 Length Overall LOA 80.50 cm
 Deadrise 18.00 deg Breath (Deck) B 23.00 cm
 LCG Position 35.00 % LOA 28.18 cm @ Transom Breath (Chine) BPX 21.00 cm

Displacement DIS 1458.0 gms Disp. Coeff. CDL 0.1201
 VCG Position 26.96 % B 6.20 cm @ Base Line
 Static trim TAOo 0.70 deg
 Water Temp. 20.30 deg C Density 998.164 kg/m3 Kin. Viscosity 0.9964E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.436	164.9	0.33	2.28	51.46	67.16	1284.4	1.000	12.24135	0.113	0.016	2.98	2.913
1.795	203.3	0.04	2.64	46.29	65.21	1219.0	1.251	10.17489	0.139	0.002	3.34	2.764
2.171	247.3	-0.47	2.61	41.06	64.40	1158.7	1.513	8.89937	0.170	-0.023	3.32	2.627
2.534	289.7	-0.76	2.41	36.22	62.87	1091.0	1.766	8.12799	0.199	-0.036	3.12	2.474
2.879	332.6	-0.96	2.37	32.20	61.99	1038.3	2.006	7.59488	0.228	-0.046	3.08	2.355
3.237	376.3	-1.08	2.38	28.47	61.86	995.9	2.255	7.08809	0.258	-0.051	3.08	2.258
3.551	433.9	-0.97	2.19	23.75	61.99	945.4	2.474	7.15415	0.298	-0.046	2.90	2.144
3.845	485.3	-1.23	2.07	22.10	62.09	928.5	2.679	6.94764	0.333	-0.059	2.77	2.105

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 26.87 % B 6.18 cm @ Base Line
 Static trim TAOo 0.88 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.063	114.7	0.38	0.63	61.99	69.23	1368.9	0.740	14.57800	0.063	0.018	1.51	3.104
1.425	209.1	0.42	2.56	57.51	67.47	1330.9	0.993	15.19549	0.115	0.020	3.44	3.018
1.789	250.2	0.09	3.04	55.55	66.82	1313.1	1.246	11.70342	0.137	0.004	3.92	2.977
2.157	294.0	-0.54	3.15	44.28	63.19	1176.0	1.503	10.56257	0.161	-0.026	4.03	2.667
2.521	328.6	-0.93	3.07	41.87	62.89	1149.4	1.757	8.83980	0.180	-0.044	3.95	2.606
2.875	366.7	-1.15	3.04	37.16	62.00	1091.0	2.003	7.99227	0.201	-0.055	3.91	2.474
3.216	402.9	-1.32	3.50	32.78	61.42	1038.0	2.240	7.37914	0.221	-0.063	4.38	2.354
3.554	443.0	-1.42	2.89	26.97	61.11	970.8	2.476	7.09980	0.243	-0.068	3.77	2.201
3.848	474.9	-1.53	2.65	24.15	61.18	940.6	2.681	6.70169	0.260	-0.073	3.53	2.133

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 27.26 % B 6.27 cm @ Base Line
 Static trim TAOo 0.98 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.064	139.5	0.48	0.68	66.41	70.04	1385.4	0.741	17.48788	0.057	0.023	1.66	3.142
1.424	292.6	0.50	3.36	56.35	66.82	1320.1	0.992	21.47624	0.120	0.024	4.34	2.993
1.788	348.5	0.09	3.92	52.33	65.21	1268.4	1.245	16.90114	0.143	0.004	4.89	2.876
2.152	385.7	-0.69	4.05	46.69	63.19	1199.8	1.500	13.64001	0.159	-0.033	5.03	2.721
2.522	413.4	-1.28	4.01	42.26	61.58	1138.5	1.757	11.22449	0.170	-0.061	4.98	2.582
2.869	431.2	-1.57	4.09	37.03	59.97	1066.6	1.999	9.65456	0.177	-0.075	5.06	2.419
3.207	456.8	-1.70	3.93	34.62	57.96	1018.0	2.235	8.57290	0.188	-0.081	4.91	2.308
3.539	487.6	-1.85	3.66	30.59	57.96	974.7	2.466	7.84835	0.200	-0.088	4.64	2.210
3.828	528.8	-1.99	3.42	28.18	58.36	952.7	2.667	7.44415	0.217	-0.095	4.40	2.160

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2505
 VCG Position 26.61 % B 6.12 cm @ Base Line
 Static trim TAOo 1.09 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.061	168.6	0.53	0.76	64.11	69.32	1383.4	0.739	21.29795	0.055	0.025	1.85	3.137
1.427	395.6	0.60	4.15	58.77	66.82	1329.4	0.994	28.73560	0.130	0.029	5.23	3.015
1.774	454.8	0.14	4.37	53.94	65.61	1286.1	1.236	22.07600	0.149	0.007	5.45	2.916
2.145	498.7	-0.81	4.71	49.91	63.19	1227.7	1.494	17.35756	0.164	-0.038	5.79	2.784
2.501	513.5	-1.58	4.93	44.42	60.44	1146.8	1.743	14.07041	0.169	-0.075	6.01	2.600
2.849	524.9	-1.94	5.06	38.24	57.16	1047.6	1.985	12.13627	0.173	-0.093	6.15	2.376
3.198	530.9	-2.11	4.73	35.02	56.35	1004.0	2.228	10.16017	0.175	-0.100	5.82	2.277
3.532	545.7	-2.28	4.12	33.00	57.16	991.8	2.461	8.66877	0.179	-0.108	5.21	2.249
3.833	579.0	-2.30	3.83	30.59	56.75	960.9	2.670	8.06149	0.190	-0.110	4.92	2.179

Table B.32 L/B = 3.5 ; β = 18° ; L_{CG} = 35% ; Thrust Line: Base Line (1/2)

Displacement DIS 3640.0 gms Disp. Coeff. CDL 0.2998
 VCG Position 28.13 % B 6.47 cm @ Base Line
 Static trim TAOo 1.75 deg
 Water Temp. 21.50 deg C Density 997.885 kg/m3 Kin. Viscosity 0.9682E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.064	210.3	0.55	0.79	68.43	70.04	1386.3	0.741	26.37326	0.058	0.026	2.54	3.143
1.430	540.7	0.53	4.55	57.96	66.41	1321.8	0.996	39.34676	0.149	0.025	6.30	2.997
1.785	599.5	0.01	5.30	53.53	64.00	1265.1	1.243	29.25781	0.165	0.000	7.05	2.869
2.149	661.2	-1.12	5.71	48.30	61.18	1194.1	1.497	23.57079	0.182	-0.053	7.46	2.708
2.517	691.4	-2.05	6.28	41.46	54.74	1054.5	1.754	20.34448	0.190	-0.097	8.03	2.391
2.874	650.3	-2.56	5.79	37.84	53.13	999.0	2.003	15.49251	0.179	-0.122	7.54	2.265
3.241	630.7	-2.71	5.00	34.21	51.52	942.4	2.258	12.52598	0.173	-0.129	6.75	2.137
3.581	633.7	-2.80	4.36	30.99	51.52	907.6	2.495	10.70201	0.174	-0.134	6.11	2.058
3.922	627.6	-2.83	3.89	29.78	51.92	898.8	2.732	8.92723	0.172	-0.135	5.64	2.038

Table B.32 L/B = 3.5 ; $\beta = 18^\circ$; $L_{CG} = 35\%$; Thrust Line: Base Line (2/2)

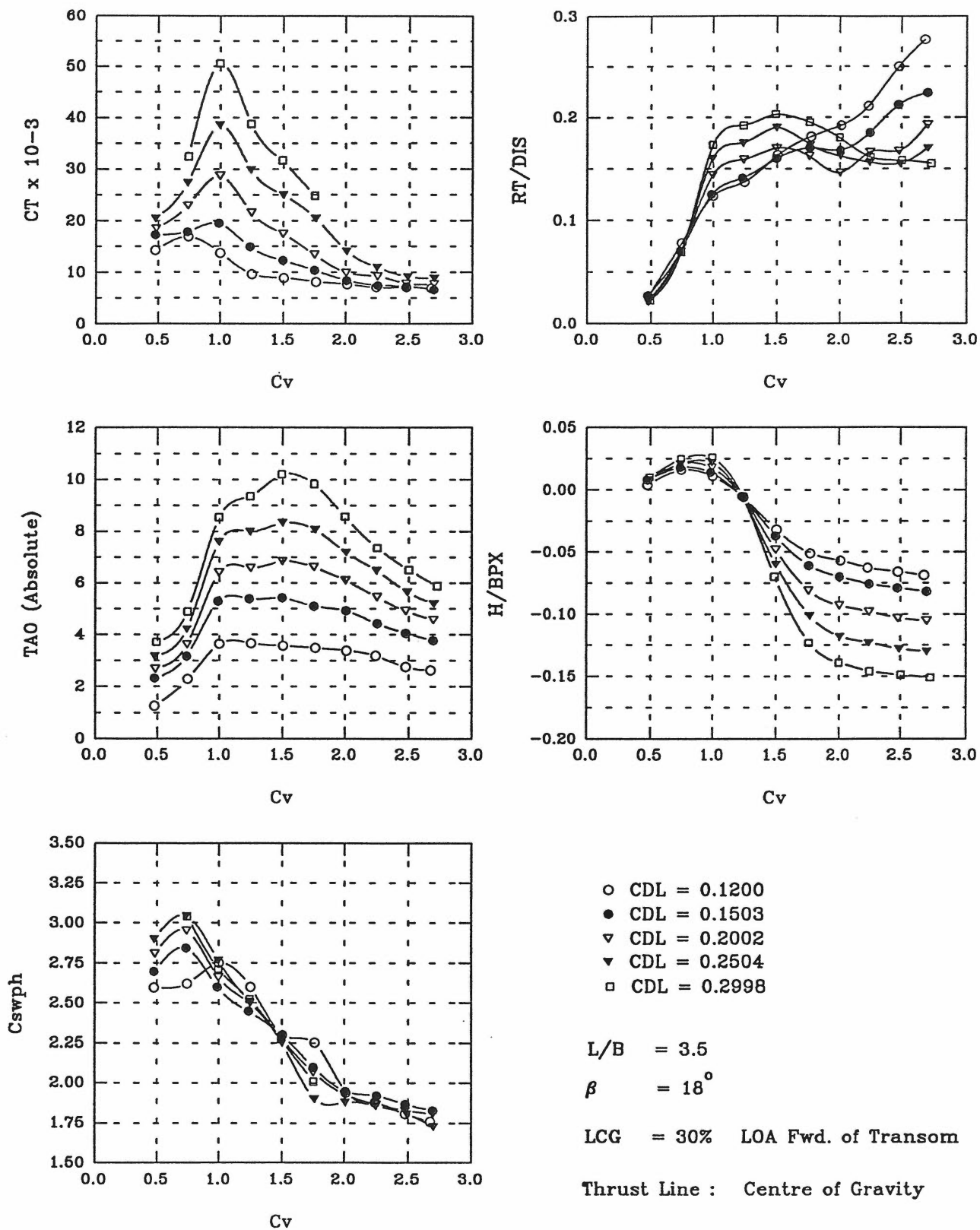


Figure B.33

Model No. T-3518

L/B Ratio 3.5 Length Overall LOA 80.50 cm
 Deadrise 18.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm

LCG Position 30.00 % LOA 24.15 cm @ Transom

Displacement DIS 1458.0 gms Disp. Coeff. CDL 0.1200
 VCG Position 29.91 % B 6.88 cm @ Base Line

Static trim TAOo 1.13 deg Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s
 Water Temp. 19.50 deg C

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.685	39.1	0.09	0.14	36.22	67.22	1144.2	0.478	14.29996	0.027	0.004	1.27	2.595
1.066	113.1	0.33	1.15	37.84	66.82	1156.1	0.743	16.90530	0.078	0.016	2.28	2.622
1.436	180.4	0.23	2.52	50.31	65.21	1253.1	1.000	13.73184	0.124	0.011	3.65	2.841
1.793	199.3	-0.13	2.54	53.13	63.60	1257.6	1.249	9.69332	0.137	-0.006	3.67	2.852
2.158	238.0	-0.67	2.45	40.25	61.99	1123.9	1.504	8.93606	0.163	-0.032	3.58	2.549
2.532	264.6	-1.07	2.36	30.59	59.57	993.1	1.764	8.16948	0.181	-0.051	3.49	2.252
2.888	279.5	-1.19	2.26	23.35	54.34	854.5	2.012	7.70894	0.192	-0.057	3.39	1.938
3.216	308.1	-1.32	2.06	20.93	54.34	827.9	2.241	7.06906	0.211	-0.063	3.19	1.877
3.559	365.1	-1.39	1.62	18.11	54.34	797.0	2.479	7.10824	0.250	-0.066	2.75	1.807
3.839	403.2	-1.45	1.49	16.10	54.34	774.8	2.675	6.93937	0.277	-0.069	2.62	1.757

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 29.22 % B 6.72 cm @ Base Line

Static trim TAOo 2.07 deg Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s
 Water Temp. 19.50 deg C

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.685	49.3	0.17	0.26	41.06	66.82	1189.2	0.478	17.34405	0.027	0.008	2.33	2.697
1.055	127.2	0.38	1.10	48.30	66.41	1253.7	0.735	17.90275	0.070	0.018	3.17	2.843
1.414	227.8	0.30	3.22	42.67	61.99	1146.9	0.985	19.52690	0.125	0.014	5.29	2.601
1.773	257.2	-0.11	3.31	38.64	59.57	1079.3	1.235	14.89671	0.141	-0.005	5.38	2.447
2.149	292.2	-0.78	3.35	34.21	57.96	1013.8	1.498	12.26285	0.160	-0.037	5.42	2.299
2.516	309.4	-1.29	3.04	30.19	53.94	925.3	1.753	10.37676	0.170	-0.061	5.11	2.098
2.879	306.3	-1.47	2.86	26.16	51.92	858.9	2.006	8.45902	0.168	-0.070	4.93	1.948
3.233	338.4	-1.59	2.37	24.15	52.73	845.7	2.252	7.52454	0.185	-0.076	4.44	1.918
3.554	386.8	-1.66	2.00	21.33	53.53	823.5	2.476	7.30902	0.212	-0.079	4.07	1.867
3.868	409.6	-1.73	1.70	18.92	54.34	805.8	2.695	6.67882	0.224	-0.082	3.77	1.827

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 29.04 % B 6.68 cm @ Base Line

Static trim TAOo 2.38 deg Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s
 Water Temp. 19.50 deg C

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.694	56.4	0.16	0.31	46.29	66.82	1238.8	0.483	18.58616	0.023	0.008	2.69	2.809
1.059	170.8	0.44	1.25	54.74	66.41	1301.8	0.738	23.00336	0.070	0.021	3.63	2.952
1.427	349.5	0.39	4.03	46.29	61.18	1173.7	0.994	28.73523	0.144	0.018	6.41	2.661
1.785	387.2	-0.13	4.20	41.86	58.77	1103.0	1.244	21.64140	0.159	-0.006	6.58	2.501
2.150	412.8	-1.01	4.47	37.03	54.34	1003.5	1.498	17.48536	0.170	-0.048	6.85	2.276
2.514	393.1	-1.71	4.23	32.60	50.31	911.9	1.751	13.40884	0.162	-0.081	6.61	2.068
2.872	354.5	-1.95	3.72	28.98	48.30	850.1	2.001	9.93594	0.146	-0.093	6.10	1.928
3.231	404.4	-2.06	3.08	26.57	48.30	823.5	2.251	9.24688	0.166	-0.098	5.46	1.867
3.555	406.4	-2.17	2.55	24.15	49.11	805.8	2.477	7.84202	0.167	-0.103	4.93	1.827
3.868	469.6	-2.21	2.20	22.94	49.51	796.9	2.695	7.73953	0.193	-0.105	4.58	1.807

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2504
 VCG Position 28.00 % B 6.44 cm @ Base Line

Static trim TAOo 2.91 deg Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s
 Water Temp. 19.50 deg C

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.686	62.9	0.17	0.27	48.30	68.43	1278.2	0.478	20.52712	0.021	0.008	3.18	2.899
1.056	209.1	0.45	1.31	59.17	68.02	1343.2	0.736	27.41298	0.069	0.021	4.22	3.046
1.426	487.1	0.45	4.68	48.30	63.60	1220.4	0.993	38.59400	0.160	0.022	7.59	2.767
1.780	533.2	-0.12	5.08	42.67	58.36	1106.4	1.240	29.87786	0.175	-0.006	7.99	2.509
2.151	577.1	-1.26	5.43	37.03	51.92	977.1	1.499	25.08002	0.190	-0.060	8.34	2.216
2.526	527.3	-2.13	5.17	25.36	46.69	792.5	1.760	20.49939	0.173	-0.101	8.08	1.797
2.880	493.2	-2.47	4.28	29.78	45.48	827.9	2.006	14.11877	0.162	-0.118	7.19	1.877
3.227	475.2	-2.58	3.58	28.18	46.29	819.1	2.248	10.94947	0.156	-0.123	6.49	1.857
3.571	472.6	-2.68	2.74	26.16	46.29	796.9	2.488	9.13881	0.155	-0.128	5.65	1.807
3.871	517.0	-2.72	2.30	22.94	46.29	761.5	2.697	8.90416	0.170	-0.130	5.21	1.727

Table B.33 L/B = 3.5 ; β = 18° ; Lcg = 30% ; Thrust Line: Centre of Gravity (1/2)

Displacement DIS 3640.0 gms Disp. Coeff. CDL 0.2998
 VCG Position 27.13 % B 6.24 cm @ Base Line
 Static trim TAOo 3.28 deg
 Water Temp. 21.50 deg C Density 997.885 kg/m3 Kin. Viscosity 0.9682E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.705	80.3	0.22	0.44	0.00	0.00	0.0	0.491	0.00000	0.022	0.010	3.72	0.000
1.065	251.0	0.52	1.62	60.38	67.22	1341.5	0.742	32.42541	0.069	0.025	4.90	3.042
1.430	629.2	0.54	5.26	49.11	60.78	1195.8	0.996	50.58518	0.173	0.026	8.54	2.712
1.785	698.5	-0.10	6.08	45.08	56.75	1112.6	1.243	38.74842	0.192	-0.005	9.36	2.523
2.140	739.4	-1.47	6.93	39.85	51.52	1003.2	1.491	31.65230	0.203	-0.070	10.21	2.275
2.517	709.2	-2.59	6.55	34.62	45.89	884.9	1.754	24.87031	0.195	-0.123	9.83	2.007
2.867	655.3	-2.92	5.29	0.00	0.00	0.0	1.998	0.00000	0.180	-0.139	8.57	0.000
3.236	587.0	-3.06	4.08	0.00	0.00	0.0	2.255	0.00000	0.161	-0.146	7.36	0.000
3.588	573.6	-3.12	3.23	0.00	0.00	0.0	2.500	0.00000	0.158	-0.149	6.51	0.000
3.910	564.7	-3.17	2.60	0.00	0.00	0.0	2.724	0.00000	0.155	-0.151	5.88	0.000

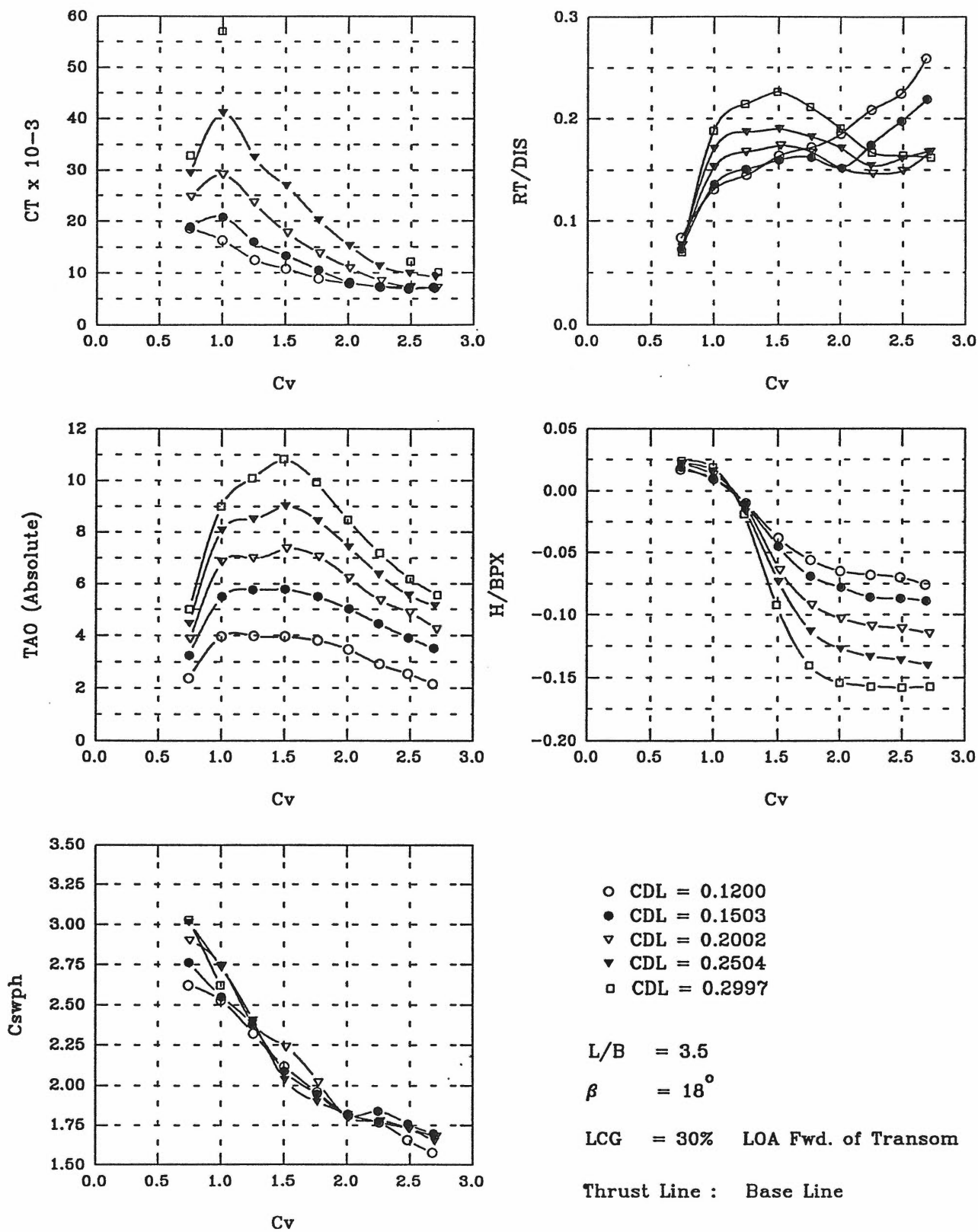


Figure B.34

Model No. T-3518

L/B Ratio 3.5 Length Overall LOA 80.50 cm
 Deadrise 18.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 30.00 % LOA 24.15 cm @ Transom

Displacement DIS 1458.0 gms Disp. Coeff. CDL 0.1200
 VCG Position 29.91 % B 6.88 cm @ Base Line
 Static trim TAOO 1.13 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.060	122.8	0.36	1.25	40.25	64.80	1156.3	0.738	18.57927	0.084	0.017	2.38	2.622
1.436	191.5	0.21	2.84	40.25	61.18	1114.8	1.000	16.37033	0.131	0.010	3.97	2.528
1.802	211.3	-0.21	2.86	34.21	58.77	1022.9	1.256	12.49896	0.145	-0.010	3.99	2.320
2.159	239.5	-0.80	2.83	28.58	56.35	934.2	1.504	10.81287	0.164	-0.038	3.96	2.118
2.530	250.5	-1.17	2.68	26.16	52.33	863.4	1.763	8.90607	0.172	-0.056	3.81	1.958
2.877	269.7	-1.37	2.35	22.54	50.31	801.4	2.005	7.98788	0.185	-0.065	3.48	1.817
3.232	303.2	-1.43	1.79	18.92	51.92	779.2	2.252	7.32068	0.208	-0.068	2.92	1.767
3.564	326.6	-1.46	1.42	16.10	50.31	730.5	2.483	6.91673	0.224	-0.070	2.55	1.657
3.846	378.1	-1.59	1.03	14.09	49.11	695.1	2.680	7.22520	0.259	-0.076	2.16	1.576

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 29.22 % B 6.72 cm @ Base Line
 Static trim TAOO 2.07 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.064	133.1	0.39	1.19	46.29	65.21	1219.0	0.741	18.95411	0.073	0.019	3.26	2.764
1.442	247.3	0.20	3.42	42.26	60.38	1125.0	1.004	20.79462	0.136	0.009	5.49	2.551
1.795	275.5	-0.22	3.70	38.24	57.16	1047.6	1.250	16.04600	0.151	-0.011	5.77	2.376
2.161	292.8	-0.94	3.71	31.40	52.33	920.9	1.506	13.37948	0.160	-0.045	5.78	2.088
2.530	296.0	-1.45	3.42	28.18	49.91	858.9	1.762	10.58334	0.162	-0.069	5.49	1.948
2.884	276.6	-1.64	2.95	24.95	47.50	797.0	2.010	8.19974	0.152	-0.078	5.02	1.807
3.225	316.9	-1.80	2.39	24.15	49.51	810.2	2.247	7.39023	0.174	-0.086	4.46	1.837
3.567	359.5	-1.83	1.85	20.13	50.31	774.8	2.485	7.16782	0.197	-0.087	3.92	1.757
3.860	399.1	-1.87	1.45	17.71	50.31	748.2	2.689	7.03553	0.219	-0.089	3.52	1.697

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 29.04 % B 6.68 cm @ Base Line
 Static trim TAOO 2.38 deg
 Water Temp. 18.50 deg C Density 998.503 kg/m3 Kin. Viscosity 0.1041E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.075	186.3	0.46	1.49	51.92	66.41	1279.2	0.749	24.77568	0.077	0.022	3.87	2.901
1.439	371.9	0.27	4.46	52.33	59.57	1209.6	1.003	29.16540	0.153	0.013	6.84	2.743
1.796	407.5	-0.25	4.59	39.04	56.75	1051.7	1.252	23.59675	0.168	-0.012	6.97	2.385
2.178	423.6	-1.33	4.97	33.41	56.35	986.9	1.518	17.77347	0.174	-0.064	7.35	2.238
2.545	405.9	-1.93	4.65	30.19	50.72	889.9	1.773	13.83978	0.167	-0.092	7.03	2.018
2.888	367.1	-2.16	3.85	26.97	45.08	792.5	2.012	10.91327	0.151	-0.103	6.23	1.797
3.248	356.2	-2.29	2.97	25.36	45.89	783.7	2.263	8.46712	0.146	-0.109	5.35	1.777
3.585	362.7	-2.32	2.50	22.54	46.69	761.5	2.498	7.28234	0.149	-0.111	4.88	1.727
3.896	407.8	-2.43	1.86	20.13	47.09	739.4	2.714	7.13862	0.168	-0.115	4.24	1.677

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2504
 VCG Position 28.00 % B 6.44 cm @ Base Line
 Static trim TAOO 2.91 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.067	227.0	0.46	1.56	58.77	66.82	1329.4	0.743	29.49320	0.075	0.022	4.47	3.015
1.437	520.1	0.33	5.16	51.12	60.13	1205.0	1.001	41.09979	0.171	0.016	8.07	2.733
1.799	569.1	-0.36	5.59	43.47	53.45	1060.8	1.254	32.57132	0.187	-0.017	8.50	2.405
2.163	577.2	-1.54	6.11	35.02	46.69	898.1	1.507	26.99991	0.190	-0.073	9.02	2.036
2.531	552.8	-2.36	5.53	31.80	44.28	836.8	1.763	20.27581	0.182	-0.113	8.44	1.897
2.883	518.7	-2.67	4.51	29.38	43.47	801.4	2.008	15.30666	0.171	-0.127	7.42	1.817
3.227	468.7	-2.80	3.46	26.57	44.28	779.2	2.248	11.35343	0.154	-0.133	6.37	1.767
3.573	490.1	-2.86	2.64	24.95	44.28	761.5	2.489	9.90871	0.161	-0.136	5.55	1.727
3.874	510.0	-2.95	2.24	22.54	43.47	726.1	2.699	9.19821	0.168	-0.140	5.15	1.647

Table B.34 L/B = 3.5 ; β = 18° ; Lcg = 30% ; Thrust Line: Base Line (1/2)

Displacement DIS 3640.0 gms
 VCG Position 27.13 % B
 Static trim TAOo 3.28 deg
 Water Temp. 20.50 deg C

Disp. Coeff. CDL 0.2997
 6.24 cm @ Base Line

175

Density 998.101 kg/m3 Kin. Viscosity 0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.067	254.6	0.50	1.73	58.36	67.62	1335.7	0.744	32.88982	0.070	0.024	5.01	3.029
1.429	685.2	0.40	5.72	47.09	58.77	1155.3	0.996	57.08467	0.188	0.019	9.00	2.620
1.782	778.7	-0.39	6.82	0.00	0.00	0.0	1.242	0.00000	0.214	-0.019	10.10	0.000
2.142	822.8	-1.94	7.54	0.00	0.00	0.0	1.492	0.00000	0.226	-0.092	10.82	0.000
2.513	767.0	-2.94	6.66	0.00	0.00	0.0	1.751	0.00000	0.211	-0.140	9.94	0.000
2.873	693.3	-3.23	5.19	0.00	0.00	0.0	2.001	0.00000	0.190	-0.154	8.47	0.000
3.237	607.9	-3.29	3.90	0.00	0.00	0.0	2.255	0.00000	0.167	-0.157	7.18	0.000
3.586	598.2	-3.32	2.91	25.36	42.67	748.2	2.498	12.22447	0.164	-0.158	6.19	1.697
3.903	589.1	-3.30	2.28	24.15	43.87	748.2	2.719	10.15857	0.162	-0.157	5.56	1.697

Table B.34 L/B = 3.5 ; $\beta = 18^\circ$; $L_{CG} = 30\%$; Thrust Line: Base Line (2/2)

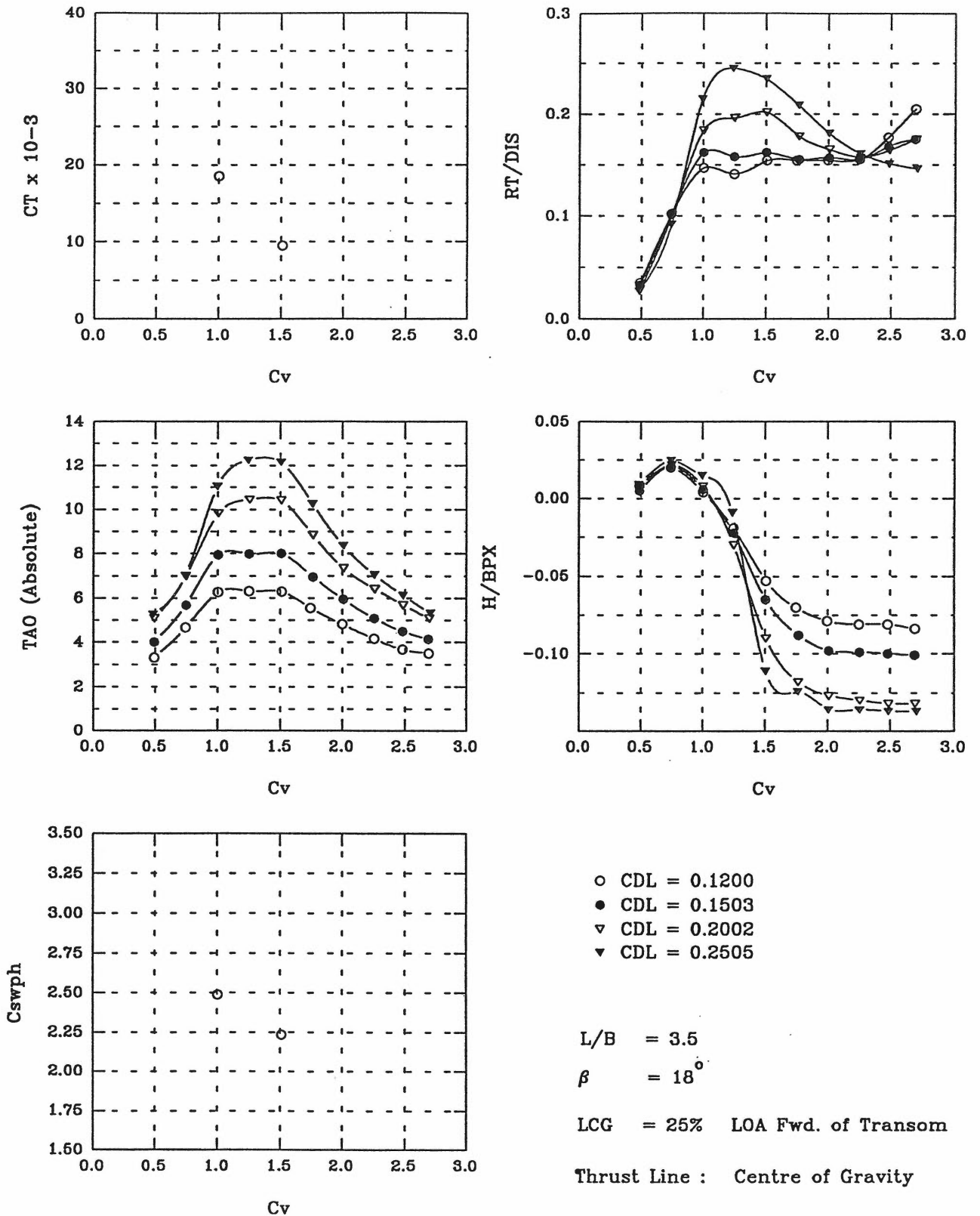


Figure B.35

Model No. T-3518
 L/B Ratio 3.5 Length Overall LOA 80.50 cm
 Deadrise 18.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 25.00 % LOA 20.13 cm @ Transom

Displacement DIS 1458.0 gms Disp. Coeff. CDL 0.1200
 VCG Position 32.48 % B 7.47 cm @ Base Line
 Static trim TAOo 2.79 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.703	51.2	0.16	0.52	0.00	0.00	0.0	0.490	0.00000	0.035	0.008	3.31	0.000
1.065	149.4	0.41	1.87	0.00	0.00	0.0	0.742	0.00000	0.102	0.020	4.66	0.000
1.441	214.6	0.08	3.48	38.64	61.18	1097.5	1.004	18.52056	0.147	0.004	6.27	2.489
1.796	205.4	-0.39	3.53	0.00	0.00	0.0	1.251	0.00000	0.141	-0.019	6.32	0.000
2.170	224.3	-1.12	3.50	28.98	60.38	984.6	1.512	9.50732	0.154	-0.053	6.29	2.233
2.503	224.6	-1.46	2.78	0.00	0.00	0.0	1.744	0.00000	0.154	-0.070	5.57	0.000
2.868	224.7	-1.65	2.03	20.13	0.00	0.0	1.998	0.00000	0.154	-0.079	4.82	0.000
3.233	226.3	-1.71	1.37	0.00	0.00	0.0	2.253	0.00000	0.155	-0.081	4.16	0.000
3.560	258.8	-1.71	0.89	0.00	0.00	0.0	2.481	0.00000	0.177	-0.081	3.68	0.000
3.867	298.9	-1.76	0.72	0.00	0.00	0.0	2.694	0.00000	0.205	-0.084	3.51	0.000

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 32.48 % B 7.47 cm @ Base Line
 Static trim TAOo 3.49 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.704	60.3	0.11	0.53	0.00	0.00	0.0	0.490	0.00000	0.033	0.005	4.02	0.000
1.069	188.8	0.44	2.21	0.00	0.00	0.0	0.745	0.00000	0.103	0.021	5.70	0.000
1.438	295.5	0.13	4.45	0.00	0.00	0.0	1.002	0.00000	0.162	0.006	7.94	0.000
1.794	288.3	-0.47	4.49	0.00	0.00	0.0	1.250	0.00000	0.158	-0.022	7.98	0.000
2.163	295.0	-1.36	4.52	0.00	0.00	0.0	1.507	0.00000	0.162	-0.065	8.01	0.000
2.534	283.2	-1.84	3.46	0.00	0.00	0.0	1.765	0.00000	0.155	-0.088	6.95	0.000
2.882	286.0	-2.05	2.46	0.00	0.00	0.0	2.008	0.00000	0.157	-0.098	5.95	0.000
3.237	283.1	-2.08	1.60	0.00	0.00	0.0	2.255	0.00000	0.155	-0.099	5.09	0.000
3.560	306.6	-2.10	1.01	0.00	0.00	0.0	2.480	0.00000	0.168	-0.100	4.50	0.000
3.863	319.0	-2.12	0.65	0.00	0.00	0.0	2.691	0.00000	0.175	-0.101	4.14	0.000

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 30.61 % B 7.04 cm @ Base Line
 Static trim TAOo 4.41 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.706	70.0	0.18	0.68	0.00	0.00	0.0	0.492	0.00000	0.029	0.008	5.09	0.000
1.070	245.9	0.46	2.58	0.00	0.00	0.0	0.745	0.00000	0.101	0.022	6.99	0.000
1.438	448.6	0.18	5.41	0.00	0.00	0.0	1.002	0.00000	0.184	0.008	9.82	0.000
1.797	476.7	-0.62	6.03	0.00	0.00	0.0	1.252	0.00000	0.196	-0.030	10.44	0.000
2.163	490.4	-1.88	5.99	0.00	0.00	0.0	1.507	0.00000	0.202	-0.090	10.40	0.000
2.530	434.0	-2.48	4.44	0.00	0.00	0.0	1.763	0.00000	0.178	-0.118	8.85	0.000
2.883	400.6	-2.67	2.93	0.00	0.00	0.0	2.008	0.00000	0.165	-0.127	7.34	0.000
3.241	382.7	-2.72	2.01	0.00	0.00	0.0	2.258	0.00000	0.157	-0.130	6.42	0.000
3.568	398.8	-2.77	1.29	0.00	0.00	0.0	2.486	0.00000	0.164	-0.132	5.70	0.000
3.870	426.0	-2.77	0.69	0.00	0.00	0.0	2.697	0.00000	0.175	-0.132	5.10	0.000

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2504
 VCG Position 29.22 % B 6.72 cm @ Base Line
 Static trim TAOo 4.71 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.693	81.2	0.19	0.58	0.00	0.00	0.0	0.483	0.00000	0.027	0.009	5.28	0.000
1.065	278.9	0.97	2.32	0.00	0.00	0.0	0.742	0.00000	0.092	0.046	7.02	0.000
1.427	652.7	0.76	6.33	0.00	0.00	0.0	0.994	0.00000	0.215	0.036	11.04	0.000
1.780	743.8	-0.19	7.54	0.00	0.00	0.0	1.240	0.00000	0.245	-0.009	12.25	0.000
2.159	714.2	-2.34	7.45	0.00	0.00	0.0	1.504	0.00000	0.235	-0.111	12.16	0.000
2.525	636.6	-2.60	5.56	0.00	0.00	0.0	1.759	0.00000	0.209	-0.124	10.26	0.000
2.880	551.5	-2.85	3.66	0.00	0.00	0.0	2.006	0.00000	0.181	-0.136	8.37	0.000
3.237	489.4	-2.85	2.34	0.00	0.00	0.0	2.255	0.00000	0.161	-0.136	7.05	0.000
3.566	459.7	-2.88	1.43	0.00	0.00	0.0	2.484	0.00000	0.151	-0.137	6.13	0.000
3.883	444.7	-3.38	0.62	0.00	0.00	0.0	2.706	0.00000	0.146	-0.161	5.33	0.000

Table B.35 L/B = 3.5 ; β = 18° ; LCG = 25% ; Thrust Line: Centre of Gravity

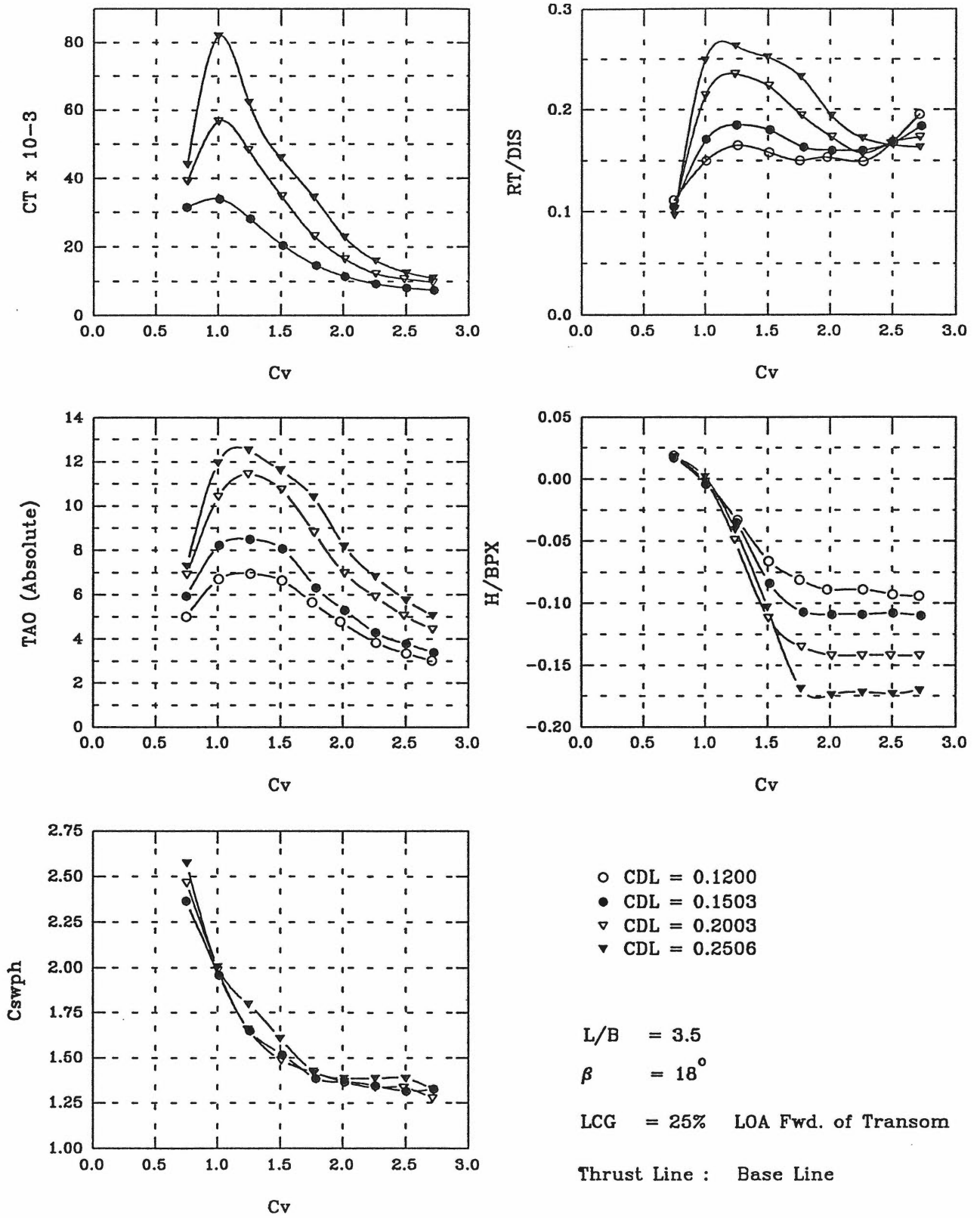


Figure B.36

Model No. T-3518

L/B Ratio 3.5
 Deadrise 18.00 deg

Length Overall LOA 80.50 cm
 Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 20.13 cm @ Transom

LCG Position 25.00 % LOA

Displacement DIS 1458.0 gms
 VCG Position 32.48 % B
 Static trim TAOo 2.79 deg
 Water Temp. 19.50 deg C

Disp. Coeff. CDL 0.1200
 7.47 cm @ Base Line

Density 998.308 kg/m3
 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.069	162.6	0.40	2.22	0.00	0.00	0.0	0.745	0.00000	0.111	0.019	5.01	0.000
1.445	218.8	-0.08	3.91	0.00	0.00	0.0	1.007	0.00000	0.150	-0.004	6.70	0.000
1.812	239.9	-0.69	4.16	0.00	0.00	0.0	1.263	0.00000	0.165	-0.033	6.95	0.000
2.171	230.0	-1.39	3.86	0.00	0.00	0.0	1.512	0.00000	0.158	-0.066	6.65	0.000
2.517	218.3	-1.71	2.86	0.00	0.00	0.0	1.754	0.00000	0.150	-0.081	5.65	0.000
2.839	222.4	-1.87	2.00	0.00	0.00	0.0	1.978	0.00000	0.153	-0.089	4.79	0.000
3.251	217.3	-1.87	1.05	0.00	0.00	0.0	2.265	0.00000	0.149	-0.089	3.84	0.000
3.594	247.0	-1.95	0.56	0.00	0.00	0.0	2.504	0.00000	0.169	-0.093	3.35	0.000
3.889	284.1	-1.97	0.22	0.00	0.00	0.0	2.709	0.00000	0.195	-0.094	3.01	0.000

Displacement DIS 1825.0 gms
 VCG Position 32.48 % B
 Static trim TAOo 3.49 deg
 Water Temp. 22.00 deg C

Disp. Coeff. CDL 0.1503
 7.47 cm @ Base Line

Density 997.772 kg/m3
 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.071	191.5	0.36	2.45	36.22	58.77	1044.3	0.746	31.46105	0.105	0.017	5.94	2.368
1.448	312.2	-0.07	4.73	32.20	46.29	863.4	1.009	33.91953	0.171	-0.003	8.22	1.958
1.802	338.0	-0.74	5.00	26.57	39.45	726.1	1.256	28.18231	0.185	-0.035	8.49	1.647
2.176	329.1	-1.76	4.59	23.35	37.43	668.6	1.516	20.45515	0.180	-0.084	8.08	1.516
2.562	297.2	-2.26	2.82	20.13	35.42	611.0	1.785	14.57649	0.163	-0.107	6.31	1.385
2.894	291.7	-2.29	1.81	18.11	36.63	602.1	2.016	11.37130	0.160	-0.109	5.30	1.365
3.246	291.3	-2.30	0.80	16.10	37.84	593.3	2.262	9.16116	0.160	-0.109	4.29	1.345
3.595	306.6	-2.27	0.29	13.68	39.04	580.0	2.505	8.04071	0.168	-0.108	3.78	1.315
3.913	336.2	-2.31	-0.10	11.27	41.86	584.4	2.726	7.38955	0.184	-0.110	3.39	1.325

Displacement DIS 2432.0 gms
 VCG Position 30.61 % B
 Static trim TAOo 4.41 deg
 Water Temp. 22.00 deg C

Disp. Coeff. CDL 0.2003
 7.04 cm @ Base Line

Density 997.772 kg/m3
 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.077	250.6	0.36	2.49	40.25	58.77	1087.5	0.750	39.09560	0.103	0.017	6.90	2.466
1.436	521.6	-0.04	6.01	34.62	45.08	876.1	1.001	56.75127	0.214	-0.002	10.42	1.987
1.782	571.2	-1.04	7.04	28.98	37.43	730.5	1.241	48.43117	0.235	-0.049	11.45	1.657
2.163	541.2	-2.35	6.34	24.95	34.62	655.3	1.507	34.70268	0.223	-0.112	10.75	1.486
2.536	471.3	-2.83	4.39	22.54	34.21	624.3	1.767	23.08229	0.194	-0.135	8.80	1.416
2.887	420.6	-2.99	2.56	20.13	34.62	602.1	2.012	16.47601	0.173	-0.142	6.97	1.365
3.243	381.9	-2.97	1.50	18.11	35.42	588.9	2.259	12.12949	0.157	-0.142	5.91	1.335
3.569	407.3	-2.98	0.65	17.31	36.22	588.9	2.486	10.68013	0.167	-0.142	5.06	1.335
3.895	421.4	-2.99	0.03	14.89	36.22	562.3	2.714	9.71074	0.173	-0.142	4.44	1.275

Displacement DIS 3042.0 gms
 VCG Position 29.22 % B
 Static trim TAOo 4.71 deg
 Water Temp. 22.00 deg C

Disp. Coeff. CDL 0.2506
 6.72 cm @ Base Line

Density 997.772 kg/m3
 Kin. Viscosity 0.9568E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.076	294.9	0.39	2.58	45.08	58.77	1134.9	0.750	44.09788	0.097	0.018	7.29	2.573
1.433	756.5	0.04	7.24	36.22	44.28	884.7	0.998	81.91853	0.249	0.002	11.95	2.006
1.786	801.5	-0.86	7.82	32.20	39.85	792.5	1.245	62.32779	0.263	-0.041	12.53	1.797
2.148	766.9	-2.16	6.93	28.18	36.22	708.4	1.497	46.12388	0.252	-0.103	11.64	1.606
2.529	705.1	-3.55	5.69	24.15	33.00	628.7	1.762	34.49077	0.232	-0.169	10.40	1.426
2.885	589.3	-3.66	3.47	21.73	33.81	611.0	2.010	22.78050	0.194	-0.174	8.18	1.385
3.244	522.5	-3.61	2.10	20.93	34.62	611.0	2.260	15.98374	0.172	-0.172	6.81	1.385
3.590	501.4	-3.63	1.06	19.32	36.22	611.0	2.501	12.51983	0.165	-0.173	5.76	1.385
3.895	496.0	-3.57	0.35	16.90	36.22	584.4	2.714	10.99989	0.163	-0.170	5.06	1.325

Table B.36 L/B = 3.5 ; β = 18° ; L_{CG} = 25% ; Thrust Line: Base Line

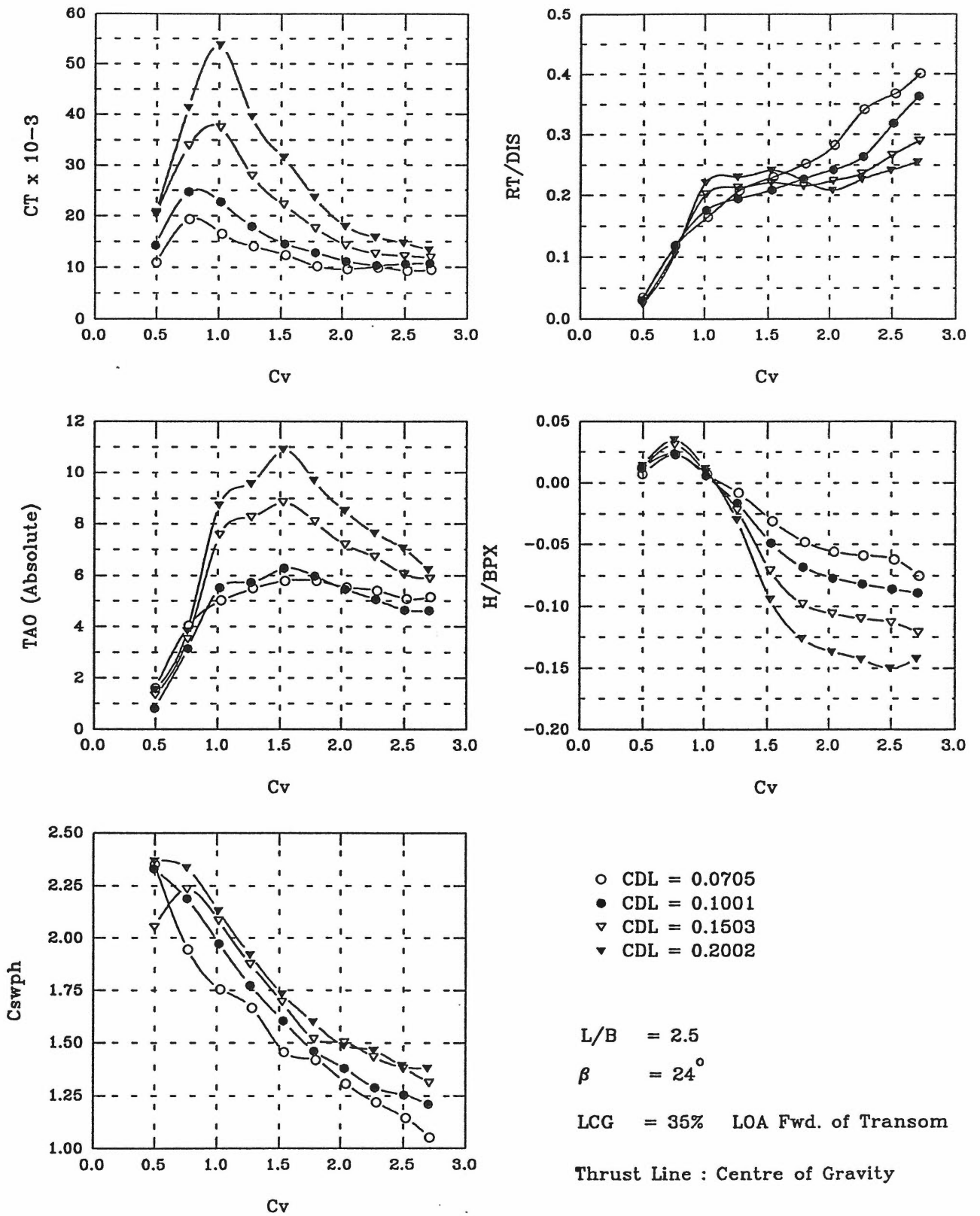


Figure B.37

Model No. T-2524
 L/B Ratio 2.5 Length Overall LOA 57.50 cm
 Deadrise 24.00 deg Breath (Deck) B 23.00 cm
 LCG Position 35.00 % LOA Breath (Chine) BPX 21.00 cm
 Displacement DIS 856.0 gms Disp. Coeff. CDL 0.0705
 VCG Position 24.22 % B 5.57 cm @ Base Line
 Static trim TAOo 1.54 deg
 Water Temp. 20.50 deg C Density 998.101 kg/m3 Kin. Viscosity 0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.715	29.5	0.15	0.07	51.75	48.30	1036.2	0.498	10.96224	0.035	0.007	1.61	2.350
1.099	102.1	0.48	2.50	28.75	46.58	857.3	0.765	19.39878	0.119	0.023	4.04	1.944
1.474	141.4	0.15	3.48	23.00	45.43	773.3	1.027	16.54591	0.165	0.007	5.02	1.754
1.838	177.8	-0.17	3.96	20.13	44.56	734.8	1.280	14.08612	0.208	-0.008	5.50	1.666
2.210	197.3	-0.66	4.25	14.38	42.26	641.8	1.540	12.36694	0.230	-0.031	5.79	1.455
2.582	215.8	-1.00	4.25	12.94	42.26	625.5	1.799	10.17125	0.252	-0.048	5.79	1.418
2.932	242.6	-1.18	4.00	9.20	41.69	576.3	2.043	9.62420	0.283	-0.056	5.54	1.307
3.279	292.1	-1.24	3.87	5.75	41.69	537.3	2.284	9.93928	0.341	-0.059	5.41	1.218
3.618	314.0	-1.31	3.55	2.88	41.69	504.8	2.521	9.34047	0.367	-0.062	5.09	1.145
3.896	342.9	-1.57	3.62	0.86	40.25	464.6	2.714	9.56048	0.401	-0.075	5.16	1.053

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 25.22 % B 5.80 cm @ Base Line
 Static trim TAOo 0.82 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.704	36.8	0.25	-0.00	46.63	49.80	1027.1	0.490	14.23580	0.030	0.012	0.82	2.329
1.087	143.4	0.51	2.33	38.81	47.44	964.9	0.757	24.71653	0.118	0.024	3.15	2.188
1.457	213.9	0.12	4.70	31.63	45.43	870.4	1.015	22.76340	0.176	0.006	5.52	1.974
1.818	236.6	-0.33	4.91	25.30	43.70	782.2	1.266	17.98949	0.195	-0.016	5.73	1.774
2.197	253.5	-1.03	5.46	20.13	42.26	706.8	1.531	14.60604	0.209	-0.049	6.28	1.603
2.559	276.2	-1.44	5.16	15.53	41.40	644.3	1.783	12.86685	0.227	-0.068	5.98	1.461
2.917	294.6	-1.61	4.65	12.94	40.83	608.0	2.032	11.19267	0.242	-0.077	5.47	1.379
3.265	321.0	-1.71	4.24	9.60	40.60	567.5	2.275	10.42405	0.264	-0.082	5.06	1.287
3.595	387.2	-1.82	3.84	7.76	41.11	553.1	2.505	10.64657	0.318	-0.086	4.66	1.254
3.880	441.6	-1.87	3.82	6.61	40.54	533.0	2.703	10.81570	0.363	-0.089	4.64	1.209

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1502
 VCG Position 26.39 % B 6.07 cm @ Base Line
 Static trim TAOo 1.34 deg
 Water Temp. 16.50 deg C Density 998.862 kg/m3 Kin. Viscosity 0.1095E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.712	47.7	0.25	-0.01	28.75	49.74	905.6	0.496	20.39402	0.026	0.012	1.33	2.053
1.086	200.6	0.66	2.18	41.98	47.50	984.2	0.757	33.92951	0.110	0.031	3.52	2.232
1.451	368.4	0.19	6.23	35.94	46.00	919.0	1.011	37.39791	0.202	0.009	7.57	2.084
1.817	388.0	-0.47	6.92	29.04	43.99	827.0	1.266	27.92364	0.213	-0.022	8.26	1.875
2.186	403.2	-1.48	7.51	24.38	41.63	746.8	1.523	22.19420	0.221	-0.071	8.85	1.694
2.558	393.0	-2.05	6.75	20.41	38.81	669.2	1.782	17.62483	0.215	-0.098	8.09	1.518
2.910	408.8	-2.22	5.84	18.40	40.25	662.7	2.028	14.30577	0.224	-0.106	7.18	1.503
3.248	429.8	-2.31	5.38	16.10	39.79	631.6	2.263	12.67226	0.236	-0.110	6.72	1.432
3.583	485.5	-2.38	4.71	13.51	40.25	607.5	2.497	12.22466	0.266	-0.113	6.05	1.378
3.885	529.9	-2.54	4.54	10.64	40.54	578.5	2.707	11.92030	0.290	-0.121	5.88	1.312

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 26.13 % B 6.01 cm @ Base Line
 Static trim TAOo 1.58 deg
 Water Temp. 19.00 deg C Density 998.407 kg/m3 Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.711	55.9	0.28	-0.03	52.50	53.53	1043.8	0.496	20.80085	0.023	0.014	1.55	2.367
1.083	253.9	0.73	2.26	46.00	49.62	1029.1	0.754	41.36673	0.104	0.035	3.84	2.334
1.445	537.1	0.25	7.15	37.38	46.58	939.8	1.007	53.78237	0.221	0.012	8.73	2.131
1.813	560.2	-0.63	7.98	31.63	43.41	846.4	1.263	39.57248	0.230	-0.030	9.56	1.919
2.185	585.4	-1.98	9.32	26.05	41.52	764.0	1.522	31.54590	0.241	-0.094	10.90	1.732
2.546	548.2	-2.64	8.12	22.14	40.25	705.0	1.774	23.58276	0.225	-0.126	9.70	1.599
2.904	505.4	-2.88	6.94	18.92	39.10	655.6	2.023	17.96347	0.208	-0.137	8.52	1.487
3.247	549.5	-2.99	6.06	18.40	38.76	645.9	2.262	15.85762	0.226	-0.143	7.64	1.465
3.571	586.8	-3.15	5.47	15.53	38.81	614.0	2.488	14.72644	0.241	-0.150	7.05	1.392
3.865	619.6	-2.99	4.64	14.38	39.45	608.2	2.693	13.40050	0.255	-0.142	6.22	1.379

Table B.37 L/B = 2.5 ; β = 24° ; L_{CG} = 35% ; Thrust Line: Centre of Gravity

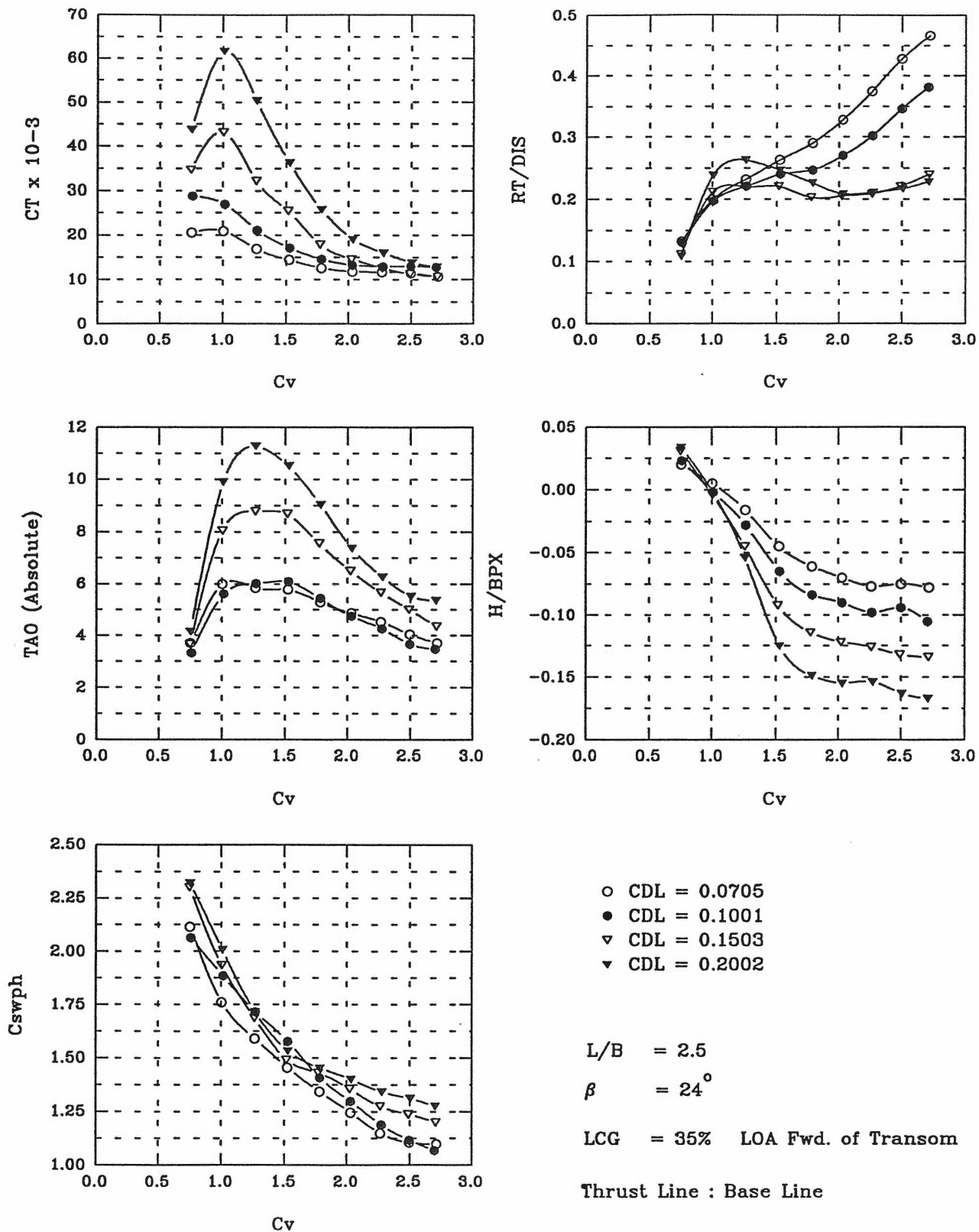


Figure B.38

Model No. T-2524
 L/B Ratio 2.5 Length Overall LOA 57.50 cm
 Deadrise 24.00 deg Breath (Deck) B 23.00 cm
 LCG Position 35.00 % LOA 20.13 cm @ Transom
 Displacement DIS 856.0 gms Disp. Coeff. CDL 0.0705
 VCG Position 24.22 % B 5.57 cm @ Base Line
 Static trim TAOo 1.54 deg
 Water Temp. 19.00 deg C Density 998.407 kg/m3 Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.079	113.3	0.43	2.16	34.50	47.73	932.5	0.752	20.50770	0.132	0.020	3.70	2.115
1.441	171.3	0.10	4.45	24.44	43.99	776.2	1.004	20.88312	0.200	0.005	5.99	1.760
1.816	198.3	-0.34	4.30	18.69	43.13	701.0	1.265	16.85502	0.232	-0.016	5.84	1.590
2.187	225.2	-0.95	4.25	14.95	41.69	641.3	1.524	14.42621	0.263	-0.045	5.79	1.454
2.559	248.6	-1.28	3.76	12.08	40.25	591.3	1.783	12.61543	0.290	-0.061	5.30	1.341
2.916	280.8	-1.47	3.33	8.91	39.68	549.0	2.032	11.82059	0.328	-0.070	4.87	1.245
3.255	320.3	-1.61	3.00	6.33	38.53	506.8	2.267	11.72621	0.374	-0.077	4.54	1.149
3.585	366.1	-1.57	2.51	2.88	40.25	487.3	2.498	11.48819	0.428	-0.075	4.05	1.105
3.897	398.8	-1.65	2.17	2.30	40.54	484.3	2.715	10.65671	0.466	-0.078	3.71	1.098

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 25.22 % B 5.80 cm @ Base Line
 Static trim TAOo 0.82 deg
 Water Temp. 19.00 deg C Density 998.407 kg/m3 Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.088	157.6	0.48	2.50	35.02	45.83	909.3	0.758	28.75506	0.130	0.023	3.32	2.062
1.455	241.1	-0.04	4.79	28.75	44.56	831.1	1.013	26.94328	0.198	-0.002	5.61	1.885
1.822	269.1	-0.60	5.19	23.58	43.13	756.1	1.270	21.06502	0.221	-0.028	6.01	1.715
2.195	292.3	-1.36	5.27	20.13	41.34	695.5	1.529	17.13465	0.240	-0.065	6.09	1.577
2.559	300.1	-1.76	4.62	15.24	39.68	620.5	1.783	14.51195	0.247	-0.084	5.44	1.407
2.915	328.8	-1.88	3.94	12.94	37.66	571.8	2.031	13.29524	0.270	-0.090	4.76	1.297
3.262	367.8	-2.06	3.45	11.10	35.31	524.3	2.273	12.95342	0.302	-0.098	4.27	1.189
3.585	420.5	-1.98	2.85	10.52	33.12	493.2	2.497	13.03902	0.346	-0.094	3.67	1.118
3.879	462.9	-2.20	2.65	10.70	30.99	471.1	2.702	12.83489	0.381	-0.105	3.47	1.068

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 26.39 % B 6.07 cm @ Base Line
 Static trim TAOo 1.34 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.070	204.9	0.65	2.33	43.70	49.45	1014.3	0.745	34.70112	0.112	0.031	3.67	2.300
1.438	387.2	-0.08	6.72	31.63	43.99	853.2	1.002	43.15956	0.212	-0.004	8.06	1.935
1.813	400.6	-0.94	7.45	25.01	40.83	744.1	1.263	32.19615	0.220	-0.045	8.79	1.687
2.176	403.7	-1.93	7.36	19.84	38.30	656.9	1.516	25.50198	0.221	-0.092	8.70	1.490
2.542	369.7	-2.40	6.22	18.40	37.38	630.3	1.771	17.83732	0.203	-0.114	7.56	1.429
2.903	374.3	-2.56	5.17	16.10	36.80	597.8	2.023	14.60286	0.205	-0.122	6.51	1.355
3.251	381.4	-2.66	4.33	12.94	36.80	562.0	2.265	12.61915	0.209	-0.126	5.67	1.274
3.575	402.5	-2.76	3.68	10.92	37.38	545.8	2.490	11.34258	0.221	-0.132	5.02	1.238
3.890	437.8	-2.81	3.03	9.49	37.38	529.5	2.710	10.74119	0.240	-0.134	4.37	1.201

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 26.13 % B 6.01 cm @ Base Line
 Static trim TAOo 1.58 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.076	264.0	0.72	2.58	44.85	49.74	1023.1	0.750	43.78806	0.109	0.034	4.16	2.320
1.445	580.4	-0.04	8.32	35.08	43.70	884.9	1.007	61.69358	0.239	-0.002	9.90	2.007
1.815	638.9	-1.14	9.71	27.89	39.10	756.2	1.265	50.38676	0.263	-0.054	11.29	1.715
2.194	600.1	-2.62	8.94	23.58	36.22	675.6	1.528	36.27639	0.247	-0.125	10.52	1.532
2.559	549.1	-3.13	7.45	20.70	35.94	640.0	1.783	25.74650	0.226	-0.149	9.03	1.451
2.917	507.9	-3.25	5.79	18.97	35.65	617.3	2.033	19.00268	0.209	-0.155	7.37	1.400
3.268	513.5	-3.24	4.69	16.10	36.22	591.3	2.277	15.98159	0.211	-0.154	6.27	1.341
3.596	526.9	-3.42	3.94	14.38	36.80	578.3	2.505	13.85048	0.217	-0.163	5.52	1.311
3.884	554.9	-3.51	3.78	12.94	36.80	562.0	2.706	12.86375	0.228	-0.167	5.36	1.274

Table B.38 L/B = 2.5 ; β = 24° ; L_{CG} = 35% ; Thrust Line: Base Line

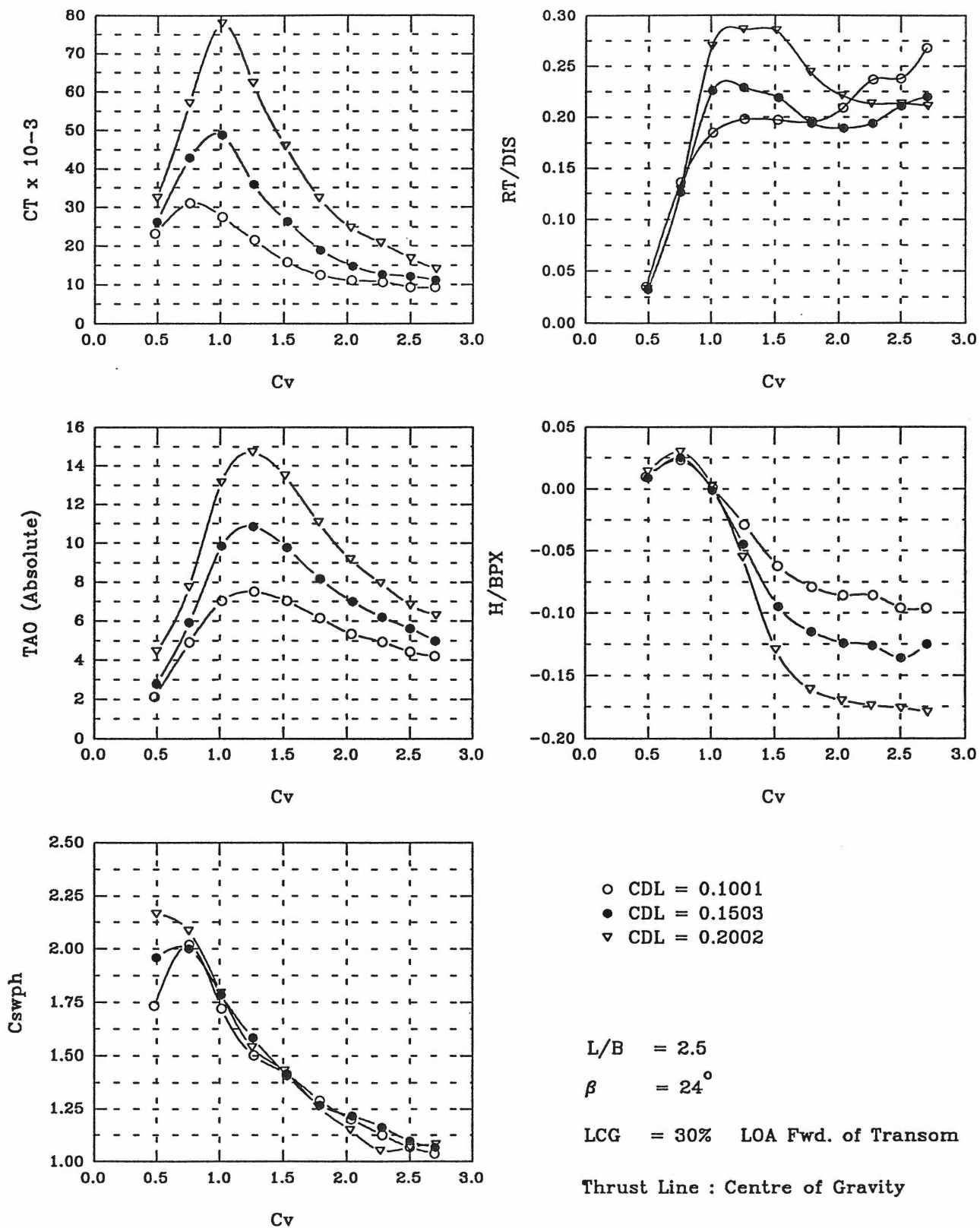


Figure B.39

Model No. T-2524
 L/B Ratio 2.5 Length Overall LOA 57.50 cm
 Deadrise 24.00 deg Breath (Deck) B 23.00 cm
 LCG Position 30.00 % LOA Breath (Chine) BPX 21.00 cm
 17.25 cm @ Transom

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 31.65 % B 7.28 cm @ Base Line
 Static trim TAOo 1.72 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.691	43.1	0.21	0.39	19.26	47.44	764.6	0.481	23.22338	0.035	0.010	2.11	1.734
1.086	165.9	0.49	3.18	34.50	44.56	890.1	0.757	31.05356	0.136	0.023	4.90	2.018
1.456	224.5	0.01	5.32	24.44	42.55	758.7	1.014	27.44094	0.185	0.001	7.04	1.720
1.819	240.4	-0.62	5.79	20.13	38.53	662.7	1.268	21.54037	0.198	-0.029	7.51	1.503
2.191	239.6	-1.30	5.30	17.25	37.95	623.8	1.527	15.72359	0.197	-0.062	7.02	1.414
2.567	236.9	-1.66	4.43	12.94	37.38	568.5	1.788	12.43047	0.195	-0.079	6.15	1.289
2.922	254.2	-1.80	3.62	10.06	36.80	529.5	2.036	11.05220	0.209	-0.086	5.34	1.201
3.272	288.2	-1.81	3.22	7.19	36.80	497.1	2.280	10.64199	0.237	-0.086	4.94	1.127
3.588	289.5	-2.01	2.71	4.31	37.38	471.1	2.500	9.38119	0.238	-0.096	4.43	1.068
3.874	325.4	-2.02	2.49	2.88	37.66	458.1	2.699	9.30527	0.268	-0.096	4.21	1.039

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 29.65 % B 6.82 cm @ Base Line
 Static trim TAOo 2.44 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.711	58.2	0.20	0.34	26.16	48.88	863.7	0.495	26.24694	0.032	0.009	2.78	1.959
1.085	230.4	0.53	3.48	35.94	44.85	898.12	0.756	42.86243	0.126	0.025	5.92	2.036
1.453	412.8	-0.02	7.41	27.89	41.69	786.6	1.012	48.87731	0.226	-0.001	9.85	1.784
1.809	417.3	-0.94	8.43	23.00	38.81	698.5	1.260	35.88356	0.229	-0.045	10.87	1.584
2.195	400.4	-1.99	7.33	18.97	35.94	620.5	1.530	26.31806	0.219	-0.095	9.77	1.407
2.564	354.3	-2.42	5.73	16.39	33.06	558.8	1.786	18.96142	0.194	-0.115	8.17	1.267
2.928	345.3	-2.61	4.57	14.38	33.06	536.0	2.040	14.76954	0.189	-0.124	7.01	1.216
3.267	353.4	-2.65	3.77	12.65	32.77	513.3	2.276	12.67562	0.194	-0.126	6.21	1.164
3.590	385.3	-2.86	3.18	10.06	32.77	484.1	2.501	12.14003	0.211	-0.136	5.62	1.098
3.878	402.2	-2.63	2.56	8.63	33.06	471.1	2.702	11.15929	0.220	-0.125	5.00	1.068

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 28.65 % B 6.59 cm @ Base Line
 Static trim TAOo 3.95 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.711	79.5	0.29	0.50	33.35	50.03	954.9	0.495	32.37814	0.033	0.014	4.45	2.165
1.083	312.7	0.62	3.78	37.38	44.85	918.7	0.754	57.05672	0.129	0.030	7.73	2.083
1.445	656.3	0.07	9.21	29.33	40.83	791.6	1.007	78.03931	0.270	0.003	13.16	1.795
1.798	696.4	-1.16	10.76	25.01	35.08	678.7	1.253	62.37973	0.286	-0.055	14.71	1.539
2.168	693.2	-2.71	9.55	22.43	33.35	630.3	1.510	46.01358	0.285	-0.129	13.50	1.429
2.546	594.1	-3.39	7.13	18.97	30.19	555.5	1.774	32.43477	0.244	-0.161	11.08	1.260
2.906	538.4	-3.57	5.22	14.95	29.90	506.8	2.025	24.72294	0.221	-0.170	9.17	1.149
3.249	517.6	-3.66	4.00	11.50	29.61	464.6	2.264	20.74617	0.213	-0.174	7.95	1.053
3.592	518.9	-3.69	2.88	11.50	30.19	471.1	2.503	16.77728	0.213	-0.176	6.83	1.068
3.885	512.9	-3.75	2.34	12.08	30.19	477.6	2.707	13.98637	0.211	-0.179	6.29	1.083

Table B.39 L/B = 2.5 ; β = 24° ; L_{CG} = 30% ; Thrust Line: Centre of Gravity

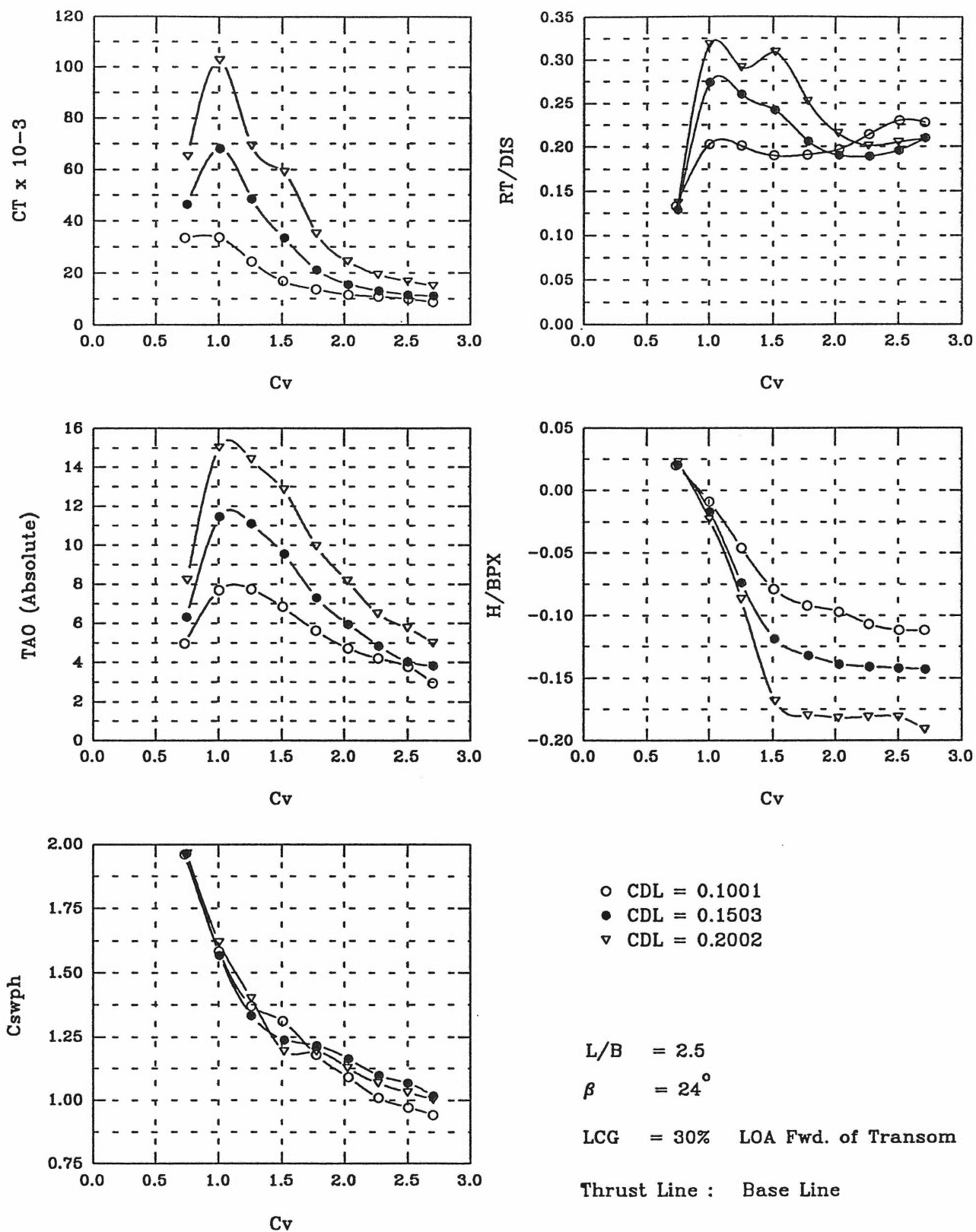


Figure B.40

Model No. T-2524

L/B Ratio 2.5 Length Overall LOA 57.50 cm
 Deadrise 24.00 deg Breath (Deck) B 23.00 cm
 LCG Position 30.00 % LOA 17.25 cm @ Transom Breath (Chine) BPX 21.00 cm

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 31.65 % B 7.28 cm @ Base Line
 Static trim TAOO 1.72 deg
 Water Temp. 20.50 deg C Density 998.101 kg/m3 Kin. Viscosity 0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.051	162.2	0.42	3.23	33.06	43.70	864.8	0.732	33.38809	0.133	0.020	4.95	1.961
1.438	246.8	-0.18	5.98	22.43	39.39	698.5	1.002	33.58103	0.203	-0.009	7.70	1.584
1.805	244.9	-0.97	6.03	18.11	35.36	604.3	1.258	24.44118	0.201	-0.046	7.75	1.370
2.166	231.0	-1.66	5.13	16.10	35.08	578.3	1.509	16.74141	0.190	-0.079	6.85	1.311
2.546	232.3	-1.93	3.90	11.50	34.50	519.8	1.774	13.55217	0.191	-0.092	5.62	1.179
2.915	240.1	-2.04	3.00	8.63	33.93	480.8	2.031	11.55015	0.197	-0.097	4.72	1.090
3.259	260.8	-2.25	2.48	5.75	33.64	445.1	2.271	10.84317	0.214	-0.107	4.20	1.009
3.596	279.3	-2.35	2.07	4.03	33.93	428.8	2.506	9.89829	0.230	-0.112	3.79	0.972
3.879	277.1	-2.36	1.22	2.30	34.50	415.8	2.703	8.70670	0.228	-0.112	2.94	0.943

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 29.65 % B 6.82 cm @ Base Line
 Static trim TAOO 2.44 deg
 Water Temp. 20.50 deg C Density 998.101 kg/m3 Kin. Viscosity 0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.074	235.8	0.45	3.88	34.50	42.55	866.5	0.748	46.40932	0.129	0.021	6.32	1.965
1.445	500.4	-0.36	9.03	25.01	36.22	691.7	1.007	68.06971	0.274	-0.017	11.47	1.568
1.806	474.7	-1.55	8.67	20.70	31.34	588.0	1.258	48.66429	0.260	-0.074	11.11	1.333
2.181	441.8	-2.49	7.12	17.54	30.76	545.8	1.519	33.46123	0.242	-0.119	9.56	1.238
2.555	375.6	-2.78	4.87	15.81	31.63	536.0	1.780	21.10280	0.206	-0.132	7.31	1.216
2.916	346.0	-2.91	3.51	12.94	32.49	513.3	2.032	15.57990	0.190	-0.139	5.95	1.164
3.266	344.1	-2.96	2.40	10.06	32.77	484.1	2.275	13.10021	0.189	-0.141	4.84	1.098
3.589	357.4	-2.98	1.60	8.63	33.06	471.1	2.501	11.57832	0.196	-0.142	4.04	1.068
3.883	383.8	-3.00	1.38	6.61	33.06	448.3	2.706	11.15813	0.210	-0.143	3.82	1.017

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2003
 VCG Position 28.65 % B 6.59 cm @ Base Line
 Static trim TAOO 3.95 deg
 Water Temp. 20.50 deg C Density 998.101 kg/m3 Kin. Viscosity 0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.078	333.3	0.48	4.27	35.94	41.40	866.1	0.751	65.15195	0.137	0.023	8.22	1.964
1.438	772.7	-0.48	11.08	27.60	35.65	714.1	1.002	102.87750	0.318	-0.023	15.03	1.619
1.803	706.8	-1.83	10.47	23.00	31.63	617.3	1.256	69.21123	0.291	-0.087	14.42	1.400
2.179	750.5	-3.53	8.90	18.69	27.89	526.3	1.518	59.05526	0.309	-0.168	12.85	1.193
2.549	612.3	-3.78	6.01	17.54	29.04	526.3	1.776	35.18974	0.252	-0.180	9.96	1.193
2.904	522.2	-3.82	4.22	14.95	29.04	497.1	2.023	24.48665	0.215	-0.182	8.17	1.127
3.250	488.7	-3.81	2.55	12.94	28.75	471.1	2.264	19.30673	0.201	-0.181	6.50	1.068
3.585	498.0	-3.81	1.81	11.50	28.75	454.8	2.498	16.74474	0.205	-0.181	5.76	1.031
3.878	508.9	-4.01	1.04	10.06	29.04	441.8	2.702	15.05565	0.209	-0.191	4.99	1.002

Table B.40 L/B = 2.5 ; $\beta = 24^\circ$; $L_{cg} = 30\%$; Thrust Line: Base Line

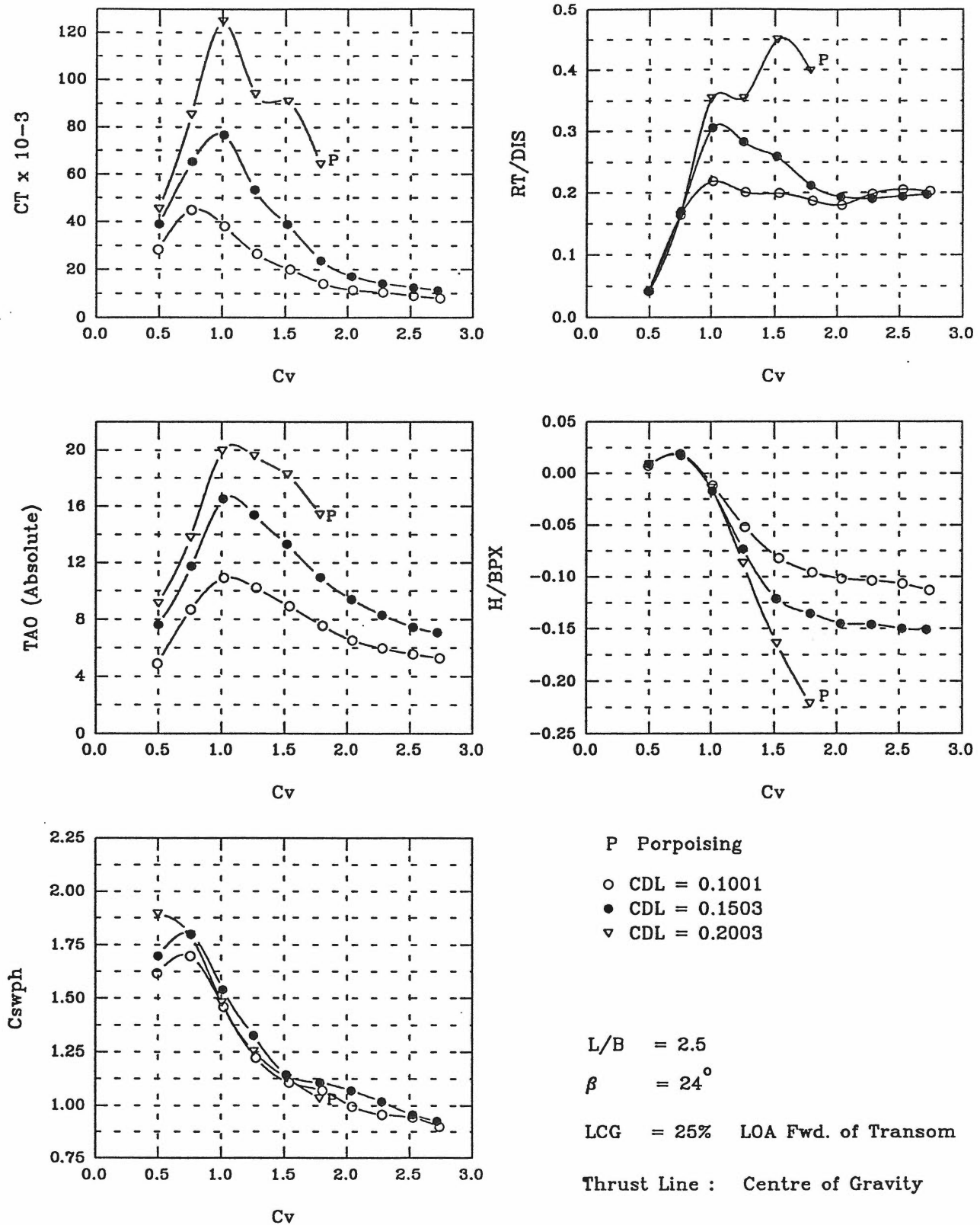


Figure B.41

Model No. T-2524		Length Overall LOA	57.50 cm
L/B Ratio	2.5	Breath (Deck) B	23.00 cm
Deadrise	24.00 deg	Breath (Chine) BPX	21.00 cm
LCG Position	25.00 % LOA	14.38 cm @ Transom	
Displacement DIS	1216.0 gms	Disp. Coeff. CDL	0.1001
VCG Position	32.96 % B	7.58 cm @ Base Line	
Static trim TAOo	4.37 deg		
Water Temp.	20.50 deg C	Density	998.101 kg/m3
		Kin. Viscosity	0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.708	51.5	0.15	0.51	17.25	45.43	712.8	0.493	28.34547	0.042	0.007	4.88	1.616
1.081	199.7	0.41	4.32	24.44	41.69	748.2	0.753	44.92320	0.164	0.019	8.69	1.697
1.459	265.9	-0.25	6.56	19.55	37.38	643.3	1.017	38.15171	0.219	-0.012	10.93	1.459
1.832	244.9	-1.09	5.84	16.10	31.63	539.3	1.276	26.58881	0.201	-0.052	10.21	1.223
2.208	242.3	-1.72	4.58	12.94	30.19	487.3	1.538	20.04890	0.199	-0.082	8.95	1.105
2.587	227.0	-2.02	3.17	10.06	31.63	471.1	1.802	14.14883	0.187	-0.096	7.54	1.068
2.930	219.1	-2.14	2.13	7.19	31.63	438.6	2.041	11.43639	0.180	-0.102	6.50	0.995
3.280	240.7	-2.18	1.57	5.75	31.63	422.3	2.286	10.41004	0.198	-0.104	5.94	0.958
3.624	249.6	-2.26	1.16	4.60	32.20	415.8	2.525	8.98238	0.205	-0.107	5.53	0.943
3.929	246.2	-2.37	0.90	2.88	32.20	396.3	2.737	7.91025	0.202	-0.113	5.27	0.899

Displacement DIS	1825.0 gms	Disp. Coeff. CDL	0.1503
VCG Position	30.52 % B	7.02 cm @ Base Line	
Static trim TAOo	6.73 deg		
Water Temp.	20.50 deg C	Density	998.101 kg/m3
		Kin. Viscosity	0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.717	76.2	0.18	0.88	20.13	45.71	748.8	0.499	38.92160	0.042	0.009	7.61	1.698
1.086	311.1	0.36	5.00	30.19	40.25	793.6	0.757	65.34623	0.170	0.017	11.73	1.799
1.453	558.5	-0.35	9.81	24.15	35.94	678.8	1.012	76.62452	0.306	-0.017	16.54	1.539
1.804	516.7	-1.52	8.67	20.13	31.63	584.8	1.257	53.37108	0.283	-0.073	15.40	1.326
2.178	472.8	-2.53	6.58	16.39	28.18	503.6	1.517	38.90901	0.259	-0.121	13.31	1.142
2.559	387.3	-2.83	4.22	13.80	29.33	487.3	1.783	23.84911	0.212	-0.135	10.95	1.105
2.917	352.6	-3.05	2.70	11.50	30.19	471.1	2.033	17.28655	0.193	-0.145	9.43	1.068
3.275	346.4	-3.07	1.60	9.78	29.90	448.3	2.282	14.16055	0.190	-0.146	8.33	1.017
3.622	354.7	-3.15	0.72	7.19	30.19	422.3	2.524	12.58352	0.194	-0.150	7.45	0.958
3.897	359.6	-3.18	0.33	5.75	30.48	409.3	2.715	11.37007	0.197	-0.151	7.06	0.928

Displacement DIS	2432.0 gms	Disp. Coeff. CDL	0.2003
VCG Position	30.04 % B	6.91 cm @ Base Line	
Static trim TAOo	8.13 deg		
Water Temp.	20.50 deg C	Density	998.101 kg/m3
		Kin. Viscosity	0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.715	98.6	0.18	1.02	27.60	46.00	835.7	0.498	45.33721	0.041	0.009	9.14	1.895
1.078	399.9	0.37	5.68	31.63	38.81	792.7	0.751	85.25516	0.164	0.018	13.80	1.797
1.440	859.7	-0.29	11.83	25.01	32.77	652.7	1.003	124.91870	0.354	-0.014	19.96	1.480
1.805	860.4	-1.82	11.44	20.99	27.89	552.3	1.258	93.96161	0.354	-0.087	19.57	1.252
2.181	1095.2	-3.44	10.12	18.11	25.88	497.1	1.520	91.02374	0.450	-0.164	18.25	1.127
2.553	970.6	-4.65	7.29	14.38	25.88	454.8	1.779	64.34322	0.399	-0.221	15.42	1.031

** Porpoising

Table B.41 L/B = 2.5 ; $\beta = 24^\circ$; $L_{ca} = 25\%$; Thrust Line: Centre of Gravity

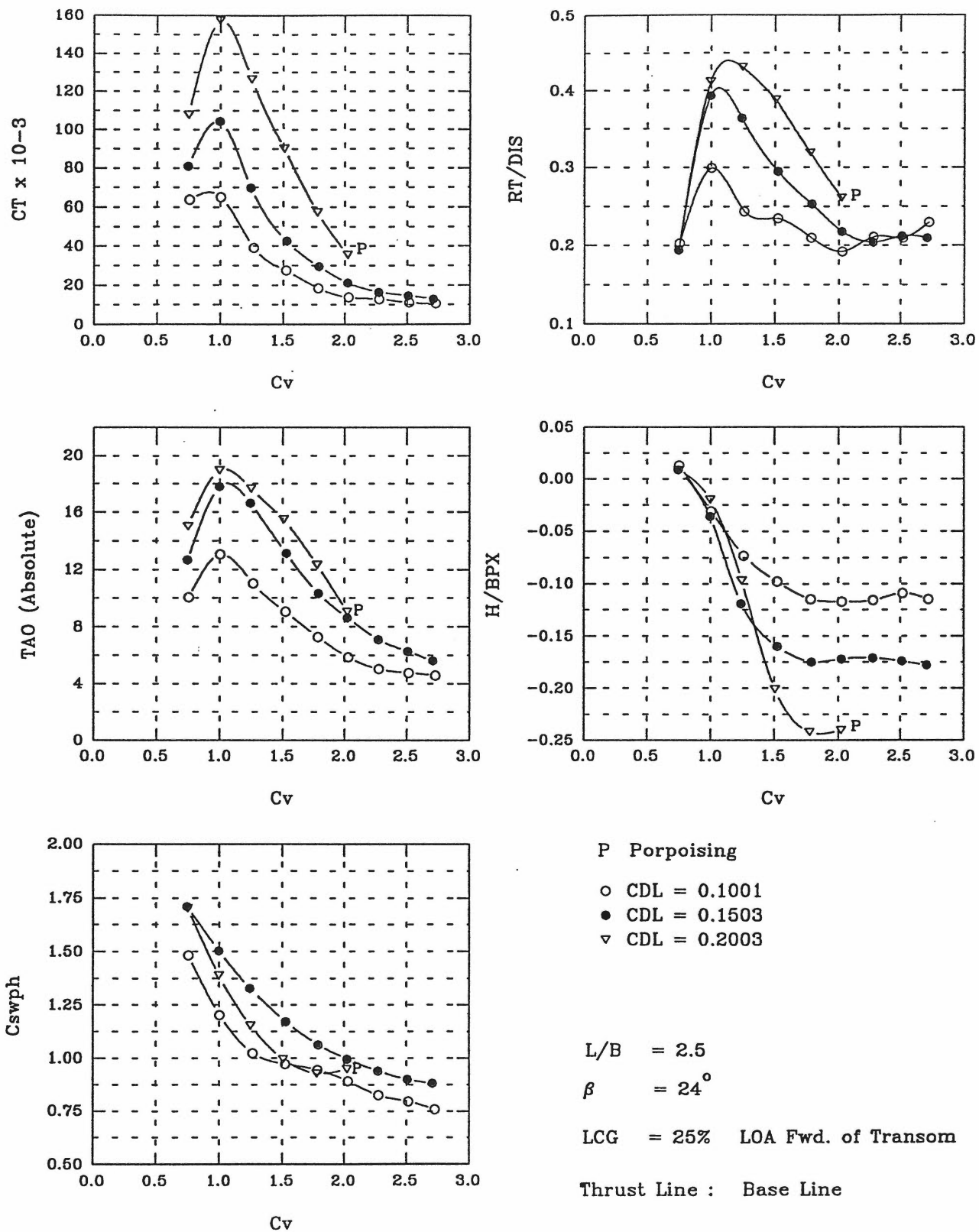


Figure B.42

Model No. T-2524
 L/B Ratio 2.5 Length Overall LOA 57.50 cm
 Deadrise 24.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 25.00 % LOA 14.38 cm @ Transom

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 32.96 % B 7.58 cm @ Base Line
 Static trim TAOo 4.37 deg
 Water Temp. 21.00 deg C Density 997.994 kg/m3 Kin. Viscosity 0.9798E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.080	247.1	0.27	5.68	23.29	34.50	653.0	0.753	63.78748	0.203	0.013	10.05	1.481
1.442	364.1	-0.66	8.70	18.11	28.75	529.5	1.004	65.03239	0.299	-0.031	13.07	1.201
1.814	296.2	-1.53	6.66	14.09	25.88	451.6	1.264	39.20102	0.244	-0.073	11.03	1.024
2.187	286.2	-2.06	4.68	11.50	26.45	428.8	1.524	27.41833	0.235	-0.098	9.05	0.972
2.560	254.9	-2.41	2.91	8.91	27.89	415.8	1.783	18.39590	0.210	-0.115	7.28	0.943
2.912	233.1	-2.45	1.49	6.90	27.89	393.1	2.029	13.75201	0.192	-0.117	5.86	0.891
3.271	256.9	-2.44	0.64	4.31	27.89	363.9	2.279	12.97296	0.211	-0.116	5.01	0.825
3.612	256.0	-2.29	0.38	2.88	28.18	350.9	2.516	10.99449	0.210	-0.109	4.75	0.796
3.916	279.5	-2.41	0.21	1.44	28.18	334.6	2.728	10.70663	0.230	-0.115	4.58	0.759

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 30.52 % B 7.02 cm @ Base Line
 Static trim TAOo 6.73 deg
 Water Temp. 20.50 deg C Density 998.101 kg/m3 Kin. Viscosity 0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.068	354.2	0.18	5.94	26.47	40.29	753.8	0.744	81.05500	0.194	0.009	12.67	1.709
1.427	717.1	-0.75	11.08	21.68	36.98	662.9	0.995	104.35690	0.393	-0.036	17.81	1.503
1.784	663.7	-2.49	9.89	17.45	34.45	586.4	1.243	69.86053	0.364	-0.119	16.62	1.330
2.192	538.3	-3.36	6.42	13.24	32.49	516.7	1.527	42.64344	0.295	-0.160	13.15	1.172
2.566	461.8	-3.67	3.59	9.94	31.55	468.8	1.788	29.39379	0.253	-0.175	10.32	1.063
2.904	397.9	-3.60	1.90	7.46	31.41	439.2	2.023	21.11864	0.218	-0.172	8.63	0.996
3.265	371.4	-3.60	0.38	5.30	31.34	414.0	2.275	16.54163	0.204	-0.171	7.11	0.939
3.602	386.4	-3.66	-0.46	3.76	31.34	396.5	2.510	14.76255	0.212	-0.174	6.27	0.899
3.889	384.0	-3.73	-1.13	2.80	31.63	389.0	2.710	12.83040	0.210	-0.178	5.60	0.882

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2003
 VCG Position 30.04 % B 6.91 cm @ Base Line
 Static trim TAOo 8.13 deg
 Water Temp. 20.50 deg C Density 998.101 kg/m3 Kin. Viscosity 0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.072	473.5	0.18	6.90	30.62	36.00	750.7	0.747	107.85390	0.195	0.009	15.02	1.702
1.430	1003.0	-0.42	10.86	24.81	29.41	612.5	0.996	157.50100	0.412	-0.020	18.99	1.389
1.790	1047.9	-2.03	9.54	19.96	25.01	508.2	1.247	126.51110	0.431	-0.097	17.66	1.152
2.163	943.9	-4.22	7.35	16.01	22.83	438.8	1.507	90.35898	0.388	-0.201	15.48	0.995
2.549	775.5	-5.08	4.22	13.06	23.10	408.7	1.776	57.41247	0.319	-0.242	12.34	0.927
2.901	634.7	-5.05	0.92	11.39	25.60	418.0	2.021	35.47278	0.261	-0.240	9.05	0.948

** Porpoising

Table B.42 L/B = 2.5 ; $\beta = 24^\circ$; $L_{CG} = 25\%$; Thrust Line: Base Line

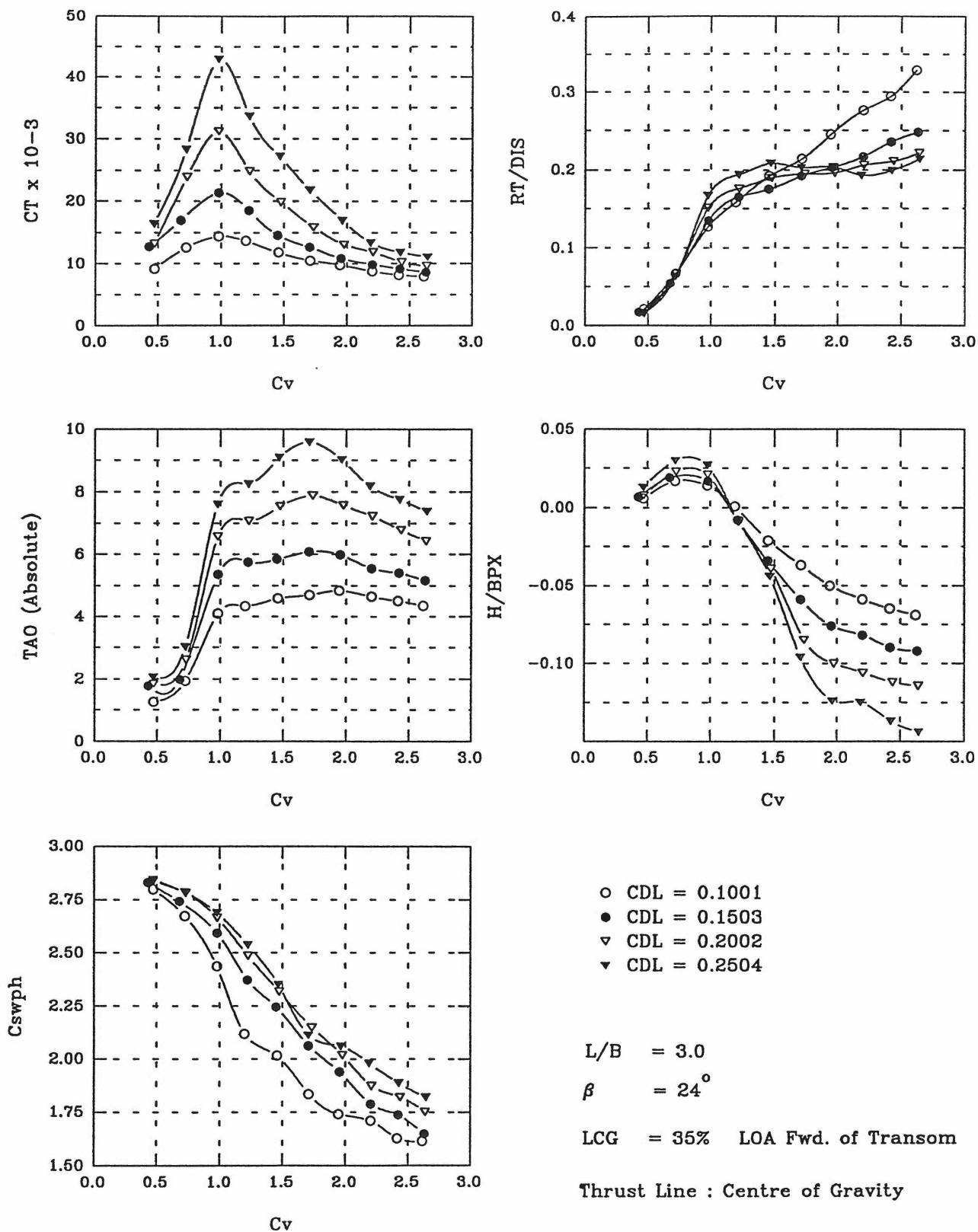


Figure B.43

Model No. T-3024
 L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 24.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 35.00 % LOA 24.15 cm @ Transom

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 29.70 % B 6.83 cm @ Base Line
 Static trim TAOo 1.25 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.675	26.1	0.12	0.01	60.73	58.98	1233.8	0.470	9.13207	0.021	0.006	1.26	2.798
1.037	81.3	0.36	0.68	48.99	57.62	1179.0	0.722	12.60481	0.067	0.017	1.93	2.673
1.404	155.0	0.30	2.84	38.90	56.34	1074.2	0.978	14.39229	0.127	0.014	4.09	2.436
1.717	191.8	0.03	3.08	27.60	54.86	933.9	1.196	13.69101	0.158	0.001	4.33	2.118
2.090	232.9	-0.44	3.34	24.07	54.42	888.9	1.456	11.78906	0.192	-0.021	4.59	2.016
2.453	260.1	-0.79	3.44	17.94	53.48	808.7	1.709	10.50075	0.214	-0.037	4.69	1.834
2.788	297.7	-1.06	3.59	14.73	53.01	767.1	1.942	9.81458	0.245	-0.050	4.84	1.739
3.162	335.8	-1.23	3.39	13.80	52.79	753.9	2.203	8.75688	0.276	-0.059	4.64	1.709
3.468	357.3	-1.37	3.25	11.18	52.18	717.3	2.416	8.14061	0.294	-0.065	4.50	1.626
3.753	400.5	-1.44	3.10	11.04	51.75	710.7	2.615	7.86331	0.329	-0.069	4.35	1.611

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 28.30 % B 6.51 cm @ Base Line
 Static trim TAOo 1.58 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.617	30.9	0.15	0.20	61.76	62.10	1247.8	0.430	12.76844	0.017	0.007	1.78	2.829
0.975	99.2	0.41	0.40	51.75	59.34	1208.6	0.679	16.95311	0.054	0.019	1.98	2.741
1.407	246.1	0.35	3.77	44.94	57.40	1143.7	0.980	21.37042	0.135	0.017	5.35	2.593
1.750	301.0	-0.18	4.16	37.61	55.20	1045.5	1.219	18.47296	0.165	-0.008	5.74	2.371
2.083	319.2	-0.71	4.27	33.23	54.33	990.3	1.451	14.59544	0.175	-0.034	5.85	2.246
2.449	351.3	-1.24	4.50	27.25	53.13	909.9	1.706	12.65398	0.192	-0.059	6.08	2.063
2.800	370.5	-1.60	4.40	23.54	52.03	855.2	1.951	10.85865	0.203	-0.076	5.98	1.939
3.161	396.3	-1.73	3.97	19.32	50.44	789.0	2.203	9.87613	0.217	-0.082	5.55	1.789
3.477	430.1	-1.89	3.82	16.97	50.77	766.2	2.422	9.12433	0.236	-0.090	5.40	1.737
3.775	452.4	-1.93	3.58	13.80	50.37	725.8	2.630	8.59543	0.248	-0.092	5.16	1.646

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 27.65 % B 6.36 cm @ Base Line
 Static trim TAOo 1.78 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.674	38.3	0.18	0.07	64.67	62.60	1250.9	0.470	13.24905	0.016	0.008	1.85	2.837
1.045	163.3	0.48	0.84	55.89	59.34	1226.6	0.728	23.95665	0.067	0.023	2.62	2.781
1.404	368.2	0.44	4.79	49.58	57.18	1175.8	0.978	31.23725	0.151	0.021	6.57	2.666
1.755	427.3	-0.19	5.29	42.78	55.20	1096.3	1.223	24.87754	0.176	-0.009	7.07	2.486
2.117	463.3	-0.81	5.77	37.59	53.17	1022.2	1.475	19.87765	0.190	-0.039	7.55	2.318
2.487	473.6	-1.79	6.11	32.09	51.75	947.6	1.733	15.88498	0.195	-0.085	7.89	2.149
2.834	477.0	-2.11	5.79	28.28	50.41	889.8	1.974	13.11963	0.196	-0.100	7.57	2.018
3.169	501.4	-2.24	5.45	24.15	48.99	826.7	2.208	11.86604	0.206	-0.106	7.23	1.875
3.500	512.5	-2.36	5.00	22.10	49.00	803.6	2.438	10.23232	0.211	-0.112	6.78	1.822
3.786	541.0	-2.39	4.65	19.32	48.99	772.1	2.638	9.60517	0.222	-0.114	6.43	1.751

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2504
 VCG Position 28.48 % B 6.55 cm @ Base Line
 Static trim TAOo 2.01 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.672	47.1	0.27	0.05	66.39	64.11	1253.5	0.468	16.37259	0.015	0.013	2.06	2.843
1.035	190.2	0.62	1.01	57.27	60.03	1228.4	0.721	28.38085	0.063	0.030	3.02	2.785
1.401	508.3	0.56	5.60	51.05	57.53	1186.0	0.976	42.94175	0.167	0.027	7.61	2.689
1.753	588.6	-0.18	6.24	44.85	55.55	1119.0	1.221	33.65789	0.194	-0.008	8.25	2.537
2.105	636.5	-0.92	7.09	39.30	52.86	1036.4	1.467	27.23288	0.209	-0.044	9.10	2.350
2.447	618.4	-2.02	7.58	32.78	49.68	931.3	1.705	21.79093	0.203	-0.096	9.59	2.112
2.815	620.3	-2.60	7.02	30.54	49.84	908.2	1.961	16.93708	0.204	-0.124	9.03	2.060
3.142	587.4	-2.62	6.18	27.60	49.68	873.7	2.189	13.38306	0.193	-0.125	8.19	1.981
3.481	606.3	-2.87	5.75	25.13	48.54	832.5	2.425	11.81175	0.199	-0.137	7.76	1.888
3.793	650.8	-3.02	5.37	22.77	48.30	803.1	2.642	11.07336	0.214	-0.144	7.38	1.821

Table B.43 L/B = 3.0 ; β = 24° ; Lcg = 35% ; Thrust Line: Centre of Gravity

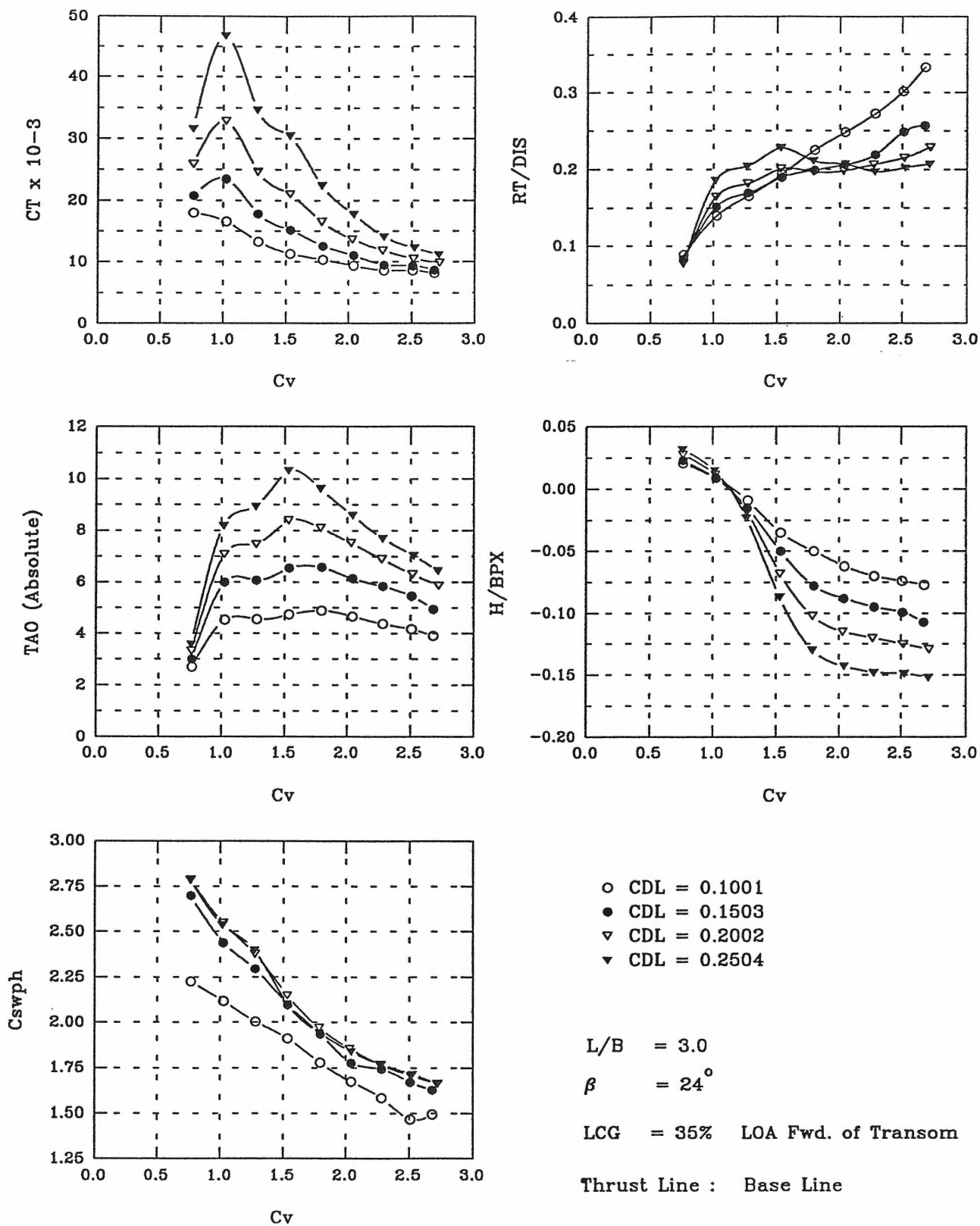


Figure B.44

Model No. T-3024
 L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 24.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 35.00 % LOA 24.15 cm @ Transom

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 29.70 % B 6.83 cm @ Base Line
 Static trim TAOo 1.25 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.099	108.2	0.44	1.46	29.28	57.03	981.9	0.765	17.94784	0.089	0.021	2.71	2.226
1.472	170.2	0.19	3.28	27.17	55.20	933.1	1.025	16.55047	0.140	0.009	4.53	2.116
1.839	202.0	-0.18	3.31	24.73	53.34	883.8	1.281	13.27409	0.166	-0.009	4.56	2.004
2.206	235.5	-0.73	3.49	22.43	52.10	843.3	1.537	11.27599	0.194	-0.035	4.74	1.912
2.579	273.5	-1.06	3.65	18.71	50.61	784.0	1.797	10.30281	0.225	-0.050	4.90	1.778
2.932	301.3	-1.30	3.43	15.53	49.68	737.3	2.043	9.34436	0.248	-0.062	4.68	1.672
3.282	330.4	-1.47	3.13	12.77	48.99	698.1	2.287	8.63493	0.272	-0.070	4.38	1.583
3.599	366.5	-1.55	2.92	7.93	49.34	647.5	2.507	8.59048	0.301	-0.074	4.17	1.468
3.845	404.9	-1.61	2.65	8.63	49.68	659.3	2.679	8.16606	0.333	-0.077	3.90	1.495

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 28.30 % B 6.51 cm @ Base Line
 Static trim TAOo 1.58 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.096	151.4	0.48	1.42	48.30	58.65	1189.9	0.764	20.82152	0.083	0.023	3.00	2.698
1.469	277.6	0.19	4.42	39.68	55.89	1076.1	1.023	23.49650	0.152	0.009	6.00	2.440
1.836	309.6	-0.31	4.48	35.88	53.82	1012.3	1.279	17.83279	0.170	-0.015	6.06	2.295
2.204	346.3	-1.06	4.96	30.36	51.41	924.4	1.536	15.15301	0.190	-0.050	6.54	2.096
2.576	362.3	-1.64	4.99	25.88	49.68	854.2	1.795	12.56536	0.199	-0.078	6.57	1.937
2.929	376.5	-1.85	4.56	21.74	47.61	783.6	2.041	11.00649	0.206	-0.088	6.14	1.777
3.283	399.6	-2.00	4.26	18.97	48.99	768.2	2.287	9.48617	0.219	-0.095	5.84	1.742
3.602	453.6	-2.07	3.88	16.22	48.99	737.0	2.509	9.32435	0.249	-0.099	5.46	1.671
3.842	468.9	-2.25	3.38	15.18	48.30	717.3	2.677	8.70188	0.257	-0.107	4.96	1.627

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 27.65 % B 6.36 cm @ Base Line
 Static trim TAOo 1.78 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.094	194.1	0.59	1.54	55.20	59.34	1229.4	0.762	25.93886	0.080	0.028	3.32	2.788
1.463	402.4	0.25	5.30	44.85	55.89	1123.4	1.019	32.89164	0.165	0.012	7.08	2.547
1.830	441.6	-0.37	5.69	37.95	55.20	1049.0	1.275	24.69360	0.182	-0.018	7.47	2.379
2.197	489.9	-1.42	6.61	33.12	50.72	947.1	1.531	21.06310	0.201	-0.068	8.39	2.148
2.561	479.5	-2.14	6.33	28.64	48.30	869.2	1.784	16.53040	0.197	-0.102	8.11	1.971
2.912	482.4	-2.41	5.74	25.88	46.58	818.7	2.029	13.65822	0.198	-0.115	7.52	1.856
3.264	499.9	-2.53	5.12	22.43	46.58	779.7	2.274	11.82738	0.206	-0.120	6.90	1.768
3.608	522.6	-2.62	4.53	20.01	46.58	752.4	2.514	10.48560	0.215	-0.125	6.31	1.706
3.901	558.0	-2.71	4.09	17.94	46.92	732.9	2.718	9.83085	0.229	-0.129	5.87	1.662

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2504
 VCG Position 28.48 % B 6.55 cm @ Base Line
 Static trim TAOo 2.01 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.090	234.7	0.68	1.57	57.27	60.03	1228.4	0.759	31.61958	0.077	0.032	3.58	2.785
1.457	565.9	0.32	6.18	44.85	55.55	1119.0	1.015	46.80551	0.186	0.015	8.19	2.537
1.822	619.4	-0.49	6.91	40.36	53.82	1058.4	1.270	34.64003	0.204	-0.023	8.92	2.400
2.194	692.4	-1.82	8.31	33.81	48.30	926.9	1.529	30.49041	0.228	-0.087	10.32	2.102
2.561	642.1	-2.72	7.61	30.02	45.89	857.3	1.784	22.44868	0.211	-0.130	9.62	1.944
2.930	628.3	-2.99	6.58	26.91	44.85	810.9	2.041	17.74419	0.207	-0.143	8.59	1.839
3.277	598.9	-3.10	5.69	24.15	44.85	779.7	2.283	14.05950	0.197	-0.148	7.70	1.768
3.620	614.5	-3.13	5.02	22.43	44.51	756.3	2.522	12.18484	0.202	-0.149	7.03	1.715
3.892	630.2	-3.19	4.43	20.70	44.16	732.9	2.712	11.15680	0.207	-0.152	6.44	1.662

Table B.44 L/B = 3.0 ; β = 24° ; L_{CG} = 35% ; Thrust Line: Base Line

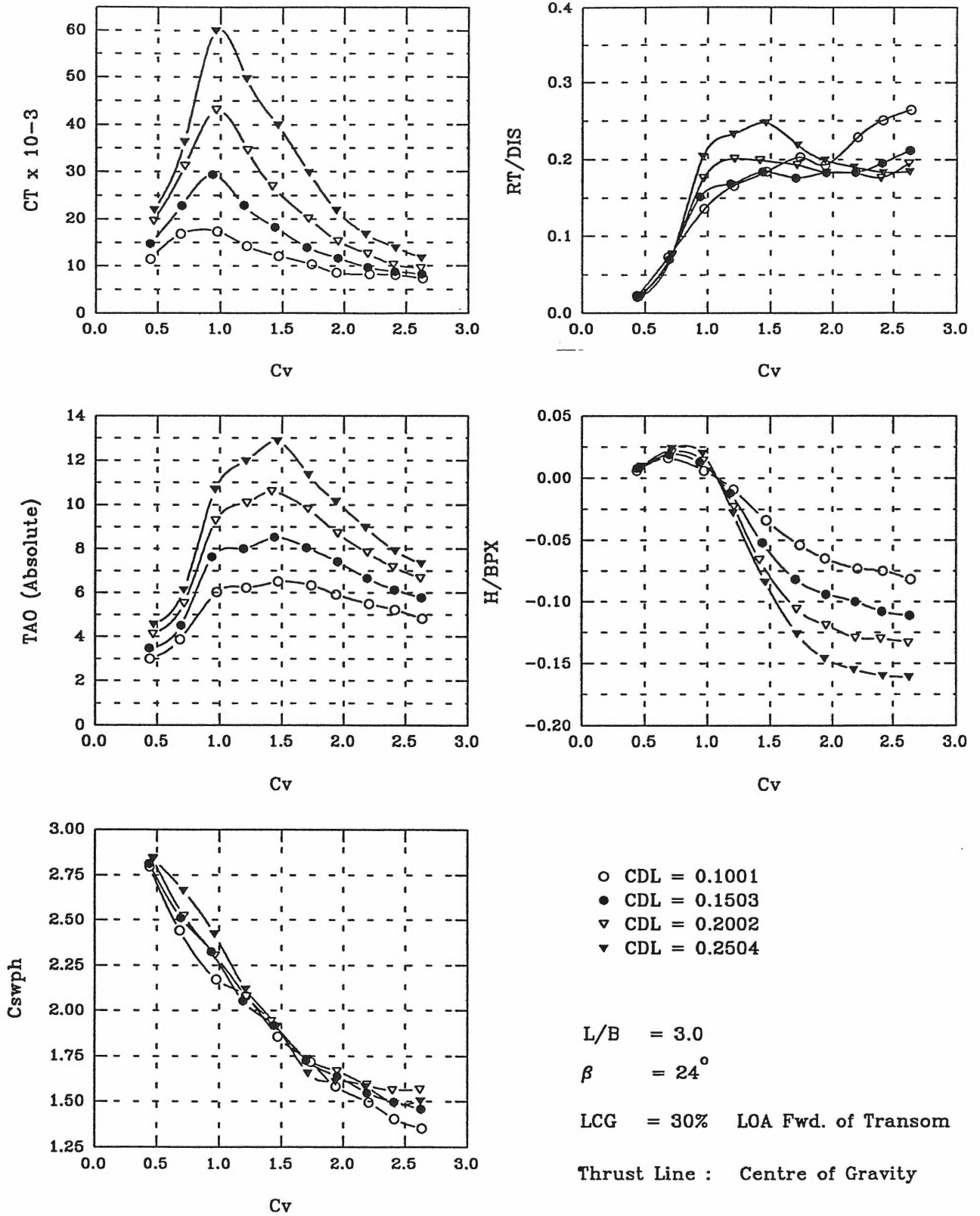


Figure B.45

Model No. T-3024
 L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 24.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 30.00 % LOA 20.70 cm @ Transom

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 27.39 % B 6.30 cm @ Base Line
 Static trim TAOo 2.75 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.630	28.5	0.13	0.24	48.30	62.10	1232.4	0.439	11.44954	0.023	0.006	2.99	2.795
0.982	88.7	0.34	1.13	34.50	59.69	1076.6	0.684	16.79316	0.073	0.016	3.88	2.441
1.398	165.2	0.12	3.27	29.33	55.20	957.0	0.974	17.34463	0.136	0.006	6.02	2.170
1.738	201.6	-0.19	3.48	27.53	53.47	916.9	1.211	14.29873	0.166	-0.009	6.23	2.079
2.108	223.8	-0.71	3.75	21.39	51.02	819.1	1.469	12.07707	0.184	-0.034	6.50	1.857
2.490	246.3	-1.14	3.59	17.89	49.05	756.7	1.735	10.31541	0.203	-0.054	6.34	1.716
2.779	235.1	-1.37	3.17	13.72	47.94	696.8	1.936	8.58813	0.193	-0.065	5.92	1.580
3.168	278.9	-1.53	2.75	11.04	47.27	658.8	2.207	8.29113	0.229	-0.073	5.50	1.494
3.466	305.2	-1.58	2.47	8.20	46.61	619.3	2.415	8.05947	0.251	-0.075	5.22	1.404
3.784	322.1	-1.73	2.08	6.21	46.58	596.5	2.636	7.41354	0.265	-0.082	4.83	1.353

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 26.83 % B 6.17 cm @ Base Line
 Static trim TAOo 3.24 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.625	36.4	0.16	0.23	49.34	62.66	1239.9	0.436	14.74637	0.020	0.008	3.47	2.812
0.995	127.6	0.41	1.27	41.40	56.93	1107.9	0.693	22.88577	0.070	0.019	4.51	2.512
1.343	276.8	0.28	4.39	37.00	53.97	1025.2	0.936	29.43614	0.152	0.013	7.63	2.325
1.702	306.5	-0.25	4.77	30.02	50.03	904.5	1.186	22.97869	0.168	-0.012	8.01	2.051
2.066	335.5	-1.10	5.29	26.95	47.94	846.3	1.439	18.26471	0.184	-0.052	8.53	1.919
2.438	320.7	-1.71	4.82	22.43	44.85	760.2	1.699	13.94670	0.176	-0.082	8.06	1.724
2.792	334.6	-1.97	4.17	19.27	44.66	722.4	1.946	11.67383	0.183	-0.094	7.41	1.638
3.143	333.5	-2.10	3.42	15.53	44.85	682.2	2.190	9.72537	0.183	-0.100	6.66	1.547
3.459	355.2	-2.26	2.90	14.36	44.09	660.5	2.410	8.83587	0.195	-0.108	6.14	1.498
3.772	387.3	-2.33	2.53	12.08	44.85	643.3	2.628	8.31605	0.212	-0.111	5.77	1.459

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 26.52 % B 6.10 cm @ Base Line
 Static trim TAOo 3.89 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.667	55.5	0.15	0.24	47.88	63.92	1252.8	0.465	19.55655	0.023	0.007	4.13	2.841
1.026	186.2	0.45	1.63	41.40	57.27	1112.6	0.715	31.27106	0.077	0.021	5.52	2.523
1.385	427.6	0.30	5.39	37.37	52.86	1016.4	0.965	43.07522	0.176	0.014	9.28	2.305
1.742	489.1	-0.49	6.19	32.78	48.30	915.3	1.214	34.61571	0.201	-0.023	10.08	2.076
2.032	484.7	-1.38	6.72	29.60	46.24	856.7	1.415	26.93756	0.199	-0.066	10.61	1.943
2.451	469.4	-2.22	5.91	24.84	42.78	764.1	1.708	20.09205	0.193	-0.106	9.80	1.733
2.792	444.5	-2.51	4.82	22.50	42.50	734.6	1.946	15.25041	0.183	-0.119	8.71	1.666
3.143	443.7	-2.70	3.94	18.97	43.13	701.7	2.190	12.57594	0.182	-0.129	7.83	1.591
3.442	427.8	-2.73	3.29	18.20	42.78	689.0	2.398	10.29953	0.176	-0.130	7.18	1.562
3.756	474.3	-2.80	2.77	16.22	44.85	690.0	2.617	9.57620	0.195	-0.133	6.66	1.565

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2504
 VCG Position 27.57 % B 6.34 cm @ Base Line
 Static trim TAOo 4.32 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.673	63.2	0.20	0.25	59.06	64.82	1252.5	0.469	21.90165	0.021	0.010	4.57	2.840
1.023	227.4	0.51	1.80	50.03	56.93	1174.6	0.713	36.33271	0.075	0.024	6.12	2.664
1.378	620.0	0.42	6.37	43.26	52.23	1067.9	0.960	60.04266	0.204	0.020	10.69	2.422
1.731	707.5	-0.58	7.65	35.19	47.61	933.9	1.206	49.67536	0.233	-0.028	11.97	2.118
2.099	755.7	-1.76	8.56	31.12	43.68	844.7	1.462	39.92371	0.248	-0.084	12.88	1.915
2.456	666.8	-2.64	7.03	24.84	39.68	729.0	1.711	29.81281	0.219	-0.126	11.35	1.653
2.772	606.1	-3.06	5.83	23.25	39.54	709.5	1.932	21.84235	0.199	-0.146	10.15	1.609
3.123	577.9	-3.25	4.66	22.08	39.68	697.8	2.176	16.69016	0.190	-0.155	8.98	1.582
3.466	555.4	-3.36	3.60	18.84	39.26	656.5	2.415	13.84132	0.183	-0.160	7.92	1.489
3.765	558.9	-3.37	3.01	17.25	41.40	662.7	2.623	11.69099	0.184	-0.161	7.33	1.503

Table B.45 L/B = 3.0 ; β = 24° ; Lcg = 30% ; Thrust Line: Centre of Gravity

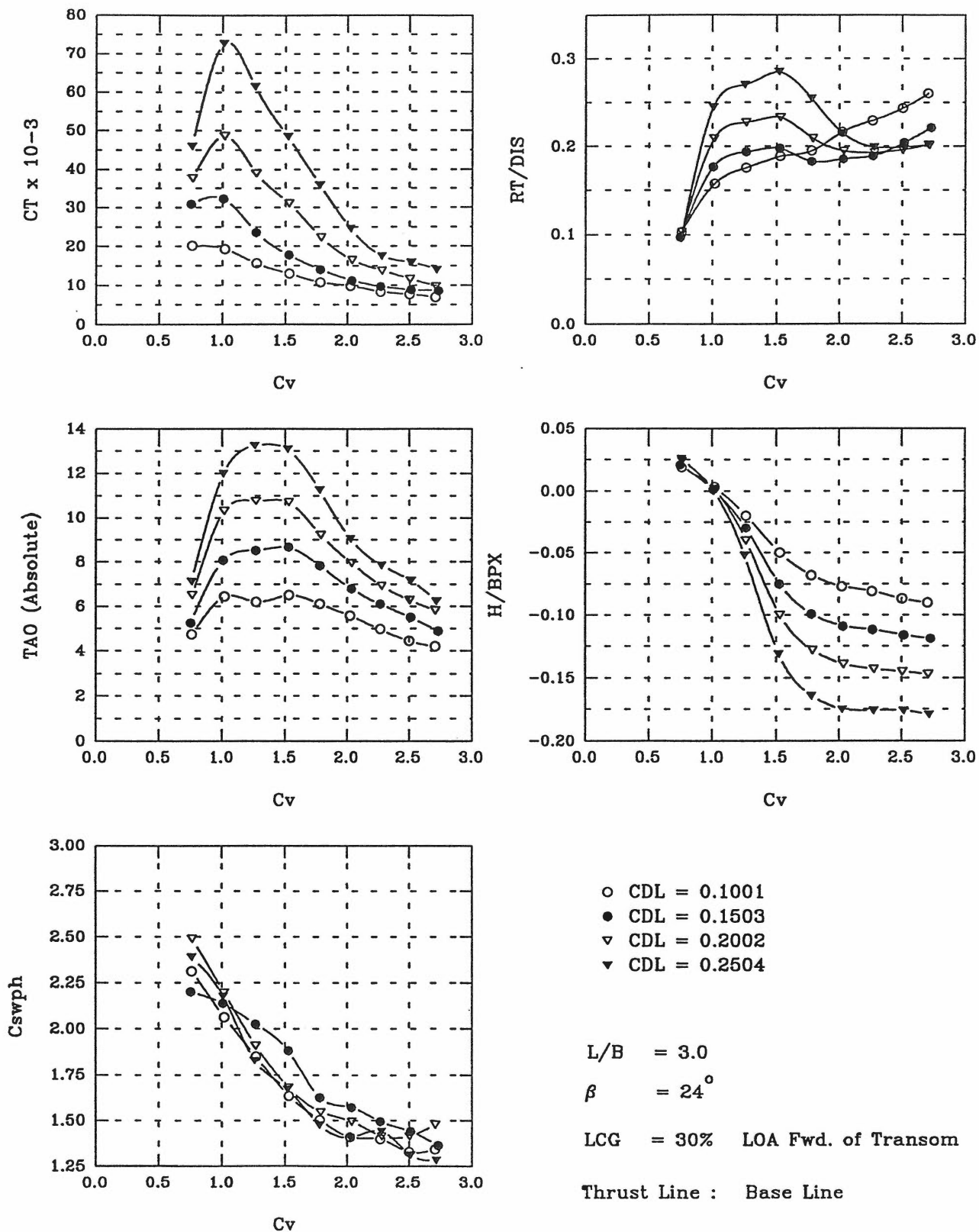


Figure B.46

Model No. T-3024

L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 24.00 deg Breath (Deck) B 23.00 cm
 LCG Position 30.00 % LOA 20.70 cm @ Transom Breath (Chine) BPX 21.00 cm

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 27.39 % B 6.30 cm @ Base Line
 Static trim TAOo 2.75 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.090	124.7	0.39	1.99	34.15	55.87	1019.9	0.759	20.23245	0.103	0.019	4.74	2.313
1.464	191.6	0.06	3.69	28.64	51.75	909.3	1.020	19.31862	0.158	0.003	6.44	2.062
1.820	214.0	-0.42	3.45	22.43	49.68	815.2	1.268	15.57546	0.176	-0.020	6.20	1.849
2.198	230.2	-1.05	3.76	18.97	44.85	721.2	1.531	12.98967	0.189	-0.050	6.51	1.635
2.553	236.6	-1.43	3.36	15.53	43.13	662.7	1.778	10.77071	0.195	-0.068	6.11	1.503
2.902	262.1	-1.62	2.83	12.28	42.66	620.9	2.022	9.85533	0.216	-0.077	5.58	1.408
3.255	278.9	-1.71	2.22	10.35	44.16	616.0	2.268	8.39630	0.229	-0.081	4.97	1.397
3.592	294.9	-1.83	1.69	8.63	43.13	584.8	2.503	7.68236	0.243	-0.087	4.44	1.326
3.883	315.6	-1.89	1.45	6.90	45.43	591.3	2.705	6.95651	0.260	-0.090	4.20	1.341

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 26.83 % B 6.17 cm @ Base Line
 Static trim TAOo 3.24 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.074	176.3	0.43	2.02	34.15	51.75	970.7	0.749	30.93112	0.097	0.021	5.26	2.201
1.446	323.5	0.03	4.84	33.12	50.37	943.1	1.007	32.25171	0.177	0.001	8.08	2.139
1.816	354.1	-0.63	5.28	30.77	48.30	893.5	1.266	23.60678	0.194	-0.030	8.52	2.026
2.191	360.5	-1.58	5.42	27.60	45.89	830.4	1.527	17.77515	0.198	-0.075	8.66	1.883
2.552	333.6	-2.08	4.59	23.11	40.36	717.3	1.778	14.02794	0.183	-0.099	7.83	1.627
2.918	339.9	-2.28	3.56	21.05	40.36	693.9	2.033	11.30298	0.186	-0.109	6.80	1.574
3.258	345.6	-2.35	2.86	18.29	40.02	658.8	2.270	9.71289	0.189	-0.112	6.10	1.494
3.609	372.8	-2.45	2.27	14.84	41.40	635.5	2.514	8.85393	0.204	-0.116	5.51	1.441
3.915	403.1	-2.49	1.65	10.35	42.78	600.4	2.727	8.60939	0.221	-0.119	4.89	1.361

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 26.52 % B 6.10 cm @ Base Line
 Static trim TAOo 3.89 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.093	251.6	0.50	2.62	40.53	56.86	1098.0	0.761	37.71460	0.103	0.024	6.51	2.490
1.456	508.2	0.05	6.43	35.54	50.37	969.1	1.014	48.61756	0.209	0.002	10.32	2.197
1.817	552.3	-0.84	6.88	30.32	44.21	841.8	1.266	39.03550	0.227	-0.040	10.77	1.909
2.197	566.5	-2.10	6.83	25.88	39.68	740.7	1.530	31.15022	0.233	-0.100	10.72	1.680
2.563	508.6	-2.69	5.33	22.43	37.95	682.2	1.786	22.30379	0.209	-0.128	9.22	1.547
2.921	473.4	-2.91	4.06	20.36	37.95	658.8	2.035	16.54920	0.195	-0.139	7.95	1.494
3.274	468.8	-3.00	3.03	17.25	37.95	623.7	2.281	13.78279	0.193	-0.143	6.92	1.414
3.594	476.2	-3.05	2.39	15.53	39.68	623.8	2.504	11.61947	0.196	-0.145	6.28	1.414
3.885	490.1	-3.09	1.93	14.72	42.94	651.6	2.707	9.79289	0.202	-0.147	5.82	1.478

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2505
 VCG Position 27.57 % B 6.34 cm @ Base Line
 Static trim TAOo 4.32 deg
 Water Temp. 20.50 deg C Density 998.101 kg/m3 Kin. Viscosity 0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.087	291.5	0.54	2.81	41.91	52.05	1053.9	0.757	46.04670	0.096	0.026	7.13	2.390
1.447	744.2	0.00	7.68	36.92	48.30	959.5	1.008	72.77737	0.245	0.000	12.00	2.176
1.803	820.5	-1.10	8.94	31.05	40.36	806.6	1.256	61.51017	0.270	-0.052	13.26	1.829
2.182	867.6	-2.75	8.78	26.88	38.45	738.2	1.520	48.52996	0.285	-0.131	13.10	1.674
2.548	772.7	-3.45	6.94	23.11	34.50	651.0	1.775	35.94795	0.254	-0.164	11.26	1.476
2.906	653.4	-3.67	4.72	20.38	34.48	619.9	2.025	24.53310	0.215	-0.175	9.04	1.406
3.271	605.8	-3.70	3.53	19.32	36.92	635.5	2.279	17.51299	0.199	-0.176	7.85	1.441
3.607	605.3	-3.70	2.84	16.67	34.46	577.8	2.513	15.83174	0.199	-0.176	7.16	1.310
3.895	612.7	-3.76	1.93	15.53	34.50	565.3	2.714	14.04388	0.201	-0.179	6.25	1.282

Table B.46 L/B = 3.0 ; β = 24° ; L_{cg} = 30% ; Thrust Line: Base Line

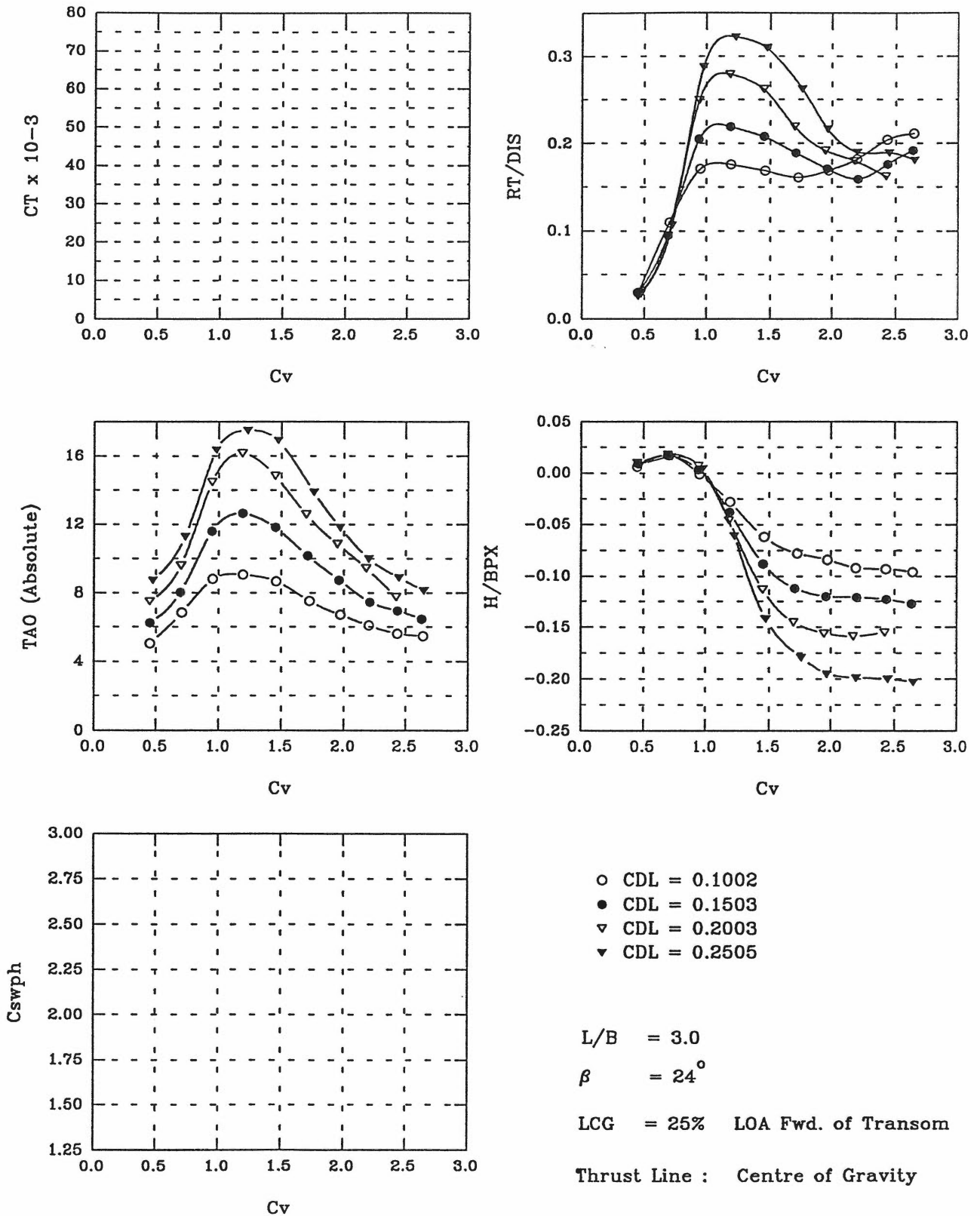


Figure B.47

Model No. T-3024
 L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 24.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 25.00 % LOA 17.25 cm @ Transom

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1002
 VCG Position 33.78 % B 7.77 cm @ Base Line
 Static trim TAOo 4.60 deg
 Water Temp. 21.50 deg C Density 997.885 kg/m3 Kin. Viscosity 0.9682E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.647	36.2	0.12	0.45	0.00	0.00	0.0	0.451	0.00000	0.030	0.006	5.05	0.000
1.009	134.2	0.35	2.24	0.00	0.00	0.0	0.703	0.00000	0.110	0.017	6.84	0.000
1.366	208.3	-0.02	4.22	0.00	0.00	0.0	0.951	0.00000	0.171	-0.001	8.82	0.000
1.717	214.0	-0.58	4.47	0.00	0.00	0.0	1.196	0.00000	0.176	-0.028	9.07	0.000
2.099	205.1	-1.31	4.09	0.00	0.00	0.0	1.462	0.00000	0.169	-0.062	8.69	0.000
2.475	195.7	-1.65	2.92	0.00	0.00	0.0	1.724	0.00000	0.161	-0.078	7.52	0.000
2.829	205.8	-1.76	2.11	0.00	0.00	0.0	1.971	0.00000	0.169	-0.084	6.71	0.000
3.161	221.0	-1.92	1.48	0.00	0.00	0.0	2.202	0.00000	0.182	-0.092	6.08	0.000
3.492	247.8	-1.96	1.02	0.00	0.00	0.0	2.433	0.00000	0.204	-0.093	5.62	0.000
3.790	256.7	-2.02	0.87	0.00	0.00	0.0	2.641	0.00000	0.211	-0.096	5.47	0.000

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 31.04 % B 7.14 cm @ Base Line
 Static trim TAOo 5.68 deg
 Water Temp. 21.50 deg C Density 997.885 kg/m3 Kin. Viscosity 0.9682E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.648	52.4	0.18	0.56	0.00	0.00	0.0	0.452	0.00000	0.029	0.009	6.24	0.000
0.992	173.8	0.35	2.34	0.00	0.00	0.0	0.691	0.00000	0.095	0.017	8.02	0.000
1.352	373.9	0.07	5.93	0.00	0.00	0.0	0.942	0.00000	0.205	0.003	11.61	0.000
1.711	398.8	-0.79	6.96	0.00	0.00	0.0	1.192	0.00000	0.219	-0.038	12.64	0.000
2.089	379.4	-1.86	6.13	0.00	0.00	0.0	1.455	0.00000	0.208	-0.088	11.81	0.000
2.449	344.9	-2.35	4.51	0.00	0.00	0.0	1.707	0.00000	0.189	-0.112	10.19	0.000
2.815	312.6	-2.52	3.09	0.00	0.00	0.0	1.961	0.00000	0.171	-0.120	8.77	0.000
3.171	290.5	-2.54	1.79	0.00	0.00	0.0	2.209	0.00000	0.159	-0.121	7.47	0.000
3.493	321.8	-2.58	1.27	0.00	0.00	0.0	2.434	0.00000	0.176	-0.123	6.95	0.000
3.777	351.0	-2.67	0.78	0.00	0.00	0.0	2.631	0.00000	0.192	-0.127	6.46	0.000

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2003
 VCG Position 29.70 % B 6.83 cm @ Base Line
 Static trim TAOo 6.91 deg
 Water Temp. 21.50 deg C Density 997.885 kg/m3 Kin. Viscosity 0.9682E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.646	63.7	0.20	0.59	0.00	0.00	0.0	0.450	0.00000	0.026	0.010	7.50	0.000
0.999	230.1	0.37	2.71	0.00	0.00	0.0	0.696	0.00000	0.095	0.018	9.62	0.000
1.354	604.5	0.14	7.57	0.00	0.00	0.0	0.943	0.00000	0.249	0.007	14.48	0.000
1.703	679.2	-0.98	9.26	0.00	0.00	0.0	1.187	0.00000	0.279	-0.046	16.17	0.000
2.083	638.3	-2.38	7.95	0.00	0.00	0.0	1.451	0.00000	0.262	-0.113	14.86	0.000
2.432	533.2	-3.04	5.68	0.00	0.00	0.0	1.695	0.00000	0.219	-0.145	12.59	0.000
2.791	467.0	-3.28	3.94	0.00	0.00	0.0	1.945	0.00000	0.192	-0.156	10.85	0.000
3.129	439.0	-3.33	2.56	0.00	0.00	0.0	2.180	0.00000	0.180	-0.159	9.47	0.000
3.472	229.9	-2.01	0.51	0.00	0.00	0.0	2.419	0.00000	0.095	-0.096	7.42	0.000
3.478	394.8	-3.26	0.86	0.00	0.00	0.0	2.423	0.00000	0.162	-0.155	7.77	0.000

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2505
 VCG Position 30.09 % B 6.92 cm @ Base Line
 Static trim TAOo 8.02 deg
 Water Temp. 20.50 deg C Density 998.101 kg/m3 Kin. Viscosity 0.9916E-06 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.679	86.3	0.17	0.72	0.00	0.00	0.0	0.473	0.00000	0.028	0.008	8.74	0.000
1.044	325.3	0.34	3.27	0.00	0.00	0.0	0.728	0.00000	0.107	0.016	11.29	0.000
1.402	877.3	0.09	8.32	0.00	0.00	0.0	0.977	0.00000	0.288	0.004	16.34	0.000
1.766	979.2	-1.29	9.46	0.00	0.00	0.0	1.230	0.00000	0.322	-0.061	17.48	0.000
2.118	942.0	-2.98	8.89	0.00	0.00	0.0	1.475	0.00000	0.310	-0.142	16.91	0.000
2.521	798.1	-3.77	5.87	0.00	0.00	0.0	1.757	0.00000	0.262	-0.179	13.89	0.000
2.821	655.8	-4.10	3.81	0.00	0.00	0.0	1.966	0.00000	0.216	-0.195	11.83	0.000
3.160	577.5	-4.19	1.99	0.00	0.00	0.0	2.201	0.00000	0.190	-0.199	10.01	0.000
3.511	574.6	-4.21	0.89	0.00	0.00	0.0	2.446	0.00000	0.189	-0.200	8.91	0.000
3.798	550.7	-4.27	0.12	0.00	0.00	0.0	2.646	0.00000	0.181	-0.203	8.14	0.000

Table B.47 L/B = 3.0 ; $\beta = 24^\circ$; $L_{cg} = 25\%$; Thrust Line: Centre of Gravity

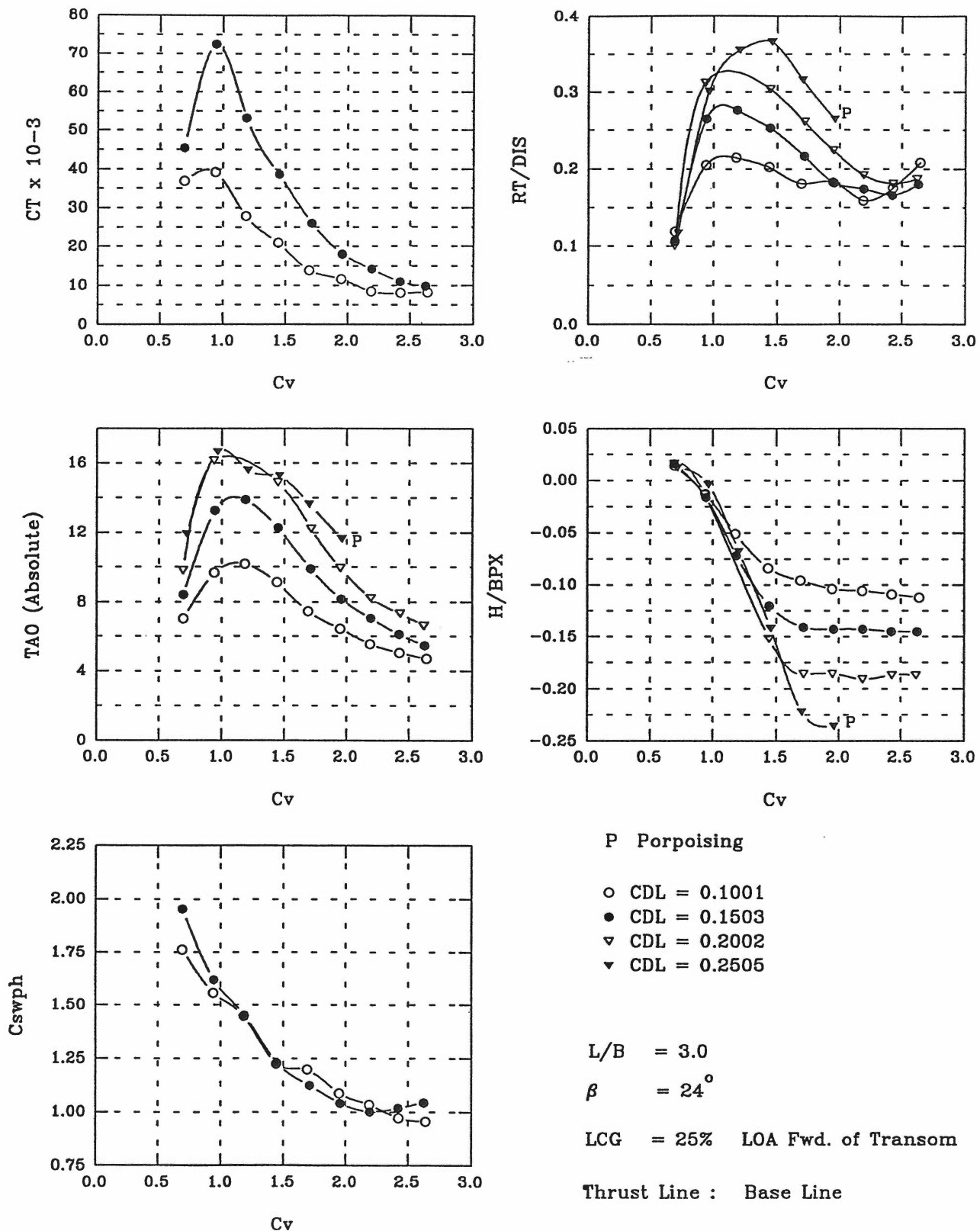


Figure B.48

Model No. T-3024

L/B Ratio 3.0 Length Overall LOA 69.00 cm
 Deadrise 24.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 25.00 % LOA 17.25 cm @ Transom

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 33.78 % B 7.77 cm @ Base Line
 Static trim TAOo 4.60 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.995	144.6	0.29	2.44	26.45	42.36	777.6	0.693	36.90949	0.119	0.014	7.04	1.763
1.347	248.9	-0.28	5.06	22.43	38.30	686.1	0.939	39.27244	0.205	-0.013	9.66	1.556
1.697	260.1	-1.07	5.59	20.09	36.38	638.0	1.182	27.81772	0.214	-0.051	10.19	1.447
2.068	246.0	-1.76	4.52	16.76	31.05	540.3	1.441	20.91673	0.202	-0.084	9.12	1.225
2.426	219.8	-2.03	2.87	13.58	33.19	528.5	1.691	13.88484	0.181	-0.096	7.47	1.198
2.795	222.2	-2.19	1.84	9.66	32.78	479.5	1.947	11.66438	0.183	-0.104	6.44	1.087
3.146	193.9	-2.22	0.95	7.28	33.07	456.0	2.192	8.44230	0.159	-0.106	5.55	1.034
3.485	212.4	-2.30	0.45	3.45	34.50	428.8	2.428	8.01594	0.175	-0.109	5.05	0.972
3.790	252.7	-2.36	0.09	1.75	35.52	421.1	2.640	8.21394	0.208	-0.112	4.69	0.955

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 31.04 % B 7.14 cm @ Base Line
 Static trim TAOo 5.68 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.995	196.9	0.33	2.75	31.12	45.06	860.3	0.693	45.40835	0.108	0.016	8.43	1.951
1.355	483.1	-0.33	7.58	25.88	37.26	713.4	0.944	72.47390	0.265	-0.016	13.26	1.618
1.705	503.3	-1.51	8.21	23.05	33.60	640.1	1.188	53.18699	0.276	-0.072	13.89	1.452
2.079	461.4	-2.51	6.60	18.63	29.33	541.9	1.448	38.72892	0.253	-0.120	12.28	1.229
2.460	395.1	-2.96	4.21	16.08	27.74	495.1	1.714	25.90840	0.216	-0.141	9.89	1.123
2.806	332.2	-3.00	2.49	13.39	27.20	458.6	1.955	18.08549	0.182	-0.143	8.17	1.040
3.150	316.8	-3.00	1.37	11.08	28.04	442.1	2.195	14.19133	0.174	-0.143	7.05	1.002
3.479	302.5	-3.04	0.43	8.63	31.05	448.3	2.424	10.95631	0.166	-0.145	6.11	1.017
3.767	327.8	-3.04	-0.20	7.84	32.91	460.5	2.625	9.85811	0.180	-0.145	5.48	1.044

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 29.70 % B 6.83 cm @ Base Line
 Static trim TAOo 6.91 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.990	246.4	0.33	2.89	0.00	0.00	0.0	0.690	0.00000	0.101	0.016	9.80	0.000
1.340	758.3	-0.26	9.21	0.00	0.00	0.0	0.934	0.00000	0.312	-0.013	16.12	0.000
2.076	739.8	-3.20	7.97	0.00	0.00	0.0	1.446	0.00000	0.304	-0.152	14.88	0.000
2.462	634.2	-3.90	5.32	0.00	0.00	0.0	1.715	0.00000	0.261	-0.186	12.23	0.000
2.796	544.3	-3.90	3.05	0.00	0.00	0.0	1.948	0.00000	0.224	-0.186	9.96	0.000
3.151	466.6	-4.01	1.33	0.00	0.00	0.0	2.195	0.00000	0.192	-0.191	8.24	0.000
3.487	440.5	-3.92	0.43	0.00	0.00	0.0	2.429	0.00000	0.181	-0.187	7.34	0.000
3.753	455.2	-3.92	-0.28	0.00	0.00	0.0	2.615	0.00000	0.187	-0.187	6.63	0.000

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2505
 VCG Position 30.09 % B 6.92 cm @ Base Line
 Static trim TAOo 8.02 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.031	357.1	0.25	3.90	0.00	0.00	0.0	0.718	0.00000	0.117	0.012	11.92	0.000
1.383	914.3	-0.08	8.63	0.00	0.00	0.0	0.964	0.00000	0.301	-0.004	16.65	0.000
1.733	1079.2	-1.43	7.57	0.00	0.00	0.0	1.207	0.00000	0.355	-0.068	15.59	0.000
2.094	1114.7	-2.99	7.23	0.00	0.00	0.0	1.459	0.00000	0.366	-0.142	15.25	0.000
2.439	961.7	-4.67	5.62	0.00	0.00	0.0	1.700	0.00000	0.316	-0.222	13.64	0.000
2.813	804.0	-4.96	3.62	0.00	0.00	0.0	1.960	0.00000	0.264	-0.236	11.64	0.000

** Porpoising

Table B.48 L/B = 3.0 ; $\beta = 24^\circ$; $L_{CG} = 25\%$; Thrust Line: Base Line

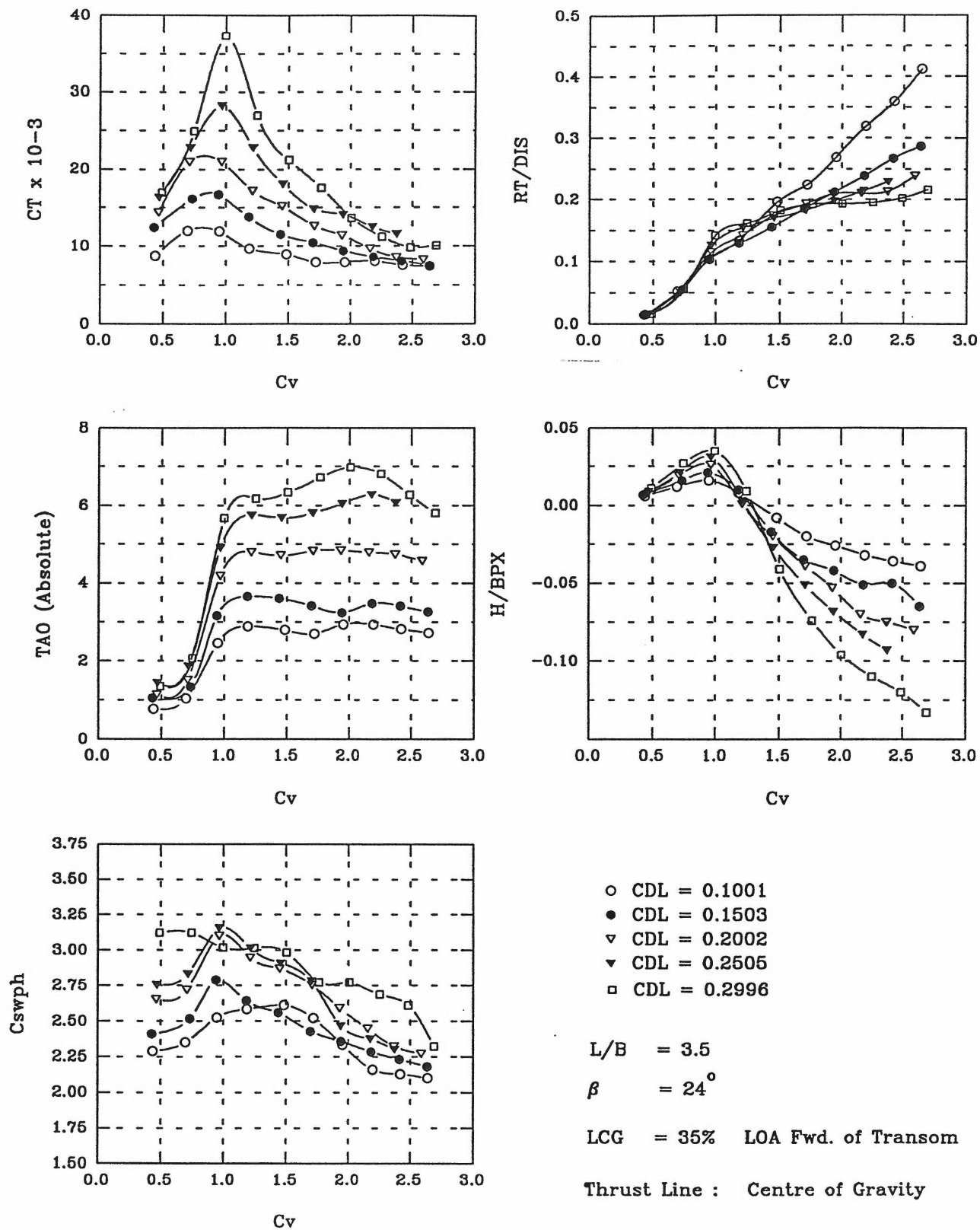


Figure B.49

Model No. T-3524
 L/B Ratio 3.5 Length Overall LOA 80.50 cm
 Deadrise 24.00 deg Breath (Deck) B 23.00 cm
 LCG Position 35.00 % LOA 28.18 cm @ Transom Breath (Chine) BPX 21.00 cm
 Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 29.65 % B 6.82 cm @ Base Line
 Static trim TAOo 0.80 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.626	17.7	0.13	-0.03	20.13	68.16	1008.7	0.436	8.77737	0.015	0.006	0.77	2.287
0.996	62.7	0.26	0.23	24.15	66.82	1036.0	0.694	12.00399	0.052	0.012	1.03	2.349
1.359	124.8	0.34	1.66	32.20	65.85	1114.0	0.947	11.93112	0.103	0.016	2.46	2.526
1.701	163.3	0.16	2.09	36.22	64.40	1139.0	1.185	9.73574	0.134	0.008	2.89	2.583
2.130	237.8	-0.16	1.99	37.84	63.94	1151.5	1.484	8.94125	0.196	-0.008	2.79	2.611
2.467	272.6	-0.43	1.90	34.62	63.60	1111.8	1.719	7.91915	0.224	-0.020	2.70	2.521
2.801	327.3	-0.54	2.14	28.18	62.70	1029.1	1.952	7.96532	0.269	-0.026	2.94	2.334
3.154	388.3	-0.68	2.13	22.14	61.99	952.6	2.197	8.05294	0.319	-0.032	2.93	2.160
3.479	436.3	-0.75	2.02	20.93	61.86	937.5	2.424	7.55605	0.359	-0.036	2.82	2.126
3.789	501.0	-0.81	1.92	20.13	61.58	925.1	2.640	7.41187	0.412	-0.039	2.72	2.098

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1503
 VCG Position 28.30 % B 6.51 cm @ Base Line
 Static trim TAOo 0.97 deg
 Water Temp. 19.50 deg C Density 998.308 kg/m3 Kin. Viscosity 0.1016E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.614	25.3	0.15	0.07	26.16	67.06	1062.0	0.428	12.41989	0.014	0.007	1.04	2.408
1.051	100.7	0.33	0.37	32.20	65.61	1110.7	0.732	16.13845	0.055	0.016	1.34	2.519
1.347	189.4	0.44	2.19	44.28	64.80	1229.4	0.939	16.68354	0.104	0.021	3.16	2.788
1.698	235.6	0.21	2.68	40.25	62.79	1165.1	1.183	13.78160	0.129	0.010	3.65	2.642
2.065	282.0	-0.35	2.64	36.87	62.87	1128.3	1.439	11.51509	0.155	-0.017	3.61	2.559
2.432	337.7	-0.74	2.45	32.20	62.39	1071.0	1.695	10.47553	0.185	-0.035	3.42	2.428
2.785	386.5	-0.87	2.27	30.19	61.66	1039.8	1.940	9.41682	0.212	-0.042	3.24	2.358
3.138	435.8	-1.07	2.51	27.77	61.26	1007.8	2.186	8.62906	0.239	-0.051	3.48	2.285
3.470	487.6	-1.04	2.44	25.92	61.02	984.1	2.417	8.08905	0.267	-0.050	3.41	2.231
3.780	523.9	-1.36	2.29	24.15	60.78	961.2	2.634	7.49642	0.287	-0.065	3.26	2.180

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 27.65 % B 6.36 cm @ Base Line
 Static trim TAOo 0.97 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.664	37.6	0.16	0.16	32.20	70.04	1170.3	0.463	14.34343	0.015	0.008	1.13	2.654
1.017	132.4	0.40	0.54	36.22	68.83	1198.5	0.708	21.00297	0.054	0.019	1.51	2.718
1.385	280.0	0.54	3.22	56.35	66.82	1367.6	0.965	20.98461	0.115	0.026	4.19	3.101
1.740	344.9	0.03	3.82	51.12	65.21	1299.8	1.212	17.22077	0.142	0.001	4.79	2.947
2.080	422.6	-0.43	3.74	48.30	64.40	1265.8	1.449	15.17398	0.174	-0.020	4.71	2.870
2.451	468.9	-0.82	3.86	44.28	63.60	1214.9	1.708	12.62950	0.193	-0.039	4.83	2.755
2.769	508.8	-1.11	3.87	38.64	62.39	1142.4	1.929	11.42113	0.209	-0.053	4.84	2.591
3.101	511.7	-1.47	3.82	34.21	61.18	1079.2	2.160	9.69361	0.210	-0.070	4.79	2.447
3.404	518.9	-1.57	3.77	30.19	60.38	1024.8	2.372	8.58825	0.213	-0.075	4.74	2.324
3.712	582.4	-1.67	3.60	28.18	60.38	1002.0	2.586	8.29033	0.239	-0.080	4.57	2.272

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2505
 VCG Position 28.48 % B 6.55 cm @ Base Line
 Static trim TAOo 1.31 deg
 Water Temp. 20.00 deg C Density 998.206 kg/m3 Kin. Viscosity 0.1004E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.671	45.5	0.18	0.13	36.22	70.04	1214.7	0.467	16.34621	0.015	0.009	1.44	2.755
1.026	152.8	0.45	0.55	40.25	69.23	1248.5	0.715	22.83794	0.050	0.021	1.86	2.831
1.384	383.0	0.66	3.59	60.38	67.62	1392.1	0.965	28.21546	0.126	0.031	4.90	3.157
1.742	469.0	0.05	4.44	54.34	65.21	1329.0	1.214	22.84784	0.154	0.003	5.75	3.014
2.088	514.8	-0.57	4.37	50.31	64.40	1282.7	1.455	18.10177	0.169	-0.027	5.68	2.909
2.446	552.2	-1.06	4.50	46.29	62.79	1226.5	1.704	14.79286	0.182	-0.051	5.81	2.781
2.777	623.8	-1.40	16.36	42.26	61.58	1171.3	1.935	13.57554	0.205	-0.067	17.67	2.656
2.780	601.6	-1.44	4.74	36.22	59.97	1087.5	1.937	14.07244	0.198	-0.068	6.05	2.466
3.129	649.6	-1.75	4.97	33.41	59.17	1046.8	2.180	12.45582	0.214	-0.083	6.28	2.374
3.411	697.8	-1.96	4.77	30.59	59.17	1015.2	2.376	11.61179	0.229	-0.093	6.08	2.302

Table B.49 L/B = 3.5 ; β = 24° ; L_{cg} = 35% ; Thrust Line: Centre of Gravity (1/2)

Displacement DIS 3640.0 gms
 VCG Position 29.52 % B
 Static trim TAOo 1.26 deg
 Water Temp. 19.00 deg C

Disp. Coeff. CDL 0.2996
 6.79 cm @ Base Line

Density 998.407 kg/m3 Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.703	58.6	0.24	0.09	53.13	70.04	1377.5	0.490	16.93609	0.016	0.011	1.35	3.123
1.070	200.2	0.57	0.80	56.35	67.62	1377.2	0.745	24.96702	0.055	0.027	2.06	3.123
1.070	200.2	0.57	0.80	56.35	67.62	1377.2	0.745	24.96702	0.055	0.027	2.06	3.123
1.429	516.3	0.73	4.41	55.55	64.40	1330.8	0.996	37.32730	0.142	0.035	5.67	3.018
1.792	585.1	0.19	4.91	54.34	65.21	1329.0	1.248	26.95408	0.161	0.009	6.17	3.014
2.161	664.0	-0.85	5.08	54.42	64.08	1316.5	1.505	21.22892	0.182	-0.041	6.34	2.985
2.531	699.7	-1.54	5.46	46.29	62.39	1221.9	1.763	17.56678	0.192	-0.074	6.72	2.771
2.879	702.1	-2.01	5.72	46.13	62.55	1222.1	2.006	13.62294	0.193	-0.096	6.98	2.771
3.240	709.4	-2.32	5.55	42.50	62.55	1184.8	2.257	11.20996	0.195	-0.110	6.81	2.687
3.570	736.1	-2.53	5.01	38.88	62.95	1151.7	2.487	9.85430	0.202	-0.120	6.27	2.612
3.859	784.8	-2.80	4.55	32.20	58.36	1024.1	2.689	10.11395	0.216	-0.133	5.81	2.322

Table B.49 L/B = 3.5 ; β = 24° ; L_{CG} = 35% ; Thrust Line: Centre of Gravity (2/2)

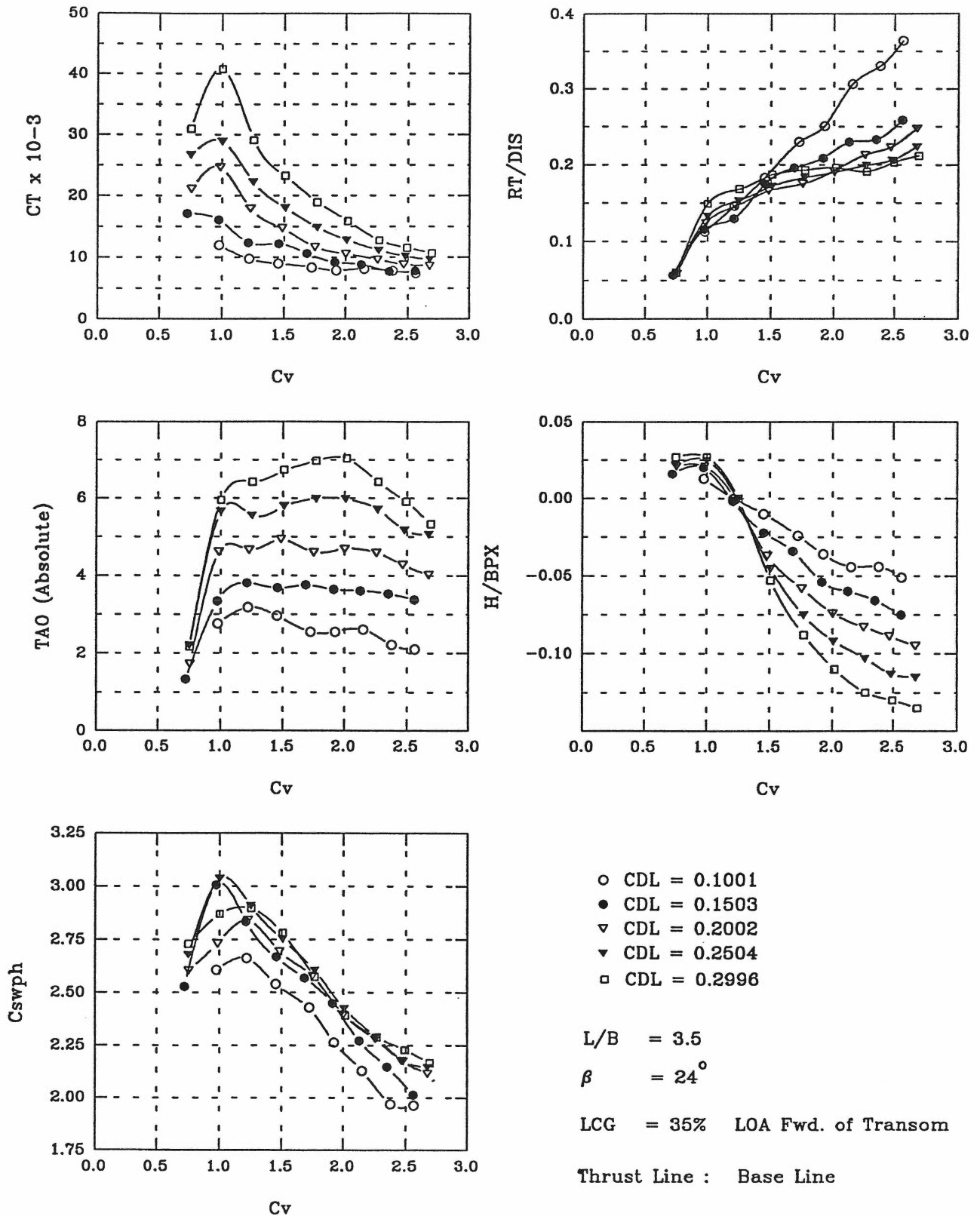


Figure B.50

Model No. T-3524												
L/B Ratio	3.5					Length Overall LOA	80.50 cm					
Deadrise	24.00 deg					Breath (Deck) B	23.00 cm					
						Breath (Chine) BPX	21.00 cm					
LCG Position	35.00 % LOA					28.18 cm @ Transom						
Displacement DIS	1216.0 gms					Disp. Coeff. CDL	0.1001					
VCG Position	29.65 % B					6.82 cm @ Base Line						
Static trim TAOo	0.80 deg											
Water Temp.	20.00 deg C					Density	998.206 kg/m3			Kin. Viscosity	0.1004E-05 m2/s	

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.399	137.3	0.27	1.96	36.22	65.21	1149.8	0.975	11.99190	0.113	0.013	2.76	2.607
1.746	177.9	0.01	2.38	40.25	63.60	1174.4	1.217	9.76524	0.146	0.000	3.18	2.663
2.087	222.5	-0.21	2.16	36.22	62.79	1120.3	1.454	8.95752	0.183	-0.010	2.96	2.540
2.473	279.5	-0.50	1.75	32.20	62.39	1071.0	1.723	8.38565	0.230	-0.024	2.55	2.428
2.761	305.6	-0.75	1.75	26.16	61.99	998.0	1.924	7.89501	0.251	-0.036	2.55	2.263
3.090	371.7	-0.92	1.81	22.14	60.78	938.5	2.153	8.15324	0.306	-0.044	2.61	2.128
3.418	400.7	-0.93	1.41	16.10	60.62	868.4	2.381	7.76394	0.330	-0.044	2.21	1.969
3.681	442.3	-1.08	1.30	16.10	60.38	865.6	2.565	7.41335	0.364	-0.051	2.10	1.963

Displacement DIS	1825.0 gms					Disp. Coeff. CDL	0.1503					
VCG Position	28.30 % B					6.51 cm @ Base Line						
Static trim TAOo	1.97 deg											
Water Temp.	20.00 deg C					Density	998.206 kg/m3			Kin. Viscosity	0.1004E-05 m2/s	

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.033	103.5	0.35	0.36	30.19	67.62	1115.1	0.720	17.09595	0.057	0.016	2.33	2.528
1.395	210.9	0.42	2.37	52.33	66.41	1325.5	0.972	16.07434	0.116	0.020	4.34	3.006
1.740	237.8	-0.05	2.84	46.29	64.80	1250.0	1.212	12.35340	0.130	-0.002	4.81	2.834
2.090	319.3	-0.46	2.71	41.46	62.79	1177.1	1.456	12.20712	0.175	-0.022	4.68	2.669
2.416	357.9	-0.72	2.78	37.84	62.39	1133.5	1.684	10.62884	0.196	-0.034	4.75	2.570
2.746	381.0	-1.13	2.67	33.41	61.99	1079.6	1.913	9.19975	0.209	-0.054	4.64	2.448
3.053	420.6	-1.25	2.64	28.18	60.38	1002.0	2.127	8.85490	0.230	-0.060	4.61	2.272
3.375	425.6	-1.38	2.56	24.15	59.57	947.2	2.351	7.75612	0.233	-0.066	4.53	2.148
3.674	473.4	-1.58	2.41	20.13	58.36	887.6	2.560	7.76584	0.259	-0.075	4.38	2.013

Displacement DIS	2432.0 gms					Disp. Coeff. CDL	0.2002					
VCG Position	27.65 % B					6.36 cm @ Base Line						
Static trim TAOo	0.97 deg											
Water Temp.	19.00 deg C					Density	998.407 kg/m3			Kin. Viscosity	0.1028E-05 m2/s	

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.080	144.0	0.45	0.76	32.20	68.43	1148.6	0.752	21.12130	0.059	0.021	1.73	2.605
1.410	301.0	0.45	3.64	40.25	66.01	1205.3	0.982	24.68370	0.124	0.021	4.61	2.733
1.760	354.0	0.00	3.69	47.09	64.40	1253.1	1.226	17.92198	0.146	0.000	4.66	2.841
2.130	404.0	-0.77	3.97	43.07	62.39	1188.7	1.484	14.72096	0.166	-0.037	4.94	2.695
2.510	425.0	-1.22	3.63	39.04	61.58	1137.6	1.749	11.65331	0.175	-0.058	4.60	2.580
2.870	467.0	-1.55	3.72	33.41	59.97	1056.2	2.000	10.54866	0.192	-0.074	4.69	2.395
3.240	518.0	-1.74	3.62	30.19	58.77	1006.0	2.257	9.63893	0.213	-0.083	4.59	2.281
3.540	542.0	-1.87	3.31	26.57	58.36	960.4	2.466	8.84989	0.223	-0.089	4.28	2.178
3.840	603.0	-2.00	3.05	24.15	58.36	933.1	2.675	8.61231	0.248	-0.095	4.02	2.116

Displacement DIS	3042.0 gms					Disp. Coeff. CDL	0.2504					
VCG Position	28.48 % B					6.55 cm @ Base Line						
Static trim TAOo	1.31 deg											
Water Temp.	19.00 deg C					Density	998.407 kg/m3			Kin. Viscosity	0.1028E-05 m2/s	

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.073	185.0	0.46	0.89	34.21	69.23	1181.7	0.748	26.69648	0.061	0.022	2.20	2.680
1.434	405.5	0.52	4.35	54.34	66.01	1338.8	0.999	28.95325	0.133	0.025	5.66	3.036
1.792	466.5	-0.01	4.34	50.31	64.40	1282.7	1.248	22.26358	0.153	-0.001	5.65	2.909
2.164	522.1	-0.95	4.49	45.48	62.39	1213.5	1.508	18.04793	0.172	-0.045	5.80	2.752
2.535	557.7	-1.57	4.63	41.46	60.38	1149.2	1.766	14.84313	0.183	-0.075	5.94	2.606
2.880	577.8	-1.93	4.67	36.22	58.36	1068.8	2.006	12.81182	0.190	-0.092	5.98	2.424
3.252	604.5	-2.16	4.40	32.20	57.16	1010.0	2.266	11.12202	0.199	-0.103	5.71	2.290
3.559	627.5	-2.37	3.87	28.18	56.75	959.8	2.479	10.14504	0.206	-0.113	5.18	2.176
3.839	680.1	-2.42	3.75	27.37	56.35	946.0	2.675	9.58652	0.224	-0.115	5.06	2.145

Table B.50 L/B = 3.5 ; β = 24° ; L_{CG} = 35% ; Thrust Line: Base Line (1/2)

Displacement DIS 3640.0 gms Disp. Coeff. CDL 0.2996
 VCG Position 29.52 % B 6.79 cm @ Base Line
 Static trim TAOo 1.26 deg
 Water Temp. 19.00 deg C Density 998.407 kg/m3 Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.075	219.4	0.57	0.91	36.22	69.23	1203.9	0.749	30.96654	0.060	0.027	2.17	2.730
1.436	541.9	0.58	4.69	46.29	66.01	1265.8	1.000	40.82234	0.149	0.027	5.95	2.870
1.800	613.3	-0.00	5.17	50.72	63.60	1277.3	1.254	29.11623	0.168	-0.000	6.43	2.896
2.166	679.7	-1.11	5.48	47.09	61.99	1225.8	1.509	23.22467	0.187	-0.053	6.74	2.780
2.538	704.3	-1.85	5.72	41.46	59.17	1135.3	1.768	18.93408	0.193	-0.088	6.98	2.574
2.896	712.6	-2.31	5.78	37.03	56.35	1054.4	2.017	15.84048	0.196	-0.110	7.04	2.391
3.261	695.5	-2.63	5.16	34.21	55.14	1009.3	2.272	12.73355	0.191	-0.125	6.42	2.289
3.579	738.8	-2.73	4.65	32.20	54.74	982.4	2.493	11.53869	0.203	-0.130	5.91	2.228
3.864	771.6	-2.84	4.07	30.19	54.34	955.1	2.692	10.63325	0.212	-0.135	5.33	2.166

Table B.50 L/B = 3.5 ; $\beta = 24^\circ$; $L_{CG} = 35\%$; Thrust Line: Base Line (2/2)

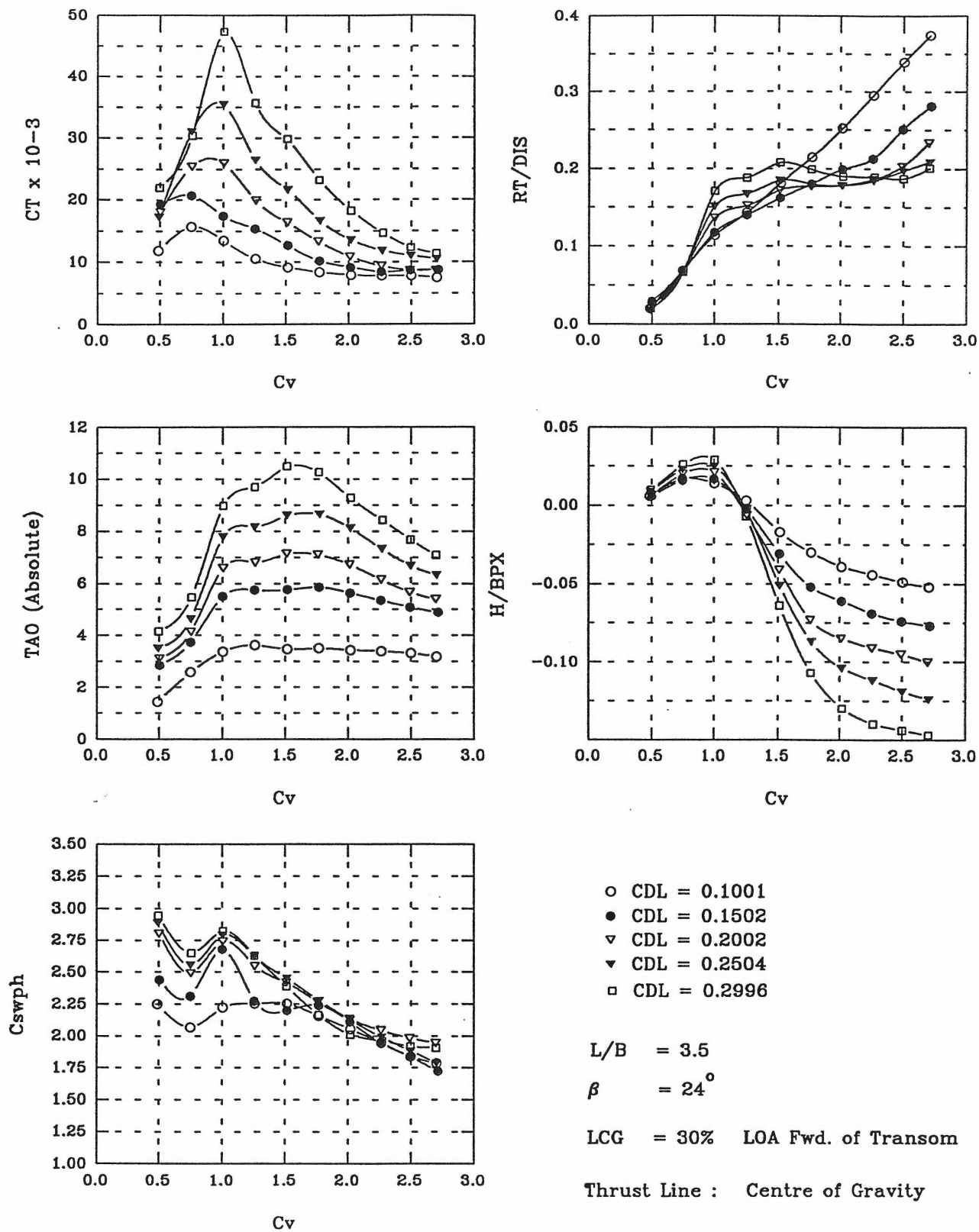


Figure B.51

Model No. T-3524

L/B Ratio 3.5 Length Overall LOA 80.50 cm
 Deadrise 24.00 deg Breath (Deck) B 23.00 cm
 Breath (China) BPX 21.00 cm
 LCG Position 30.00 % LOA 24.15 cm @ Transom

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 27.43 % B 6.31 cm @ Base Line
 Static trim TAOo 1.41 deg
 Water Temp. 19.00 deg C Density 998.407 kg/m3 Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.699	24.4	0.12	0.03	8.05	65.21	832.3	0.487	11.81118	0.020	0.006	1.44	1.887
1.073	83.8	0.36	1.17	16.10	64.40	912.5	0.748	15.65939	0.069	0.017	2.58	2.069
1.439	139.1	0.30	1.98	24.15	62.39	980.0	1.003	13.46617	0.114	0.014	3.39	2.222
1.802	173.6	0.05	2.23	26.16	61.58	993.4	1.256	10.57069	0.143	0.003	3.63	2.253
2.176	219.5	-0.36	2.07	26.97	60.89	994.4	1.516	9.15771	0.181	-0.017	3.48	2.255
2.538	261.5	-0.63	2.10	23.75	60.36	951.8	1.768	8.38054	0.215	-0.030	3.51	2.158
2.896	306.1	-0.82	2.03	20.13	59.97	906.3	2.018	7.91430	0.252	-0.039	3.44	2.055
3.253	359.1	-0.92	1.99	16.10	59.70	857.8	2.266	7.77675	0.295	-0.044	3.40	1.945
3.589	412.8	-1.03	1.92	12.07	59.58	810.8	2.501	7.76582	0.339	-0.049	3.32	1.839
3.884	455.0	-1.09	1.80	10.06	59.57	787.9	2.706	7.52351	0.374	-0.052	3.20	1.787

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1502
 VCG Position 26.83 % B 6.17 cm @ Base Line
 Static trim TAOo 2.69 deg
 Water Temp. 19.00 deg C Density 998.407 kg/m3 Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.720	54.8	0.13	0.17	28.18	66.41	1076.0	0.502	19.30031	0.030	0.006	2.86	2.440
1.074	124.1	0.33	1.05	24.15	65.61	1019.7	0.748	20.75100	0.068	0.016	3.74	2.312
1.435	215.6	0.36	2.81	41.86	62.79	1181.1	1.000	17.41467	0.118	0.017	5.50	2.678
1.801	254.7	-0.05	3.06	26.97	61.58	1002.5	1.255	15.39706	0.140	-0.002	5.75	2.273
2.175	295.8	-0.66	3.07	25.76	60.03	970.7	1.515	12.65641	0.162	-0.031	5.76	2.201
2.534	328.8	-1.10	3.17	28.98	58.36	987.7	1.766	10.18664	0.180	-0.052	5.86	2.240
2.890	362.9	-1.28	2.95	26.16	56.25	931.2	2.014	9.16590	0.199	-0.061	5.64	2.112
3.248	388.9	-1.45	2.66	22.14	53.96	859.9	2.263	8.42443	0.213	-0.069	5.35	1.950
3.580	457.3	-1.56	2.40	20.13	51.59	810.4	2.494	8.65187	0.251	-0.074	5.09	1.838
3.897	512.5	-1.62	2.20	18.11	49.12	759.7	2.715	8.72991	0.281	-0.077	4.89	1.723

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 26.52 % B 6.10 cm @ Base Line
 Static trim TAOo 2.85 deg
 Water Temp. 19.00 deg C Density 998.407 kg/m3 Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.720	58.8	0.15	0.27	42.26	66.82	1235.9	0.501	18.05240	0.024	0.007	3.12	2.802
1.074	164.4	0.41	1.28	30.19	66.41	1098.8	0.749	25.46743	0.068	0.020	4.13	2.492
1.438	331.4	0.43	3.75	45.08	62.39	1209.4	1.002	26.05014	0.136	0.021	6.60	2.742
1.805	370.6	-0.12	3.96	39.04	60.38	1123.6	1.258	19.89882	0.152	-0.006	6.81	2.548
2.169	418.5	-0.87	4.29	36.22	58.27	1067.8	1.511	16.37482	0.172	-0.041	7.14	2.421
2.524	431.2	-1.53	4.25	32.20	56.35	1000.6	1.759	13.29002	0.177	-0.073	7.10	2.269
2.885	433.2	-1.79	3.88	28.98	54.34	941.5	2.010	10.86335	0.178	-0.085	6.73	2.135
3.249	453.0	-1.91	3.31	27.60	52.22	901.9	2.263	9.35158	0.186	-0.091	6.16	2.045
3.574	493.4	-2.00	2.82	27.04	50.39	875.0	2.490	8.67704	0.203	-0.095	5.67	1.984
3.872	568.3	-2.10	2.55	27.21	48.72	858.0	2.697	8.68320	0.234	-0.100	5.40	1.946

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2504
 VCG Position 27.57 % B 6.34 cm @ Base Line
 Static trim TAOo 3.38 deg
 Water Temp. 19.00 deg C Density 998.407 kg/m3 Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.704	55.5	0.18	0.14	45.08	67.62	1274.7	0.491	17.25962	0.018	0.009	3.52	2.890
1.073	205.4	0.49	1.25	32.20	66.82	1126.9	0.748	31.08421	0.068	0.023	4.63	2.555
1.436	458.4	0.54	4.41	47.09	62.39	1230.4	1.001	35.48956	0.151	0.025	7.79	2.790
1.801	506.7	-0.07	4.79	42.26	60.38	1157.4	1.255	26.51965	0.167	-0.003	8.17	2.624
2.173	563.5	-1.07	5.23	38.24	57.56	1081.9	1.514	21.67305	0.185	-0.051	8.61	2.453
2.541	549.0	-1.83	5.27	33.89	55.08	1005.1	1.770	16.62608	0.180	-0.087	8.65	2.279
2.893	541.8	-2.19	4.74	30.39	52.65	938.3	2.016	13.55403	0.178	-0.104	8.12	2.128
3.256	560.9	-2.36	3.95	27.37	50.31	877.8	2.269	11.84170	0.184	-0.112	7.33	1.991
3.583	598.2	-2.50	3.31	25.76	47.77	830.9	2.497	11.01794	0.197	-0.119	6.69	1.884
3.881	634.4	-2.60	2.95	24.15	45.63	788.5	2.704	10.49938	0.209	-0.124	6.33	1.788

Table B.51 L/B = 3.5 ; β = 24° ; LCG = 30% ; Thrust Line: Centre of Gravity (1/2)

Displacement DIS 3640.0 gms Disp. Coeff. CDL 0.2996
 VCG Position 28.83 % B 6.63 cm @ Base Line
 Static trim TAOo 3.87 deg
 Water Temp. 19.00 deg C Density 998.407 kg/m3 Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.710	73.3	0.20	0.28	47.50	67.62	1299.3	0.494	22.01005	0.020	0.010	4.15	2.946
1.080	244.3	0.55	1.59	54.34	67.22	1353.5	0.753	30.38737	0.067	0.026	5.46	3.069
1.441	623.1	0.60	5.11	49.11	61.99	1245.5	1.004	47.32197	0.171	0.029	8.98	2.824
1.801	683.7	-0.14	5.83	44.28	58.77	1159.7	1.255	35.69779	0.188	-0.007	9.70	2.630
2.172	756.6	-1.35	6.61	39.04	54.34	1054.2	1.513	29.89476	0.208	-0.064	10.48	2.390
2.535	725.1	-2.26	6.39	34.62	49.91	954.8	1.766	23.21724	0.199	-0.107	10.26	2.165
2.899	691.0	-2.73	5.40	30.59	47.90	886.9	2.020	18.21353	0.190	-0.130	9.27	2.011
3.266	686.8	-2.94	4.56	28.18	48.30	864.2	2.276	14.64112	0.189	-0.140	8.43	1.960
3.584	682.4	-3.03	3.81	26.16	48.70	846.0	2.497	12.34362	0.187	-0.144	7.68	1.918
3.879	731.9	-3.09	3.22	25.36	49.11	841.4	2.702	11.36307	0.201	-0.147	7.09	1.908

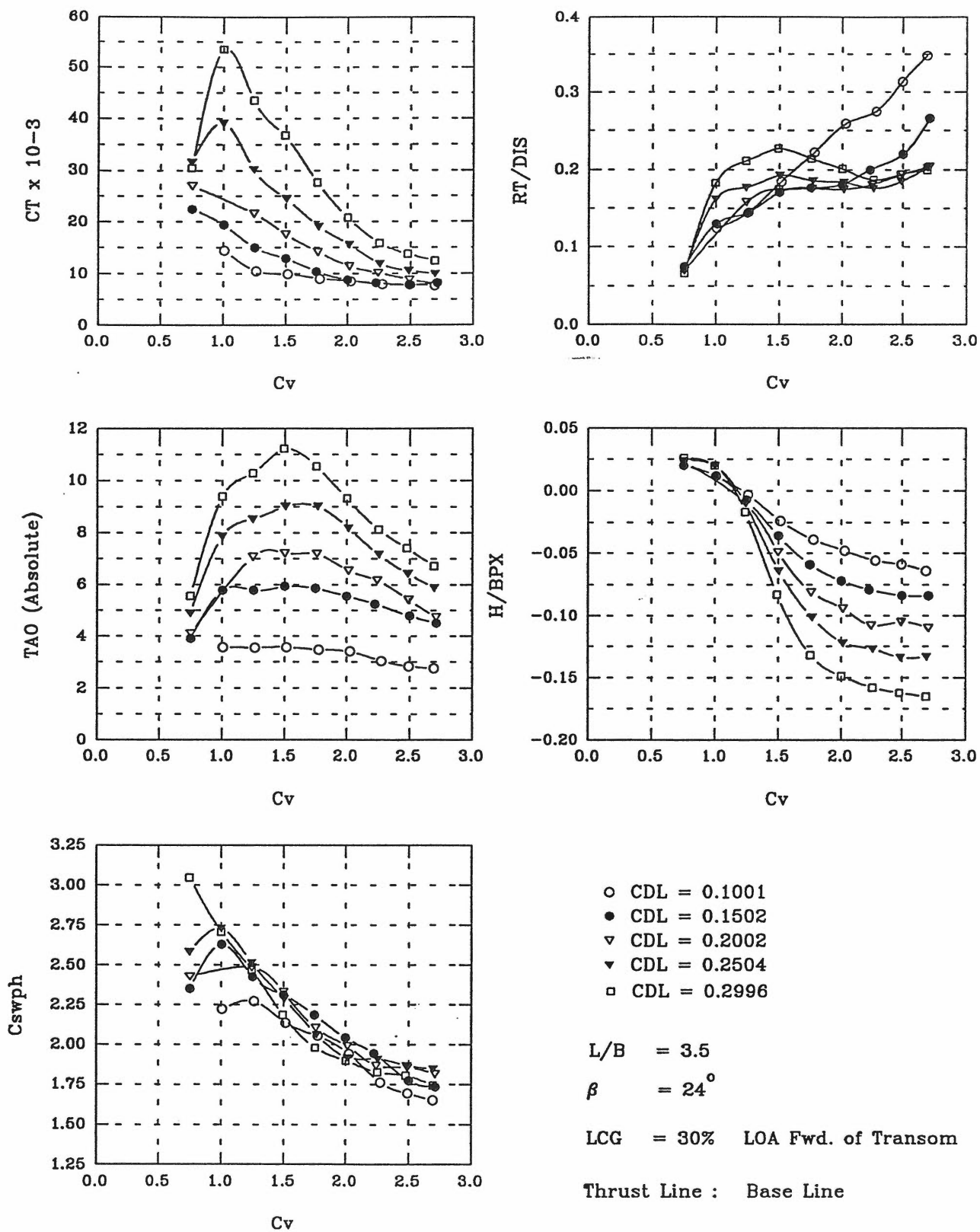


Figure B.52

Model No. T-3524
 L/B Ratio 3.5 Length Overall LOA 80.50 cm
 Deadrise 24.00 deg Breath (Deck) B 23.00 cm
 Breath (Chine) BPX 21.00 cm
 LCG Position 30.00 % LOA 24.15 cm @ Transom

Displacement DIS 1216.0 gms Disp. Coeff. CDL 0.1001
 VCG Position 27.43 % B 6.31 cm @ Base Line
 Static trim TAOo 1.41 deg
 Water Temp. 19.00 deg C Density 998.407 kg/m3 Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.445	150.7	0.24	2.18	24.15	62.39	980.0	1.007	14.46113	0.124	0.012	3.58	2.222
1.809	176.0	-0.07	2.15	28.18	60.38	1002.0	1.261	10.54362	0.145	-0.003	3.56	2.272
2.178	225.3	-0.51	2.17	24.15	59.17	942.5	1.517	9.90600	0.185	-0.024	3.58	2.137
2.549	270.0	-0.82	2.08	21.73	58.36	905.8	1.776	9.01861	0.222	-0.039	3.48	2.054
2.911	314.8	-1.01	2.00	18.11	57.56	855.5	2.028	8.53447	0.259	-0.048	3.41	1.940
3.268	334.8	-1.19	1.63	12.07	56.67	776.9	2.277	7.93048	0.275	-0.056	3.04	1.762
3.579	380.8	-1.23	1.43	10.06	55.97	746.1	2.493	7.83209	0.313	-0.059	2.84	1.692
3.865	422.9	-1.35	1.34	8.05	56.35	727.7	2.693	7.64477	0.348	-0.064	2.75	1.650

Displacement DIS 1825.0 gms Disp. Coeff. CDL 0.1502
 VCG Position 26.83 % B 6.17 cm @ Base Line
 Static trim TAOo 2.69 deg
 Water Temp. 19.00 deg C Density 998.407 kg/m3 Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.076	137.4	0.43	1.23	26.16	65.21	1037.0	0.750	22.48853	0.075	0.020	3.92	2.352
1.440	237.9	0.26	3.10	40.25	62.39	1160.4	1.003	19.42919	0.130	0.012	5.79	2.631
1.793	263.0	-0.15	3.09	34.21	60.38	1069.8	1.249	15.02084	0.144	-0.007	5.78	2.426
2.156	311.6	-0.76	3.24	31.80	58.36	1019.5	1.502	12.92092	0.171	-0.036	5.93	2.312
2.509	322.3	-1.23	3.16	28.18	57.16	964.5	1.748	10.43008	0.177	-0.059	5.85	2.187
2.869	331.0	-1.51	2.87	24.15	55.55	900.6	1.999	8.77392	0.181	-0.072	5.56	2.042
3.197	365.5	-1.65	2.57	22.14	53.73	857.3	2.228	8.19401	0.200	-0.079	5.26	1.944
3.588	401.6	-1.77	2.11	18.11	51.12	782.3	2.500	7.83464	0.220	-0.084	4.80	1.774
3.894	485.9	-1.77	1.83	16.10	51.52	764.1	2.713	8.24152	0.266	-0.084	4.52	1.733

Displacement DIS 2432.0 gms Disp. Coeff. CDL 0.2002
 VCG Position 26.52 % B 6.10 cm @ Base Line
 Static trim TAOo 2.85 deg
 Water Temp. 19.00 deg C Density 998.407 kg/m3 Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.076	170.7	0.48	1.26	28.18	66.01	1070.6	0.750	27.04952	0.070	0.023	4.11	2.428
1.784	384.0	-0.21	4.22	38.24	58.77	1095.9	1.243	21.62796	0.158	-0.010	7.07	2.485
2.151	426.2	-1.02	4.35	34.62	56.35	1027.5	1.499	17.61033	0.175	-0.049	7.20	2.330
2.523	427.2	-1.70	4.34	29.78	52.33	927.8	1.758	14.21521	0.176	-0.081	7.19	2.104
2.889	426.3	-1.96	3.69	26.57	51.12	877.8	2.013	11.43231	0.175	-0.094	6.54	1.991
3.216	445.8	-2.10	3.16	23.75	49.11	823.2	2.240	10.29242	0.183	-0.100	6.01	1.867
3.219	441.3	-2.27	3.32	23.75	49.11	823.2	2.243	10.16768	0.181	-0.108	6.17	1.867
3.575	471.3	-2.20	2.58	24.15	48.30	818.7	2.491	8.85227	0.194	-0.105	5.43	1.856
3.890	495.3	-2.30	1.89	22.14	48.70	800.5	2.710	8.03695	0.204	-0.110	4.74	1.815

Displacement DIS 3042.0 gms Disp. Coeff. CDL 0.2504
 VCG Position 27.57 % B 6.34 cm @ Base Line
 Static trim TAOo 3.38 deg
 Water Temp. 19.00 deg C Density 998.407 kg/m3 Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.071	210.4	0.50	1.52	33.81	66.41	1139.3	0.746	31.63442	0.069	0.024	4.90	2.583
1.431	491.6	0.42	4.49	45.89	61.18	1204.0	0.997	39.16269	0.162	0.020	7.87	2.730
1.779	539.7	-0.21	5.15	40.25	57.96	1109.0	1.240	30.21460	0.177	-0.010	8.53	2.515
2.158	588.4	-1.34	5.64	36.22	53.13	1009.1	1.504	24.59578	0.193	-0.064	9.02	2.288
2.532	567.2	-2.12	5.63	31.80	48.70	909.6	1.764	19.10753	0.186	-0.101	9.01	2.063
2.888	560.5	-2.56	4.81	28.18	46.69	846.0	2.012	15.61279	0.184	-0.122	8.19	1.918
3.238	535.7	-2.68	3.78	26.16	48.30	841.4	2.256	11.93193	0.176	-0.127	7.16	1.908
3.567	562.5	-2.82	3.04	23.75	49.11	823.2	2.485	10.55121	0.185	-0.134	6.42	1.867
3.867	617.5	-2.79	2.50	22.14	49.91	814.1	2.694	9.96924	0.203	-0.133	5.88	1.846

Table B.52 L/B = 3.5 ; β = 24° ; L_{CG} = 30% ; Thrust Line: Base Line (1/2)

Displacement DIS 3640.0 gms
 VCG Position 28.83 % B
 Static trim TAOo 3.87 deg
 Water Temp. 19.00 deg C

Disp. Coeff. CDL 0.2996
 6.63 cm @ Base Line

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Density 998.407 kg/m3 Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.074	240.5	0.55	1.69	54.34	66.41	1343.7	0.748	30.49803	0.066	0.026	5.56	3.047
1.431	666.6	0.43	5.52	45.89	60.38	1194.9	0.997	53.55519	0.183	0.020	9.39	2.709
1.780	766.3	-0.35	6.41	41.06	55.55	1089.6	1.240	43.60048	0.211	-0.017	10.28	2.471
2.141	827.5	-1.74	7.36	36.22	49.11	963.7	1.492	36.81119	0.227	-0.083	11.23	2.185
2.518	780.2	-2.78	6.68	31.80	45.48	873.3	1.754	27.69542	0.214	-0.132	10.55	1.980
2.873	730.5	-3.13	5.44	29.38	44.68	836.9	2.001	20.78874	0.201	-0.149	9.31	1.898
3.235	681.4	-3.31	4.26	26.97	44.28	805.0	2.254	15.89098	0.187	-0.158	8.13	1.825
3.556	705.9	-3.40	3.54	25.76	44.68	795.9	2.477	13.78337	0.194	-0.162	7.41	1.805
3.864	727.3	-3.47	2.84	22.94	45.08	768.7	2.692	12.45625	0.200	-0.165	6.71	1.743

Table B.52 L/B = 3.5 ; $\beta = 24^\circ$; $L_{CG} = 30\%$; Thrust Line: Base Line (2/2)

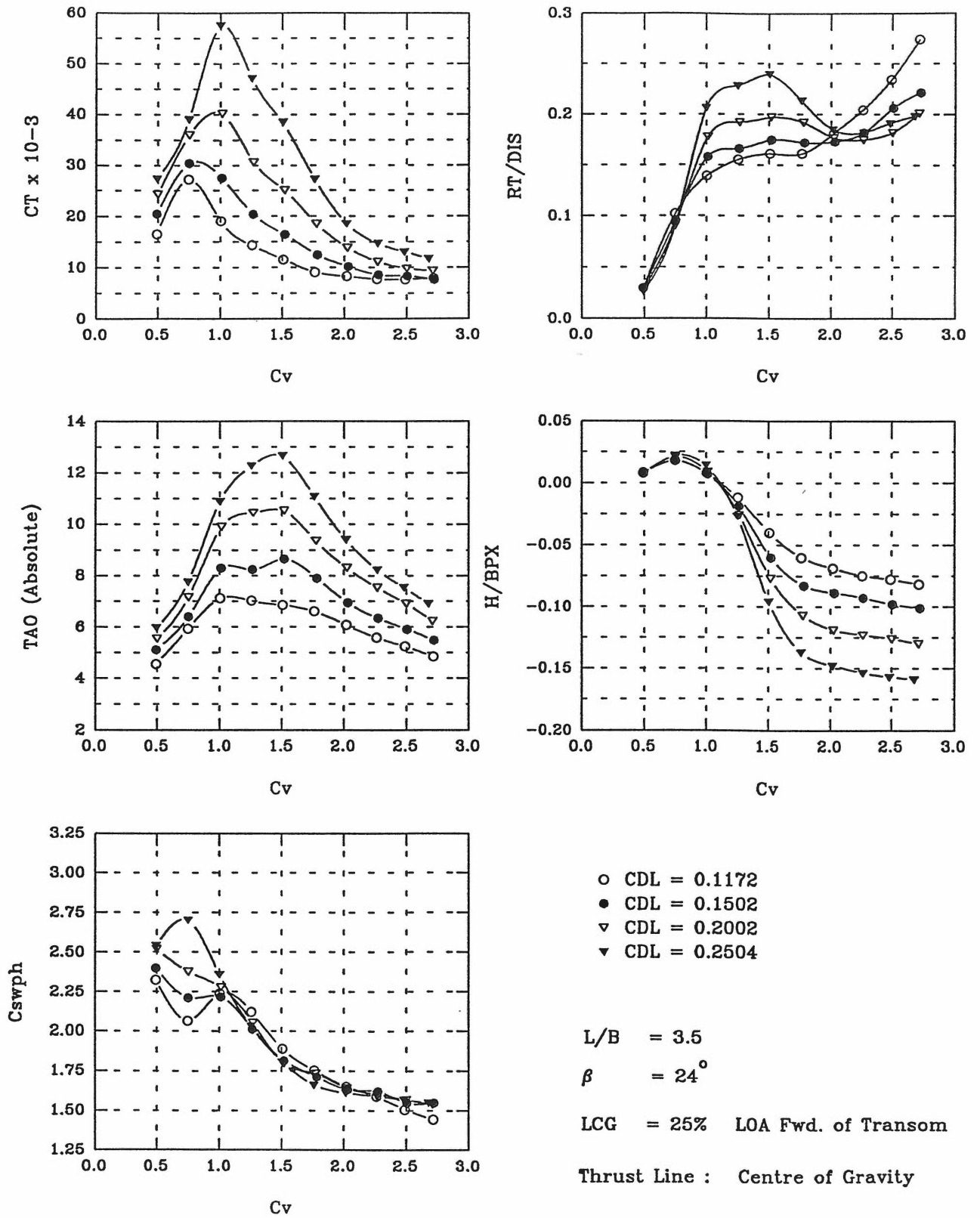


Figure B.53

Model No. T-3524

L/B Ratio

3.5

Deadrise

24.00 deg

Length Overall LOA 80.50 cm

Breath (Deck) B 23.00 cm

Breath (Chine) BPX 21.00 cm

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LCG Position 25.00 % LOA

20.13 cm @ Transom

Displacement DIS 1424.0 gms

Disp. Coeff. CDL 0.1172

VCG Position 29.89 % B

6.88 cm @ Base Line

Static trim TAOo 4.16 deg

Water Temp. 19.00 deg C

Density 998.407 kg/m3

Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.705	42.9	0.16	0.39	28.18	62.39	1025.5	0.491	16.51581	0.030	0.008	4.55	2.325
1.072	144.8	0.38	1.77	20.13	60.38	911.1	0.747	27.18948	0.102	0.018	5.93	2.066
1.438	198.5	0.16	2.96	30.19	57.16	987.3	1.002	19.11033	0.139	0.008	7.12	2.239
1.798	220.5	-0.26	2.86	29.22	53.53	935.1	1.253	14.33551	0.155	-0.012	7.02	2.120
2.166	229.8	-0.85	2.70	23.35	50.31	832.3	1.509	11.56063	0.161	-0.040	6.86	1.887
2.534	229.3	-1.26	2.45	20.13	48.30	773.2	1.765	9.07797	0.161	-0.060	6.61	1.753
2.898	257.5	-1.45	1.92	17.31	47.09	727.7	2.019	8.28058	0.181	-0.069	6.08	1.650
3.247	290.4	-1.57	1.43	13.28	48.70	700.4	2.262	7.73149	0.204	-0.075	5.59	1.588
3.576	332.7	-1.64	1.08	10.06	48.70	664.0	2.491	7.69940	0.234	-0.078	5.24	1.506
3.900	389.8	-1.73	0.69	8.05	48.30	636.7	2.717	7.90872	0.274	-0.082	4.85	1.444

Displacement DIS 1825.0 gms

Disp. Coeff. CDL 0.1502

VCG Position 29.22 % B

6.72 cm @ Base Line

Static trim TAOo 4.49 deg

Water Temp. 19.00 deg C

Density 998.407 kg/m3

Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.707	55.2	0.18	0.63	30.59	62.79	1057.5	0.492	20.53533	0.030	0.009	5.12	2.398
1.078	175.3	0.38	1.91	25.36	60.78	974.9	0.751	30.41719	0.096	0.018	6.40	2.211
1.449	287.8	0.15	3.80	32.20	54.34	977.9	1.010	27.54258	0.158	0.007	8.29	2.217
1.813	302.4	-0.41	3.74	28.18	50.31	886.9	1.263	20.39045	0.166	-0.019	8.23	2.011
2.183	318.7	-1.26	4.17	24.95	45.89	800.5	1.521	16.42321	0.175	-0.060	8.66	1.815
2.562	314.7	-1.74	3.41	21.73	45.08	755.0	1.785	12.48342	0.172	-0.083	7.90	1.712
2.913	316.6	-1.87	2.47	19.32	44.28	718.6	2.030	10.20047	0.173	-0.089	6.96	1.630
3.263	331.9	-1.96	1.85	16.90	46.29	714.1	2.273	8.57809	0.182	-0.093	6.34	1.619
3.597	375.6	-2.05	1.43	14.09	46.29	682.2	2.506	8.36175	0.206	-0.098	5.92	1.547
3.906	404.2	-2.13	1.00	12.07	48.30	682.2	2.721	7.63201	0.221	-0.101	5.49	1.547

Displacement DIS 2432.0 gms

Disp. Coeff. CDL 0.2002

VCG Position 29.35 % B

6.75 cm @ Base Line

Static trim TAOo 5.03 deg

Water Temp. 19.00 deg C

Density 998.407 kg/m3

Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.715	70.2	0.17	0.52	35.02	63.19	1111.5	0.498	24.25626	0.029	0.008	5.55	2.520
1.078	222.8	0.45	2.13	31.40	61.18	1047.8	0.751	35.98697	0.092	0.021	7.16	2.376
1.452	433.2	0.18	4.87	36.22	52.73	1004.5	1.012	40.17177	0.178	0.009	9.90	2.278
1.816	465.7	-0.56	5.41	31.80	48.30	905.1	1.265	30.66359	0.192	-0.026	10.44	2.052
2.181	480.0	-1.63	5.49	27.37	42.67	791.4	1.519	25.06054	0.197	-0.077	10.52	1.795
2.548	468.1	-2.25	4.33	25.36	42.26	764.1	1.775	18.53755	0.192	-0.107	9.36	1.733
2.901	430.3	-2.49	3.28	22.14	41.86	723.2	2.022	13.89000	0.177	-0.119	8.31	1.640
3.254	424.6	-2.58	2.50	19.88	42.67	706.8	2.267	11.14799	0.175	-0.123	7.53	1.603
3.588	443.2	-2.64	1.88	17.63	43.47	690.4	2.500	9.79692	0.182	-0.126	6.91	1.566
3.890	489.3	-2.72	1.20	15.29	44.68	677.7	2.710	9.37851	0.201	-0.130	6.23	1.537

Displacement DIS 3042.0 gms

Disp. Coeff. CDL 0.2504

VCG Position 29.39 % B

6.76 cm @ Base Line

Static trim TAOo 5.43 deg

Water Temp. 19.00 deg C

Density 998.407 kg/m3

Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
0.709	78.3	0.18	0.53	35.42	63.60	1120.7	0.494	27.33915	0.026	0.008	5.96	2.541
1.074	273.2	0.45	2.32	44.28	61.58	1191.9	0.748	39.03788	0.090	0.022	7.75	2.703
1.433	625.5	0.29	5.46	38.64	53.53	1040.6	0.998	57.55421	0.206	0.014	10.89	2.360
1.796	692.2	-0.56	6.84	33.41	45.89	895.9	1.251	47.09596	0.228	-0.027	12.27	2.031
2.159	727.3	-2.01	7.22	29.38	41.06	795.9	1.504	38.53076	0.239	-0.096	12.65	1.805
2.528	648.9	-2.89	5.65	26.16	38.64	732.3	1.761	27.24461	0.213	-0.137	11.08	1.660
2.892	561.4	-3.11	3.98	23.35	39.45	709.5	2.015	18.58807	0.185	-0.148	9.41	1.609
3.254	555.0	-3.23	2.80	21.73	40.25	700.4	2.267	14.70575	0.182	-0.154	8.23	1.588
3.559	580.9	-3.30	2.10	19.72	41.46	691.3	2.480	13.03498	0.191	-0.157	7.53	1.568
3.841	601.2	-3.34	1.49	18.11	42.26	682.2	2.676	11.73549	0.198	-0.159	6.92	1.547

Table B.53 L/B = 3.5 ; $\beta = 24^\circ$; $L_{cg} = 25\%$; Thrust Line: Centre of Gravity

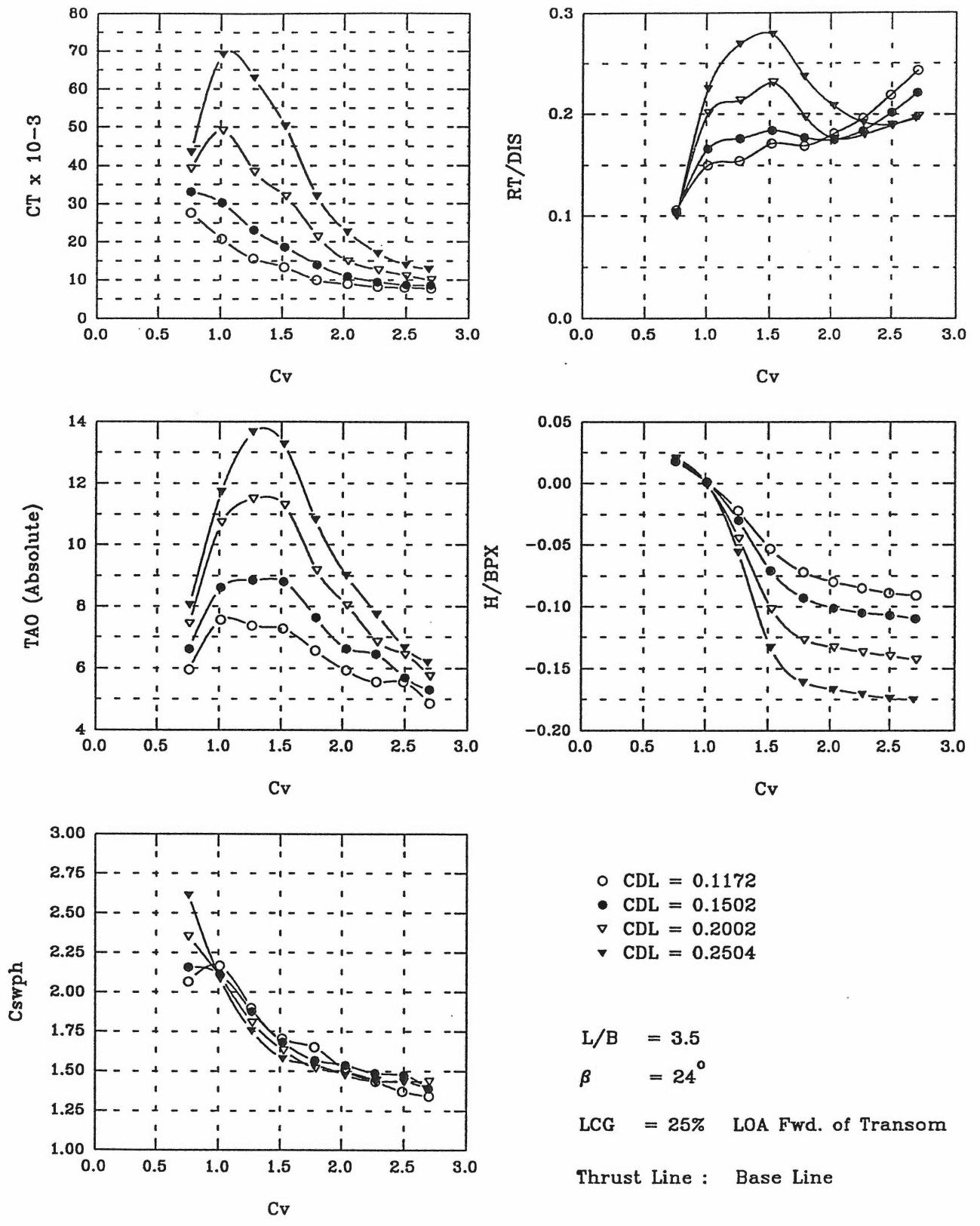


Figure B.54

Model No. T-3524		Length Overall	LOA	80.50 cm
L/B Ratio	3.5	Breath (Deck)	B	23.00 cm
Deadrise	24.00 deg	Breath (Chine)	BPX	21.00 cm
LCG Position	25.00 % LOA		20.13 cm @ Transom	
Displacement DIS	1424.0 gms	Disp. Coeff.	CDL	0.1172
VCG Position	29.89 % B		6.88 cm @ Base Line	
Static trim TAOo	4.16 deg			
Water Temp.	19.00 deg C	Density	998.407 kg/m3	Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.086	151.1	0.38	1.79	20.13	60.38	911.1	0.757	27.61724	0.106	0.018	5.95	2.066
1.452	213.0	0.03	3.39	30.19	54.34	955.1	1.012	20.77753	0.150	0.001	7.55	2.166
1.817	219.0	-0.45	3.21	24.95	49.11	836.9	1.266	15.57690	0.154	-0.022	7.37	1.898
2.178	242.8	-1.11	3.12	21.73	44.68	750.5	1.518	13.40007	0.171	-0.053	7.28	1.702
2.554	240.5	-1.50	2.40	20.13	44.28	727.7	1.779	9.95878	0.169	-0.072	6.56	1.650
2.912	257.2	-1.67	1.77	14.89	43.87	664.0	2.029	8.97619	0.181	-0.080	5.93	1.506
3.261	278.7	-1.78	1.39	11.27	44.68	632.2	2.272	8.14619	0.196	-0.085	5.55	1.434
3.573	312.5	-1.88	1.39	8.05	45.48	604.9	2.490	7.95100	0.219	-0.089	5.55	1.372
3.876	346.0	-1.91	0.71	6.04	46.29	591.3	2.701	7.65358	0.243	-0.091	4.87	1.341

Displacement DIS	1825.0 gms	Disp. Coeff.	CDL	0.1502
VCG Position	29.22 % B		6.72 cm @ Base Line	
Static trim TAOo	4.49 deg			
Water Temp.	19.00 deg C	Density	998.407 kg/m3	Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.087	189.6	0.39	2.12	24.15	59.97	951.9	0.757	33.13325	0.104	0.019	6.61	2.158
1.453	302.4	0.02	4.12	30.99	51.52	932.4	1.012	30.19005	0.166	0.001	8.61	2.114
1.822	321.7	-0.62	4.36	27.37	45.89	827.8	1.269	23.01712	0.176	-0.030	8.85	1.877
2.184	335.9	-1.49	4.32	23.75	41.86	741.4	1.522	18.65801	0.184	-0.071	8.81	1.681
2.558	323.8	-1.96	3.15	18.92	42.26	691.3	1.782	14.06073	0.177	-0.093	7.64	1.568
2.915	320.2	-2.11	2.14	17.71	42.26	677.7	2.031	10.92725	0.175	-0.101	6.63	1.537
3.258	335.8	-2.21	1.96	14.89	43.07	654.9	2.270	9.48987	0.184	-0.105	6.45	1.485
3.588	369.4	-2.26	1.21	12.88	44.68	650.4	2.500	8.67027	0.202	-0.107	5.70	1.475
3.871	402.7	-2.31	0.81	10.06	44.28	614.0	2.697	8.59930	0.221	-0.110	5.30	1.392

Displacement DIS	2432.0 gms	Disp. Coeff.	CDL	0.2002
VCG Position	29.35 % B		6.75 cm @ Base Line	
Static trim TAOo	5.03 deg			
Water Temp.	19.00 deg C	Density	998.407 kg/m3	Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.090	246.2	0.42	2.41	32.20	59.57	1038.1	0.759	39.22689	0.101	0.020	7.44	2.354
1.458	489.7	-0.03	5.69	33.41	48.30	923.1	1.016	49.02157	0.201	-0.001	10.72	2.093
1.827	518.7	-0.95	6.46	28.18	42.26	795.9	1.273	38.38393	0.213	-0.045	11.49	1.805
2.194	562.2	-2.14	6.26	25.36	38.24	718.6	1.529	31.93805	0.231	-0.102	11.29	1.630
2.567	478.5	-2.67	4.13	21.73	37.43	668.6	1.789	21.33986	0.197	-0.127	9.16	1.516
2.920	427.5	-2.79	3.01	20.13	38.24	659.5	2.035	14.93532	0.176	-0.133	8.04	1.495
3.275	438.3	-2.88	1.82	17.71	38.64	636.8	2.282	12.61427	0.180	-0.137	6.85	1.444
3.594	458.8	-2.95	1.40	15.70	40.25	632.2	2.504	11.03895	0.189	-0.140	6.43	1.434
3.881	482.5	-2.99	0.71	13.68	42.26	632.2	2.704	9.95589	0.198	-0.143	5.74	1.434

Displacement DIS	3042.0 gms	Disp. Coeff.	CDL	0.2504
VCG Position	29.39 % B		6.76 cm @ Base Line	
Static trim TAOo	5.43 deg			
Water Temp.	19.00 deg C	Density	998.407 kg/m3	Kin. Viscosity 0.1028E-05 m2/s

Vel m/s	RT gms	H cm	TAO Rel.	LC cm	LK cm	WSPH cm2	CV	CT x10-3	RT/DIS	H/BPX	TAO Abs.	Cwsph
1.091	303.4	0.43	2.62	42.26	59.97	1152.8	0.760	43.48169	0.100	0.021	8.05	2.614
1.455	684.8	0.00	6.30	34.21	47.09	918.5	1.014	69.18816	0.225	0.000	11.73	2.083
1.818	819.0	-1.17	8.24	28.98	39.45	773.2	1.267	62.95673	0.269	-0.056	13.67	1.753
2.185	849.7	-2.78	7.85	26.16	35.42	695.9	1.522	50.27636	0.279	-0.133	13.28	1.578
2.554	720.0	-3.38	5.39	24.15	35.82	677.7	1.779	32.00575	0.237	-0.161	10.82	1.537
2.911	632.4	-3.51	3.58	21.73	35.82	650.4	2.028	22.53957	0.208	-0.167	9.01	1.475
3.264	583.6	-3.59	2.32	19.72	36.22	632.2	2.274	17.03099	0.192	-0.171	7.75	1.434
3.587	576.7	-3.66	1.23	17.71	38.24	632.2	2.499	13.93155	0.190	-0.174	6.66	1.434
3.849	597.0	-3.67	0.76	15.70	38.64	614.0	2.682	12.89828	0.196	-0.175	6.19	1.392

Table B.54 L/B = 3.5 ; β = 24° ; L_{ca} = 25% ; Thrust Line: Base Line