

# Summary Report

4-Jan-2006

Project: **Nordhavn 68 Twin Screw**Vessel: **N6805****Prepared by**Mickey Smith  
Boat Systems, Inc.**For**

Pacific Asian Enterprises

## Vessel

|                 |                           |                |                     |
|-----------------|---------------------------|----------------|---------------------|
| Vessel type     | <b>Displacement</b>       | Length [On WL] | <b>63.5 ft</b>      |
| Service         | <b>Passenger/Pleasure</b> | Weight         | <b>76.30 LT</b>     |
| Water type      | <b>Salt</b>               | Speed/power by | <b>Average hull</b> |
| Propellers      | <b>2</b>                  | Avg. hull mult | <b>1.000</b>        |
| Max. diameter   | <b>39.0 in</b>            |                |                     |
| Immersion       | <b>36.0 in</b>            |                |                     |
| Propeller style | <b>Open</b>               |                |                     |

## Engine

|              |                             |                       |              |
|--------------|-----------------------------|-----------------------|--------------|
| Model        | <b>Lugger L1276A2 340HP</b> | Design power [316 hp] | <b>100 %</b> |
| Manufacturer | <b>Alaskan Diesel</b>       | Design RPM [1800]     | <b>100 %</b> |
| Fuel type    | <b>Diesel</b>               | Parasitic loss        | <b>24 hp</b> |
| Rated power  | <b>340 hp</b>               | Gear efficiency       | <b>0.970</b> |
| Rated RPM    | <b>1800</b>                 |                       |              |
| Fuel rate    | <b>16.3 gal/hr</b>          |                       |              |

## Sizing

|                    |                            |                         |                 |
|--------------------|----------------------------|-------------------------|-----------------|
| Model              | <b>Generic motor yacht</b> | Calc. sizing for        | <b>Top</b>      |
| Manufacturer       |                            | Design speed            | <b>12.9 kts</b> |
| Series             | <b>GawnAEW</b>             | Blade area ratio [Keep] | <b>0.700</b>    |
| Blades             | <b>4</b>                   | Diameter [Keep]         | <b>38.5 in</b>  |
| Cup type           | <b>None</b>                | Pitch [Size]            | <b>37.0 in</b>  |
| Cup drop           | <b>0.000 in</b>            | Gear ratio [Keep]       | <b>3.000</b>    |
| Propeller material | <b>Mn Bronze</b>           | Calc'd max. speed       | <b>12.9 kts</b> |

## Analysis

| Speed<br>[kts]      | Engine<br>RPM | Power<br>[hp] | Thrust<br>[lbf] | Cavitation | Strength  |
|---------------------|---------------|---------------|-----------------|------------|-----------|
| <b>12.9 (Top)</b>   | <b>1800</b>   | <b>316</b>    | <b>5020</b>     | <b>OK</b>  | <b>OK</b> |
| <b>9.0 (Cruise)</b> | <b>1237</b>   | <b>101</b>    | <b>2314</b>     | <b>OK</b>  | <b>OK</b> |

## Utility

|                |                     |                          |                 |
|----------------|---------------------|--------------------------|-----------------|
| Shaft material | <b>Aquamet 22HS</b> | Time at top [12.9 kts]   | <b>5 %</b>      |
| Shear strength | <b>70000.0 psi</b>  | Time at cruise [9.0 kts] | <b>95 %</b>     |
| Safety factor  | <b>5</b>            | Hours/year               | <b>500</b>      |
| Req'd min diam | <b>2.5 in</b>       | Total annual fuel        | <b>5364 gal</b> |
| Cylinders      | <b>6</b>            |                          |                 |
| Phase check    | <b>OK</b>           |                          |                 |

**Notes**

This evaluation has been carefully prepared to meet professional standards. Since it is not possible to determine the accuracy of the provided data, the preparer of this report assumes no liability nor makes any performance guarantees of any kind.