

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

**Data Acquisition & Processing Report
Spring Addendum**

Type of Survey: Hydrographic and Special

Project Number: OPR-370-TJ-08, OPR-307-TJ-08,
OPR-B310-TJ-08, S-E925-TJ-08
S-E926-TJ-08

Time Frame: July-October 2008

LOCALITY

State: New York, Virginia,
Connecticut,
& Massachusetts

General Locality: Mid Atlantic & North East

2008

Chief of Party

CDR P. Tod Schattgen, NOAA

LIBRARY & ARCHIVES

DATE

A. Equipment

In July 2008, an Odom OTSBB200/24-4/20 vertical beam transducer was added to Launch 3101. The transducer element was mounted on the same mechanical swing arm as the Reson 8125 multibeam transducer. The low frequency, 24 KHz pulse, forms a 20° rectangular beam footprint at the -9dB point. The high frequency, 200 KHz pulse, forms a 4° circular beam footprint at the -6dB point. Due to the smaller footprint and resulting higher resolution, the high frequency setting is used exclusively. The inclusion of this transducer allows for simultaneous acquisition of both side scan and bathymetric imagery.

B. Quality Control

In August 2008, CARIS Bathy Database 2.1 software was added to the *Thomas Jefferson's* processing workflow as a data analysis tool. Using this software surfaces generated using the Combined Uncertainly Bathymetric Estimator algorithm can be assessed according to IHO order 1 specifications. To do this, the maximum allowable error of each node is calculated using IHO Order 1 formula: $\sqrt{(0.25^2 + (0.013 * \text{node depth}))}$. Next, the observed 'uncertainty' of each node is subtracted from the maximum allowable error. If the resulting value is positive, the node has met IHO order 1 specifications. Negative values indicate failure to meet specifications, and prompts further examination.

CARIS Bathy Database is also used to create contours and generalized product surfaces, which can be evaluated for artifacts and depth flyers. Such errors can then be removed before creation of a finalized base surface.

C. Correction to Echo Sounding

During the field season, changes were made to all three acquisition platforms' Hydrographic Vessel Files, (HVF). Below is a matrix that contains the updated parameters (listed across the top row) and the associated project the changes apply to (in the left column). Appendix 1, of this report contains all HVF files used during the period covered by this addendum.

	Static Water levels	Patch test/ System Certs	Azimuth
OPR-D304-TJ-08	TJ S222 Reson7125 port.hvf		
OPR-B307-TJ-08	TJ S222 Reson7125 port.hvf	TJ 3101 Reson8125.hvf	
OPR-B370-TJ-08	TJ S222 Reson7125 port.hvf	TJ 3101 Reson8125.hvf	TJ 3102 Reson8101.hvf
S-925-TJ-08		TJ_3102_Klein5000_SSS100.hvf TJ_3102_Klein5000_SSS200.hvf	
S-926-TJ-08		TJ 3101 Klein5000 SSS100.hvf	
		TJ_3101_Klein5000_SSS200.hvf TJ_3102_Klein5000_SSS100.hvf TJ_3102_Klein5000_SSS200.hvf NOAA_AUV600.hvf	

On 5 October 2008, while working on project OPR-B370-TJ-08, launch 3102 struck a rock damaging the SSS and disturbing the Reson 8125 multi-beam transducer. A patch test of the Reson 8125 was performed later that day and showed a slight change in alignment. Refer to launch 3102's HVF entry 2008-279 for results. SSS was replaced and the system was recertified on Oct 15, see hvf entry 2008-293 for survey project S-926-TJ-08 and OPR-B370-TJ-08.

D. APPROVAL

As Lead Hydrographer, I have ensured that standard field surveying and processing procedures were followed in producing this examination in accordance with the Office of Coast Survey Hydrographic Surveys Division's *Field Procedures Manual*, and NOS *Hydrographic Surveys Specifications and Deliverables*. Field operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy.

This DAPR and all accompanying records and data are approved. All records are forwarded for final review and processing to N/CS33, Atlantic Hydrographic Branch.

Approved and Forwarded:

LT Jasper D Schaer, NOAA
Field Operations Officer

CDR P. Tod Schattgen, NOAA
Commanding Officer

Appendix 1

3101

TJ_3101_Klein5000_SSS100.hvf

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      <Model value="POS MV V4"/>
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      <Model value="POS MV V4"/>
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      <ApplyFlag value="No"/>
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```
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</WaterlineHeight>
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Azimuth="0.000000"/>
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        </TransducerEntries>
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</DepthSensor>
</HIPSVesselConfig>
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3101

TJ_3101_ODOM_VB.hvf

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    <ProfileCoordinates>
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      <Entry Y="-4.170000" Z="-0.800000"/>
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      <Entry Y="-4.170000" Z="0.210000"/>
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  </VesselShape>
  <DepthSensor>
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      <Latency value="0.000000"/>
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          <Manufacturer value="ODOM"/>
          <SerialNumber value="31381"/>
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0.010000"/>
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Azimuth="0.000000"/>
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      </TransducerEntries>
    </TimeStamp>
  </DepthSensor>
  <GyroSensor>
    <TimeStamp value="2007-001 00:00:00">
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      <Latency value="0.000000"/>
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      <SerialNumber value="2207"/>
      <ApplyFlag value="No"/>
    </TimeStamp>
  </GyroSensor>
  <HeaveSensor>
    <TimeStamp value="2007-001 00:00:00">
      <Comment value="Start of Field Season '07"/>
      <Latency value="0.000000"/>
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```

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    <Model value="POS/MV V4"/>
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    <SerialNumber value="2207"/>
    <Ellipse value="NA83"/>
    <Offsets X="0.000000" Y="0.000000" Z="0.000000"/>
  </TimeStamp>
</NavSensor>
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  <TimeStamp value="2007-001 00:00:00">
    <Comment value="Start of Field Season '07"/>
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    <Manufacturer value="Applanix"/>
    <Model value="POS/MV V4"/>
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  </TimeStamp>
</SVPSensor>
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    <Latency value="0.000000"/>
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```

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    <Transducer Roll="0.550000" Roll12="0.000000"/>
    <Navigation Latency="0.000000"/>
  </Offsets>
  <StandardDeviation>
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Heave="0.050000" Roll="0.050000" Pitch="0.050000"
PitchStablized="0.000000"/>
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Roll="0.000000"/>
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</WaterlineHeight>
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3101

TJ_3101_RESON8125.hvf

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      <Entry X="-2.530000" Y="2.830000"/>
      <Entry X="-2.530000" Y="-4.170000"/>
    </PlanCoordinates>
    <ProfileCoordinates>
      <Entry Y="-4.170000" Z="0.210000"/>
      <Entry Y="-4.170000" Z="-0.800000"/>
      <Entry Y="2.830000" Z="-0.800000"/>
      <Entry Y="5.830000" Z="0.210000"/>
      <Entry Y="-4.170000" Z="0.210000"/>
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  </VesselShape>
  <DepthSensor>
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      </TransducerEntries>
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          <SerialNumber value="31381"/>
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Latency="0.000000"/>
        </Transducer>
      </TransducerEntries>
    </TimeStamp>
  </DepthSensor>
</HIPSVesselConfig>
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    <MountAngle Pitch="0.200000" Roll="-0.170000" Azimuth="-
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  </Transducer>
</TransducerEntries>
  <Comment value="Project h11916 Patch Test"/>
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  </TransducerEntries>
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    <Model value="POS/MV V4"/>
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    <Latency value="0.000000"/>
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    <Model value="POS/MV V4"/>
    <SerialNumber value="2207"/>
    <Ellipse value="NA83"/>
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    <Model value="POS/MV V4"/>
    <SerialNumber value="2207"/>
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  </TimeStamp>
</RollSensor>
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</SVPSensor>
<TPEConfiguration>
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    <Latency value="0.000000"/>
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    <StandardDeviation>
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Heave="0.050000" Roll="0.050000" Pitch="0.050000"
PitchStablized="0.000000"/>
    </StandardDeviation>
  </TimeStamp>
</TPEConfiguration>

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        <Timing Transducer="0.001000" Navigation="0.001000"
Gyro="0.001000" Heave="0.001000" Pitch="0.001000" Roll="0.001000"/>
        <SoundVelocity Measured="0.500000" Surface="0.500000"/>
        <Tide Measured="0.010000" Zoning="0.200000"/>
        <Offsets X="0.002000" Y="0.002000" Z="0.002000"/>
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Roll="0.102000"/>
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DeltaDraft="0.012000">
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    </StandardDeviation>
</TimeStamp>
</TPEConfiguration>
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        <ApplyFlag value="No"/>
        <StdDev Waterline="0.000000"/>
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        <ApplyFlag value="Yes"/>
        <StdDev Waterline="0.000000"/>
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        <ApplyFlag value="Yes"/>
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            <Entry Speed="1.994384" Draft="0.000000"/>
            <Entry Speed="6.591577" Draft="0.038000"/>
            <Entry Speed="7.549892" Draft="0.082000"/>
            <Entry Speed="8.364363" Draft="0.052000"/>
            <Entry Speed="9.027214" Draft="0.036000"/>
            <Entry Speed="15.550756" Draft="0.036000"/>
        </DraftEntries>
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            <Entry Speed="6.025918" Draft="0.060000"/>
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```

```
</TimeStamp>  
</DraftSensor>  
</HIPSVesselConfig>
```


3102

TJ_3102_Klein5000_SSS100.hvf

```
<?xml version="1.0"?>
<HIPSVesselConfig Version="2.0">
  <VesselShape>
    <PlanCoordinates/>
    <ProfileCoordinates/>
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  <GyroSensor>
    <TimeStamp value="2007-001 00:00:00">
      <Comment value="Start of Field Season '07"/>
      <Latency value="0.000000"/>
      <Manufacturer value="Applanix"/>
      <Model value="POS MV"/>
      <SerialNumber value=""/>
      <ApplyFlag value="No"/>
    </TimeStamp>
  </GyroSensor>
  <NavSensor>
    <TimeStamp value="2007-001 00:00:00">
      <Comment value="Added tow point as active sensor per FOO.
Corrected by ENS Winner"/>
      <Latency value="0.000000"/>
      <Manufacturer value="APPLANIX"/>
      <Model value="POS MV"/>
      <SerialNumber value=""/>
      <Ellipse value="NA83"/>
      <Offsets X="0.000000" Y="0.000000" Z="0.000000"/>
    </TimeStamp>
    <TimeStamp value="2008-293 00:00:00">
      <Comment value="Oct 19 cert"/>
      <Latency value="1.000000"/>
      <Manufacturer value="APPLANIX"/>
      <Model value="POS MV"/>
      <SerialNumber value=""/>
      <Ellipse value="NA83"/>
      <Offsets X="0.000000" Y="0.000000" Z="0.000000"/>
    </TimeStamp>
  </NavSensor>
  <WaterlineHeight>
    <TimeStamp value="2007-001 00:00:00">
      <Comment value="Start of Field Season '07"/>
      <Latency value="0.000000"/>
      <WaterLine value="0.000000"/>
      <ApplyFlag value="No"/>
      <StdDev Waterline="0.000000"/>
    </TimeStamp>
    <TimeStamp value="2008-086 00:00:00">
      <Comment value="HSRR"/>
    </TimeStamp>
  </WaterlineHeight>
</HIPSVesselConfig>
```

```
<Latency value="0.000000"/>
<WaterLine value="-0.223000"/>
<ApplyFlag value="Yes"/>
<StdDev Waterline="0.000000"/>
</TimeStamp>
</WaterlineHeight>
<TowedSensor>
  <TimeStamp value="2007-001 00:00:00">
    <Comment value="Start of Field Season '07"/>
    <Latency value="0.000000"/>
    <Manufacturer value="KLEIN"/>
    <Model value="5000"/>
    <SerialNumber value=""/>
    <Offsets X="0.485000" Y="0.008000" Z="0.601981"
Layback="0.000000"/>
  </TimeStamp>
</TowedSensor>
</HIPSVesselConfig>
```

3102

TJ_3102_Klein5000_SSS200.hvf

```
<?xml version="1.0"?>
<HIPSVesselConfig Version="2.0">
  <VesselShape>
    <PlanCoordinates/>
    <ProfileCoordinates/>
    <RP Length="0.000000" Width="0.000000" Height="0.000000"/>
  </VesselShape>
  <GyroSensor>
    <TimeStamp value="2007-001 00:00:00">
      <Comment value="Start of Field Season '07"/>
      <Latency value="0.000000"/>
      <Manufacturer value="Applanix"/>
      <Model value="POS MV"/>
      <SerialNumber value=""/>
      <ApplyFlag value="No"/>
    </TimeStamp>
  </GyroSensor>
  <NavSensor>
    <TimeStamp value="2007-001 00:00:00">
      <Comment value="Start of Field Season '07"/>
      <Latency value="0.000000"/>
      <Manufacturer value="APPLANIX"/>
      <Model value="POS MV"/>
      <SerialNumber value=""/>
      <Ellipse value="NA83"/>
      <Offsets X="0.000000" Y="0.000000" Z="0.000000"/>
    </TimeStamp>
    <TimeStamp value="2008-293 00:00:00">
      <Comment value="Oct 19 cert"/>
      <Latency value="0.800000"/>
      <Manufacturer value="APPLANIX"/>
      <Model value="POS mV"/>
      <SerialNumber value=""/>
      <Ellipse value="NA83"/>
      <Offsets X="0.000000" Y="0.000000" Z="0.000000"/>
    </TimeStamp>
  </NavSensor>
  <WaterlineHeight>
    <TimeStamp value="2007-001 00:00:00">
      <Comment value="Start of Field Season '07"/>
      <Latency value="0.000000"/>
      <WaterLine value="0.000000"/>
      <ApplyFlag value="No"/>
      <StdDev Waterline="0.000000"/>
    </TimeStamp>
    <TimeStamp value="2008-086 00:00:00">
      <Comment value="HSRR"/>
      <Latency value="0.000000"/>
      <WaterLine value="-0.223000"/>
    </TimeStamp>
  </WaterlineHeight>
</HIPSVesselConfig>
```

```
<ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
</WaterlineHeight>
<TowedSensor>
  <TimeStamp value="2007-001 00:00:00">
    <Comment value="Start of Field Season '07"/>
    <Latency value="0.000000"/>
    <Manufacturer value="KLEIN"/>
    <Model value="5000"/>
    <SerialNumber value=""/>
    <Offsets X="0.485000" Y="0.008000" Z="0.601981"
Layback="0.000000"/>
  </TimeStamp>
</TowedSensor>
</HIPSVesselConfig>
```

3102

TJ_3102_Reson8101.hvf

```
<?xml version="1.0"?>
<HIPSVesselConfig Version="2.0">
  <VesselShape>
    <PlanCoordinates>
      <Entry X="-2.530000" Y="-4.170000"/>
      <Entry X="0.470000" Y="-4.170000"/>
      <Entry X="0.470000" Y="2.830000"/>
      <Entry X="-1.030000" Y="5.830000"/>
      <Entry X="-2.530000" Y="2.830000"/>
      <Entry X="-2.530000" Y="-4.170000"/>
    </PlanCoordinates>
    <ProfileCoordinates>
      <Entry Y="-4.170000" Z="0.270000"/>
      <Entry Y="-4.170000" Z="-0.800000"/>
      <Entry Y="2.830000" Z="-0.800000"/>
      <Entry Y="5.830000" Z="0.270000"/>
      <Entry Y="-4.170000" Z="0.270000"/>
    </ProfileCoordinates>
    <RP Length="4.170000" Width="0.470000" Height="0.800000"/>
  </VesselShape>
  <GyroSensor>
    <TimeStamp value="2007-001 00:00:00">
      <Latency value="0.000000"/>
      <ApplyFlag value="No"/>
      <Comment value="Start of Field Season '07"/>
      <Manufacturer value="Applanix"/>
      <Model value="POS MV"/>
      <SerialNumber value="402"/>
    </TimeStamp>
  </GyroSensor>
  <HeaveSensor>
    <TimeStamp value="2007-001 00:00:00">
      <Latency value="0.000000"/>
      <ApplyFlag value="Yes"/>
      <Offsets X="0.000000" Y="0.000000" Z="0.000000"
Heave="0.000000"/>
      <Comment value="Start of Field Season '07"/>
      <Manufacturer value="APPLANIX"/>
      <Model value="POS MV"/>
      <SerialNumber value="402"/>
    </TimeStamp>
  </HeaveSensor>
  <NavSensor>
    <TimeStamp value="2007-001 00:00:00">
      <Latency value="0.000000"/>
      <Ellipse value="NA83"/>
      <Offsets X="0.000000" Y="0.000000" Z="0.000000"/>
      <Comment value="Start of Field Season '07"/>
      <Manufacturer value="Applanix"/>
      <Model value="POS MV"/>
    </TimeStamp>
  </NavSensor>
</HIPSVesselConfig>
```

```

    <SerialNumber value="402"/>
  </TimeStamp>
</NavSensor>
<PitchSensor>
  <TimeStamp value="2007-001 00:00:00">
    <Latency value="0.000000"/>
    <ApplyFlag value="Yes"/>
    <Offsets Pitch="0.000000"/>
    <Comment value="Start of Field Season '07"/>
    <Manufacturer value="Applanix"/>
    <Model value="POS MV"/>
    <SerialNumber value="402"/>
  </TimeStamp>
</PitchSensor>
<RollSensor>
  <TimeStamp value="2007-001 00:00:00">
    <Latency value="0.000000"/>
    <ApplyFlag value="Yes"/>
    <Offsets Roll="0.000000"/>
    <Comment value="Start of Field Season '07"/>
    <Manufacturer value="Applanix"/>
    <Model value="POS/MV"/>
    <SerialNumber value="402"/>
  </TimeStamp>
</RollSensor>
<SVPSensor>
  <TimeStamp value="2008-001 00:00:00">
    <Latency value="0.000000"/>
    <DualHead value="No"/>
    <Offsets X="-0.362000" Y="-0.064000" Z="0.529000"/>
    <MountAngle Pitch="0.000000" Roll="0.000000" Azimuth="0.000000"/>
    <Comment value="(null)"/>
  </TimeStamp>
  <TimeStamp value="2008-236 12:49:00">
    <Comment value="fix"/>
    <Latency value="0.000000"/>
    <DualHead value="No"/>
    <Offsets X="-0.362000" Y="-0.064000" Z="0.529000"/>
    <MountAngle Pitch="0.000000" Roll="0.000000"
Azimuth="180.000000"/>
  </TimeStamp>
  <TimeStamp value="2008-236 12:57:00">
    <Comment value=""/>
    <Latency value="0.000000"/>
    <DualHead value="No"/>
    <Offsets X="-0.362000" Y="-0.064000" Z="0.529000"/>
    <MountAngle Pitch="0.000000" Roll="0.000000" Azimuth="0.000000"/>
  </TimeStamp>
  <TimeStamp value="2008-236 15:26:00">
    <Comment value="fix"/>
    <Latency value="0.000000"/>
    <DualHead value="No"/>
    <Offsets X="-0.362000" Y="-0.064000" Z="0.529000"/>
    <MountAngle Pitch="0.000000" Roll="0.000000"
Azimuth="180.000000"/>
  </TimeStamp>
  <TimeStamp value="2008-236 15:35:00">

```

```

    <Comment value="" />
    <Latency value="0.000000" />
    <DualHead value="No" />
    <Offsets X="-0.362000" Y="-0.064000" Z="0.529000" />
    <MountAngle Pitch="0.000000" Roll="0.000000" Azimuth="0.000000" />
  </TimeStamp>
  <TimeStamp value="2008-236 17:03:00">
    <Comment value="fix" />
    <Latency value="0.000000" />
    <DualHead value="No" />
    <Offsets X="-0.362000" Y="-0.064000" Z="0.529000" />
    <MountAngle Pitch="0.000000" Roll="0.000000"
Azimuth="180.000000" />
  </TimeStamp>
  <TimeStamp value="2008-236 17:04:00">
    <Comment value="" />
    <Latency value="0.000000" />
    <DualHead value="No" />
    <Offsets X="-0.362000" Y="-0.064000" Z="0.529000" />
    <MountAngle Pitch="0.000000" Roll="0.000000" Azimuth="0.000000" />
  </TimeStamp>
  <TimeStamp value="2008-279 00:00:00">
    <Latency value="0.000000" />
    <DualHead value="No" />
    <Offsets X="-0.362000" Y="-0.064000" Z="0.529000" />
    <MountAngle Pitch="0.000000" Roll="0.000000" Azimuth="0.000000" />
  </TimeStamp>
  <TimeStamp value="2008-300 18:10:00">
    <Latency value="0.000000" />
    <DualHead value="No" />
    <Offsets X="-0.362000" Y="-0.064000" Z="0.529000" />
    <MountAngle Pitch="0.000000" Roll="0.000000" Azimuth="0.000000" />
  </TimeStamp>
</SVPSensor>
<WaterlineHeight>
  <TimeStamp value="2008-001 00:00:00">
    <Comment value="Start of Field Season '08" />
    <Latency value="0.000000" />
    <WaterLine value="0.000000" />
    <ApplyFlag value="No" />
    <StdDev Waterline="0.000000" />
  </TimeStamp>
  <TimeStamp value="2008-086 00:00:00">
    <Comment value="fieldseason 08" />
    <Latency value="0.000000" />
    <WaterLine value="-0.220000" />
    <ApplyFlag value="Yes" />
    <StdDev Waterline="0.000000" />
  </TimeStamp>
</WaterlineHeight>
<TPEConfiguration>
  <TimeStamp value="2005-211 00:01:00">
    <Comment value="" />
    <Latency value="0.000000" />
    <Offsets>
      <MRUtoTransducer X="0.362000" Y="0.064000" Z="0.673000"
X2="0.000000" Y2="0.000000" Z2="0.000000" />
    </Offsets>
  </TimeStamp>

```

```
<NavigationToTransducer X="0.431300" Y="0.898200" Z="4.416000"
X2="0.000000" Y2="0.000000" Z2="0.000000"/>
  <Transducer Roll="-2.647600" Roll12="0.000000"/>
  <Navigation Latency="0.000000"/>
</Offsets>
<StandardDeviation>
  <Motion Gyro="0.020000" HeavePercAmplitude="5.000000"
Heave="0.050000" Roll="0.020000" Pitch="0.020000"
PitchStablized="0.000000"/>
  <Position Navigation="0.500000"/>
  <Timing Transducer="0.001000" Navigation="0.001000"
Gyro="0.001000" Heave="0.001000" Pitch="0.001000" Roll="0.001000"/>
  <SoundVelocity Measured="0.500000" Surface="0.500000"/>
  <Tide Measured="0.010000" Zoning="0.200000"/>
  <Offsets X="0.002000" Y="0.002000" Z="0.002000"/>
  <MRUAlignment Gyro="0.000000" Pitch="0.000000"
Roll="0.000000"/>
  <Vessel Speed="0.030000" Loading="0.000000" Draft="0.010000"
DeltaDraft="0.015000">
    <StDevComment value="(null)"/>
  </Vessel>
</StandardDeviation>
</TimeStamp>
</TPEConfiguration>
<DraftSensor>
  <TimeStamp value="2007-087 00:00:00">
    <Comment value="2007 HSRR results"/>
    <Latency value="0.000000"/>
    <ApplyFlag value="Yes"/>
    <DraftEntries>
      <Entry Speed="0.000000" Draft="0.000000"/>
      <Entry Speed="2.742765" Draft="0.000000"/>
      <Entry Speed="3.811879" Draft="-0.012000"/>
      <Entry Speed="5.248380" Draft="0.020000"/>
      <Entry Speed="6.389417" Draft="0.020000"/>
      <Entry Speed="7.472138" Draft="0.041000"/>
      <Entry Speed="8.280778" Draft="0.052000"/>
      <Entry Speed="8.984449" Draft="-0.079000"/>
      <Entry Speed="15.550756" Draft="-0.079000"/>
    </DraftEntries>
  </TimeStamp>
  <TimeStamp value="2008-086 00:00:00">
    <Comment value="2008 HSRR results"/>
    <Latency value="0.000000"/>
    <ApplyFlag value="Yes"/>
    <DraftEntries>
      <Entry Speed="1.669762" Draft="0.000000"/>
      <Entry Speed="5.693521" Draft="0.102000"/>
      <Entry Speed="6.982289" Draft="0.135000"/>
      <Entry Speed="7.660691" Draft="0.149000"/>
      <Entry Speed="8.420734" Draft="0.155000"/>
      <Entry Speed="9.859179" Draft="0.122000"/>
    </DraftEntries>
  </TimeStamp>
</DraftSensor>
<DepthSensor>
  <TimeStamp value="2008-001 00:00:00">
```



```
<Comment value="Start of Field Season '08"/>
<Latency value="0.000000"/>
<SensorClass value="Swath"/>
<TransducerEntries>
  <Transducer Number="1" StartBeam="1" Model="sb8101">
    <Manufacturer value="Reson"/>
    <SerialNumber value="13976"/>
    <Offsets X="-0.362000" Y="-0.064000" Z="0.529000"
Latency="0.000000"/>
    <MountAngle Pitch="4.133000" Roll="-1.913000"
Azimuth="0.430000"/>
  </Transducer>
</TransducerEntries>
</TimeStamp>
</DepthSensor>
</HIPSVesselConfig>
```

S222

TJ_S222_RESON7125_Port.hvf

```
<?xml version="1.0"?>
<HIPSVesselConfig Version="2.0">
  <VesselShape>
    <PlanCoordinates>
      <Entry X="-4.550000" Y="-34.000000"/>
      <Entry X="9.150000" Y="-34.000000"/>
      <Entry X="9.150000" Y="14.000000"/>
      <Entry X="2.300000" Y="29.400000"/>
      <Entry X="-4.550000" Y="14.000000"/>
      <Entry X="-4.550000" Y="-34.000000"/>
    </PlanCoordinates>
    <ProfileCoordinates>
      <Entry Y="-34.000000" Z="3.000000"/>
      <Entry Y="-34.000000" Z="-5.000000"/>
      <Entry Y="14.000000" Z="-5.000000"/>
      <Entry Y="29.400000" Z="3.000000"/>
      <Entry Y="-34.000000" Z="3.000000"/>
    </ProfileCoordinates>
    <RP Length="34.000000" Width="9.150000" Height="5.000000"/>
  </VesselShape>
  <DepthSensor>
    <TimeStamp value="2008-001 00:00:00">
      <Latency value="0.000000"/>
      <SensorClass value="Swath"/>
      <TransducerEntries>
        <Transducer Number="1" StartBeam="1" Model="sb7125c">
          <Manufacturer value="RESON"/>
          <Offsets X="0.000000" Y="0.000000" Z="0.000000"
Latency="0.000000"/>
          <MountAngle Pitch="-2.300000" Roll="0.050000" Azimuth="-
1.080000"/>
        </Transducer>
      </TransducerEntries>
      <Comment value="Start of Field Season '08"/>
    </TimeStamp>
  </DepthSensor>
  <DraftSensor>
    <TimeStamp value="2008-113 00:00:00">
      <Latency value="0.000000"/>
      <ApplyFlag value="Yes"/>
      <DraftEntries>
        <Entry Speed="2.276242" Draft="0.000000"/>
        <Entry Speed="4.554428" Draft="0.002000"/>
        <Entry Speed="6.101728" Draft="0.036000"/>
        <Entry Speed="7.757883" Draft="0.084000"/>
        <Entry Speed="9.114687" Draft="0.129000"/>
        <Entry Speed="10.457883" Draft="0.239000"/>
      </DraftEntries>
      <Comment value="2005 values"/>
    </TimeStamp>
  </DraftSensor>
</HIPSVesselConfig>
```

```
</DraftSensor>
<GyroSensor>
  <TimeStamp value="2008-001 00:00:00">
    <Latency value="0.000000"/>
    <ApplyFlag value="No"/>
    <Comment value="(null)"/>
    <Manufacturer value="(null)"/>
    <Model value="(null)"/>
    <SerialNumber value="(null)"/>
  </TimeStamp>
</GyroSensor>
<HeaveSensor>
  <TimeStamp value="2008-001 00:00:00">
    <Latency value="-0.050000"/>
    <ApplyFlag value="Yes"/>
    <Offsets X="0.000000" Y="0.000000" Z="0.000000"
Heave="0.000000"/>
    <Comment value="Start of Field Season '07"/>
    <Manufacturer value=""/>
    <Model value=""/>
    <SerialNumber value=""/>
  </TimeStamp>
</HeaveSensor>
<NavSensor>
  <TimeStamp value="2008-001 00:00:00">
    <Latency value="0.060000"/>
    <Ellipse value="NA83"/>
    <Offsets X="0.000000" Y="0.000000" Z="0.000000"/>
    <Comment value="Start of Field Season '07"/>
    <Manufacturer value="Applanix"/>
    <Model value=""/>
    <SerialNumber value=""/>
  </TimeStamp>
</NavSensor>
<PitchSensor>
  <TimeStamp value="2008-001 00:00:00">
    <Latency value="0.000000"/>
    <ApplyFlag value="Yes"/>
    <Offsets Pitch="0.000000"/>
    <Comment value="(null)"/>
    <Manufacturer value="(null)"/>
    <Model value="(null)"/>
    <SerialNumber value="(null)"/>
  </TimeStamp>
</PitchSensor>
<RollSensor>
  <TimeStamp value="2008-001 00:00:00">
    <Latency value="0.020000"/>
    <ApplyFlag value="Yes"/>
    <Offsets Roll="0.000000"/>
    <Comment value=""/>
    <Manufacturer value=""/>
    <Model value=""/>
    <SerialNumber value=""/>
  </TimeStamp>
</RollSensor>
<TPEConfiguration>
```

```

<TimeStamp value="2006-001 00:00:00">
  <Comment value="First entry for dual RESON 7125 "/>
  <Latency value="0.000000"/>
  <Offsets>
    <MRUtoTransducer X="8.499000" Y="2.679000" Z="4.888000"
X2="3.655000" Y2="2.684000" Z2="4.887000"/>
    <NavigationToTransducer X="8.499000" Y="2.679000" Z="4.888000"
X2="3.655000" Y2="2.684000" Z2="4.887000"/>
    <Transducer Roll="0.122200" RollI2="0.019400"/>
    <Navigation Latency="0.000000"/>
  </Offsets>
  <StandardDeviation>
    <Motion Gyro="0.020000" HeavePercAmplitude="5.000000"
Heave="0.049987" Roll="0.050000" Pitch="0.050000"
PitchStablized="0.000000"/>
    <Position Navigation="0.500000"/>
    <Timing Transducer="0.000000" Navigation="0.000000"
Gyro="0.000000" Heave="0.000000" Pitch="0.000000" Roll="0.000000"/>
    <SoundVelocity Measured="0.500040" Surface="0.499526"/>
    <Tide Measured="0.010058" Zoning="0.199949"/>
    <Offsets X="0.050000" Y="0.050000" Z="0.015240"/>
    <MRUAlignment Gyro="0.000000" Pitch="0.000000"
Roll="0.000000"/>
    <Vessel Speed="0.029838" Loading="0.000000" Draft="0.010058"
DeltaDraft="0.000000"/>
  </StandardDeviation>
</TimeStamp>
</TPEConfiguration>
<WaterlineHeight>
  <TimeStamp value="2008-001 00:00:00">
    <Latency value="0.000000"/>
    <WaterLine value="0.000000"/>
    <ApplyFlag value="Yes"/>
    <StdDev Waterline="0.000000"/>
    <Comment value="Start of Field Season '08"/>
  </TimeStamp>
  <TimeStamp value="2008-079 00:00:00">
    <Comment value="Start of HSRR"/>
    <Latency value="0.000000"/>
    <WaterLine value="0.630000"/>
    <ApplyFlag value="Yes"/>
    <StdDev Waterline="0.000000"/>
  </TimeStamp>
  <TimeStamp value="2008-086 00:00:00">
    <Comment value=""/>
    <Latency value="0.000000"/>
    <WaterLine value="0.320000"/>
    <ApplyFlag value="Yes"/>
    <StdDev Waterline="0.000000"/>
  </TimeStamp>
  <TimeStamp value="2008-108 13:00:00">
    <Comment value=""/>
    <Latency value="0.000000"/>
    <WaterLine value="0.480000"/>
    <ApplyFlag value="Yes"/>
    <StdDev Waterline="0.000000"/>
  </TimeStamp>

```

```
<TimeStamp value="2008-113 00:36:00">
  <Comment value=""/>
  <Latency value="0.000000"/>
  <WaterLine value="0.360000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-162 13:00:00">
  <Comment value="Delaware Bay"/>
  <Latency value="0.000000"/>
  <WaterLine value="0.360000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-163 15:00:00">
  <Comment value="H11916 NY"/>
  <Latency value="0.000000"/>
  <WaterLine value="0.550000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-163 20:40:00">
  <Comment value="H11916 NY trim ship"/>
  <Latency value="0.000000"/>
  <WaterLine value="0.440000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-175 17:40:00">
  <Comment value="H11916 Sandy Hook"/>
  <Latency value="0.000000"/>
  <WaterLine value="0.490000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-180 00:00:00">
  <Comment value="H11916 Ambrose"/>
  <Latency value="0.000000"/>
  <WaterLine value="0.570000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-190 22:55:00">
  <Comment value="H11916 Sandy Hook Full Fuel"/>
  <Latency value="0.000000"/>
  <WaterLine value="0.250000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-211 00:00:00">
  <Comment value="H11922 Gay Head"/>
  <Latency value="0.000000"/>
  <WaterLine value="0.430000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-222 00:00:00">
```

```
<Comment value="H11922 Menemsha Bight"/>
<Latency value="0.000000"/>
<WaterLine value="0.470000"/>
<ApplyFlag value="Yes"/>
<StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-089 12:00:00">
  <Comment value="Launches on"/>
  <Latency value="0.000000"/>
  <WaterLine value="0.340000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-098 12:00:00">
  <Comment value="Launches on"/>
  <Latency value="0.000000"/>
  <WaterLine value="0.340000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-112 00:00:00">
  <Comment value="?"/>
  <Latency value="0.000000"/>
  <WaterLine value="0.480000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-122 21:40:00">
  <Comment value="Launches on, low on fuel"/>
  <Latency value="0.000000"/>
  <WaterLine value="0.450000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-156 15:00:00">
  <Comment value=""/>
  <Latency value="0.000000"/>
  <WaterLine value="0.490000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-196 13:40:00">
  <Comment value="Launches on"/>
  <Latency value="0.000000"/>
  <WaterLine value="0.250000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-227 19:30:00">
  <Comment value="Launches off"/>
  <Latency value="0.000000"/>
  <WaterLine value="0.390000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-249 03:00:00">
  <Comment value="Launches on"/>
```

```
<Latency value="0.000000"/>
<WaterLine value="0.470000"/>
<ApplyFlag value="Yes"/>
<StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-252 08:30:00">
  <Comment value="Launches off"/>
  <Latency value="0.000000"/>
  <WaterLine value="0.470000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-262 15:00:00">
  <Comment value="Launches off"/>
  <Latency value="0.000000"/>
  <WaterLine value="0.470000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
<TimeStamp value="2008-295 06:00:00">
  <Comment value="Launches on back dated"/>
  <Latency value="0.000000"/>
  <WaterLine value="0.495000"/>
  <ApplyFlag value="Yes"/>
  <StdDev Waterline="0.000000"/>
</TimeStamp>
</WaterlineHeight>
<SVPSensor>
  <TimeStamp value="2008-001 00:00:00">
    <Latency value="0.000000"/>
    <DualHead value="No"/>
    <Offsets X="-3.655000" Y="-2.369000" Z="5.063000"/>
    <MountAngle Pitch="0.000000" Roll="0.000000" Azimuth="0.000000"/>
    <Comment value="(null)"/>
  </TimeStamp>
</SVPSensor>
</HIPSVesselConfig>
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AUV

NOAA_AUV600.hvf

```
<?xml version="1.0"?>
<HIPSVesselConfig Version="2.0">
  <VesselShape>
    <PlanCoordinates/>
    <ProfileCoordinates/>
    <RP Length="0.000000" Width="0.000000" Height="0.000000"/>
  </VesselShape>
  <GyroSensor>
    <TimeStamp value="2006-182 00:00:00">
      <Latency value="0.000000"/>
      <ApplyFlag value="No"/>
    </TimeStamp>
  </GyroSensor>
  <NavSensor>
    <TimeStamp value="2006-182 00:00:00">
      <Latency value="0.000000"/>
      <Ellipse value="NA83"/>
      <Offsets X="-0.520000" Y="0.000000" Z="0.000000"/>
      <Comment value="(null)"/>
      <Manufacturer value="(null)"/>
      <Model value="(null)"/>
      <SerialNumber value="(null)"/>
    </TimeStamp>
  </NavSensor>
</HIPSVesselConfig>
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