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Submitted without prejudice

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Member SAMS SA, ABYC, USSA, NFPA, NMEA  
Vessel Safety Examiner, US Coast Guard Auxiliary

Date: 7/26/2007

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## *Pre-Purchase Marine Survey Report*



Photo 1. Searay 320 Sundancer, year 2003 “XXXXXX”

### **I. GENERAL INFORMATION**

TYPE OF SURVEY	Pre-Purchase
REPORT NUMBER	320
PREPARED FOR	XXXXXXXXXXXXXXXX
ADDRESS	XXXXXXXXXXXXXXXX
PHONE/EMAIL	XXXXXXXXXXXXXXXX
DATE OF SURVEY	7/25/2007
DATE OF REPORT	7/26/2007
MANUFACTURER/ MODEL	Searay/320 Sundancer

HULL IDENTIFICATION NUMBER	XXXXXXXXXXXX
NAME OF VESSEL	XXXXXXX
MODEL YEAR	2003
YEAR BUILT	2003
DESIGNER	Searay Division of Brunswick Corp
DOCUMENTATION #/ REG. #	XXXXXXX
HAILING PORT	XXXXXXX
LOA/ BEAM	35'6"/ 11' 5"
DISPLACEMENT	13,200 lbs.
NAVIGATIONAL LIMITS	To be determined by underwriter
INTENDED USE OF VESSEL	Recreational
PERSONS PRESENT AT SURVEY	Charles Avalos Sr.,XXXXXXXXXXXXXXXX
OWNER'S NAME	XXXXXXX
SURVEY SITE	Babylon Marine, Babylon NY
FAIR MARKET VALUE	\$120,000 USD
ESTIMATED REPLACEMENT VALUE	\$175,000 USD



Figure 2. Starboard view.

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## II. COAST GUARD DOCUMENTATION

FROM THE COAST GUARD DOCUMENTATION DATA BASE:

*Coast Guard Vessel Documentation*

Data found in current database.

Vessel Name:	K	USCG Doc. No.:	XXXXXX
Vessel Service:	RECREATIONAL	IMO Number:	*
Trade Indicator:	Recreational	Call Sign:	*
Hull Material:	FRP (FIBERGLASS)	Hull Number:	SERTXXXXXXXX
Ship Builder:	SEA RAY DIVISION OF BRUNSWICK CORP	Year Built:	2003
		Length (ft.):	32.3
Hailing Port:	HOLBROOK NY	Hull Depth (ft.):	6.2
Owner:	XXXXXXXXXXXXXXXXXX	Hull Breadth (ft.):	11.3
	XXXXXXXXXXXXXXXXXX	Gross Tonnage:	15
	XXXXXXXXXXXXXXXXXX	Net Tonnage:	12
Documentation Issuance Date:	March 14, 2007	Documentation Expiration Date:	March 31, 2008
<b>Previous Vessel Names:</b>	XXXX	<b>Previous Vessel Owners:</b>	XXXXXXXXXX

## III. SCOPE OF SURVEY

Charles Avalos Sr from Marinotech, Inc. examined the above named vessel at the request of Mr. **XXXXXXXX**.

The fair market value specified on the first page was derived from commercially published used boat price guides, condition of vessel and other means.

The vessel described in this report was inspected for compliance with National Fire Prevention Association (NFPA), the American Boat and Yacht Council (ABYC), the United States Coast Guard (USCG), Code of Federal Regulations (CFR), National Marine Electronics Association (NMEA), and the State of New York.

The survey consisted of visual observations via available spaces and inspection ports, percussion testing, moisture meter readings, and voltage/resistance measurements with multi-meter.

The purpose of this survey was to determine the physical condition and approximate market value of the vessel. This survey does not address the vessel's stability characteristics and inherent defects, internal condition of machinery, or items that cannot be readily observed without intrusive removal of headliners, flooring, and panels, which would cause damage to the vessel.

**Charles Avalos from Marinetech makes no claim to be a Marine Engine Mechanic. Marinetech provides General Marine Surveys, and a separate Engine Survey by a qualified factory mechanic may be in your own best self-interest. This report is based on an out of the water inspection while on a travel lift, an in the water inspection, and a sea trial.**

#### **IV. CONDITIONS**

An inspection was conducted on 7/25/07. The weather was sunny, approximately 85 F, 70% relative humidity and winds from the S at 12 MPH.

#### **V. OVERVIEW**

This 320 Sundancer is a gasoline powered twin engine V-drive cruiser with a modified V hull and a 21° aft deadrise.

The 320 has a solid fiberglass laminate hull, with a vinylester skin coat to resist blistering. Balsa core is used in areas like the foredeck, walkways and cockpit soles. Introduced in 2002, the 320 Sundancer replaced Sea Ray's popular 310 model. Sea Ray has given the 320 a new hull form, redesigned for better fore-and-aft balance and a smoother ride in rough seas.

Beneath the saloon sole, there are two stowage bins, one 15"x20" and another 46"x20". Behind the starboard settee, there's a 12"Dx18"Hx42"W hidden stowage cabinet that is accessed by pulling the back of the settee towards the centerline. Then there's the cavernous space beneath the island berth forward, the large hanging locker to starboard, and another big cabinet beneath the TV on the port side.

The enclosed head with shower is to port together with the gallery forward of it. To starboard is the dinette. The owners cabin is forward and a guest cabin is located aft.

#### **VI. CODING OF FINDINGS AND RECOMMENDATIONS**

Findings and recommendations are color-coded as follows:

**SAFETY** findings and recommendations are safety issue items that often fail to comply with ABYC, Federal (CFR), State, NFPA or Coast Guard regulations (USCG).

**ROUTINE** findings and recommendations are non-regulatory deficiencies.

**PREVENTIVE** findings and recommendations for preventive maintenance and upgrades to improve equipment and performance.

## VII. HULL CHARACTERISTICS AND TOPSIDES



Photo 3. Hull identification number.

The hull is a modified “V” plaining type constructed of FRP solid laminate with longitudinal and transverse stringers that are glassed-over. Partial bulkheads were incorporated to create an open cabin. A bolted in swim platform with swim ladder was noted securely attached to transom.

Dead-rise aft is reportedly 21°.

Through-hull fittings were observed in good condition with sufficient caulk in contact with hull. The port Great South Bay raw water intake for engine cooling was partially clogged with marine growth but was subsequently power-washed clear at haul-out. Ceilings were covered with liner preventing examination of such. Hull to deck joint was not available for inspection because of furnishings and liners.

No cosmetic damage noted except for few minor scratches considered normal wear and tear.

A visual overall examination of the hull was conducted with emphasis on checking for collision damage and de-lamination of laminate. No problems were found.

Since boat was short-hauled and has been in the water, accurate moisture measurements of underside were inconclusive, but no evidence of blistering was observed.

Bottom paint was noted in good condition with few areas of flaking.

Percussion testing revealed no de-lamination of hull and topsides.

Minor cosmetic scratches were noted but topsides over-all condition was noted in above-average condition. Average being defined as the typical observed condition of the majority of vessels surveyed built in the year 2003. Gel-coat still retains considerable gloss, although a compounding and waxing is over-due.

**ROUTINE**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Topsides need compounding and waxing.	Have topsides compounded in the Fall after haul-out and waxed in Spring.



Photo 4. Close-up rudders, props, shafts, struts, trim tab, hull anode.

Anodes were noted in good condition and not due for replacement until next season.

**ROUTINE**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Excessive toe-in noted in rudders.	Adjust toe-in before next season launch.

DISCUSSION: Rudder parallel adjustment (toe-in) was measured as follows: distance between rudders in front of rudders = 37 inches. Distance between rear edges of rudders = 34 ¾ inches. Alignment should be between zero and ¼ inch difference front to back. Adjustment is made from inside transom by turning steel rod with locking nuts until correct spacing is achieved.

Excessive toe-in causes increased drag, slightly reducing fuel economy and lowers top end speed at wide open throttle.



Photo 5. Stern view.



Photo 6. Close-up bow view and plow anchor on stainless roller.

**PREVENTIVE**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Moderate marine growth was observed on rudders and props.	Use special bottom paint, specifically designed for immersed metal next season before launch on submerged metal parts.

Engine mount stringers were tested with moisture meter and no moisture was found. The propellers are 18 X 19 and made of bronze. Prop shafts are stainless steel with a 1 ½” diameter.

Struts and rudders are bronze.

Trim-tabs were tested. The switches were electrically reversed. The port tab operated normally at full travel. The starboard tab operated but did not quite reach full travel.

**ROUTINE**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Starboard trim-tab does not achieve full travel range.	Investigate cause and repair.

**VIII. DECK, HELM, CANVAS AND GROUND TACKLE**

The decks are constructed of FRP and cored.

Moisture measurements with Electro Physics GRP-33 moisture meter revealed no excessive moisture in randomly tested deck areas but tested slightly moist around windlass indicating that it should be removed and re-calked.

**PREVENTIVE**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Slight moisture detected on a 10” radius around windlass mostly to port.	Remove windlass, clean and re-caulk area.

DISCUSSION: The most effective way to permanently keep moisture from intruding core under windlass installation would be to drill over-sized holes on deck for bolts, epoxy-fill holes, and re-drill correct size holes through epoxy before caulking to positively seal core.

Approximate cost of restoring to original dry core condition is approximately \$5,000.

Percussion testing with a hammer revealed no de-lamination except for slight de-lamination by moist area to port of windlass.

Gas and fills are located to port and starboard on deck. Water fill is to port. Waste to port aft.

The anchor is a 35 lb-plow and located in the bow anchor roller stainless bracket with chain and rope of undetermined length.

The windlass is a 12 VDC Lofrans and tested operational.

Cleats, bow-rail, windshield and hinges are securely attached and in good condition.

A 18" X 18" plastic hatch is located in the foredeck providing emergency escape route if companionway should become blocked by fire or other hazards.

Two other hatches round in shape with a 12" diameter are located aft of the main fore-hatch.

The canvas appears in excellent condition but the bimini was not fully inspected in its stowed position.

The windscreen was noted securely attached and in operational condition.

Steering is achieved through hydraulic means and was tested operational lock to lock.

Engine controls are push-pull cables at the helm and operated smoothly.



Photo 7. Helm.

No weakness or flexing was noted on all deck areas.

Windshield-wipers were tested and operated mechanically but need new blades.

### ROUTINE

FINDING	RECOMMENDATION
Windshield wipers are damaged.	Replace.

Search light was tested and found operational.

A 12VDC/120VAC Isotherm refrigerator/freezer installed in cockpit on port side was confirmed working as evidenced with pyrometer readings.



Photo 8. Foredeck.



Photo 9. Foredeck looking aft.



Photo 10. Delta style plow anchor and bracket.

## IX. PROPULSION AND MACHINERY



Photo 11. Engine room.

**Propulsion engines are inboard Mercruiser 350 MPI Horizon Fuel Injection gasoline engines rated at 300 HP each.**

Engines are cooled with fresh water through a heat exchanger which is in turn cooled with raw water.

Motor mountings and attachments comply with Coast Guard regulations and meet ABYC standards.

A flame arrestor was noted mounted on air intake per Coast Guard regulations.

This engine appears to be original equipment installed when vessel was built.

PROPULSION ENGINES: Mercruiser 350 MPI

	PORT	STARBOARD
MODEL #	Mercruiser 5.7 L	Mercruiser 5.7 L
HORSE POWER	300	300
SERIAL #	OM392293	OM392305
HOUR METER	150	15*
APPEARANCE	NO RUST, NO LEAKS NOTED	NO RUST, NO LEAKS NOTED

\* Reportedly, digital hour meter for starboard side, re-initialized to zero unintentionally and randomly. Starboard engine hour meter should reportedly be as on port side.

Engine controls are through push-pull wire remote control levers activating cables from helm and manufactured by Sea Star.

Steering is accomplished by hydraulic Sea star steering system. .



Photo 12. Aqua-lift fiberglass mufflers and hoses in good condition and double clamped.

TRANSMISSIONS: HURST

	PORT	STARBOARD
MODEL	V-DRIVES	V-DRIVES
SERIAL NUMBER	45579	45581
RATIO	1.99	1.99
APPEARANCE	NO RUST, NO LEAKS NOTED	NO RUST, NO LEAKS NOTED

A Sea Fire automatic fire extinguisher was noted mounted in the engine room. Engine room was observed clean and organized with no apparent hazards.

**X. TANKAGE AND PLUMBING**



Photo 13. Port side 100 gallon fuel tank properly labeled and vented per ABYC Standards. Fuel hoses are Coast Guard approved and in good condition. Fresh water hot/cold manifold in foreground.

A reportedly 40-gallon polyethylene water tank was noted to port securely mounted with no signs of leakage in engine room. Another reportedly 28-gallon polyethylene waste holding tank was noted to port securely mounted with no signs of leakage in engine room. Pumping of house fresh water system is accomplished by a 12 VDC demand pump tested operational.

Galley, head, fixtures were tested operational for hot and cold water.  
The shower sump pump did not operate.

**ROUTINE**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Shower sump pump did not operate.	Replace.

All sea-cocks were inspected and tested operational with no defects found except for port raw water intake seacock as noted below.

**SAFETY**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Portside engine cooling water intake seacock frozen in open position.	Free and lubricate.



Photo 14. Vacuflush system and water tank to port in engine room.

An Atwood 120 VAC hot water heater with heat exchanger was noted to port in engine room and tested working.

## XI. ELECTRICAL



Photo 15. Intelli-power 30A battery charger to left, DC main panel to right.



Photo 16. Three group 27 batteries were noted to starboard in engine room secured with positive terminal covered as per ABYC Standards. One is the house battery and the other two are port and starboard starting.



Photo 17. Inlet for 30A power installed to ABYC Standards and tested operational with multi-meter.



Photo 18. Battery switches under helm seat installed as per ABYC Standards.



Photo 19. AC/DC breaker panel is installed in cabin as per ABYC Standards. Stereo visible above panel tested working.



Photo 20. Central vacuum located under aft cabin seat.

## ROUTINE

FINDING	RECOMMENDATION
Battery charger does not power up.	Check fuses and wiring and replace charger if necessary

Round captive lugs are used throughout wiring connections to minimize chance of accidental disconnection.

Observable wiring meets ABYC Standards.

## XII. NAVIGATION AND ELECTRONICS

VHF	RAY 215	WORKING
COMPASS	RITCHIE 5"	WORKING
DF	LOWRANCE ON DASHBOARD	WORKING
GPS	RAYMARINE C70 MAP	WORKING
RADAR	RAYMARINE C70	WORKING

It is the opinion of this surveyor that this vessel is equipped with all necessary electronics for intended use.

## XIII. SAFETY EQUIPMENT AND BILGE PUMPS

Engine ventilation blowers were noted in engine room and tested. The starboard power blower works fine.

### SAFETY

FINDING	RECOMMENDATION
Portside engine blower does not operate.	Rule out wiring problem and replace if necessary.

Navigational lights all tested working.

There is one automatic electric 12 VDC bilge pump in bilge aft and under engine tested working by filling bilge with water and observing pump out of bilge water.

Another engine room bilge pump in forward area did not operate.

Another automatic electric 12 VDC bilge pump mid-ships was tested in same manner and also found not working.

Oil disposal and garbage disposal placards were noted in galley area.

A horn sound producing device was tested and found operational.

A CO detector was noted in cabin as recommended by ABYC since 2003.

**SAFETY**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Forward bilge pump in engine room does not operate	Rule out wiring problem and replace if necessary.

**SAFETY**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Midships bilge pump in cabin does not pump even though it can be heard activated.	Rule out clog in output hose and replace if necessary.

One BC1 fire extinguisher was noted with adequate pressure in cockpit and another in the cabin with adequate pressure showing on dial.

A Sea Fire automatic fire extinguisher was noted in engine room. This automatic fire extinguisher should be inspected by qualified technician and tagged stating inspection date.

FOUR type II PFD's were noted under helmsman's seat in cockpit.

**SAFETY**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Throwable flotation device not seen	Coast Guard requires a throwable flotation device for man over board event..

**SAFETY**

<b>FINDING</b>	<b>RECOMMENDATION</b>
No Visual Distress Signals were sighted..	Coast Guard requires 3 day/night flares.



Photo 21. Bilge pump aft in engine room tested working.

#### **XIV. INTERIOR AMENITIES**

A 12VDC/120VAC refrigerator/freezer installed in galley on port side was confirmed working as evidenced with pyrometer readings.



Photo 22. Galley to port.



Photo 23. Dinette to starboard looking aft from forward cabin.



Photo 24. Head to port.



Photo 25. Owner's berth forward.



Photo 26. Aft cabin.

A Whirlpool microwave was tested and found operational.  
A Toshiba TV/VCR was noted working in main cabin.

## **XV. SEA TRIAL**

The Sea Trial was conducted between 12:45PM and 1:45PM. Present at the Sea Trial were the owners Joann and Rich Spatola, the buyer Mitch Borcina, and myself.

Motors started without difficulty and ran smoothly with no unusual sounds or smoke. Trim was operation and verified.

Motor functioned and achieved 4,700 RPM at full throttle with a top speed of 26 knots. This performance took place with 4 persons on board, half full gas tanks, full water tank and moderate chop. Reportedly should do 30 knots with one person on board and flat seas.

Performance is consistent with reported data when considering conditions and payload. Steering was smooth and responsive lock to lock.

Forward and reverse confirmed working and shifting smoothly.

Battery voltage with engine running was 14.1 VDC confirming alternator charging.

Trimtabs had very small effect on trim due to their small size.

A rattling vibration was noted at high RPM's. This sound was verified as coming from engine hatch, since it would go away when slight opening force on hatch was made with hatch power switch.

Engine synchronizer was observed operational.

PERFORMANCE:

RPM	SPEED	WATER TEMP	OIL PRESSURE
800/800	3.6K	175°/175°F	55/55LBS
3400/3800	19K	180°/180°F	60/55LBS
4600/4700	26K	190°/180°F	60/55LBS

PYROMETER READINGS:

EXHAUST RISERS	95°F/108°F //112°F/104°F
WATER TEMP SENDER	140°F/145°F AT IDLE
ALTERNATOR	134°F/140°F
EXHAUST HOSES	102°F/115°F
EXHAUST MANIFOLDS	149°F/150°F//150°F/160°F
PAN OIL	142°F/150°F

The above results are consistent with normal findings.

**ROUTINE**

FINDING	RECOMMENDATION
Rattling sound from port hatch opening activating rod hardware.	Suggest inspect and tighten all port hatch actuating hardware.

**XVI. SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS**

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**ROUTINE**

FINDING	RECOMMENDATION
Topsides need compounding and waxing.	Have topsides compounded in the Fall after haul-out and waxed in Spring.

**ROUTINE**

FINDING	RECOMMENDATION
Excessive toe-in noted in rudders.	Adjust toe-in before next season launch.

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**PREVENTIVE**

FINDING	RECOMMENDATION
Moderate marine growth was observed on rudders and props.	Use special bottom paint, specifically designed for immersed metal next season before launch on submerged metal parts.

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**ROUTINE**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Starboard trim-tab does not achieve full travel range.	Investigate cause and repair.

**PREVENTIVE**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Slight moisture detected on a 10" radius around windlass mostly to port.	Remove windlass, clean and re-caulk area.

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**ROUTINE**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Windshield wipers are damaged.	Replace.

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**ROUTINE**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Shower sump pump did not operate.	Replace.

**SAFETY**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Portside engine cooling water intake seacock frozen in open position.	Free and lubricate.

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**ROUTINE**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Battery charger does not power up.	Check fuses and wiring and replace charger if necessary

**SAFETY**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Portside engine blower does not operate.	Rule out wiring problem and replace if necessary.

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**SAFETY**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Forward bilge pump in engine room does not operate	Rule out wiring problem and replace if necessary.

**SAFETY**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Midships bilge pump in cabin does not pump even though it can be heard activated.	Rule out clog in output hose and replace if necessary.

**SAFETY**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Throwable flotation device not seen	Coast Guard requires a throwable flotation device for man over board event..

**SAFETY**

<b>FINDING</b>	<b>RECOMMENDATION</b>
No Visual Distress Signals were sighted..	Coat requires 3 day/night flares.

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**ROUTINE**

<b>FINDING</b>	<b>RECOMMENDATION</b>
Rattling sound from port hatch opening activating rod hardware.	Suggest inspect and tighten all port hatch actuating hardware.

**XVII. SURVEYOR'S SUMMARY OPINION**

I have attempted to provide the facts as observed without prejudice and minimal subjectivity.

However, it is difficult to provide a complete survey avoiding every subjective statement. Maximum detail and extensive photography was used in order to have the reader form his own opinion of this vessel.

The following statements are strictly the opinion of the surveyor to assist the lay reader in interpretation of the facts reported...

This vessel was observed in above average condition cosmetically and mechanically.

This vessel appears to have received above average maintenance.

This vessel does not appear to have any previous repairs that can be detected visually.

This vessel is suitable for intended use after correcting safety issues marked in red.

## **XVIII. DISCLAIMER**

Inspections are conducted in a thorough and professional manner with due care and diligence. No assurance can be made, however, that every deficiency will be discovered. The facts as discovered and presented in our written report should not be deemed a guarantee or warranty, either expressed or implied, for the boat, the machinery or equipment. All observations are strictly in the nature of opinion and may be subject to further qualification.

Given today's complicated marine systems, few surveyors can be considered experts in all matters. Qualified specialists should be consulted when circumstances dictate. Expert inspections of rigging, machinery, electrical systems, independent from the primary general survey, may be in your best interest.

This survey has been prepared in good faith. It is a description of the condition as then found, examined and visible. The surveyor assumes no responsibility for defects and shall be held harmless for any subsequent conditions arising.

This survey does not guarantee either expressed or implied the condition of the above surveyed vessel.

*Capt. Charles A. Avalos Sr., USCG Master*