
IN THE UTAH SUPREME COURT

CRAIG FEASEL,

Plaintiff / Appellant / Respondent,

v.

TRACKER MARINE, LLC, and
BRUNSWICK CORPORATION,

Defendants / Appellees / Petitioners.

Brief of Respondent

Supreme Court Case No. 20200327-SC

Court of Appeals Case No. 20180332-CA

Trial Court Case No. 140500037

Writ of Certiorari from the Opinion of the Utah Court of Appeals, 2020 UT App 28,
Reversing and Remanding a Judgment of the Second Judicial District, Morgan County,
Honorable Noel S. Hyde, District Court No. 140500037

Elisabeth M. McOmber
Patrick X. Fowler, *pro hac vice*
SNELL & WILMER, LLP
15 West South Temple, Suite 1200
Salt Lake City, Utah 84101
Attorneys for Petitioner Brunswick Corp.

Nathan D. Alder
Sarah E. Spencer
CHRISTENSEN & JENSEN, P.C.
257 East 200 South, Suite 1100
Salt Lake City, Utah 84111

Michael C. McMullen, *pro hac vice*
BAKER STERCHI COWDEN & RICE LLC
2400 Pershing Road, Suite 500
Kansas City, Missouri 64108
*Attorneys for Petitioner Tracker Marine,
LLC*

Michael A. Worel (12741)
Paul M. Simmons (4668)
Catherine E. Woltering (17553)
Walter M. Mason (16891)
DEWSNUP KING OLSEN WOREL
HAVAS MORTENSEN
36 South State Street, Suite 2400
Salt Lake City, Utah 84111
Telephone: (801) 533-0400
Attorneys for Respondent

List of Current and Former Parties

In addition to the parties named above, an individual named Monty Martinez was a defendant in the district court action, represented by Lloyd R. Jones of the Law Office of Lloyd R. Jones, 230 South 500 East, Suite 400, Salt Lake City, Utah 84102. Based on a settlement agreement, Appellant Craig Feasel dismissed Martinez from the case before the appeal was filed. This matter before the Utah Supreme Court does not concern Martinez.

Table of Contents

Table of Authorities	v
Introduction	1
Statement of the Issues	3
Statement of the Case	4
I. Statement of Facts	4
A. Petitioners Knew Their Products Had a Propensity to Enter the Circle of Death and Knew Their Warnings Were Inadequate	4
B. Feasel’s Testimony	6
C. Rescuer’s Testimony	7
D. Martinez’s Testimony	7
E. Testimony by Warnings Expert William Kitzes	8
F. Kitzes’s Exemplar Warning Labels for the Boat and Manuals	9
G. Tracker and Brunswick’s Inadequate Warning Label on the Boat	12
H. Tracker’s and Brunswick’s Inadequate Warnings in Their Manuals	14
I. Testimony Regarding the Severity of Danger and Efficacy of Warnings ..	26
J. Testimony by Boating Expert Gary Polson	27
II. Procedural History	28
III. Disposition in the Court of Appeals	29
Summary of the Argument	30

Argument	31
I. The Court of Appeals Correctly Held That Petitioners’ Warnings to the Boat Operator Were Not Adequate as a Matter of Law	32
A. The Utah Court of Appeals Correctly Applied the <i>House</i> Factors to Determine That Factual Issues Remained Regarding Whether Petitioners Issued an Adequate Warning That “Completely Disclosed All the Risks Involved, as Well as the Extent of Those Risks”	33
1. The Purported Warnings Could Not “Reasonably Be Expected to Catch the Attention” of Users Because Placards on the Boat Were Hidden Behind a Seat, and the Purported Warnings in the Manuals Were Mere Statements.....	37
2. The Purported Warnings Gave No “Comprehensible” or “Fair” Indication of the “Specific Risk” of the Boat’s Propensity to Turn Tightly in a Circle of Death or Why the Lanyard Must be Worn	38
3. The “Magnitude” of the Danger Presented by the Boat’s Propensity to Enter a Circle of Death Required Warnings of a Far Greater “Intensity” Than the Purported Warnings Given	41
B. The Utah Court of Appeals’ Decision Regarding Adequacy Must Also Be Affirmed Because Feasel Presented Evidence of Petitioners’ Negligence and Unreasonableness; Specifically, Petitioners Knew of the Widespread Disregard of Instructions to Wear the Lanyard, Yet Failed to Make Appropriate Changes.....	45
II. The Court of Appeals Correctly Reversed the District Court’s Erroneous Conclusion That Petitioners Owed No Duty to Feasel to Warn of the Boat’s Latent Dangers.....	46
A. Petitioners Owed a Duty to Feasel to Ensure That Adequate Warnings Were Issued in Connection with the Boat.....	47
1. Under Section 402A of the Restatement, a Manufacturer Owes a Duty in Strict Liability to All Ultimate Users, Including Boat Passengers.....	48
2. Under Section 388 of the Restatement, a Manufacturer Owes a Duty in Negligence to All Ultimate Users, Including Passengers on a Boat	49

3. Under This Court’s Precedents Regarding Negligence, Petitioners Owed a Duty to Feasel to Adequately Warn of the Latent Dangers of the Boat.....	50
B. Petitioners Had a Duty to Communicate a Warning to Feasel; Whether They Breached That Duty by Unreasonably Relying on Martinez Is a Question of Fact to Be Decided by the Jury.....	52
C. Petitioners Could Not Satisfy Their Duty to Feasel by Relying on Martinez.....	54
1. Petitioners Did Not Adequately Warn Martinez	55
2. The Sophisticated Intermediary Doctrine Does Not Apply.....	55
3. Whether It Would Be Reasonable for Petitioners to Rely on Martinez Is a Question of Fact for the Jury	57
a. The Gravity of Risk Was Exceptionally High Because the Circle of Death Has Repeatedly Caused Catastrophic Injury and Death.....	57
b. Petitioners Knew the Owners and Operators of Its Boats Would Most Likely Not Convey Relevant Warnings to Passengers	58
c. It Was Reasonable and Easy to Warn Feasel Directly, Just as Petitioners Warned Feasel of Other Dangers Through Warning Placards on the Boat Itself.....	58
Conclusion.....	59
Certificate of Compliance.....	61
Addendum	
Opinion of the Utah Court of Appeals	No. 1
Tracker Manual	No. 2
Brunswick Manual.....	No. 3
Feasel Declaration	No. 4
Martinez Declaration	No. 5
Alternative Warnings.....	No. 6
Photos of Placards on Boat.....	No. 7

Table of Authorities

Cases

<i>Air & Liquid Sys. Corp. v. DeVries</i> , 139 S. Ct. 986 (2019)	52
<i>Alder v. Bayer Corp., AGFA Div.</i> , 2002 UT 115, 61 P.3d 1068	38, 49, 53
<i>Alm v. Aluminum Co. of Am.</i> , 717 S.W.2d 588 (Tex. 1986)	56
<i>Anderson v. Hedstrom Corp.</i> , 76 F. Supp. 2d 422 (S.D.N.Y. 1999)	38
<i>Anderson v. Klix Chem. Co.</i> , 472 P.2d 806 (Or. 1970)	32
<i>Barson v. E.R. Squibb & Sons, Inc.</i> , 682 P.2d 832 (Utah 1984)	47
<i>Bickram v. Case I.H.</i> , 712 F. Supp. 18 (E.D.N.Y. 1989)	59
<i>Black v. Gorman-Rupp</i> , 655 So. 2d 717 (La. Ct. App. 1995)	37
<i>Blackham v. Snelgrove</i> , 280 P.2d 453 (Utah 1955).....	54
<i>B.R. ex rel. Jeffs v. West</i> , 2012 UT 11, 275 P.3d 228.....	50, 51
<i>Brown v. Sears, Roebuck & Co.</i> , 667 P.2d 750 (Ariz. 1983)	41, 42
<i>Bylsma v. R.C. Willey</i> , 2017 UT 85, 416 P.3d 595.....	40, 41, 48
<i>Casetta v. U.S. Rubber Co.</i> , 260 Cal. App. 2d 792, 67 Cal. Rptr. 645 (1968)	38
<i>Chronister v. Bryco Arms</i> , 125 F.3d 624 (8th Cir. 1997).....	39
<i>Colombo v. BRP US Inc.</i> , 230 Cal. App. 4th 1442, 179 Cal. Rptr. 3d 580 (2014)	59
<i>Cooley v. Carter-Wallace Inc.</i> , 102 A.D.2d 642, 478 N.Y.S.2d 375 (1984)	41, 42, 52
<i>Crane v. Sears, Roebuck & Co.</i> , 218 Cal. App. 2d 855, 32 Cal. Rptr. 754 (1963)	38
<i>Davis v. Avondale Industries</i> , 975 F.2d 169 (5th Cir. 1992).....	55, 56
<i>DeBry v. Noble</i> , 889 P.2d 428 (Utah 1995).....	53

<i>De Luryea v. Winthrop Laboratories, Div. of Sterling Drug, Inc.</i> , 697 F.2d 222 (8th Cir. 1983)	32
<i>Derienzo v. Trek Bicycle Corp.</i> , 376 F. Supp. 2d 537 (S.D.N.Y. 2005)	37
<i>Duford v. Sears, Roebuck & Co.</i> , 833 F.2d 407 (1st Cir. 1987).....	32
<i>Frantz v. Brunswick Corp.</i> , 866 F. Supp. 527 (S.D. Ala. 1994)	53
<i>Garner v. Santoro</i> , 865 F.2d 629 (5th Cir. 1989)	38
<i>Gray v. Badger Min. Corp.</i> , 676 N.W.2d 268 (Minn. 2004).....	55
<i>Grier v. Cochran W. Corp.</i> , 705 A.2d 1262 (N.J. Super. Ct. App. Div. 1998).....	55
<i>Groesbeck v. Bumbo Int’l Trust</i> , 718 Fed. App’x 604 (10th Cir. 2017)	44
<i>Hale v. Beckstead</i> , 2005 UT 24, 116 P.3d 263.....	53
<i>Harman v. Yeager</i> , 110 P.2d 352 (Utah 1941).....	54
<i>Hood v. Ryobi America Corp.</i> , 181 F.3d 608 (4th Cir. 1999)	44
<i>House v. Armour of Am., Inc.</i> , 886 P.2d 542 (Utah Ct. App. 1994)	32, 36, 48
<i>House v. Armour of Am., Inc.</i> , 929 P.2d 340 (Utah 1996)	31, 33, 48, 49, 59
<i>Incollingo v. Ewing</i> , 282 A.2d 206 (Pa. 1971)	33, 45
<i>Johnson v. Colt Indus. Operating Corp.</i> , 797 F.2d 1530 (10th Cir. 1986)	40
<i>Kelso v. Bayer Corp.</i> , 398 F.3d 640 (7th Cir. 2005)	44
<i>Lancaster Silo & Block Co. v. N. Propane Gas Co.</i> , 75 A.D.2d 55, 427 N.Y.S.2d 1009 (1980)	38
<i>Marois v. Paper Converting Mach. Co.</i> , 539 A.2d 621 (Me. 1988)	38
<i>Patch v. Stanley Works (Stanley Chem. Co. Div.)</i> , 448 F.2d 483 (2d Cir. 1971)	32
<i>Phillips v. Kimwood Mach. Co.</i> , 525 P.2d 1033 (Or. 1974)	31
<i>Riggs v. Asbestos Corp., Ltd.</i> , 2013 UT App 86, 304 P.3d 61	53

<i>Russo v. Abex Corp.</i> , 670 F. Supp. 206 (E.D. Mich. 1987).....	56
<i>Ritchie v. Glidden Co.</i> , 242 F.3d 713 (7th Cir. 2001)	53, 56
<i>Ross v. Jacobs</i> , 684 P.2d 1211 (Okla. Civ. App. 1984)	33
<i>Schneider v. Surhmann</i> , 8 Utah 2d 35, 327 P.2d 822 (1948)	49
<i>Slisze v. Stanley-Bostitch</i> , 1999 UT 20, 979 P.2d 317	31
<i>Smith v. U.S. Gypsum Co.</i> , 612 P.2d 251 (Okla. 1980)	32
<i>Smith v. Walter C. Best, Inc.</i> , 927 F.2d 736 (3d Cir. 1990).....	54, 55
<i>Stoffel v. Thermogas Co.</i> , 998 F. Supp. 1021 (N.D. Iowa 1997)	56
<i>Sumsion v. J. Lyne Roberts & Sons, Inc.</i> , 2019 UT 14, 443 P.3d 1199	48
<i>Tabor v. Metal Ware Corp.</i> , 2007 UT 71, 168 P.3d 814.....	48, 53
<i>Tucson Indus., Inc. v. Schwartz</i> , 501 P.2d 936 (Ariz. 1972)	38
<i>Webb v. Special Elec. Co.</i> , 370 P.3d 1022 (Cal. 2016)	56, 57
Statutes	
Utah Code § 78B-6-702	46, 49
Utah Code § 78B-6-703	46
Other Authorities	
<i>Failure to warn as basis of liability under doctrine of strict liability in tort</i> , 53 A.L.R.3d 239	56
RESTATEMENT (SECOND) OF TORTS § 388.....	46, 48, 49, 50, 54, 57
RESTATEMENT (SECOND) OF TORTS § 402A.....	33, 46, 48, 49, 57
RESTATEMENT (THIRD) OF TORTS: PROD. LIAB. § 2	42, 49, 57, 59
W. Kimble and R. Leshner, <i>Products Liability</i> § 199 (1979)	42

Introduction

In June 2012, Respondent, Craig Feasel, rode as a passenger in a bass fishing boat manufactured by Petitioner Tracker Marine, LLC, that was equipped with an engine manufactured by Petitioner Brunswick Corporation. The boat was driven by Monty Martinez. The boat struck something, causing the boat to turn sharply and eject both Feasel and Martinez into the water.

At this point, Feasel and Martinez learned firsthand that the boat had a deadly latent danger: If unmanned and under power, it has a tendency to turn tightly in a deadly circle that can trap and repeatedly strike anyone unfortunate enough to be in the water. The engine continues at the throttle level set when the driver was ejected. Feasel was repeatedly struck by the encircling boat and repeatedly cut by the propeller, at high throttle. While Martinez was able to swim away from the danger, Feasel was trapped and struck at least three times by the boat. Feasel was life-flighted to a hospital to treat his grave injuries, including multiple bones broken in his face that required 12 screws and 3 steel bars to repair,¹ a “two-inch puncture wound near his heart,” and 3-inch deep cuts from the propeller.² Feasel was hospitalized for 52 days³ and considers it a “miracle” he survived.⁴ Physicians expressed disbelief that his left arm did not require amputation from his injuries.⁵

¹ R. 3411–12, 3500 (“But I feel like the third lap was the lap that hit my head and jaws and broke my face and nose, my whole face and my teeth, knocked all kinds of teeth in my mouth, and my mouth was instantly full of blood.”).

² R. 2529.

³ R. 88 (injury occurred June 30), 3254 (released from hospital August 21).

⁴ R. 3395 (“I’m not supposed to be alive.”).

⁵ R. 3479.

Feasel, Martinez, and the rescuer were experienced boaters, but were all shocked the boat moved at high speed in a tight circle after the driver was ejected. They were unaware of this danger inherent in the design of the boat and engine. Petitioners, however, knew of this deadly problem for decades. It is known in the industry as “the circle of death.” Yet Petitioners failed to warn users about this latent danger, choosing instead to simply warn about the open and obvious danger that contacting the propeller can cause injury. This is analogous to users of a beach being warned, “Caution, No Swimming,” rather than “Caution, No Swimming, Shark Infested Water”—while the instruction is the same, the general warning is inadequate to warn of the more specific, deadly danger the presence of sharks presents.

A safety device known as a kill-switch lanyard can be worn by the driver to nullify the risk of the circle of death by shutting off the engine if the driver is ejected. However, none of the warnings or instructions Petitioners provided with the boat show or explain that using the kill-switch lanyard is necessary to prevent the circle of death. Petitioners admit they knew for decades that boat operators routinely fail to use the kill-switch lanyard. They also knew operators fail to wear the lanyard because operators *do not understand its purpose and do not know the risks of failing to wear it.*

Feasel is entitled to have a jury decide whether Petitioners are liable to Feasel for their failure to warn of the specific risk of the circle of death and their failure to adequately warn of the need to wear the lanyard. The district court found the warnings were adequate as a matter of law, but only after excluding key evidence offered by Feasel, including the testimony (1) of Feasel that he was unaware of the circle-of-death risk and that if he were

warned of that phenomenon and its connection to the lanyard, he would *not* have ridden in the boat unless the operator wore the lanyard and (2) of Martinez that he would have worn the lanyard had he been so warned. The Court of Appeals properly overturned the district court's exclusion of this evidence, making the factual record even more favorable to Feasel. That evidentiary ruling was not part of this Court's grant of certiorari review.

Petitioners not only seek to turn products liability law on its head by having this Court determine that their non-specific, ambiguous warnings and instructions were adequate as a matter of law, but Petitioners also seek a determination that they satisfied their duty to Feasel by giving warnings to Martinez. Petitioners are incorrect. It was unreasonable and negligent for Petitioners to rely on an unsophisticated user such as Martinez to convey warnings to passengers. First, they never adequately warned Martinez. Second, Petitioners could have easily and inexpensively warned passengers directly by placing a warning on the boat itself.

Statement of the Issues

1. Whether the Court of Appeals erred in concluding that Petitioners had failed to demonstrate that, as a matter of law, adequate warnings were provided to the operator of the boat in which Respondent was traveling when he was thrown from the boat and injured by it.

This issue was presented in the petition for certiorari on pages 11 through 15.

2. Whether the Court of Appeals erred in reversing the district court's conclusion that Petitioners had no duty to warn Respondent directly as a passenger.

This issue was presented in the petition for certiorari on pages 16 through 17.

Statement of the Case

I. Statement of Facts

A. Petitioners Knew Their Products Had a Propensity to Enter the Circle of Death and Knew Their Warnings Were Inadequate

1. The product safety manager for Brunswick, Peter Chisholm, testified the circle of death “is a common phenomenon” that Brunswick knew about for “most of his career” (which began in 1980).⁶
2. Chisholm testified he knew that operators did not use the lanyard beginning when Brunswick “instituted the lanyard in the late ‘70s.”⁷
3. Since 1980, Brunswick knew that users of its products are injured because boat operators do not wear the lanyard.⁸
4. From its own customer research, Brunswick knew half of the operators of its boats openly admit to not using the lanyard.⁹
5. Brunswick knows there are at least two reasons why boaters do not use the lanyard: (1) they are unaware of the risks of not wearing it; and (2) they do not know the purpose of the lanyard:

Q. What are some of the reasons that you know of and have learned of when operators don't use the lanyard and kill switch?

⁶ R. 4228 (51:19–52:12).

⁷ R. 4229–30 (65:24–66:4).

⁸ R. 4236 (101:15–20).

⁹ R. 4230, 5468–69, 5475 (“my testimony is that 50 percent of the people do not use the lanyard.”).

A. I think it's a convenience issue. Some people simply just choose not to hook it up because they don't want to be bothered with it or they feel that there is no risk.

Q. And they feel that there's no risk, is that what you said?

A. Correct.

Q. Any other reasons that you've come to know of?

A. Being unaware of what the purpose of the switch is.¹⁰

6. Brunswick admits it does not warn boaters about the circle of death:

Q. Is there anything in this manual that tells the operator if for some reason he loses control of the boat or falls out of the boat, there is the potential that the boat could turn into a tight circle and come back on the operator?

A. The answer to your specific question is no.¹¹

7. Tracker's compliance engineer, Denzel Hellesen, testified that Tracker knows boaters do not use the lanyard but nonetheless chose *not* to include further warnings than those included in its manuals.¹²

8. Hellesen admits he has (1) attended U.S. Coast Guard information seminars for manufacturers of bass boats informing them about the circle of death and (2) read about the "circle of death" in "a number of publications" warning manufacturers about this danger.¹³

9. Tracker admits the circle of death has been a concern for the American Boat and Yacht Council, in which Tracker participates as a committee member.¹⁴

¹⁰ R. 4235 (90:10–23).

¹¹ R. 4229 (61:13–62:6).

¹² R. 4240 (50:15–51:10), 4245 (80:12–22).

¹³ R. 4246 (93:20–94:17).

¹⁴ R. 4252–53.

B. Feasel's Testimony

10. Feasel testified that on “June 30, 2012, I was injured in a boating accident. During the accident, I was ejected from the boat. The boat then began tightly circling around me. The boat and propeller struck me at least three separate times during at least three separate circles.”¹⁵

11. Feasel, a life-long boater, testified that “[b]efore the accident, I did not know about the Circle of Death” and that “the Circle of Death was not a danger that I contemplated for boating.”¹⁶

12. Feasel testified that if “I had known about the Circle of Death, I would have insisted that the operator of the boat use the kill-switch lanyard while operating the boat.” Feasel also testified that if “I had known about the Circle of Death, I would not have ridden in any bass boat in which the operator is not using the kill-switch lanyard.”¹⁷

13. Feasel testified that “I have been boating nearly my whole life. In my experience, very few boaters use the kill-switch lanyard.”¹⁸

14. Feasel testified that since the accident “I have spoken with many boaters about the Circle of Death. All of these boaters were surprised to learn about the Circle of Death because they had never heard about it.”¹⁹

¹⁵ R. 4217. *See also* R. 1500–02 (describing boat impacts); *supra* nn.1–5 (describing injuries).

¹⁶ R. 4218.

¹⁷ R. 4218.

¹⁸ R. 4218.

¹⁹ R. 4218.

C. Rescuer's Testimony

15. Kristen Lefevor, who rescued Feasel, testified she did not know about the circle-of-death phenomenon despite boating for decades and being a “careful, safe boater.”²⁰

D. Martinez's Testimony

16. Martinez testified that before the accident he did not know that “the boat would spin with no one in them [sic] in clear weather.”²¹

17. Martinez also testified as follows:

- a. The “weather was clear at the time of the accident so I was not wearing the kill-switch lanyard.”²²
- b. Martinez was driving the boat at full throttle when it hit something in the water, causing him and Feasel to be ejected from the boat into the water.²³
- c. “[T]he boat started spinning in circles.”²⁴
- d. If “I had known at the time of the accident that in clear weather a boat could spin when all people are thrown from the boat, I would have worn the engine-stop-switch lanyard.”²⁵
- e. “Since the accident, I now wear the kill-switch lanyard when I drive the boat, irrespective of the weather conditions, because I now know that a boat can

²⁰ R. 7546–47 (quoting Lefevor deposition during summary judgment hearing).

²¹ R. 4222.

²² R. 4222.

²³ R. 2775–2780 (Martinez Dep.).

²⁴ R. 4222.

²⁵ R. 4222.

continue to spin even without people in the boat.”²⁶

E. Testimony by Warnings Expert William Kitzes

18. Feasel retained product warnings expert William Kitzes to determine whether Petitioners’ warnings for the bass boat were adequate.²⁷

19. Kitzes has testified as a product-warnings expert in more than 400 depositions and 125 trials, in favor of both plaintiffs and defendants.²⁸

20. After reviewing the case materials, industry standards, research, reports, and instructional materials, Kitzes assessed the adequacy of Petitioners’ warnings.²⁹ Kitzes did this by evaluating a multitude of factors, including: the safety risks of the bass boat; the severity of those risks; how those risks are identified in warnings; the warnings’ environment; foreseeable uses by consumers; Petitioners’ monitoring of customers’ safety performance; Petitioners’ reactions to customers’ safety performance; and how the product is promoted.³⁰ Kitzes has used this same methodology for more than 400 cases in which he testified.³¹

21. Kitzes concluded that Petitioners “failed to adequately warn boat and engine users” and failed to “motivate them to avoid injury” by using the lanyard.³²

22. Kitzes testified this lack of adequate warnings made the bass boat unreasonably

²⁶ R. 4222.

²⁷ R. 3535 (Pl.’s Expert Disclosures).

²⁸ R. 4001.

²⁹ R. 3535 (Pl.’s Expert Disclosures), 3866, 3890–91, 3908–11, 3919–20, 3966–67, 3983–85.

³⁰ R. 4006.

³¹ R. 3859, 4001.

³² R. 3880, 3998.

dangerous.³³

23. Kitzes made it clear that Petitioners' warnings were inadequate, as opposed to just being capable of improvement.³⁴

24. Kitzes explained that national and industry standards require product warnings to inform users about the dangers from the product's foreseeable use. Kitzes testified it is reasonably foreseeable that boaters would not use the lanyard and confirmed that Petitioners needed to "inform the product user of the hazard, inform them of how to avoid the hazard, and the consequences if they fail to do so."³⁵

F. Kitzes's Exemplar Warning Labels for the Boat and Manuals

25. To illustrate the inadequacies of Tracker's and Brunswick's warnings, Kitzes created exemplars of adequate alternative warnings for use both on the boat and in the manuals, duplicated below.³⁶

³³ R. 3978.

³⁴ R. 3915 ("I think their material is inadequate to convey the risk so that people understand the danger. . . . [I]t needs to be supplanted with something that adequately conveys the risk, the danger, the hazard, how to avoid it, and under what circumstances it occurs.").

³⁵ R. 3863.

³⁶ R. 3920, 3918–21 (Kitzes authenticating his alternative warnings); 4264 (submitting alternative warning); Addendum 6.

⚠ DANGER

Contact with a spinning propeller will cause serious injury or death

Operators thrown overboard without a kill switch lanyard attached can suffer amputation or death from contact with propeller blades

Continuous throttle input will cause boat to turn sharply to the right and create a “circle of death” causing multiple propeller strikes



⚠ DANGER

Contact with a Spinning Propeller will cause Serious Injury or Death

Operator must attach lanyard kill switch at all times to prevent amputation or death by contact with spinning propeller

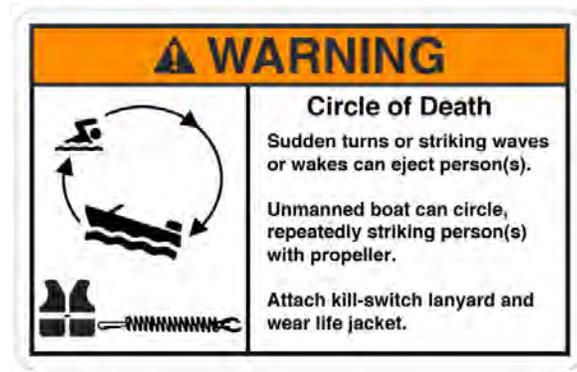
If the operator falls overboard with the engine running--the propeller will steer the boat to the right, creating an ever-tightening “circle of death”

The U.S. Coast Guard states that at 3200 rpm, the propeller can hit you 160 times per second

Wearing the lanyard to cut-off the engine when the operator loses contact with the steering control has been proven to prevent many propeller strikes, amputations and deaths



26. Supportive of Kitzes’s testimony, similar warnings are publicly available. For example, the following warning is given by PropellerSafety.com.³⁷



27. The Safe Boating Council posed the following warning on Twitter on May 14, 2016.³⁸



³⁷ Available at <http://www.propellersafety.com/12691/propeller-guard-thoughts/open-letter-to-fell-marine-mob-plus/>.

³⁸ Available at <https://twitter.com/SafeBoatCouncil/status/731620394268905472/photo/1>.

G. Tracker and Brunswick's Inadequate Warning Label on the Boat

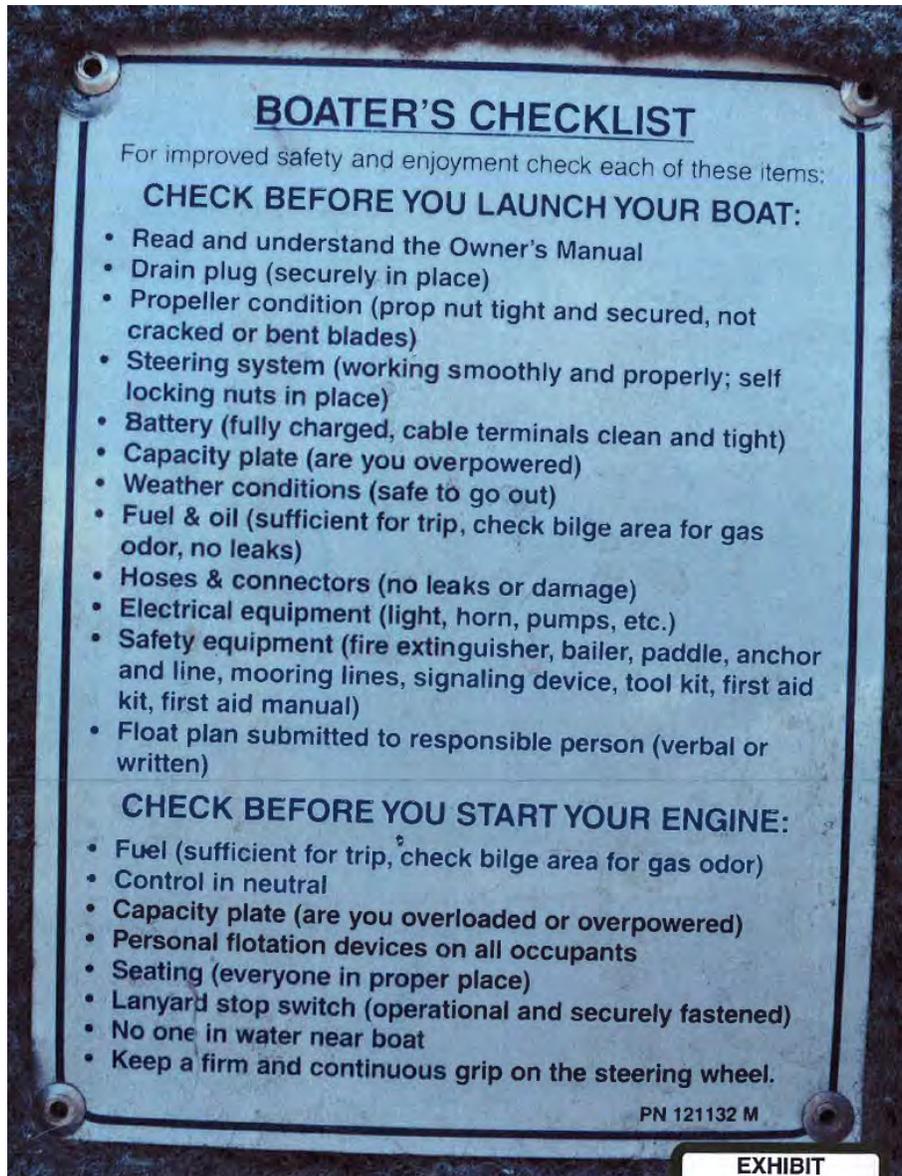
28. In contrast to Kitzes's alternative warnings, Tracker and Brunswick's warning label on the boat,³⁹ duplicated below, does not mention the dangers of the boat circling or of a person thrown from the boat being struck multiple times. Nor does it mention the operator must wear the lanyard to avoid this grave danger. Indeed, the instruction to wear the lanyard is not even on the "warning" label; it is on an entirely separate checklist.⁴⁰ Although a "warning" label mentions the danger of the propeller, it does so in the obvious context of using the ladder at the back of the boat to get in and out of water (as opposed to the non-obvious situation of being ejected and trapped by the circle of death).⁴¹



³⁹ R. 2942 (Photo of labels on the boat).

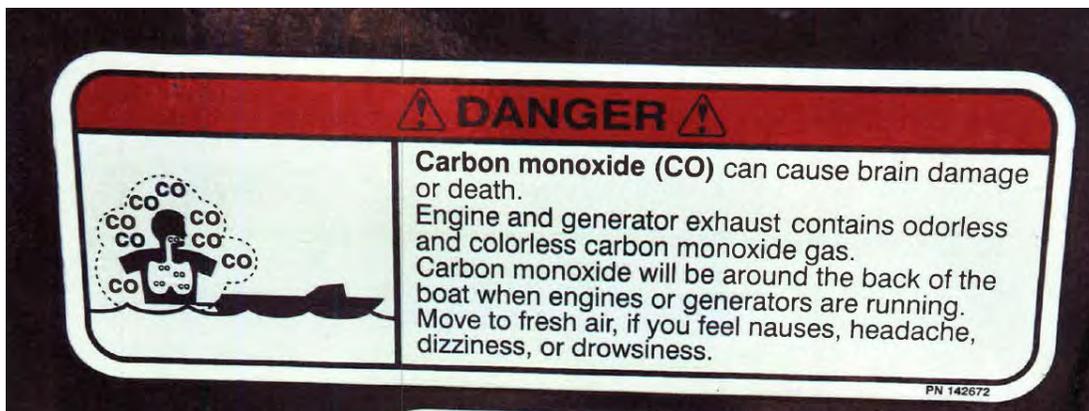
⁴⁰ R. 3193 (Photo of boater's checklist affixed to boat).

⁴¹ Addendum 7; R.6084 (Martinez Dep., describing warnings on boat).



EXHIBIT

29. The rear of the boat also carries a warning to passengers about the dangers of carbon monoxide.¹⁰⁶

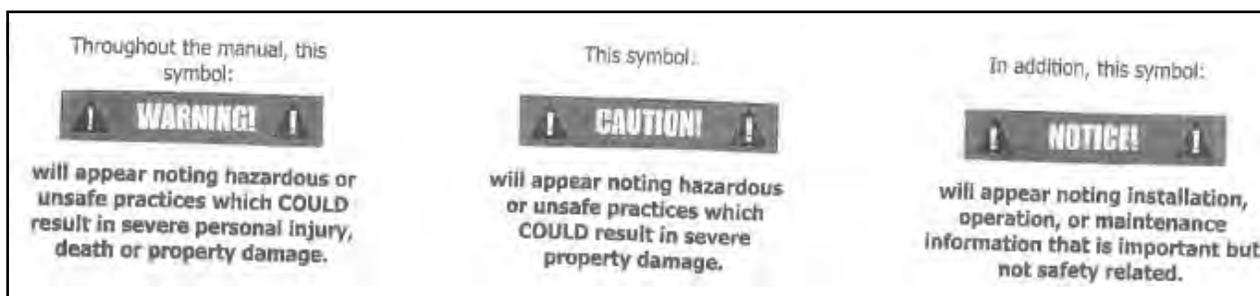


H. Tracker's and Brunswick's Inadequate Warnings in Their Manuals

30. Tracker issued a 96-page manual with the boat purchased by Martinez.¹⁰⁷

31. The Tracker manual never describes the boat's tendency to turn tightly in a circle if unmanned or under power, nor does it give any indication of that danger.¹⁰⁸

32. The Tracker manual describes its warning symbols as follows:¹⁰⁹



33. What Tracker has chosen to include in its manual does not convey adequate warnings related to the injury suffered by Feasel:

¹⁰⁶ Addendum 7; R. 6084.

¹⁰⁷ R. 2943–3048 (Tracker manual).

¹⁰⁸ *See generally id.*

¹⁰⁹ R. 2954.

- a. The lanyard is *not* identified in the Table of Contents under “Boating Safety,” “Emergency Procedures,” “Water Sports” (which includes “Fishing”), or “Getting Underway.”¹¹⁰

Table of Contents		
1 OWNER'S RESPONSIBILITY	Fire and Explosion	10
Boating Terminology	Collision	11
State Registration	Grounding	12
-Classes of Water Craft	Towing	12
Warranty Registration	-General Guidelines for Towing	12
Important Numbers	Person Overboard	13
-Hull Identification Number (HIN)	Emergency Re-Boarding	13
Insurance	Drowning	14
Periodic Maintenance	Medical Emergency	14
Warning Labels	Carbon Monoxide	14
Storage	Accident Reporting	16
Instructing Passengers	Distress Signals	16
Courtesy on the Water	Giving Assistance	16
	First Aid	16
2 BOATING SAFETY	4 WATER SPORTS	
Introduction	Water Skiing/Signals	17
Owner/Operator Responsibilities	Swimming and Diving	18
Safety Equipment	Fishing	19
Personal Flotation Device	5 RULES OF THE ROAD	
Capacity Information	Right-of-Way	20
Passenger Safety	Overtaking/Passing	20
Alcohol/Drug Use	Crossing Situations	20
Minors	Meeting Head On	21
Education	Warning Signals	21
Float Plan	Navigation Aids	22
3 EMERGENCY PROCEDURES	Channel Buoy Guide	22
Hazardous Weather	Waterway Markers	22
Capsizing		
	Homeland Security	23
	6 ENVIRONMENTAL CONSIDERATIONS	
	Fuel and Oil Spillage	24
	Excessive Noise	24
	Wake/Wash	24
	Exhaust Emissions	25
	Paint, Cleaning Agents and Other Substances	25
	7 GETTING UNDERWAY	
	Boarding/Loading	26
	Starting Procedure	26
	Shifting	28
	Maneuvering	28
	Docking	29
	Departing	30
	Safety Checklist	30
	8 OPERATING INFORMATION	
	Fueling Procedures	32
	Anchoring	33
	Performance	33
	Getting on Plane	33
	High Speed Operation	35
	Operating in Shallow Water	35
	9 TRAILER INFORMATION	
	Brackish and Salt Water Use	36

- b. The lanyard *sometimes* is and sometimes is *not* included in the manual's lists of safety equipment.¹¹¹

¹¹⁰ R. 2949. See also R. 2950 (identifying the lanyard under “Controls/Indicators”).

¹¹¹ R. 2954 (including lanyard), R. 2955 (excluding lanyard from list of safety equipment and recommended items to bring aboard).

Your safety, and the safety of other boaters, could depend directly on your operation and maintenance practices. Know the proper safety procedures and follow the recommended safety practices listed in this manual as you continue to seek education in boating education and safety.

SAFETY EQUIPMENT

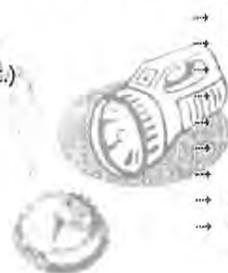
To comply with United States Coast Guard requirements your boat must be equipped with the following safety equipment:

- An approved Type B fire extinguisher
- A Personal Flotation Device (PFD) for each person aboard
- A horn or sounding device
- A Type IV Throwable Personal Flotation Device
- Proper navigation lighting for operation after sunset
- A Visual Distress Signal (VDS)

Consult your national boating law enforcement agency for additional details on required safety equipment.

In addition we recommend that you carry some additional items aboard for safety and precautionary reasons. These items include:

- An anchor and line
- A spare propeller with fastening devices
- A bailing device (bucket, hand pump, scoop)
- A knife
- A basic tool kit (screwdrivers, wrench, pliers, etc.)
- A depth sounder
- boat fenders (for docking)
- Charts
- A compass
- Spare keys
- Engine and accessories manual
- Emergency position-indicating radio beacon
- A waterproof flashlight and batteries
- Mooring lines
- A cell phone / radio
- Safety approved gas can (properly stowed)
- A first-aid kit
- Carbon monoxide detection system (if your boat is equipped with an enclosed cabin or compartment)
- Paddles
- A radio with weather band



c. The lanyard is *not* mentioned in connection with “PASSENGER SAFETY.”¹¹²

¹¹² R. 2957.

PASSENGER SAFETY

The owner/operator is responsible for the safety of the passengers aboard as well as the safety of fellow boaters. Inform the passengers of their responsibilities, such as wearing a PFD and to remain seated when moving. Each occupant needs to know where safety equipment is located and how to use it. Instruct at least one person on board how to operate the boat in case of an emergency. Do not let passengers sit on the gunwale, over the bow, on seat backs, or drag their hands or feet in the water while underway. Passengers should exercise common sense to ensure that everyone enjoys a safe outing. Make sure you know and abide by boating laws, rules and regulations.

7

TM000090

- d. The lanyard is *not* mentioned in the 7-page section regarding “Emergency Procedures,” including the subsection regarding “PERSON OVERBOARD.”¹¹³
- e. The lanyard is *not* mentioned in the 3-page section regarding “Water Sports,” including the subsection regarding “FISHING.”¹¹⁴
- f. The lanyard is mentioned in a section regarding, “Getting Underway,” but nothing there provides a warning or indication of any danger in connection with the lanyard or provides any information about its purpose:¹¹⁵

¹¹³ R. 2960–66.

¹¹⁴ R. 2967–69.

¹¹⁵ R. 2976–77.

Getting Underway

BOARDING/LOADING

Use caution when boarding your boat. NEVER JUMP INTO THE BOAT! Always step into the boat when boarding. Passengers need to board one at a time and sit where their weight is distributed evenly throughout the boat. Do not carry heavy equipment while boarding. Get into the boat and then lift any equipment aboard carefully.

It is very important that weight is distributed evenly throughout the boat. Passengers should be seated only in proper seating locations. Avoid excess weight in the bow or stern. Passengers must never ride on the deck, gunwale, rear deck, elevated fishing seats, or seat backs while the boat is underway.

! WARNING! !

All passengers should be carefully seated to prevent them from being thrown overboard or injured from falling in the boat. Passengers must never ride on the deck, gunwale, elevated fishing seats, or seat backs while the boat is underway. Passengers riding on the bow rider seats (if equipped) should use extreme caution. During rough water operation, passengers should be seated on the floor of the boat near the center.

STARTING PROCEDURE

OUTBOARD ENGINES: Electric Start Remote Control

Before starting your engine, read your engine owner's/operator's manual for specific details and complete operating procedures.

! WARNING! !

Never start or run your outboard engine without water circulating through all of the cooling intake holes in the gear case to prevent damage to the water pump or overheating of the engine which may cause permanent engine damage.

26

2976

TM000109

1. Lower the outboard to the run position. Make sure the cooling intake holes are submerged in water and the area around the engine is free of obstructions.
2. Make sure the fuel line is connected to the engine.
3. Squeeze fuel line primer bulb several times until it feels firm. Inspect for any fuel leaks at all connections.
4. Set the lanyard stop switch to RUN position and attach safety lanyard to the operator.
5. Shift the throttle control to neutral (N) position.
6. Turn the ignition key to the START position to start the engine. (See engine owner's manual for additional information regarding engine starting.)
7. Check for a steady stream of water flowing out of the water pump indicator hole. **NOTE: If no water is coming out of the water pump indicator hole, stop the engine and check the cooling water intake holes for obstruction. Absence of exterior obstructions may indicate a pump failure or blockage in the cooling system. Either condition could lead to severe motor damage.**

! WARNING! !

Never start the engine without water being supplied to the pickup pump to prevent pump and engine damage.

Do not operate starter motor continuously for more than 30 seconds.

On Carbureted Engines: When engine starts, quickly reduce throttle setting to avoid exceeding 1500 RPM.

Never shift drive unit unless engine is at idle RPM.

27

TM000110

2977

- g. A safety checklist states the lanyard stop switch should be checked to ensure it is operational but says nothing about ensuring the operator wears it.¹¹⁶

2979

DEPARTING
 In most cases it is best to back away from the dock. Forward departure may cause the stern to swing into the dock. The following procedures may be used to depart from the dock.

- Angle the engine away from the dock and slowly shift into reverse, backing away from the dock to swing the stern out. Continue backing while gradually straightening the engine. When clear of the dock, shift into neutral and angle the engine toward the dock to bring the boat parallel with the dock. Then angle the engine away from the dock and proceed forward.
- OR -
- Manually push the boat away from the dock with the engine running and in the neutral position. When clear of the dock, angle the engine away from the dock, shift into forward and proceed slowly.

SAFETY CHECKLIST
 The following checks and services are essential to safe boating and should be performed at each outing. Get in the habit of performing these checks so that they become part of your normal routine.

PRE-OPERATION

- Check the weather report before going on an outing. If bad weather is forecast, we recommend that you stay off the water.
- Check that the bilge drain plug is installed before launching the boat.
- Check the propeller for damage.
- Check that the required safety equipment is on board and in proper operating condition.
- Check to see that there is an adequate amount of fuel.
- Check the steering system and throttle control for proper operation.
- Check the lanyard stop switch for proper operation by starting the engine (on the water) and pulling the switch.
- Check all hoses (livewell, bilge, etc.) and connections for leaks or damage.
- Check bilge compartment for fuel, oil or water leaks as well as all fuel, oil and water connections.

! WARNING! !

If any problem is found during the safety checks, do not operate the boat. Any problem noted should be resolved before operating the boat. Contact your dealer to repair any item not functioning properly. Failure to do so may lead to conditions favorable for an accident and cause severe personal injury, death or property damage.

30

TM000112

- h. The lanyard is mentioned in the context of “getting on plane,” but with no indication that failing to wear the lanyard is dangerous.¹¹⁷

2982

GETTING ON PLANE
 Before beginning your run, make sure all loose equipment is properly stowed so it will not interfere with the operation of the boat, fall overboard or endanger your passengers. Make sure you and your passengers are wearing personal flotation devices and passengers are seated in appropriate on-plane seating locations with weight distributed evenly throughout the boat. The lanyard stop switch should be attached to the operator and the way ahead should be clear before taking off.

33

TM000115

¹¹⁶ R. 2979.

¹¹⁷ R. 2982.

- i. The lanyard is mentioned in connection with “Launching and Loading,” but is not included in the list of “Safety equipment.” The section does not indicate any danger or warning in connection with failing to wear the lanyard.

Launching and Loading

PREPARATION
As common courtesy to other boaters, prepare the boat for launching before approaching the ramp. Check the following:

- Remove the motor toter/transom saver and rear tie-downs.
- Install the bilge drain plug.
- Disconnect the trailer lights.
- Transfer any gear from the vehicle to the boat.
- Ensure the lanyard stop switch is connected and the fuel primer bulb is primed.
- Follow the boater Safety checklist.

LAUNCHING
Launching with two people is recommended, if possible. There are many factors that affect launching, such as ramp depth, weather conditions, congestion, etc. The following are guidelines to follow when launching. Procedures may need to be modified, depending on conditions.

- After preparation of the boat for launching, back the trailer down the ramp slowly, keeping the vehicle as straight as possible to keep from blocking lanes for others.
- Back the vehicle until the wheels of the trailer are at least halfway submerged. The depth will vary, depending on ramp depth and steepness. The trailer should be backed into the water deep enough for the boat to float off the trailer.
- Lower the engine deep enough in the water to allow for it to be started. Watch the depth so that the lower unit does not drag on the bottom or contact obstructions including people.
- Start the engine and let it run until it is warmed up.
- Loosen and detach the winch strap from the bow eye. Back the boat slowly off the trailer, keeping the boat straight. Make sure the way is clear behind you before backing.
- Once the boat is clear of the trailer, pull the vehicle up the ramp and out of the way.

BOATER'S CHECKLIST

For improved safety and enjoyment check each of these items:

CHECK BEFORE YOU LAUNCH YOUR BOAT:

- Read and understand the Owner's Manual
- Drain plug (securely in place)
- Propeller condition (prop nut tight and secured, not cracked or bent blades)
- Steering system (working smoothly and properly; self locking nuts in place)
- Battery (fully charged, cable terminals clean and tight)
- Capacity plate (are you overpowered)
- Weather conditions (safe to go out)
- Fuel and oil (sufficient for trip, check bilge area for gas odor, no leaks)
- Hoses and connectors (no leaks or damage)
- Electrical equipment (light, horn, pumps, etc.)
- Safety equipment (fire extinguisher, bailer, paddle, anchor and line, mooring lines, signaling device, lock kit, first aid kit, first aid manual)
- Float plan submitted to responsible person (verbal or written)

CHECK BEFORE YOU START YOUR ENGINE:

- Fuel (sufficient for trip, check bilge area for gas odor)
- Control in neutral
- Capacity plate (are you overloaded or overpowered)
- Personal flotation devices on all occupants
- Seating (everyone in proper place)
- Lanyard stop switch (operational and securely fastened)
- No one in water near boat
- Keep a firm and continuous grip on the steering wheel.

3002

TM000135

- j. The lanyard is described in a half-page section. That section: (1) describes that the lanyard is “strongly recommended” and “should” be worn but does not say wearing it is mandatory; (2) does not say that failing to wear the lanyard will cause injury or death; (3) never gives any indication that the boat can turn tightly in a deadly circle if the lanyard is not worn; and (4) describes risks of *wearing* the lanyard, including that if the lanyard is not long enough it can cause inadvertent activation, that “[a]ccidental loss of power can be

hazardous,” and that if the kill-switch is activated the boat “can cause injury to anyone in the boat’s path.”¹¹⁸

Lanyard Stop Switch



Your TRACKER® boat is equipped with a lanyard stop switch as an added safety feature. This device is designed to turn off the engine whenever the operator, who should always be attached to the switch lanyard, moves far enough away from the operator's position to activate the switch. It is strongly recommended that the operator make use of this device. The lanyard should be of sufficient length to avoid inadvertent activation. Accidental loss of power can be hazardous particularly when docking or in heavy seas, strong current, or high winds. It can take several seconds for the engine and propeller to stop turning and the boat can continue to coast for several hundred feet depending on the velocity at shut-down and the degree of any turn. However, the boat will not complete a full circle. While the boat is coasting, it can cause injury to anyone in the boat's path as seriously as the boat would when under power.

Attach the lanyard to the lanyard stop switch. Attach the metal snap on the opposite end of the lanyard to a belt loop or around your wrist. Some life jackets are also equipped with a loop for this purpose. The lanyard must be attached in a secure enough fashion as to properly activate the stop switch in case the boat operator becomes accidentally ejected from the driver's seat.

! WARNING! !

The operator should attach the lanyard stop switch to a belt loop, life jacket loop or around his or her wrist before operating the boat. The stop switch will shut off the engine should the operator be accidentally ejected from the driver's seat. Check the switch for proper operation before each use by starting the engine and pulling the lanyard far enough for the switch to engage to the OFF position. The engine should shut off immediately. The switch should be replaced if it is not functioning. Remember to reset the switch to the RUN position before attempting to restart the engine or the engine will not start.

34. In a separate section, the Tracker manual refers to “steering torque” but (1) never indicates that the boat has a tendency to turn in a tight circle of death if unmanned and under power and (2) never connects “steering torque” to the need to wear the lanyard.¹¹⁹

STEERING SYSTEMS

Your TRACKER® boat may be equipped with one of two types of steering systems, mechanical or hydraulic steering.

! WARNING! !

Keep at least one hand on the steering wheel at all times when the boat is running, regardless of whether you have mechanical or hydraulic steering. The steering torque of the engine can cause the steering wheel to spin if released, resulting in serious damage to the boat or serious injury or death to dislodged occupants.

61

3010

TM000143

¹¹⁸ R. 3006.

¹¹⁹ R. 2983, 3010.

Begin your run with the engine trimmed in (down) all the way to help you "get out of the hole" more quickly. Rapidly advance the throttle to get the boat on plane. Moderate to maximum throttle may be required, depending on the load and propeller.

Once the boat is on plane, immediately trim the engine out (up) to an intermediate trim position to avoid plowing the water, which could lead to bow steering, a condition that may cause the boat to lean to one side or turn abruptly. Running with the bow down also restricts speed and fuel economy. Extreme trim under (down) may also cause the boat to list or lean. The boat will level itself out as the engine is trimmed up (out). Adjust your cruising speed to a level with which you feel safe and comfortable.

! WARNING! !

Adjust the engine to an intermediate trim position as soon as the boat is on plane to avoid possible ejection due to boat "spin-out." Do not attempt to turn the boat when the engine is trimmed extremely under or in.

Under certain trim positions and/or bow-up attitude, such as when getting on plane, there can be a noticeable pull on the steering wheel, often referred to as "steering torque." This may only be a temporary situation such as when planing off, or it may be eliminated or reduced by changing your engine trim so that the propeller shaft is more parallel to the water surface. See the engine owner's/operator's manual for more information. Under all circumstances, the operator should always keep a firm grip on the steering wheel.

! WARNING! !

Do not trim the engine out too far while underway or the boat may begin to porpoise. Porpoising is a condition where the bow of the boat rises up and down in an uncontrolled manner. Engine over-trim is one cause of this condition. If porpoising occurs, trim the engine down (in) gradually until the bow stabilizes. Porpoising can also be caused by excessive weight in the rear portion of the boat which may require distribution of weight more evenly.

35. Similar to the Tracker manual, Brunswick's 125-page manual never gives any indication that the engine and boat have a tendency to create a circle of death if unmanned and under power.¹²⁰ Nor does the manual give any indication that wearing the lanyard mitigates that risk.¹²¹

36. Brunswick's manual describes its warning indications as follows:¹²²

¹²⁰ See generally R. 1052–1195 (Brunswick manual). See also R. 3049–3189 (same).

¹²¹ See generally *id.*

¹²² R. 1083.

This manual as well as safety labels posted on the outboard use the following safety alerts to draw your attention to special safety instructions that should be followed.

▲ DANGER
Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
▲ WARNING
Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
▲ CAUTION
Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE
Indicates a situation which, if not avoided, could result in engine or major component failure.

37. Brunswick’s manual includes two pages about the lanyard. The first page notes that the lanyard is an optional accessory, stating “[a] lanyard switch *can* be installed as an accessory.”¹²³ It notes the lanyard can be “entangle[d] with nearby objects” and cause “accidental activation” of the kill switch. This page identifies no other danger and provides no additional warnings:

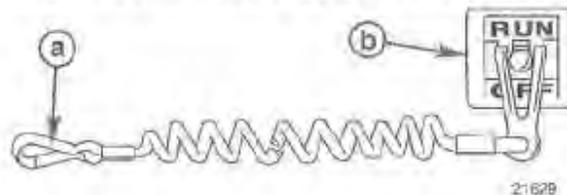
¹²³ R. 1089 (emphasis added).

GENERAL INFORMATION

Lanyard Stop Switch

The purpose of a lanyard stop switch is to turn off the engine when the operator moves far enough away from the operator's position (as in accidental ejection from the operator's position) to activate the switch. Tiller handle outboards and some remote control units are equipped with a lanyard stop switch. A lanyard stop switch can be installed as an accessory - generally on the dashboard or side adjacent to the operator's position.

The lanyard is a cord usually 122–152 cm (4–5 feet) in length when stretched out, with an element on one end made to be inserted into the switch and a snap on the other end for attaching to the operator. The lanyard is coiled to make its at-rest condition as short as possible to minimize the likelihood of lanyard entanglement with nearby objects. Its stretched-out length is made to minimize the likelihood of accidental activation should the operator choose to move around in an area close to the normal operator's position. If it is desired to have a shorter lanyard, wrap the lanyard around the operator's wrist or leg, or tie a knot in the lanyard.



a - Lanyard cord
b - Lanyard stop switch

Read the following Safety Information before proceeding.

38. The second page of the Brunswick manual addressing the lanyard includes the sole warning in either manual or on the boat that the lanyard should “always [be] properly connected” to the operator.¹²⁴ The preceding sentence, however, contemplates that an operator *will not* use the lanyard, stating: “If the operator falls out of the boat, stop the engine immediately” Of course, if an operator is wearing the lanyard and is ejected, there is no need to stop the engine because that is done by the kill switch. Further, the warning is followed by another warning, of equal intensity, of the risks of accidental

¹²⁴ R. 1090. See also R. 4048–49 (Kitzes testifying about warning).

activation of the switch resulting from *wearing* the lanyard. It also notes the danger that if the lanyard is worn and activated, the boat “can cause injury to anyone in the boat’s path”:

GENERAL INFORMATION

Important Safety Information: The purpose of a lanyard stop switch is to stop the engine when the operator moves far enough away from the operator's position to activate the switch. This would occur if the operator accidentally falls overboard or moves within the boat a sufficient distance from the operator's position. Falling overboard and accidental ejections are more likely to occur in certain types of boats such as low sided inflatables, bass boats, high performance boats, and light, sensitive handling fishing boats operated by a hand tiller. Falling overboard and accidental ejections are also likely to occur as a result of poor operating practices such as sitting on the back of the seat or gunwale at planing speeds, standing at planing speeds, sitting on elevated fishing boat decks, operating at planing speeds in shallow or obstacle infested waters, releasing your grip on a steering wheel or tiller handle that is pulling in one direction, drinking alcohol or consuming drugs, or daring high speed boat maneuvers.

While activation of the lanyard stop switch will stop the engine immediately, a boat will continue to coast for some distance depending upon the velocity and degree of any turn at shut down. However, the boat will not complete a full circle. While the boat is coasting, it can cause injury to anyone in the boat's path as seriously as the boat would when under power.

We strongly recommend that other occupants be instructed on proper starting and operating procedures should they be required to operate the engine in an emergency (e.g. if the operator is accidentally ejected).

▲ WARNING

If the operator falls out of the boat, stop the engine immediately to reduce the possibility of serious injury or death from being struck by the boat. Always properly connect the operator to the stop switch using a lanyard.

▲ WARNING

Avoid serious injury or death from deceleration forces resulting from accidental or unintended stop switch activation. The boat operator should never leave the operator's station without first disconnecting the stop switch lanyard from the operator.

MART000374

I. Testimony Regarding the Severity of Danger and Efficacy of Warnings

39. Kitzes testified that, as Chisholm (Brunswick’s product safety manager) admitted, boaters do not use the lanyard because they do not understand the danger of not doing so.¹²⁵

Kitzes also testified that an adequate warning, which makes the danger of the circle of death explicit, would result in more boaters using the lanyard.¹²⁶

40. Kitzes relied upon research data from the U.S. Coast Guard’s Boating Accident Report Database (BARD). BARD recognized “that being thrown overboard is the common causality in many of these incidents, that [the boat] circles around, and it goes at the speed it was at when you fell out, and the boat, or the propeller, could hit you.”¹²⁷ BARD data shows that in 2009 only an estimated 20% of boaters wore the lanyard, which dropped to 13% the following year.¹²⁸

41. Kitzes relied upon U.S. Coast Guard research data showing in just a four-year period between 2002 and 2006 there were 35 deaths and 99 injuries that could have been prevented by using kill-switch lanyards, with another 17 deaths that may have been prevented by using kill-switch lanyards. These deaths and injuries would likely have been prevented with an adequate warning.¹²⁹

42. Kitzes testified adequate warnings, like his proposed warnings, would more likely than not result in more people using the lanyard, preventing injuries like Feasel’s.¹³⁰

¹²⁵ R. 4052–53; *supra* Statement of Facts (“S.O.F.”) ¶ 5.

¹²⁶ R. 4052.

¹²⁷ R. 3904–3905.

¹²⁸ R. 3893–94.

¹²⁹ *See* R. 3900, 3969–70.

¹³⁰ R. 4052, 4076.

J. Testimony by Boating Expert Gary Polson

43. Feasel retained a boating mechanical engineer named Gary Polson.¹³¹

44. Polson testified that “the boat and outboard motor at issue in this case had, at the time it was sold, a characteristic, propensity, risk, and danger known as the ‘Circle of Death.’ This means that the boat, when underway with no one at the helm, has a propensity to spin in tight circles and strike an ejected occupant with the propeller or other part of the boat.”¹³²

45. Polson testified that the “Circle of Death is a different and more threatening type of danger than the danger of being hit by a non-circling boat. A non-circling boat may strike an ejected occupant once; but a boat engaged in the Circle of Death can strike an ejected occupant multiple times, particularly with the propeller. This different type of danger is not contemplated by the ordinary and prudent buyer, consumer, and user.”¹³³

46. Polson testified that “[b]ass boats, like the boat in this case, have a higher risk of occupant ejections than other types of boats,” given their low-slung build.¹³⁴

47. Polson testified that there are more than 70 documented fatalities and injuries from the Circle of Death.¹³⁵

¹³¹ R. 3535 (Pl.’s Expert Disclosures).

¹³² R. 4127.

¹³³ R. 4127.

¹³⁴ R. 4127; *see also* R. 3087 (Brunswick manual—“Falling overboard and accidental ejections are more likely to occur in certain types of boats such as low-sided inflatables, bass boats . . .”).

¹³⁵ R. 4130.

II. Procedural History

Feasel sued Tracker and Brunswick asserting strict liability and negligence claims based on their failure to adequately warn of the risks associated with the tendency of the boat to enter a circle of death and the need to wear the lanyard.¹³⁶ Feasel brought additional claims that are not at issue before this Court, including claims for design defect and breach of warranties.¹³⁷

Tracker and Brunswick moved for summary judgment. Feasel opposed the motion, in part on grounds that genuine disputes of material fact precluded summary judgment.¹³⁸ The district court excluded certain evidence offered by Feasel, including portions of declaration testimony of Feasel and Martinez.¹³⁹ With this evidence excluded, the district court granted summary judgment in favor of Tracker and Brunswick on all of Feasel's claims.¹⁴⁰ Feasel appealed the district court's order on summary judgment, as well as its order excluding declaration testimony.¹⁴¹

The Utah Court of Appeals held that genuine disputes of material fact precluded summary judgment on Feasel's "inadequate warning claim," not distinguishing between Feasel's negligence and strict liability theories regarding the inadequate warning.¹⁴² The

¹³⁶ R. 88–98 (First Am. Compl.).

¹³⁷ *Id.* Feasel also sued Martinez, the driver of the boat, before settling claims against him and dismissing him as a defendant. *See* R. 7845–46 (Order Dismissing Martinez).

¹³⁸ R. 2383–4090 (Joint Motion for Summary Judgment and Exhibits); R. 4091–4312 (Opposition to Joint Motion for Summary Judgment and Exhibits).

¹³⁹ Opinion, ¶ 8.

¹⁴⁰ R. 7742 (Order Granting Summary Judgment).

¹⁴¹ R. 7847 (Notice of Appeal).

¹⁴² Opinion, ¶¶ 19–27.

Court of Appeals also reversed the district court’s conclusion that “the duty to warn extends to the operator of the boat,” not to Feasel.¹⁴³ Tracker and Brunswick petitioned this Court for certiorari review on several issues.¹⁴⁴ This Court granted the petition on June 26, 2020, as to two issues.

III. Disposition in the Lower Courts and Orders Under Review

The Order under review is the Opinion of the Utah Court of Appeals, 2020 UT App 28 (“Opinion”), which reviewed and reversed, as applicable here, the district court’s Order on Defendants Tracker and Brunswick’s Joint Motion for Summary Judgment.¹⁴⁵

¹⁴³ Opinion, ¶¶ 30–31; R. 7740 ¶ 7.

¹⁴⁴ Tracker and Brunswick’s Petition for Writ of Certiorari, filed April 22, 2020.

¹⁴⁵ R. 7736–7744.

Summary of the Argument

The Court granted certiorari with respect to only two issues, which concern the Court of Appeals' holdings that (1) Petitioners' failed to demonstrate the adequacy of their warnings as a matter of law, and (2) the district court erred by holding that Petitioners' "duty to warn extends to the operator of the boat," not to Feasel.¹⁴⁶

Feasel addresses the adequacy of the warnings issue by showing that the Court of Appeals ruled correctly by: (1) applying the *House* factors to the incomplete and ambiguous "warnings" supplied by Petitioners; (2) viewing the facts in the light most favorable to Feasel; and (3) concluding that triable issues of fact precluded judgment as a matter of law in favor of Petitioners. Further, Feasel has created a triable issue by showing Petitioners acted unreasonably and negligently by failing to change their warnings in light of their knowledge that users routinely failed to wear the kill-switch lanyard.

Feasel addresses the duty issue by demonstrating: (1) under the applicable Restatement of Torts sections and case law, duties in strict liability and negligence are owed ultimately to all "users" of a product, which includes boat passengers; (2) whether Petitioners satisfied their duty to warn Feasel by relying on Martinez, an intermediary, is a question of fact for the jury; and (3) it was unreasonable to rely on Martinez to forward warnings to Feasel.

¹⁴⁶ Opinion, ¶¶ 30–31; R. 7740 ¶ 7.

ARGUMENT

It is well established that “under Utah law, a manufacturer may be held strictly liable for any physical harm caused by its failure to provide adequate warnings regarding the use of its product.”¹⁴⁷ Feasel also brought claims of *negligent* failure to provide adequate warnings,¹⁴⁸ on the basis that a “manufacturer has a duty to warn against a product’s latent hazards that are known to the manufacturer but unknown to the consumer.”¹⁴⁹ Under either theory, Petitioners were “required to warn about a danger from the [product]’s foreseeable use of which [Petitioners] knew or reasonably should have known and that a reasonable user would not expect.”¹⁵⁰

This Court granted certiorari on two questions, relating to the adequacy of Petitioners’ warnings and to whom Petitioners were required to issue those warnings. There being no error by the Court of Appeals, this Court should affirm.

¹⁴⁷ *House v. Armour of Am., Inc.*, 929 P.2d 340, 343 (Utah 1996).

¹⁴⁸ *See, e.g.*, R. 91 ¶ 25(b); 94 ¶ 47(c). *See also Slisze v. Stanley-Bostitch*, 1999 UT 20, ¶ 8, 979 P.2d 317 (holding that plaintiff may “simultaneously bring a negligence and a strict liability claim” with respect to the same product).

¹⁴⁹ *Slisze*, 1999 UT 20, ¶ 15 (citing RESTATEMENT (SECOND) OF TORTS § 388 cmt. b; *Anderson v. Dreis & Krump Mfg. Corp.*, 739 P.2d 1177, 1182 (Wash. Ct. App. 1987) (describing inadequate warning theories under strict liability and negligence)). While similar in practice, such claims brought under strict liability focus on the product itself, asking whether it was unreasonably dangerous because it lacked adequate warnings; on the other hand, such claims brought under negligence ask, essentially, whether the defendant exercised reasonable care in supplying the product without that warning. *See, e.g., Phillips v. Kimwood Mach. Co.*, 525 P.2d 1033, 1039 (Or. 1974) (describing theories of failure to adequately warn).

¹⁵⁰ Model Utah Jury Instructions (Second) CV1007–1008 and CV 1017–1018 (quoted in Pet’rs’ Br., 30).

I. THE COURT OF APPEALS CORRECTLY HELD THAT PETITIONERS' WARNINGS TO THE BOAT OPERATOR WERE NOT ADEQUATE AS A MATTER OF LAW.

Petitioners do not dispute the existence of a duty to warn.¹⁵¹ Nor do they dispute the legal standard employed by the Court of Appeals. Rather, Petitioners' only challenge is that the Court of Appeals "too strictly applied the standard for determining" whether they provided adequate product warnings.¹⁵²

The Utah Court of Appeals did not err. It carefully applied Utah law and correctly concluded that genuine issues of material fact existed regarding the adequacy of Petitioners' warnings.¹⁵³ That opinion was in line with countless decisions across the country that have left such matters to the jury.¹⁵⁴

¹⁵¹ Pet'rs' Br., 4 (admitting that "Tracker and Brunswick's duty to warn extended ... to Martinez as the owner/operator").

¹⁵² Pet'rs' Br., 3; *see also* Pet'rs' Br., 16–17, 22–27.

¹⁵³ *House v. Armour of Am., Inc.*, 886 P.2d 542, 551 (Utah Ct. App. 1994) (*House I*), *aff'd*, 929 P.2d 340 (Utah 1996) ("It was error for the trial court to grant summary judgment on this issue unless reasonable minds could reach only one result taking all disputed facts and inferences in a light most favorable to [the nonmoving party]." (citations omitted)).

¹⁵⁴ *See, e.g., id.* ("Whether the warning provided by the label was adequate presents a question of fact, to be resolved by the trier of fact." (citing *DeBry v. Valley Mortgage Co.*, 835 P.2d 1000, 1004 (Utah Ct. App. 1992))). *See also Anderson v. Klix Chem. Co.*, 472 P.2d 806, 810 (Or. 1970) (noting "this question,—was the warning reasonable?—is the kind of question that is usually answered by a jury"); *Duford v. Sears, Roebuck & Co.*, 833 F.2d 407, 410 (1st Cir. 1987) (jury question whether arrows and word "up" on chimney pipe adequately warned of need to install pipe in certain orientation); *Patch v. Stanley Works (Stanley Chem. Co. Div.)*, 448 F.2d 483, 489–90 (2d Cir. 1971) (jury question whether defendant knew of certain use of product that risked explosion and thus had a duty to warn); *Smith v. U.S. Gypsum Co.*, 612 P.2d 251, 254 (Okla. 1980) (jury question whether warnings "DANGER," "EXTREMELY FLAMMABLE," "VAPORS MAY CAUSE FLASH FIRE," "Vapors may ignite explosively" and others were adequate where product exploded); *De Luryea v. Winthrop Laboratories, Div. of Sterling Drug, Inc.*, 697 F.2d 222, 224–25 (8th Cir. 1983) (jury question whether warnings adequate even though no physician testified that "warnings were inadequate or that [the physician] would have acted

A. The Utah Court of Appeals Correctly Applied the *House* Factors to Determine That Factual Issues Remained Regarding Whether Petitioners Issued an Adequate Warning That “Completely Disclosed All the Risks Involved, as Well as the Extent of Those Risks.”

The clearest evidence of the inadequacy of Petitioners’ warnings is that users of their products in fact (1) did not know of the danger of the circle of death, and (2) routinely failed to wear the kill-switch lanyard because they did not understand its purpose or the dangers it avoided.¹⁵⁵ A warning cannot be adequate as a matter of law where it is in fact ineffective. On that basis alone Petitioners were not entitled to judgment as a matter of law.

Here, no “reasonable” or “ordinary” user would be adequately warned.¹⁵⁶ Indeed, the purported warnings on the boat and in the manuals differ significantly from the descriptions in Petitioners’ brief. For example, Petitioners have stated as follows:

differently if different warnings had been given”); *Incollingo v. Ewing*, 282 A.2d 206, 220 (Pa. 1971) (jury questions presented as to whether warnings were adequate and whether warnings were “in effect cancelled out and rendered meaningless in the light of the sales effort”); *Ross v. Jacobs*, 684 P.2d 1211, 1214 (Okla. Civ. App. 1984) (“We initially conclude that most courts have been reluctant to decide adequacy of warning as a matter of law.” (citations omitted)).

¹⁵⁵ S.O.F. ¶¶ 4–5. *See also* S.O.F. ¶¶ 2, 3, 6, 11–16, 17(d), 17(e), 21, 39, 45.

¹⁵⁶ *See, e.g., House*, 929 P.2d at 344 (a “product may still be unreasonably dangerous if the hazards or risks associated with its use were not such that they should have been realized by a *reasonable user* or consumer of the product” (emphasis added) (quoting *House I*, 886 P.2d at 548)); RESTATEMENT (SECOND) OF TORTS § 402A cmt. *i* (product is unreasonably dangerous if “[t]he article sold [is] dangerous to an extent beyond that which would be contemplated by the *ordinary consumer* who purchases it, with the ordinary knowledge common to the community as to its characteristics.” (emphasis added)).

Petitioners' Statement	Response
<p>“The warnings and instructions in manuals <i>and on a placard next to the helm</i> of the boat describe the function and purpose of the stop switch lanyard and why the operator needs to wear it.”</p> <p>Pet’rs’ Br. 8 (emphasis added).</p>	<ul style="list-style-type: none"> <li>- No citation to the record. <li>- The statement on the helm says <i>nothing</i> regarding the “function” or “purpose” of the lanyard nor “why the operator needs to wear it.”¹⁵⁷ <li>- The statement on the helm is <i>not</i> a warning because it is not accompanied by indications that there is any danger or risk associated with not wearing the lanyard. <li>- No statement on the boat or in either manual discloses that the boat has a tendency to turn in a tight circle if unmanned and under power or that wearing the lanyard mitigates that risk.
<p>The warnings “told [Martinez] that the boat would not circle or spin if the lanyard was worn.”</p> <p>Pet’rs’ Br. 15.</p>	<ul style="list-style-type: none"> <li>- No citation to the record. <li>- The statement referenced (without citation) in Tracker’s manual is not a warning, as it gives no indication of “WARNING” or “CAUTION”.¹⁵⁸ <li>- The statement in the manual actually describes a danger of <i>wearing</i> the lanyard if it activates to stop the boat: “the boat can continue to coast for several hundred feet depending on the velocity at shut-down and the degree of any turn. However, the boat will not complete a full circle. While the boat is coasting, it can cause injury to anyone in the boat’s path”¹⁵⁹ <li>- The statement in the manual says <i>nothing</i> to indicate that <i>not wearing</i> the lanyard poses a danger because the boat has a propensity to turn tightly in a circle if unmanned and under power.

¹⁵⁷ R. 3193.

¹⁵⁸ R. 2954, 3006; S.O.F. ¶ 32.

¹⁵⁹ R. 3006; S.O.F. ¶ 33(j).

<p>Martinez “was told to always inform at least one passenger about the boat and engine’s safety features and <i>warnings</i>.”</p> <p>Pet’rs’ Br. at 15 (emphasis added).</p>	<ul style="list-style-type: none"> - No citation to the record. - Nothing in the manuals instruct operators to disclose “warnings” to passengers. Rather, the Tracker manual merely states to “make sure” that a passenger “is familiar with the proper operation and safety aspects of the boat <i>in case of emergency</i>” and to “[s]how all passengers the location of safety equipment and ensure that they know how to use the safety equipment.”¹⁶⁰ - Importantly, the lanyard is not part of the ten-item list of “safety equipment” listed on the boat’s “BOATER’S CHECKLIST.”¹⁶¹
<p>The warnings “explain that if the lanyard is not worn and the operator is ejected, the boat’s steering wheel can spin thereby causing the boat to circle while under power.”</p> <p>Pet’rs’ Br. at 19.</p>	<ul style="list-style-type: none"> - No citation to the record. - <i>Nowhere</i> does any warning or other statement say that the boat can, or has a propensity to, turn in a circle.
<p>“The warnings link the circling phenomenon to not wearing the lanyard. The warnings notify the user that if the lanyard is worn, the engine will stop if the operator is ejected and ‘the boat will not complete a full circle.’”</p> <p>Pet’rs’ Br. at 19.</p>	<ul style="list-style-type: none"> - Petitioners employ a logical fallacy to misrepresent the statements in the manual. Where the manual describes the danger of <i>wearing</i> the lanyard, the statement that the boat “will not” go in a circle if the lanyard <i>is</i> worn does not give a reasonable user indication that the boat <i>will</i> go in a circle if the lanyard is <i>not</i> worn. - <i>Nowhere</i> does any warning or other statement say that the boat can, or has a propensity to, turn in a circle, let alone repeated, deadly circles. - <i>Nowhere</i> does any warning or other statement link wearing the kill-switch lanyard to the risk of the boat turning tightly in a circle of death.

¹⁶⁰ R. 2953 (emphasis added).

¹⁶¹ R. 3193. *See also* S.O.F. ¶ 33(b), (c), (i).

Petitioners have described warnings they *wish* were included with their dangerous products. As an additional example, Petitioners state the warnings communicate “the engine’s ‘steering torque’ can cause the boat’s steering wheel to ‘spin’ and the boat to turn in a ‘circle’ if the driver is ejected without wearing the lanyard.” Tellingly, Petitioners must use extremely selective quoting to make their argument. For their untrue statement, Petitioners cite two pages of the Tracker manual, R. 2983 and R. 3010.

First, R. 2983 is not a “warning,” even according to Tracker.¹⁶² It describes that “Under certain trim positions and/or bow-up attitude, such as when getting on plane, there can be a noticeable pull on the steering wheel, often referred to as ‘steering torque.’” Second, R. 3010, which is 17 pages away in the manual, warns only about keeping “at least one hand on the steering wheel.” In connection with keeping one hand on the steering wheel, it notes that “steering torque” can cause the “wheel to spin if released,” which can result in “serious damage to the boat or serious injury or death to dislodged occupants.”

No reasonable user would understand that: (1) these statements have anything to do with a kill-switch lanyard; (2) the boat has a propensity to turn in a tight circle when unmanned and under power; or (3) such risk is mitigated by wearing the kill-switch lanyard. The actual record, rather than Petitioners’ misrepresentation of it, makes clear not only that the warnings were *inadequate*, but that the district court absolutely could not hold the warnings were adequate as a matter of law. Indeed, the warnings were inadequate on every factor articulated in *House I*, as relied upon by the Court of Appeals in this matter:

¹⁶² S.O.F. ¶ 32.

An adequate warning “must completely disclose all the risks involved, as well as the extent of those risks”; specifically, it must “(1) be designed so it can reasonably be expected to catch the attention of the consumer; (2) be comprehensible and give a fair indication of the *specific risks* involved with the product; and (3) be of an intensity justified by the magnitude of the risk.”¹⁶³

1. The Purported Warnings Could Not “Reasonably Be Expected to Catch the Attention” of Users Because Placards on the Boat Were Hidden Behind a Seat, and the Purported Warnings in the Manuals Were Mere Statements.

Petitioners rely on the following statement affixed to the boat: “CHECK BEFORE YOU START YOUR ENGINE: . . . Lanyard stop switch (operational and securely fastened).”¹⁶⁴ That statement gives no indication of danger or the possibility of injury or death. It is not accompanied by any word or symbol indicating “warning” or “caution.” Further, that instruction is very small and tucked away behind the driver’s seat, obscured by the seat and by the body of anyone seated there.¹⁶⁵ “A warning that is inconspicuously located and written in small print may be deficient.”¹⁶⁶

The Tracker and Brunswick manuals use “WARNING” and “CAUTION” labels to indicate hazardous situations.¹⁶⁷ However, statements relied upon by Petitioners about the purpose of the lanyard, safety of passengers, and that while wearing the lanyard “the boat will not complete a full circle” do *not* indicate any warning or caution.¹⁶⁸

¹⁶³ Opinion, ¶ 24 (emphasis added) (quoting *House I*, 886 P.2d at 551).

¹⁶⁴ R. 3193.

¹⁶⁵ R. 2942.

¹⁶⁶ *Derienzo v. Trek Bicycle Corp.*, 376 F. Supp. 2d 537, 568 (S.D.N.Y. 2005). *See also infra* n.243.

¹⁶⁷ R. 1083, 2954.

¹⁶⁸ R. 1089–90, 2951, 2953, 2957, 2983, 3006. *See also Black v. Gorman-Rupp*, 655 So. 2d 717, 723 (La. Ct. App. 1995) (“the issue of whether the warning must be placed on the product itself must be considered on a case-by-case, or at least product-by-product, basis. Consideration must be given to the nature and severity of the danger to be warned against,

2. The Purported Warnings Gave No “Comprehensible” or “Fair” Indication of the “Specific Risk” of the Boat’s Propensity to Turn Tightly in a Circle of Death or Why the Lanyard Must be Worn.

For decades, cases across the country have required product warnings to describe product risks with *specificity*.¹⁶⁹ It is not enough to warn of general dangers. For example, in *Alder v. Bayer Corp., AGFA Div.*, 2002 UT 115, ¶ 38, 61 P.3d 1068, this Court held that “there is a triable issue as to adequate warning” where defendant communicated “the requirement for ten complete air exchanges per hour” but did not inform technicians of facts making the product “likely to be dangerous,” including “disclosure of the specific,

the likelihood that the product will be used by persons who have not read the manual, the practicality and effectiveness of placing the warning on the product itself and any other relevant factors.”).

¹⁶⁹ See, e.g., *Casetta v. U.S. Rubber Co.*, 260 Cal. App. 2d 792, 816–17, 67 Cal. Rptr. 645 (1968) (jury question whether defendant’s general instructions for mounting tires adequately warned of “a special hazard [of explosion that] arose in mounting tube-type tires on safety or hump-type rims”); *Marois v. Paper Converting Mach. Co.*, 539 A.2d 621, 624 (Me. 1988) (even though plaintiff knew of dangerous “nip point area” of paper rewinder, it was a jury question whether he knew of the *specific* danger his hand could be drawn into the machine while clearing); *Garner v. Santoro*, 865 F.2d 629, 640 (5th Cir. 1989) (jury question whether plaintiff was adequately warned even though instructed about safety equipment and its purpose); *Tucson Indus., Inc. v. Schwartz*, 501 P.2d 936, 940–41 (Ariz. 1972) (affirming verdict of inadequate warning where product could cause blindness to someone in different room despite clear warnings regarding toxic vapors and necessity of ventilation); *Anderson v. Hedstrom Corp.*, 76 F. Supp. 2d 422, 451 (S.D.N.Y. 1999) (“Whether those warnings should have specified, for example, the specific danger of paralysis from neck injury, rather than only the danger of ‘serious injuries,’ is a question upon which reasonable people could disagree.”); *Crane v. Sears, Roebuck & Co.*, 218 Cal. App. 2d 855, 859, 32 Cal. Rptr. 754 (1963) (question of fact whether warning was adequate that stated “Caution: Inflammable Mixture. Do not use near fire or flame” and product caused burst of flame when used six feet from pilot light). See also *Lancaster Silo & Block Co. v. N. Propane Gas Co.*, 75 A.D.2d 55, 65, 427 N.Y.S.2d 1009, 1015 (1980) (“The degree of danger is a crucial factor in determining the specificity required in a warning.”).

serious, long-term effects of chemical exposure.” Similarly, the adequacy of the warning is a jury question here because Petitioners made statements that boat drivers should wear the lanyard, but did not inform users of the boat of the “specific, serious” risks entailed with failing to ensure the driver wore the lanyard.

An analogous case, *Chronister v. Bryco Arms*, 125 F.3d 624 (8th Cir. 1997), addressed the adequacy of warnings and instructions accompanying a handgun. The defendant provided a general instruction to wear “hearing protection” while using the gun.¹⁷⁰ The gun, however, had a “specific risk” that it “was prone to misfeeding, which could result in a cartridge discharging with the chamber open.”¹⁷¹ That propensity came to fruition while plaintiff used the gun, resulting in catastrophic damage to his ear that could have been prevented had he worn hearing protection. The court held that because the plaintiff “testified that he did not know of the risk that [the gun] could misfire on an open chamber while he held it, producing an explosion greater than the routine discharge,” the “jury could reasonably have concluded that, had an adequate warning of the [gun’s] *particular risks* been present, [plaintiff] would have altered his behavior.”¹⁷² That is exactly the situation here: Petitioners failed to disclose the “specific risk” that the boat was “prone” to enter the circle of death. A jury could reasonably conclude that had Martinez and Feasel been warned of that risk, they would have altered their behavior and used the lanyard.

¹⁷⁰ 125 F.3d at 628.

¹⁷¹ *Id.*

¹⁷² *Id.* at 629 (emphasis added).

Reflecting that Petitioners were fully capable of describing latent dangers of the boat in detail, the Tracker manual describes in detail the phenomenon of “porpoising,” where the bow moves up and down uncontrollably.¹⁷³ That Petitioners did not describe the circle-of-death phenomenon in similar detail would justify a reasonable juror in finding Petitioners did not act reasonably in issuing warnings and instructions.

Requiring product manufacturers and suppliers to warn of *specific*, known, and foreseeable dangers and to connect safety instructions—such as the instruction to wear a kill-switch lanyard—to *those* dangers is justified by the policy considerations underlying strict products liability in Utah.¹⁷⁴ The doctrine of strict products liability was judicially adopted in Utah: (1) “because of the economic and social need for the protection of consumers in an increasingly complex and mechanized society”;¹⁷⁵ (2) “because of the limitations in the negligence and warranty remedies”;¹⁷⁶ (3) “to ensure ‘that the costs of injuries resulting from defective products are borne by the manufacturer that put such products on the market rather than by the injured persons who are powerless to protect themselves’”;¹⁷⁷ (4) because “retailers and manufacturers ‘should absorb the inevitable

¹⁷³ R. 2983.

¹⁷⁴ See *Johnson v. Colt Indus. Operating Corp.*, 797 F.2d 1530, 1537 (10th Cir. 1986) (“Appellant’s only attempt to lessen the risk was the single statement in the gun’s instructions that ‘the safest way to carry your [gun] is with five cartridges in the chamber and the hammer on the sixth chamber’. While appellant terms this statement a ‘warning’, it is evident that the statement neither describes the risk involved nor warns of the possible consequences.” (alteration in original)).

¹⁷⁵ *Bylsma v. R.C. Willey*, 2017 UT 85, ¶ 22, 416 P.3d 595 (quoting *Ernest W. Hahn, Inc. v. Armco Steel Co.*, 601 P.2d 152, 156 (Utah 1979)).

¹⁷⁶ *Id.*

¹⁷⁷ *Id.*

losses which must result in a complex civilization from the use of their products, because they are in the better position to do so, and through their prices to pass such losses on to the community at large”;¹⁷⁸ and (5) “to create incentives that protect future consumers.”¹⁷⁹

Allowing suppliers or manufacturers of products to escape liability where they issue overly generalized warnings that fail to disclose the specific risks known to them undermines the important policy decisions supporting strict products liability. “[T]his incentive scheme falls apart when the manufacturer cannot be held liable.”¹⁸⁰ Here, this is largely because “the consumer is not on an equal footing with the manufacturer who is in a unique position to know the specific risks involved.”¹⁸¹

3. The “Magnitude” of the Danger Presented by the Boat’s Propensity to Enter a Circle of Death Required Warnings of a Far Greater “Intensity” Than the Purported Warnings Given.

The instructions to wear the lanyard were not warnings and did not present a significant enough magnitude of danger. In *Brown v. Sears, Roebuck & Co.*, 667 P.2d 750 (Ariz. 1983), a man was electrocuted while standing on damp ground and using a saw that was connected to an ungrounded, two-pronged extension cord. A red tag labelled “CAUTION” accompanied the saw and “‘required’ that a three-pronged grounded cord be used for ‘your safety’ to ‘protect the user from shock.’”¹⁸² The saw’s instruction booklet also listed “Do’s and Don’ts,” including “DO be sure tool is properly grounded especially

¹⁷⁸ *Id.* ¶ 30 (quoting William L. Prosser, *The Assault upon the Citadel (Strict Liability to the Consumer)*, 69 Yale L.J. 1099, 1120 (1960). See also *infra* n.227.

¹⁷⁹ *Id.* ¶ 29.

¹⁸⁰ *Id.* (multiple citations omitted).

¹⁸¹ *Cooley v. Carter-Wallace Inc.*, 478 N.Y.S.2d 375, 376 (1984).

¹⁸² *Brown*, 667 P.2d at 757.

if you are on damp floor or ground.”¹⁸³ It also stated, “DON’T use a 2-wire extension cord.” Despite these numerous clear instructions, which would have saved the man’s life if he had followed them, the court found that genuine questions of material fact existed as to the adequacy of the instructions and warnings. The court noted a distinction: “Instructions are to be followed to secure the most efficient or satisfactory use of the product; warnings are instructions as to *dangers* that might occur if the instructions are not followed.”¹⁸⁴ The court relied on the following statement of the law:

Even though a product may be accompanied by complete and adequate directions for its proper use, and even though the product is safe if such directions are followed, ***if there are dangers that are not obvious that may arise if the directions are not followed***, the manufacturer may be held liable for failing to warn of such dangers. Determination of liability in those cases would seem to turn on the question of whether it was reasonably foreseeable that the user would fail to read the directions or fail to follow them, in the absence of a warning as to the consequences of such misuse.¹⁸⁵

Here, Petitioners gave instructions to wear the kill-switch lanyard, but *never* connected that instruction to the danger—well known to Petitioners—that failure to wear the lanyard could lead to the latent, unique, and deadly danger of the boat entering a circle of death. *That* danger is “not obvious” and “may arise if the directions [to wear the lanyard]

¹⁸³*Id.* at 758.

¹⁸⁴ *Id.* (emphasis in original) (citations omitted). *See also* RESTATEMENT (THIRD) OF TORTS: PROD. LIAB. § 2 cmt. *i* (“Instructions inform persons how to use and consume products safely. Warnings alert users and consumers to the existence and nature of product risks so that they can prevent harm either by appropriate conduct during use or consumption or by choosing not to use or consume.”).

¹⁸⁵ W. Kimble and R. Leshner, *Products Liability* § 199 at 210–11 (1979) (emphasis added) (quoted in *Brown*, 667 P.2d at 758). *See also Cooley*, 478 N.Y.S.2d at 646–48 (warning to not use Nair on genital area was not adequate as a matter of law because it did not fairly indicate the severity of injury that could result).

are not followed.” Further, it was beyond foreseeable, and actually known to Petitioners,¹⁸⁶ that users routinely “fail[ed] to follow” Petitioners’ instructions to wear the lanyard. Accordingly, Petitioners can be held liable for failing to warn of specific, known, and latent dangers arising from not wearing the lanyard and are not entitled to a determination that their warnings are adequate as a matter of law.

Further, the instructions about the lanyard differ from the descriptions in Petitioners’ brief, which repeatedly describes them in absolute terms: “the operator *needs* to wear” the lanyard;¹⁸⁷ “the operator *must* wear” the lanyard;¹⁸⁸ the operator “*must* ensure the stop switch lanyard is ‘operational and securely fastened’”;¹⁸⁹ “the operator *must* wear the engine stop switch lanyard”;¹⁹⁰ “the operator *must always* wear the lanyard.”¹⁹¹ But those are the words of Petitioners’ counsel, not the words of the warnings themselves.

On the boat itself, the placard simply states, “CHECK BEFORE YOU START YOUR ENGINE: . . . Lanyard stop switch (operational and securely fastened).”¹⁹² The manuals state, equivocally: “A lanyard stop switch *can* be installed as an accessory”;¹⁹³ “It is strongly *recommended* that the operator make use of [the lanyard]”;¹⁹⁴ and “The operator *should* attach the lanyard . . . before operating the boat.”¹⁹⁵

¹⁸⁶ S.O.F. ¶¶ 2–7.

¹⁸⁷ Pet’rs’ Br., 8 (emphasis added).

¹⁸⁸ *Id.* at 18 (emphasis added).

¹⁸⁹ *Id.* at 20 (emphasis added).

¹⁹⁰ *Id.* at 45 (emphasis added).

¹⁹¹ *Id.* at 48 (emphasis added).

¹⁹² R. 3193.

¹⁹³ R. 1089 (emphasis added).

¹⁹⁴ R. 3006 (emphasis added).

¹⁹⁵ *Id.* (emphasis added).

Only one warning says the operator should “always” be connected to the lanyard.¹⁹⁶ But that statement is immediately preceded by a warning that contemplates the operator *will not* use the lanyard; moreover, it is located between descriptions and warnings about the danger of *wearing* the lanyard.¹⁹⁷

The equivocal “warnings” in this case contrast starkly with those found to be adequate as a matter of law in *Hood v. Ryobi America Corp.*, 181 F.3d 608 (4th Cir. 1999), relied on by Petitioners. In that case, an electric saw and its manual “bore at least seven clear, simple warnings not to operate the tool with the blade guards removed.”¹⁹⁸ Those warnings included “ALWAYS USE THE SAW BLADE GUARD”; “NEVER operate this saw without all guards in place and in good operating condition”; “NEVER PERFORM ANY CUTTING OPERATION WITH THE UPPER OR LOWER BLADE GUARD REMOVED”; “USE OF SAW WITHOUT THIS GUARD WILL RESULT IN SERIOUS INJURY”; and other similarly clear and absolute warnings.¹⁹⁹

Unlike the clear warnings in *Hood*, the purported warnings here are equivocal and ambiguous; thus, they do not provide a fair warning commensurate with the severe

¹⁹⁶ R. 1090.

¹⁹⁷ *Id.* (“While activation of the lanyard stop switch will stop the engine immediately, a boat will continue to coast for some distance While the boat is coasting, it can cause injury to anyone in the boat’s path Avoid serious injury or death from deceleration forces resulting from accidental or unintended stop switch activation.”); S.O.F. ¶ 38.

¹⁹⁸ 181 F.3d at 609.

¹⁹⁹ *Id.* at 609–10. *See also Groesbeck v. Bumbo Int’l Trust*, 718 Fed. App’x 604, 608 (10th Cir. 2017) (unpublished) (multiple, unequivocal warnings to “never use” baby seat on an elevated surface were adequate); *Kelso v. Bayer Corp.*, 398 F.3d 640, 642 (7th Cir. 2005) (“plain, clear and unambiguous” warnings that stated “[d]o not use this product for more than 3 days” and “[s]top use and ask a physician if symptoms persist” was adequate warning regarding injuries resulting from using longer than three days).

magnitude of risk. The magnitude of the risk should be assessed not only in terms of the likelihood of injury, but also in terms of the severity of injury that may occur.²⁰⁰ Here, where the injuries that may result from failing to use the lanyard are catastrophic physical injury and death, Petitioners' ambiguous statements failed to provide a fair warning commensurate with the magnitude of the risk.

B. The Utah Court of Appeals' Decision Regarding Adequacy Must Also Be Affirmed Because Feasel Presented Evidence of Petitioners' Negligence and Unreasonableness; Specifically, Petitioners Knew of the Widespread Disregard of Instructions to Wear the Lanyard, Yet Failed to Make Appropriate Changes.

Petitioners had knowledge: (1) of the specific risk of boats having a propensity to turn tightly in a circle of a death; (2) that users routinely failed to wear the kill-switch lanyard despite Petitioners' instructions; and (3) that users failed to wear the kill-switch because they did not understand its purpose or the risks it protected against.²⁰¹

*“When a required warning is retained unchanged in the face of being widely disregarded, and the supplier knows or has reason to know of such wide disregard, a jury may be permitted to find the warning insufficient.”*²⁰² In light of Petitioners' knowledge of the wide disregard of its instructions to wear the lanyard, the question of the adequacy of the warnings must be submitted to the jury.

²⁰⁰ See *infra* 57–58.

²⁰¹ S.O.F. ¶¶ 1–9.

²⁰² *Incollingo v. Ewing*, 282 A.2d 206, 222 (Pa. 1971) (emphasis added).

II. THE COURT OF APPEALS CORRECTLY REVERSED THE DISTRICT COURT’S ERRONEOUS CONCLUSION THAT PETITIONERS OWED NO DUTY TO FEASEL TO WARN OF THE BOAT’S LATENT DANGERS.

The Utah Court of Appeals correctly applied section 402A of the Second Restatement of Torts to determine that Petitioners owed a duty to Feasel, as a “user” of the boat, to promulgate adequate warnings.²⁰³ That conclusion is also supported by Section 388 of the Second Restatement of Torts; Section 1 of the Third Restatement of Torts: Products Liability;²⁰⁴ this Court’s precedents regarding duty in negligence cases; Utah statutes;²⁰⁵ and failure-to-warn cases throughout the country.

The Court of Appeals did not express what Petitioners were required to do to satisfy that duty. Nor should it have. Neither the Court of Appeals nor this Court can determine as a matter of law what conduct would have been “reasonable” in light of the genuine disputes of material fact in the record. Petitioners rely on statements of purported warning affixed to the boat and in manuals; whether those statements satisfied Petitioners’ duty to Feasel, however, is a question of fact that must be left to the jury.

²⁰³ Opinion, ¶¶ 30–31.

²⁰⁴ That section provides as follows: “One engaged in the business of selling or otherwise distributing products who sells or distributes a defective product is subject to liability for harm to persons or property caused by the defect.”

²⁰⁵ See Utah Code §§ 78B-6-702 (defining “unreasonably dangerous” with respect to the “buyer, user, or consumer”), 78B-6-703 (describing product liability defects “which made the product unreasonably dangerous *to the user* or consumer” (emphasis added)).

A. Petitioners Owed a Duty to Feasel to Ensure That Adequate Warnings Were Issued in Connection with the Boat.

The parties agree that a product supplier is “required to warn about a danger from the [product]’s foreseeable use of which [he] knew or reasonably should have known and that a reasonable user would not expect.”²⁰⁶ It is a basic principle of product liability law that manufacturers and distributors owe this duty to the ultimate user of the product.²⁰⁷ Petitioners agree that Petitioners’ duty is ultimately owed to Feasel.²⁰⁸ In this respect, the district court erred by holding that Feasel “failed to establish an appropriate basis on which to extend such a duty [to warn] to [Feasel].”²⁰⁹ As a matter of first principles, Petitioners owed their duties to the users of their product, including Feasel as a passenger of the boat.

Petitioners argue instead that they *satisfied* their duty to Feasel by issuing warnings to Martinez.²¹⁰ Besides reaching an incorrect conclusion, Petitioners’ analysis is fraught

²⁰⁶ Model Utah Jury Instructions (Second) CV1007–1008 and CV 1017–1018 (quoted in Pet’rs’ Br., 30).

²⁰⁷ See, e.g., *Barson v. E.R. Squibb & Sons, Inc.*, 682 P.2d 832, 835 (Utah 1984) (“The manufacturer of ethical drugs has the duty of making timely and adequate warnings to the medical profession of any dangerous side effects produced by its drugs of which it knows or has reason to know. The manufacturer is directly liable to the patient for the breach of such duty.”).

²⁰⁸ Pet’rs’ Br. 4 (Section 402A “establishes that passengers injured by unreasonably dangerous products may assert strict liability claims based upon failure to warn. That is a given. The more specific question is, what is the scope of that duty under the circumstances of a particular case?”).

²⁰⁹ R. 7740 ¶ 7.

²¹⁰ Pet’rs’ Br. at 29 (Petitioners “adequately warned Martinez . . . and therefore . . . did not have an independent duty to warn Feasel”), 30 (“[T]he scope of the duty to warn is limited, and may be satisfied in certain cases by reasonably warning an intermediary. That is the case here.”).

with *factual issues* preventing a determination as a matter of law.²¹¹

Because this Court has adopted sections of the Second Restatement of Torts applicable to strict products liability (Section 402A) and negligence for failure to warn (Section 388), those sections are an appropriate starting point for determining the scope of Petitioners' duty. Indeed, those sections *fully* resolve the duty question in a failure-to-warn case such as this.²¹²

1. Under Section 402A of the Restatement, a Manufacturer Owes a Duty in Strict Liability to All Ultimate Users, Including Boat Passengers.

Utah has adopted section 402A of the Second Restatement of Torts.²¹³ Accordingly, “a manufacturer may be held strictly liable for any physical harm caused by its failure to provide adequate warnings regarding the use of its product.”²¹⁴ “Where a manufacturer ‘knows or should know of a risk associated with its product,’ the absence or inadequacy of warnings renders that product ‘unreasonably dangerous,’ subjecting the manufacturer to

²¹¹ Pet'rs' Br., 32 (“the question may arise as to whether the person supplying the chattel is exercising that reasonable care” (quoting RESTATEMENT (SECOND) OF TORTS § 388 cmt. *n*)); 32 (“the rule cannot be mechanically applied in cases involving warnings given to intermediaries, and whether a duty is owed depends on the specific facts of a given case: ‘... The standard is one of reasonableness in the circumstances.’” (quoting RESTATEMENT (THIRD) OF TORTS: PROD. LIAB. § 2(c))).

²¹² See *Sumsion v. J. Lyne Roberts & Sons, Inc.*, 2019 UT 14, ¶ 23, 443 P.3d 1199 (“Because each of these cited Restatement sections establishes a duty and fully explains the scope of that duty, the task before us in this case is to determine which Restatement section applies and determine whether the duty identified therein extends to [plaintiff].”). See also *Tabor v. Metal Ware Corp.*, 2007 UT 71, ¶ 14, 168 P.3d 814 (answering certified questions about existence and scope of duty imposed on successor corporation to independently warn customers of defects by relying on Restatement).

²¹³ See *Bylsma v. R.C. Willey*, 2017 UT 85, ¶ 21, 416 P.3d 595.

²¹⁴ *House*, 929 P.2d at 343; *House I*, 886 P.2d at 547.

strict liability.’”²¹⁵ Comment *l* to section 402A defines “user” to include “those who are passively enjoying the benefit of the product, as in the case of passengers in automobiles or airplanes.” There is thus no question that suppliers of products owe their duties to the “users” of their products, including passengers on a boat.

2. Under Section 388 of the Restatement, a Manufacturer Owes a Duty in Negligence to All Ultimate Users, Including Boat Passengers.

Utah has adopted Section 388 of the Second Restatement of Torts.²¹⁶ Under that section, suppliers of products are liable in *negligence* where the supplier:

- (a) knows or has reason to know that the chattel is or is likely to be dangerous for the use for which it is supplied, and
- (b) has no reason to believe that those for whose use the chattel is supplied will realize its dangerous condition, and
- (c) fails to exercise reasonable care to inform them of its dangerous condition or of the facts which make it likely to be dangerous.

That section squarely applies here. Feasel’s complaint alleged not only a failure to warn arising in strict liability, but also in negligence.²¹⁷ Each element under Section 388 is satisfied under the facts presented by Feasel. Petitioners knew, for many years, that the boat and engine supplied by them had a dangerous tendency to circle when unmanned and

²¹⁵ *House*, 929 P.2d at 343 (citing *House I*, 886 P.2d at 547). See also Utah Code § 78B-6-702 (defining “unreasonably dangerous”); RESTATEMENT (THIRD) OF TORTS: PROD. LIAB. § 2 (defining product defect to include inadequate instructions or warnings).

²¹⁶ *Schneider v. Surhmann*, 8 Utah 2d 35, 37, 327 P.2d 822, 823 (1948); *Alder v. Bayer Corp., AGFA Div.*, 61 P.3d at 1079 n.14, (“*Schneider* referenced the original restatement. However, since the language of section 388 in the original and the Restatement (Second) are substantially similar in all material respects, we impute adoption of the Restatement (Second) of Torts.”).

²¹⁷ R. 91–94. The district court incorrectly described Feasel’s failure-to-warn theory as solely arising in strict liability. R. 7740–41.

under power.²¹⁸ Petitioners had actual knowledge that (1) users of its products would not, and did not, realize the danger of the circle-of-death phenomenon and (2) operators did not wear the lanyard because they did not understand its purpose or the risks of not wearing it.²¹⁹ Accordingly, Petitioners failed to exercise reasonable care because they failed to warn of the circle of death and issued inadequate instructions regarding the lanyard.

Comment *a* to Section 388 makes clear the duty owed by suppliers runs to passengers of a boat. It specifies that liability runs to “all those who are members of a class whom the supplier should expect to use [the chattel] or occupy it or share in its use.” In the case of an automobile, which is clearly analogous to a boat, the comment specifies that liability runs to “anyone” a rightful possessor of the automobile “chooses to receive in it as passenger or guest.”

3. Under This Court’s Precedents Regarding Negligence, Petitioners Owed a Duty to Feasel to Adequately Warn of the Latent Dangers of the Boat.

Finding that Petitioners owed a duty to Feasel, as a user and passenger of the boat, under applicable Restatement provisions as described above, is also consistent with this Court’s precedents regarding when a duty is owed generally in negligence cases. “Duty must be determined as a matter of law and on a categorical basis for a given class of tort claims.”²²⁰ This Court has unequivocally rejected that “duty determinations should be fact specific.”²²¹ Rather, the duty factors are “analyzed at a broad, categorical level for a class

²¹⁸ S.O.F. ¶¶ 1, 7, 8.

²¹⁹ S.O.F. ¶¶ 5–7.

²²⁰ *B.R. ex rel. Jeffs v. West*, 2012 UT 11, ¶ 23, 275 P.3d 228.

²²¹ *Id.*

of defendants.”²²² Here, the general circumstances require the question to be framed as whether manufacturers and suppliers of watercraft owe duties to passengers to issue adequate warnings about latent dangers of the watercraft.

This Court articulated several factors to determine whether a class of defendants owes a duty to a class of plaintiffs to exercise reasonable care: (1) the existence of special relationships that “arise when one assumes responsibility for another’s safety or deprives another of his or her normal opportunities for self-protection”; (2) the distinction between misfeasance and nonfeasance; (3) “the foreseeability or likelihood of injury”; (4) “public policy as to which party can best bear the loss occasioned by the injury”; and (5) other general policy considerations.²²³

Manufacturers and suppliers of watercraft are engaged in affirmative acts to produce and sell their products. The injuries from using watercraft, including the injuries to passengers from the circle-of-death phenomenon, are not only foreseeable but actually known by this class of defendants.²²⁴ Moreover, the public policy principles that support strict products liability generally also support that manufacturers and suppliers should be liable to passengers of watercraft;²²⁵ that class of defendants is the “least-cost avoider” for

²²² *Id.*

²²³ *Id.* ¶¶ 5–7 (citations omitted).

²²⁴ S.O.F. ¶¶ 1–9.

²²⁵ *See supra* 40–41.

such risks because the cost of issuing warnings is almost non-existent²²⁶ while the cost to passengers of being inadequately warned is immense.²²⁷

That watercraft manufacturers and suppliers generally owe duties to passengers to issue adequate warnings about the danger of their products is consistent with the fact that watercraft routinely include warning placards that communicate various dangers to any passenger on the boat.²²⁸

B. Petitioners Had a Duty to Communicate a Warning to Feasel; Whether They Breached That Duty by Unreasonably Relying on Martinez Is a Question of Fact to Be Decided by the Jury.

Having established that Petitioners owed duties to Feasel to ensure adequate warnings were made regarding their products, the remaining question is whether satisfaction of that duty required direct warnings to Feasel as a passenger of the boat. Whether a supplier has “provided warning to the end user, not just an intermediary” is not

²²⁶ *Cooley v. Carter-Wallace Inc.*, 102 A.D.2d 642, 644, 478 N.Y.S.2d 375 (1984) (“Since the cost of providing warnings is often minimal, the balance usually weighs in favor of an obligation to warn.”).

²²⁷ *See, e.g., Air & Liquid Sys. Corp. v. DeVries*, 139 S. Ct. 986, 997 (2019) (“The manufacturer of a product is in the best position to understand and warn users about its risks; in the language of law and economics, those who make products are generally the least-cost avoiders of their risks. By placing the duty to warn on a product’s manufacturer, we force it to internalize the full cost of any injuries caused by inadequate warnings—and in that way ensure it is fully incentivized to provide adequate warnings. By contrast, we dilute the incentive of a manufacturer to warn about the dangers of its products when we require other people to share the duty to warn and its corresponding costs.”). Also, the evidence in this case reflects that boat users, including passengers, would modify their behavior to ensure the driver of a boat wears the kill-switch lanyard if they were adequately warned of the dangers. S.O.F. ¶¶ 11–12, 17(d).

²²⁸ *See, e.g., S.O.F. ¶¶ 28–29.*

a question of the existence of a duty but only “one factor in determining whether” a supplier “has *discharged* its duty to warn.”²²⁹

Additionally, Petitioners raise a red herring regarding preservation.²³⁰ This Court did not grant certiorari with respect to Petitioners’ claim that the Court of Appeals erred by remanding to the district court to determine whether Feasel preserved the argument that Petitioners owed him a duty to issue adequate warnings. This Court therefore cannot decide that issue.²³¹ Further, Feasel *did* preserve the argument.²³² Petitioners were also notified

²²⁹*Tabor v. Metal Ware Corp.*, 2007 UT 71, ¶ 13, n.3, 168 P.3d 814 (emphasis added) (“If a successor corporation has a duty to warn under section 13 [of the Restatement (Third) of Torts: Products Liability], one factor in determining whether a successor corporation has discharged its duty to warn is whether it provided warning to the end user, not just an intermediary like a distributor or retailer. . . . Thus, if Metal Ware does have a duty to warn, it would owe that duty to end users, like the Tabors, not just its retail distributors, such as Shopko.”). *See also Ritchie v. Glidden Co.*, 242 F.3d 713, 724 (7th Cir. 2001) (analyzing warning to sophisticated intermediary as a question of whether defendant “discharged” its duty owed to the ultimate user); *Hale v. Beckstead*, 2005 UT 24, ¶ 38, 116 P.3d 263 (holding that, under applicable Restatement provisions, because disputed issues of fact “bear upon whether Beckstead had a duty to warn or otherwise protect Hale from the unenclosed balcony, it was error to affirm the grant of summary judgment”); *Alder*, 2002 UT 115, ¶ 24 (“if the legal framework exists for a duty of care, contingent upon proof of specific facts supported by evidence in the record, we must remand to the trial court for factual determinations”); *Riggs v. Asbestos Corp., Ltd.*, 2013 UT App 86, ¶ 23, 304 P.3d 61 (to whom product warnings must be issued was a question for the jury); *Frantz v. Brunswick Corp.*, 866 F. Supp. 527, 535 (S.D. Ala. 1994) (holding that Brunswick, apparently the same party as Petitioner in this matter, was not entitled to summary judgment on its adequate warning claims due to disputed material facts, including whether warning to a third party satisfied Brunswick’s duty to the plaintiff to issue adequate warnings (citing RESTATEMENT (SECOND) OF TORTS § 388)).

²³⁰ Pet’rs’ Br. 28–29.

²³¹ *See DeBry v. Noble*, 889 P.2d 428, 445 (Utah 1995) (“That issue was not raised in the petition for certiorari, and we do not address it on the merits.”).

²³² *See, e.g., R.* 89–95, ¶¶ 10 (“Plaintiff Craig Feasel was a passenger in the Bass Tracker.”), 32 (“The Bass Tracker and its component parts, which Defendant Tracker Marine, LLC designed, tested, [and] manufactured . . . were defective. These defects included but are not limited to defects in design and *failure to give adequate instructions and warnings*, as

early in discovery that Feasel’s allegations of inadequate warning relied on the fact that Petitioners failed to warn *passengers*.²³³

C. Petitioners Could Not Satisfy Their Duty to Feasel by Relying on Martinez.

Petitioners did not, and could not, satisfy their duties to Feasel by warning Martinez as an intermediary. Depending on the facts specific to each case, a supplier may in certain circumstances rely on an intermediary to convey a warning—at least in negligence cases.²³⁴

alleged herein.” (emphasis added)), 54 (“The Optimax engine and its component parts, which Defendant Brunswick Corporation designed, tested, [and] manufactured . . . were defective. These defects included but are not limited to defects in design and *failure to give adequate instructions and warnings*, as alleged herein.” (emphasis added)). *See also, e.g., Blackham v. Snelgrove*, 280 P.2d 453, 454 (Utah 1955) (“[A] pleader is required only to make a short and plain statement of his claim, and the requirement of technical exactness is excluded. Fine detail is not required.”). This Court should not countenance Petitioners’ belated raising of a purported pleading defect. Petitioners failed to raise this issue until *after* the district court ruled the duty to warn extended only to Martinez. R. 7603–11. *See also Harman v. Yeager*, 110 P.2d 352, 354 (Utah 1941) (when pleading defects are not raised until trial, “the pleading should be liberally construed in favor of the pleader with all reasonable inferences from the facts pleaded indulged with a view to a trial on the merits and doing substantial justice between the parties”).

²³³ R. 7681 (“Tracker’s Interrogatory No. 4: Describe in detail all facts upon which you base your allegation that Tracker failed to adequately warn boat operators of dangers of the circle of death and of the importance of using/wearing a kill switch lanyard. Feasel’s Response: *Tracker issued no warnings whatsoever to boat operators or passengers, or, to Plaintiff’s knowledge, to anyone else, concerning the circle of death.*” (emphasis added)).

²³⁴ *See* RESTATEMENT (SECOND) OF TORTS § 388 cmt. *n.* *See also Smith v. Walter C. Best, Inc.*, 927 F.2d 736, 741 (3d Cir. 1990) (“There is a split of authority as to the availability of the sophisticated purchaser defense in cases alleging strict liability for failure to warn. Some jurisdictions, notably Pennsylvania and New Jersey, have held that the defense is available only in cases involving negligent failure to warn. These jurisdictions hold that where a seller is under a duty to warn all foreseeable users of the dangerous product, the risk of an employer’s failure to warn is imputed to the seller.” (citations omitted)).

Feasel has put forward substantial evidence that would easily allow a jury to find Petitioners acted unreasonably in relying on Martinez.

1. Petitioners Did Not Adequately Warn Martinez.

As discussed *supra*, 32–45, Petitioners did not warn Martinez about the latent danger of the boat’s tendency to turn tightly in a circle of death if unmanned and under power. Neither did Petitioners adequately warn Martinez that wearing the kill-switch lanyard was necessary. Because Petitioners did not adequately warn the intermediary, Petitioners’ warnings to the intermediary cannot satisfy their duty to Feasel.

2. The Sophisticated Intermediary Doctrine Does Not Apply.

Martinez was not an industry professional, was not a distributor in Petitioners’ supply chain, and had no employment relationship with Feasel. Martinez simply owned and operated the boat. Accordingly, Martinez cannot be said to be an “employer [that] already has a full range of knowledge of the dangers, equal to that of the supplier.”²³⁵

Yet, Petitioners insistently rely on inapplicable authorities decided “in the context of a product supplier which sells a product to a business, which business in turn acts as the intermediary by allowing employees of the business to use the product.”²³⁶ Petitioners rely on inapposite cases: (1) *Grier v. Cochran W. Corp.*, 705 A.2d 1262, 1266 (N.J. Super. Ct. App. Div. 1998) (a machine manufacturer warned Continental Airlines and not the airline’s employees); (2) *Smith v. Walter C. Best, Inc.*, 927 F.2d 736, 737 (3rd Cir. 1990) (a manufacturer warned an employer about dangers of exposure to silica dust); (3) *Davis v.*

²³⁵ *Gray v. Badger Min. Corp.*, 676 N.W.2d 268, 277 (Minn. 2004) (cited in Pet’rs’ Br. at 32, *without* the critical word “employer”).

²³⁶ Pet’rs’ Br., 34.

Avondale Industries, 975 F.2d 169, 171 (5th Cir. 1992) (a manufacturer warned an employer of dangers from breathing fumes emitted while welding); (4) *Stoffel v. Thermogas Co.*, 998 F. Supp. 1021 (N.D. Iowa 1997) (a pipeline operator relied on a propane shipper to forward warnings); (5) *Alm v. Aluminum Co. of Am.*, 717 S.W.2d 588, 591 (Tex. 1986) (a manufacturer of soda-bottle-cap-fastening machines had no means of warning ultimate soda customers because of independent intermediaries); and (6) *Webb v. Special Elec. Co.*, 370 P.3d 1022 (Cal. 2016) (raw material suppliers warned company purchasing the material and not that company's employees).

Those cases cited by Petitioners have nothing to do with this case. At most, they support the proposition that whether a supplier can reasonably rely on a third-party intermediary to carry forward warnings about its products depends on the facts of the case and is ordinarily a jury question. Indeed, even addressing truly sophisticated intermediaries, totally unlike Martinez, courts often find there remain questions of fact regarding whether the manufacturer or supplier acted reasonably in relying on the sophisticated intermediary.²³⁷ None of the cases cited by Petitioners, however, have any factual similarity to this case, where Petitioners could have easily warned Feasel directly with a placard on the boat and nothing about Martinez (or lay boat owners or operators, generally) gave any indication that Petitioners could rely on him to warn passengers.

²³⁷ See, e.g., *Ritchie v. Glidden Co.*, 242 F.3d 713, 724–25 (7th Cir. 2001) (factual issues precluded summary judgment in favor of supplier of airless spray paint equipment who merely warned intermediary); *Russo v. Abex Corp.*, 670 F. Supp. 206, 209 (E.D. Mich. 1987) (supplier who sold asbestos to automobile manufacturers would have to prove at trial that cost of effectively warning unsophisticated, ultimate users outweighed danger to such users of prolonged contact with asbestos).

3. Whether It Would Be Reasonable for Petitioners to Rely on Martinez Is a Question of Fact for the Jury.

Comment *n* to Section 388 addresses the reasonableness of relying on an intermediary to convey a warning with respect to claims of *negligent* failure to warn. Section 402A does not make reference to Section 388; however, some authorities find Section 388 persuasive in interpreting Section 402A.²³⁸ Pursuant to Comment *n* to Section 388, whether it is reasonable for Petitioners to rely on Martinez (or, generally, boat owners and operators) to warn a passenger like Feasel depends on three factors: (1) the gravity of the risks posed by the product; (2) the likelihood that the intermediary will convey the information to the ultimate user; and (3) the feasibility and effectiveness of giving a warning directly to the user.²³⁹

a. The Gravity of Risk Was Exceptionally High Because the Circle of Death Has Repeatedly Caused Catastrophic Injury and Death.

Comment *n* to § 388 notes that “the magnitude of the risk involved must be compared with the burden which would be imposed by requiring [precautions] (see § 291), and the magnitude of the risk is determined not only by the chance that some harm may result but also the serious or trivial character of the harm which is likely to result (see §

²³⁸ See, e.g., *Failure to warn as basis of liability under doctrine of strict liability in tort*, 53 A.L.R.3d 239, § 2(b) (“it has been noted that notwithstanding the fact that there is no cross-reference from § 402A of the Restatement of Torts 2d (which sets out the strict tort liability doctrine) to § 388 of the Restatement of Torts 2d (which spells out the duty to warn in negligence actions), the principles applicable in the latter should be applicable to the former.”).

²³⁹ RESTATEMENT (THIRD) OF TORTS: PROD. LIAB. § 2 cmt. *i*; RESTATEMENT (SECOND) OF TORTS § 388 cmt. *n*. See also *Webb v. Special Elec. Co.*, 370 P.3d 1022, 1033–38 (Cal. 2016) (analyzing defendant’s burden in proving sophisticated intermediary defense and noting that proving reasonable reliance on the intermediary “will typically raise questions of fact for the jury to resolve”).

293).” Here, the magnitude of the risk is high because the “seriousness” of the harm is at its highest—the circle-of-death phenomenon has led to numerous deaths that could have been prevented by the driver’s use of a kill-switch lanyard.²⁴⁰ Accordingly, this factor weighs in favor of requiring Petitioners to take on the minimal cost and responsibility to place a warning on the boat to alert passengers of the risks of (1) the boat’s tendency to enter a circle of death when unmanned and under power and (2) the related need to ensure the operator always wears the lanyard.

b. Petitioners Knew the Owners and Operators of Its Boats Would Most Likely Not Convey Relevant Warnings to Passengers.

Petitioners knew that owners and drivers of their products did not understand the risks of the boat’s tendency to enter a circle of death when unmanned and under power and the related need to ensure the driver always wears the lanyard.²⁴¹ Accordingly, Petitioners also knew that passengers would not be informed of such risks by those intermediaries.

c. It Was Reasonable and Easy to Warn Feasel Directly, Just as Petitioners Warned Feasel of Other Dangers Through Warning Placards on the Boat Itself.

Petitioners venture into the absurd, stating “[t]here is no reasonable way for Tracker and Brunswick to directly warn every passenger that might venture onto a boat during the boat’s lengthy period of useful life.”²⁴² That untenable argument ignores that Petitioners can simply place a placard on the boat itself, just as they have done regarding the danger

²⁴⁰ S.O.F. ¶¶ 41, 47.

²⁴¹ S.O.F. ¶ 5.

²⁴² Pet’rs’ Br., 16.

of carbon monoxide.²⁴³ Petitioners could easily and inexpensively place additional warnings about (1) the latent danger that the boat has a propensity to turn tightly in a circle of death if unmanned and under power and (2) that such risk is mitigated if the driver merely wears the kill-switch lanyard. Feasel has presented an example of such a warning, along with testimony that such a warning would apprise users of the circle-of-death risk and the related need to ensure the operator always wears the lanyard.²⁴⁴ Feasel has further presented evidence that such a warning would have been effective in modifying his behavior, which enforces the heeding presumption whereby this Court must assume that Feasel would have adhered to such a warning.²⁴⁵

CONCLUSION

There being no error by the Court of Appeals, this Court should affirm. There is no dispute that Petitioners owed their duty to warn ultimately to Feasel. Feasel has presented evidence from which a reasonable juror could easily conclude that Petitioners failed to

²⁴³ S.O.F. ¶ 29. *See also Colombo v. BRP US Inc.*, 230 Cal. App. 4th 1442, 1455, 179 Cal. Rptr. 3d 580, 593 (2014) (passengers of watercraft had claim of inadequate warning where jet thrust could cause bodily injury if wetsuit was not worn and warning was not visible to passengers); *Bickram v. Case I.H.*, 712 F. Supp. 18, 22 (E.D.N.Y. 1989) (jury question whether warning inside backhoe’s cab was adequate when operator and plaintiff were outside cab).

²⁴⁴ S.O.F. ¶¶ 25, 39, 42.

²⁴⁵ S.O.F. ¶¶ 11, 12, 17d; *House*, 929 P.2d 340 at 347 (“in cases in which it cannot be demonstrated what the plaintiff would have done had he or she been adequately warned, the plaintiff should be afforded a rebuttable presumption that he or she would have followed an adequate warning had one been provided.” (quoting *House I*, 886 P.2d at 552)). *See also* RESTATEMENT (THIRD) TORTS: PROD. LIAB. § 2 cmt. *i* (users should be warned of risks so they can “prevent harm by appropriate conduct” or “choosing not to use” a product).

issue adequate warnings and acted unreasonably in relying on Martinez to forward warnings to Feasel.

DATED this 25th day of November 2020:

DEWSNUP OLSEN KING WOREL
HAVAS MORTENSEN

/s/ Walter M. Mason

Walter M. Mason

Attorney for Respondent Craig Feasel

Certificate of Compliance

I certify that this brief complies with Rules 21 and 24(g), Utah Rules of Appellate Procedure. It does not contain any non-public information. The brief contains 13,892 words, as calculated by Microsoft Word (excluding the table of contents, table of authorities, addendum, and certificates of counsel).

DEWSNUP OLSEN KING WOREL
HAVAS MORTENSEN

/s/ Walter M. Mason
Walter M. Mason
Attorney for Respondent Craig Feasel

CERTIFICATE OF SERVICE

This is to certify that on the 25th day of November, 2020, a copy of this
RESPONDENT’S BRIEF was sent via e-mail to the following:

Sarah Elizabeth Spencer
Nathan D. Adler
CHRISTENSEN & JENSEN, P.C.
257 East 200 South, Suite 1100
Salt Lake City, Utah 84111
sarah.spencer@chrisjen.com
nathan.alder@chrisjen.com

Michael C. McMullen, *pro hac vice*
BAKER STERCHI COWDEN & RICE LLC
2400 Pershing Road, Suite 500
Kansas City, Missouri 6418
mmcmullen@bscr-law.com

Attorneys for Petitioner Tracker Marine, LLC

Elizabeth M. McOmber
Patrick X. Fowler
SNELL & WILMER, LLP
15 West South Temple, Suite 1200
Salt Lake City, Utah 84101
emcomber@swlaw.com
pfowler@swlaw.com

Attorneys for Petitioner Brunswick Corp.

/s/ Walter M. Mason
Walter M. Mason
Attorney for Respondent Craig Feasel

2020 UT App 28

FEB 21 2020

THE UTAH COURT OF APPEALS

CRAIG FEASEL,
Appellant,

v.

TRACKER MARINE LLC AND BRUNSWICK CORPORATION,
Appellees.

Opinion

No. 20180332-CA

Filed February 21, 2020

Second District Court, Morgan Department
The Honorable Noel S. Hyde
No. 140500037

Michael A. Worel and Richard Eric Shelton,
Attorneys for Appellant

Sarah E. Spencer, Nathan D. Alder, and Michael C.
McMullen, Attorneys for Appellee Tracker
Marine LLC

Elisabeth M. McOmber and Patrick X. Fowler,
Attorneys for Appellee Brunswick Corporation

JUDGE MICHELE M. CHRISTIANSEN FORSTER authored this Opinion,
in which JUDGES KATE APPLEBY and JILL M. POHLMAN concurred.

CHRISTIANSEN FORSTER, Judge:

¶1 Craig Feasel appeals the district court's decision granting Tracker Marine LLC (Tracker) and Brunswick Corporation's (Brunswick) (collectively, Defendants) motion to strike Feasel's and another witness's declarations and its grant of summary judgment in favor of Defendants on Feasel's failure-to-warn claim. We reverse and remand for further proceedings.

BACKGROUND¹

¶2 In June 2012, Feasel went fishing in a small bass boat with a friend, Martinez, on a reservoir in Morgan County, Utah. Martinez was driving the boat, which was manufactured by Tracker and equipped with an engine manufactured by Brunswick. The boat struck an unknown object, and Feasel and Martinez were ejected from the boat. Although the boat was equipped with a kill-switch lanyard,² Martinez was not wearing it at the time of the impact, and the boat continued to operate under power after the two men were ejected. But rather than move forward, away from the men, the boat turned into a tight circle. Martinez was able to swim out of the boat's path, but Feasel was repeatedly struck and sliced by the boat's propellers as the boat continued to circle. Nearby boaters succeeded in rescuing Feasel, who was flown to the hospital.

¶3 The boat's user manuals included warnings regarding the use and purpose of the kill-switch lanyard, the danger presented by a spinning propeller blade, and the possibility that the steering wheel may spin if released. Additionally, labels affixed near the boat's steering wheel warned users to wear the kill-switch lanyard, to "[k]eep a firm and continuous grip on the steering wheel," to check that no one is in the water near the boat when the engine is started, and that the rotating propeller could cause injury. None of the warnings stated that wearing the

1. "In reviewing a district court's grant of summary judgment, we view the facts and all reasonable inferences drawn therefrom in the light most favorable to the nonmoving party and recite the facts accordingly." *Ockey v. Club Jam*, 2014 UT App 126, ¶ 2 n.2, 328 P.3d 880 (quotation simplified).

2. When properly worn by the boat's driver, a kill-switch lanyard will shut off the boat's engine if the driver is accidentally ejected from the boat.

Feasel v. Tracker Marine

kill-switch lanyard would prevent the boat from turning in circles if the driver was ejected from the boat.

¶4 Feasel sued Defendants,³ asserting strict liability and negligence claims based on defective design and failure to warn, as well as claims for breach of warranty. Following discovery, Defendants moved for summary judgment on Feasel's claims.⁴

¶5 Feasel opposed the motion, asserting that genuine issues of material fact precluded summary judgment. Feasel presented evidence that the physical phenomenon whereby a driverless boat begins circling—referred to colloquially as the circle of death—is well-known in the boating industry but is not common knowledge among “[o]rdinary boat users.” Although the kill-switch lanyard is designed to shut off the motor if the driver is accidentally ejected from the boat, so that it does not begin turning in a circle of death, Defendants were aware that fewer than fifty percent of boaters actually use the lanyard. A safety manager for Brunswick opined that people do not wear the lanyard because they do not understand its purpose. And a compliance engineer for Tracker stated that Tracker was aware that people do not wear the lanyard and had discussions about how to encourage lanyard use but that “[t]he outcome of those discussions was essentially the continuance of the information” already contained in Tracker's manual.

¶6 Feasel also relied on declarations he and Martinez submitted to the court. Feasel's declaration stated that he had not heard of the circle of death before the accident and that if he had known about it, he would have “insisted” that Martinez

3. Feasel also sued Martinez for negligence, but this claim was voluntarily dismissed after the parties reached a settlement.

4. Although the district court granted summary judgment in favor of Defendants on all Feasel's claims, on appeal he challenges only the court's ruling on his failure-to-warn claim. We therefore discuss only the facts relating to that issue.

Feasel v. Tracker Marine

wear the lanyard and would not have ridden in any boat in which the driver was not wearing a lanyard. Martinez's declaration stated that before the accident, he had read that driverless boats can circle in stormy weather but that he did not understand that this could happen in clear weather. He stated that if he had known that the circle of death could occur in clear weather, he would have worn the lanyard on the day of the accident.

¶7 Finally, Feasel presented expert testimony indicating that the circle of death presents a "different situation[]" from the general danger a rotating propeller poses to people in the water and that Defendants' warnings were inadequate to convey the specific danger presented by the circle of death. One of Feasel's experts crafted an alternate proposed warning specifically explaining the circle of death and linking the risk of such a danger to the need for boaters to always wear the kill-switch lanyard. The expert opined that a more explicit warning similar to the one he designed would result in people "more likely than not" wearing the lanyards.

¶8 Prior to the hearing on the summary judgment motion, Defendants moved to strike Feasel's and Martinez's declarations, asserting that certain of their statements were inconsistent with previous statements made in their depositions. The district court agreed and struck those paragraphs in which Feasel and Martinez expressed their lack of awareness of the circle-of-death phenomenon and asserted that they would have acted differently if they had been aware of the danger. The court then granted Defendants' motion for summary judgment. Specifically with respect to the failure-to-warn issue, the district court determined that Feasel could not establish his claim as a matter of law because (1) Defendants provided warnings in the boat's user manuals and the labels on the boat, and Martinez was aware of these warnings; (2) Defendants had no duty to warn Feasel directly, as a passenger; (3) no warning Martinez could have received would have made a difference to his heeding the warning; and (4) the expert's proposed alternative warning was

too speculative to create a factual issue for the jury. Feasel now appeals.

ISSUES AND STANDARDS OF REVIEW

¶9 Feasel first challenges the district court's decision to strike his and Martinez's declarations on the ground that the declarations were inconsistent with their earlier depositions. "We review a district court's decision on a motion to strike affidavits submitted in support of or in opposition to a motion for summary judgment for an abuse of discretion." *Mower v. Simpson*, 2017 UT App 23, ¶ 11, 392 P.3d 861 (quotation simplified).

¶10 Feasel further asserts that he presented sufficient evidence to preclude summary judgment on his inadequate warning claim and that the court erred in granting summary judgment in Defendants' favor. "Because a district court's ruling on summary judgment is a question of law, we review it for correctness." *Rupp v. Moffo*, 2015 UT 71, ¶ 5, 358 P.3d 1060.

ANALYSIS

I. The District Court Exceeded Its Discretion in Striking Martinez's and Feasel's Declarations.

¶11 Feasel first argues that the district court exceeded its discretion by striking his and Martinez's declarations on the ground that certain statements in the declarations contradicted their deposition testimony. "When a party takes a clear position in a deposition, that is not modified on cross-examination, he may not thereafter raise an issue of fact by his own affidavit which contradicts his deposition, unless he can provide an explanation of the discrepancy." *Magana v. Dave Roth Constr.*, 2009 UT 45, ¶ 39 n.33, 215 P.3d 143 (quotation simplified). Having reviewed Feasel's and Martinez's declarations, as well as their depositions, we see no evidentiary basis for the district

Feasel v. Tracker Marine

court's determination that the statements made in the two men's declarations contradicted their deposition testimony.

¶12 The district court struck the following statements from Feasel's declaration:

5. Before the Accident, I did not know about the Circle of Death.

....

7. Before the Accident, the Circle of Death was not a danger that I contemplated for boating.

8. Before the Accident, I did not have any experience or training about the Circle of Death.

9. If I had known about the Circle of Death, I would have insisted that the operator of the boat use a kill-switch lanyard while operating the boat.

10. If I had known about the Circle of Death, I would have not ridden in any bass boat in which the operator is not using the kill-switch lanyard.

¶13 In his deposition, Feasel testified as follows:

Q. Where did you first hear that phrase, the circle of death?

A. After my accident, when I got home and I started looking at accident statistics, injuries, the boating industry reports, coast guard, those kinds of things, because I was curious as all get out.

....

Q. And based on your knowledge of how the kill switch works when the lanyard is attached, as far

Feasel v. Tracker Marine

as you know, if Mr. Martinez had simply attached the lanyard to his person, the kill switch would have stopped the motor when he was ejected; true?

A. True.

Q. And if the kill switch immediately stops the motor, then the boat is not going to circle and strike you; true?

A. True.

Q. When you operate your Skeeter boat, before this accident with Mr. Martinez, you were certainly well aware that you were responsible for safe operation, including attaching the lanyard, the kill switch lanyard?

A. Yes.

....

. . . . I've just never, ever fathomed the violent potential of circle of death situation in a boat.

Q. But you would agree with me, would you not, that you knew that a rotating propeller, a boat at full throttle with a rotating propeller, that propeller could cause injury if you came in contact with it?

A. I think that's pretty much common sense, yes, I do agree with you.

Q. And you knew that prior to the accident; correct?

A. Yes.

¶14 Defendants assert that these statements indicate that Feasel

Feasel v. Tracker Marine

was aware of the dangers of a rotating propeller and [a driverless] boat, he was aware of the danger of being hit by a propeller when in the water, he knew that a boat driver always needed to wear the stop switch lanyard, and he knew that if the stop switch is worn and stops the motor, the boat will not circle and strike an ejected occupant.

They maintain that the stricken portions of Feasel's declaration contradicted representations made during his deposition. But Feasel's declaration did not state that he was unaware of the general dangers posed by a propeller; rather, he stated that he was unaware that a driverless boat would begin turning in a circle of death, returning to strike the ejected occupants. This is not inconsistent with his deposition statement that he did not learn of the circle-of-death phenomenon until after the accident. And although Feasel acknowledged that he knew the function of a kill switch, that a lanyard should be worn for safe operation of a boat, and that he would not have been struck by the circling boat if Martinez had worn the kill-switch lanyard, he never stated that he knew prior to the accident that a driverless boat was prone to circling or that the kill switch was intended to prevent the specific danger of an ejected driver or passengers being struck by a circling boat.

¶15 As to Martinez's declaration, the district court struck the following statements:

3. Prior to the Accident, I had read that boats could spin in a circle when people were thrown from the boat in stormy weather.
4. Because of this danger in stormy weather, I wore the kill-switch lanyard when I drove the boat in stormy weather.

Feasel v. Tracker Marine

5. Prior to the Accident, I did not know that people would be thrown from a boat and the boat would spin with no one in them in clear weather.

....

9. Prior to the Accident, I did not know that when all people in a boat are thrown out of the boat it can continue to circle in clear weather.

10. If I had known at the time of the Accident that in clear weather a boat could spin when all people were thrown from the boat, I would have worn the engine-stop-switch lanyard.

....

12. Since the Accident, I now wear the kill-switch lanyard when I drive the boat, irrespective of the weather conditions, because I now know that a boat can continue to spin even without people in the boat.

¶16 In his deposition, Martinez testified as follows:

Q. So you also knew that if you were to fall out or be ejected, that that kill switch could save your life if you wore the lanyard?

A. Correct.

Q. And that could happen in a couple of ways. You know the boat would keep running if you didn't wear the lanyard and you were thrown out, and so you might not be able to get back to the boat; right?

A. Correct.

Q. So you knew that there was a risk of drowning if you didn't wear that lanyard; right?

Feasel v. Tracker Marine

A. Correct.

Q. You also knew that if you didn't wear that lanyard and you were thrown out, that the boat would keep going. It might strike a person in the water; right? That's a risk?

A. I would say yes.

Q. Right. You knew that before this accident, didn't you?

A. I would say I was aware of that, yes.

....

Q. And if for some reason the boat does a circle, then you could be the person that gets hit by the boat; right?

A. Right.

Q. That's obvious, too, isn't it?

A. Yes.

Q. And you knew that before this accident; right?

A. I will say yes.

Q. No one had to tell you that, you knew that; right?

A. I read about it before. I just didn't think it was going to happen to me.

Q. You knew it could happen but you didn't think it would happen?

A. Right.

Feasel v. Tracker Marine

Q. I guess you thought it might happen if you were in stormy weather, though, that's why you wore the lanyard.

A. Correct.

....

Q. [In your answer to Interrogatory No. 2,] you say, "The lanyard was used in stormy weather." Did I read that correctly?

A. Yes.

Q. Are you referring to the kill switch or the stop switch lanyard on the throttle control?

A. Yes.

Q. Why would you use the lanyard in stormy weather?

A. Because it's spooky out at—it's really—when you get bad weather, the waves get really high. And if it's stormy around here, and windy, it can be pretty scary.

Q. So you were anticipating, because of the waves, that you wanted to wear the lanyard in case you hit a big wave?

A. Correct.

Q. Is that the only time you used the lanyard on your boat before this accident, was in stormy weather?

A. Yes.

....

Feasel v. Tracker Marine

Q. You didn't need Tracker Marine to invent some other gadget, you didn't need some additional warning, you knew, as the operator of the boat, that you had to take responsibility for safe operation, which included wearing the lanyard, true?

A. I don't know about all the first statements that you're talking about creating or making a better product, but if I would have been wearing the lanyard, yes, the accident would not have happened.

Q. And you knew that before the accident?

A. Yes.

Q. So you didn't need any other warning or gadget, you just needed to wear the lanyard to prevent this accident; right?

A. Right.

¶17 As with Feasel's declaration, nothing in Martinez's declaration contradicts his deposition testimony. In his deposition, Martinez stated that he knew that "if for some reason" the boat circles, it can return to hit the people who had been ejected from the boat, but he did not state that he was aware that a boat could circle in clear weather, and in fact, he emphasized that he believed it was necessary to wear the lanyard primarily in stormy weather. And as with Feasel, Martinez's acknowledgment that the accident would not have happened if he had worn the lanyard does not demonstrate that he was aware of the specific circle-of-death phenomenon. His declaration merely "clarifies[]" and expands his deposition testimony" regarding his beliefs about the relative dangers of stormy and clear weather rather than contradicting it. *Cf. Uintah Basin Med. Center v. Hardy*, 2005 UT App 92, ¶ 14 n.1, 110 P.3d 168.

¶18 While the jury might ultimately question the credibility of Feasel's claim that he was unaware of the circle-of-death phenomenon or Martinez's claim that he believed it occurs only in times of bad weather, the depositions and declarations are not inconsistent. The district court therefore exceeded its discretion in striking them.

II. Material Disputed Facts Precluded Summary Judgment on Feasel's Inadequate Warning Claim.

¶19 We next turn to the question of whether the district court correctly granted summary judgment to Defendants on Feasel's inadequate warning claim. "[U]nder Utah law, a manufacturer may be held strictly liable for any physical harm caused by its failure to provide adequate warnings regarding the use of its product." *House v. Armour of Am., Inc. (House II)*, 929 P.2d 340, 343 (Utah 1996). To establish his inadequate warning claim, Feasel is required to prove (1) that Defendants had a duty to warn, (2) that the warning was inadequate, (3) that the inadequate warning made the product unreasonably dangerous, and (4) that the lack of an adequate warning caused the injury. *See id.* at 343, 346.

A. Adequacy of the Warnings

¶20 The first ground on which the district court relied in granting summary judgment on Feasel's inadequate warning claim was its determination that warnings were provided to boat drivers in the boat manuals and on labels affixed near the boat's steering wheel and that Martinez testified that he read and understood the warnings. But Feasel does not dispute that Defendants provided warnings in the boat manuals and on labels on the boat or that both Feasel and Martinez understood them as they were presented. Rather, he disputes that those warnings were adequate to warn of the danger posed by the circle-of-death phenomenon. Feasel asserts that Defendants had a duty to provide a specific warning regarding the risk of the circle of death and that the existing warnings exhorting users to

Feasel v. Tracker Marine

wear the kill-switch lanyard were inadequate because they did not mention the circle of death.⁵ The adequacy of a warning ordinarily “presents a question of fact, to be resolved by the trier of fact.” *House v. Armour of Am., Inc. (House I)*, 886 P.2d 542, 551 (Utah Ct. App. 1994), *aff’d*, 929 P.2d 340 (Utah 1996).

¶21 Defendants maintain that the district court correctly rejected Feasel’s inadequate warning arguments as a matter of law because (1) the danger was open and obvious such that a warning was not required as a matter of law; (2) Martinez’s and Feasel’s actual knowledge, training, and experience precluded a finding that the lack of warnings made the boat unreasonably dangerous; and (3) the warnings were adequate as a matter of law. We address each argument in turn.

¶22 Defendants’ assertion that “a reasonable consumer would ‘generally know’ and ‘recognize’ that the boat propeller could strike and seriously injure or kill them if they were ejected,” (citing *House II*, 929 P.2d at 343 (quotation simplified)), ignores the basis of Feasel’s claim—that consumers were unlikely to know that a driverless boat would spin into a circle of death. Even if we accept the idea that consumers are generally aware that they may be injured by a propeller if ejected from a boat, the danger of incurring multiple propeller wounds from a circling boat is more specific. No information was presented to the district court to show that consumers generally are aware of the propensity of boats without a driver to circle, and indeed, Feasel presented evidence to the contrary. Based upon the evidence presented to the district court, the particular danger at issue here—the circling boat—was not so open and obvious that

5. The manuals included warnings that “[t]he steering torque of the engine can cause the steering wheel to spin if released, resulting in serious damage to the boat or serious injury or death to dislodged occupants,” but this warning was not included in the warning explaining the purpose of the lanyard or on the labels affixed to the boat.

Feasel v. Tracker Marine

Defendants had no duty to warn as a matter of law. *See House II*, 929 P.2d at 343 (explaining that an open and obvious danger is one that is “generally known and recognized” (quoting Restatement (Second) of Torts § 402A cmt. j (Am. Law Inst. 1965))); *see also infra* ¶ 26.

¶23 Defendants further assert that Feasel cannot establish that the absence of adequate warnings made the boat unreasonably dangerous, because Martinez and Feasel had extensive knowledge, training, and experience with respect to boating. Under Utah law, whether a product is “unreasonably dangerous” must be considered in light of the “actual knowledge, training, or experience possessed by that particular buyer, user, or consumer.” Utah Code Ann. § 78B-6-702 (LexisNexis 2018). Defendants assert that “[i]t is undisputed that Martinez and Feasel had actual knowledge, training and experience regarding the reasons why operators must wear the lanyard and the hazards of not doing so.” But Feasel stated in his declaration that he was unaware of the circle-of-death phenomenon until after the accident, and Martinez stated in his declaration that he believed boats would circle only in bad weather. Thus, there exists a dispute of material fact as to whether Feasel and Martinez, who were seasoned boaters, had actual knowledge of the specific hazard at issue in this case.

¶24 Finally, Defendants assert that the warnings provided were adequate as a matter of law. An adequate warning “must completely disclose all the risks involved, as well as the extent of those risks”; specifically, it must “(1) be designed so it can reasonably be expected to catch the attention of the consumer; (2) be comprehensible and give a fair indication of the specific risks involved with the product; and (3) be of an intensity justified by the magnitude of the risk.” *House I*, 886 P.2d at 551 (quotation simplified). Defendants argue that the warnings they provided in their manuals and on their boats were adequate because the warnings “explain the ability of the lanyard to stop the boat from circling in the water.” But the warnings do not explicitly link the admonition to wear the lanyard with the danger of a driverless boat turning in a tight circle.

¶25 The manual contains a number of warning boxes, set apart from the main text and labeled with the all-caps word WARNING and a symbol of an exclamation point set inside a triangle. Several of these warnings explain that the lanyard's purpose is to turn off the engine in the case of accidental ejection. However, none of these warnings explain the danger presented by the boat turning back toward ejected passengers and circling over them. One line in each of Tracker's and Brunswick's manuals states, "While activation of the lanyard stop switch will stop the engine immediately, a boat will continue to coast for some distance depending upon the velocity and degree of any turn at shut down. However, the boat will not complete a full circle." This information is included in the main text of the manual rather than in one of the labeled warning boxes, and the danger presented by the boat continuing to circle is not articulated. A warning box in a different part of the manual directs users to keep a hand on the steering wheel at all times because "[t]he steering torque of the engine can cause the steering wheel to spin if released, resulting in . . . serious injury or death to dislodged occupants." But this warning is linked specifically to the need for the driver to keep at least one hand on the steering wheel, not the need to wear the lanyard. Further warnings instruct users about the dangers of the propellers and advise users to shut off the motor if anyone is in the water or if the driver falls out. One warning label affixed to the right of the steering wheel instructs users to ensure that the lanyard is "operational and securely fastened" before starting the engine, and a separate label nearby warns that a "[r]otating propeller may cause serious injury or death." None of the affixed labels refer to the possibility that a driverless boat may spin in a tight circle while under power.

¶26 Given that none of the warnings provided here specifically warn that the failure to wear a lanyard may result in a circle-of-death situation, Defendants have not demonstrated that, as a matter of law, the warnings were adequate. Rather, we think this is a question for the jury. A jury may well conclude that the warnings, read together, were adequate, but without

Feasel v. Tracker Marine

more explicit warnings, this issue should not have been resolved as a matter of law. *Cf. Groesbeck v. Bumbo Int'l Trust*, 718 F. App'x 604, 618 (10th Cir. 2017) (holding that multiple clear and prominent on-product warnings directing consumers not to use a baby seat on elevated surfaces and specifically warning that babies can fall out of the seat were adequate as a matter of law).

¶27 Because the question of whether the warnings here were adequate should have been left to the fact-finder, the district court erred in granting summary judgment on this basis.

B. Causation

¶28 The district court next determined that Feasel could not establish causation because Martinez stated in his deposition that “any other warning that he may have received would not have made any difference” to his heeding that warning. However, this does not appear to be an accurate characterization of Martinez’s testimony. Although Martinez stated that he should have worn the lanyard, even in the absence of additional or more explicit warnings, he never stated that an additional warning would not have made a difference. And in his declaration, which we have determined to be admissible, he explicitly declared, “If I had known at the time of the Accident that in clear weather a boat could spin when all people were thrown from the boat, I would have worn the engine-stop-switch lanyard,” and, “Since the Accident, I now wear the kill-switch lanyard when I drive the boat, irrespective of the weather conditions, because I now know that a boat can continue to spin even without people in the boat.” This evidence is sufficient to put the question of causation in the hands of the jury, and therefore the district court erred in ruling on the issue of causation as a matter of law.

III. Additional Issues

¶29 Feasel raises two additional issues on appeal that are not essential to our determination. Nevertheless, because these

matters may be relevant on remand, we address them briefly here.

A. Duty to Passengers

¶30 During oral argument on the motion for summary judgment, Defendants asserted, for the first time, that the duty to warn does not extend to passengers.⁶ When it became clear that this was a question the district court was considering, Feasel requested the opportunity to brief it further, which the court denied. The court then concluded that Defendants had no duty to warn Feasel directly as a passenger and relied on this conclusion in its summary judgment ruling.

¶31 Utah has adopted section 402A of the Second Restatement of Torts with respect to strict products liability. *See Bylsma v. R.C. Willey*, 2017 UT 85, ¶ 21, 416 P.3d 595. The comments to section 402A define “user” as including “those who are passively enjoying the benefit of the product, as in the case of passengers in automobiles or airplanes.” Restatement (Second) of Torts § 402A cmt. 1 (Am. Law Inst. 1965). Likely due to the lack of briefing, the district court did not analyze this provision or explain why it believed the provision would not apply in this

6. The district court also observed that Feasel’s assertion that Defendants had a duty to warn him directly was a new theory not raised in his complaint, which alleged only that Defendants had “fail[ed] to adequately warn boat operators.” Feasel appears to be using this alternate theory to guard against the possibility that the jury might find that Martinez had actual knowledge of the dangers presented by the circle of death. *See supra* ¶ 23. On appeal, we address only the court’s legal conclusion that the duty to warn does not extend to passengers. The possibility that Feasel may be precluded from pursuing his theory for procedural or other reasons is a matter for the court to address on remand.

Feasel v. Tracker Marine

case.⁷ Defendants have pointed us to no case law that would preclude applying this definition of “user” in the failure-to-warn context.⁸ Thus, the district court erred on this point.

7. The district court cited the example of other occupants of the reservoir who might be in danger from a driverless boat, pointing out that it would be impossible to provide warnings to such individuals. But a passenger clearly has a greater ability to ensure his own safety than a person in the water who has no connection to a boat or its driver. A boat passenger who receives an adequate warning has the ability to encourage the driver to follow safety instructions or to elect not to ride in the boat if the driver does not do so.

8. Defendants have misinterpreted the cases they cite. For example, they represented the holding in *Marshall v. Ford Motor Co.*, 446 F.2d 712 (10th Cir. 1971), as follows: “The Tenth Circuit . . . conclud[ed] that the driver, not the manufacturer, had the obligation to warn passengers of relevant hazards arising from seatbelt nonuse. Where the driver was adequately warned, such that she knew about the need for passengers to wear seatbelts, no separate or independent duty to warn extended to passengers.” In reality, the plaintiff’s failure-to-warn argument was rejected in that case because “the function of seat belts is a matter of common knowledge.” *Id.* at 715. The court went on to point to the fact in that case that the driver had repeatedly warned her passengers to wear seatbelts. *Id.* Thus, the *Marshall* court did not hold that the duty to warn does not generally extend to passengers. In citing *Stevens v. Cessna Aircraft Co.*, 115 Cal. App. 3d 431 (Ct. App. 1981), Defendants accurately represent the court’s holding that an aircraft manufacturer was not required to warn passengers about aircraft weight limitations, but they neglect to acknowledge that the court explicitly distinguished airplane passengers from other types of passengers due to the fact that airplane passengers “necessarily depend[] upon the skill and judgment of the pilot.” *Id.* at 434. In
(continued...)

B. Expert Testimony

¶32 Feasel also takes issue with the district court's determination that his expert's testimony was too speculative to support a finding of causation. Feasel analyzes this issue under rule 702 of the Utah Rules of Evidence and challenges the court's decision to "exclude" the expert testimony without motion or briefing. The district court did not actually go so far as to exclude the testimony, primarily because its summary judgment ruling obviated the need for a trial. We are therefore not in a position to review the admissibility of the expert testimony.

¶33 However, we do believe that the court's finding regarding the sufficiency of the expert testimony was premature and possibly based on erroneous information. This issue was raised for the first time at the summary judgment hearing and was not fully briefed by the parties. Further, Feasel alleges that counsel for Defendants made a number of representations regarding the expert's testimony that were not entirely accurate and on which the district court may have relied in assessing Feasel's expert's reliability.

¶34 In screening out unreliable expert testimony, district courts "must be careful not to displace the province of the factfinder to weigh the evidence." *State v. Jones*, 2015 UT 19, ¶ 26, 345 P.3d 1195. Rule 702 "requires only a basic foundational showing of indicia of reliability for the testimony to be admissible, not that the opinion is indisputably correct." *Majors v. Owens*, 2015 UT App 306, ¶ 12, 365 P.3d 165 (quoting Utah R. Evid. 702 advisory committee's note). In the event that Defendants seek to exclude Feasel's expert at trial, the court should entertain full briefing on the matter and thoroughly

(...continued)

short, the cases cited by Defendants do not support their position that the duty to warn does not extend to passengers in a small boat.

Feasel v. Tracker Marine

examine the expert's proposed testimony before reaching a decision on admissibility.

CONCLUSION

¶35 The district court exceeded its discretion in striking Martinez's and Feasel's declarations on the ground that they contradicted earlier deposition testimony. Because their declarations did not conflict with their deposition testimony, there was no basis on which to strike them. Further, the district court erred in granting summary judgment in favor of Defendants, because genuine issues of material fact remain, specifically with respect to the adequacy of the warnings, whether Martinez and Feasel had actual knowledge of the specific danger that would result from not wearing the kill-switch lanyard, and whether the failure to warn caused Feasel's injuries. Accordingly, we reverse the district court's grant of Defendant's motion to strike and motion for summary judgment with respect to Feasel's failure-to-warn claim and remand for further proceedings consistent with this opinion.

CERTIFICATE OF MAILING

I hereby certify that on the 21st day of February, 2020, a true and correct copy of the attached OPINION was sent by standard or electronic mail to be delivered to:

NATHAN D. ALDER
SARAH E SPENCER
CHRISTENSEN & JENSEN PC
NATHAN.ALDER@CHRISJEN.COM
sarah.spencer@chrisjen.com

MICHAEL A. WOREL
RICHARD ERIC SHELTON
DEWSNUP KING & OLSEN
MWOREL@DKOWLAW.COM
RICKY@YHMLAW.COM

PATRICK X. FOWLER
ELISABETH M MCOMBER
SNELL & WILMER LLP
pfowler@swlaw.com
EMCOMBER@SWLAW.COM

MICHAEL C MCMULLEN
BAKER STERCHI COWDEN & RICE LLC
mmcmullen@bscr-law.com

HONORABLE NOEL S. HYDE
SECOND DISTRICT, MORGAN DEPT

SECOND DISTRICT, MORGAN DEPT
ATTN: BROOKE MCKNIGHT
brookem@utcourts.gov


Judicial Secretary

TRIAL COURT: SECOND DISTRICT, MORGAN DEPT, 140500037
APPEALS CASE NO.: 20180332-CA

TRACKER[®]
boats

EXHIBIT 15
DATE _____
WITNESS _____
ROCKIE DUSTIN, CSR, RPR



**ALUMINUM MODIFIED "V" FISHING BOATS
OWNERS/OPERATORS MANUAL**

TM000076

2943

ATTENTION

This Owner's/Operator's Manual contains information vital to safe usage of this equipment by all owner's/operator's. Each owner/operator should review this manual carefully prior to use.

Proper maintenance, as outlined herein, will ensure product safety, reliability, and longevity.

TRACKER[®]
boats

TRACKER[®]
boats
Fish the Finest![®]

TM000078

Welcome and Introduction

WELCOME

Thank you and congratulations on purchasing your new TRACKER® boat. This manual will guide you in the proper operation and care of your new boat package and equipment. Please take time to read the manual and become familiar with its contents before operating your boat for the first time.

Included in this manual is general information on major components such as the engine, trolling motor, depth finder, etc. The suppliers of these components may have their own specific operation, maintenance and warranty procedures. Be sure to read the information provided by these companies which may be included in the owner's/operator's packaged material.

The illustrations in this manual are representative views for your reference and may be slightly different from your actual boat model and equipment. Some items noted may be optional or may not be available for your particular model.

Thanks again for choosing Tracker. We appreciate your business and are confident that your boat will provide you with years of boating pleasure!



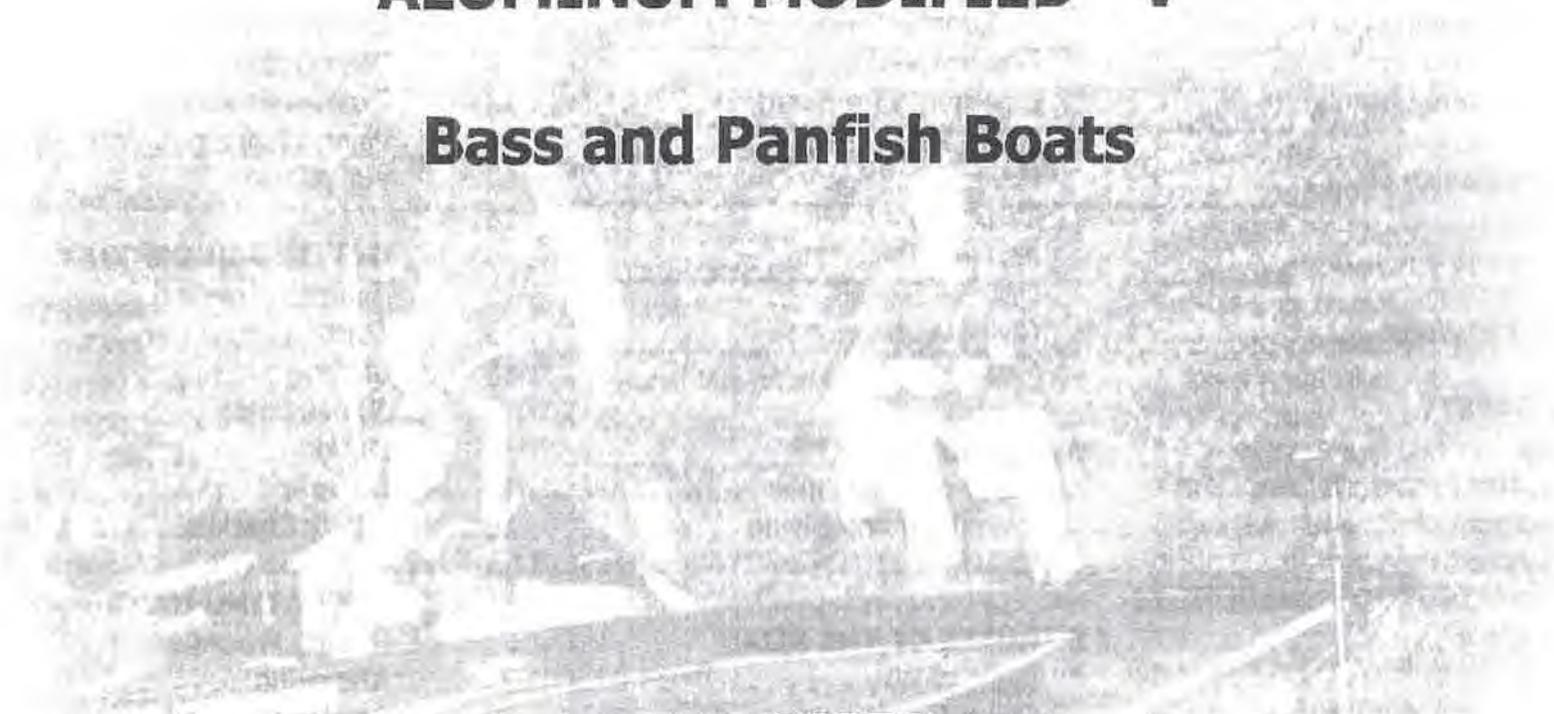
NMMA® CERTIFICATION

Tracker Marine is a member of the National Marine Manufacturers Association (NMMA) and each Tracker boat meets the rigid specifications required for NMMA certification. NMMA certification exceeds United States Coast Guard requirements and is backed by over 1600 members. Inspections are performed each model year to ensure that our boats meet the stringent standards of NMMA.

OWNER'S / OPERATOR'S MANUAL

ALUMINUM MODIFIED - V

Bass and Panfish Boats



TRACKER.
boats

2500 E. Kearney
Springfield, MO 65898

Table of Contents

1 OWNER'S RESPONSIBILITY

- Boating Terminology 1
- State Registration 1
 - Classes of Water Craft 1
- Warranty Registration 2
- Important Numbers 2
 - Hull Identification Number (HIN) 2
- Insurance 3
- Periodic Maintenance 3
- Warning Labels 3
- Storage 3
- Instructing Passengers 3
- Courtesy on the Water 3

2 BOATING SAFETY

- Introduction 4
- Owner/Operator Responsibilities 4
- Safety Equipment 5
- Personal Flotation Device 6
- Capacity Information 7
- Passenger Safety 7
- Alcohol/Drug Use 8
- Minors 8
- Education 8
- Float Plan 9

3 EMERGENCY PROCEDURES

- Hazardous Weather 10
- Capsizing 10

- Fire and Explosion 10
- Collision 11
- Grounding 12
- Towing 12
 - General Guidelines for Towing 12
- Person Overboard 13
- Emergency Re-Boarding 13
- Drowning 14
- Medical Emergency 14
- Carbon Monoxide 14
- Accident Reporting 16
- Distress Signals 16
- Giving Assistance 16
- First Aid 16

4 WATER SPORTS

- Water Skiing/Signals 17
- Swimming and Diving 18
- Fishing 19

5 RULES OF THE ROAD

- Right-of-Way 20
- Overtaking/Passing 20
- Crossing Situations 20
- Meeting Head On 21
- Warning Signals 21
- Navigation Aids 22
- Channel Buoy Guide 22
- Waterway Markers 22

- Homeland Security 23

6 ENVIRONMENTAL CONSIDERATIONS

- Fuel and Oil Spillage 24
- Excessive Noise 24
- Wake/Wash 24
- Exhaust Emissions 25
- Paint, Cleaning Agents and Other Substances 25

7 GETTING UNDERWAY

- Boarding/Loading 26
- Starting Procedure 26
- Shifting 28
- Maneuvering 28
- Docking 29
- Departing 30
- Safety Checklist 30

8 OPERATING INFORMATION

- Fueling Procedures 32
- Anchoring 33
- Performance 33
- Getting on Plane 33
- High Speed Operation 35
- Operating in Shallow Water 35

9 TRAILER INFORMATION

- Brackish and Salt Water Use 36

3
15
4
4
14
15
25
26
26
28
28
29
30
30
32
33
33
33
35
35
36

2950

Hitches	37
Trailer Checklist	37
Hookup Procedure	40
Winch	42
Trailers with Brakes	42
Drum Brakes	43
Disc Brakes	43
Actuator/Coupler	43
Brake Fluid	43
Brake Wiring Diagram	45
Operating Tips	46
Maneuvering the Trailer	47
-Starting	47
-Backing	47
-Corners and Curves	47
-Passing/Being Passed	48
-Stopping	48
-Parking	48
Trailer Maintenance/Care	47
-Brake Pad Wear	51
-Rotor Damage	51
-Actuator/Hydraulic Line Service	51
Brake Replacement Parts	51
Swing-Away Tongue	52

10 LAUNCHING/LOADING

Preparation	53
Launching	53
Loading	54

11 CONTROLS/INDICATORS

Gauges	55
Switches	56

Lanyard Stop Switch	57
Shift/Throttle	57

12 SYSTEMS

Electrical System	59
Trolling Motor Battery	59
Fuel System	60
Engine Exhaust	60
Engine Cooling	60
-Engine Alarms	60
Bilge	61
Steering Systems	61
-Mechanical Steering	62
-Hydraulic Steering	62
Engine/Propeller	62
Lighting	63
Navigational Equipment	63
-Compass	63
-Horn	63
-GPS Unit	63

13 FISHING/WATER SPORTS FEATURES

Fishing Equipment	64
-Depth Finder	64
-Trolling Motor	64
-Livewell Systems	64
-Manual	64
-Remote	65
-Recirculating	66
-Pump-Out	66
-Livewell Controls	67
-Baitwells	67
Fishing Seats	68

Ski Equipment	68
-Ski Pylon (Ski Tow Bar)	68

14 MAINTENANCE/CARE

Periodic Checks/Services	69
Painted Aluminum Care	70
Bottom Paint	70
Salt Water Use	70
General Maintenance	72
-Electrical System	72
-Engine/Propeller	72
-Fuel System	73
-Livewell/Plumbing System	73
-Steering System	74
-Hydraulic Steering	74
-Carpet/Upholstery	75
-Deck Hardware	76
-Windshields	76
-Corrosion Protection	76
Storage Procedures	78
Reactivating After Storage	79

15 TROUBLESHOOTING

16 WARRANTY/SERVICE

Owner's Responsibilities	84
Boat Warranty	85
Trailer Warranty	88

17 GLOSSARY

Definitions	91
-----------------------	----

Owner's Responsibilities

Welcome aboard! The purchase of your TRACKER® boat will provide many pleasurable hours of recreational activities. As you anticipate the fun ahead, you need to be aware that owning and operating a boat comes with responsibilities. Before operating, you are responsible to be familiar with your boat and its systems. Each time you take the boat to the water, you must comply with all federal, state and local laws. You are responsible for the safety of yourself, your passengers and other boaters on the water. You are also responsible for maintaining your boat in a safe operating condition and you should seek education on proper boat operating procedures. Your dealer is an excellent source of boating information and can help you with any additional information that you may need.

BOATING TERMINOLOGY

It is the owner's responsibility to know the boating terminology and nautical terms associated with boating. Please see the Glossary later in this manual for boating terminology and definitions. This is not all-encompassing, but will help you become familiar with the most common nautical terminology.

STATE REGISTRATION

All power boats operated on navigable waters of the United States must be registered (numbered) in the state of principal use. Many states require registration in that state whenever boating on waters within their state boundary. Contact your state boating authorities (United States Coast Guard Auxiliary, Water Patrol, etc.) for registration information and boating requirements.

CLASSES OF WATERCRAFT

The correct classification of your boat is important when you register your new boat with the United States Coast Guard or with your local registering authority. The class of your boat also may determine the amount of registration fee you are required to pay.

- CLASS A: Under 16 feet in length
- CLASS 1: 16 feet to less than 26 feet
- CLASS 2: 26 feet to less than 40 feet

WARRANTY REGISTRATION

As the boat owner, it is your responsibility to ensure your dealer warranty registers your boat with TRACKER® at the time of purchase. The engine and other components also need to be registered with the manufacturer of the equipment at the time of purchase. Failure to do so could result in denial of a warranty claim request if you experience an unexpected concern with an unregistered component.

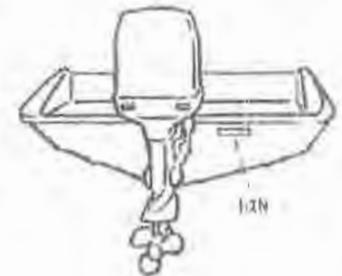
IMPORTANT: ALL BOAT MANUFACTURERS ARE REQUIRED BY TITLE 46, UNITED STATES CODE ANNOTATED (U.S.C.A.), FORMERLY THE FEDERAL BOAT SAFETY ACT OF 1971 TO NOTIFY FIRST TIME OWNERS IN THE EVENT ANY DEFECT IS DISCOVERED "WHICH CREATES A SUBSTANTIAL RISK OF PERSONAL INJURY TO THE PUBLIC." IT IS ESSENTIAL THAT WE HAVE YOUR WARRANTY REGISTRATION CARD COMPLETE WITH YOUR NAME AND MAILING ADDRESS IN OUR FILES SO THAT WE CAN COMPLY WITH THE LAW IF IT SHOULD BECOME NECESSARY.

IMPORTANT NUMBERS

The identification numbers on the hull, engine, trailer and accessories are important. Record the serial numbers, model and registration numbers immediately after purchase for future reference. File these records in a safe place away from the boat. You will need to report these numbers to authorities in case of theft, fire or damage.

HULL IDENTIFICATION NUMBER

The hull identification number (HIN), also known as the serial number, is located on the outside of the transom on the starboard corner. This serial number must be clearly visible at all times and must not be altered, removed or tampered with in any way. You will need the HIN number for any warranty question or future transaction involving your boat.



INSURANCE

Insurance on your boat should be obtained as soon as possible for protection against loss by fire, theft, nature, etc. General liability insurance is recommended as well. Many states have laws requiring minimum amounts of insurance coverage. Contact your insurance agent for more information.

PERIODIC MAINTENANCE

Proper maintenance is important to keep your boat in safe operating condition. Periodic maintenance is not only a condition of warranty, but could add to the resale value of your boat. Maintenance guidelines are outlined in the "Maintenance and Care" section of this manual. Implement a routine for periodic maintenance. Consult your dealer for maintenance products and suggestions.

WARNING LABELS

Warning labels or decals have been affixed to your boat and other equipment to alert you to the recommended precautions and procedures noted on the labels.

STORAGE

Your boat must be properly stored to prevent damage to the boat or engine. Protect your boat from the elements to prevent weathering and deterioration of upholstery, carpet and other components. Improper storage may void your warranty. Additional storage information is covered in the "Storage" section of this manual. Contact your dealer for storage recommendations.

INSTRUCTING PASSENGERS

Before each outing, make sure at least one passenger, other than the primary operator, is familiar with the proper operation and safety aspects of the boat in case of emergency. Show all passengers the location of safety equipment and ensure that they know how to use the safety equipment.

COURTESY ON THE WATER

Know the rules of the water and practice them at all times.

- * Be familiar with traffic patterns of the body of water on which you are boating.
- * Give fishermen, sailboats and water skiers plenty of room.
- * You are responsible for spotting and avoiding swimmers and slow-moving vessels.
- * You are responsible for damage caused by your wake.
- * Operate at slow speeds in restricted and congested areas.
- * Keep a lookout for personal watercraft. They have the same rights and responsibilities as you do.
- * Contact your local or state boating authorities for information on boating and safety courses.
- * Keep boating safe for everyone!



Boating Safety

INTRODUCTION

Good seamanship and safe boat handling are presented in this section and highlighted throughout this manual when applicable. Follow the guidelines in this section and manual for safe boating. Regulations vary from federal to local waters and from state to state. Contact your local boating authorities for information regarding your area. **Safe boating is a result of using common sense and following proven boating practices.**

The basic safety rules and practices are described in this section of this manual.

Throughout the manual, this symbol:



will appear noting hazardous or unsafe practices which COULD result in severe personal injury, death or property damage.

This symbol:



will appear noting hazardous or unsafe practices which COULD result in severe property damage.

In addition, this symbol:



will appear noting installation, operation, or maintenance information that is important but not safety related.

The precautions listed in this manual and on the boat are not all-inclusive. **REMEMBER: ALWAYS USE COMMON SENSE WHEN OPERATING A BOAT!**

OWNER'S / OPERATOR'S RESPONSIBILITIES

As the operator, you are responsible for your safety, the safety of your passengers and the safety of other boaters. You must operate the boat in a safe manner and follow all the rules of the waterway. Good navigational skills are recommended. Knowing how to react properly to adverse weather conditions when they arise is important to your continued safe use of a boat.

The boat owner/operator is responsible for the boat being in compliance with United States Coast Guard and state safety equipment regulations. Ensure that each person has an approved personal flotation device aboard. All safety equipment such as fire extinguishers, PFDs, life preservers, flares, lanyard stop switch, etc., should be checked for proper operation and accessibility before each outing.

Your safety, and the safety of other boaters, could depend directly on your operation and maintenance practices. Know the proper safety procedures and follow the recommended safety practices listed in this manual as you continue to seek education in boating education and safety.

SAFETY EQUIPMENT

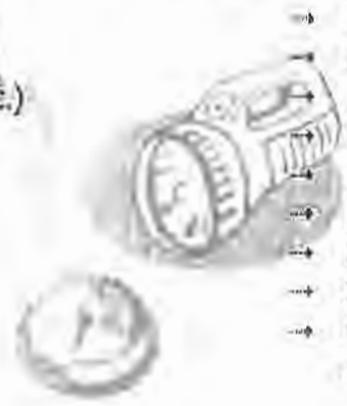
To comply with United States Coast Guard requirements your boat must be equipped with the following safety equipment:

- An approved Type B fire extinguisher
- A horn or sounding device
- Proper navigation lighting for operation after sunset
- A Personal Flotation Device (PFD) for each person aboard
- A Type IV Throwable Personal Flotation Device
- A Visual Distress Signal (VDS)

Consult your national boating law enforcement agency for additional details on required safety equipment.

In addition we recommend that you carry some additional items aboard for safety and precautionary reasons. These items include:

- An anchor and line
- A bailing device (bucket, hand pump, scoop)
- A basic tool kit (screwdrivers, wrench, pliers, etc.)
- boat fenders (for docking)
- A compass
- Engine and accessories manual
- A waterproof flashlight and batteries
- A cell phone / radio
- A first-aid kit
- Paddles
- A radio with weather band
- A spare propeller with fastening devices
- A knife
- A depth sounder
- Charts
- Spare keys
- Emergency position-indicating radio beacon
- Mooring lines
- Safety approved gas can (properly stowed)
- Carbon monoxide detection system (if your boat is equipped with an enclosed cabin or compartment)



PERSONAL FLOTATION DEVICE

DO NOT DRIFT FROM THE STAY! WEAR YOUR LIFE JACKET!



Federal law requires at least one Type I, II, III, IV or V Personal Flotation Device (PFD) for each person aboard your boat. In addition, one throwable device (Type IV PFD) is required aboard. The owner/operator is responsible for providing an approved PFD for each person. It is recommended that each person wear a PFD at all times while aboard the boat, especially children and non-swimmers. Additionally, certain laws may require the use of a PFD at all times when on the water.



PFD Type I - This type of vest provides the most buoyancy and is best for open, rough, or remote water where rescue may be slow in coming. The Type I PFD is designed to turn most unconscious wearers face up in the water.



PFD Type II - This type of vest is good for calm, inland water where there is a good chance of quick rescue. The Type II PFD will turn some, but not all, unconscious wearers face up in the water.



PFD Type III - This type of vest is good for calm, inland water where there is a good chance of quick rescue. Designed to keep the wearer in a vertical position, it may require the wearer to tilt his/her head back to avoid turning face down in the water. This type allows more freedom of movement for active water sports and is generally the most comfortable type for continuous wear.



PFD Type IV - This device is designed to be thrown to a conscious person in the water. This device is not designed to be worn and usually takes the shape of a boat cushion, life ring or horseshoe. It is not suitable, alone, for children or non-swimmers and should never be worn on a person's back. Throwables should always be kept in an easily accessible location.



PFD Type V - This type of special use device is intended for specific activities and may be carried instead of another PFD only if used according to the approval condition on the label. Some Type V devices provide hypothermia protection. Varieties include deck suits, work vests, board sailing vests, and Hybrid PFDs. A TYPE V HYBRID INFLATABLE PFD is the least bulky. It contains a small amount of internal buoyancy and an inflatable chamber and must be worn when underway to be acceptable. This type is designed to automatically inflate upon entering the water.

PFDs require regular maintenance and service. Ensure that your PFD is completely dry before storage. You may contact the PFD manufacturer or your dealership for further instructions about servicing and maintenance of your PFD(s).

TEST PFD BUOYANCY AT LEAST ONCE PER YEAR.

CAPACITY INFORMATION



Failure to comply with the maximum weight and horse power capacity listed on the capacity plate may result in death or injury to occupants and will void your warranty.

The United States Coast Guard requires boats less than 20 feet in length to have a Certification label stating the maximum number of persons and the maximum weight the boat will handle safely under normal conditions. Your boat (if less than 20 ft. in length) has a capacity tag located inside the boat near the console or in the bow area. Know the maximum capacity ratings and ensure that the ratings are never exceeded.

The maximum load capacity includes passengers and equipment. Do not exceed either the person and/or the weight capacity limits. Do not exceed the recommended maximum horsepower capacity rating. This will not only void your warranty but can be extremely dangerous for you and your passengers' personal safety and can cause damage to the boat.

NOTE: THE NUMBER OF SEATS IS NOT NECESSARILY AN INDICATION OF THE NUMBER OF PERSONS A BOAT CAN CARRY SAFELY. CERTAIN SEAT LOCATIONS, INTENDED FOR YOUR COMFORT WHILE FISHING, ARE NOT INTENDED FOR USE WHILE THE BOAT IS UNDERWAY.



The operator is responsible by law to "maintain a proper lookout by sight (and sound)." The operator must have an unobstructed view, particularly to the front. No passengers, gear or fishing seats should block the operator's view when operating the boat above idle speed.

PASSENGER SAFETY

The owner/operator is responsible for the safety of the passengers aboard as well as the safety of fellow boaters. Inform the passengers of their responsibilities, such as wearing a PFD and to remain seated when moving. Each occupant needs to know where safety equipment is located and how to use it. Instruct at least one person on board how to operate the boat in case of an emergency. Do not let passengers sit on the gunwale, over the bow, on seat backs, or drag their hands or feet in the water while underway. Passengers should exercise common sense to ensure that everyone enjoys a safe outing. Make sure you know and abide by boating laws, rules and regulations.

ALCOHOL/DRUG USE



ALCOHOL/DRUG USE AND BOATING DON'T MIX. Never operate or allow another person to operate the boat while under the influence of alcohol or drugs. Be aware this may include some prescription medications. Over 50 percent of all boating accidents involve the use of alcohol and/or drugs.

When boating, exposure to noise, vibration, heat from the sun, wind, etc., produces what is known as a boater's hypnosis. boater's hypnosis slows your reaction time and gives you the feeling of being intoxicated. Using alcohol or drugs, including some prescription medications, while boating may intensify this effect which increases your chance of an accident. **Do not drink and drive a boat.** In addition to being a danger to yourself and others on the water, most states have laws on boating while intoxicated, punishable with sentences similar to driving a vehicle while intoxicated. Avoid drinking and boating!

MINORS

Minors must be closely supervised when operating a boat. Some states have laws requiring a minimum age for operating and licensing a boat.

EDUCATION

There are federal and state programs on safe boating and boating education courses. We recommend that you enroll in a safe boating course to improve your boating skills. For additional information on safe boating, contact the following organizations:

American Boat and Yacht Council, Inc.

613 Third Street, Suite 10
Annapolis, MD 21403
Phone: 410-990-4460
Website: www.abycinc.org

National Safe Boating Council

P.O. Box 509
Bristow, VA 20136
Ph: 703-361-4294
Website: www.safeboatingcouncil.org

United States Coast Guard

Commandant (G-OPB)
2100 Second Street SW
Washington DC 20593-001
Website: www.uscgboating.org

Boating Educational Hotline

1-800-336-2628

FLOAT PLAN

Pilots file flight plans prior to each flight. Likewise, we encourage all boaters to prepare a plan. Please copy and complete this page before going boating and leave it with a reliable person who can be depended upon to notify the United States Coast Guard or other organization if you do not return as scheduled. Do not file this plan with the United States Coast Guard.

Name of person submitting report: _____
Telephone Number: _____

BOAT DESCRIPTION

Boat Model:
Registration Number:
HIN:
Colors:
Registered to:
Engine Type:
Engine Serial Number:

Other Pertinent Information:

Tow vehicle type/model:	State in which licensed:
Tow vehicle color:	Trailer make and color:
Tow vehicle license number:	Trailer license number:
Vehicle park location:	

PERSONS ABOARD (Name, age, address, phone number):

Trip Expectations:

Departure time:	Expected return time:
Departure location:	Return location (if other than departure):

Survival Equipment (Check all that apply):

<input type="checkbox"/> PFDs	<input type="checkbox"/> Flares	<input type="checkbox"/> Flashlight	<input type="checkbox"/> Anchor
<input type="checkbox"/> Mirror	<input type="checkbox"/> Smoke Signals	<input type="checkbox"/> Food	<input type="checkbox"/> Raft

If not returned by _____, contact the Coast Guard or other rescue authority at telephone number: _____

Emergency Procedures

No matter how careful you are on the water, emergencies can arise that require you to follow certain procedures. The following are typical emergency situations with suggested procedures to follow. The following list is not all-inclusive regarding all possible emergency situations or possible procedures to follow. This is simply an overview of some situations.

HAZARDOUS WEATHER

A safety-minded boater should be aware of present and forecasted weather conditions. The operator should know the weather forecast before an outing. Check local forecasts as well as the United States Coast Guard weather broadcast 2670 kHz (VHF/FM), United States Weather Service broadcasts 162.55 MHz or 162.40 MHz (VHF/FM), or the local marina's information. If bad weather is forecast, cancel your outing. Even if present weather conditions are mild, changing weather conditions can occur rapidly. Use good judgment when deciding if the weather conditions are suitable for boating. If there is any doubt, it is better to be safe than sorry.

If you become caught in hazardous weather, head immediately for shore or other appropriate shelter. Make sure all passengers are wearing their PFDs and are seated on the floor of the boat near the centerline. Reduce your speed but keep enough power to head into the waves at a slight angle.

CAPSIZING

Hazardous conditions and / or improper operation of a boat can cause a boat to become flooded, swamped or capsized. These conditions are usually unexpected and can happen quickly. If your boat becomes capsized it may be safer to stay with the floating boat than to try to swim to shore. Use common sense when making this decision. You must consider variables such as water temperature, distance to shore and personal physical capabilities.

FIRE AND EXPLOSION

Most boat fires are caused by flammable liquids, such as gasoline. A United States Coast Guard-approved dry Type-B chemical or carbon dioxide type fire extinguisher can be used to put out fires. Follow the directions on the fire extinguisher for proper use. Aim the extinguisher nozzle at the base of the flames and use a sweeping motion to extinguish the fire.

Being on board a boat when a fire occurs can be a frightening experience. Deciding whether to abandon ship or stay aboard to extinguish the fire is a difficult situation. The danger of explosion may exist if the fire is not put out quickly. If you need to abandon ship, be sure all passengers are wearing their PFDs, and then swim away from the boat. Keep a distance away from the boat as burning fuel can spread out over the surface of the water nearby.

COLLISION

If you are involved in a collision with another boat or a fixed object (sandbar, bridge, dock, etc.), first account for everyone on board. Check for injuries and render first aid if necessary. Before proceeding, inspect your boat thoroughly for leaks or structural damage. Check the engine and propeller for damage and safe operation. If you determine that the boat can be operated safely, proceed immediately to shore and have the boat removed from the water and inspected.

If you feel the boat cannot be operated safely, stay with the boat and signal for help.

GROUNDING

In a situation where your vessel has hit bottom, your action will depend on whether or not the boat remains stranded. If you only touch ground slightly, you may only need to inspect the hull for damage. If the boat remains aground, evaluate the situation before taking action.

DO NOT THROW THE ENGINE CONTROLS INTO REVERSE! Doing so could cause additional damage to the hull of the boat.

Follow these basic guidelines if you become grounded:

- Inspect your boat for leaks. If water is coming into the boat, attempt to stop the flow before trying to free the boat.
- Check for damage to hull, propulsion and steering systems.
- Before moving the boat, determine the water depth around the boat as well as the type of bottom (sand, rocks, mud, etc.)
- Use common sense before attempting to move your boat. Damage to the boat caused by grounding will not be covered by warranty.



TOWING



Towing or being towed can inflict stress on the boat, hardware and lines. Failure of any of these parts could cause property damage, personal injury or death.

We do not recommend using a recreational boat for towing unless it is a last resort. Towing or being towed could result in damage to one or both vessels. The United States Coast Guard or a private salvage company is better equipped for towing.

If your boat is not operational and in need of a tow, another recreational boater may assist you by standing by, and possibly keeping the bow of your boat at the proper angle until help arrives.

Only under the following conditions should a recreational boat tow another:

- Seas are calm.
- The disabled boat is small.
- One or both operators is aware of the proper towing technique.

GENERAL GUIDELINES FOR TOWING

Be sure the fitting(s) to which you attach the towline is through bolted and is reinforced with a backing plate. **NEVER USE A MOORING CLEAT FOR TOWING!**

- Pad pressure points. Create a bridle with a line around the hull or superstructure to distribute the load over a wider area. Use these techniques on both the towing and the towed boat.
- Keep lines clear of the propellers on both boats.
- Keep passengers on both boats clear of the towline that is pulled tight.
- Never hold a towline while it is feeding out or after it is pulled tight.

PERSON OVERBOARD

When a person falls overboard, follow these procedures:

1. Always use extreme caution when approaching someone in the water. Approach at idle speed only, allowing your stern to swing away from the person as you get close. Always slow the boat, stop and turn the engine off before you reach the person.
2. Circle around quickly, approaching into the wind and waves. Keep the person in sight at all times and maneuver the boat to keep the engine lower unit away from the person while the engine is still running. Turn off the engine when the person is alongside the boat. Attach a line to a throwable flotation device. Toss the device to the person. Assist the person back into the boat.
3. Do not dive into the water after an unconscious person or non-swimmer unless you are trained in lifesaving techniques. A panicky victim can drown his would-be rescuer. Make sure the rescue person is wearing a proper PFD before entering the water.

EMERGENCY RE-BOARDING

Boats designed specifically as fishing boats may not be equipped with a boarding ladder. An emergency situation may require you to re-board your boat using other means. These emergency situations include but are not limited to:

- You are the only occupant of the boat and you have been ejected from the boat.
- An occupant has been ejected from the boat and you are unable to assist him/her back into the boat.

In these or other emergency re-boarding situations follow these procedures:

1. Grab onto the top of the gunwale to hoist yourself out of the water and into the boat. If the boat seems unstable, proceed along the gunwale, hand over hand, until you reach a more stable location closer to the bow or stern. Keep your body as low as possible to the gunwale and deck as the boat is re-entered. Ensure that caution is taken so as not to capsize the boat.
-OR-
2. If the gunwale cannot be reached, use the lower unit of the engine as a "step", along with using the stern mounted grab handle, to lift yourself up out of the water and into the boat.

NOTE: IF YOUR BOAT DID NOT COME EQUIPPED WITH A BOARDING LADDER AND YOU INTEND TO USE YOUR BOAT FOR WATER SPORTS, WE RECOMMEND AN AFTER-MARKET BOARDING LADDER BE INSTALLED AND USED WHEN RE-BOARDING.

! WARNING! !

We do not recommend using the lower unit of the engine as a means of re-boarding your boat. However, in certain emergency situations, it may become necessary. You must ensure that the engine is OFF and the propeller has stopped rotating before attempting to board the boat in this fashion. Take extra care to ensure that you do not slip onto the engine or the propeller as this could cause property damage, personal injury or death.

DROWNING

At least two people on board the boat should be certified in CPR. Emergency situations are hectic, and being prepared could make the difference between life and death. If a person is drowning, follow standard lifesaving procedures.

- Reach to pull the victim to safety. If you cannot reach the victim, throw a PFD to them. Swim to rescue a drowning victim only as a last resort.
- If you are able to retrieve the victim, keep him / her warm.
- Use care handling the victim. If the victim has fallen overboard, spinal injury may exist.
- Signal or call for help and transport the victim to shore for medical assistance.

MEDICAL EMERGENCY

Be prepared for medical emergencies by taking a first aid course and carrying a first aid kit on board. You should be familiar with conditions such as fatigue and hypothermia so that you can respond to these emergency situations correctly.

CARBON MONOXIDE

Every boater should be aware of the risks associated with carbon monoxide. To protect yourself, your passengers, and those around you, learn all you can about CO. (Note: visit www.uscgboating.org for informational pamphlets on the dangers of Carbon Monoxide.)

Carbon monoxide (CO) is a colorless, odorless, and tasteless gas. Carbon monoxide is produced when a carbon-based fuel burns. Gasoline, propane, charcoal and oil are examples of carbon-based fuels. Sources of carbon-based fuels on your boat may include the engine, gas generator, propane stove and space or water heaters (if equipped).

Early symptoms of CO poisoning are often confused with seasickness or intoxication. These symptoms may include eye irritation, headache, nausea, weakness or dizziness.

If CO poisoning is suspected, proceed with caution. You and others may also be in danger from exposure to CO.

- > Evaluate the situation and ventilate the area if possible.
- > Evacuate the area and move the affected person(s) to a fresh air environment.
- > Observe the victim(s).
- > Administer oxygen, if available.
- > Contact medical help. If the victim is not breathing, perform rescue breathing or approved cardiopulmonary resuscitation (CPR), as appropriate, until medical help arrives. Prompt action can mean the difference between life and death.
- > Shut off potential sources of CO, if possible. Correct ventilation problems and/or repair exhaust problems as appropriate. Investigate the source of CO and take corrective action, such as evacuating and ventilating the area or shutting off the source of the CO, while at the same time evacuating and ventilating the area.

Before every outing, perform the following checks to ensure your safety while on the water:

- > Make sure you know where CO exhaust outlets are located on your vessel.
- > Educate all passengers about the symptoms of CO poisoning and where CO may accumulate.
- > When docked, or rafted with another boat, be aware of exhaust emissions from the other boat.
- > Confirm that water flows from the exhaust outlet when the engines and generator are started.
- > Listen for any change in exhaust sound, which could indicate an exhaust component failure.
- > Test the operation of each CO alarm (if equipped) by pressing the test button.

ACCIDENT REPORTING

Boating accidents include collision, capsizing, fire/explosion, sinking/flooding, disappearance, loss of life or equipment, etc. The owner/operator of the boat is responsible for filing an accident report with the appropriate authorities. Contact your insurance agent and the United States Coast Guard for more information regarding accident reporting.

DISTRESS SIGNALS

Visual distress signals should be carried aboard your boat in case of emergency. Both daytime and nighttime distress signals should be carried. Visual distress signals, such as flares, must be used with care. Read and follow the instructions included with the distress signal. Check local regulations on using pyrotechnic devices in your area.

GIVING ASSISTANCE

According to Title 46, United States Code Annotated (U.S.C.A.), formerly The Federal Boat Safety Act of 1971, the owner or operator of a vessel is required by law to render assistance to any individual or vessel in distress, as long as his vessel is not endangered in the process. This statute grants "Good Samaritan" protection to a boater offering good-faith assistance to fellow boaters involved in an accident. If you see a distress signal, notify the United States Coast Guard or local authority. Channel 9 on a CB, channel 16 (156.8 MHz) and channel 22A (157.1 MHz) on a VHF radio are recognized distress channels. Contact the United States Coast Guard for more information.



Pyrotechnic signaling devices can cause injury or property damage if not handled properly. Follow the manufacturer's directions and keep this device out of the reach of children.

FIRST AID

You need to be familiar with basic first aid procedures in order to deal with problems that may occur while on the water. A first aid kit should be carried on board at all times. Training is available in handling emergency situations such as drowning, bleeding, hypothermia and burn treatment. As the owner/operator, you should be prepared to handle such emergencies. First aid literature and training courses are available through the American Red Cross.

Water Sports

WATER SKIING

You are responsible for the safety and conduct of a water skier. Find out the skier's experience level and avoid maneuvers that may cause the skier problems.

Do not ski in congested areas where there is danger of a fallen skier being run over by another boat. Avoid skiing near swimming areas, piers and underwater hazards.

When a skier falls, watch for the OK signal. Return immediately to the skier, approaching the skier carefully, so as not to overrun the skier with the boat. Turn the motor off before getting close to the skier. Help the skier aboard and retrieve the towline and skis and store safely inside boat.

The following are common water skiing signals:



! WARNING! !

- Skiers must wear a United States Coast Guard-approved flotation device suitable for water sports, such as a Type II water ski vest as described earlier.
- Keep the boat and the skier at least 100 feet away from all objects.
- Always have an experienced driver and an observer to watch the skier at all times.
- Once a skier goes down, you must raise your Ski Flag to alert others.
- Always keep a downed skier in sight and check for the skier "OK" signal immediately.
- Never ski in shallow water, in congested areas or at night.
- Never back up to a skier or anyone in the water. Turn the motor OFF before you get close to someone in the water.

SWIMMING AND DIVING

Before swimming, make sure the boat is anchored securely. Turn the engine off. Stow the keys and any valuables on board. Always swim near the shore and away from boating traffic. Divers should always display the red and white diver down flag, either on the boat or on a buoy in the area of the diving activity.



Entering the water for swimming and diving should be done from the stern swim platform, if equipped. Be aware of water depth and the possibility of submerged objects, such as trees or rocks.

! WARNING! !

DO NOT use the outboard engine for a diving platform. Diving from the outboard engine could result in severe personal injury, death or property damage.

When re-boarding the boat, use a ladder, swim platform or other means for climbing aboard. The boarding ladder should be placed as far from the outboard engine as practical to avoid injuries if you slip. You must be careful to avoid injury. We recommend a ladder be used on the swim platform for re-boarding whenever possible.

! WARNING! !

Always turn off the engine when re-boarding swimmers or divers or in the area of swimmers, divers or any person in the water. Failure to do so could cause personal injury, death or property damage.

! WARNING! !

We do not recommend using the lower unit of the engine as a means of re-boarding your boat. However, in certain emergency situations, it may become necessary. You must ensure that the engine is OFF and the propeller has stopped rotating before attempting to board the boat in this fashion. Take extra care to ensure that you do not slip onto the engine or the propeller as this could cause personal injury, death or property damage.

FISHING

Your boat may be equipped with a fishing package. Remember that your main responsibility on the water is to operate the boat in a safe manner.



- Follow the rules of the road while underway and use common sense when operating in clustered areas.
- Operate the boat at slow or no-wake speeds near others who are fishing.
- Periodically check the engine for fishing line that may become wrapped around the propeller.
- Stow any fishing gear that you are not using in order to prevent breakage and accidental tripping.
- Never anchor in a channel or tie up to a navigational aid; either action may be illegal.
- Show common courtesy to fellow fishermen at all times.

Rules of the Road

Boaters have traffic rules on the water that they must obey, just as there are traffic laws to be obeyed when operating a motor vehicle. The nautical "rules of the road" dictate who has the right of way whenever boats meet in open water. The right-of-way boat is referred to as the "privileged" boat. The boat that must give way is called the "burdened" boat.

The following are situations that you may encounter while boating, although this cannot describe all of the possible situations you may encounter. Become familiar with the proper maneuvering procedures to follow in these situations prior to boat operation.

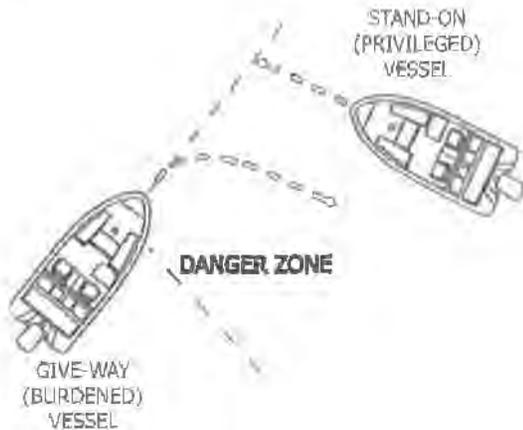
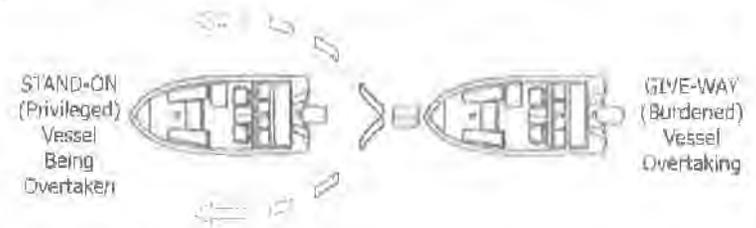
RIGHT OF WAY

Sailboats have the right of way over powerboats in nearly all cases, unless they are powered by an engine. boats paddled or rowed have the right of way over powerboats. Stay clear of these craft and do not create a wake that may cause them trouble.

In narrow channels, small powerboats must yield to large commercial vessels and must not hamper their operations. Keep your distance from all commercial vessels and other large craft. A large vessel has limitations in maneuverability.

OVERTAKING/PASSING

In overtaking and passing situations, the boat being passed has the right of way, and the passing boat is required to stay clear.

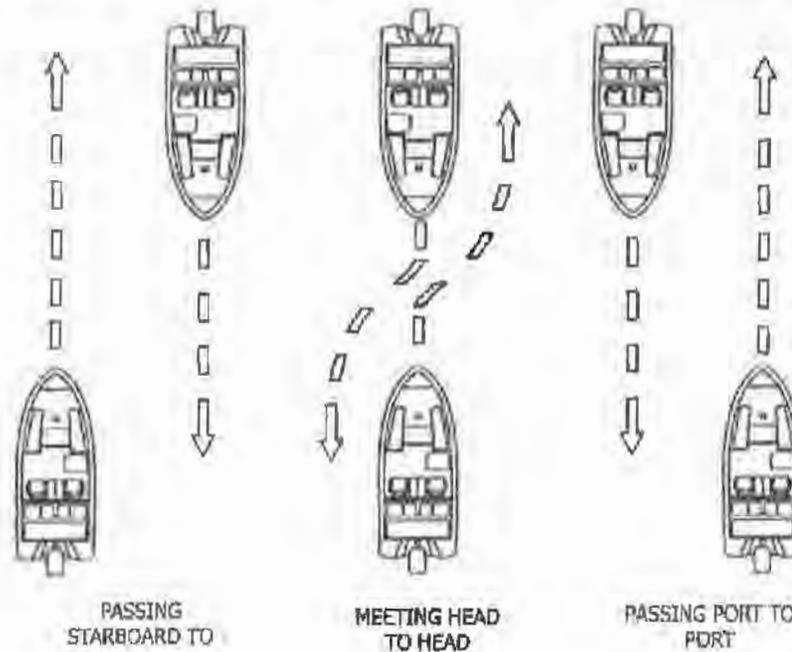


CROSSING SITUATION

In crossing situations, the boat on the right is privileged. It must hold its course and speed. The burdened boat must slow down and stay clear until the privileged boat passes. boats going up and down a river have the privilege over boats crossing the river.

MEETING HEAD ON

When boats are meeting head on, neither boat has the right of way. Both boats should keep to their right and pass on the left.



WARNING SIGNALS

The following warning signals and their meanings are typically used by boaters on the water. Common sounding devices such as a horn or whistle are most often used.

- **One Prolonged Blast:** Warning signal (coming out of slip).
- **One Short Blast:** Pass on my port side.
- **Two Short Blasts:** Pass on my starboard side.
- **Three Short Blasts:** Engine in reverse.
- **Five or More Blasts:** Danger signal.

NAVIGATION AIDS

Navigation aids are the signposts of the waterways. There are two main navigation systems used in the United States: The lateral system maintained by the United States Coast Guard and the uniform state waterways marking system maintained by state or local agencies.

The lateral system uses colored buoys to mark channel sides. The right (starboard) side of the channel is marked with red, even-numbered buoys. The left (port) side of the channel is marked with green, odd-numbered buoys. The middle of the channel is marked with red and white vertically striped buoys. Always pass close to these vertically striped buoys. The phrase "red right returning" is commonly used with the lateral system and means that the red buoys mark the right side of the channel when returning to a port from the ocean.

State waterways are normally governed by the uniformed state waterway marking system. Well-defined channels are marked with red and black buoys. Regulatory markers are white with orange geometric shapes.

CHANNEL BUOY GUIDE (FEDERAL)



UNIFORM WATERWAY MARKERS (STATE AND LOCAL)



You should become familiar with the following buoys and markers for both federal and state waterways. Contact the United States Coast Guard for more information on navigation aids.

HOMELAND SECURITY

All boaters should be aware of and comply with measures intended to protect both themselves and National Security. These Homeland Security measures have been set forth to help reduce public security demands permitting Marine Patrols to focus their limited resources on true Homeland Security concerns.

- Do not approach military vessels.
- Do not stop or anchor beneath bridges or in the channel.
- Avoid commercial operation areas, especially those that involve military, cruise line or petroleum facilities.
- Avoid restricted areas near dams, power plants, water processing facilities, etc.

Violators will be perceived as a threat. Failure to follow these guidelines will result in the perception that you are a threat. You may be boarded, jailed, and/or fined. For more information on security zones and how you can help, visit the United States Coast Guard website at <http://www.uscgboating.org>.



Environmental Considerations

FUEL AND OIL SPILLAGE

Discharging fuel or oily waste in navigable waters is prohibited by Federal Regulations. Discharge is defined as any action which causes a film, sheen or discoloration on the water surface, or causes a sludge or emulsion beneath the water surface.

A common violation of this regulation is bilge discharge. If you notice fuel or oily waste in the bilge compartment, use rags or sponges to soak up the substance and dispose of it properly ashore.

If there is too much fuel or oily waste to dispose of yourself, contact your dealership or a knowledgeable marine service to remove it. Fuel or oil discharge into the bilge area could indicate a concern with the fuel / oil tanks and you should contact your dealer immediately to evaluate this concern.

Fill your fuel and oil tank(s) to less than rated capacity to allow for expansion of the liquids.

NEVER PUMP CONTAMINATED BILGE OVERBOARD!!

EXCESSIVE NOISE

Some areas enforce noise limit regulations. Even if no law is established in your area, courtesy demands that boats operate quietly.

Local regulations and international standards are always changing. It is advisable to check with your dealer to ensure that your boat is in compliance with local or international sound emission requirements applicable to your boat and your usage area.

WAKE / WASH

People and vessels may be endangered by the wake of a powerboat. Each powerboat operator is responsible for injury or damage caused by the boat's wake. Proceed with extreme caution in confined or congested waterways. Observe "no wake" warnings. The boat operator is responsible to comply with this and other added restrictions, such as speed limit zones enforced for protection of wildlife.

! CAUTION! !
ALWAYS reduce your speed in congested waterways.

EXHAUST EMISSIONS

Carbon monoxide may accumulate in enclosed cabins or cockpits. If your boat is so equipped, ensure continuous movement of fresh air and install a carbon monoxide detection system in the enclosed cabin or cockpit. Ensure continuous airflow on the open decks, the swim platform and the aft deck on vessels which have a bimini top installed. Exhaust emissions can accumulate in an open boat with only an open bimini top installed.

! WARNING! !

You can be overcome by fumes from your own engine or from adjacent vessels.

PAINT, CLEANING AGENTS AND OTHER SUBSTANCES

Before applying any type of anti-fouling paint to the hull of your boat (recommended for salt water use), consult your marine dealer about environmental regulations.

Some common household cleaning agents may contain chemical ingredients which may cause hazardous reactions in people, property and the environment. Avoid products containing chlorine, phosphates, and non-biodegradable ingredients.

We recommend the use of propylene glycol antifreeze instead of the more common ethylene glycol to protect wildlife in case of accidental or intentional spillage.

Getting Underway

BOARDING/LOADING

Use caution when boarding your boat. NEVER JUMP INTO THE BOAT! Always step into the boat when boarding. Passengers need to board one at a time and sit where their weight is distributed evenly throughout the boat. Do not carry heavy equipment while boarding. Get into the boat and then lift any equipment aboard carefully.

It is very important that weight is distributed evenly throughout the boat. Passengers should be seated only in proper seating locations. Avoid excess weight in the bow or stern. Passengers must never ride on the deck, gunwale, rear deck, elevated fishing seats, or seat backs while the boat is underway.



All passengers should be carefully seated to prevent them from being thrown overboard or injured from falling in the boat. Passengers must never ride on the deck, gunwale, elevated fishing seats, or seat backs while the boat is underway. Passengers riding on the bow rider seats (if equipped) should use extreme caution. During rough water operation, passengers should be seated on the floor of the boat near the center.

STARTING PROCEDURE

OUTBOARD ENGINES: Electric Start Remote Control

Before starting your engine, read your engine owner's/operator's manual for specific details and complete operating procedures.



Never start or run your outboard engine without water circulating through all of the cooling intake holes in the gear case to prevent damage to the water pump or overheating of the engine which may cause permanent engine damage.

1. Lower the outboard to the run position. Make sure the cooling intake holes are submerged in water and the area around the engine is free of obstructions.
2. Make sure the fuel line is connected to the engine.
3. Squeeze fuel line primer bulb several times until it feels firm. Inspect for any fuel leaks at all connections.
4. Set the lanyard stop switch to RUN position and attach safety lanyard to the operator.
5. Shift the throttle control to neutral (N) position.
6. Turn the ignition key to the START position to start the engine. (See engine owner's manual for additional information regarding engine starting.)
7. Check for a steady stream of water flowing out of the water pump indicator hole. **NOTE: If no water is coming out of the water pump indicator hole, stop the engine and check the cooling water intake holes for obstruction. Absence of exterior obstructions may indicate a pump failure or blockage in the cooling system. Either condition could lead to severe motor damage.**

 **WARNING!** 

Never start the engine without water being supplied to the pickup pump to prevent pump and engine damage.

Do not operate starter motor continuously for more than 30 seconds.

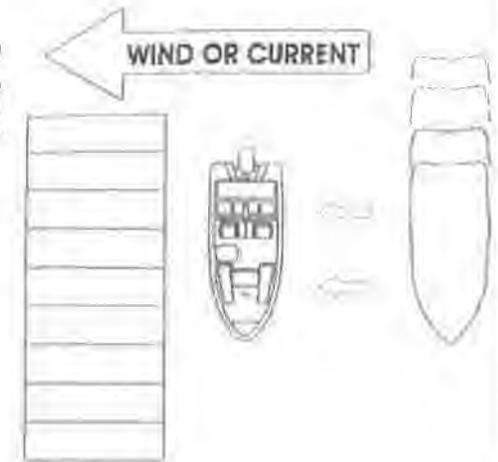
On Carbureted Engines: When engine starts, quickly reduce throttle setting to avoid exceeding 1500 RPM.

Never shift drive unit unless engine is at idle RPM.

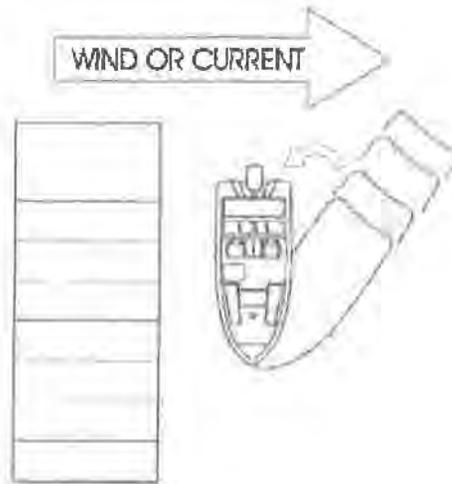
The following are basic guidelines for docking:

- Approach the dock slowly and with caution. Note the boat traffic, wind and current conditions, as they will be the biggest factors affecting the boat maneuvering.
- When docking into the wind, approach the dock slowly at an approximate 45-degree angle with the bow pointed into the wind, if possible. As the bow nears the dock, bring the stern alongside the dock by turning the steering wheel hard to port. When the boat is near parallel to the dock, turn to starboard and at idle RPM shift control into reverse to stop the boat. Secure the bow mooring line first to keep the bow from swinging out into open water.

DOCKING WITH THE WIND



DOCKING AGAINST THE WIND



- When docking with the wind or current pushing the boat toward the dock, approach parallel to the dock and allow the wind to push you in toward the dock. Approach the dock slowly with the wind or current at your back. Be prepared to shift to reverse to slow the boat and maintain your position. Secure the stern line first, then the bow.

DEPARTING

In most cases it is best to back away from the dock. Forward departure may cause the stern to swing into the dock. The following procedures may be used to depart from the dock.

- Angle the engine away from the dock and slowly shift into reverse, backing away from the dock to swing the stern out. Continue backing while gradually straightening the engine. When clear of the dock, shift into neutral and angle the engine toward the dock to bring the boat parallel with the dock. Then angle the engine away from the dock and proceed forward.
- OR -
- Manually push the boat away from the dock with the engine running and in the neutral position. When clear of the dock, angle the engine away from the dock, shift into forward and proceed slowly.

SAFETY CHECKLIST

The following checks and services are essential to safe boating and should be performed at each outing. Get in the habit of performing these checks so that they become part of your normal routine.

PRE-OPERATION

- Check the weather report before going on an outing. If bad weather is forecast, we recommend that you stay off the water.
- Check that the bilge drain plug is installed before launching the boat.
- Check the propeller for damage.
- Check that the required safety equipment is on board and in proper operating condition.
- Check to see that there is an adequate amount of fuel.
- Check the steering system and throttle control for proper operation.
- Check the lanyard stop switch for proper operation by starting the engine (on the water) and pulling the switch.
- Check all hoses (livewell, bilge, etc.) and connections for leaks or damage.
- Check bilge compartment for fuel, oil or water leaks as well as all fuel, oil and water connections.



If any problem is found during the safety checks, do not operate the boat. Any problem noted should be resolved before operating the boat. Contact your dealer to repair any item not functioning properly. Failure to do so may lead to conditions favorable for an accident and cause severe personal injury, death or property damage.

DURING OPERATION

- Check to see that the engine starts and idles properly before pulling away from the dock or trailer.
- Check for the tell-tale stream of water from the engine (outboard only) to ensure the cooling system is operating.
- Check gauges frequently to ensure that the engine is operating properly. The tachometer reading is especially important to ensure that the engine is operating in the recommended RPM range of the engine manufacturer's specifications.
- Check for excessive engine and drivetrain vibration.

POST-OPERATION

- Remove the drain plug (after the boat is trailered) to remove any water in the bilge.
- Check the propeller for damage.
- Check for fuel, oil and water leaks.
- Follow engine manufacturer's recommendations regarding storing fuel for extended periods of time.
- Ensure all accessories and switches are turned off.
- Charge the trolling motor batteries (if equipped).
- Store the boat in a covered area, if possible, or protect the boat from the elements with a mooring cover. See the "storage" section for more information.

TRACKER[®]
boats

Operating Information

FUELING PROCEDURES

Fueling a boat can be dangerous if not done properly. Follow these precautions when fueling your TRACKER® boat:

! WARNING! !

Gasoline vapors are extremely flammable. DO NOT SMOKE when fueling or allow sparks or open flame near the fuel tank, fuel fill or fuel vent. Keep the fuel area well ventilated and use caution when filling the fuel tank. Fuel leakage is a potential fire and explosion hazard, which can lead to serious personal injury, death and property damage.

- Use only the recommended grade of gasoline with the specified minimum octane rating listed in the engine owner's / operator's manual.
- Fuel up only in a well-ventilated and lighted area.
- If on the water, make sure the boat is securely moored to the dock before fueling.
- Examine the fuel system for leakage or damage prior to filling.
- Shut off the engine and all electrical equipment.
- Never smoke or strike a match or lighter while fueling.
- Keep the fuel supply nozzle in contact with the fuel fill fitting to prevent a static spark.
- Wipe up any fuel spillage immediately.
- Allow for fuel expansion in hot weather. Fuel will expand when exposed to heat. Do not fill the tank completely on warm days as the fuel will expand, causing pressure to build in the tank. This could lead to a potential fuel leak at the fuel vent if the tank is over filled.
- Make sure the fuel cap is tight after filling.
- Check the oil reservoir for oil supply and fill if needed. During the engine break-in, be sure to follow the recommended fuel-to-oil mixture as stated in the engine owner's manual.
- Keep hatches and hull / cabin openings (if equipped) closed.
- Use the "sniff test" to check for fumes in the bilge and engine compartment after fueling and at regular intervals while the boat is in use.
- Check crank case oil for proper levels on boats rigged with four-stroke outboard or I/O engines.

ANCHORING

You should always anchor from the bow of your TRACKER® boat. With the anchor tied to the line, tie the end of the line to the bow eye or cleat. Head the boat into the wind or current to the spot you wish to anchor. Turn off the engine and slowly lower the anchor. When the anchor hits bottom, keep tension on the line and slowly back up the boat. Let out the anchor line. A rule of thumb is to let out a length that is six-to-eight times the depth of the water. For example, if the boat is in 10 feet of water, let out 60-to-80 feet of line.

Check your boat position in relation to the shoreline landmarks. If you are drifting, the anchor is dragging on the bottom and needs to be reset. Follow the same procedures as stated above.

To weigh (pull in) the anchor, start the engine and move forward until the anchor line is straight up and down. Pull hard on the line to lift the anchor from the bottom. Be careful to avoid injury due to anchor being lodged. Never use boat power to pull up the anchor as it may cause a slingshot effect.

PERFORMANCE

You should approach the performance limits of your TRACKER boat gradually. The first few hours of operation should be at slow-to-mid-range throttle, allowing you to get a good feel for how the boat handles and reacts at different throttle and trim positions. Operate the boat only at speeds with which you feel comfortable.

Many factors affect boat performance. Propeller type and size, engine height, condition of boat bottom, water and weather conditions, load and weight distribution, climate, altitude and other factors will affect the way your boat performs.

Your dealer can answer most performance questions you have about your TRACKER boat.

GETTING ON PLANE

Before beginning your run, make sure all loose equipment is properly stowed so it will not interfere with the operation of the boat, fall overboard or endanger your passengers. Make sure you and your passengers are wearing personal flotation devices and passengers are seated in appropriate on-plane seating locations with weight distributed evenly throughout the boat. The lanyard stop switch should be attached to the operator and the way ahead should be clear before taking off.

Begin your run with the engine trimmed in (down) all the way to help you "get out of the hole" more quickly. Rapidly advance the throttle to get the boat on plane. Moderate to maximum throttle may be required, depending on the load and propeller.

Once the boat is on plane, immediately trim the engine out (up) to an intermediate trim position to avoid plowing the water, which could lead to bow steering, a condition that may cause the boat to lean to one side or turn abruptly. Running with the bow down also restricts speed and fuel economy. Extreme trim under (down) may also cause the boat to list or lean. The boat will level itself out as the engine is trimmed up (out). Adjust your cruising speed to a level with which you feel safe and comfortable.

! WARNING! !

Adjust the engine to an intermediate trim position as soon as the boat is on plane to avoid possible ejection due to boat "spin-out." Do not attempt to turn the boat when the engine is trimmed extremely under or in.

Under certain trim positions and/or bow-up attitude, such as when getting on plane, there can be a noticeable pull on the steering wheel, often referred to as "steering torque." This may only be a temporary situation such as when planing off, or it may be eliminated or reduced by changing your engine trim so that the propeller shaft is more parallel to the water surface. See the engine owner's/operator's manual for more information. Under all circumstances, the operator should always keep a firm grip on the steering wheel.

! WARNING! !

Do not trim the engine out too far while underway or the boat may begin to porpoise. Porpoising is a condition where the bow of the boat rises up and down in an uncontrolled manner. Engine over-trim is one cause of this condition. If porpoising occurs, trim the engine down (in) gradually until the bow stabilizes. Porpoising can also be caused by excessive weight in the rear portion of the boat which may require distribution of weight more evenly.

HIGH-SPEED OPERATION

Increase speed gradually. Keep a close watch on the tachometer to ensure that the engine is operating within the recommended RPM range listed in the engine owner's/operator's manual. The forces that affect boat performance are complicated, so it is very important that you gain experience with your boat slowly. If you do not have experience in performance boat operation, we suggest that you operate the boat for the first time under the supervision of someone experienced in performance boating, such as your TRACKER® dealer.

You should become familiar with the handling characteristics of your TRACKER boat after some time on the water. Never operate your boat at a speed greater than your experience dictates.



Keep one hand on the wheel and the other on the throttle at all times. If the boat begins to operate in an unsafe manner, reduce the throttle and trim the engine in gradually. Operate the boat only at a speed with which you feel comfortable.

OPERATING IN SHALLOW WATER

Know the area in which you are operating. Consult charts and ask local boaters. If you are aware of or suspect shallow water, post a lookout and proceed slowly. Shallow waters present obvious hazards. In addition to insufficient draft, shallow means sand bars, stumps, or other unmarked obstructions in deep water. Other hazards in shallow water include mud, sand, weeds and debris, which can foul your engine's cooling water intakes.



COLLISION HAZARD - Use extra caution in shallow water or where underwater / floating objects may be present. Hitting an object at high speed or severe angle can cause serious personal injury, death and property damage.

Trailer Information

Your TRACKER® boat may be equipped with a factory-matched Trailstar® trailer. Trailstar trailers are specifically designed to match your boat in order to offer the optimum support during transportation and storage.

BRACKISH & SALT WATER USE

Trailstar Trailers are built using Galvashield™, a process that provides every trailer with exceptional corrosion protection. The galvanized and powder-coated steel tubing provides exceptional durability and good looks, even in highly corrosive environments. This Galvashield process not only protects the steel from rusting by forming a protective barrier between the steel and the environment, but it also provides sacrificial protection of the steel.



Proper maintenance of your trailer when used in salt water is essential to the life of the trailer. After each use in salt water, rinse the trailer frame thoroughly with fresh water. Follow the suggested maintenance schedule listed in the "Maintenance/Care" section of this manual.

CAPACITY INFORMATION

Your Trailstar trailer has a certification label attached to the passenger side of the trailer tongue. The maximum load carrying capacity and GVWR (Gross Vehicle Weight Rating) is listed on the certification label. The GVWR is the load-carrying capacity plus the weight of the trailer itself. Never exceed the maximum capacity information listed on the certification label. Load gear accordingly and store extra gear in the trailer tow vehicle.

! WARNING! !

Do not exceed the maximum capacity information listed on your trailer. The total weight of the boat, engine, fuel, gear and trailer must not exceed the trailer's Gross Vehicle Weight Rating (GVWR). Overloading the trailer could cause an accident resulting in serious injury, death or property damage.

CLASSES OF TRAILERS

Trailers are separated into four classes based on gross vehicle weight (GVW). The gross vehicle weight rating (GVWR) is equal to the trailer's weight plus the maximum load it may carry at 60 mph.

Class One	GVWR not to exceed 2,000 lbs.
Class Two	GVWR over 2,000 lbs. but not to exceed 3,500 lbs.
Class Three	GVWR over 3,500 lbs. but not to exceed 5,000 lbs.

HITCHES

Hitches are divided into classes that specify the GVWR and maximum tongue weight. Hitch classes are numbered the same and specify the same GVWR as the trailer classes. Always use a hitch with the same or greater class number than the trailer. Seek professional assistance for your specific trailer hitch requirements.

TRAILERING CHECKLIST

Follow these guidelines each time you trailer your TRACKER® boat:

- Check the trailer tires for proper inflation. The proper air pressure level is indicated on the sidewall of the tire. The load carrying capacity of the trailer is based on this pressure level.



Check the trailer tire pressure before each use. Inadequate tire pressure can lead to conditions favorable for an accident, injury, death, and property damage and may void the trailer's warranty.

- Check the taillights and turn signals for proper operation before each use.
- Check the coupler and safety cables for proper connection before trailering.
- Check to see that the disc/drum brakes (if equipped) are working and that the safety breakaway cable is connected to the vehicle.
- Check the brake fluid level in the master cylinder and fill if needed. Follow the brake manufacturer's instructions to maintain the proper fluid level. If fluid needs to be added regularly, a leak in the system is indicated. Do not use the trailer until the leak location is determined and repaired. For more information on brakes, refer to the trailer brake section listed later in this manual.

- The trailer hitch ball on your vehicle must match the size of the trailer coupler. Never use a hitch ball that does not match the coupler.
- Stow all loose equipment so it will not slide around in, or become ejected from, the boat. Make sure all panels and storage lids are secure.
- Lower and secure the convertible top (if equipped).

! WARNING !

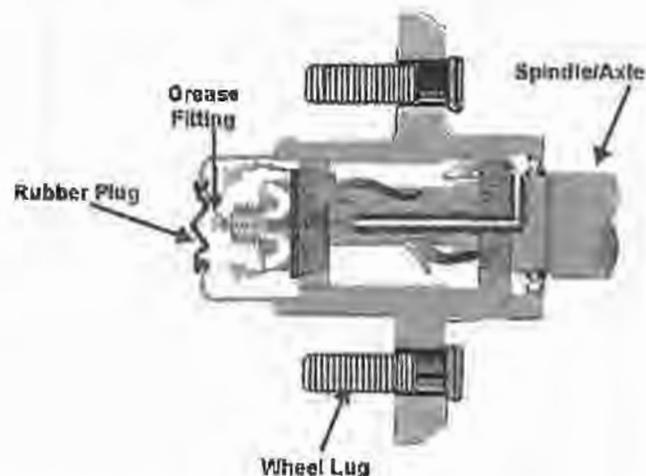
Trailer lug nuts should be checked for tightness before each use. Loose lug nuts could result in an accident.

- Check lug nuts to ensure they are tight before each use. Wheel lug nuts must be torqued to 90 ft. Lbs. \pm 5 ft. lbs., using a criss-cross tightening pattern.
- It is recommended to secure the boat to the trailer with an additional tie-down other than the winch strap (located on the back of the winch stand) so that the boat will not slide off the trailer if the winch strap releases. Secure the stern of the boat with the rear tie-down straps.

- Keep the wheel bearings properly lubricated at all times. (See separate brake actuator owner's manual for additional operation and maintenance information.)

Super Lube™ hubs (installed on most models):

1. Remove the rubber plug from the grease (hub) cap.
2. Use a standard grease gun onto the grease fitting located at the end of the spindle, or behind the hub, making sure the grease gun nozzle is engaged on the fitting tightly.
3. Pump grease into the fitting, while slowly turning the wheel. Grease will flow out of the hub around the spindle.
4. When the grease appears to be the new clean grease, remove the grease gun and wipe off any excess grease.
5. Replace the rubber plug in the cap.



- immediately after trailering, periodically check the wheel hubs for excessive heat. It is normal for the hub to be very hot under normal conditions, possibly even hotter than is comfortable to the hand. Wheel bearings on trailers with brakes generally run noticeably warmer than trailers without brakes.

! CAUTION !

The wheel bearings must be properly lubricated. Bearings that are not lubricated properly could seize up, leading to possible hub or axle damage to the trailer as well as accidents, injury, and even death.

! CAUTION !

It is recommended that you carry extra wheel bearings, races and seals in case of bearing failure. You should also carry the proper lug nut wrench, jack and a spare tire. The lug nut wrench and jack requirements may be different than what you carry for your towing vehicle. Check with your dealer for extra bearings and a spare tire to match your trailer.

- Use the motor toter bar/transom saver to secure the boat engine during trailering. This will prevent the shock of road travel from being transferred to the transom and engine. Failure to use a motor toter bar/transom saver can cause transom damage, cracking, etc. which will not be covered by warranty.
- Disconnect the trailer light harness from your tow vehicle before backing your trailer into the water to launch. This will reduce the likelihood of shorting out your trailer lights when submerged. Be sure to reconnect the light harness after loading and check the lights for proper operation.
- Rinse the trailer frame with fresh water after each use, especially trailers used in salt or brackish water. Protect the finish on painted trailers by waxing the frame periodically with a good automotive wax.

HOOKUP PROCEDURE

The towing vehicle must be equipped with the properly rated hitch, correct size tow ball and the proper trailer light connection. The vehicle must be rated to handle the maximum load of the boat, motor, trailer and gear.

NOTICE!

Many newer vehicles are equipped with amber turn signals and red tail lights. If your tow vehicle is so equipped, you will need a special wiring adapter installed to be compatible with combined (turn and stop) lights on your Tralstar® trailer. See your dealer for adapter availability.

Unlocked position

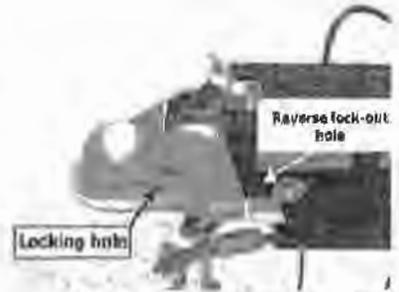


Locking hole

Typical Non-Brake Coupler

To hook up, move the coupler over the trailer hitch tow ball. Make sure the hitch pin is removed from the locking hole in the side of the coupler. The non-brake style coupler should be unlatched and ready to load onto the ball.

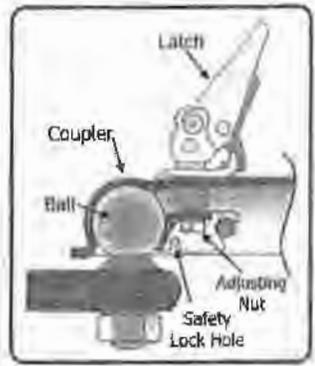
To unlatch the brake style coupler, push the button on top of the handle to the side. While holding the button to the side, raise the handle by lifting the front with two fingers. The coupler should unlatch easily.



Typical Coupler with Brake Actuator

Lower the coupler onto the tow ball by cranking the dolly wheel up. Lock the coupler latch by closing the latch handle. As a safety feature, the coupler latch will not close unless the ball is properly seated into the coupler. If the handle will not close freely, the ball is not fully inserted into the socket, the ball is oversized, or there are contaminants in the ball socket. **DO NOT FORCE THE HANDLE.**

If necessary, replace the hitch ball with a unit that meets SAE specifications. After the latch handle is closed, the hitch pin should fit easily into the hole. If it does not, the coupler latch is not completely closed and you should repeat this step until coupler is properly latched onto the ball before trailering.



WARNING!

If the latch handle does not close freely, there may be something wrong and the trailer should not be towed. Ensure that the ball is fully seated in its socket, the ball is of proper size, and there are no contaminants in the ball socket. An incorrect coupling connection could cause disconnection of trailer from tow vehicle. Replace the hitch ball if necessary and/or seek the assistance of a hitch professional.

After successfully connecting the trailer, raise the dolly wheel into the locked, traveling position. Connect the retractable safety cables to the vehicle. Properly connecting the safety cables will help prevent the tongue from dropping to the ground in case the trailer becomes disconnected from the hitch ball while trailering. Connect the trailer lights and check for proper operation. Hook the surge brake breakaway cable (if equipped) to the towing vehicle.



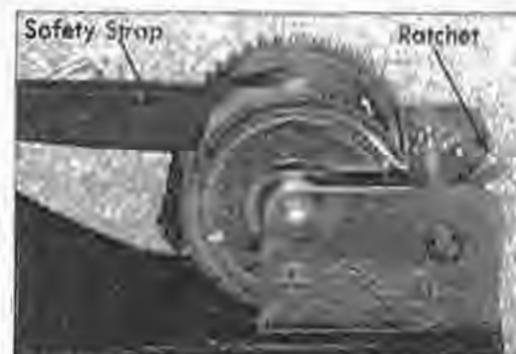
Criss-Cross the trailer safety chains underneath the trailer tongue.



Retractable Safety Cables

WINCH

To pull the line/load in: First, always engage the ratchet in the hold position. Before moving a load, make sure that the ratchet snaps into engagement. Then turn the handle in the appropriate direction. When turning the handle, always listen for a clicking sound that indicates the ratchet is working properly. If the clicking sound stops, do not let go of the handle. The handle can spin dangerously backward which can cause severe injury to the person operating the winch and others nearby. Lower the load to a safe resting place before letting go of the handle.



To let line/load out: First, take a firm grip on the handle and push the ratchet to the reverse position. You may have to pull the handle slightly to free the ratchet. Keep a firm grip on the handle and turn slowly. Never let go of the handle when letting out or lowering a load.

If you want to stop and rest, always engage the ratchet first, then let go of the handle gradually to ensure the ratchet is holding the load.

! WARNING! !

Be careful when using the winch to load/unload your boat from the trailer. The winch and winch handle could cause injury if not used properly. Keep a firm grip on the handle at all times. Never engage the ratchet until you have a firm grip on the handle and you are ready to lower the boat. Never let go of the handle when letting out or lowering your boat.

TRAILERS WITH BRAKES

If equipped with brakes, your Trailstar[®] trailer includes a surge braking system installed as an additional safety feature. As the tow vehicle brakes are applied, the "surge" or push of the trailer towards the tow vehicle activates the hydraulic brake fluid and synchronizes the trailer brakes with the tow vehicle brakes. Your trailer may be equipped with either a drum or disc braking system.

Drum Brakes

Drum brakes are activated by the surge actuator/coupler located on the front end of the trailer tongue. When the tow vehicle stops, the trailer pushes into the tow vehicle, compressing the master cylinder that is located inside the actuator. The master cylinder forces brake fluid to the drum brakes. Inside each drum brake is a wheel cylinder that expands with the surge of brake fluid, pushing the brake shoes against the inside of the brake drum.

Drum brakes must be periodically adjusted. Recommended service intervals are after the first 500 miles and then every 1000 miles. Drum brakes also must be flushed when submerged in salt water or towed in road conditions where salting of the roads is done to improve driving

Disc Brakes

Disc brakes have improved resistance to fade on downhill grade and they are also self-adjusting. As a result, braking efficiency is not reduced as pads wear. In addition, disc brakes recover quickly after being submerged, require little maintenance, are easy to flush out and are less susceptible to water-induced corrosion.

Actuator/Coupler

Your Trailstar® trailer is equipped with an actuator / coupler that is designed for use with a specific size hitch ball. If your trailer is equipped with brakes, please read and familiarize yourself with the actuator handbook that was included with the purchase of your trailer.

Brake Fluid

Check the brake fluid level in the master cylinder and fill with DOT 3 brake fluid if needed. Keep the brake fluid level approximately 3/8" below the top. To access the reservoir, remove the brake cap on top of the actuator by turning the cap counterclockwise. Clean brake fluid off the level indicator on the plug. Reinstall and remove plug. Fluid should just touch the end of the level indicator. Fill the reservoir with DOT 3 brake fluid as needed. Check for foam or bubbles in the brake fluid. If either are present, drain fluid from the master cylinder and replace with new brake fluid. See the actuator instructions included with the owner's packet for proper procedures.

If fluid is consistently low, a leak in the system most likely exists. Have the system checked by your dealer, or brake professional, to determine the cause of the leak.

! WARNING !

Check brake fluid levels before each use to ensure that the fluid level is full. If fluid must be added frequently, a leak in the system may exist. Do not pull the trailer until the cause of the leak is determined and repaired.

Your trailer may be equipped with a reverse lock-out hole on the side of the actuator. The lock-out allows the trailer to be backed without engaging the brakes. To engage this option, place the safety hitch pin into the reverse lock-out hole. Your trailer may be equipped with "free backing" brakes. Whenever you back up, a 12-volt electrical signal from the tow vehicle back-up light circuit energizes a pressure control unit inside the actuator. Hydraulic pressure is prevented from building up, so the brakes will not activate.

Secure the breakaway cable to the bumper or frame of the tow vehicle. The breakaway cable will activate the braking system if the trailer becomes disconnected from the tow vehicle. The cable must be long enough to permit turns without pulling the breakaway cable forward.

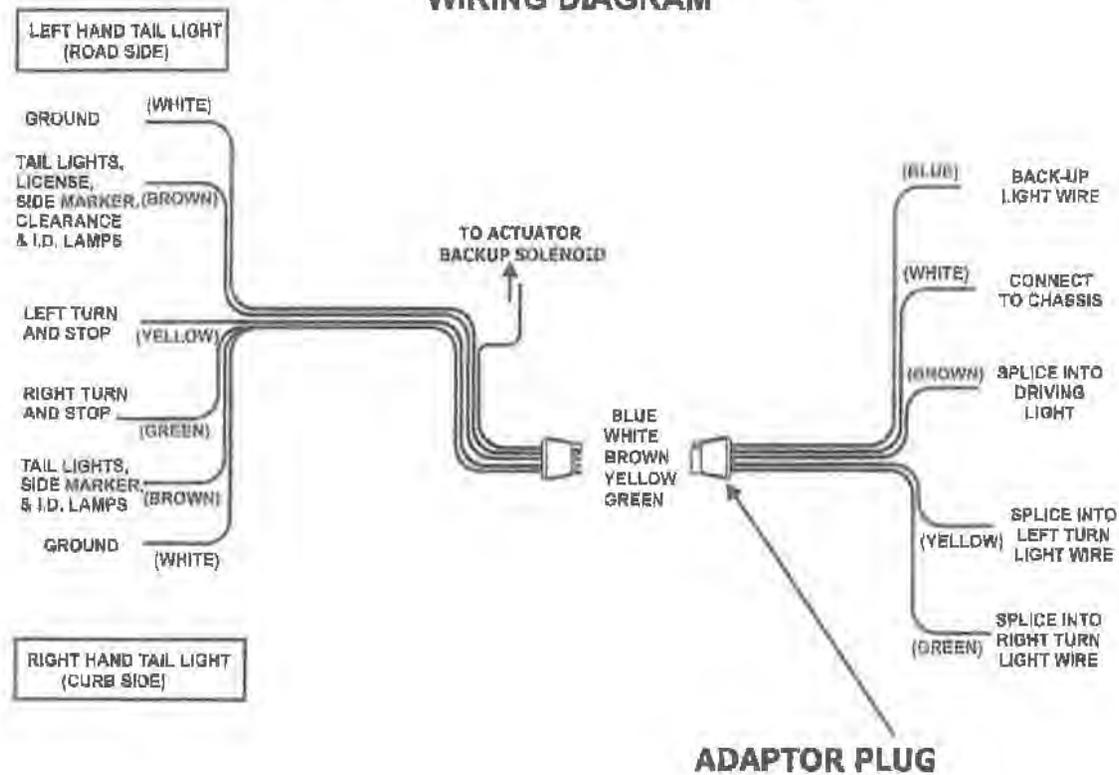
The procedure to reset the breakaway cable, should it become activated, will vary by actuator model. Please consult the brake actuator owner's manual for the procedure recommended for your actuator prior to your first outing.



A "Flat Five" adaptor plug is shipped with units equipped with electronic backing brakes. This blue wire must be wired to your vehicle's back-up lights for the system to operate. (See wiring diagram below.)

For additional information on surge brake and actuator operation, read the actuator owner's/operator's manual supplied with the owner's packet.

BRAKE BY-PASS SOLENOID VALVE WIRING DIAGRAM



Operating Tips for Trailers with Disc Brakes

Check your brake system before each trip.

- Make sure there are no leaks in the hydraulic brake fluid system.
- A surface rust may build up on the rotor brake surface if the trailer is not used for a week or more. The brake pads will wipe off the rust in the first few miles of travel.
- If the trailer has been idle for several months, or has been frequently submerged in salt water without flushing out the brakes, severe corrosion can occur. Review the maintenance instructions later in this section. Brakes must be maintained by the owner/operator.

When starting out:

- The trailer should tow easily. If not, or if it is swaying to one side, a rotor may not be rotating freely. Seek assistance from a dealer or brake professional.
- Try your brakes at slow-to-moderate speeds and become accustomed to the sensations of the properly functioning brakes at different speeds.

On the road:

- When towing a trailer, with or without brakes, you need extra distance to stop.
- On long, gentle downhill grades, try to avoid downshifting. Running in low gear can actuate the trailer surge brakes continuously for the duration of the grade, causing them to overheat.
- On moderate and steep sections, downshifting into lower gears may be necessary. Slow down before the grade and keep your speed under control. Do not apply the brakes continuously as they can overheat.

Before launching:

- If the brakes are hot, let them cool down. The sudden change in temperature when submerging very hot calipers and rotors may stress all parts and could cause damage. Follow the maintenance instructions later in this section.

MANEUVERING THE TRAILER

If you have never towed a trailer before, it is a good idea to practice maneuvering procedures in a large, open area such as an empty parking lot. Keep the following guidelines in mind when maneuvering your trailer.

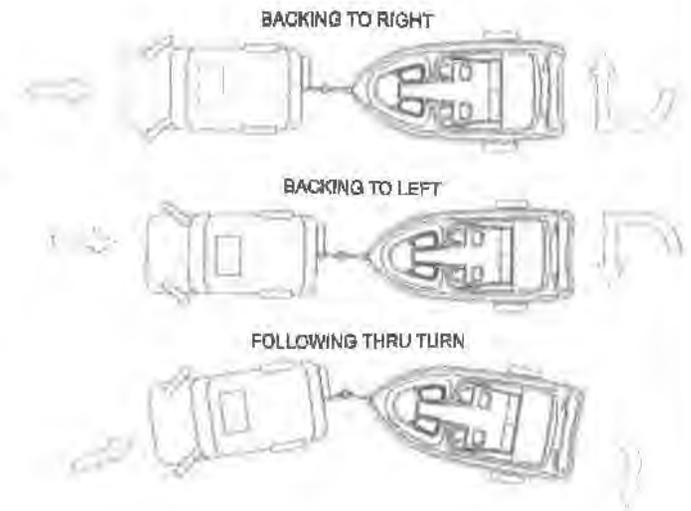
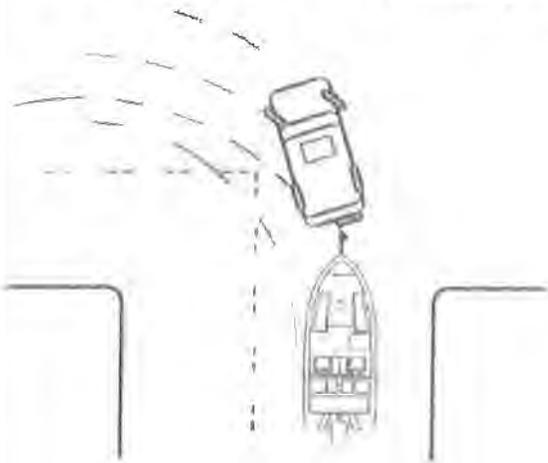
Starting

The additional weight of the boat/trailer will reduce the towing vehicle's acceleration. In addition, the added length should be considered when pulling and/or merging into traffic.

Backing

Place your hand at the bottom of the steering wheel. To turn right, move your hand to the right. To turn left, move your hand to the left. (Do the opposite if your hand is positioned at the top of the steering wheel.) Back up slowly. The trailer will go in the opposite direction of the towing vehicle's front wheels. Turn the steering wheel in the opposite direction you want the trailer to go. After the trailer begins moving, turn the steering wheel to follow it. It is easier to back a trailer if you have a second person outside the tow vehicle to guide you.

Use slight movements to adjust direction, limiting movement of the trailer. If necessary, pull forward and realign the tow vehicle and trailer and start again.



Corners and Curves

The trailer wheels will not follow the path of the towing vehicle's wheels. Make wider turns at corners and curves. Stay well on your side of the center line on curves.

Passing

The added length and weight of the boat/trailer will reduce the towing vehicle's acceleration. You will need more room to pass. Signal well in advance of pulling back into the right lane and allow plenty of distance to clear the passed vehicle. Change lanes smoothly to avoid whipping the trailer.

Being Passed

Air turbulence from a passing truck or bus may push the trailer to the right or left. The trailer will correct the sway naturally as the vehicle passes. Avoid sudden braking or oversteering.

Stopping

The extra weight of the boat/trailer greatly increases the stopping distance. Keep plenty of distance between your vehicle and obstacles ahead in case you need to stop suddenly. Always anticipate the need to stop or slow down. To reduce speed, shift to a lower gear and press the brakes slightly.

Parking

Avoid parking on a grade, if possible. It may be easier to park if you have someone outside the vehicle to guide you. When stopped, have someone place blocks on the downhill side of the trailer wheels. Apply your parking brake before shifting the tow vehicle into Park. Following this sequence will ensure your vehicle does not become locked in Park because of the extra load on the transmission. (For manual transmissions, apply the parking brake first and then place the vehicle in first or reverse gear before shutting off the vehicle.)

Always place blocks at the front and rear of the trailer tires when uncoupling the trailer. This will ensure the trailer does not move or roll away after releasing the coupling.

Before uncoupling, it is recommended that you place jack stands under the rear of the trailer. An unbalanced load may cause the tongue to suddenly rotate upward, possibly causing injury.

TRAILER MAINTENANCE/CARE

Proper maintenance and care of your trailer is a must for safe and reliable operation. Follow these maintenance and care guidelines.

- Keep wheel bearings lubricated with a lithium-based Grade II or higher grease. Check hubs often and re-grease as needed.
- Periodically inspect tires and wheels. Underinflation and / or overinflation significantly affects vehicle handling and the safety of your tires.
- Check the coupler mechanism for smooth operation. Lubricate pivot points, the winch and coupler periodically. See the actuator owner's/operator's manual for lubrication points.
- Check the hitch ball condition for corrosion or damage. Check the coupler operation for a proper fit on the ball.
- Trace the wiring system from the tow vehicle to the trailer. Inspect for bare or chafed wires or corroded terminals. Put a small amount of silicone grease on the light plugs to shield them from moisture and help prevent corrosion.
- Inspect the winch strap for wear and replace if necessary.
- Inspect the trailer for rust spots, nicks and chips. Touch-up paint is available through your dealer and should be used to touch up nicks or scratches to inhibit corrosion.
- Inspect trailer bunk boards for signs of deterioration. Replace if necessary.
- Rinse the trailer with fresh water often. Clean with mild detergent and water regularly. Wax the frame with a quality automotive wax at least once a year to protect the finish.

Trailers With Brakes

- Check the brake fluid in the master cylinder reservoir before each use. Maintain the proper brake fluid level. Use only DOT-3 brake fluid.
- Do not reuse brake fluid or use any other type of brake fluid other than DOT-3. The fluid level should be approximately 3/8" below the top.
- If fluid needs to be added regularly, the system may have a leak and should be repaired. Do not pull the trailer until the leak location is determined and repaired.
- If the trailer has been in saltwater, the single most important maintenance step for disc and drum brakes is to flush them thoroughly with fresh water.

! WARNING! !

Saltwater use can be damaging to the braking system. Proper maintenance procedures must be followed to assure safe operation. Failure to properly maintain the actuator could result in conditions leading to an accident, injury, death or property damage.

- Your braking system should be inspected regularly by a qualified technician. Hoses, fittings and tubing should be checked and replaced As needed. See your dealer for more information.
- Trailer drum brakes must be adjusted after the first 300 miles of use. After initial adjustment, they should be adjusted annually or every 1,000 miles, whichever comes first. Brakes should be adjusted only by a qualified technician. Seek assistance from your dealer or brake professional.

! WARNING! !

The trailer drum brakes must be adjusted after the first 300 miles of use and every year or 1,000 miles thereafter, whichever comes first. Failure to do so may lead to conditions favorable for an accident, injury, death or property damage.

For more trailer care/maintenance information, read the brake actuator owner's manual supplied with the owner's/operator's packet. Follow the procedures listed and contact your dealer for more information.

Brake Pad Wear

For trailers with disc brakes, pads must be replaced when $3/32"$ (.094") or less of pad friction material is left.

WARNING!

If you are not familiar with disc brake pad replacement have this work performed by a qualified service shop. Improper pad replacement may decrease braking effectiveness, potentially causing an accident from not being able to stop the tow vehicle combination within an acceptable distance.

Rotor Damage

Rotors must be replaced if the distance between brake surfaces becomes less than 0.882" (22.4mm) due to wear. Otherwise, brake effectiveness and rotor integrity will be reduced resulting in possible loss of brakes.

WARNING!

Pad and rotor condition should be checked at least annually. Rotors should be resurfaced by a qualified brake specialist if extreme galling or wear marks are present.

Actuator and Hydraulic Line Service

Follow the actuator manufacturer's suggested service routine. Always be sure hydraulic fluid is clean. Be sure that the fluid level is within $3/8"$ of the top of the reservoir. DO NOT fill beyond that level. Trailstar® brake systems use DOT-3 hydraulic fluid. Check for leaks in the brake lines and fittings. Leaks will lead to the loss of trailer braking ability. Repair or replace as necessary.

BRAKE REPLACEMENT PARTS

All trailer and trailer brake replacement parts can be purchased from your TRACKER® dealer.

NOTICE!

Use only organic, non-metallic pads. Metallic pads will rust and depreciate the rotor surface.

SWING-AWAY TONGUE

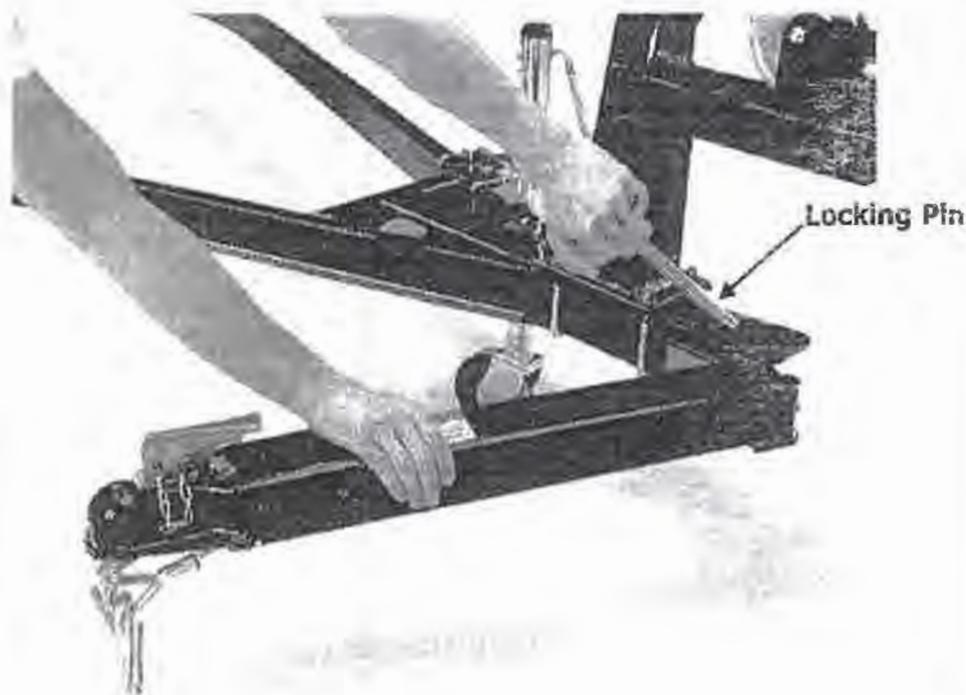
Your Trailstar® trailer may have a built-in swing-away tongue for convenient storage in your garage or confined storage area.

To retract the tongue:

1. Remove the safety lock from the locking pin.
2. Remove the locking pin.
3. Retract by pushing the trailer tongue sideways and back towards the trailer.

CAUTION!

Do not use force to remove the trailer locking pin from the swing-away tongue, as this could cause damage to the pin. Lift up slightly on the trailer tongue to relieve pressure on the locking pin if necessary.



Launching and Loading

PREPARATION

As common courtesy to other boaters, prepare the boat for launching before approaching the ramp. Check the following:

- Remove the motor toter/transom saver and rear tie-downs.
- Install the bilge drain plug.
- Disconnect the trailer lights.
- Transfer any gear from the vehicle to the boat.
- Ensure the lanyard stop switch is connected and the fuel primer bulb is primed.
- Follow the boater Safety checklist.

LAUNCHING

Launching with two people is recommended, if possible. There are many factors that affect launching, such as ramp depth, weather conditions, congestion, etc. The following are guidelines to follow when launching. Procedures may need to be modified, depending on conditions.

- After preparation of the boat for launching, back the trailer down the ramp slowly, keeping the vehicle as straight as possible to keep from blocking lanes for others.
- Back the vehicle until the wheels of the trailer are at least halfway submerged. The depth will vary, depending on ramp depth and steepness. The trailer should be backed into the water deep enough for the boat to float off the trailer.
- Lower the engine deep enough in the water to allow for it to be started. Watch the depth so that the lower unit does not drag on the bottom or contact obstructions including people.
- Start the engine and let it run until it is warmed up.
- Loosen and detach the winch strap from the bow eye. Back the boat slowly off the trailer, keeping the boat straight. Make sure the way is clear behind you before backing.
- Once the boat is clear of the trailer, pull the vehicle up the ramp and out of the way.

BOATER'S CHECKLIST

For improved safety and enjoyment check each of these items:

CHECK BEFORE YOU LAUNCH YOUR BOAT:

- Read and understand the Owner's Manual
- Drain plug (securely in place)
- Propeller condition (prop nut tight and secured, not cracked or bent blades)
- Steering system (working smoothly and properly; self locking nuts in place)
- Battery (fully charged, cable terminals clean and tight)
- Capacity plate (are you overpowered)
- Weather conditions (safe to go out)
- Fuel and oil (sufficient for trip, check bilge area for gas odor, no leaks)
- Hoses and connectors (no leaks or damage)
- Electrical equipment (light, horn, pumps, etc.)
- Safety equipment (fire extinguisher, bailer, paddle, anchor and line, mooring lines, signaling device, tool kit, first aid kit, first aid manual)
- Float plan submitted to responsible person (verbal or written)

CHECK BEFORE YOU START YOUR ENGINE:

- Fuel (sufficient for trip, check bilge area for gas odor)
- Control in neutral
- Capacity plate (are you overloaded or overpowered)
- Personal flotation devices on all occupants
- Seating (everyone in proper place)
- Lanyard stop switch (operational and securely fastened)
- No one in water near boat
- Keep a firm and continuous grip on the steering wheel.

LOADING

Similar to launching, many conditions affect loading and the procedures should be adjusted accordingly. Trailstar® trailers are designed for drive-on loading. Follow these guidelines when loading your boat:

- Back the vehicle straight down the ramp until the trailer bunks are submerged (wetting the carpeted bunks will allow the boat to load more easily). Pull the trailer forward until about one-quarter of the tires are visible. This will vary depending on ramp steepness.
- Drive the boat toward the trailer at a slow speed. Be sure to tilt the motor up to prevent the lower unit from dragging on the bottom.
- Drive the boat slowly between the guide bunks, keeping the boat straight in line with the winch stand. Use short bursts of power to advance the boat on the trailer until the bow eye rests on the bow roller. If the boat will not advance to the bow roller, the trailer may need to be backed deeper into the water. Excessive throttle can cause the boat to travel over the bow stop.
- Shut off the engine and tilt it up so the lower unit doesn't drag on the ramp.
- Hook the winch strap to the bow eye and crank the winch until the boat is secure to the trailer.
- Drive the vehicle up the ramp and out of the way of other boaters to prepare the boat for transport.

! CAUTION !

Trailstar trailers are designed for drive-on loading. The bunks should be wet for ease of loading. Drive the boat up to the trailer until the bow eye is up to the bow roller. The winch strap is merely a means to secure the boat to the trailer. To avoid damage to the winch and strap, do not use the winch to pull the boat onto the trailer.

- Check to see that the boat is aligned properly on the guide bunks.
- Pull the drain plug and open the livewell valve to drain any water, if necessary.
- Make sure all accessories and switches are turned off.
- Stow all loose equipment so it will not slide around in the boat.
- Make sure all panels and storage lids are secure. Lower and secure the convertible top (if equipped).
- Unload additional gear, if necessary.
- Secure the rear tie-downs and check the bow winch strap to ensure that it is secure.
- Install the motor toter/transom saver and connect the trailer lights.
- Ensure the lights are working and the coupler is secure to the hitch ball. If so, your boat and trailer are ready for transport.



Controls and Indicators

GAUGES



Tachometer Gauge

Indicates engine speed in crankshaft revolutions per minute (RPM). With engine running, use this gauge to keep the engine operating in the recommended RPM range listed in the engine operator's manual.



Voltmeter Gauge

Indicates the condition of the main (cranking) battery in volts DC. Normal operating range is between 14 and 15.5 volts. The ignition switch must be in the RUN position to activate the gauge.



Fuel Gauge

Indicates the approximate level of fuel in the tank. The ignition switch must be in the RUN position to activate the gauge. While underway, fuel gauge readings may fluctuate due to fuel slosh and boat attitude.



Trim Gauge

Indicates engine trim/tilt position. Use this gauge to monitor your engine's trim. The ignition switch must be in the RUN position to activate the gauge.

Gauge design may vary depending on Tracker model.



Speedometer

Indicates forward speed of boat in miles per hour. Use this gauge to identify efficient cruising and skiing speeds. Boat speedometer gauges measure water pressure and are only an approximation of actual speed.



Oil Pressure Gauge

Indicates engine oil pressure. Consult the engine owner's/operator's manual for normal levels and monitor levels frequently to ensure proper operation of your engine.



Water Pressure Gauge

Indicates engine water pressure. Consult the engine owner's/operator's manual for normal levels and monitor levels frequently to ensure proper operation of your engine.



Multi-Function Gauge

Combines two or more gauges into one unit.

Condensation may build up on the inside of the gauges. Our gauges are vented so the bulb illuminating the gauge will cause condensation to

SWITCHES

The switches on your TRACKER® boat are multiple position on/off switches. Your boat may be equipped with the following switches:



Navigation Light Switch

Activates the navigation running lights (when installed) for night operation.

NAV position - turns on the red and green bow lights and white stern light as well as illuminates instrument lights.

ANCHOR position - turns on stern light only for night anchoring. Do not operate the boat with the switch in the



Accessory Switch

Allows you to control the power of optional electrical equipment wired to the switch. The switch is left open at the factory to simplify wiring of optional accessories.



Livewell Recirculation Switch

Activates the livewell pump to recirculate the water in the livewell tank. If equipped, the AUTO position will allow the pump to cycle ON for one minute and OFF for three minutes.



Bilge Switch

Activates the bilge pump to remove water from the bilge area. Make sure the switch is turned off when not in use to avoid damaging the bilge pump.



Aerator Switch

Activates the aerator pumps to fill, or provide air to, the water in the livewell tank. Make sure the switch is turned off when not in use to avoid damaging the pump. If equipped, the AUTO position will allow the pump to cycle ON for one minute and OFF for three minutes.



Ignition Switch

Three or four-position switch for engine starting and stopping.

START position - Operates engine electric starter when key is turned clockwise and held at last position. Release the key when engine starts.

RUN position - Release key after engine starts and it will return to run position. The gauges are energized with the key in this position.

OFF position - stops the engine, however the propellor will continue to turn for a short period of time.

CHOKE position (if equipped) - Push key in to operate. Controls the engine choke or fuel enrichener (carb outboard motors only) to assist in starting a cold engine.

Switch style will vary depending on TRACKER boat.

Lanyard Stop Switch



Your TRACKER® boat is equipped with a lanyard stop switch as an added safety feature. This device is designed to turn off the engine whenever the operator, who should always be attached to the switch lanyard, moves far enough away from the operator's position to activate the switch. It is strongly recommended that the operator make use of this device. The lanyard should be of sufficient length to avoid inadvertent activation. Accidental loss of power can be hazardous particularly when docking or in heavy seas, strong current, or high winds. It can take several seconds for the engine and propeller to stop turning and the boat can continue to coast for several hundred feet depending on the velocity at shut-down and the degree of any turn. However, the boat will not complete a full circle. While the boat is coasting, it can cause injury to anyone in the boat's path as seriously as the boat would when under power.

Attach the lanyard to the lanyard stop switch. Attach the metal snap on the opposite end of the lanyard to a belt loop or around your wrist. Some life jackets are also equipped with a loop for this purpose. The lanyard must be attached in a secure enough fashion as to properly activate the stop switch in case the boat operator becomes accidentally ejected from the driver's seat.

! WARNING! !

The operator should attach the lanyard stop switch to a belt loop, life jacket loop or around his or her wrist before operating the boat. The stop switch will shut off the engine should the operator be accidentally ejected from the driver's seat. Check the switch for proper operation before each use by starting the engine and pulling the lanyard far enough for the switch to engage to the OFF position. The engine should shut off immediately. The switch should be replaced if it is not functioning. Remember to reset the switch to the RUN position before attempting to restart the engine or the engine will not start.

SHIFT/THROTTLE

Your TRACKER® boat may be equipped with a remote control that operates the shifting and throttle functions of the engine. If your engine is equipped with power trim, the tilt/trim switch on the control handle or the switch panel allows the motor to be raised or lowered by depressing the switch. The lanyard stop switch may also be located on the remote control box.

To shift the motor to forward gear, depress the neutral lock bar/button and move handle forward. Acceleration is controlled by advancing the handle forward. The center upright position is the neutral position. For reverse, depress neutral lock bar/button and move handle toward the rear.

The remote control, if equipped, features a throttle-only button located on the handle. Depressing this button disengages the shift mechanism from the control handle and allows the throttle to be advanced to assist in starting the engine. To activate, depress the throttle-only button while the control handle is in the neutral position. Advancing the handle forward will allow the throttle to be advanced without shifting the engine. This is especially helpful in warming up a cold engine.

Consult the engine and remote control owner's/operator's manuals for more information regarding the shift/throttle operation.

! CAUTION !

Shift the control handle from neutral to forward or reverse position to prevent the gears from grinding, which will cause accelerated gear wear. Do not shift too quickly from forward to reverse, stay in the neutral position until the boat has lost most of its headway before shifting to reverse.

Systems

ELECTRICAL SYSTEM

Your TRACKER® boat is equipped with a 12-volt negative ground DC system (excluding the trolling motor). A 12-volt cranking battery is used for engine cranking as well as accessory operation. The positive wire (red) feeds current from the battery to the electrical systems, the negative wire (black) is the ground. Circuit breakers or fuses protect circuits from overloading. In case of circuit overload, the fuse will blow or the breaker will trip. To reset a circuit breaker, switch the component's circuit switch to OFF, wait about one minute for the circuit to cool, push the breaker in to reset, and turn the component's circuit switch back ON. If fuses or breakers continuously fail under normal operating condition, have your boat inspected by a qualified electrical technician.

! CAUTION! !

Do not exceed the recommended fuse size or bypass the fuse or circuit breaker. Continuous fuse/breaker failure indicates an electrical problem that requires immediate attention. Have your boat inspected by a qualified technician. Failure to install the correct fuse/breaker or having non-qualified personnel work on the electrical system may result in stray current corrosion, damage to the electrical system or severe personal injury and may void your warranty.

TROLLING MOTOR BATTERY

Your boat may be equipped with a trolling motor. The trolling motor wiring harness is routed from the bow panel to the trolling battery compartment.

A circuit breaker panel or in-line fuse protects the circuit from electrical overload. The circuit breaker is located near the trolling battery in the stern storage compartment. The trolling motor plug, which mates with the bow receptacle, may be installed at the factory or by your dealer. The deep cycle battery(ies) must be recharged after the charge has been depleted. This can be done with a battery charger on shore or with an optional built-in battery charger. A battery maintenance system may be available for your model. See your TRACKER dealer for more information.

FUEL SYSTEM

Your TRACKER® boat is equipped with an internal fuel system that meets stringent NMMA® regulations. The system may have a fuel gauge to monitor the level of fuel in the tank. While underway, fuel gauge readings may fluctuate due to fuel slosh and boat attitude. A fuel vent allows air to move out from or into the tank as the fuel level changes.

Inspect the fuel system components on a regular basis for leaks, loose connections or blockages. If fuel tank is slow to fill, inspect the hose from the fuel fill to the tank to ensure it is not kinked. Filling the fuel tank too quickly may cause fuel to exit out of the fuel vent. Be sure to wipe up any fuel spill.

ENGINE EXHAUST



CARBON MONOXIDE HAZARD - Ensure engine exhaust system is working properly. Carbon monoxide poison is extremely toxic and can endanger your life.

Your boat's exhaust system removes gases created by the engine and vents them toward the rear of the boat. Before each outing, inspect the entire system for tightness. Leaks may permit carbon monoxide exposure. Consult your engine owner's/operator's manual for further

ENGINE COOLING

Most marine engines circulate water around components or through a heat exchanger on the engine to reduce temperature. See the engine owner's/operator's manual for water flow diagrams and information regarding monitoring your engine temperature.

Engine Alarms

Most marine engines are equipped with an engine alarm. Before operating your boat, consult the engine owner's/operator's manual for a description of these alarms and their meaning.

BILGE

The lowest part of the boat where incidental water drains is called the bilge. Water may gather in the bilge during heavy rain, as swimmers or skiers board, or if a leak exists. All TRACKER® boats are equipped with a bilge pump to remove this water. To activate the bilge pump, flip the bilge switch on the console to the ON position.

If equipped with an auto-bilge system, the bilge pump is controlled by an automatic float switch, which turns the bilge pump on when water rises above a preset level. The auto-bilge system is a convenience and should not be relied on to keep the boat completely water-free, especially if the boat has been subjected to conditions that may result in water intrusion into the boat.

Check the bilge pump periodically to ensure that there is no debris jamming the impeller. Depress the locking tabs on the pump and remove the pump cartridge for cleaning.

! CAUTION! !

Prolonged exposure to inclement weather, i.e. rain, melting snow, etc. may activate the auto-bilge system and drain the battery. Always provide proper storage for your boat.

STEERING SYSTEMS

Your TRACKER® boat may be equipped with one of two types of steering systems, mechanical or hydraulic steering.

! WARNING! !

Keep at least one hand on the steering wheel at all times when the boat is running, regardless of whether you have mechanical or hydraulic steering. The steering torque of the engine can cause the steering wheel to spin if released, resulting in serious damage to the boat or serious injury or death to dislodged occupants.

Mechanical Steering

The mechanical steering system operates through push/pull cables connecting the steering wheel to the engine. Turning the steering wheel allows the engine to be turned.

Hydraulic Steering

Hydraulic steering is available on some boats. The hydraulic helm is designed to prevent the steering load from feeding back to the driver. The helm contains a lock valve which will not allow the steering to move until you move it with the steering wheel.

The hydraulic steering system is factory installed and has basic maintenance requirements. See the maintenance/care section for proper maintenance procedures for the hydraulic steering system. See your owner's packet for additional information on the hydraulic steering system, if equipped.

ENGINE / PROPELLER

Your engine has its own operator's manual that you should read before operating for the first time. Make sure you follow the proper break-in procedures and understand all operating information.

The performance of your boat can be affected by engine height and propeller selection. Your dealer is well-suited to help you select the best setup for your particular needs.

The propeller converts the engine's power into thrust to propel the boat. Propeller size is identified by two numbers, such as 14" x 21". The first number is the propeller diameter, or the distance across the circle made by the blade tips as the propeller rotates. The second number is the pitch, which is the theoretical distance the propeller travels in one revolution.

Propeller pitch is similar to gearing on an automobile. The engine is designed to run best at a certain RPM range, depending on engine size. A propeller with a pitch that is too low will cause the engine to turn too many RPMs. Acceleration out of the hole will be good but propeller efficiency will suffer. In contrast, a propeller that is too large in pitch will not turn enough RPMs causing the engine to lag. Acceleration will also be sluggish. A propeller that allows the engine to run toward the upper end of the RPM range is generally the most efficient prop. You should always use a propeller that allows the engine to operate within the recommended RPM range; turning too many or too few RPMs may cause engine failure after time and will void the engine warranty.

A two-inch difference in pitch size usually has a 300- to 500-RPM change. For example, if a 19" pitch prop allows the engine to turn 5500 RPM, changing to a 21" pitch will drop the RPMs to approximately 5200. Acceleration will be better with the smaller 19" pitch, but top end speed and fuel economy most likely will be better with the 21" pitch propeller.



Typical Outboard Propeller

A smaller pitch propeller than normal should be used for water skiing or running with heavy loads. The smaller pitch will allow for more low-end torque to pull up skiers. It is important that the operator watch the tachometer to make sure the engine does not continuously exceed the maximum RPM range at full throttle. Propping the engine above the maximum RPM range is called "under-propping". It is often necessary to run two props for different uses, one for skiing or heavy loads and one for normal use.

There are many propeller types and designs on the market. The way a prop will perform with your particular engine depends on blade material, design, number of blades, exhaust relief, cupping, rake, etc. Your boat was shipped with a good all-purpose propeller. Certain boating activities may require a different propeller to maximize performance. See your dealer for additional information.

LIGHTING

Your TRACKER® boat is equipped with navigation lights meeting requirements for night operation. The small, green and red light, is mounted to the bow but is removable. The taller, white light mounts to the light base at the stern. Your boat may also be equipped with courtesy lights and/or a map light located on the red/green navigational light post.

To operate the navigation lights, install the lights to the bases by opening the base lid cover. Align the screw head with the slot in the light base and push the light pole in. Lock the light in place by turning the connector clockwise and down. Turn on the lights with the navigation light switch. Reverse procedure to remove the lights.

NAVIGATIONAL EQUIPMENT

Horn

A horn is often included as standard equipment, but may be an optional accessory in some cases. The horn button or switch is usually located at the helm. Test the horn periodically to ensure it is operating properly. Avoid spraying water directly into the horn.

GPS Unit

Some TRACKER® boats are equipped with a GPS unit. These units are useful for finding location information, directions, and even clocking your speed on the water. Many marine GPS units also include depth-finder capabilities. Consult the GPS operator's manual prior to operating the unit for the first time.

Fishing / Water Sports Features

FISHING EQUIPMENT

DEPTH FINDER

Your boat may be equipped with a depth-finder. These units are designed to assist you in determining the depth of water, identifying underwater structure and locating fish. Each unit has its own operator's manual describing features and operation. Consult the operator's manual prior to operating for the first time.

TROLLING MOTOR

Your boat may be equipped with a bow-mounted trolling motor. The trolling motor has its own operator's manual that you should read prior to first time operation.

The trolling motor should be powered by a deep cycle battery(ies). The battery(ies) will need to be recharged after each use. You can recharge with a battery charger connected to the battery terminals or through the bow panel by connecting the proper plug to a battery charger. There also are built-in battery chargers available for some models. See your TRACKER® dealer for more information.

LIVEWELL SYSTEMS

Your Tracker boat may be equipped with a livewell system. There are essentially three types of livewell systems; manual, remote and recirculating. Your boat may incorporate features from one or more of these basic systems. Many livewell systems also include a pump-out feature.

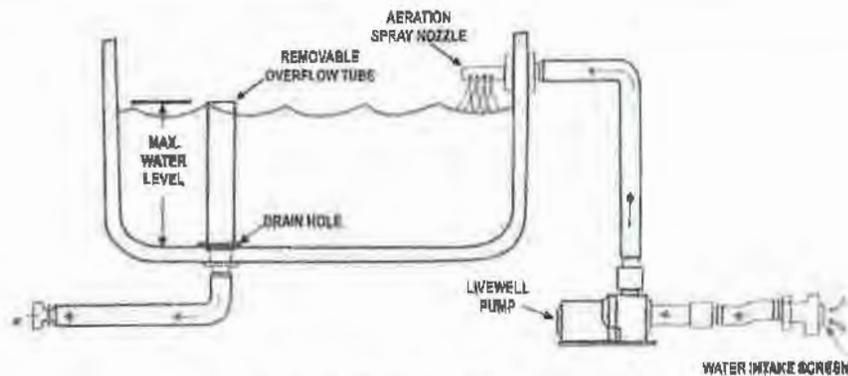
Manual

The manual system fills the livewell and aerates the water by continuously pumping fresh water into the well. Components of the manual system include a drain, a removable overflow tube, an aeration / fill nozzle and the livewell pump.

To fill the livewell, set the Livewell Switch to the ON or FILL position. To drain the livewell, remove the overflow tube to allow the water to flow out of the livewell container. (See diagram on following page.)



Typical Livewell

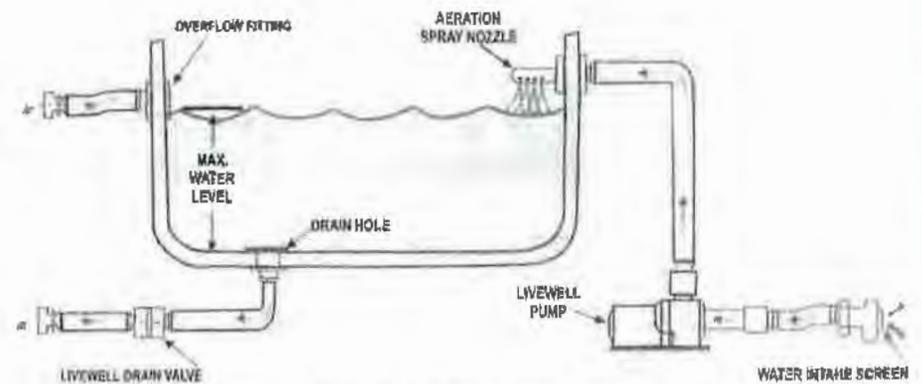


TYPICAL MANUAL LIVEWELL

Remote

The remote livewell operates much the same way as the manual livewell. The primary difference is the addition of a remotely controlled livewell drain valve. These systems have an overflow fitting rather than an overflow tube.

To drain the livewell, switch the remote valve control to the EMPTY or OPEN position.



TYPICAL REMOTE LIVEWELL SYSTEM

! CAUTION!

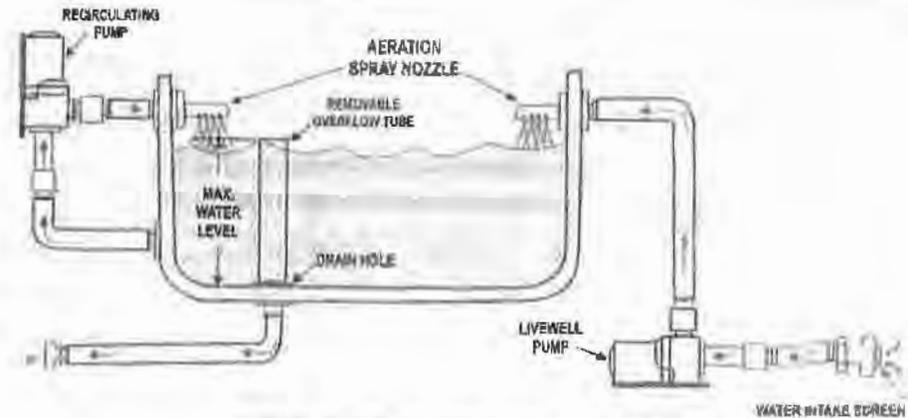
Manual livewell systems are not designed to be used while the boat is in operation or on a trailer. When the boat is in operation or on a trailer, the pump must be switched OFF, or pump damage will occur.

! CAUTION!

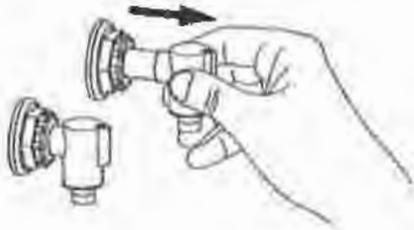
Remote livewell systems are not designed to be used while the boat is in operation or on a trailer. When the boat is in operation or on a trailer, the pump must be switched OFF, or pump damage will occur.

Recirculating

The recirculating livewell is different from the manual system in that it is typically a two pump system. The second pump allows you to recirculate the water that is in the livewell, even while the boat is in operation or being trailered. When using the recirculate mode, keep in mind that since no fresh water is being brought in, the temperature of the water in the livewell can rise quickly and may kill your fish. This type of livewell system can be drained either by removing the overflow tube or remotely, by moving the switch to OPEN or EMPTY.



TYPICAL RECIRCULATING LIVEWELL SYSTEM



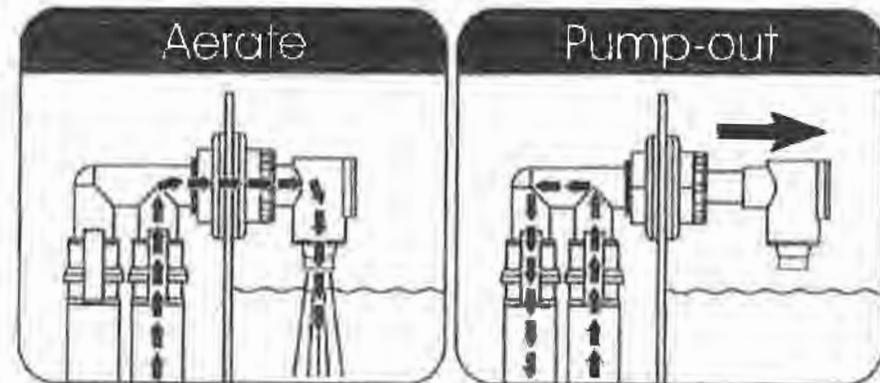
Pump-Out

If equipped with the pump-out feature, the livewell system will not have the typical aeration spray nozzle. This type of system includes a 90 degree two-position aerator head. The aerator switch is located on the console panel and is used to fill the livewell.

When turned on, the livewell will pull water in from outside and fill the livewell. The manual position pulls water continuously into the livewell. The auto position (if

equipped) is controlled by a timer and will pull water into the livewell for 1 minute and be off for 3 minutes.

With the recirculation pump on and any fill pumps off, pull the pump-out aerator head to the pump-out position. Once the desired level is reached or the livewell is empty, return the aerator head to the livewell aeration position.



CAUTION!

To avoid damage to the livewell system, never operate the system in freezing weather. Freezing water can damage the aerator pump and cause the livewell hoses and fittings to split, causing the livewell system to leak.

Livewell Controls

Depending on the model, your boat may have toggle, rocker, dial or sliding switches for livewell control.

Some livewells have a timer for aerating and adding fresh water to the livewell in a controlled time cycle. Livewells with this feature will have a three position switch labeled "MAN" and "AUTO." Use the manual position to fill the livewell, and for aeration while fishing. Use the automatic position to engage the timer so that the pump shuts OFF and turns ON within a factory set time cycle. (Typically one (1) minute ON and three (3) minutes OFF). The middle position on the switch is for turning the pump OFF.

Baitwells (Some Models)

To fill the if equipped, switch the baitwell control on the console switch panel to the ON or FILL position and ensure the fill valve inside the baitwell is in the OPEN position. When the baitwell is full of water, switch the control to the off (middle) position and switch the fill valve inside the baitwell to the CLOSED position to avoid water runoff. Use the RECIRC position on the baitwell control switch to provide recirculation to the baitwell.

To empty the baitwell, simply remove the plug from the bottom of the baitwell tank.



Typical Baitwell

FISHING SEATS

TRACKER® boats utilize pin-type mounts for the front and rear fishing seats, which accommodate a folding chair or a bicycle-type seat which can be placed/moved to the front or rear deck.



DO NOT sit on the raised platform fishing seats while the boat is underway. Sitting in elevated seats while the boat exceeds 5 MPH can result in the occupant being thrown overboard, causing serious injury or death.



Swivel seats (if equipped) must be in the "locked position" while the boat is underway. Failure to place a swivel seat in the "locked position" while underway can result in the occupant being thrown from the seat, causing serious injury or death.



All seat components should be properly stowed when not in use. Failure to properly stow these components could result in property damage or serious injury.

SKI EQUIPMENT



Use transom tow ring or tow pylon only to pull water skiers. Unless specified by the manufacturer, any other use may create excessive stress on this equipment, resulting in serious injury, death or property damage.

SKI PYLON (Ski Tow Bar)

Using your ski pylon for activities other than pulling a skier, such as tubing or wakeboarding is not recommended by most manufacturers of this equipment. Please consult your owners' information packet for specific recommendations regarding ski pylons.

Maintenance / Care

INTRODUCTION

This section outlines the care and maintenance procedures recommended for your new TRACKER® boat. Proper care and maintenance must be taken to ensure that your boat provides you with many years of boating enjoyment.

GENERAL CARE AND MAINTENANCE CHECKLIST

SYSTEM/COMPONENT

SERVICE REQUIRED

PERIODICALLY

Zinc Anode	Inspect, replace when deteriorated over 50%.
Wiring	Inspect for shorts, frayed wires and loose connections.
Throttle/Shift Cables	Clean/Inspect/Lubricate.
Steering Cable	Clean/Inspect/Lubricate. Check for excessive play, adjust if needed.
Trailer Bearings	Check/Lubricate as needed.
Trailer Brakes	Check brake pad and rotor for wear, replace as needed.
Trailer Winch, Coupler, Pivot Points	Check/Lubricate as needed.
Hull	Wash after each use.
Lanyard Stop Switch	Check for proper operation before each use by starting the engine and pulling the lanyard. Engine must stop.
Bilge Pump	Check for debris. Clean as necessary.
Aerator Pump	Check for debris. Clean filter if necessary.
Trailer Tires	Check air pressure and lug nut torque before each use.

GENERAL CARE AND MAINTENANCE CHECKLIST

SYSTEM/COMPONENT	SERVICE REQUIRED
<p>Surge Brake Fluid</p> <p>Battery</p> <p>Fuel System</p>	<p>PERIODICALLY</p> <p>Check brake fluid level before each use.</p> <p>Check electrolyte level. Make sure battery terminals are clean.</p> <p>Check for loose fittings, hose leaks or deterioration. Repair as necessary.</p>
<p>Hull</p> <p>Battery</p> <p>Bilge</p> <p>Windshield</p> <p>Upholstery</p> <p>Livewell</p> <p>Trailer</p>	<p>WHEN REQUIRED</p> <p>Wax when needed.</p> <p>Re-charge cranking battery when needed. Re-charge trolling motor battery(ies) after each use.</p> <p>Check for debris/Clean.</p> <p>Clean as needed.</p> <p>Clean when soiled and protect from the elements.</p> <p>Clean as needed.</p> <p>Inspect for rust, nicks or chips. Touch up as needed.</p>

PAINTED ALUMINUM CARE

Normal maintenance for the painted finish on your TRACKER® boat requires removal of surface dirt with a mild detergent and water. Special cleaners are available to remove algae, scum and other stubborn stains. Avoid harsh abrasives or strong chemicals. Wax the boat at least once a season with a quality marine paste or polish. See your dealer for cleaning and protectant chemicals designed specifically for your Tracker boat.

Almost inevitably, scratches or gouges can penetrate the paint into the aluminum surface; these should be repaired. Without attention, further damage such as rust can occur. Contact your Tracker dealer for repair procedures. The painted surface is also subject to weathering and may fade over time if continuously exposed to direct sunlight, especially during storage. It is suggested that your boat be protected from exposure to the elements during storage. A mooring cover or covered storage is suggested to keep your boat looking good. How you care for your boat will have a direct affect on the paint's life and appearance.

BOTTOM PAINT

Slight algae or slime will form on all vessels over time. Use a coarse towel or a piece of old rug to wipe these substances off the painted hull while the boat is still in the water. Stiff brushes or abrasive materials are not recommended. Bottom paint should be serviced seasonally. Consult your dealer if painting is necessary.

Do not apply bottom paint to sacrificial zinc anodes or the metal which may come in contact with the zinc.

SALT WATER USE

Hulls left in the water for long periods of time (especially in salt, brackish, or polluted water) may be subject to blistering and peeling of the painted surface. Extreme blistering may require use of an anti-fouling paint or similar protectant. Consult your dealer for the best application for your particular area.

The proper precautionary measures should be taken when operating the boat in salt or brackish water. The boat should be rinsed with fresh water and rubbed with a soft cloth after each use. If docking or mooring your boat in salt water for an extended time, it is recommended that your hull be protected with anti-fouling paint or a similar protectant. Be sure to check the sacrificial zinc anode attached to the motor and replace it when it is over 50% corroded. Galvanic corrosion is accelerated in saltwater, so additional zinc anodes may be necessary for extra protection. A trailer used in brackish or saltwater should be rinsed thoroughly after each use. See your dealer for recommendations for saltwater protection in your area.

GENERAL MAINTENANCE

Electrical System

The electrolyte level in non-maintenance free batteries should be checked periodically and filled with **distilled** water as needed. Fill until the level is approximately ½" above the plates. Do not overfill.

Battery terminals and wire leads must be clean and tight. A light coat of grease on the terminals and leads will help prevent corrosion. A solution of baking soda and water, along with a plastic brush, can be used to clean the battery terminals. Make sure the solution does not enter the battery vents, as it will damage the battery.

When charging batteries, make sure the battery compartment is well ventilated. Be sure all power is off before disconnecting batteries. When connecting battery leads, be sure the negative lead goes to the negative battery terminal and positive to positive.

WARNING!

Batteries release a hydrogen gas which is extremely flammable. Make sure the battery compartment is well ventilated when charging the batteries. DO NOT smoke or allow an open flame or spark near the batteries. Failure to adhere to these precautions may produce an explosion and cause death or serious injury.

Check all wiring periodically for loose connections and proper support. Damaged wiring can cause a short circuit and should be corrected immediately. Damaged wiring can cause a short circuit and should be corrected immediately. A short circuit can cause stray current corrosion, a condition which is not covered by warranty.

WARNING!

Wiring that is damaged or not properly supported can cause a short circuit if not corrected, causing serious damage to the boat as well as being a fire hazard.

Engine/Propeller

The propeller should be checked for damage before each use. A nicked or damaged propeller should be repaired or replaced with a new one. Periodically remove the propeller and inspect the prop shaft for fishing line. Grease the propeller shaft before reinstalling the propeller. See the engine operator's manual for more information.

Fuel System

The fuel system on your TRACKER® boat is designed to meet NMMA® regulations for fuel systems. The fuel system must be maintained to ensure there are no leaks and clean fuel is delivered to the engine. Remove the access panels periodically and inspect fuel hoses, fittings and connections for wear or leaks. Cracked hoses should be replaced with United States Coast Guard approved components. Clean fuel filters or vent screens as necessary.

Keep the fuel tank full during the boating season to prevent condensation from occurring. Fuel stored for over 15 days should have fuel stabilizer added. See the engine manual for fuel minimum octane requirements and maintenance recommendations.

⚠ WARNING! ⚠

Your boat is equipped with an internal fuel system that is pressure tested at the factory to assure that it is leak free. Any component replacement to the fuel system should be done only by an authorized technician. The system should be pressure tested after any component is replaced.

Livewell / Plumbing System

Check the bilge and livewell systems often to assure that they are free of leaks. Hose connections should be tight. Thru-hull fittings should be watertight. Check the bilge pump periodically to ensure there is no debris jamming the impeller; this is done by depressing the locking tabs on the pump and raising the pump up, taking care not to disconnect the wiring.

The bilge should be cleaned periodically with a mild detergent or bilge cleaner. After cleaning, rinse thoroughly with fresh water to remove any remaining cleaning solution.

Clean livewells periodically by flushing with fresh water only. Do not use cleaning solvents as residual amounts of detergent may be harmful to fish added to the livewell.

Steering System

The steering system should be inspected and maintained regularly. Check the hardware at the helm and the engine frequently for tightness. Steering cables should be lubricated monthly to ensure smooth operation. Periodically remove the cables from the engine and clean out the tilt tube. Lubricate tube and cables with a quality marine waterproof grease. See the engine operator's manual for maintenance information on the steering system.

Hydraulic Steering

Models equipped with hydraulic steering should be inspected by a qualified technician a minimum of two times per year (requirements vary depending on usage) or at the first indication that the steering system is not operating normally or correctly. The technician should:

1. Check oil level in helm. The level should always be within 1/4" of the bottom of the filler hole.
2. Check outboard engine tilt tube for salt deposits or corrosion. Clean and grease annually.
3. Check mechanical linkages and connections. Tighten loose parts and replace excessively worn parts.
4. Check for leaks and replace or repair any malfunctioning components.
5. Hydraulic hoses must be protected from kinking, chaffing and any possible contact or interference with assembly screws or sharp edges of any type.

Follow the maintenance and care information listed in the engine operator's manual. Proper maintenance procedures must be followed to assure reliable operation. Check control cables periodically for proper connection and clean as needed.



Failure to replace a damaged component may result in a steering failure causing personal injury, property damage or death.

Carpet

Wash the carpet regularly with mild detergent and water. Rinse with fresh water and let the carpet dry before storing to prevent mildew. Vacuum often to keep it looking good.



Some popular fish scents that are sprayed on lures contain chemicals that may stain or deteriorate the carpet. Spray these formulas over the side of the boat away from the carpet. Damage to carpet caused by the use of such chemicals will not be covered under warranty.

Upholstery

To protect your vinyl upholstery, vinyl protectant is recommended. Regular use of a vinyl protectant can help prevent UV caused slow-fade.

The upholstery should be washed with a mild detergent and water solution. There are other safe, acceptable vinyl cleaning products. Always test any cleaner in a small hidden area to sample the affect it has on the upholstery. All cleaning methods must be followed by thoroughly rinsing the area with clean, warm water.

Do not use common household cleaners such as powdered abrasives or steel wool, as they can cause damage and discoloration. Use waxes with caution as many contain dyes or solvents that can permanently damage the protective coating. Silicone based protectants are not recommended, as they can leave the vinyl hard and brittle and eventually cause cracking.



Some cleaners / protectants available on the market are not recommended for marine upholstery care. The use of these products may actually cause the upholstery to crack and deteriorate. Upholstery damage caused by using these or other types of products not recommended by the manufacturer will not be covered by warranty.

NOTE: SUNTAN LOTION, TREE POLLEN, WET LEAVES AND SOME OTHER PRODUCTS CAN CONTAIN DYES THAT CAN STAIN PERMANENTLY. DAMAGE CAUSED BY THESE AND OTHER ENVIRONMENTAL FACTORS WILL NOT BE COVERED BY WARRANTY.

Deck Hardware

Clean deck hardware frequently with soap and water. Glass cleaner is typically safe to use on stainless steel. Remove any rust spots as soon as possible with a brass, silver or chrome polish.

Never use an abrasive cleaner such as sandpaper or steel wool when maintaining stainless steel deck hardware.

Windshields

Use a mild soap solution and a soft, damp cloth to clean your windshield (if equipped). Harsh detergents, solvents, chemicals or dry cloths can scratch the windshield surface. Keep in mind that a clean windshield is an important safety precaution.

Corrosion Protection

Corrosion is a common occurrence in marine environments. Corrosion is an electrochemical reaction that happens when electrons flow between metals that are connected or grounded through water. As electrons flow, the electrical actions cause one of the two metals to be eaten away. The process is greatly accelerated in salt, brackish, or polluted water. Proper precautionary measures should be taken to prevent corrosion from causing damage to the boat, engine, and other components.

**NOTICE!**

Corrosion is not covered under the written express limited warranty.

There are two types of corrosion, galvanic corrosion and stray current corrosion:

Galvanic corrosion occurs when two or more dissimilar metals that share a common ground are submerged in a conductive solution (such as salt, brackish or polluted water), creating a chemical reaction that generates an electrical current flow between metals. As the current flows, the metal that is most chemically active will begin to erode. If left unchecked, a good deal of damage can occur. Common causes of galvanic corrosion are an eroded sacrificial zinc anode, attachment of dissimilar metals such as stainless steel, or shore power from other boats interacting with the engine lower unit.

Stray current corrosion occurs when an electrical current, flowing along a metal conductor (such as the engine or trolling motor), leaves the metal for a water path of less resistance, causing conversion of the metal into non-metallic corrosion products or direct removal of the metal. Rapid corrosion of the metal will occur. Common causes of stray current corrosion are improperly insulated circuits, improperly wired electrical accessories, improper or bad grounding and improperly wired shore power.

There are measures that should be taken to prevent corrosion from occurring. Sacrificial zinc anodes protect hardware exposed to the water. The zinc will be attacked by the electrolysis action before other metals and will decompose. Sacrificial zinc anodes must be replaced when erosion reaches 50%. The engine has sacrificial zinc anodes installed from the factory. See the engine operator's manual for more information.

Other corrosion protection devices include galvanic isolators, a MerCathode® system, continuity devices, and anti-corrosion kits. When operating in salt, brackish or polluted water, an anti-fouling paint or similar protection should be used to protect the hull and engine from marine growth and corrosion. See your dealer for corrosion protection measures for your area.

Ensure that the wiring is properly supported and the insulation is intact. Wiring that is shorted or improperly grounded can cause accelerated corrosion.

! WARNING! !

Wiring that is damaged or not properly supported can cause a short circuit if not corrected, causing serious damage to the boat as well as being a fire hazard.

STORAGE PROCEDURES

Proper procedures should be followed to prepare your TRACKER® boat for storage or winter lay-up. Improper storage preparation can cause damage to the boat, engine and components. Any damage incurred during storage is not covered under the terms of the written express limited warranty.

Follow these guidelines when preparing your boat for storage:

- Clean the hull and interior of the boat. Now is a good time to wax the boat and apply rust inhibitor to all metal hardware. Allow the interior to dry before storing to prevent mildew.
- Perform all scheduled engine maintenance as noted in the engine operator's manual. Contact your dealer if you have any questions.
- Add the proper amount of fuel stabilizer and conditioner per the manufacturer's recommendations. Run the treated fuel mixture through the engine for approximately 15 minutes to ensure the engine fuel supply is protected with stabilized fuel. See the engine manual for more information.
- Remove the drain plug and raise the bow of the boat to allow any water to drain. Make sure water is drained from the livewell system and any other area.
- Remove the battery(ies) from the boat. Clean and fully charge the batteries before storing. Store the battery in an area not subject to freezing temperatures.
- Store the boat and trailer in a protected area, such as covered storage. If storing outside, keep the boat covered with a mooring cover. The cover should have adequate ventilation to prevent mildew damage. It may be necessary to add support under the cover to prevent pockets that will collect rain or snow.
- Loosen the stern tie-downs and winch strap to reduce stress on the hull, but ensure that the boat is properly supported on the trailer before doing so.
- Lubricate all pivot points and hardware on the trailer as needed.
- See your engine operator's manual or your dealer for complete details and guidelines on winterizing your motor.

REACTIVATING AFTER STORAGE

Follow these guidelines when reactivating the boat after storage:

- Perform pre-season maintenance to the engine following the procedures listed in the engine operator's manual.
- Remove cover from boat and inspect for nesting animals. Thoroughly clean the hull and interior.
- Inspect steering, fuel and plumbing systems. Tighten or replace any loose or damaged hardware.
- Install fully charged battery(ies) to the boat.
- Reconnect winch strap and stern tie-downs.
- Check tire pressure and lug nut torque. Please see the Trailering and Getting Underway sections.

Troubleshooting

OUTBOARD ENGINE

SYMPTOM	POSSIBLE CAUSE / SOLUTION
Engine will not crank.	<ol style="list-style-type: none"> 1. Throttle / shifter is in gear. Move to the neutral position. 2. Loose or corroded battery connections. Tighten or clean terminals. 3. Blown fuse. Replace. 4. Battery is not charged. Charge or replace the battery. 5. Engine concern. Consult your dealer.
Engine cranks but will not start.	<ol style="list-style-type: none"> 1. Lanyard stop switch is in the stop position. Move to run position. 2. No fuel in tank. Fill tank. 3. Primer bulb is not primed. Prime. 4. Fuel filter is clogged. Replace the filter. 5. Engine concern. Consult your dealer.
Engine hard to start.	<ol style="list-style-type: none"> 1. The engine is flooded. Disconnect the fuel line and crank the engine until it is cleared. 2. Improper fuel / oil mixture. Drain and re-mix. 3. Engine concern. Consult your dealer.
Engine runs erratically.	<ol style="list-style-type: none"> 1. Spark plugs fouled or defective. Replace. 2. Engine fuel filter clogged. Remove obstruction or replace the filter. 3. Fuel tank pick-up tube screen is obstructed. Consult your dealer. 4. Fuel line or tank vent line is kinked or clogged. Replace kinked lines or blow out lines with compressed air to remove obstruction. 5. Faulty battery. Test and replace if faulty. 6. Stale or contaminated fuel. If contaminated, drain tank. Replace fuel and fuel filter. 7. Idle speed too low.

OUTBOARD ENGINE (continued)**SYMPTOM****POSSIBLE CAUSE / SOLUTION**

Battery will not hold charge.

1. Battery connections are corroded or loose. Check connections and replace if needed.
2. Low electrolyte level in battery. Check levels.
3. Worn out or inefficient battery. Replace.
4. Excessive use of electrical accessories.
5. Defective rectifier, alternator or voltage regulator. See dealer for replacement.
6. Constant draw on battery. See your dealer.

PERFORMANCE

Poor performance.

1. Throttle not fully open. Inspect the throttle cable and linkages for proper operation.
2. Damaged or improper propeller. Replace the propeller.
3. Excessive water in the bilge. Drain and check for cause of entry.
4. boat overloaded or the load is improperly distributed. Reduce the load or redistribute the load more evenly.

Poor speed.

1. Incorrect or damaged propeller. Replace the propeller.
2. Motor is trimmed in too far. Adjust trim.
3. Load is distributed unevenly. Redistribute or reduce load.
4. Marine growth on the hull. Clean hull.
5. Engine concern. Consult your dealer.

Slow to plane.

1. Propeller pitch is too large. Change propeller.
2. Excessive weight in the stern. Redistribute load.
3. Motor is trimmed out too far. Adjust trim.
4. Water in the bilge. Drain water and inspect pumps and hull for possible cause.

PERFORMANCE (continued)

SYMPTOM	POSSIBLE CAUSE / SOLUTION
Tachometer reads too slowly.	<ol style="list-style-type: none"> 1. Improper tachometer setting. Re-calibrate tachometer. 2. Propeller pitch is too large. Change propeller.
Tachometer reads high.	<ol style="list-style-type: none"> 1. Improper tachometer setting. Re-calibrate tachometer. 2. Propeller pitch is too small. Change propeller.
Bow will porpoise.	<ol style="list-style-type: none"> 1. The engine is over-trimmed. Adjust trim. 2. The boat is overloaded at the stern.
GENERAL OPERATION	
Aerator pump does not run.	<ol style="list-style-type: none"> 1. Circuit breaker is tripped or fuse has blown. Inspect breaker or fuse and correct. 2. Aerator switch is on automatic. Turn switch to manual position. 3. The pump is damaged. Replace.
Aerator pump runs but will not pump water.	<ol style="list-style-type: none"> 1. Pump is clogged. Clean debris from the impeller and flush. 2. Prime the pump by backing the boat with the pump on.
Bilge pump does not run.	<ol style="list-style-type: none"> 1. Circuit breaker is tripped or fuse has blown. Inspect breaker or fuse and correct. 2. Pump is damaged. Replace.
Bilge pump runs but will not pump water.	<ol style="list-style-type: none"> 1. Pump is clogged. Remove the pump cartridge. Clean debris from impeller and housing.

GENERAL OPERATION (continued)

SYMPTOM	POSSIBLE CAUSE / SOLUTION
Trolling motor will not run.	<ol style="list-style-type: none">1. Bow receptacle is not plugged in. Plug in bow receptacle.2. Battery is not charged. Charge battery.3. Control switch is in the OFF position. Switch to ON position.4. The circuit breaker is tripped or the fuse is blown. Inspect breaker or fuse and correct.5. Defective unit. Consult your dealer.
Navigation lights do not work.	<ol style="list-style-type: none">1. Light is not plugged into the receptacle properly. Inspect and correct connection.2. The master power switch (if equipped) is OFF. Turn master power switch ON.3. The circuit breaker is tripped or the fuse is blown. Inspect breaker or fuse and correct.4. The bulb is burned out. Replace the bulb.5. The light switch is not in the proper position. Inspect and correct switch position.
Livewell will not hold water.	<ol style="list-style-type: none">1. Livewell valve (if equipped) left open while underway. Close the valve when underway.2. Valve not operating properly. Replace valve.3. Leak in livewell system. Consult your dealer.4. Overflow tube or drain plug (if equipped) not installed into drain fitting.

Warranty/Service

OWNER'S RESPONSIBILITIES

To comply with the terms of the written express limited warranty, the owner is responsible for the proper registration of the boat by signing the warranty registration form at the time of purchase. The owner must follow proper operation procedures and adhere to the care and maintenance procedures set forth in this manual. Read the warranty information included in the owner's/operator's packet and information included with major components.

The written express limited warranty for your TRACKER® boat is transferable and can be extended to one subsequent purchaser for the remaining portion of the warranty period by completing the warranty transfer notification card included in the owner information packet and sending it to Tracker. Additional restrictions apply.

Your Tracker Marine dealer has a direct interest in you as a customer and in your complete satisfaction of the product you have purchased. Your dealer is in the best position to assist you with your boating needs and has the full support and assistance from Tracker Marine.

If for any reason you are not completely satisfied with the services performed by your dealer, we suggest that you discuss the matter with the Service Manager or General Manager of the dealership. In the unlikely event that resolution to your concerns cannot be reached by the dealership

Have the following information available:

- HIN (Hull Identification Number)
- Selling dealer name/location & date of purchase
- Servicing dealer (if different than selling dealer)
- Nature of concern
- Names of dealership personnel involved
- Record of services performed and approximate dates



Customer Service Department
2500 E. Kearney
Springfield, MO 65898

When contacting Tracker Marine, keep in mind that your concern will most likely be resolved at the dealership, using the dealership's facilities, equipment and personnel.

Express Written Limited Warranty

TRACKER.
boats

ALUMINUM BOATS LIMITED LIFETIME WARRANTY

TRACKER® Marine, L.L.C. ("TRACKER") warrants that your boat was manufactured free of defects in materials and workmanship, to the extent stated herein.

This limited warranty is extended to the original retail purchaser and is subject to the following conditions:

1. When you pick up your boat through a TRACKER Dealer, you must sign the warranty registration forms delivered to you at the time of purchase.

THE DURATION OF THIS LIMITED WARRANTY IS ONE (1) YEAR FROM THE DATE OF PURCHASE BY THE ORIGINAL PURCHASER. IN ADDITION, TRACKER WARRANTS: A) THAT, FOR A PERIOD OF FIVE (5) YEARS FROM THE DATE OF ORIGINAL PURCHASE, THE HULL, THE INTERIOR RIBS, AND TRANSOM ARE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL RECOMMENDED USAGE AND WITH PROPER MAINTENANCE; AND B) THAT, FOR THE LIFE OF THE BOAT, AS LONG AS IT IS OWNED BY THE ORIGINAL PURCHASER, THE EXTERNAL WELDS ARE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL RECOMMENDED USAGE AND WITH PROPER MAINTENANCE.

This limited warranty applies only to the portions of the boat manufactured by TRACKER. This limited warranty does not cover:

- A) Equipment and accessories manufactured by some other firms, which carry their own individual warranties.
- B) Engines, outdrives, propellers and controls.
- C) Paint cracking, blistering, fading or peeling.
- D) Chrome-plated, anodized and aluminum finishes.
- E) The color-fastness of materials.
- F) Windshield breakage.
- G) Leakage around hatches, through hull fittings or other designed openings.
- H) Estimated performance characteristics including but not limited to speed, weight or fuel consumption.
- I) Damage or failure due to tears or fading of canvas, vinyl, upholstery, fabric/trim, plastics & zippers.
- J) A boat which is used commercially, used for racing or used in service other than the private pleasure of the owner, including boats registered by business entities or multiple persons (not including husband and wife).
- K) Damages resulting from failure to follow periodic maintenance items to the product in accordance with recommendations of TRACKER.
- L) Ordinary wear and tear.

M) Galvanic or stray current corrosion. For this warranty to be valid, the owner must take delivery at the specific dealership or company store location specified by TRACKER.

The limited warranty regarding the hull, interior ribs and transom is transferable to a second owner during the first five (5) years of service from the original purchase date. A \$100.00 warranty transfer fee is applicable at the time of transfer. Transfer request must be made in writing to TRACKER Warranty Transfer, 2500 E. Kearney, Springfield, MO 65803 within 30 days of purchase. When properly transferred, the warranty period to the second purchaser will be for a maximum of five (5) years from the purchase date by the original owner. Equipment, components and accessories repossessed from the original purchaser are specifically excluded from coverage under this limited warranty and, as such, are not transferable for warranty purposes to a second purchaser.

This warranty is void with respect to any part or component otherwise covered by this warranty if the boat component or part is abused, misused or damaged as a result of unreasonable use while in the possession of the owner (including failure to provide reasonable and necessary maintenance) and, in addition, this warranty is void and shall not apply nor cover any component or part of any TRACKER® product after it has been in any manner altered, modified, neglected, vandalized, improperly trailered, has been involved in an accident, has been overpowered according to the maximum recommended engine horsepower on the capacity information plate, if any covered product or part has been repaired or replaced with non-recommended, non-Tracker parts or products, or if any covered product or part has not been repaired or replaced in accordance with TRACKER specifications.

In the event of defect or failure to conform to this limited warranty, the owner shall notify his/her purchasing dealer and describe in detail or setting forth in writing the specific nature of the defect or failure. The purchasing dealer, a factory authorized repair center or the TRACKER factory may be authorized to perform the obligations set forth in this limited warranty. The purchasing dealer will promptly contact the owner to inform him/her whether the repair must be made at the purchasing dealer's location, a factory authorized repair center or at the TRACKER factory. In the event repair must be made at the purchasing dealer's location, a factory authorized repair center or at the TRACKER factory, transportation to and from the applicable repair center shall be at the owner's expense and not at the expense of TRACKER. TRACKER shall have the absolute and sole discretion to select the appropriate location for the repairs and method of repair in accordance with the terms and conditions of the applicable warranty. All service repairs covered by this warranty and authorized by TRACKER must be performed at the authorized dealership or company store as determined by TRACKER in its sole and absolute discretion. TRACKER will commence repairs promptly after delivery of the boat and proceed with such repairs in a commercially reasonable manner and shall use its best efforts to complete the repairs within a reasonable time thereafter. TRACKER will have no responsibility for towing, road service charges or any other transportation charges.

UNDER THIS LIMITED WARRANTY, THE OBLIGATION OF TRACKER IS LIMITED TO THE REPAIR OR, AT THE OPTION OF TRACKER, REPLACEMENT OF PARTS OR EQUIPMENT WHICH ARE DETERMINED BY TRACKER TO BE DEFECTIVE AND TRACKER WILL HAVE NO OBLIGATION AND THE OWNER WILL HAVE NO REMEDY AGAINST TRACKER FOR ANY MATTER OTHER THAN THOSE SPECIFICALLY MENTIONED HEREIN AND SHALL NOT BE ENTITLED TO RECOVER INCIDENTAL OR CONSEQUENTIAL DAMAGES, DIRECT OR INDIRECT, INCLUDING, BUT NOT LIMITED TO, LOST PROFITS, LOST SALES, LOSS OF TIME, BOAT PAYMENTS, INTEREST, STORAGE AND SLIP FEES, INSURANCE, POSTAGE, AFTER-MARKET GOODS, DEPRECIATION OF VALUE DUE TO AGE, COURT COSTS AND EXPENSES, ATTORNEYS' FEES, INJURY TO PERSON OR PROPERTY OR FOR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS FROM ANY CAUSE WHATSOEVER. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO THE OWNER.

If there is any dispute between the parties with respect to the application or interpretation of this Limited Warranty, all parties agree that the exclusive remedy for determining such dispute, regardless of its nature, shall be by arbitration in accordance with the then most-applicable commercial arbitration rules of the American Arbitration Association. All parties agree that the location of the arbitration shall be Springfield, Missouri. The prevailing party shall be entitled to reimbursement from the other party of all of the prevailing party's costs including, but not limited to, arbitrator's compensation, expenses and attorney's fees. All awards may be filed with the clerk of one or more courts, state or federal, as a basis for declaratory or other judgment and the issuance of execution.

TRACKER reserves the right to make changes in design and changes or improvements upon its product at any time, including during a product year, without imposing any obligation upon itself to alter any of its products which were previously manufactured.

It is the responsibility of the owner or any operator of this boat to be familiar with and observe all local, state and federal laws, rules and regulations regarding boating and boating safety. The owner or any operator of this boat should take a Coast Guard Auxiliary course in boating and boating safety before operation of this boat and should be completely familiar with all systems regarding safe operation of this boat. TRACKER boats contain flotation material. However, there is no boat that is unsinkable. Personal flotation devices should be worn by each passenger in accordance with U.S. Coast Guard standards.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED, IMPLIED OR STATUTORY AND IS SPECIFICALLY IN LIEU OF, WITHOUT LIMITING THE FOREGOING LANGUAGE, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO THE OWNER.

The warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

TRAILSTAR

TRAILER LIMITED WARRANTY TRAILSTAR™ TRAILERS (GALVASHIELD™)

TRACKER® Marine, L.L.C. ("TRACKER") warrants that your trailer was manufactured free of defects in materials and workmanship, to the extent stated herein.

This limited warranty is extended to the original retail purchaser and is subject to the following conditions:

1. When you pick up your trailer through a TRAILSTAR™ Dealer, you must sign the warranty registration forms delivered to you at the time of purchase.

THE DURATION OF THIS LIMITED WARRANTY IS ONE (1) YEAR FROM THE DATE OF PURCHASE BY THE ORIGINAL PURCHASER. IN ADDITION, TRACKER WARRANTS THE GALVASHIELD GALVANIZED STEEL TUBING AGAINST STRUCTURAL FAILURE DUE SOLELY TO CORROSION FOR A PERIOD OF THREE (3) YEARS FROM THE DATE OF PURCHASE BY THE ORIGINAL PURCHASER. THIS LIMITED WARRANTY APPLIES ONLY TO STRUCTURAL CORROSION OF THE STEEL TUBING.

This limited warranty applies only to the portions of the trailer manufactured by TRACKER. This limited warranty does not cover:

- A) Surface corrosion resulting from consumer neglect to properly maintain scratches or other damages to the surfaces of the galvanized steel tubing.
- B) Paint, chalking, blistering, color fading or peeling.
- C) Tires or other equipment, parts or accessories manufactured by some other firm which carry their own individual warranties.
- D) Ordinary wear and tear, corrosion, chalking, blistering or color fading.
- E) Overloading (exceeding the GVWR designated load capacity).
- F) A trailer which is used commercially or used in service other than the private pleasure use of the original owner.
- G) Damages resulting from failure to follow periodic maintenance to the product in accordance with recommendations of TRACKER.
- H) Vandalism, improper use, damage.

For this warranty to be valid, the owner must take delivery at the specific dealership or company store location specified by TRACKER.

This limited warranty is transferable and extended to one subsequent purchaser for the remaining portion of the warranty period. Transfer request must be made in writing to TRACKER Warranty Transfer, 2500 E. Kearney, Springfield, MO 65803 within 30 days of purchase. When properly transferred the warranty

period to the second purchaser will be for a maximum of one (1) year from purchase date of original purchaser. Equipment, components and accessories repossessed from the original purchaser are specifically excluded from coverage under this limited warranty and, as such, are not transferable for warranty purposes to a second purchaser.

This warranty is void with respect to any part or component otherwise covered by this warranty if the trailer component or part is abused, misused or damaged as a result of unreasonable use while in the possession of the owner (including failure to provide reasonable and necessary maintenance) and, in addition, this warranty is void and shall not apply nor cover any component or part of any TRAILSTAR product after it has been in any manner altered, modified, neglected, vandalized, has been involved in an accident, has been overloaded according to the GVWR designated load capacity, if any covered product or part has been repaired or replaced with non-recommended, non-Tracker parts or products, or if any covered product or part has not been repaired or replaced in accordance with TRACKER specifications.

In the event of defect or failure to conform to this limited warranty, the owner shall notify his/her purchasing dealer and describe in detail or setting forth in writing the specific nature of the defect or failure. The purchasing dealer, a factory authorized repair center or the TRACKER® factory may be authorized to perform the obligations set forth in this limited warranty. The purchasing dealer will promptly contact the owner to inform him/her whether the repair must be made at the purchasing dealer's location, a factory authorized repair center or at the TRACKER factory. In the event repair must be made at the purchasing dealer's location, a factory authorized repair center or at the TRACKER factory, transportation to and from the applicable repair center shall be at the owner's expense and not at the expense of TRACKER. TRACKER shall have the absolute and sole discretion to select the appropriate location for the repairs and method of repair in accordance with the terms and conditions of the applicable warranty. All service repairs covered by this warranty and authorized by TRACKER must be performed at the authorized dealership or company store as determined by TRACKER in its sole and absolute discretion. TRACKER will commence repairs promptly after delivery of the trailer and proceed with such repairs in a commercially reasonable manner and shall use its best efforts to complete the repairs within a reasonable time thereafter. TRACKER will have no responsibility for towing, road service charges or any other transportation charges.

UNDER THIS LIMITED WARRANTY, THE OBLIGATION OF TRACKER IS LIMITED TO THE REPAIR OR, AT THE OPTION OF TRACKER, REPLACEMENT OF PARTS OR EQUIPMENT WHICH ARE DETERMINED BY TRACKER TO BE DEFECTIVE AND TRACKER WILL HAVE NO OBLIGATION AND THE OWNER WILL HAVE NO REMEDY AGAINST TRACKER FOR ANY MATTER OTHER THAN THOSE SPECIFICALLY MENTIONED HEREIN AND THE OWNER SHALL NOT BE ENTITLED TO RECOVER INCIDENTAL OR CONSEQUENTIAL DAMAGES, DIRECT OR INDIRECT, INCLUDING, BUT NOT LIMITED TO, LOST PROFITS, LOST SALES, LOSS OF TIME, BOAT PAYMENTS, INTEREST, STORAGE AND SLIP FEES, INSURANCE, POSTAGE, AFTER-MARKET GOODS, DEPRECIATION OF VALUE DUE TO AGE, COURT COSTS AND EXPENSES, ATTORNEYS' FEES, INJURY TO PERSON OR PROPERTY OR FOR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS FROM ANY CAUSE WHATSOEVER. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

If there is any dispute between the parties with respect to the application or interpretation of this Limited Warranty, all parties agree that the exclusive remedy for determining such dispute, regardless of its nature, shall be by arbitration in accordance with the then most-applicable commercial arbitration rules of the American Arbitration Association. All parties agree that the location of the arbitration shall be Springfield, Missouri. The prevailing party shall be entitled to reimbursement from the other party of all of the prevailing party's costs including, but not limited to, arbitrator's compensation, expenses and attorney's fees. All awards may be filed with the clerk of one or more courts, state or federal, as a basis for declaratory or other judgment and the issuance of execution.

TRACKER reserves the right to make changes in design and changes or improvements upon its product at any time, including during a product year, without imposing any obligation upon itself to alter any of its products which were previously manufactured.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED, IMPLIED OR STATUTORY AND IS SPECIFICALLY IN LIEU OF, WITHOUT LIMITING THE FOREGOING LANGUAGE, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO THE OWNER.

The warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Glossary

A

ABOARD - On or within the boat.

ABOVE DECK - On the deck.

ABREAST - Side by side; by the side of.

ADRIFT - Loose, not on moorings or towline.

AFT - Toward the stern of the boat.

AGROUND - Touching or attached to the bottom.

AHEAD - In a forward direction.

AIDS TO NAVIGATION - Artificial objects to supplement natural landmarks indicating safe and unsafe waters.

B

BEAM - The greatest width of the boat.

BEARING - The direction of an object expressed either as a true bearing as shown on the chart, or as a bearing relative to the heading of the boat.

BELOW - Beneath the deck.

BILGE - The interior of the hull below the floor boards.

BOAT - A waterborne vehicle smaller than a ship.

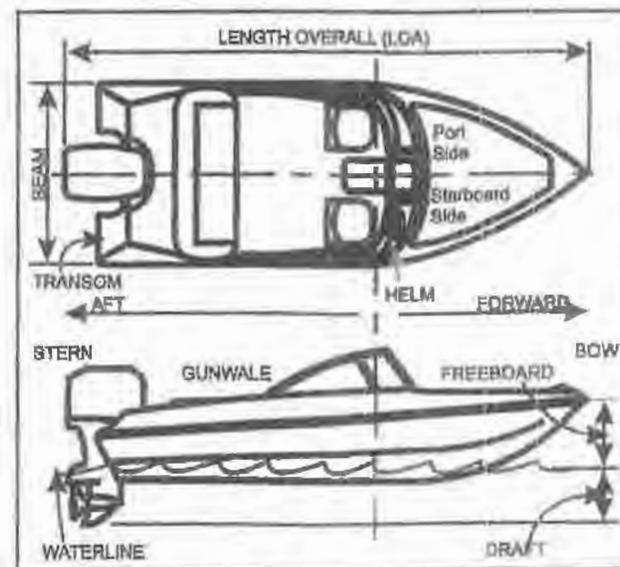
BOW - The forward part of a boat.

BOW LINE - A docking line leading from the bow.

BRIDGE - The location from which a vessel is steered and its speed controlled. "Control Station" is really a more appropriate term for small craft.

BULKHEAD - A vertical partition separating compartments.

BUOY - An anchored float used for marking a position on the water, a hazard, or a shoal and for mooring.



BOATING TERMINOLOGY

BURDENED VESSEL - That vessel which, according to the applicable Navigation Rules, must give way to the privileged vessel. The term has been superseded by the term "give-way".

C

CABIN - A compartment for passengers or crew.

CAPSIZE - To turn over.

CAST OFF - To let go.

CHINE - The intersection of the bottom and sides of a flat or v-bottomed boat.

CLEAT - A fitting to which lines are attached.

COCKPIT - An opening in the deck from which the boat is handled.

COURSE - The direction in which a boat is steered.

CURRENT - The horizontal movement of water.

D

DEAD ASTERN - Directly aft.

DECK - A permanent covering over a compartment, hull or any part thereof.

DOCK - A protected water area in which vessels are moored. The term is often used to denote a pier or a wharf.

DRAFT - The depth of water a boat draws.

E

EBB - A receding current.

F

FATHOM - Six feet.

FENDER - A cushion, placed between boats, or between a boat and a pier, to prevent damage.

FLOOD - An incoming current.

FORWARD - Toward the bow of the boat.

FREEBOARD - The minimum vertical distance from the surface of the water to the gunwale.

G

GEAR - A general term for ropes, blocks, tackle and other equipment.

GIVE-WAY VESSEL - A term used to describe the vessel which must yield in meeting, crossing, or overtaking situations.

GRAB RAILS - Hand-hold fittings mounted on cabin tops and sides for personal safety when moving around the boat.

GROUND TACKLE - A collective term for the anchor and its associated gear.

GUNWALE - The upper edge of a boat's sides.

H

HARD CHINE - An abrupt intersection between the hull side and the hull bottom of a boat so constructed.

HATCH - An opening in a boat's deck fitted with a watertight cover.

HEAD - A marine toilet. Also the upper corner of a triangular sail.

HEADING - The direction in which a vessel's bow points at any given time.

HEADWAY - The forward motion of a boat. Opposite of sternway.

HELM - The wheel or tiller controlling the rudder.

HELMSPERSON - The person who steers the boat.

HULL - The main body of a vessel.

I

INBOARD - More toward the center of a vessel; inside; a motor fitted inside a boat.

INTRACOASTAL WATERWAY - ICW: bays, rivers, and canals along the coasts (such as the Atlantic and Gulf of Mexico coasts), connected so that vessels may travel without going into the sea.

K

KEEL - The centerline of a boat running fore and aft; the backbone of a vessel.

KNOT - A measure of speed equal to one nautical mile (6076 feet) per hour; A fastening made by interweaving rope to form a stopper, to enclose or bind an object, to form a loop or a noose, to tie a small rope to an object, or to tie the ends of two small ropes together.

L

LATITUDE - The distance north or south of the equator measured and expressed in degrees.

LINE - Rope and cordage used aboard a vessel.

LOG - A record of courses or operation. Also, a device to measure speed.

LONGITUDE - The distance in degrees east or west of the meridian at Greenwich, England.

M

MIDSHIP - Approximately in the location equally distant from the bow and stern.

MOORING - An arrangement for securing a boat to a mooring buoy or a pier.

N

NAUTICAL MILE - One minute of latitude; approximately 6076 feet - about 1/8 longer than the statute mile of 5280 feet.

NAVIGATION - The art and science of conducting a boat safely from one point to another.

NAVIGATION RULES - The regulations governing the movement of vessels in relation to each other, generally called steering and sailing rules.

O

OUTBOARD - Toward or beyond the boat's sides. A detachable engine mounted on a boat's stern.

OVERBOARD - Over the side or out of the boat.

P

PLANING - A boat is said to be planing when it is essentially moving over the top of the water rather than through the water.

PLANING HULL - A type of hull shaped to glide easily across the water at high speed.

PORT - The left side of a boat looking forward. A harbor.

PRIVILEGED VESSEL - A vessel which, according to the applicable Navigation Rule, has right of way (this term has been superseded by the term "stand-on").

R

ROPE - In general, cordage as it is purchased at the store. When it comes aboard a vessel and is put to use it becomes line.

RUDDER - A vertical plate or board for steering a boat.

RUN - To allow a line to feed freely.

RUNNING LIGHTS - Lights required to be shown on boats underway between sundown and sunup.

S

SATELLITE NAVIGATION - A form of position finding using radio transmissions from satellites with sophisticated on-board automatic equipment.

SCOPE - Technically, the ratio of length of anchor rode in use to the vertical distance from the bow of the vessel to the bottom of the water. Usually six to seven to one for calm weather and more scope in storm conditions.

SCREW - A boat's propeller.

SCUPPERS - Drain holes on deck, in the toe rail, or in bulwarks or (with drain pipes) in the deck itself.

SEACOCK - A through hull valve, a shut off on a plumbing or drain pipe between the vessel's interior and the sea.

SEAMANSHIP - All the arts and skills of boat handling, ranging from maintenance and repairs to piloting, sail handling, marlinespike work, and rigging.

SEAWORTHY - A boat or a boat's gear able to meet the usual sea conditions.

SECURE - To make fast.

SHIP - A larger vessel usually thought of as being used for ocean travel. A vessel able to carry a "boat" on board.

SLACK - Not fastened; loose. Also, to loosen.

STAND-ON VESSEL - That vessel which has right of way during a meeting, crossing, or overtaking situation.

STARBOARD - The right side of a boat when looking forward.

STERN - The after part of the boat.

STERN LINE - A docking line leading from the stern.

STOW - To put an item in its proper place.

SWAMP - To fill with water, but not settle to the bottom.

T

TIDE - The periodic rise and fall of water level in the oceans.

TILLER - A bar or handle for turning a boat's rudder or an outboard motor.

TRANSOM - The stern cross-section of a square sterned boat.

TRIM - Fore and aft balance of a boat.

U

UNDERWAY - Vessel in motion, i.e., when not moored, at anchor, or aground.

V

V BOTTOM - A hull with the bottom section in the shape of a "V".

W

WAKE - Moving waves, track or path that a boat leaves behind it, when moving across the waters.

WATERLINE - A line painted on a hull which shows the point to which a boat sinks when it is properly trimmed (see **BOOT TOP**).

WAY - Movement of a vessel through the water such as headway, sternway or leeway.

Y

YACHT - A pleasure vessel, a pleasure boat; in American usage the idea of size and luxury is conveyed, either sail or power.

WARRANTY REGISTRATION TRANSFER (forward this copy to TRACKER® Marine)

Boat Serial # _____ Model Year _____
Engine Make _____ Serial # _____
Trailer Type _____ Serial # _____

Previous Owner _____
Owner's Name _____
Street Address _____
City _____ State _____ Zip _____
Home Phone # _____ Work Phone # _____
Date of Purchase _____
Owner's Signature _____

(Must be signed)

**YOUR REQUEST FOR WARRANTY TRANSFER MUST BE RECEIVED WITHIN 30 DAYS OF THE SALE DATE.
ADDITIONAL DOCUMENTATION MAY BE REQUIRED.**

TRACKER.
marine

WARRANTY REGISTRATION TRANSFER (retain this copy for your files)

Boat Serial # _____ Model Year _____
Engine Make _____ Serial # _____
Trailer Type _____ Serial # _____

Previous Owner _____
Owner's Name _____
Street Address _____
City _____ State _____ Zip _____
Home Phone # _____ Work Phone # _____
Date of Purchase _____

TRACKER.
marine

We All Live Downstream

We at TRACKER® MARINE build boats so more people can enjoy the great outdoors. As fishermen and outdoorsmen ourselves, we realize how important it is to protect our environment and natural resources. We support the individuals and organizations who are participating in recycling, fish restocking, water clean-up efforts and wildlife management. We encourage you to practice "Catch and Release" and participate in improved management of our fish and wildlife resources. Our conservation efforts are necessary to ensure that future generations will enjoy the great outdoors. Remember, we all live downstream!



TRACKER Marine
2500 E. Kearney
Springfield, MO. 65898

Part # 153691

April 2009

3048

TM000181

MERCURY Outboards

OWNER'S MANUAL

- Installation
- Operation
- Maintenance
- Warranty

MERCURY
"1 On The Water"



Mercury Marine is the first marine manufacturer in the world to be 100 percent ISO 9001:2000 certified.

EXHIBIT 16

DATE _____

WITNESS _____

ROCKIE DUSTIN, CSR, RPR

© 2009 Mercury Marine

© 2009 Mercury Marine

75/90/115/125 OptiMax

90-10208090 1209

MART000336

1052

Thank You

for your purchase of one of the finest outboards available. You have made a sound investment in boating pleasure. Your outboard has been manufactured by Mercury Marine, a world leader in marine technology and outboard manufacturing since 1939. These years of experience have been committed to the goal of producing the finest quality products. This led to Mercury Marine's reputation for strict quality control, excellence, durability, lasting performance, and being the best at providing after the sale support.

Please read this manual carefully before operating your outboard. This manual has been prepared to assist you in the operation, safe use, and care of your outboard.

All of us at Mercury Marine took pride in building your outboard and wish you many years of happy and safe boating.

Again, thank you for your confidence in Mercury Marine.

EPA Emissions Regulations

Outboards sold by Mercury Marine in the United States are certified to the United States Environmental Protection Agency as conforming to the requirements of the regulations for the control of air pollution from new outboard motors. This certification is contingent on certain adjustments being set to factory standards. For this reason, the factory procedure for servicing the product must be strictly followed and, wherever practicable, returned to the original intent of the design.

Maintenance, replacement, or repair of the emission control devices and systems may be performed by any marine engine repair establishment or individual.

Engines are labeled with an Emission Control Information decal as permanent evidence of EPA certification.

WARNING

The engine exhaust from this product contains chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

90-10208090 1209

75/90/115/125 OptiMax

© 2009 Mercury Marine

Warranty Message

The product you have purchased comes with a **limited warranty** from Mercury Marine, the terms of the warranty are set forth in the **Warranty Information** section of this manual. The warranty statement contains a description of what is covered, what is not covered, the duration of coverage, how to best obtain warranty coverage, **important disclaimers and limitations of damages**, and other related information. Please review this important information.

The description and specifications contained herein were in effect at the time this manual was approved for printing. Mercury Marine, whose policy is one of continued improvement, reserves the right to discontinue models at any time, to change specifications, designs, methods, or procedures without notice and without incurring obligation.

Mercury Marine, Fond du Lac, Wisconsin U.S.A.

Litho in U.S.A.

© 2009, Mercury Marine

Mercury, Mercury Marine, MerCruiser, Mercury MerCruiser, Mercury Racing, Mercury Precision Parts, Mercury Propellers, Mariner, Quicksilver, #1 On The Water, Alpha, Bravo, Pro Max, OptiMax, Sport-Jet, K-Planes, MerCathode, RideGuide, SmartCraft, Zero Effort, M with Waves logo, Mercury with Waves logo, and SmartCraft logo are all registered trademarks of Brunswick Corporation. Mercury Product Protection logo is a registered service mark of Brunswick Corporation.

Mercury Premier Service

Mercury evaluates the service performance of its dealers and assigns its highest rating of "Mercury Premier" to those demonstrating an exceptional commitment to service.

Earning a Mercury Premier Service rating means a dealer:

- Achieves a high 12 month service CSI (Customer Satisfaction Index) score for warranty service.
- Possesses all necessary service tools, test equipment, manuals, and parts books.
- Employs at least one Certified or Master technician.

- Provides timely service for all Mercury Marine customers.
- Offers extended service hours and mobile service, when appropriate.
- Uses, displays, and stocks adequate inventory of genuine Mercury Precision Parts.
- Offers a clean, neat shop with well organized tools and service literature.

Declaration of Conformity Optimax - For Recreational Craft Propulsion Engines with the Requirements of Directive 94/25/EC as amended by 2003/44/EC

Name of engine manufacturer: Mercury Marine			
Address: W6250 Pioneer Road P.O. Box 1939			
Town: Fond du Lac, WI	Post Code: 54936-1939	Country: USA	

Name of Authorized Representative: Brunswick Marine In EMEA inc.			
Address: Parc Industriel de Petit-Rechain			
Town: Verviers	Post Code: 4800	Country: Belgium	

Name of Notified Body for exhaust emission assessment: Det Norske Veritas AS			
Address: Veritasveien 1			
Town: Hovik	Post Code: 1322	Country: Norway	ID Number: 0575

Name of Notified Body for noise emission assessment: Det Norske Veritas AS			
Address: Veritasveien 1			
Town: Hovik	Post Code: 1322	Country: Norway	ID Number: 0575

Conformity assessment module used for exhaust emissions:	<input type="checkbox"/> B+C	<input type="checkbox"/> B+D	<input type="checkbox"/> B+E	<input type="checkbox"/> B+F	<input type="checkbox"/> G	<input checked="" type="checkbox"/> H
Conformity assessment module used for noise emissions:	<input type="checkbox"/> A	<input type="checkbox"/> Aa	<input type="checkbox"/> G	<input checked="" type="checkbox"/> H		
Other Community Directives applied: Safety of Machinery Directive 98/37/EC; Electromagnetic Compatibility Directive 2004/108/EC						

Description of Engines and Essential Requirements

Engine Type	Fuel Type	Combustion Cycle
<input checked="" type="checkbox"/> Outboard engine	<input checked="" type="checkbox"/> Petrol	<input checked="" type="checkbox"/> 2 stroke

Identification of Engines Covered by This Declaration of Conformity

Name of engine family	Unique engine identification number: starting serial number	EC Module H certificate number
1.5L Optimax 75, 80, 90, 115, 125 hp	1B227000	RCD-H-2
2.5L Optimax 135, 150, 175 hp	1B227000	RCD-H-2
3.0L Optimax 200, 225 hp	1B227000	RCD-H-2

Essential requirements	standards	other normative document/ method	technical file	Please specify in more detail (* = mandatory standard)
Annex 1.B—Exhaust Emissions				
B.1 engine identification	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
B.2 exhaust emission requirements	<input checked="" type="checkbox"/> *	<input type="checkbox"/>	<input type="checkbox"/>	* EN ISO 8718-1:1995
B.3 durability	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
B.4 owner's manual	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ISO 8665: 1995
Annex 1.C—Noise Emissions				
C.1 Noise emission levels	<input checked="" type="checkbox"/> *	<input type="checkbox"/>	<input type="checkbox"/>	EN ISO 14509
C.2 Owner's manual	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Owner's manual

This declaration of conformity is issued under the sole responsibility of the manufacturer. I declare on behalf of the engine manufacturer that the engines mentioned preceding complies with all applicable essential requirements in the way specified.

**GE
BE**

Get th
at max
an

Order Serv

Name / function:

Mark D. Schwabero, President, Mercury
Outboard



Date and place of issue: July 24, 2008
Fond du Lac, Wisconsin, USA

v

TABLE OF CONTENTS

WARRANTY INFORMATION

Warranty Registration.....	1
Transfer of Warranty.....	1
Transfer of Mercury Product Protection (Extended Service Coverage) Plan United States and Canada.....	2
Outboard Limited Warranty.....	3
3 Year Limited Warranty Against Corrosion.....	6
Warranty Coverage and Exclusions.....	9
U.S. EPA Emissions Limited Warranty.....	11
Emission Control System Components.....	11
California Emissions Limited Warranty.....	13
California Air Resources Board Explanation of Your California Emission Control Warranty Statement.....	16
Emission Certification Star Label.....	17

General Information

Boater's Responsibilities.....	19
Before Operating Your Outboard.....	19
Boat Horsepower Capacity.....	20
High-Speed and High-Performance Boat Operation.....	20
Propeller Selection.....	20
Outboard Remote Control Models	23
Remote Steering Notice.....	24
Lanyard Stop Switch.....	25
Protecting People in the Water.....	27
Passenger Safety Message - Pontoon Boats and Deck Boats..	28
Wave and Wake Jumping.....	29
Impact with Underwater Hazards.....	30
Exhaust Emissions.....	31
Selecting Accessories for Your Outboard.....	33
Safe Boating Suggestions.....	34
Recording Serial Number.....	36
Specifications.....	36
Component Identification.....	38

TABLE OF CONTENTS

Transporting

Trailering Boat/Outboard	39
--------------------------------	----

Fuel and Oil

Fuel Recommendations.....	40
Fuel Requirements.....	42
Fuel Additives.....	42
Avoiding Fuel Flow Restriction.....	42
Low Permeation Fuel Hose Requirement	42
Oil Recommendation.....	42
Filling Oil Injection System.....	43
Filling Fuel Tank.....	45

Features and Controls

Remote Control Features.....	46
Warning System.....	47
Power Trim and Tilt.....	49
Trim Tab Adjustment.....	53

Operation

Pre-Starting Check List.....	54
Operating in Freezing Temperatures.....	54
Operating in Saltwater or Polluted Water.....	55
Operating at High Elevations.....	55
Setting Trim Angle While Running Engine at Idle Speed.....	56
Engine Break-in Procedure.....	56
Starting the Engine.....	57
Gear Shifting.....	60
Stopping the Engine.....	61

TABLE OF CONTENTS

Maintenance

Outboard Care.....	62
EPA Emissions Regulations.....	62
Inspection and Maintenance Schedule.....	63
Flushing the Cooling System	66
Top Cowl Removal and Installation.....	66
Cleaning Care for Top Cowl.....	67
Flywheel Cover Removal and Installation.....	67
Side Panel Removal and Installation.....	68
Fuel System.....	69
Steering Link Rod Fasteners.....	72
Fuse Replacement.....	73
Corrosion Control Anode.....	74
Battery Inspection	75
Battery Information.....	75
Propellers.....	76
Spark Plug Inspection and Replacement.....	80
Compressor Air Intake Filter.....	81
Alternator Belt Inspection.....	81
Lubrication Points.....	82
Checking Power Trim Fluid.....	84
Gearcase Lubrication.....	85

Storage

Storage Preparation.....	88
Fuel System.....	88
Protecting Internal Engine Components.....	90
Protecting External Outboard Components.....	90
Gearcase.....	91
Positioning Outboard for Storage.....	91
Battery Storage.....	91

TABLE OF CONTENTS

Troubleshooting

Starter Motor Will Not Crank the Engine.....	92
Engine Will Not Start.....	92
Engine Runs Erratically.....	93
Performance Loss.....	93
Battery Will Not Hold Charge.....	93

Owner Service Assistance

Local Repair Service.....	94
Service Away from Home.....	94
Parts and Accessories Inquiries.....	94
Service Assistance.....	94
Mercury Marine Service Offices.....	95

Outboard Installation

Important Information.....	97
Boat Horsepower Capacity.....	97
Start in Gear Protection.....	97
Selecting Accessories for Your Outboard.....	98
Fuel Tanks.....	98
Low Permeation Fuel Hose Requirement	98
Installation Specifications.....	99
Lifting the Outboard.....	99
Steering Cable - Starboard Side Routed Cable.....	100
Determining Recommended Outboard Mounting Height.....	102
Drilling Outboard Mounting Holes.....	103
Fastening the Outboard to the Transom.....	104
Electrical, Fuel Hose, Flush Hose and Control Cables.....	108
Oil Injection Set-Up.....	121
Trim In Pin.....	123

TABLE OF CONTENTS

Maintenance Log

Maintenance Log.....	125
----------------------	-----



WARRANTY INFORMATION

Warranty Registration

UNITED STATES AND CANADA

To be eligible for warranty coverage, the product must be registered with Mercury Marine.

At the time of sale, the selling dealer should complete the warranty registration and immediately submit it to Mercury Marine via MercNET, e-mail, or mail. Upon receipt of this warranty registration, Mercury Marine will record the registration.

A copy of the warranty registration should be provided to you by your selling dealer.

NOTE: Registration lists must be maintained by Mercury Marine and any dealer on marine products sold in the United States, should a safety recall notification under the Federal Safety Act be required.

You may change your address at any time, including at time of warranty claim, by calling Mercury Marine or sending a letter or fax with your name, old address, new address, and engine serial number to Mercury Marine's warranty registration department. Your dealer can also process this change of information.

Mercury Marine

Attn: Warranty Registration Department

W6250 W. Pioneer Road

P.O. Box 1939

Fond du Lac, WI 54936-1939

920-929-5054

Fax +1 920 929 5893

OUTSIDE UNITED STATES AND CANADA

For products purchased outside the United States and Canada, contact the distributor in your country, or the Marine Power Service Center closest to you.

Transfer of Warranty

UNITED STATES AND CANADA

The limited warranty is transferable to a subsequent purchaser, but only for the remainder of the unused portion of the limited warranty. This will not apply to products used for commercial applications.

MART000349

WARRANTY INFORMATION

To transfer the warranty to the subsequent owner, send or fax a copy of the bill of sale or purchase agreement, new owner's name, address, and engine serial number to Mercury Marine's warranty registration department. In the United States and Canada, mail to:

Mercury Marine
Attn: Warranty Registration Department
W6250 W. Pioneer Road
P.O. Box 1939
Fond du Lac, WI 54936-1939
920-929-5054
Fax +1 920 929 5893

Upon processing the transfer of warranty, Mercury Marine will record the new owner's information.

There is no charge for this service.

OUTSIDE THE UNITED STATES AND CANADA

For products purchased outside the United States and Canada, contact the distributor in your country, or the Marine Power Service Center closest to you.

Transfer of Mercury Product Protection (Extended Service Coverage) Plan United States and Canada

The remaining coverage period of the Product Protection Plan is transferable to the subsequent purchaser of the engine within thirty (30) days from the date of sale. Contracts not transferred within thirty (30) days of the subsequent purchase will no longer be valid and the product will no longer be eligible for coverage under the terms of the contract.

To transfer the plan to the subsequent owner, contact Mercury Product Protection or an authorized dealer to receive a Request for Transfer form. Submit to Mercury Product Protection a receipt/bill of sale, a completed Request of Transfer form, and a check payable to Mercury Marine in the amount of \$50.00 (per engine) to cover the transfer fee.

Plan coverage is not transferable from one product to another product or for non-eligible applications.

The Certified Pre-Owned engine plans are not transferable.

WARRANTY INFORMATION

For help or assistance, contact Mercury Product Protection Department at 1-888-427-5373 from 7:30 a.m. to 4:30 p.m. CST, Monday-Friday or email mpp_support@mercmarine.com.

Outboard Limited Warranty

UNITED STATES, CANADA, EUROPE, MIDDLE EAST, AFICA, AND THE CONFEDERATION OF INDEPENDENT STATES

WHAT IS COVERED: Mercury Marine warrants its new products to be free of defects in material and workmanship during the period described below.

DURATION OF COVERAGE: This Limited Warranty provides coverage for three (3) years from the date the product is first sold to a recreational use retail purchaser, or the date on which the product is first put into service, whichever occurs first. Commercial users of these products receive warranty coverage of one (1) year from the date of first retail sale, or one (1) year from the date on which the product was first put into service, whichever occurs first. Commercial use is defined as any work or employment related use of the product, or any use of the product which generates income, for any part of the warranty period, even if the product is only occasionally used for such purposes. The repair or replacement of parts, or the performance of service under this warranty, does not extend the life of this warranty beyond its original expiration date. Unexpired warranty coverage can be transferred from one recreational use customer to a subsequent recreational use customer upon proper reregistration of the product. Unexpired warranty coverage cannot be transferred either to or from a commercial use customer. Warranty coverage may be terminated for used repossessed product; or product purchased at auction, from a salvage yard, or from an insurance company.

WARRANTY INFORMATION

CONDITIONS THAT MUST BE MET IN ORDER TO OBTAIN WARRANTY COVERAGE: Warranty coverage is available only to retail customers that purchase from a Dealer authorized by Mercury Marine to distribute the product in the country in which the sale occurred, and then only after the Mercury Marine specified predelivery inspection process is completed and documented. Warranty coverage becomes available upon proper registration of the product by the authorized dealer. Inaccurate warranty registration information regarding recreational use, or subsequent change of use from recreational to commercial (unless properly reregistered) may void the warranty at the sole discretion of Mercury Marine. Routine maintenance outlined in the Operation and Maintenance Manual must be timely performed in order to maintain warranty coverage. Mercury Marine reserves the right to make warranty coverage contingent upon proof of proper maintenance.

WHAT MERCURY WILL DO: Mercury's sole and exclusive obligation under this warranty is limited to, at our option, repairing a defective part, replacing such part or parts with new or Mercury Marine certified remanufactured parts, or refunding the purchase price of the Mercury product. Mercury reserves the right to improve or modify products from time to time without assuming an obligation to modify products previously manufactured.

HOW TO OBTAIN WARRANTY COVERAGE: The customer must provide Mercury with a reasonable opportunity to repair, and reasonable access to the product for warranty service. Warranty claims shall be made by delivering the product for inspection to a Mercury dealer authorized to service the product. If purchaser cannot deliver the product to such a dealer, written notice must be given to Mercury. We will then arrange for the inspection and any covered repair. Purchaser, in that case, shall pay for all related transportation charges and/or travel time. If the service provided is not covered by this warranty, purchaser shall pay for all related labor and material, and any other expenses associated with that service. Purchaser shall not, unless requested by Mercury, ship the product or parts of the product directly to Mercury. Proof of registered ownership must be presented to the dealer at the time warranty service is requested in order to obtain coverage.

WARRANTY INFORMATION

WHAT IS NOT COVERED: This limited warranty does not cover routine maintenance items, tune-ups, adjustments, normal wear and tear, damage caused by abuse, abnormal use, use of a propeller or gear ratio that does not allow the engine to run in its recommended wide-open throttle RPM range (see the Operation and Maintenance Manual), operation of the product in a manner inconsistent with the recommended operation/duty cycle section of the Operation and Maintenance Manual, neglect, accident, submersion, improper installation (proper installation specifications and techniques are set forth in the Installation instructions for the product), improper service, use of an accessory or part not manufactured or sold by us, jet pump impellers and liners, operation with fuels, oils or lubricants which are not suitable for use with the product (see the Operation and Maintenance Manual), alteration or removal of parts, water entering the engine through the fuel intake, air intake or exhaust system, or damage to the product from insufficient cooling water caused by blockage of the cooling system by a foreign body, running the engine out of water, mounting the engine too high on the transom, or running the boat with the engine trimmed out too far. Use of the product for racing or other competitive activity, or operating with a racing type lower unit, at any point, even by a prior owner of the product, voids the warranty.

Expenses related to haul-out, launch, towing, storage, telephone, rental, inconvenience, slip fees, insurance coverage, loan payments, loss of time, loss of income, or any other type of incidental or consequential damages are not covered by this warranty. Also, expenses associated with the removal and/or replacement of boat partitions or material caused by boat design for access to the product are not covered by this warranty.

No individual or entity, including Mercury Marine authorized dealers, has been given authority by Mercury Marine to make any affirmation, representation or warranty regarding the product, other than those contained in this limited warranty, and if made, shall not be enforceable against Mercury Marine.

WARRANTY INFORMATION

For additional information regarding events and circumstances covered by this warranty, and those that are not, see the Warranty Coverage section of the Operation and Maintenance Manual, incorporated by reference into this warranty.

DISCLAIMERS AND LIMITATIONS:

THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. TO THE EXTENT THAT THEY CANNOT BE DISCLAIMED, THE IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE LIFE OF THE EXPRESS WARRANTY. INCIDENTAL AND CONSEQUENTIAL DAMAGES ARE EXCLUDED FROM COVERAGE UNDER THIS WARRANTY. SOME STATES/COUNTRIES DO NOT ALLOW FOR THE DISCLAIMERS, LIMITATIONS AND EXCLUSIONS IDENTIFIED ABOVE, AS A RESULT, THEY MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER LEGAL RIGHTS WHICH VARY FROM STATE TO STATE AND COUNTRY TO COUNTRY.

3 Year Limited Warranty Against Corrosion

WHAT IS COVERED: Mercury Marine warrants that each new Mercury, Mariner, Mercury Racing, Sport Jet, M² Jet Drive, Tracker by Mercury Marine Outboard, Mercury MerCruiser Inboard or Sterndrive Engine (Product) will not be rendered inoperative as a direct result of corrosion for the period of time described below.

DURATION OF COVERAGE: This limited corrosion warranty provides coverage for three (3) years from either the date the product is first sold, or the date on which the product is first put into service, whichever occurs first. The repair or replacement of parts, or the performance of service under this warranty, does not extend the life of this warranty beyond its original expiration date.

Unexpired warranty coverage can be transferred to subsequent (noncommercial use) purchaser upon proper reregistration of the product.

WARRANTY INFORMATION

CONDITIONS THAT MUST BE MET IN ORDER TO OBTAIN WARRANTY COVERAGE: Warranty coverage is available only to retail customers that purchase from a Dealer authorized by Mercury Marine to distribute the product in the country in which the sale occurred, and then only after the Mercury Marine specified pre-delivery inspection process is completed and documented. Warranty coverage becomes available upon proper registration of the product by the authorized dealer. Corrosion prevention devices specified in the Operation and Maintenance Manual must be in use on the boat, and routine maintenance outlined in the Operation and Maintenance Manual must be timely performed (including, without limitation, the replacement of sacrificial anodes, use of specified lubricants, and touch-up of nicks and scratches) in order to maintain warranty coverage. Mercury Marine reserves the right to make warranty coverage contingent upon proof of proper maintenance.

WHAT MERCURY WILL DO: Mercury's sole and exclusive obligation under this warranty is limited to, at our option, repairing a corroded part, replacing such part or parts with new or Mercury Marine certified remanufactured parts, or refunding the purchase price of the Mercury product. Mercury reserves the right to improve or modify products from time to time without assuming an obligation to modify products previously manufactured.

HOW TO OBTAIN WARRANTY COVERAGE: The customer must provide Mercury with a reasonable opportunity to repair, and reasonable access to the product for warranty service. Warranty claims shall be made by delivering the product for inspection to a Mercury dealer authorized to service the product. If purchaser cannot deliver the product to such a dealer, written notice must be given to Mercury. We will then arrange for the inspection and any covered repair. Purchaser, in that case, shall pay for all related transportation charges and/or travel time. If the service provided is not covered by this warranty, purchaser shall pay for all related labor and material, and any other expenses associated with that service. Purchaser shall not, unless requested by Mercury, ship the product or parts of the product directly to Mercury. Proof of registered ownership must be presented to the dealer at the time warranty service is requested in order to obtain coverage.

WARRANTY INFORMATION

WHAT IS NOT COVERED: This limited warranty does not cover electrical system corrosion; corrosion resulting from damage, corrosion which causes purely cosmetic damage, abuse, or improper service; corrosion to accessories, instruments, steering systems; corrosion to factory installed jet drive unit; damage due to marine growth; product sold with less than a one year limited Product warranty; replacement parts (parts purchased by customer); products used in a commercial application.

Commercial use is defined as any work or employment related use of the product, or any use of the product which generates income, for any part of the warranty period, even if the product is only occasionally used for such purposes.

Corrosion damage caused by stray electrical currents (onshore power connections, nearby boats, submerged metal) is not covered by this corrosion warranty and should be protected against by the use of a corrosion protection system, such as the Mercury Precision Parts or Quicksilver MerCathode system and/or Galvanic Isolator. Corrosion damage caused by improper application of copper base antifouling paints is also not covered by this limited warranty. If antifouling protection is required, Tri-Butyl-Tin-Adipate (TBTA) base antifouling paints are recommended on Outboard and MerCruiser boating applications. In areas where TBTA base paints are prohibited by law, copper base paints can be used on the hull and transom. Do not apply paint to the outboard or MerCruiser product. In addition, care must be taken to avoid an electrical interconnection between the warranted product and the paint. For MerCruiser product, an unpainted gap of at least 38 mm (1.5 in.) should be left around the transom assembly. Refer to the Operation and Maintenance Manual for additional details.

For additional information regarding events and circumstances covered by this warranty, and those that are not, see the Warranty Coverage section of the Operation and Maintenance Manual, incorporated by reference into this warranty.

WARRANTY INFORMATION

DISCLAIMERS AND LIMITATIONS:

THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. TO THE EXTENT THAT THEY CANNOT BE DISCLAIMED, THE IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE LIFE OF THE EXPRESS WARRANTY. INCIDENTAL AND CONSEQUENTIAL DAMAGES ARE EXCLUDED FROM COVERAGE UNDER THIS WARRANTY. SOME STATES/COUNTRIES DO NOT ALLOW FOR THE DISCLAIMERS, LIMITATIONS AND EXCLUSIONS IDENTIFIED ABOVE, AS A RESULT, THEY MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER LEGAL RIGHTS WHICH VARY FROM STATE TO STATE AND COUNTRY TO COUNTRY.

Warranty Coverage and Exclusions

The purpose of this section is to help eliminate some of the more common misunderstandings regarding warranty coverage. The following information explains some of the types of services that are not covered by warranty. The provisions set forth following have been incorporated by reference into the Three Year Limited Warranty Against Corrosion Failure, the International Limited Outboard Warranty, and the United States and Canada Limited Outboard Warranty.

Keep in mind that warranty covers repairs that are needed within the warranty period because of defects in material and workmanship. Installation errors, accidents, normal wear, and a variety of other causes that affect the product are not covered.

Warranty is limited to defects in material or workmanship, but only when the consumer sale is made in the country to which distribution is authorized by us.

Should you have any questions concerning warranty coverage, contact your authorized dealer. They will be pleased to answer any questions that you may have.

GENERAL EXCLUSIONS FROM WARRANTY

1. Minor adjustments and tune-ups, including checking, cleaning, or adjusting spark plugs, ignition components, carburetor settings, filters, belts, controls, and checking lubrication made in connection with normal services.

WARRANTY INFORMATION

2. Factory installed jet drive units - Specific parts excluded from the warranty are: the jet drive impeller and jet drive liner damaged by impact or wear, and water damaged driveshaft bearings as a result of improper maintenance.
3. Damage caused by neglect, lack of maintenance, accident, abnormal operation, or improper installation or service.
4. Haul-out, launch, towing charges, removal and/or replacement of boat partitions or material because of boat design for necessary access to the product, all related transportation charges and/or travel time, etc. Reasonable access must be provided to the product for warranty service. Customer must deliver product to an authorized dealer.
5. Additional service work requested by customer other than that necessary to satisfy the warranty obligation.
6. Labor performed by other than an authorized dealer may be covered only under the following circumstances: when performed on emergency basis (providing there are no authorized dealers in the area who can perform the work required or have no facilities to haul-out, etc., and prior factory approval has been given to have the work performed at this facility).
7. All incidental and/or consequential damages (storage charges, telephone or rental charges of any type, inconvenience or loss of time or income) are the owner's responsibility.
8. Use of other than Mercury Precision or Quicksilver parts when making warranty repairs.
9. Oils, lubricants, or fluids changed as a matter of normal maintenance is customer's responsibility unless loss or contamination of same is caused by product failure that would be eligible for warranty consideration.
10. Participating in or preparing for racing or other competitive activity or operating with a racing type lower unit.
11. Engine noise does not necessarily indicate a serious engine problem. If diagnosis indicates a serious internal engine condition which could result in a failure, condition responsible for noise should be corrected under the warranty.

MART000358

WARRANTY INFORMATION

12. Lower unit and/or propeller damage caused by striking a submerged object is considered a marine hazard.
13. Water entering engine through the fuel intake, air intake, or exhaust system or submersion.
14. Failure of any parts caused by lack of cooling water, which results from starting motor out of water, foreign material blocking inlet holes, motor being mounted too high, or trimmed too far out.
15. Use of fuels and lubricants which are not suitable for use with or on the product. Refer to the **Maintenance** section.
16. Our limited warranty does not apply to any damage to our products caused by the installation or use of parts and accessories which are not manufactured or sold by us. Failures which are not related to the use of those parts or accessories are covered under warranty if they otherwise meet the terms of the limited warranty for that product.

U.S. EPA Emissions Limited Warranty

Consistent with the obligations created by 40 CFR Part 1045, Subpart B, Mercury Marine provides a five year or 175 hours of engine use, whichever occurs first, to the retail customer, that the engine is designed, built, and equipped so as to conform at the time of sale with applicable regulations under section 213 of the Clean Air Act, and that the engine is free from defects in materials and workmanship which cause the engine to fail to conform with applicable regulations. This emission-related warranty covers all the components listed in the **Emission Control System Components**.

Emission Control System Components

The EPA and California emission-related warranty covers all the following list of components:

COMPONENTS OF THE EMISSIONS CONTROL SYSTEM:

1. Fuel metering system
 - a. Carburetor and internal parts (and/or pressure regulator or fuel injection system)
 - b. Cold start enrichment system

MART000359

WARRANTY INFORMATION

- c. Intake valves
- 2. Air induction system
 - a. Intake manifold
 - b. Turbocharger or supercharger systems (where applicable)
- 3. Ignition system
 - a. Spark plugs
 - b. Magneto or electronic ignition system
 - c. Spark advance/retard system
 - d. Ignition coil and/or control module
 - e. Ignition wires
- 4. Lubrication system (4-Stroke engines excluded)
 - a. Oil pump and internal parts
 - b. Oil injectors
 - c. Oil meter
- 5. Exhaust system
 - a. Exhaust manifold
 - b. Exhaust valves
- 6. Miscellaneous items used in above systems
 - a. Hoses, clamps, fittings, tubing, sealing gaskets or devices, and mounting hardware
 - b. Pulleys, belts, and idlers
 - c. Vacuum, temperature, check and time sensitive valves and switches
 - d. Electronic controls

The emission-related warranty does not cover components whose failure would not increase an engine's emissions on any regulated pollutant.

WARRANTY INFORMATION

California Emissions Limited Warranty

The California Air Resources Board has promulgated air emission regulations for outboard engines. The regulations apply to all outboard engines sold to retail consumers in California, and which were manufactured for the 2001 model year and later. Mercury Marine, in compliance with those regulations, provides this limited warranty for the emission control systems (see the components listed in the **Emission Control System Components**), and further warrants that the outboard engine was designed, built, and equipped to conform with all applicable regulations adopted by the California Air Resources Board pursuant to its authority in Chapters 1 and 2, Part 5, Division 26 of the Health and Safety Code. For information regarding the limited warranty for the nonemission-related components of the outboard, please see the limited warranty statement for your outboard.

WHAT IS COVERED: Mercury Marine warrants the components of the emissions control systems (see the components listed in the **Emission Control System Components**) of its new, 2001 model year and later outboards, sold by a California dealer to retail customers residing in California, to be free from defects in material or workmanship, that cause the failure of a warranted part to be identical in all material respects to that part as described in the application of Mercury Marine for certification from the California Air Resources Board, for the period of time, and under the conditions, identified below. The cost to diagnose a warranty failure is covered under the warranty (if the warranty claim is approved). Damage to other engine components caused by the failure of a warranted part will also be repaired under warranty.

WARRANTY INFORMATION

DURATION OF COVERAGE: This limited warranty provides coverage for the components of the emissions control systems of new, 2001 model year and later outboards, sold to retail customers in California for four (4) years from either the date the product is first sold, or first put into service, whichever occurs first, or the accumulation of 250 hours of engine operation (as determined by the engine's hour meter, if any). Emission-related normal maintenance items such as spark plugs and filters, that are on the warranted parts list, are warranted up to their first required replacement interval only. Refer to **Emission Control System Components and Maintenance Schedule**. The repair or replacement of parts, or the performance of service under this warranty, does not extend the life of this warranty beyond its original expiration date. Unexpired warranty coverage can be transferred to a subsequent purchaser. (See instructions on transfer of warranty.)

HOW TO OBTAIN WARRANTY COVERAGE: The customer must provide Mercury with a reasonable opportunity to repair and reasonable access to the product for warranty service. Warranty claims shall be made by delivering the product for inspection to a Mercury dealer authorized to service the product. If purchaser cannot deliver the product to such a dealer, please notify Mercury Marine and Mercury will then arrange for the inspection and any covered repair. Purchaser, in that case, shall pay for all related transportation charges and/or travel time. If the service provided is not covered by this warranty, purchaser shall pay for all related labor and material, and any other expenses associated with that service. Purchaser shall not, unless requested by Mercury, ship the product or parts of the product directly to Mercury.

WHAT MERCURY WILL DO: Mercury Marine's sole and exclusive obligation under this warranty is limited to, at our expense and at our option, repairing or replacing defective parts with new or Mercury Marine certified remanufactured parts, or refunding the purchase price of the Mercury product. Mercury reserves the right to improve or modify products from time to time without assuming an obligation to modify products previously manufactured.

WARRANTY INFORMATION

WHAT IS NOT COVERED: This limited warranty does not cover routine maintenance items, tune-ups, adjustments, normal wear and tear, damage caused by abuse, abnormal use, use of a propeller or gear ratio that does not allow the engine to run in its recommended wide-open throttle RPM range (see **General Information - Specifications**), operation of the product in a manner inconsistent with the recommended operation procedures, neglect, accident, submersion, improper installation (proper installation specifications and techniques are set forth in the installation instructions for the product), improper service, use of an accessory or part not manufactured or sold by us, jet pump impellers and liners, operation with fuels, oils, or lubricants which are not suitable for use with the product (see **Fuel and Oil**), alteration or removal of parts, or water entering the engine through the fuel intake, air intake or exhaust system. Use of the product for racing or other competitive activity, or operating with a racing type lower unit, at any point, even by a prior owner of the product, voids the warranty.

Expenses related to haul-out, launch, towing, storage, telephone, rental, inconvenience, slip fees, insurance coverage, loan payments, loss of time, loss of income, or any other type of incidental or consequential damages are not covered by this warranty. Also, expenses associated with the removal and/or replacement of boat partitions or material caused by boat design for access to the product are not covered by this warranty.

Nonwarranty maintenance, replacement, or repair of emission control devices and systems may be performed by any marine engine repair establishment or individual. The use of non-Mercury parts for nonwarranty maintenance or repairs will not be grounds for disallowing other warranty work. The use of add-on (as defined at section 1900 (b)(1) and (b)(10) of Title 13 of the California Code of Regulations) or modified parts not exempted by the California Air Resources Board may be grounds for disallowing a warranty claim, at the discretion of Mercury Marine. Failures of warranted parts caused by the use of a nonexempted add-on or modified part will not be covered.

WARRANTY INFORMATION

DISCLAIMERS AND LIMITATIONS

THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. TO THE EXTENT THAT THEY CANNOT BE DISCLAIMED, THE IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE LIFE OF THE EXPRESS WARRANTY. INCIDENTAL AND CONSEQUENTIAL DAMAGES ARE EXCLUDED FROM COVERAGE UNDER THIS WARRANTY. SOME STATES/COUNTRIES DO NOT ALLOW FOR THE DISCLAIMERS, LIMITATIONS AND EXCLUSIONS IDENTIFIED ABOVE, AS A RESULT, THEY MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER LEGAL RIGHTS WHICH VARY FROM STATE TO STATE AND COUNTRY TO COUNTRY.

If you have any questions regarding your warranty rights and responsibilities, you should contact Mercury Marine at 1-920-929-5040.

California Air Resources Board Explanation of Your California Emission Control Warranty Statement

YOUR WARRANTY RIGHTS AND OBLIGATIONS: The California Air Resources Board is pleased to explain the emission control system warranty on your 2001 model year and later outboard engine. In California, new outboard engines must be designed, built, and equipped to meet the State's stringent anti-smog standards. Mercury Marine must warrant the emission control system on your outboard engine for the periods of time listed below, provided there has been no abuse, neglect, or improper maintenance of your outboard engine.

Your emission control system may include parts such as the carburetor or fuel injection system, the ignition system, and catalytic converter. Also included may be hoses, belts, connectors, and other emission-related assemblies.

Where a warrantable condition exists, Mercury Marine will repair your outboard engine at no cost to you, including diagnosis, parts, and labor.

WARRANTY INFORMATION

MANUFACTURER'S WARRANTY COVERAGE: Select emission control parts from model year 2001 and later outboard engines are warranted for four (4) years, or for 250 hours of use, whichever occurs first. However, warranty coverage based on the hourly period is only permitted for outboard engines and personal watercraft equipped with appropriate hour meters or their equivalent. If any emission-related part on your engine is defective under warranty, the part will be repaired or replaced by Mercury Marine.

OWNER'S WARRANTY RESPONSIBILITIES: As the outboard engine owner, you are responsible for the performance of the required maintenance listed in the **Maintenance** section. Mercury Marine recommends that you retain all receipts covering maintenance on your outboard engine, but Mercury Marine cannot deny warranty solely for the lack of receipts or your failure to ensure the performance of all scheduled maintenance.

As the outboard engine owner, you should, however, be aware that Mercury Marine may deny you warranty coverage if your outboard engine or a part has failed due to abuse, neglect, improper maintenance, or unapproved modifications.

You are responsible for presenting your outboard to a Mercury dealer authorized to service the product as soon as a problem exists. The warranty repairs will be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact Mercury Marine at 1-920-929-5040.

Emission Certification Star Label

Outboards are labeled on the cowl with one of the following star labels.

The symbol for a cleaner marine engine means:

Cleaner air and water - for a healthier lifestyle and environment.

Better fuel economy - burns up to 30–40 percent less gas and oil than conventional carbureted two-stroke engines, saving money and resources.

WARRANTY INFORMATION

Longer emission warranty - protects consumer for worry-free operation.

	<p>One Star - Low Emission</p> <p>The One Star label identifies engines that meet the Air Resources Board's 2001 exhaust emissions standards. Engines meeting these standards have 75% lower emissions than conventional carbureted two-stroke engines. These engines are equivalent to the U.S. EPA's 2006 standards for marine engines.</p>
	<p>Two Stars - Very Low Emission</p> <p>The Two Star label identifies engines that meet the Air Resources Board's Personal Watercraft and Outboard marine engine 2004 exhaust emissions standards. Engines meeting these standards have 20% lower emissions than One Star - Low Emission engines.</p>
	<p>Three Stars - Ultra Low Emission</p> <p>The Three Star label identifies engines that meet the Air Resources Board's Personal Watercraft and Outboard marine engine 2008 exhaust emissions standards or the Sterndrive and Inboard marine engine 2003-2008 exhaust emission standards. Engines meeting these standards have 65% lower emissions than One Star - Low Emission engines.</p>
	<p>Four Stars - Super Ultra Low Emission</p> <p>The Four Star label identifies engines that meet the Air Resources Board's Sterndrive and Inboard marine engine 2009 exhaust emission standards. Personal Watercraft and Outboard marine engines may also comply with these standards. Engines meeting these standards have 90% lower emissions than One Star - Low Emission engines.</p>

GENERAL INFORMATION

Boater's Responsibilities

The operator (driver) is responsible for the correct and safe operation of the boat and safety of its occupants and general public. It is strongly recommended that each operator (driver) read and understand this entire manual before operating the outboard.

Be sure at least one additional person onboard is instructed in the basics of starting and operating the outboard and boat handling in case the driver is unable to operate the boat.

Before Operating Your Outboard

Read this manual carefully. Learn how to operate your outboard properly. If you have any questions, contact your dealer.

Safety and operating information that is practiced, along with using good common sense, can help prevent personal injury and product damage.

This manual as well as safety labels posted on the outboard use the following safety alerts to draw your attention to special safety instructions that should be followed.

DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates a situation which, if not avoided, could result in engine or major component failure.

GENERAL INFORMATION

Boat Horsepower Capacity

▲ WARNING

Exceeding the boat's maximum horsepower rating can cause serious injury or death. Overpowering the boat can affect boat control and flotation characteristics or break the transom. Do not install an engine that exceeds the boat's maximum power rating.

Do not overpower or overload your boat. Most boats will carry a required capacity plate indicating the maximum acceptable power and load as determined by the manufacturer following certain federal guidelines. If in doubt, contact your dealer or the boat manufacturer.

U.S. COAST GUARD CAPACITY	
MAXIMUM HORSEPOWER	XXX
MAXIMUM PERSON CAPACITY (POUNDS)	XXX
MAXIMUM WEIGHT CAPACITY	XXX

26777

High-Speed and High-Performance Boat Operation

If your outboard is to be used on a high-speed or high-performance boat with which you are unfamiliar, we recommend that you never operate it at its high speed capability without first requesting an initial orientation and familiarization demonstration ride with your dealer or an operator experienced with your boat/outboard combination. For additional information, obtain a copy of our **Hi-Performance Boat Operation** booklet from your dealer, distributor, or Mercury Marine.

Propeller Selection

The propeller on your outboard is one of the most important components in the propulsion system. An improper propeller choice can significantly affect the performance of your boat and could result in damage to the outboard engine.

MART000368

GENERAL INFORMATION

When choosing a propeller, a full selection of aluminum and stainless steel propellers specifically designed for your outboard are available through Mercury Marine. To view the entire product offering and find the correct propeller that is best suited for your application, visit www.mercmarinepropellers.com or see your local authorized Mercury dealer.

SELECTING THE CORRECT PROPELLER

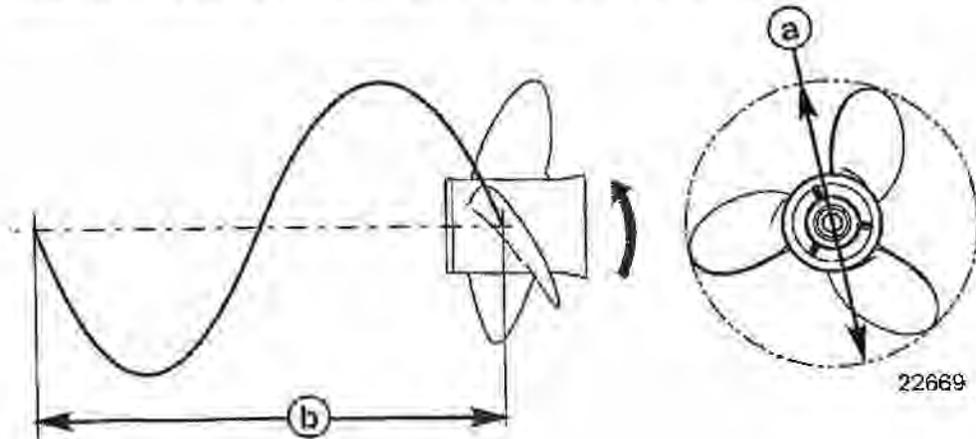
An accurate tachometer for measuring engine speed is important in choosing the correct propeller.

Choose a propeller for your boating application that will allow the engine to operate within the specified full throttle operating range. When operating the boat at full throttle under normal load conditions, the engine RPM should be in the upper half of the recommended full throttle RPM range. Refer to **Specifications**. If engine RPM is above that range, select a propeller of increased pitch in order to reduce engine RPM. If engine RPM is below the recommended range, select a propeller of reduced pitch to increase engine RPM.

IMPORTANT: To ensure proper fit, and performance, Mercury Marine recommends the use of Mercury or Quicksilver branded propellers and mounting hardware.

GENERAL INFORMATION

Propellers are designated by the diameter, pitch, number of blades, and material. The diameter and pitch are stamped (cast) into the side or the end of the propeller hub. The first number represents the diameter of the propeller and the second number represents the pitch. For example, 14x19 represents a propeller with a 14 inch diameter and 19 inches of pitch.



- a - Diameter
- b - Pitch - Travel during one revolution

The following are some propeller basics that will help you determine the correct propeller for your boating application.

Diameter - The diameter is the distance across the imaginary circle that is made when the propeller rotates. The correct diameter for each propeller has been predetermined for the design of your outboard. However, when more than one diameter is available for the same pitch, use a larger diameter for heavy boat applications and a smaller diameter for lighter applications.

Pitch - The pitch is the theoretical distance, in inches, that a propeller travels forward during one revolution. Pitch can be thought of similar to gears in a car. The lower the gear, the faster the car will accelerate, but with lower overall top speed. Likewise, a lower pitch propeller will accelerate quickly, but top-end speed will be reduced. The higher the propeller pitch the faster the boat will usually go; though typically slowing acceleration.

GENERAL INFORMATION

Determining the Correct Pitch size - First, check the full throttle RPM under normal load condition. If the full throttle RPM is within the recommended range, select a replacement or upgrade propeller with the same pitch as the current propeller.

- Adding 1 inch of pitch will reduce the full throttle RPM by 150 to 200
- Subtracting 1 inch of pitch will increase full throttle RPM by 150 to 200
- Upgrading from a 3-blade propeller to a 4-blade propeller will generally decrease full throttle RPM by 50 to 100

IMPORTANT: Avoid damage to the engine. Never use a propeller which allows the engine to exceed the recommended full throttle RPM range when under normal full throttle operation.

PROPELLER MATERIAL

Most propellers manufactured by Mercury Marine are made from either aluminum or stainless steel. Aluminum is suitable for general purpose use and is standard equipment on many new boats. Stainless steel is over five times more durable than aluminum and typically provides performance gains in acceleration and top end speed due to design efficiencies. Stainless steel propellers also come in a larger variety of sizes and styles that allow you to dial in the ultimate performance for your boat.

3 BLADE VS. 4 BLADE

Available in many sizes of both aluminum and stainless, 3 and 4-blade propellers have unique performance characteristics. In general, 3-blade propellers offer good all around performance and higher top speed than 4-blade propellers. However, 4-blade propellers are usually faster to plane and more efficient at cruising speeds, but lack the top end speed of a 3-blade propeller.

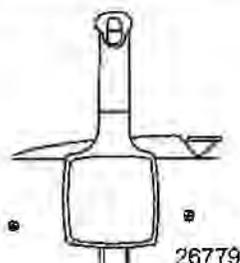
Outboard Remote Control Models

The remote control connected to your outboard must be equipped with a start in neutral only protection device. This prevents the engine from starting when the shift is actuated in any position other than neutral.

GENERAL INFORMATION

⚠ WARNING

Starting the engine with the drive in gear can cause serious injury or death. Never operate a boat that does not have a neutral-safety-protection device.

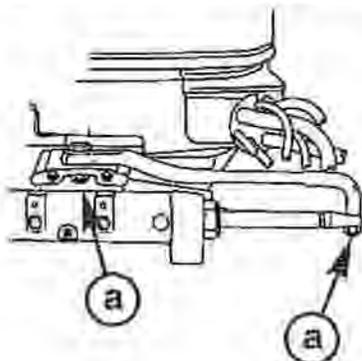


Remote Steering Notice

The steering link rod that connects the steering cable to the engine must be fastened utilizing self-locking nuts. These self-locking nuts must never be replaced with common nuts (non-locking) as they will work loose and vibrate off, freeing the link rod to disengage.

⚠ WARNING

Improper fasteners or improper installation procedures can result in loosening or disengagement of the steering link rod. This can cause a sudden, unexpected loss of boat control, resulting in serious injury or death due to occupants being thrown within or out of the boat. Always use required components and follow instructions and torque procedures.



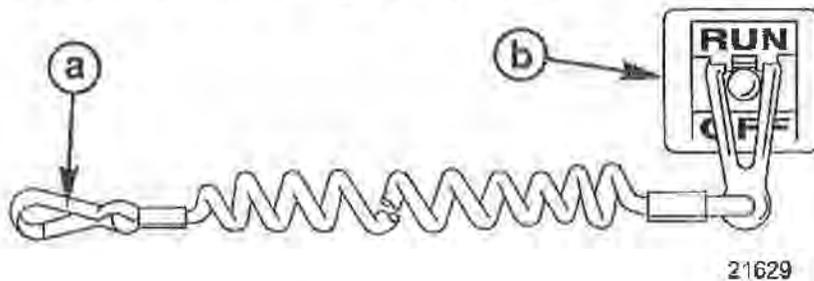
a - Self-locking nuts

GENERAL INFORMATION

Lanyard Stop Switch

The purpose of a lanyard stop switch is to turn off the engine when the operator moves far enough away from the operator's position (as in accidental ejection from the operator's position) to activate the switch. Tiller handle outboards and some remote control units are equipped with a lanyard stop switch. A lanyard stop switch can be installed as an accessory - generally on the dashboard or side adjacent to the operator's position.

The lanyard is a cord usually 122–152 cm (4–5 feet) in length when stretched out, with an element on one end made to be inserted into the switch and a snap on the other end for attaching to the operator. The lanyard is coiled to make its at-rest condition as short as possible to minimize the likelihood of lanyard entanglement with nearby objects. Its stretched-out length is made to minimize the likelihood of accidental activation should the operator choose to move around in an area close to the normal operator's position. If it is desired to have a shorter lanyard, wrap the lanyard around the operator's wrist or leg, or tie a knot in the lanyard.



- a** - Lanyard cord
- b** - Lanyard stop switch

Read the following Safety Information before proceeding.

GENERAL INFORMATION

Important Safety Information: The purpose of a lanyard stop switch is to stop the engine when the operator moves far enough away from the operator's position to activate the switch. This would occur if the operator accidentally falls overboard or moves within the boat a sufficient distance from the operator's position. Falling overboard and accidental ejections are more likely to occur in certain types of boats such as low sided inflatables, bass boats, high performance boats, and light, sensitive handling fishing boats operated by a hand tiller. Falling overboard and accidental ejections are also likely to occur as a result of poor operating practices such as sitting on the back of the seat or gunwale at planing speeds, standing at planing speeds, sitting on elevated fishing boat decks, operating at planing speeds in shallow or obstacle infested waters, releasing your grip on a steering wheel or tiller handle that is pulling in one direction, drinking alcohol or consuming drugs, or daring high speed boat maneuvers.

While activation of the lanyard stop switch will stop the engine immediately, a boat will continue to coast for some distance depending upon the velocity and degree of any turn at shut down. However, the boat will not complete a full circle. While the boat is coasting, it can cause injury to anyone in the boat's path as seriously as the boat would when under power.

We strongly recommend that other occupants be instructed on proper starting and operating procedures should they be required to operate the engine in an emergency (e.g. if the operator is accidentally ejected).

WARNING

If the operator falls out of the boat, stop the engine immediately to reduce the possibility of serious injury or death from being struck by the boat. Always properly connect the operator to the stop switch using a lanyard.

WARNING

Avoid serious injury or death from deceleration forces resulting from accidental or unintended stop switch activation. The boat operator should never leave the operator's station without first disconnecting the stop switch lanyard from the operator.

MART000374

GENERAL INFORMATION

Accidental or unintended activation of the switch during normal operation is also a possibility. This could cause any, or all, of the following potentially hazardous situations:

- Occupants could be thrown forward due to unexpected loss of forward motion - a particular concern for passengers in the front of the boat who could be ejected over the bow and possibly struck by the gearcase or propeller.
- Loss of power and directional control in heavy seas, strong current, or high winds.
- Loss of control when docking.

Protecting People in the Water

WHILE YOU ARE CRUISING

It is very difficult for a person standing or floating in the water to take quick action to avoid a boat heading in his/her direction, even at slow speed.



21604

Always slow down and exercise extreme caution any time you are boating in an area where there might be people in the water.

Whenever a boat is moving (coasting) and the outboard gear shift is in neutral position, there is sufficient force by the water on the propeller to cause the propeller to rotate. This neutral propeller rotation can cause serious injury.

WHILE BOAT IS STATIONARY

▲ WARNING

A spinning propeller, a moving boat, or any solid device attached to the boat can cause serious injury or death to swimmers. Stop the engine immediately whenever anyone in the water is near your boat.

GENERAL INFORMATION

Shift outboard into neutral and shut off the engine before allowing people to swim or be in the water near your boat.

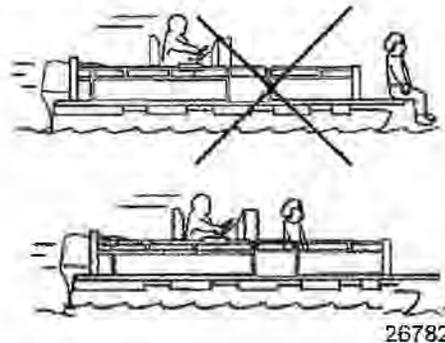
Passenger Safety Message - Pontoon Boats and Deck Boats

Whenever the boat is in motion, observe the location of all passengers. Do not allow any passengers to stand or use seats other than those designated for traveling faster than idle speed. A sudden reduction in boat speed, such as plunging into a large wave or wake, a sudden throttle reduction, or a sharp change of boat direction, could throw them over the front of the boat. Falling over the front of the boat between the two pontoons will position them to be run over by the outboard.

BOATS HAVING AN OPEN FRONT DECK

No one should ever be on the deck in front of the fence while the boat is in motion. Keep all passengers behind the front fence or enclosure.

Persons on the front deck could easily be thrown overboard or persons dangling their feet over the front edge could get their legs caught by a wave and pulled into the water.



▲ WARNING

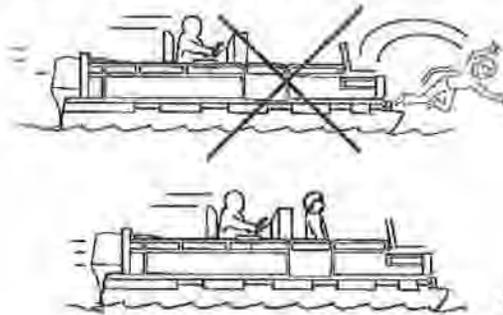
Sitting or standing in an area of the boat not designed for passengers at speeds above idle can cause serious injury or death. Stay back from the front end of deck boats or raised platforms and remain seated while the boat is in motion.

GENERAL INFORMATION

BOATS WITH FRONT MOUNTED, RAISED PEDESTAL FISHING SEATS

Elevated fishing seats are not intended for use when the boat is traveling faster than idle or trolling speed. Sit only in seats designated for traveling at faster speeds.

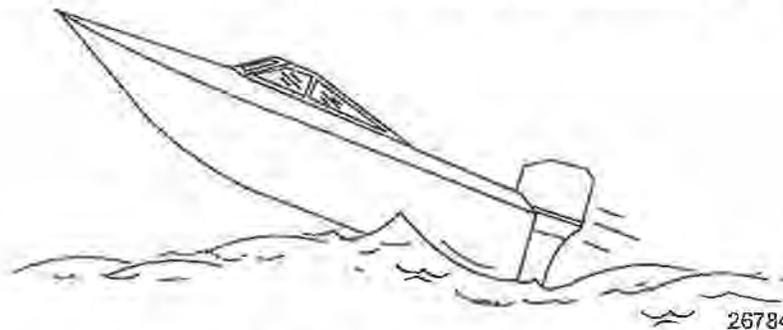
Any unexpected, sudden reduction in boat speed could result in the elevated passenger falling over the front of the boat.



26783

Wave and Wake Jumping

Operating recreational boats over waves and wake is a natural part of boating. However, when this activity is done with sufficient speed to force the boat hull partially or completely out of the water, certain hazards arise, particularly when the boat reenters the water.



26784

The primary concern is the boat changing direction while in the midst of the jump. In such case, the landing may cause the boat to veer violently in a new direction. Such a sharp change in direction can cause occupants to be thrown out of their seats, or out of the boat.

GENERAL INFORMATION

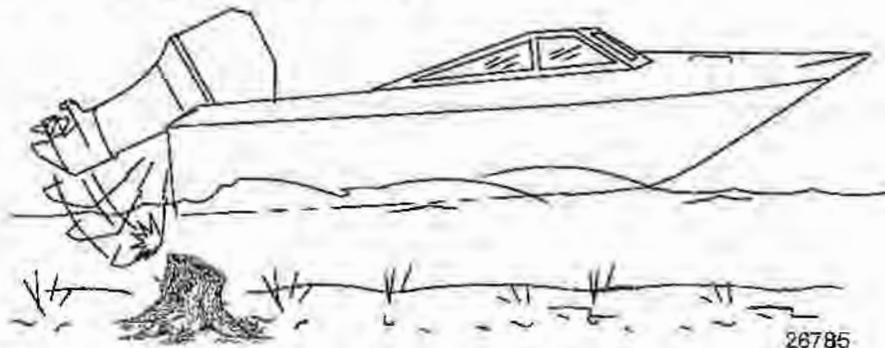
▲ WARNING

Wave or wake jumping can cause serious injury or death from occupants being thrown within or out of the boat. Avoid wave or wake jumping whenever possible.

There is another less common hazardous result from allowing your boat to launch off a wave or wake. If the bow of your boat pitches down far enough while airborne, upon water contact it may penetrate under the water surface and submarine for an instant. This will bring the boat to a nearly instantaneous stop and can send the occupants flying forward. The boat may also steer sharply to one side.

Impact with Underwater Hazards

Reduce speed and proceed with caution whenever you drive a boat in shallow water areas, or in areas where you suspect underwater obstacles may exist which could be struck by the outboard or the boat bottom. **The most important thing you can do to help reduce injury or impact damage from striking a floating or underwater object is to control the boat speed. Under these conditions, boat speed should be kept to a minimum planing speed of 24 to 40 km/h (15 to 25 MPH).**



Striking a floating or underwater object could result in an infinite number of situations. Some of these situations could result in the following:

- Part of the outboard or the entire outboard could break loose and fly into the boat.

GENERAL INFORMATION

- The boat could move suddenly in a new direction. Such a sharp change in direction can cause occupants to be thrown out of their seats or out of the boat.
- A rapid reduction in speed. This will cause occupants to be thrown forward, or even out of the boat.
- Impact damage to the outboard and/or boat.

Keep in mind, the most important thing you can do to help reduce injury or impact damage during an impact is control the boat speed. Boat speed should be kept to a minimum planing speed when driving in waters known to have underwater obstacles.

After striking a submerged object, stop the engine as soon as possible and inspect it for any broken or loose parts. If damage is present or suspected, the outboard should be taken to an authorized dealer for a thorough inspection and necessary repair. The boat should also be checked for any hull fractures, transom fractures, or water leaks.

Operating a damaged outboard could cause additional damage to other parts of the outboard, or could affect control of the boat. If continued running is necessary, do so at greatly reduced speeds.

WARNING

Operating a boat or engine with impact damage can result in product damage, serious injury, or death. If the vessel experiences any form of impact, have an authorized Mercury Marine dealer inspect and repair the vessel or power package.

Exhaust Emissions

BE ALERT TO CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a deadly gas that is present in the exhaust fumes of all internal combustion engines, including the engines that propel boats, and the generators that power boat accessories. By itself, CO is odorless, colorless, and tasteless, but if you can smell or taste engine exhaust, you are inhaling CO.

Early symptoms of carbon monoxide poisoning, which are similar to the symptoms of seasickness and intoxication, include headache, dizziness, drowsiness, and nausea.

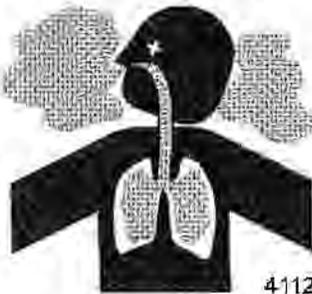
GENERAL INFORMATION

⚠ WARNING

Inhaling engine exhaust gases can result in carbon monoxide poisoning. This can lead to unconsciousness, brain damage, or death. Avoid exposure to carbon monoxide.

Stay clear from exhaust areas when engine is running. Keep the boat well-ventilated while at rest or underway.

STAY CLEAR OF EXHAUST AREAS



Engine exhaust gases contain harmful carbon monoxide. Avoid areas of concentrated engine exhaust gases. When engines are running, keep swimmers away from the boat, and do not sit, lie, or stand on swim platforms or boarding ladders. While underway, do not allow passengers to be positioned immediately behind the boat (platform dragging, teak/body surfing). This dangerous practice not only places a person in an area of high engine exhaust concentration, but also subjects them to the possibility of injury from the boat propeller.

GOOD VENTILATION

Ventilate the passenger area, open side curtains or forward hatches to remove fumes.

Example of desired air flow through the boat:



GENERAL INFORMATION

POOR VENTILATION

Under certain running and/or wind conditions, permanently enclosed or canvas enclosed cabins or cockpits with insufficient ventilation may draw in carbon monoxide. Install one or more carbon monoxide detectors in your boat.

Although the occurrence is rare, on a very calm day, swimmers and passengers in an open area of a stationary boat that contains, or is near, a running engine may be exposed to a hazardous level of carbon monoxide.

1. Examples of poor ventilation while the boat is stationary:



21626

- a - Operating the engine when the boat is moored in a confined space
- b - Mooring close to another boat that has its engine operating

2. Examples of poor ventilation while the boat is moving:



21628

- a - Operating the boat with the trim angle of the bow too high
- b - Operating the boat with no forward hatches open (station wagon effect)

Selecting Accessories for Your Outboard

Genuine Mercury Precision or Quicksilver Accessories have been specifically designed and tested for your outboard. These accessories are available from Mercury Marine dealers.

MART000381

GENERAL INFORMATION

IMPORTANT: Check with your dealer before installing accessories. The misuse of approved accessories or the use of nonapproved accessories can damage the product.

Some accessories not manufactured or sold by Mercury Marine are not designed to be safely used with your outboard or outboard operating system. Acquire and read the installation, operation, and maintenance manuals for all your selected accessories.

Safe Boating Suggestions

In order to safely enjoy the waterways, familiarize yourself with local and other governmental boating regulations and restrictions, and consider the following suggestions.

Use flotation devices. Have an approved personal flotation device of suitable size for each person aboard (it is the law) and have it readily accessible.

Do not overload your boat. Most boats are rated and certified for maximum load (weight) capacities (refer to your boat capacity plate). If in doubt, contact your dealer or the boat's manufacturer.

Perform safety checks and required maintenance. Follow a regular schedule and ensure that all repairs are properly made.

Know and obey all nautical rules and laws of the waterways. Boat operators should complete a boating safety course. Courses are offered in the U.S.A. by 1) the U.S. Coast Guard Auxiliary, 2) the Power Squadron, 3) the Red Cross, and 4) your state boating law enforcement agency. Inquiries may be made to the Boating Hotline, 1-800-368-5647 or the Boat U.S. Foundation information number 1-800-336-BOAT.

Make sure everyone in the boat is properly seated. Do not allow anyone to sit or ride on any part of the boat that was not intended for such use. This includes the back of seats, gunwales, transom, bow, decks, raised fishing seats, any rotating fishing seat, or anywhere that an unexpected acceleration, sudden stopping, unexpected loss of boat control, or sudden boat movement could cause a person to be thrown overboard or into the boat.

Never be under the influence of alcohol or drugs while boating (it is the law). Alcohol or drug use impairs your judgment and greatly reduces your ability to react quickly.

GENERAL INFORMATION

Prepare other boat operators. Instruct at least one other person onboard in the basics of starting and operating the outboard, and boat handling, in case the driver becomes disabled or falls overboard.

Passenger boarding. Stop the engine whenever passengers are boarding, unloading, or are near the back (stern) of the boat. Just shifting the outboard into neutral is not sufficient.

Be alert. The operator of the boat is responsible by law to maintain a proper lookout by sight and hearing. The operator must have an unobstructed view particularly to the front. No passengers, load, or fishing seats should block the operator's view when operating the boat above idle speed.

Never drive your boat directly behind a water-skier in case the skier falls. As an example, your boat traveling at 40 km/h (25 MPH) will overtake a fallen skier 61 m (200 ft) in front of you in 5 seconds.

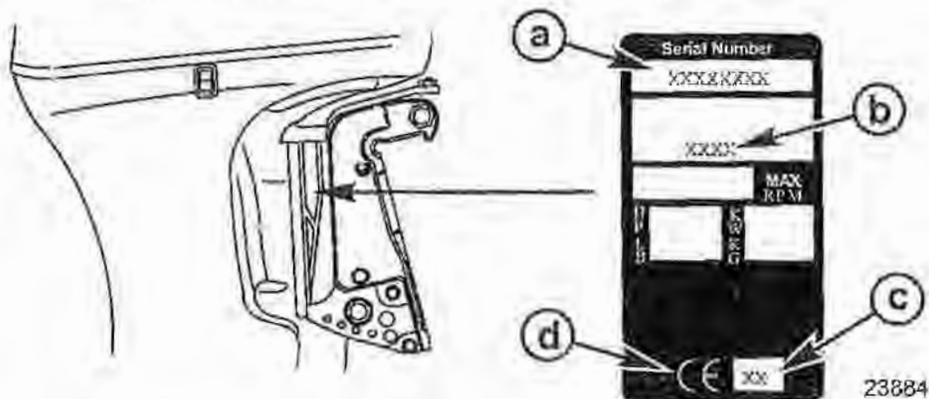
Watch fallen skiers. When using your boat for waterskiing or similar activities, always keep a fallen or down skier on the operator's side of the boat while returning to assist the skier. The operator should always have the down skier in sight and never back up to the skier or anyone in the water.

Report accidents. Boat operators are required by law to file a Boating Accident Report with their state boating law enforcement agency when their boat is involved in certain boating accidents. A boating accident must be reported if 1) there is loss of life or probable loss of life, 2) there is personal injury requiring medical treatment beyond first aid, 3) there is damage to boats or other property where the damage value exceeds \$500.00, or 4) there is complete loss of the boat. Seek further assistance from local law enforcement.

GENERAL INFORMATION

Recording Serial Number

It is important to record this number for future reference. The serial number is located on the outboard as shown.



- a - Serial number
- b - Model designation
- c - Year manufactured
- d - Certified Europe Insignia (as applicable)

Specifications

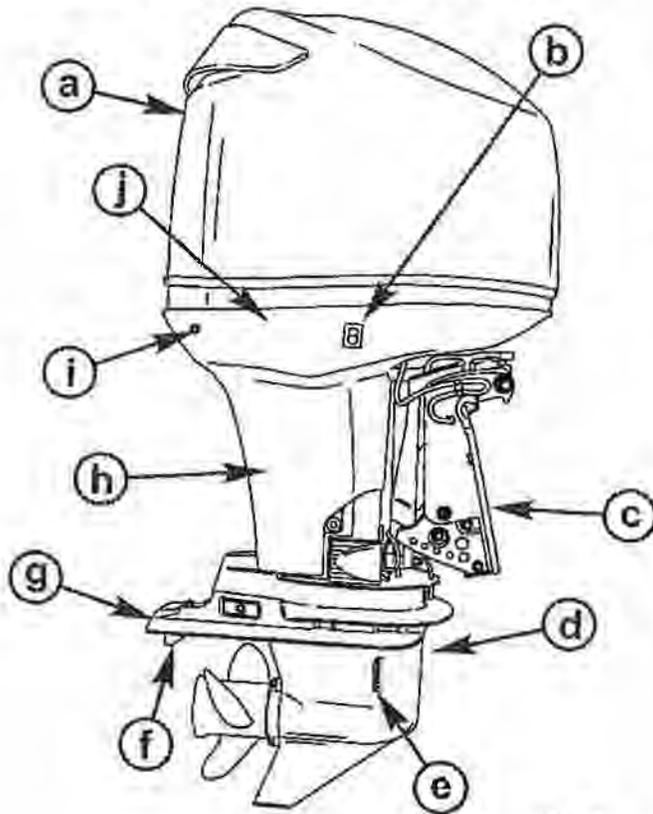
Models	75	90	115/115 Pro XS	125
Horsepower	75	90	115	125
Kilowatts	55.2	66.2	84.6	91.3
Full throttle RPM range	5000-5750 RPM			
Idle speed in forward gear	625-675 RPM			
Number of cylinders	3			
Piston displacement	1523.5 cc (92.9 in ³)			
Cylinder bore	92.11 mm (3.63 in.)			
Piston stroke	76.2 mm (3.0 in.)			
Recommended spark plug	IZFR5J			
Spark plug gap	0.80 mm (0.030 in.)			

GENERAL INFORMATION

Models	75	90	115/115 Pro XS	125
Gear ratio	2.33:1		2.07:1	
Recommended gasoline	Refer to Fuel and Oil			
Recommended oil	Refer to Fuel and Oil			
Oil tank capacity	4.72 liter (5 US qt)			
Gearcase lubricant capacity	665 ml (22.5 fl oz)			
Battery rating	1000 marine cranking amps (MCA) or 800 cold cranking amps (CCA)			
Charging system output	60 A			
Emission control system	Electronic engine control (EC)			
Sound at drivers ear (ICOMIA 39-94) dBA	82.0			

GENERAL INFORMATION

Component Identification



- a - Top cowl
- b - Auxiliary tilt switch
- c - Transom brackets
- d - Gearcase
- e - Cooling water intake holes
- f - Trim tab
- g - Anti-ventilation plate
- h - Driveshaft housing
- i - Water pump indicator hole
- j - Bottom cowl

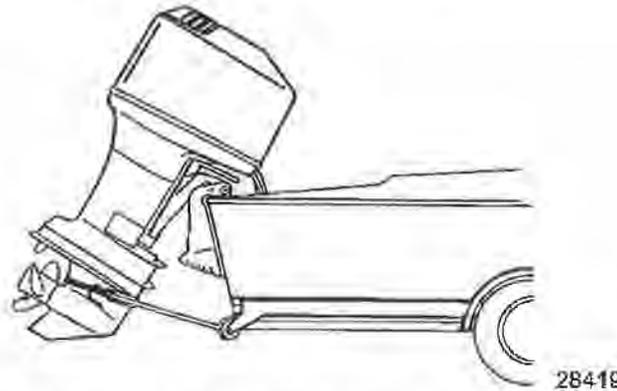
29461

TRANSPORTING

Trailer Boat/Outboard

Trailer your boat with the outboard tilted down in a vertical operating position.

If additional ground clearance is required, the outboard should be tilted up using an accessory outboard support device. Refer to your local dealer for recommendations. Additional clearance may be required for railroad crossings, driveways, and trailer bouncing.



IMPORTANT: Do not rely on the power trim/tilt system or tilt support lever to maintain proper ground clearance for trailering. The outboard tilt support lever is not intended to support the outboard for trailering.

Shift the outboard to forward gear. This prevents the propeller from spinning freely.

FUEL AND OIL

Fuel Recommendations

IMPORTANT: Use of improper gasoline can damage your engine. Engine damage resulting from the use of improper gasoline is considered misuse of the engine, and damage caused thereby will not be covered under the limited warranty.

FUEL RATINGS

Mercury Marine engines will operate satisfactorily when using a major brand of unleaded gasoline meeting the following specifications:

USA and Canada - having a posted pump Octane Rating of 87 (R+M)/2 minimum. Premium gasoline (92 [R+M]/2 Octane) is also acceptable. Do not use leaded gasoline.

Outside USA and Canada - having a posted pump Octane Rating of 90 RON minimum. Premium gasoline (98 RON) is also acceptable. If unleaded gasoline is not available, use a major brand of leaded gasoline.

USING REFORMULATED (OXYGENATED) GASOLINES (USA ONLY)

This type of gasoline is required in certain areas of the USA. The 2 types of oxygenates used in these fuels are alcohol (ethanol) or ether (MTBE or ETBE). If ethanol is the oxygenate that is used in the gasoline in your area, refer to **Gasolines Containing Alcohol**.

These reformulated gasolines are acceptable for use in your Mercury Marine engine.

GASOLINES CONTAINING ALCOHOL

If the gasoline in your area contains either methanol (methyl alcohol) or ethanol (ethyl alcohol), you should be aware of certain adverse effects that can occur. These adverse effects are more severe with methanol. Increasing the percentage of alcohol in the fuel can also worsen these adverse effects.

Some of these adverse effects are caused because the alcohol in the gasoline can absorb moisture from the air, resulting in a separation of the water/alcohol from the gasoline in the fuel tank.

FUEL AND OIL

The fuel system components on your Mercury Marine engine will withstand up to 10% alcohol content in the gasoline. We do not know what percentage your boat's fuel system will withstand. Contact your boat manufacturer for specific recommendations on the boat's fuel system components (fuel tanks, fuel lines, and fittings). Be aware that gasolines containing alcohol may cause increased:

- Corrosion of metal parts
- Deterioration of rubber or plastic parts
- Fuel permeation through rubber fuel lines
- Starting and operating difficulties

WARNING

Fuel leakage is a fire or explosion hazard, which can cause serious injury or death. Periodically inspect all fuel system components for leaks, softening, hardening, swelling, or corrosion, particularly after storage. Any sign of leakage or deterioration requires replacement before further engine operation.

Because of possible adverse effects of alcohol in gasoline, it is recommended that only alcohol-free gasoline be used where possible. If only fuel containing alcohol is available, or if the presence of alcohol is unknown, increased inspection frequency for leaks and abnormalities is required.

IMPORTANT: When operating a Mercury Marine engine on gasoline containing alcohol, storage of gasoline in the fuel tank for long periods should be avoided. Long periods of storage, common to boats, create unique problems. In cars, alcohol-blend fuels normally are consumed before they can absorb enough moisture to cause trouble, but boats often sit idle long enough for phase separation to take place. In addition, internal corrosion may take place during storage if alcohol has washed protective oil films from internal components.

FUEL AND OIL

Fuel Requirements

Do not use pre-mixed gas and oil in this engine. The engine automatically receives extra oil during engine break-in. Use a fresh supply of the recommended gasoline during engine break-in and after engine break-in.

Fuel Additives

To minimize carbon deposit buildup in the engine, it is recommended to add Mercury or Quicksilver Quikleen Engine Treatment additive to the engine's fuel at each tank fill throughout the boating season. Use additive as directed on container.

Avoiding Fuel Flow Restriction

IMPORTANT: Adding components to the fuel supply system (filters, valves, fittings, etc.) may restrict the fuel flow. This may cause engine stalling at low speed, and/or a lean fuel condition at high RPM that could cause engine damage.

Low Permeation Fuel Hose Requirement

Required for outboards manufactured for sale, sold, or offered for sale in the United States.

- The Environmental Protection Agency (EPA) requires that any outboard manufactured after January 1, 2009 must use low permeation fuel hose for the primary fuel hose connecting the fuel tank to the outboard.
- Low permeation hose is USCG Type B1-15 or Type A1-15, defined as not exceeding 15/gm²/24 h with CE 10 fuel at 23 °C as specified in SAE J 1527 - marine fuel hose.

Oil Recommendation

Recommended Oil	Mercury OptiMax/DFI or Quicksilver DFI 2-Cycle Engine Oil
------------------------	--

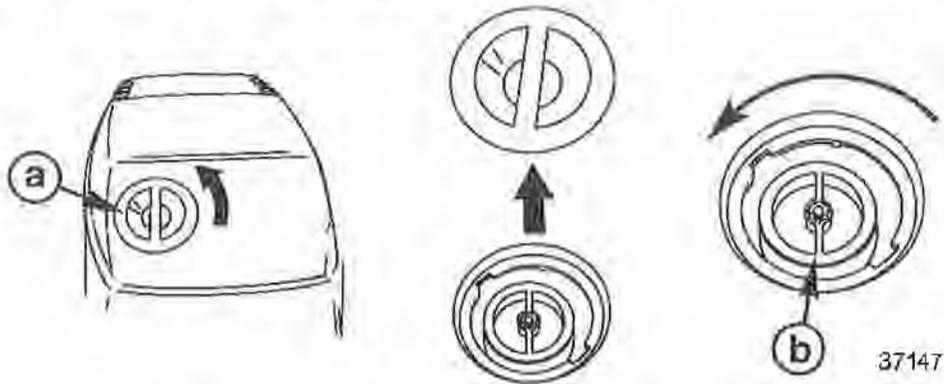
Mercury OptiMax/DFI or Quicksilver DFI 2-Cycle Engine Oil is recommended for your engine. If Mercury OptiMax/DFI or Quicksilver DFI 2-Cycle Engine Oil is not available, we recommend using Mercury or Quicksilver TC-W3 Premium Plus 2-Cycle Oil. Severe engine damage may result from use of an inferior oil.

MART000390

FUEL AND OIL

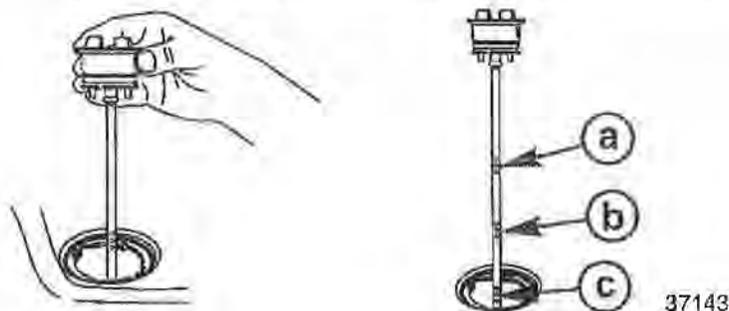
Filling Oil Injection System

1. Place the outboard in a vertical operating position.
2. Remove the cowl cover.
3. Remove the oil filler cap.



- a** - Cowl cover
b - Oil filler cap

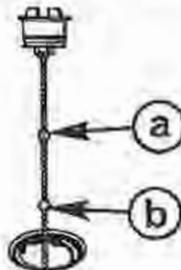
4. Oil filler caps with a dipstick - Check the oil level on the dipstick. The first set of holes indicates 0.94 liters (1 US qt) low. The second set of holes indicates 1.89 liters (2 US qt) low. The third set of holes indicates 2.83 liters (3 US qt) low.



- a** - Add 0.94 liters (1 US qt)
b - Add 1.89 liters (2 US qt)
c - Add 2.83 liters (3 US qt)

FUEL AND OIL

5. Oil filler caps with a chain - Check the oil level on the chain. The first ball marker indicates 0.94 liters (1 US qt) low. The second ball marker indicates 1.89 liters (2 US qt) low.



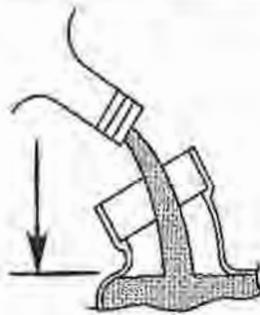
37146

a - Add 0.94 liters (1 US qt)

b - Add 1.89 liters (2 US qt)

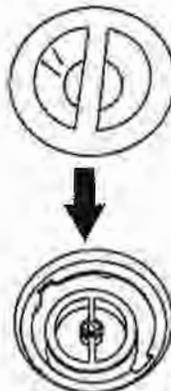
6. Slowly fill the oil tank with the specified oil. **Do not overfill.** Add only enough oil to bring the oil level up to the bottom of the fill neck.

	Capacity	Fluid Type
Oil tank	4.72 liters (5 US qt)	OptiMax/DFI 2-Cycle Engine Oil



29465

7. Install the oil filler cap and tighten securely. Install the cowl cover.



29466

MART000392

FUEL AND OIL

Filling Fuel Tank

WARNING

Avoid serious injury or death from a gasoline fire or explosion. Use caution when filling fuel tanks. Always stop the engine and do not smoke or allow open flames or sparks in the area while filling fuel tanks.

Fill fuel tanks outdoors away from heat, sparks, and open flames.

Remove portable fuel tanks from boat to refill them.

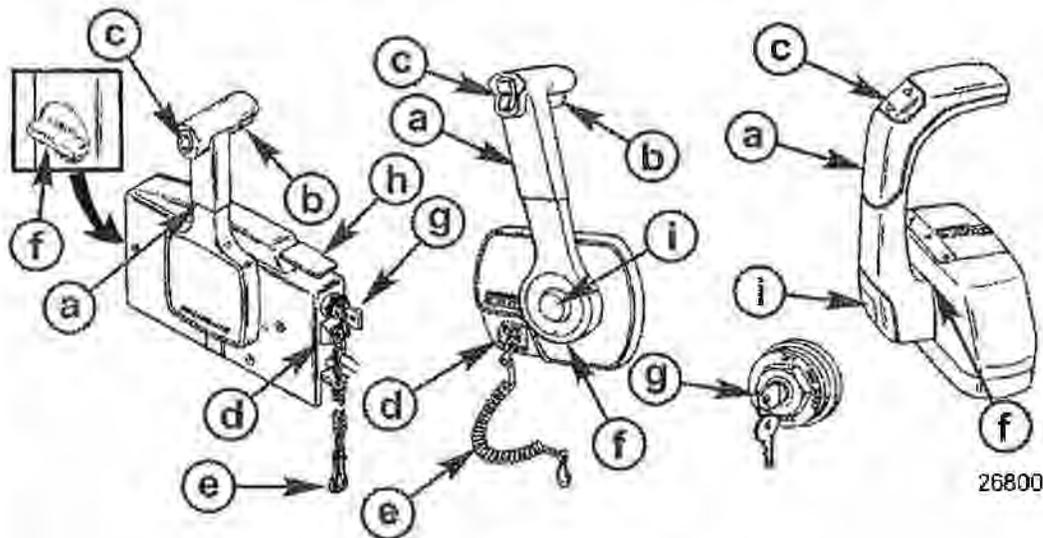
Always stop engine before refilling tanks.

Do not completely fill the fuel tanks. Leave approximately 10% of the tank volume unfilled. Fuel will expand in volume as its temperature rises and can leak under pressure if the tank is completely filled.

FEATURES AND CONTROLS

Remote Control Features

Your boat may be equipped with one of the Mercury Precision or Quicksilver remote controls shown. If not, consult your dealer for a description of the functions and operations of the remote control.

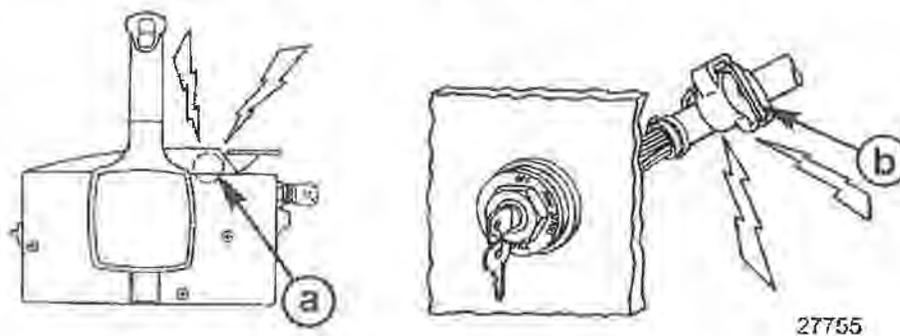


- a - Control handle - forward, neutral, reverse
- b - Neutral release lever
- c - Trim/tilt switch (if equipped) - Refer to **Features and Controls - Power Trim and Tilt**
- d - Lanyard stop switch - Refer to **General Information - Lanyard Stop Switch**
- e - Lanyard - Refer to **General Information - Lanyard Stop Switch**
- f - Throttle friction adjustment - Console controls require cover removal for adjustment
- g - Ignition key switch - "OFF," "ON," "START"
- h - Fast idle lever - Refer to **Operation - Starting the Engine**
- i - Throttle only button - Refer to **Operation - Starting the Engine**

FEATURES AND CONTROLS

Warning System

The outboard warning system incorporates a warning horn inside the boat. The warning horn may be located inside the remote control or connected to the ignition key switch.



- a - Horn inside remote control
- b - Horn connected to ignition key switch

WARNING HORN SIGNALS

When the key switch is turned to the "ON" position, the horn will turn on for a moment as a test to show the horn is working.

The warning horn will emit either a continuous beep or intermittent short beeps. This will alert the operator and help identify the following listed situations. For visual display of the specific engine functions and for additional engine data, refer to **SmartCraft Product** information, following.

Warning Horn		
Function	Sound	Description
Start up	One beep	Normal system test.
Low oil	Four beeps every 2 minutes	Oil level is low in the oil tank. Refill the oil tank. Refer to Fuel and Oil .
Water in fuel	Four beeps every 2 minutes	Water in the fuel filter chamber reached the full level. Water can be removed from the chamber. Refer to Maintenance - Fuel System for water removal.

FEATURES AND CONTROLS

Warning Horn		
Function	Sound	Description
Cooling system problem	Continuous	Engine Guardian System is activated. Power limit will vary with level of overheat. Shift outboard into neutral and check for a steady stream of water coming out of the water pump indicator hole. If no water is coming out of the water pump indicator hole or flow is intermittent, stop engine and check water intake holes for obstruction.
Oil level is critically low	Continuous	Engine Guardian System is activated. Power limit will allow a fast idle. The oil level is critically low in the oil tank. Refill the oil tank. Refer to Fuel and Oil .
Oil pump failure	Continuous	Engine Guardian System is activated. Power limit will allow a fast idle. The warning horn is activated if the oil pump should ever stop functioning electrically. No lubricating oil is being supplied to the engine.
Engine overspeed	Continuous	The warning horn is activated any time engine speed exceeds the maximum allowable RPM. The system will limit the engine speed to within the allowable range. Engine overspeed indicates a condition that should be corrected. Overspeed could be caused by incorrect propeller pitch, engine height, trim angle, etc.
Sensor out of range	Continuous	Engine Guardian System is activated. Power limit may activate at full throttle speed.
	Intermittent beep	Engine Guardian System is activated. Power limit may restrict engine speed to idle.
Engine running cold at slow speed	One beep	Engine is not reaching correct temperature while operating below 1000 RPM. Have your dealer check the engine.

ENGINE GUARDIAN SYSTEM

The Engine Guardian System monitors the critical sensors on the engine for any early indications of problems. The system will respond to a problem by emitting a continuous beep and/or reducing engine power in order to provide engine protection.

FEATURES AND CONTROLS

If Guardian System has been activated, reduce throttle speed. The horn will turn off when throttle speed is within the allowable limit. Consult your dealer for assistance.

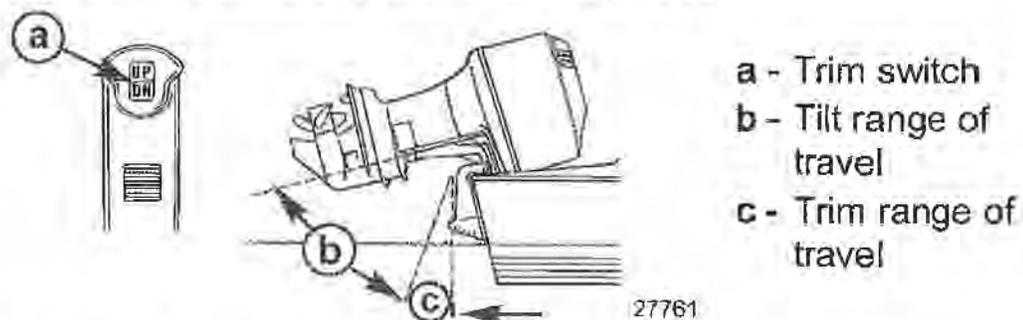
SMARTCRAFT PRODUCT

A Mercury SmartCraft System instrument package can be purchased for this outboard. A few of the functions the instrument package will display are engine RPM, coolant temperature, battery voltage, fuel consumption, and engine operating hours.

The SmartCraft instrument package will also aid in Engine Guardian diagnostics. The SmartCraft instrument package will display critical engine alarm data and potential problems.

Power Trim and Tilt

Your outboard has a trim/tilt control called power trim. This enables the operator to easily adjust the position of the outboard by pressing the trim switch. Moving the outboard in closer to the boat transom is called trimming in or down. Moving the outboard further away from the boat transom is called trimming out or up. The term trim generally refers to the adjustment of the outboard within the first 20° range of travel. This is the range used while operating your boat on plane. The term tilt is generally used when referring to adjusting the outboard further up out of the water. With the engine turned off, the outboard can be tilted out of the water. At low idle speed, the outboard can also be tilted up past the trim range to permit, for example, shallow water operation.



POWER TRIM OPERATION

NOTE: When traveling at slow speeds, a slight drop in engine RPM may be noticed on occasion when engaging power trim. This condition is normal and has no adverse affect on the outboard.

FEATURES AND CONTROLS

With most boats, operating around the middle of the trim range will give satisfactory results. However, to take full advantage of the trimming capability there may be times when you choose to trim your outboard all the way in or out. Along with an improvement in some performance aspects comes a greater responsibility for the operator, and this is being aware of some potential control hazards. The most significant control hazard is a pull or torque that can be felt on the steering wheel or tiller handle. This steering torque results from the outboard being trimmed so that the propeller shaft is not parallel to the water surface.

WARNING

Trimming the outboard beyond a neutral steering condition may result in a pull on the steering wheel or tiller handle and loss of boat control. Maintain control of the boat if trimming beyond a neutral steering condition.

Consider the following lists carefully.

1. Trimming in or down can:
 - Lower the bow.
 - Result in quicker planing off, especially with a heavy load or a stern heavy boat.
 - Generally improve the ride in choppy water.
 - Increase steering torque or pull to the right (with the normal right hand rotation propeller).
 - In excess, can lower the bow of some boats to a point where they begin to plow with their bow in the water while on plane. This can result in an unexpected turn in either direction (called bow steering or oversteering) if any turn is attempted, or if a significant wave is encountered.

WARNING

Operating the boat at high speeds with the outboard trimmed too far under can create excessive bow steer, resulting in the operator losing control of the boat. Install the trim limit pin in a position that prevents excessive trim under and operate the boat in a safe manner.

MART000398

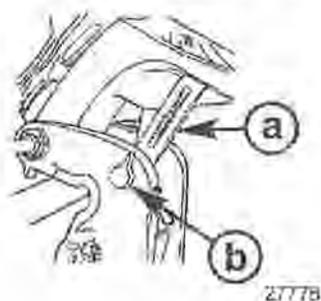
FEATURES AND CONTROLS

- In rare circumstances, the owner may decide to limit the trim in. This can be accomplished by purchasing a stainless steel tilt pin from your dealer and inserting it in whatever adjustment hole in the transom brackets is desired. The non-stainless steel shipping bolt should not be used in this application.
2. Trimming out or up can:
 - Lift the bow higher out of the water.
 - Generally increase top speed.
 - Increase clearance over submerged objects or a shallow bottom.
 - Increase steering torque or pull to the left at a normal installation height (with the normal right hand rotation propeller).
 - In excess, can cause boat porpoising (bouncing) or propeller ventilation.
 - Cause engine overheating if any cooling water intake holes are above the waterline.

TILTING OPERATION

To tilt outboard, shut off the engine and press the trim/tilt switch or auxiliary tilt switch to the up position. The outboard will tilt up until the switch is released or it reaches its maximum tilt position.

1. Engage the tilt support lever by rotating the knob to bring the support lever upward.
2. Lower the outboard to rest on the tilt support lever.
3. Disengage the tilt support lever by raising the outboard off the support lever and rotating the lever down. Lower the outboard.



a - Tilt support lever

b - Knob

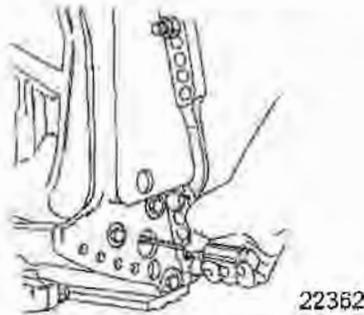
FEATURES AND CONTROLS

MANUAL TILTING

If the outboard cannot be tilted using the power trim/tilt switch, the outboard can be manually tilted.

NOTE: *The manual tilt release valve must be tightened before operating the outboard to prevent the outboard from tilting up during reverse operation.*

Turn out the manual tilt release valve three turns counterclockwise. This allows manual tilting of the outboard. Tilt the outboard to the desired position and tighten the manual tilt release valve.



SHALLOW WATER OPERATION

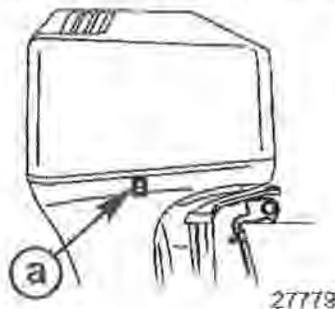
When operating your boat in shallow water, you can tilt the outboard beyond the maximum trim range to prevent hitting bottom.

1. Reduce engine speed below 2000 RPM.
2. Tilt outboard up. Make sure all the water intake holes stay submerged at all times.
3. Operate the engine at slow speed only. If engine speed exceeds 2000 RPM, the outboard will automatically return down to the maximum trim range.

FEATURES AND CONTROLS

AUXILIARY TILT SWITCH

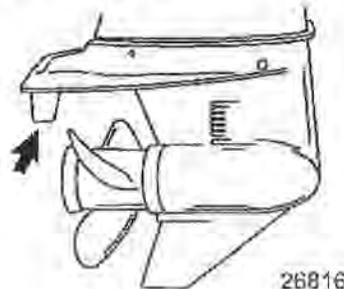
The auxiliary tilt switch can be used to tilt the outboard up or down using the power trim system.



a - Auxiliary tilt switch

Trim Tab Adjustment

Propeller steering torque will cause your boat to pull in one direction. This steering torque is a normal thing that results from your outboard not being trimmed so the propeller shaft is parallel to the water surface. The trim tab can help compensate for this steering torque in many cases and can be adjusted within limits to reduce any unequal steering effort.



NOTE: Trim tab adjustment will have little effect reducing steering torque if the outboard is installed with the anti-ventilation plate approximately 50 mm (2 inches) or more above the boat bottom.

Operate your boat at normal cruising speed, trimmed to the desired position. Turn your boat left and right and note the direction the boat turns more easily.

If adjustment is necessary, loosen trim tab bolt and make small adjustments at a time. If the boat turns more easily to the left, move the trailing edge of trim tab to the left. If the boat turns more easily to the right, move the trailing edge of trim tab to the right. Retighten bolt and retest.

OPERATION

Pre-Starting Check List

- Operator knows safe navigation, boating, and operating procedures.
- An approved personal flotation device of suitable size for each person aboard and readily accessible (it is the law).
- A ring type life buoy or buoyant cushion designed to be thrown to a person in the water.
- Know the boat's maximum load capacity. Look at the boat capacity plate.
- Fuel supply OK.
- Oil supply (oil injection) OK.
- Arrange passengers and load in the boat so the weight is distributed evenly and everyone is seated in a proper seat.
- Tell someone where you are going and when you expect to return.
- It is illegal to operate a boat while under the influence of alcohol or drugs.
- Know the waters and area you will be boating; tides, currents, sand bars, rocks, and other hazards.
- Make inspection checks listed in **Maintenance - Inspection and Maintenance Schedule**.

Operating in Freezing Temperatures

When using your outboard or having your outboard moored in freezing or near freezing temperatures, keep the outboard tilted down at all times so the gearcase is submerged. This prevents the trapped water in the gearcase from freezing and causing possible damage to the water pump and other components.

If there is a chance of ice forming on the water, the outboard should be removed and drained completely of water. If ice should form at the water level inside the outboard driveshaft housing, it will block water flow to the engine causing possible damage.

OPERATION

Pre-Starting Check List

- Operator knows safe navigation, boating, and operating procedures.
- An approved personal flotation device of suitable size for each person aboard and readily accessible (it is the law).
- A ring type life buoy or buoyant cushion designed to be thrown to a person in the water.
- Know the boat's maximum load capacity. Look at the boat capacity plate.
- Fuel supply OK.
- Oil supply (oil injection) OK.
- Arrange passengers and load in the boat so the weight is distributed evenly and everyone is seated in a proper seat.
- Tell someone where you are going and when you expect to return.
- It is illegal to operate a boat while under the influence of alcohol or drugs.
- Know the waters and area you will be boating; tides, currents, sand bars, rocks, and other hazards.
- Make inspection checks listed in **Maintenance - Inspection and Maintenance Schedule**.

Operating in Freezing Temperatures

When using your outboard or having your outboard moored in freezing or near freezing temperatures, keep the outboard tilted down at all times so the gearcase is submerged. This prevents the trapped water in the gearcase from freezing and causing possible damage to the water pump and other components.

If there is a chance of ice forming on the water, the outboard should be removed and drained completely of water. If ice should form at the water level inside the outboard driveshaft housing, it will block water flow to the engine causing possible damage.

OPERATION

Operating in Saltwater or Polluted Water

We recommend that you flush the internal water passages of your outboard with fresh water after each use in salt or polluted water. This will prevent a buildup of deposits from clogging the water passages. Refer to **Maintenance - Flushing the Cooling System**.

If you keep your boat moored in the water, always tilt the outboard so the gearcase is completely out of water (except in freezing temperatures) when not in use.

Wash the outboard exterior and flush out the exhaust outlet of the propeller and gearcase with fresh water after each use. Each month, spray Mercury Precision or Quicksilver Corrosion Guard on external metal surfaces. Do not spray on corrosion control anodes as this will reduce the effectiveness of the anodes.

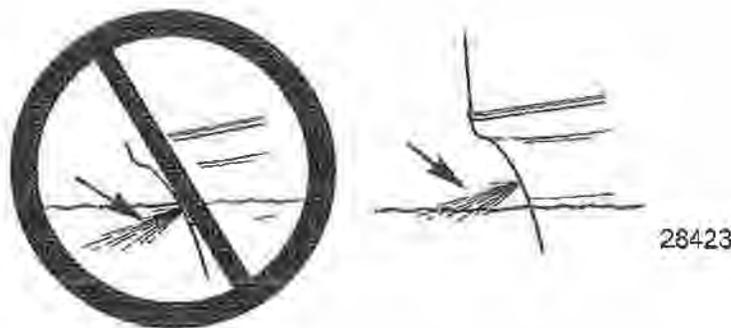
Operating at High Elevations

Your engine automatically compensates for high elevation changes. A different pitch propeller may help reduce some normal performance loss resulting from reduced oxygen in the air. Consult your dealer.

OPERATION

Setting Trim Angle While Running Engine at Idle Speed

The exhaust relief hole on the outboard may become submerged if the outboard is trimmed full-in while running at idle speed. This will cause exhaust restriction, rough idle, excessive smoke, and fouled spark plugs. If this condition exists, trim the outboard up until the exhaust relief hole is out of the water. The outboard should be lowered for accelerating from a standing start or from idle speed.



Engine Break-in Procedure

IMPORTANT: Failure to follow the engine break-in procedures can result in poor performance throughout the life of the engine and can cause engine damage. Always follow break-in procedures.

GASOLINE/OIL BREAK-IN MIXTURE

NOTE: Do not use premixed gas and oil during break-in. Use straight gasoline during engine break-in and after engine break-in.

The engine break-in procedure for an OptiMax outboard is important to ensure proper performance and maximum life from the engine. The following break-in procedure allows the internal engine parts to wear-in evenly. Incorrect engine break-in can shorten the engine life.

The engine automatically receives extra oil during the first hours of operation. For most boaters this extra oil mode will be complete in about ten hours.

OPERATION

BREAK-IN PROCEDURE

1. For the first hour of operation, allow the engine to warm up for 30–60 seconds.
 - a. Run the engine at varied throttle settings, the majority of the time between 3000 and 4500 RPM or three-quarter throttle.
 - b. Change engine speed approximately every two minutes, and avoid continuous operation at idle speed for more than ten minutes. Short bursts of full throttle for periods up to ten seconds are acceptable.
 - c. Avoid trimming the outboard out (up) beyond a vertical trim position during operation.

***NOTE:** It is the driver's responsibility to always drive in a safe manner. Improper trim angle of the outboard when driving at high speed can be difficult and dangerous. The purpose of specifying trim angle is to help guide the operator in determining how to put the proper load on the engine. They are intended to be guidelines and do not suggest or require unsafe boat operation.*

2. For the next three hours of operation, change engine speed every ten minutes.

Starting the Engine

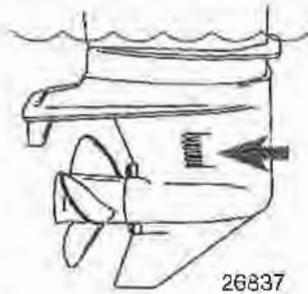
Before starting, read the pre-starting check list, special operating instructions, and engine break-in procedure in the **Operation** Section.

NOTICE

Without sufficient cooling water, the engine, the water pump, and other components will overheat and suffer damage. Provide a sufficient supply of water to the water inlets during operation.

OPERATION

1. Lower the outboard to the vertical operating position. Make sure all cooling water intake holes are submerged.



26837

2. Open the fuel tank vent screw, located in the filler cap, on manual venting type fuel tanks.



19748

3. Position the fuel line primer bulb so the arrow on the side of the bulb is pointing up. Squeeze the fuel line primer bulb several times until it feels firm.



27348

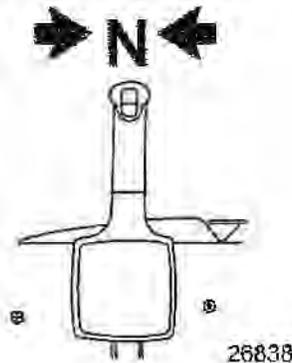
4. Set the lanyard stop switch to "RUN" position. Refer to General Information - Lanyard Stop Switch.



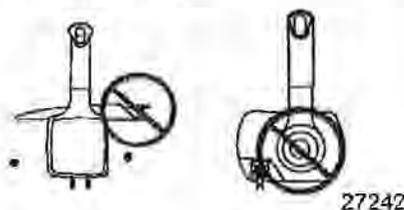
19791

OPERATION

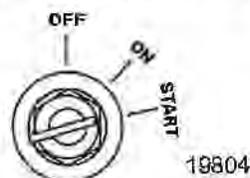
5. Shift outboard to neutral ("N") position.



6. For the initial start of a new engine, or for an engine that ran out of fuel or was drained of fuel, the fuel system should be filled as follows:
 - a. Squeeze the fuel line primer bulb until it feels firm.
 - b. Turn the ignition key switch to the "ON" position for three seconds. This operates the electric fuel pump.
 - c. Turn the ignition key switch back to the "OFF" position, and squeeze the primer bulb again until it feels firm. Turn the ignition key switch to the "ON" position again for three seconds. Continue this procedure until the fuel line primer bulb stays firm.
7. Do not advance the neutral fast idle speed feature on the remote control for starting.



8. Turn the ignition key to "START" position. Release the key when engine starts. If engine fails to start in 10 seconds, return the key to "OFF" position, wait one second and try again.



OPERATION

NOTE: The electronic starting system will automatically prime (choke) the engine and increase idle speed for starting.

9. Check for a steady stream of water flowing out of the water pump indicator hole.

IMPORTANT: If no water is coming out of the water pump indicator hole, stop engine and check cooling water intake holes for obstruction. No obstruction may indicate a water pump failure or blockage in the cooling system. This condition will cause the engine to overheat. Have the outboard checked by your dealer. Operating the engine while overheated will cause engine damage.

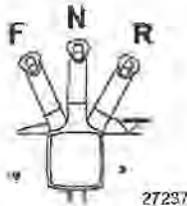


19805

Gear Shifting

IMPORTANT: Observe the following:

- Never shift outboard into gear unless engine speed is at idle.
- Do not shift outboard into reverse when the engine is not running.
- Your outboard has three gear shift positions to provide operation: Forward (F), Neutral (N), and Reverse (R).
- When shifting, always stop at neutral position and allow the engine speed to return to idle.
- Always shift outboard into gear with a quick motion.
- After shifting outboard into gear, advance the lever further to increase speed.



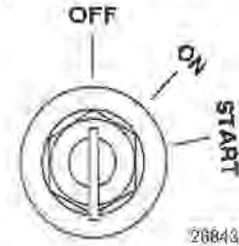
27237

60

OPERATION

Stopping the Engine

Reduce engine speed and shift outboard to neutral position. Turn ignition key to "OFF" position.



26843

61

MART000409

MAINTENANCE

Outboard Care

To keep your outboard in the best operating condition, it is important that your outboard receive the periodic inspections and maintenance listed in the **Inspection and Maintenance Schedule**. We urge you to keep it maintained properly to ensure the safety of you and your passengers, and retain its dependability. Record maintenance performed in the **Maintenance Log** at the back of this book. Save all maintenance work orders and receipts.

SELECTING REPLACEMENT PARTS FOR YOUR OUTBOARD

We recommend using original Mercury Precision or Quicksilver replacement parts and Genuine Lubricants.

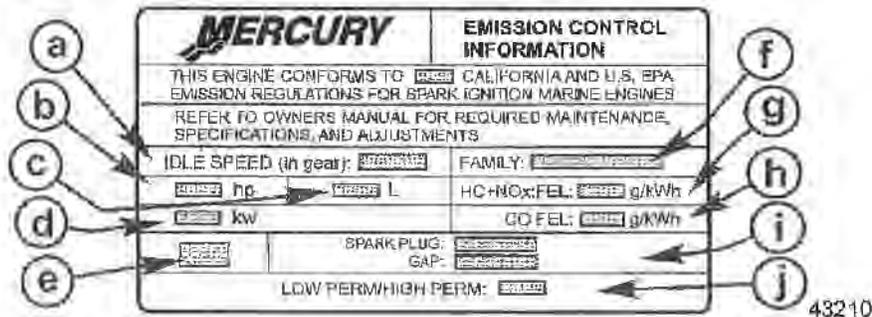
EPA Emissions Regulations

All new outboards manufactured by Mercury Marine are certified to the United States Environmental Protection Agency, as conforming to the requirements of the regulations for the control of air pollution from new outboard motors. This certification is contingent on certain adjustments set to factory standards. For this reason, the factory procedure for servicing the product must be strictly followed and, wherever practicable, returned to the original intent of the design. **Maintenance, replacement, or repair of the emission control devices and systems may be performed by any marine spark ignition (SI) engine repair establishment or individual.**

MAINTENANCE

EMISSION CERTIFICATION LABEL

An emission certification label, showing emission levels and engine specifications directly related to emissions, is placed on the engine at the time of manufacture.



- a - Idle speed
- b - Engine horsepower
- c - Piston displacement
- d - Engine power - kilowatts
- e - Date of manufacture
- f - Family number
- g - Regulated emission limit for the engine family
- h - Regulated emission limit for the engine family
- i - Recommended spark plug and gap
- j - Percent of fuel line permeation

OWNER RESPONSIBILITY

The owner/operator is required to have routine engine maintenance performed to maintain emission levels within prescribed certification standards.

The owner/operator is not to modify the engine in any manner that would alter the horsepower or allow emission levels to exceed their predetermined factory specifications.

Inspection and Maintenance Schedule

BEFORE EACH USE

- Check that the lanyard stop switch stops the engine.
- Visually inspect the fuel system for deterioration or leaks.

MAINTENANCE

- Inspect the outboard for tightness to the boat transom. If any looseness of the outboard or mounting fasteners exist, retorque the outboard mounting fasteners to the specified torque. When looking for signs of looseness, look for loss of outboard transom bracket material or paint caused by movement between the outboard mounting fasteners and the outboard transom brackets. Also look for signs of movement between the outboard transom brackets and the boat transom (lift plate/setback bracket).

Description	Nm	lb-in.	lb-ft
Outboard mounting locknuts and bolts - standard boat transom	75		55
Outboard mounting locknuts and bolts - metal lift plates and setback brackets	122		90

- Check steering system for binding or loose components.
- Visually check steering link rod fasteners for proper tightness. See **Steering Link Rod Fasteners**.
- Check propeller blades for damage.

AFTER EACH USE

- Flush out the outboard cooling system if operating in salt or polluted water. See **Flushing the Cooling System**.
- Wash off all salt deposits and flush out the exhaust outlet of the propeller and gearcase with fresh water if operating in saltwater.

EVERY 100 HOURS OF USE OR ONCE YEARLY, WHICHEVER OCCURS FIRST

- Lubricate all lubrication points. Lubricate more frequently when used in saltwater. See **Lubrication Points**.
- Replace spark plugs at first 100 hours or first year. After that, inspect spark plugs every 100 hours or once yearly. Replace spark plugs as needed. See **Spark Plug Inspection and Replacement**.
- Replace fuel filter. See **Fuel System**.

MAINTENANCE

- Replace compressor air intake filter. See **Compressor Air Intake Filter**.
- Inspect alternator belt. See **Alternator Belt Inspection**.
- Retorque the outboard mounting fasteners that fasten the outboard to the boat transom. Tighten the fasteners to the specified torque.¹

Description	Nm	lb-in.	lb-ft
Outboard mounting locknuts and bolts - standard boat transom	75		55
Outboard mounting locknuts and bolts - metal lift plates and setback brackets	122		90

- Check corrosion control anodes. Check more frequently when used in saltwater. See **Corrosion Control Anode**.
- Drain and replace gearcase lubricant. See **Gearcase Lubrication**.
- Check power trim fluid. See **Checking Power Trim Fluid**.
- Inspect battery. See **Battery Inspection**.
- Check control cable adjustments.¹
- Lubricate splines on the driveshaft and shift shaft.¹
- Check tightness of bolts, nuts, and other fasteners.
- Check cowl seals to make sure seals are intact and not damaged.
- Check internal cowl sound reduction foam (if equipped) to make sure foam is intact and not damaged.
- Check that the intake silencer (if equipped) is in place.
- Check that the idle relief muffler (if equipped) is in place.
- Check for loose hose clamps and rubber boots (if equipped) on the air intake assembly.

EVERY 300 HOURS OF USE OR THREE YEARS

- Replace water pump impeller (more often if overheating occurs or reduced water pressure is noted).¹
- Replace the in-line oil filter that is located in the oil hose between the oil tank and the oil injection pump.¹

¹ These items should be serviced by an authorized dealer.

MAINTENANCE

BEFORE PERIODS OF STORAGE

- Refer to storage procedure. See **Storage** section.

Flushing the Cooling System

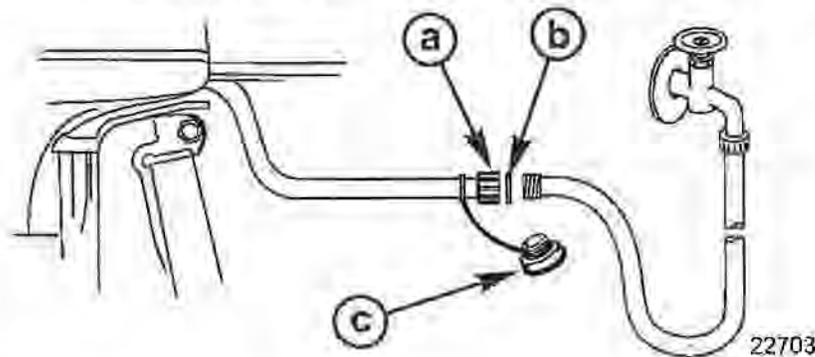
Flush the internal water passages of the outboard with fresh water after each use in salt, polluted, or muddy water. This will help prevent a buildup of deposits from clogging the internal water passages.

NOTE: The engine can be stopped, or running at idle speed in neutral, when flushing the cooling system. Do not flush the engine using a water source that exceeds 310 kPa (45 psi).

1. Unscrew the cover from the end of the hose adapter.
2. Attach a water hose to the hose adapter.
3. Turn on the water and flush the cooling system for a minimum of 3 minutes.

IMPORTANT: Do not run engine above idle speed when flushing.

4. Turn off the water and remove the water hose from the hose adapter. Reinstall the cover into the hose adapter.



- a - Hose adapter
- b - Sealing washer
- c - Cover

Top Cowl Removal and Installation

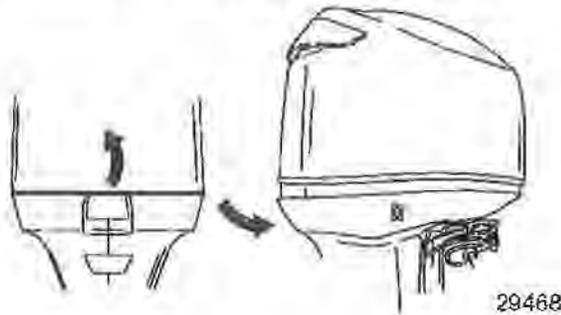
REMOVAL

1. Unlock the rear latch by pushing lever up.

MART000414

MAINTENANCE

2. Lift rear of cowl and disengage front hook.



INSTALLATION

1. Engage the front hook and push cowl back over the cowl seal.
2. Push cowl down and move the rear latch lever down to lock.

Cleaning Care for Top Cowl

IMPORTANT: Dry wiping (wiping the plastic surface when it is dry) will result in minor surface scratches. Always wet the surface before cleaning. Follow the cleaning and waxing procedure.

CLEANING AND WAXING PROCEDURE

1. Before washing, rinse the top cowl with clean water to remove the dirt and dust that may scratch the surface.
2. Wash the top cowl with clean water and a mild non-abrasive soap. Use a soft clean cloth when washing.
3. Dry thoroughly with a soft clean cloth.
4. Wax the surface using a non-abrasive automotive polish (polish designed for clear coat finishes). Remove the applied wax by hand using a clean soft cloth.

Flywheel Cover Removal and Installation

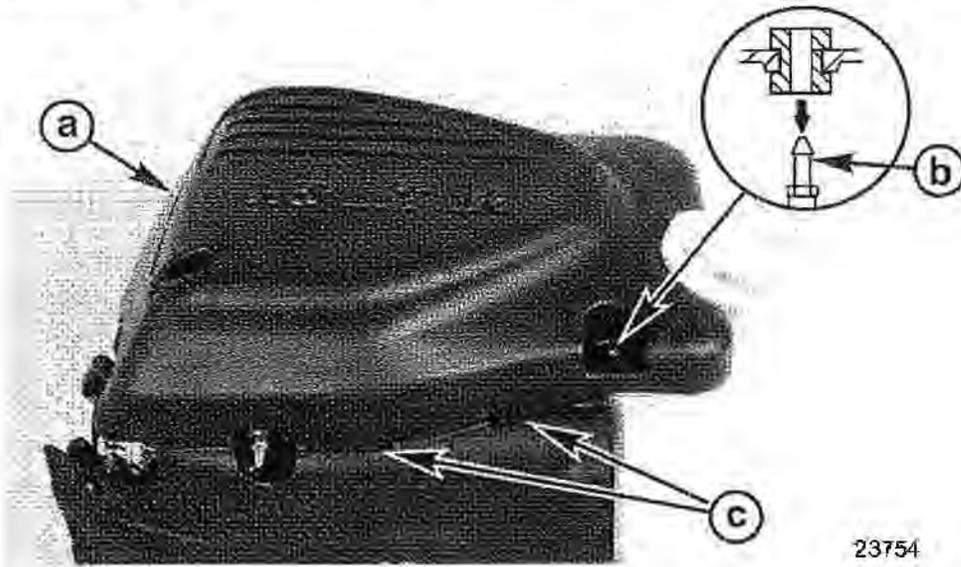
REMOVAL

Lift the cover off the three mounting pins.

MAINTENANCE

INSTALLATION

Position the cover onto the three mounting pins. Insert the tabs into the slots in the side panel and push the cover down onto the mounting pins.



- a** - Flywheel cover
- b** - Mounting pins
- c** - Tabs

Side Panel Removal and Installation

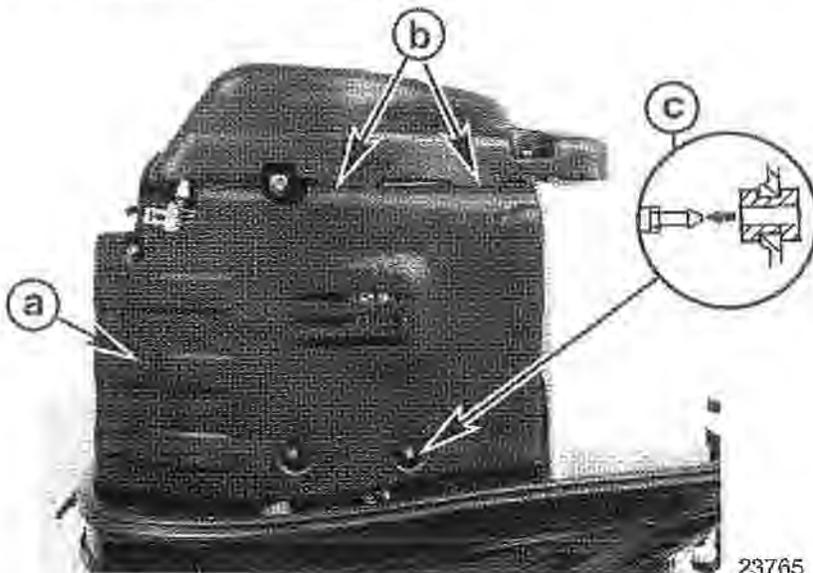
REMOVAL

Pull the side panel off the three mounting pins.

MAINTENANCE

INSTALLATION

Position the side panel onto the three mounting pins. Insert the tabs on the flywheel cover into the upper slots and push the side panel onto the mounting pins.



- a - Side panel
- b - Upper slots
- c - Mounting pins

Fuel System

⚠ WARNING

Fuel is flammable and explosive. Ensure the key switch is off and the lanyard is positioned so that the engine cannot start. Do not smoke or allow sources of spark or open flame in the area while servicing. Keep the work area well ventilated and avoid prolonged exposure to vapors. Always check for leaks before attempting to start the engine and wipe up any spilled fuel immediately.

MAINTENANCE

Before servicing any part of the fuel system, stop the engine and disconnect the battery. Drain the fuel system completely. Use an approved container to collect and store fuel. Wipe up any spillage immediately. Material used to contain spillage must be disposed of in an approved receptacle. Any fuel system service must be performed in a well-ventilated area. Inspect any completed service work for sign of fuel leakage.

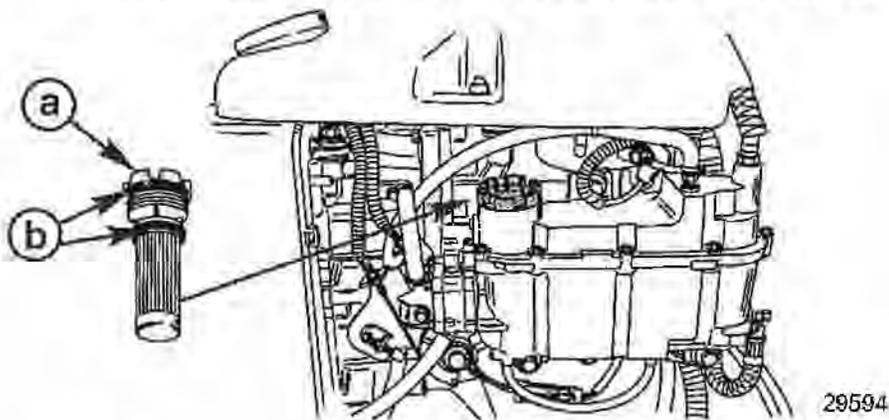
FUEL LINE INSPECTION

Visually inspect the fuel line and primer bulb for cracks, swelling, leaks, hardness, or other signs of deterioration or damage. If any of these conditions are found, the fuel line or primer bulb must be replaced.

FUEL FILTER REPLACEMENT

Removal

1. Use fuel filter tool 91-896661 or use the shaft of a screwdriver between the lugs on the filter cap and unscrew the filter.



- a - Filter
- b - O-rings

Installation

1. Lubricate the O-ring seals with oil.
2. Install the fuel filter and tighten securely.

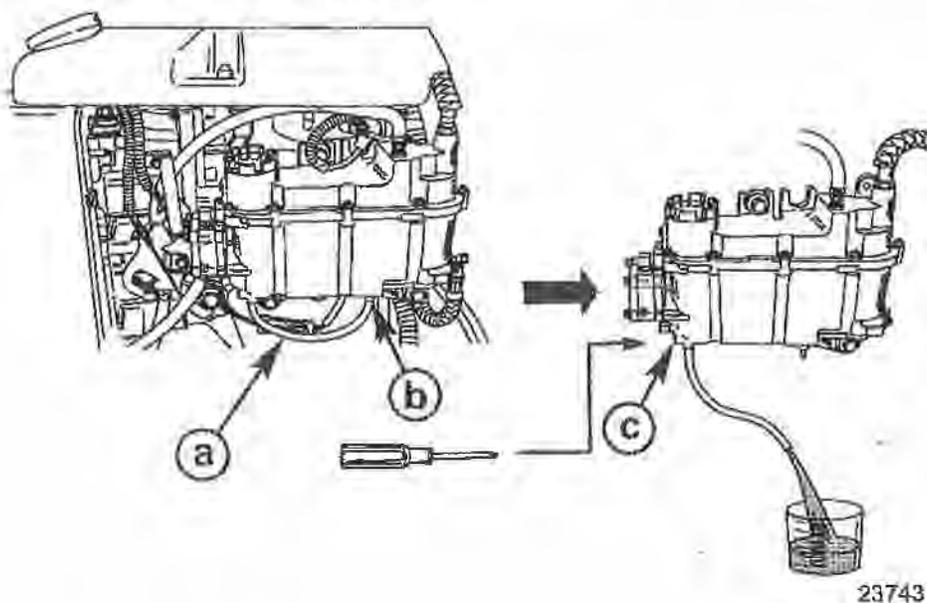
IMPORTANT: Visually inspect for fuel leakage from the filter while squeezing the primer bulb until firm, forcing fuel into the filter.

MAINTENANCE

DRAINING WATER FROM THE FUEL FILTER CHAMBER

NOTE: If a sufficient amount of water has accumulated in the fuel filter chamber, the warning system will turn on. Draining the water from the fuel filter chamber is required.

1. Pull the drain hose off the right side fitting. Hold the open end of the hose over a container.
2. Use a 1/8 in. hex wrench and loosen the drain screw and drain the fuel filter chamber.



- a - Drain hose
- b - Right side fitting
- c - Drain screw

3. Retighten the drain screw and reattach the hose.

IMPORTANT: Visually inspect for fuel leakage from the drain screw by squeezing the primer bulb until firm, forcing fuel into the chamber.

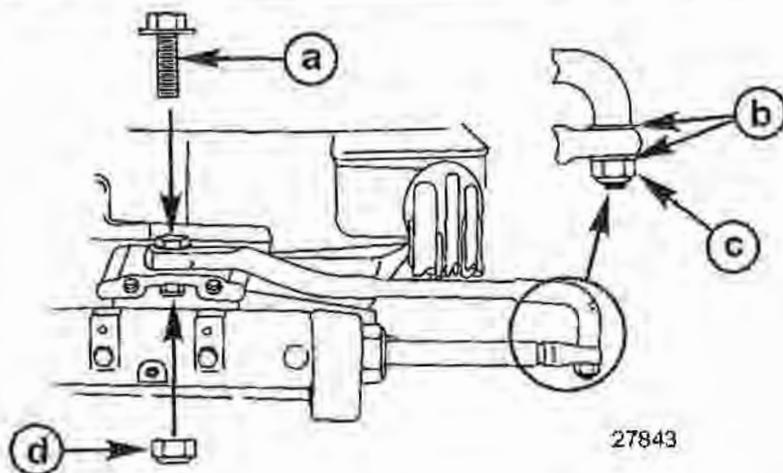
MAINTENANCE

Steering Link Rod Fasteners

IMPORTANT: The steering link rod that connects the steering cable to the engine must be fastened using special washer head bolt ("a" - Part Number 10-849838) and self-locking nylon insert locknuts ("c" & "d" - Part Number 11-826709113). These locknuts must never be replaced with common nuts (non-locking) as they will work loose and vibrate off, freeing the link rod to disengage.

▲ WARNING

Improper fasteners or improper installation procedures can result in loosening or disengagement of the steering link rod. This can cause a sudden, unexpected loss of boat control, resulting in serious injury or death due to occupants being thrown within or out of the boat. Always use required components and follow instructions and torque procedures.



- a - Special washer head bolt (10-849838)
- b - Flat washer (2)
- c - Nylon insert locknut (11-826709113)
- d - Nylon insert locknut (11-826709113)

Description	Nm	lb. in.	lb. ft.
Special washer head bolt	27		20
Nylon insert locknut "d"	27		20
Nylon insert locknut "c"	Tighten until seats, then back off 1/4 turn		

MART000420

MAINTENANCE

Assemble steering link rod to steering cable with two flat washers and self-locking nylon insert locknut. Tighten locknut until it seats, then back nut off 1/4 turn.

Assemble steering link rod to engine with special washer head bolt and self-locking nylon insert locknut. First torque bolt, then torque locknut to specifications.

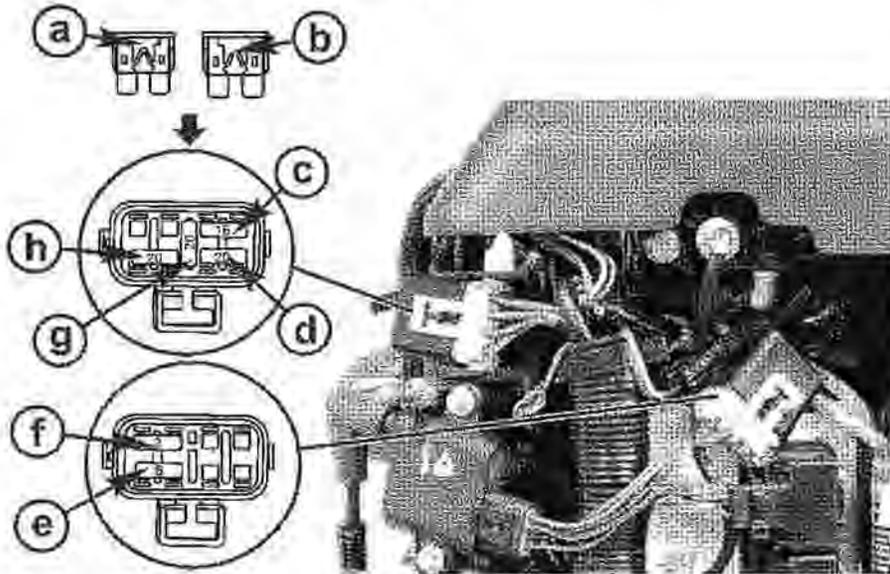
Fuse Replacement

IMPORTANT: Always carry spare 5 and 20 amp fuses.

The electrical wiring circuits on the outboard are protected from overload by fuses in the wiring. If a fuse is blown, try to locate and correct the cause of the overload. If the cause is not found, the fuse may blow again.

MAINTENANCE

Open the fuse holder and look at the silver colored band inside the fuse. If band is broken, replace the fuse. Replace fuse with a new fuse with the same rating.



23/93

- a - Good fuse
- b - Blown fuse
- c - 14 pin remote control harness/cowl trim switch/main power relay - 15 amp fuse
- d - Ignition coil circuit - 20 amp fuse
- e - SmartCraft data bus circuit - 5 amp fuse
- f - Diagnostics terminal - 2 amp fuse
- g - Spare fuse - 20 amp fuse
- h - Fuel injectors/direct injectors/oil pump/PCM - 20 amp fuse

Corrosion Control Anode

Your outboard has corrosion control anodes at different locations. An anode helps protect the outboard against galvanic corrosion by sacrificing its metal to be slowly corroded instead of the outboard metals.

MAINTENANCE

Each anode requires periodic inspection, especially in saltwater which will accelerate the erosion. To maintain this corrosion protection, always replace the anode before it is completely eroded. Never paint or apply a protective coating on the anode as this will reduce effectiveness of the anode.

The gearcase has two corrosion control anodes, one on each side. A third anode is installed on the bottom of the transom bracket assembly.



Battery Inspection

The battery should be inspected at periodic intervals to ensure proper engine starting capability.

IMPORTANT: Read the safety and maintenance instructions which accompany your battery.

1. Turn off the engine before servicing the battery.
2. Make sure the battery is secure against movement.
3. Battery cable terminals should be clean, tight, and correctly installed. Positive to positive and negative to negative.
4. Make sure the battery is equipped with a nonconductive shield to prevent accidental shorting of battery terminals.

Battery Information

▲ WARNING

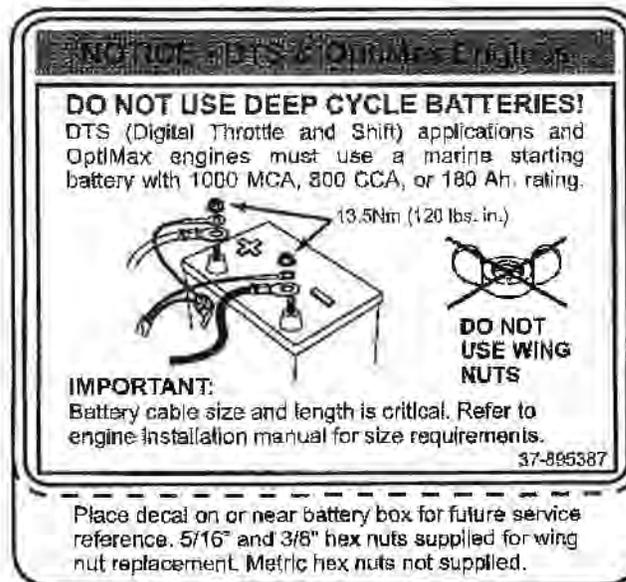
Failure to properly secure the battery leads can result in a loss of power to the Digital Throttle and Shift (DTS) system, leading to serious injury or death due to loss of boat control. Secure the battery leads to the battery posts with hex nuts to avoid loose connections.

MAINTENANCE

- Do not use deep cycle batteries. Engines must use a marine starting battery with 1000 MCA, 800 CCA or 180 Ah.
- When connecting engine battery, hex nuts must be used to secure battery leads to battery posts. Torque nuts to specification.

Description	Nm	lb. in.	lb. ft.
Hex nuts	13.5	120	

Decal needs to be placed on or near battery box for future service reference. One 5/16 in. and one 3/8 in. hex nut are supplied per battery for wing nut replacement. Metric hex nuts are not supplied.



3486

Propellers

REMOVAL

IMPORTANT: Propellers used on this product require the Mercury Marine Flo-Torq III type hub or equivalent.

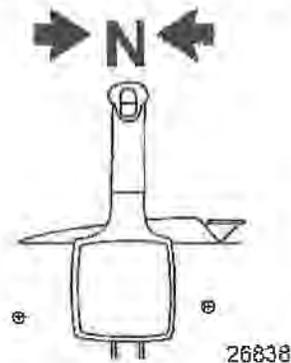
MART000424

MAINTENANCE

⚠ WARNING

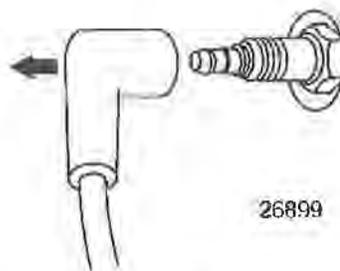
Rotating propellers can cause serious injury or death. Never operate the boat out of the water with a propeller installed. Before installing or removing a propeller, place the drive unit in neutral and engage the lanyard stop switch to prevent the engine from starting. Place a block of wood between the propeller blade and the anti-ventilation plate.

1. Shift the outboard to the neutral ("N") position.

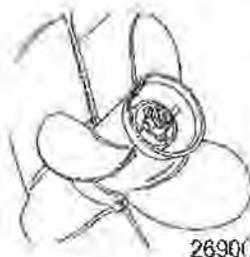


IMPORTANT: Refer to Spark Plug Inspection and Replacement for removing spark plug leads.

2. Remove the spark plug leads to prevent the engine from starting.

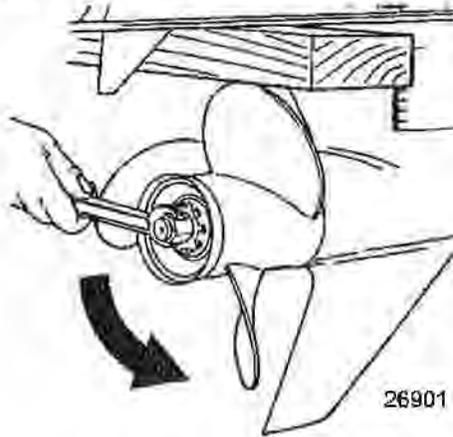


3. Straighten the bent tabs on the propeller nut retainer.



MAINTENANCE

4. Place a block of wood between the gearcase and propeller and remove the propeller nut.

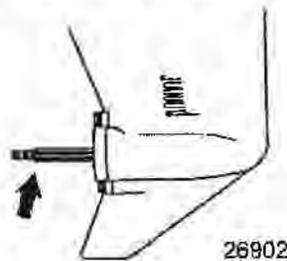


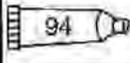
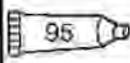
5. Pull the propeller straight off the shaft. If the propeller is seized to the shaft and cannot be removed, have the propeller removed by an authorized dealer.

INSTALLATION

IMPORTANT: To prevent the propeller hub from corroding and seizing to the propeller shaft (especially in saltwater), always apply a coat of the recommended lubricant to the entire propeller shaft at the recommended maintenance intervals and also each time the propeller is removed.

1. Coat the propeller shaft with Quicksilver or Mercury Precision Lubricants Anti-Corrosion Grease or 2-4-C with Teflon.



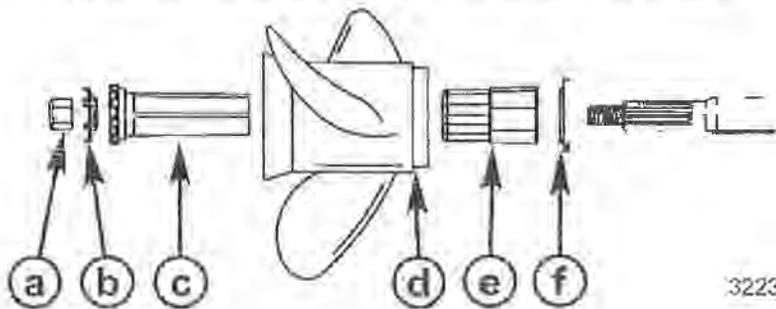
Tube Ref No.	Description	Where Used	Part No.
 94	Anti-Corrosion Grease	Propeller shaft	92-802867Q 1
 95	2-4-C with Teflon	Propeller shaft	92-802859A 1

MART000426

MAINTENANCE

NOTE: The Flo-Torq III propeller drive hubs are designed to have a small amount of free play when installed. This free play allows the propeller to slide back and forth on the rear thrust hub (up to 3.17 mm [1/8 in.]) and rotate up to 10 degrees.

- Flo-Torq III drive hub propellers** - Install the forward thrust hub, replaceable drive sleeve, propeller, thrust hub, propeller nut retainer, and propeller nut onto the shaft.

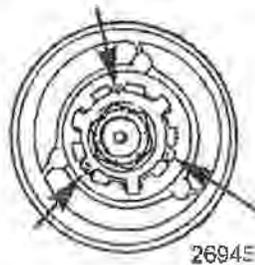


- a - Propeller nut
- b - Propeller nut retainer
- c - Rear thrust hub
- d - Propeller
- e - Replaceable drive sleeve
- f - Forward thrust hub

- Place a block of wood between the gearcase and propeller. Torque the propeller nut to specification.

Description	Nm	lb. in.	lb. ft.
Propeller nut	75		55

- Secure the propeller nut by bending three of the tabs into the thrust hub grooves.



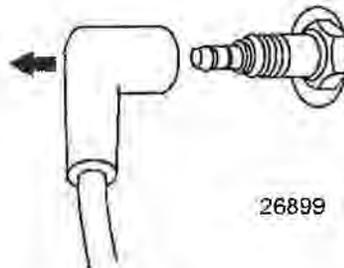
MAINTENANCE

Spark Plug Inspection and Replacement

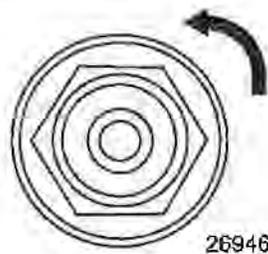
▲ WARNING

Damaged spark plug boots may emit sparks which can ignite fuel vapors under the engine cowl, resulting in serious injury or death from a fire or explosion. To avoid damaging the spark plug boots, do not use any sharp object or metal tool to remove the spark plug boots.

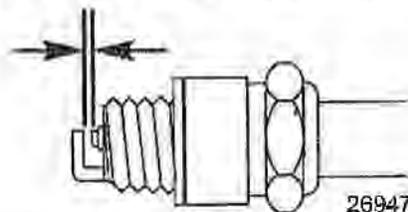
1. Remove the spark plug leads. Twist the rubber boots slightly and pull off.



2. Remove the spark plugs to inspect. Replace spark plug if electrode is worn or the insulator is rough, cracked, broken, blistered, or fouled.



3. Set the spark plug gap to specifications.



Spark Plug	
Spark plug gap	0.80 mm (0.030 in.)

MAINTENANCE

4. Before installing spark plugs, clean off any dirt on the spark plug seats. Install plugs finger-tight, and then tighten to the specified value.

Description	Nm	lb. in.	lb. ft.
Spark plug	27		20

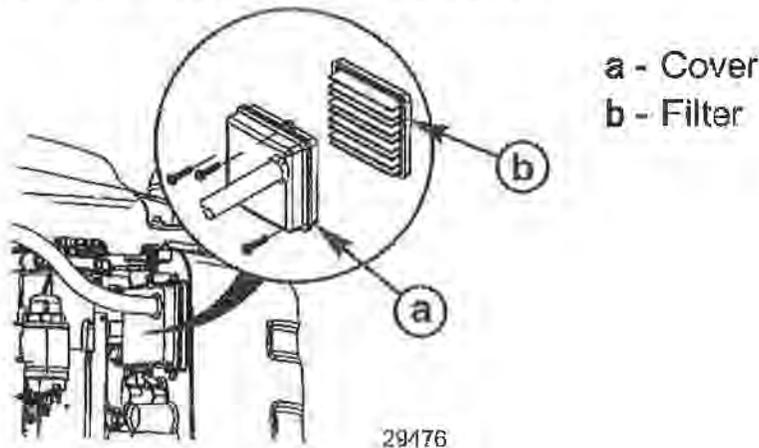
Compressor Air Intake Filter

The filter should be changed every 100 hours of operation, or once a season.

IMPORTANT: Never run the engine without the air filter.

REMOVAL

1. Remove three screws and filter cover from engine.
2. Remove filter from the cover.



INSTALLATION

1. Install filter into cover.
2. Fasten filter cover with three screws.

Alternator Belt Inspection

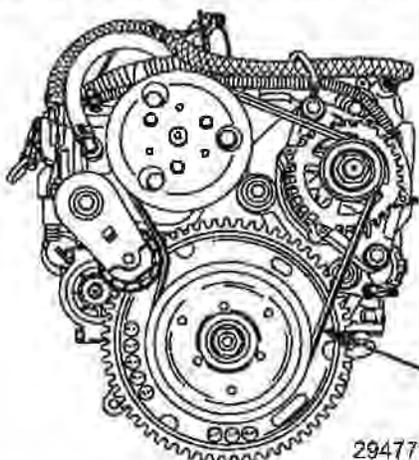
▲ WARNING

Inspecting the belts with the engine running may cause serious injury or death. Turn off the engine and remove the ignition key before adjusting tension or inspecting belts.

1. Inspect the alternator belt and have it replaced by an authorized dealer if any of the following conditions are found.

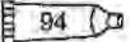
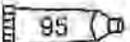
MAINTENANCE

- a. Cracks or deterioration in the rubber portion of the belt.
- b. Belt surfaces rough or uneven.
- c. Signs of wear on edges or outer surfaces of belt.

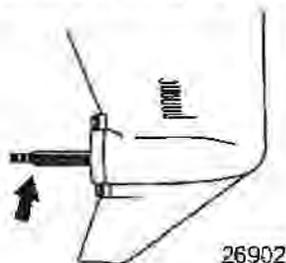


Lubrication Points

1. Lubricate the following with Quicksilver or Mercury Precision Lubricants Anti-Corrosion Grease or 2-4-C with Teflon.

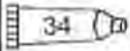
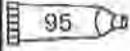
Tube Ref No.	Description	Where Used	Part No.
 94	Anti-Corrosion Grease	Propeller shaft	92-802867Q 1
 95	2-4-C with Teflon	Propeller shaft	92-802859A 1

- Propeller shaft - Refer to **Propeller Replacement** for removal and installation of the propeller. Coat the entire propeller shaft with lubricant to prevent the propeller hub from corroding and seizing to the shaft.

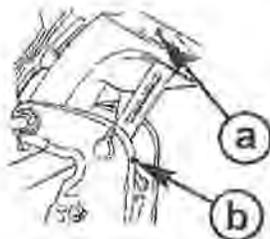


2. Lubricate the following with Quicksilver or Mercury Precision Lubricants 2-4-C with Teflon or Special Lubricant 101.

MAINTENANCE

Tube Ref No.	Description	Where Used	Part No.
 34	Special Lubricant 101	Swivel bracket, tilt support lever, tilt tube, steering cable grease fitting	92-802865Q02
 95	2-4-C with Teflon	Swivel bracket, tilt support lever, tilt tube, steering cable grease fitting	92-802859A 1

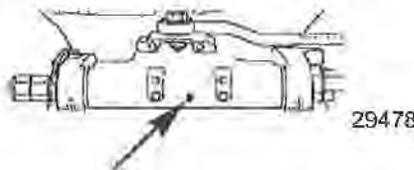
- Swivel bracket - Lubricate through fitting.
- Tilt support lever - Lubricate through fitting.



27873

- a - Swivel bracket
- b - Tilt support lever

- Tilt tube - Lubricate through fitting.



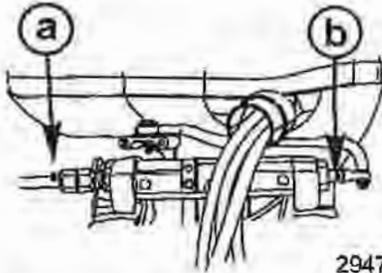
29478

- Steering cable grease fitting (if equipped) - Rotate steering wheel to fully retract the steering cable end into the outboard tilt tube. Lubricate through fitting.

MAINTENANCE

⚠ WARNING

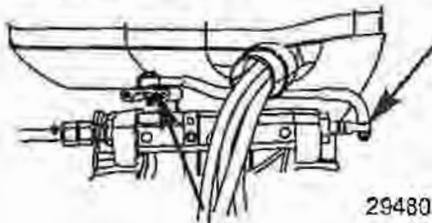
Incorrect cable lubrication can cause hydraulic lock, leading to serious injury or death from loss of boat control. Completely retract the end of the steering cable before applying lubricant.



29479

- a - Fitting
- b - Steering cable end

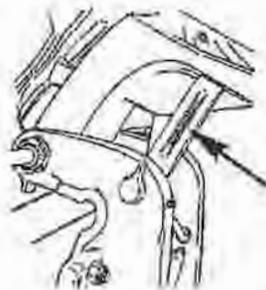
3. Lubricate the following with lightweight oil.
 - Steering link rod pivot points - Lubricate pivot points.



29480

Checking Power Trim Fluid

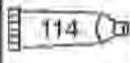
1. Tilt outboard to the full up position and engage the tilt support lever.



27877

2. Remove fill cap and check fluid level. The fluid level should be even with the bottom of the fill hole. Add Quicksilver or Mercury Precision Lubricants Power Trim and Steering Fluid. If not available, use automotive (ATF) automatic transmission fluid.

MAINTENANCE

Tube Ref No.	Description	Where Used	Part No.
 114	Power Trim and Steering Fluid	Power trim reservoir	92-858074K01



27884

Gearcase Lubrication

When adding or changing gearcase lubricant, visually check for the presence of water in the lubricant. If water is present, it may have settled to the bottom and will drain out prior to the lubricant, or it may be mixed with the lubricant, giving it a milky colored appearance. If water is noticed, have the gearcase checked by your dealer. Water in the lubricant may result in premature bearing failure or, in freezing temperatures, will turn to ice and damage the gearcase.

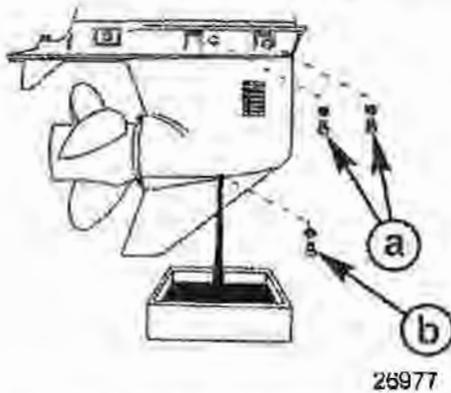
Examine the drained gearcase lubricant for metal particles. A small amount of metal particles indicates normal gear wear. An excessive amount of metal filings or larger particles (chips) may indicate abnormal gear wear and should be checked by an authorized dealer.

DRAINING GEARCASE

1. Place outboard in a vertical operating position.
2. Place a drain pan below outboard.

MAINTENANCE

3. Remove vent plugs and fill/drain plug and drain lubricant.



- a - Vent plugs
- b - Fill/drain plug

GEARCASE LUBRICANT CAPACITY

Gearcase lubricant capacity is approximately 666 ml (22.5 fl oz).

GEARCASE LUBRICANT RECOMMENDATION

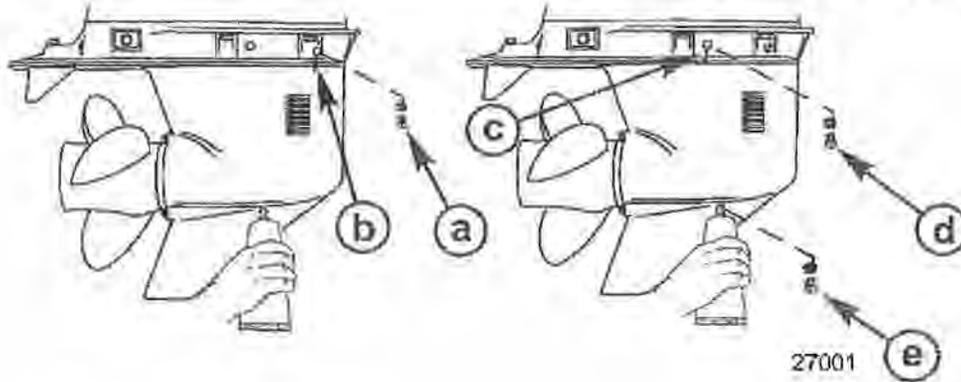
Mercury or Quicksilver Premium or High Performance Gear Lubricant.

CHECKING LUBRICANT LEVEL AND FILLING GEARCASE

1. Place outboard in a vertical operating position.
2. Remove the front vent plug and rear vent plug.

MAINTENANCE

3. Remove fill/drain plug. Place lubricant tube into the fill/drain plug hole and add lubricant until it appears at the front vent hole. At this time install the front vent plug and sealing washer.



- a - Front vent plug
- b - Front vent hole
- c - Rear vent hole
- d - Rear vent plug
- e - Fill/drain plug

4. Continue adding lubricant until it appears at the rear vent hole.
5. Stop adding lubricant. Install the rear vent plug and sealing washer before removing lubricant tube.
6. Remove lubricant tube and reinstall cleaned fill/drain plug and sealing washer.

SUBMERGED OUTBOARD

A submerged outboard will require service within a few hours by an authorized dealer once the outboard is recovered from the water. This immediate attention by a servicing dealer is necessary once the engine is exposed to the atmosphere to minimize internal corrosion damage to the engine.

STORAGE

Storage Preparation

The major consideration in preparing your outboard for storage is to protect it from rust, corrosion, and damage caused by freezing of trapped water.

The following storage procedures should be followed to prepare your outboard for out of season storage or prolonged storage (two months or longer).

NOTICE

Without sufficient cooling water, the engine, the water pump, and other components will overheat and suffer damage. Provide a sufficient supply of water to the water inlets during operation.

Fuel System

IMPORTANT: Gasoline containing alcohol (ethanol or methanol) can cause a formation of acid during storage and can damage the fuel system. If the gasoline being used contains alcohol, it is advisable to drain as much of the remaining gasoline as possible from the fuel tank, remote fuel line, and engine fuel system.

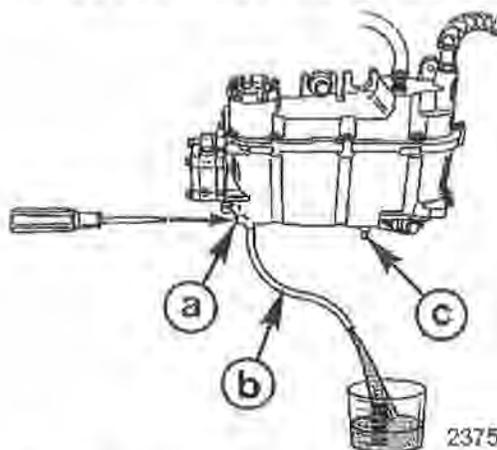
The most effective method of storage preparation is to add the recommended amount of Mercury Precision Fuel Stabilizer and Mercury Precision Quickleen products as described on the containers to the fuel tank before the last operation of the boat. Adding fuel stabilizer will help prevent the formation of varnish and gum in the gasoline. The Mercury Precision Quickleen product will help clean and lubricate the fuel injectors.

1. **Portable Fuel Tank** - Pour the required amount of gasoline stabilizer and Quickleen (follow instructions on containers) into fuel tank. Tip fuel tank back and forth to mix stabilizer and Quickleen with the fuel.
2. **Permanently Installed Fuel Tank** - Pour the required amount of gasoline stabilizer and Quickleen (follow instructions on containers) into a separate container and mix with approximately 1 liter (1 quart) of gasoline. Pour this mixture into fuel tank.
3. Pull the drain hose off the right side fitting. Hold the open end of the hose over a container.

MART000436

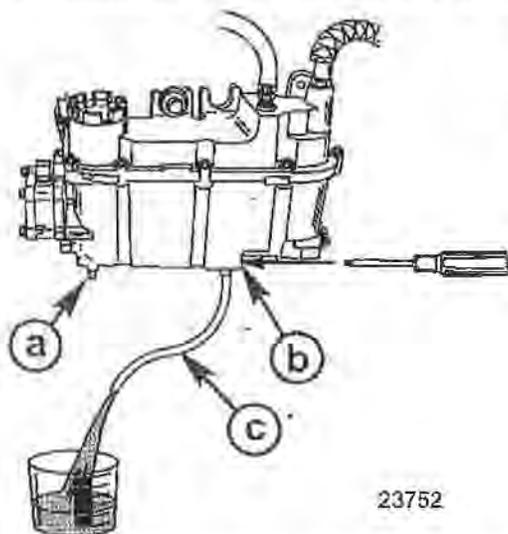
STORAGE

- Loosen drain screw and drain the fuel filter chamber.



- a - Drain screw
- b - Drain hose
- c - Right side fitting

- Retighten the drain screw and reattach the hose.
- Pull the drain hose off the left side fitting. Hold the open end of the hose over a container.
- Loosen the drain screw and drain the float chamber.



- a - Left side fitting
- b - Drain screw
- c - Drain hose

- Retighten the drain screw and reattach the hose.
- Premix the following in a container:
 - 8 cc (0.27 oz.) or 2 teaspoons of Mercury Precision Quickleen lubricant.
 - 8 cc (0.27 oz.) or 2 teaspoons of Mercury Precision Fuel Stabilizer.
- Remove the fuel filter. See **Maintenance - Fuel System** for procedure.

STORAGE

11. Pour this mixture into the fuel filter opening. Reinstall the fuel filter.
12. Prime the fuel system. See **Operation - Starting The Engine**.
13. Place the outboard in water or use the flush hose or flushing device or for circulating cooling water. Start the engine and run at idle speed for five minutes to allow the treated fuel to fill the fuel system.

Flushing Device	91-44357Q 2
 9192	Attaches to the water intakes; provides a fresh water connection when flushing the cooling system or operating the engine.

Protecting Internal Engine Components

*NOTE: Make sure the fuel system has been prepared for storage. Refer to **Fuel System**, preceding.*

IMPORTANT: Refer to Spark Plug Inspection and Replacement for correct procedure for removing spark plug leads.

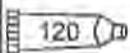
1. Remove the spark plugs. Add approximately 30 ml (1 oz) of engine oil or inject a five second spray of storage seal into each spark plug hole.
2. Rotate the flywheel manually several times to distribute the oil or storage seal in the cylinders.
3. Reinstall spark plugs.

Protecting External Outboard Components

- Lubricate all outboard components listed in **Maintenance - Inspection and Maintenance Schedule**.
- Touch up any paint nicks. See your dealer for touch-up paint.
- Spray Quicksilver or Mercury Precision Lubricants Corrosion Guard on external metal surfaces (except corrosion control anodes).

MART000438

STORAGE

Tube Ref No.	Description	Where Used	Part No.
 120	Corrosion Guard	External metal surfaces	92-802878 55

Gearcase

- Drain and refill the gearcase lubricant (refer to **Gearcase Lubrication**).

Positioning Outboard for Storage

Store outboard in an upright (vertical) position to allow water to drain out of the outboard.

NOTICE

Storing the outboard in a tilted position can damage the outboard. Water trapped in the cooling passages or rain water collected in the propeller exhaust outlet in the gearcase can freeze. Store the outboard in the full down position.

Battery Storage

- Follow the battery manufacturer's instructions for storage and recharging.
- Remove the battery from the boat and check water level. Recharge if necessary.
- Store the battery in a cool, dry place.
- Periodically check the water level and recharge the battery during storage.

TROUBLESHOOTING

Starter Motor Will Not Crank the Engine

POSSIBLE CAUSES

- Blown 20 amp fuse in the starting circuit. Refer to **Maintenance**.
- Outboard is not shifted to neutral position.
- Weak battery or battery connections are loose or corroded.
- Ignition key switch failure.
- Wiring or electrical connection faulty.
- Starter motor solenoid or slave solenoid failure.

Engine Will Not Start

POSSIBLE CAUSES

- Lanyard stop switch not in "RUN" position.
- Battery not fully charged.
- Incorrect starting procedure. Refer to **Operation** section.
- Old or contaminated fuel.
- Fuel is not reaching the engine.
 - Fuel tank is empty.
 - Fuel tank vent not open or restricted.
 - Fuel line is disconnected or kinked.
 - Primer bulb not squeezed.
 - Primer bulb check valve is faulty.
 - Fuel filter is obstructed. Refer to **Maintenance** section.
 - Fuel pump failure.
 - Fuel tank filter obstructed.
- Open 20 amp fuse. Check fuses, refer to **Maintenance** section.
- Threaded connection of an air hose is loose.
- Ignition system component failure.
- Spark plugs fouled or defective. Refer to **Maintenance** section.

TROUBLESHOOTING

Engine Runs Erratically

POSSIBLE CAUSES

- Spark plugs fouled or defective. Refer to **Maintenance** section.
- Incorrect setup and adjustments.
- Fuel is being restricted to the engine.
 - a. Engine fuel filter is obstructed. Refer to **Maintenance** section.
 - b. Fuel tank filter obstructed.
 - c. Stuck antisiphon valve on built-in fuel tank.
 - d. Fuel line is kinked or pinched.
 - e. Injector plugged.
- Threaded connection of an air hose is loose.
- Fuel pump failure.
- Ignition system component failure.

Performance Loss

POSSIBLE CAUSES

- Throttle not fully open.
- Damaged propeller or improper propeller size.
- Boat overloaded or load improperly distributed.
- Excessive water in bilge.
- Boat bottom is dirty or damaged.

Battery Will Not Hold Charge

POSSIBLE CAUSES

- Battery connections are loose or corroded.
- Low electrolyte level in battery.
- Worn out or inefficient battery.
- Excessive use of electrical accessories.
- Defective rectifier, alternator, or voltage regulator.
- Open circuit in the alternator output wire (fused link).

OWNER SERVICE ASSISTANCE

Local Repair Service

Always return your outboard to your local authorized dealer should the need for service arise. Only he has the factory trained mechanics, knowledge, special tools, equipment, and genuine parts and accessories to properly service your engine should the need occur. He knows your engine best.

Service Away from Home

If you are away from your local dealer and the need arises for service, contact the nearest authorized dealer. Refer to the Yellow Pages of the telephone directory. If, for any reason, you cannot obtain service, contact the nearest Mercury Marine Service Office.

Parts and Accessories Inquiries

All inquiries concerning genuine replacement parts and accessories should be directed to your local authorized dealer. The dealer has the necessary information to order parts and accessories for you. When inquiring on parts and accessories, the dealer requires the model and serial number to order the correct parts.

Service Assistance

Your satisfaction with your outboard product is very important to your dealer and to us. If you ever have a problem, question or concern about your outboard product, contact your dealer or any authorized Mercury Marine dealership. If additional assistance is required, take these steps.

1. Talk with the dealership's sales manager or service manager. If this has already been done, then contact the owner of the dealership.
2. Should you have a question, concern, or problem that cannot be resolved by your dealership, please contact Mercury Marine Service Office for assistance. Mercury Marine will work with you and your dealership to resolve all problems.

The following information will be needed by the service office:

- Your name and address
- Daytime telephone number

MART000442

1158

OWNER SERVICE ASSISTANCE

- Model and serial number of your outboard
- The name and address of your dealership
- Nature of problem

Mercury Marine Service Offices

For assistance, call, fax, or write. Please include your daytime telephone number with mail and fax correspondence.

United States, Canada		
Telephone	English - (920) 929-5040 Français - (905) 636-4751	Mercury Marine W6250 W. Pioneer Road P.O. Box 1939 Fond du Lac, WI 54936-1939
Fax	English - (920) 929-5893 Français - (905) 636-1704	
Website	www.mercurymarine.com	

Australia, Pacific		
Telephone	(61) (3) 9791-5822	Brunswick Asia Pacific Group 132-140 Frankston Road Dandenong, Victoria 3164 Australia
Fax	(61) (3) 9706-7228	

Europe, Middle East, Africa		
Telephone	(32) (87) 32 • 32 • 11	Brunswick Marine Europe Parc Industriel de Petit-Rechain B-4800 Verviers, Belgium
Fax	(32) (87) 31 • 19 • 65	

Mexico, Central America, South America, Caribbean		
Telephone	(954) 744-3500	Mercury Marine 11650 Interchange Circle North Miramar, FL 33025 U.S.A.
Fax	(954) 744-3535	

Japan		
Telephone	072-233-8888	Kisaka Co., Ltd. 4-130 Kannabecho Sakai-shi Sakai-ku 5900984 Osaka, Japan
Fax	072-233-8833	

OWNER SERVICE ASSISTANCE

Asla, Singapore		
Telephone	5466160	Mercury Marine Singapore 72 Loyang Way Singapore, 508762
Fax	5467789	

OUTBOARD INSTALLATION

Important Information

Rigging boats, which includes proper engine installation, has become more complex over the years. As a result, we recommend our engines be installed only by Mercury authorized dealers. If you intend to disregard this recommendation and install the engine yourself, please make sure to read and comply with these instructions. Failure to comply with these installation instructions could lead to serious injury or death.

Boat Horsepower Capacity

WARNING

Exceeding the boat's maximum horsepower rating can cause serious injury or death. Overpowering the boat can affect boat control and flotation characteristics or break the transom. Do not install an engine that exceeds the boat's maximum power rating.

Do not overpower or overload your boat. Most boats will carry a required capacity plate indicating the maximum acceptable power and load as determined by the manufacturer following certain federal guidelines. If in doubt, contact your dealer or the boat manufacturer.

U.S. COAST GUARD CAPACITY	
MAXIMUM HORSEPOWER	XXX
MAXIMUM PERSON CAPACITY (POUNDS)	XXX
MAXIMUM WEIGHT CAPACITY	XXX

26777

Start in Gear Protection

WARNING

Starting the engine with the drive in gear can cause serious injury or death. Never operate a boat that does not have a neutral-safety-protection device.

OUTBOARD INSTALLATION

The remote control connected to the outboard must be equipped with a start in neutral only protection device. This prevents the engine from starting in gear.

Selecting Accessories for Your Outboard

Genuine Mercury Precision or Quicksilver Accessories have been specifically designed and tested for this outboard.

Some accessories not manufactured or sold by Mercury Marine are not designed to be safely used with this outboard or outboard operating system. Acquire and read the installation, operation, and maintenance manuals for all selected accessories.

Fuel Tanks

PORTABLE FUEL TANK

Select a suitable location in the boat within the engine fuel line length limitations and secure the tank in place.

PERMANENT FUEL TANK

Permanent fuel tanks should be installed in accordance with industry and federal safety standards, which include recommendations applicable to grounding, anti-siphon protection, ventilation, etc.

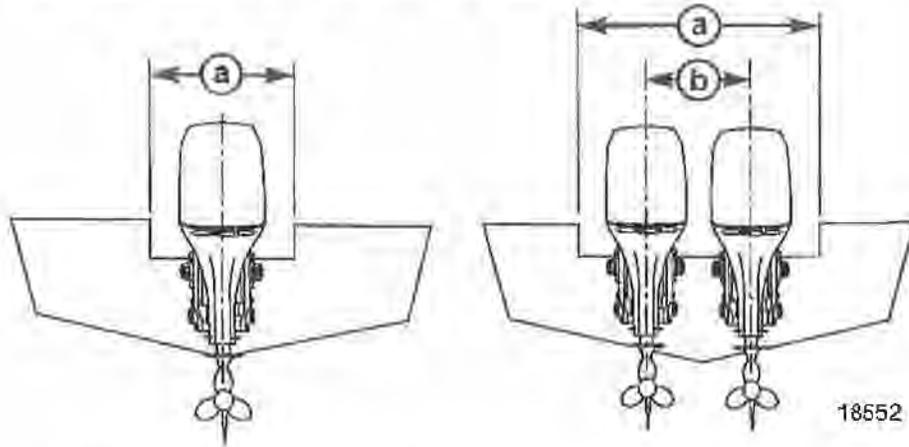
Low Permeation Fuel Hose Requirement

Required for outboards manufactured for sale, sold, or offered for sale in the United States.

- The Environmental Protection Agency (EPA) requires that any outboard manufactured after January 1, 2009 must use low permeation fuel hose for the primary fuel hose connecting the fuel tank to the outboard.
- Low permeation hose is USCG Type B1-15 or Type A1-15, defined as not exceeding $15/\text{gm}^2/24 \text{ h}$ with CE 10 fuel at 23°C as specified in SAE J 1527 - marine fuel hose.

OUTBOARD INSTALLATION

Installation Specifications



a - Minimum transom opening

b - Engine centerline for dual engine - 66.0 cm (26 in.)

Minimum Transom Opening	
Single engine	84.2 cm (33 in.)
Dual engine	149.9 cm (59 in.)

Lifting the Outboard

▲ WARNING

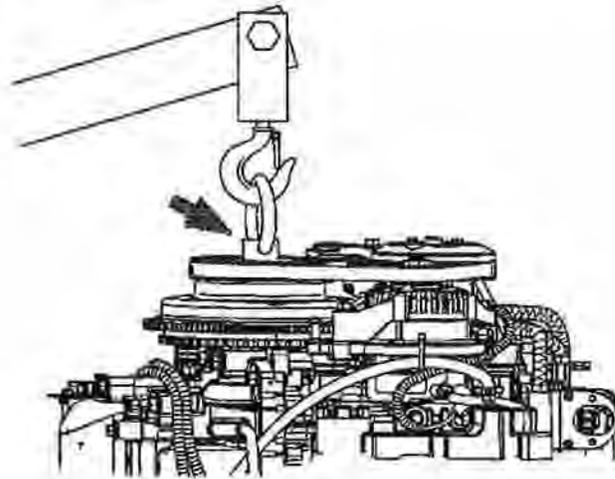
Improperly supporting an engine during lifting can result in the engine falling, causing serious injury or death. Before lifting the engine, verify that the lifting ring is threaded into the flywheel for a minimum of five turns and that the hoist has the correct lifting capacity for the engine weight.

To lift the outboard:

1. Remove the cowl from the outboard.

OUTBOARD INSTALLATION

2. Thread the lifting eye into the flywheel hub for a minimum of five turns.



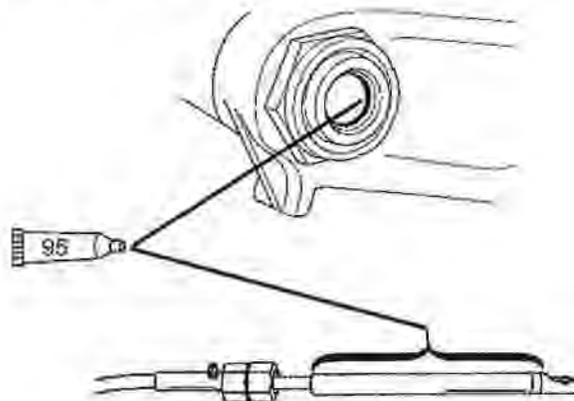
15363

Lifting Eye	91-90455--1
	Threads into the flywheel to remove the powerhead assembly from the driveshaft housing, or to lift entire engine for removal/installation.

3. Connect a hoist to the lifting eye.
4. Lift the outboard and place it on the boat transom.

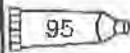
Steering Cable - Starboard Side Routed Cable

1. Lubricate O-ring seal and entire cable end.

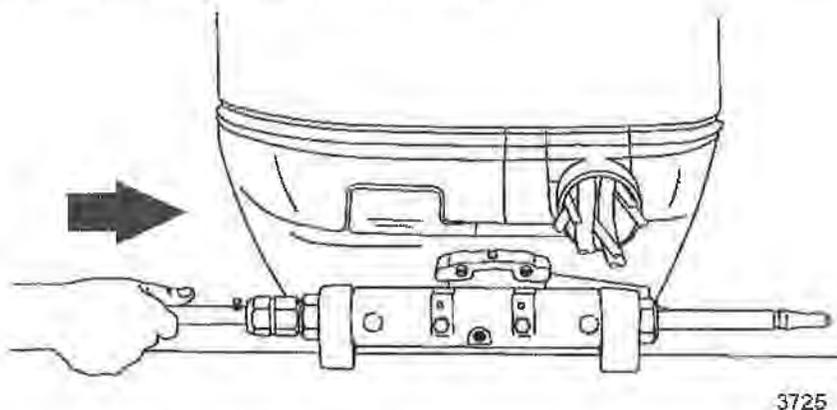


3724

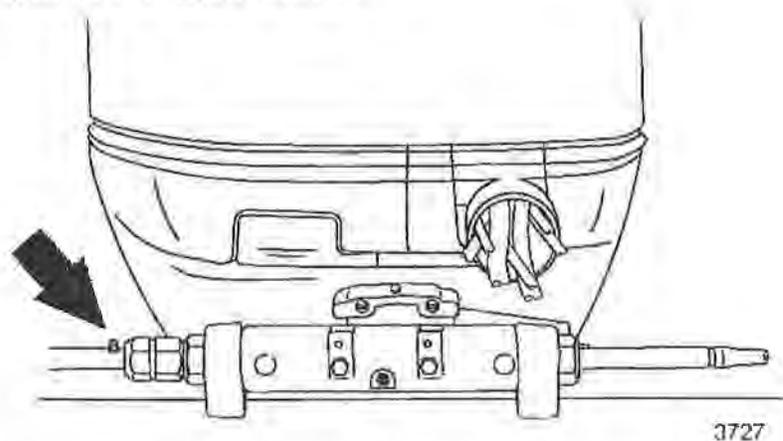
OUTBOARD INSTALLATION

Tube Ref No.	Description	Where Used	Part No.
95 	2-4-C with Teflon	O-ring seal and entire cable end	92-802859A 1

2. Insert steering cable into tilt tube.



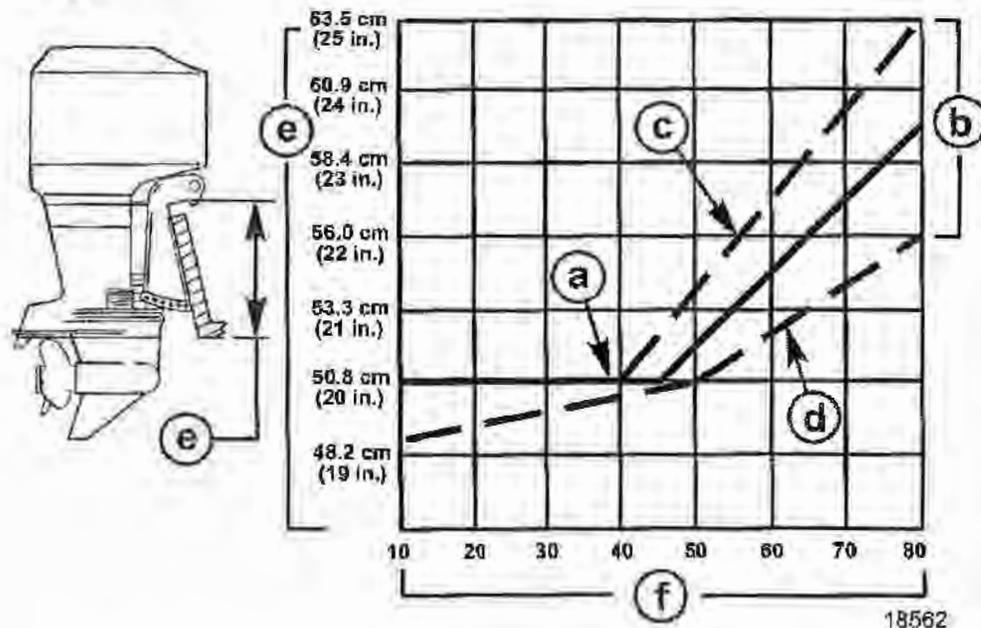
3. Torque nut to specification.



Description	Nm	lb-in.	lb-ft.
Nut	47.5		35

OUTBOARD INSTALLATION

Determining Recommended Outboard Mounting Height



- a** - The solid line is recommended to determine the outboard mounting height
- b** - The broken lines represent the extremes of known successful outboard mounting height dimensions
- c** - This line may be preferred to determine outboard mounting height dimension, if maximum speed is the only objective
- d** - This line may be preferred to determine outboard mounting height dimension for dual outboard installation
- e** - Outboard mounting height (height of outboard mounting brackets from bottom of boat transom). For heights over 56.0 cm (22 in.), a propeller that is designed for surfacing operation is usually preferred.
- f** - Maximum boat speed (MPH) anticipated

OUTBOARD INSTALLATION

NOTICE

1. The outboard should be mounted high enough on the transom so the exhaust relief hole will stay at least 25.4 mm (1 in.) above the waterline when the engine is running at idle speed. Having the exhaust relief hole above the waterline will prevent exhaust restrictions. Exhaust restrictions will result in poor performance at idle.
2. Add 12.7 cm (5 in.) for XL models to the listed outboard mounting heights.
3. The mounting height of the outboard must not exceed 63.5 cm (25 in.) for L models, 76 cm (30 in.) for XL models. Mounting the outboard higher may cause damage to the gearcase components.

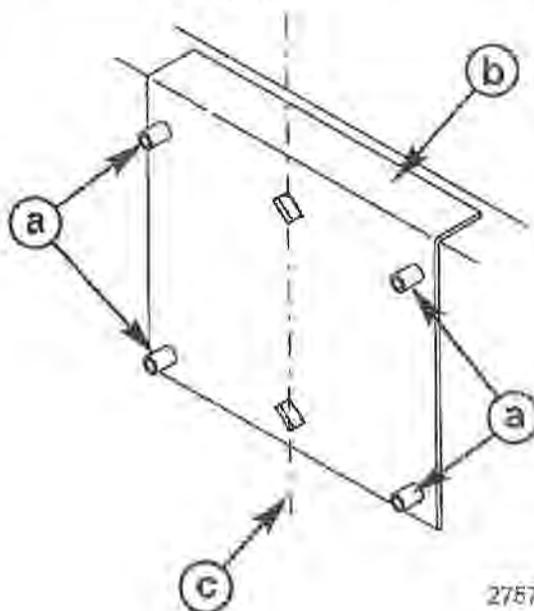
Increasing the mounting height will usually:

- Reduce steering torque
- Increase top speed
- Increase boat stability
- Cause propeller to break loose during planing

Drilling Outboard Mounting Holes

IMPORTANT: Before drilling any mounting holes, carefully read **Determining Recommended Outboard Mounting Height** and install outboard to the nearest recommended mounting height.

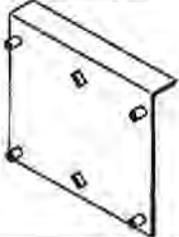
1. Mark four mounting holes on the transom using the transom drilling fixture.



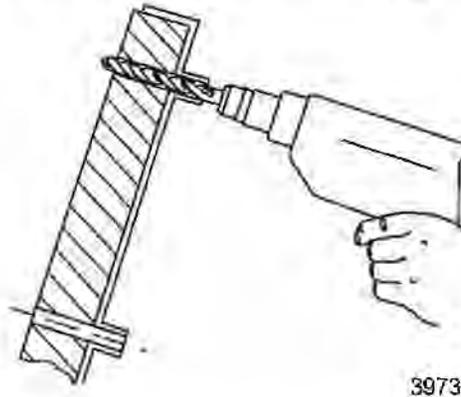
- a - Drill guide holes
- b - Transom drilling fixture
- c - Transom centerline

2757

OUTBOARD INSTALLATION

Transom Drilling Fixture	91-98234A2
 <p style="text-align: right; margin-top: 5px;">5489</p>	<p>Aids in engine installation by acting as a template for engine mounting holes.</p>

2. Drill four 13.5 mm (17/32 in.) mounting holes.



Fastening the Outboard to the Transom MOUNTING BOLTS

Outboard Transom Mounting Hardware - Supplied with Outboard		
Part Number	Part Name	Description
10-67755-1	Outboard mounting bolt	½-20 x 4.50 in. long (2.25 in. thread)
11-826711-17	Nylon insert locknut	½-20
12-28421	Flat washer	1-1/2 in. diameter
12-54012	Flat washer	7/8 in. diameter

Available Outboard Mounting Bolts	
Part Number	Description
10-67755005	½-20 x 2.50 in. long (1.25 in. thread)
10-67755006	½-20 x 3.50 in. long (1.25 in. thread)
10-814259	½-20 x 4.00 in. long (2.25 in. thread)
10-67755-1	½-20 x 4.50 in. long (2.25 in. thread)
10-8M0033366	½-20 x 5.00 in. long (3.25 in. thread)
10-67755-003	½-20 x 5.50 in. long (3.25 in. thread)

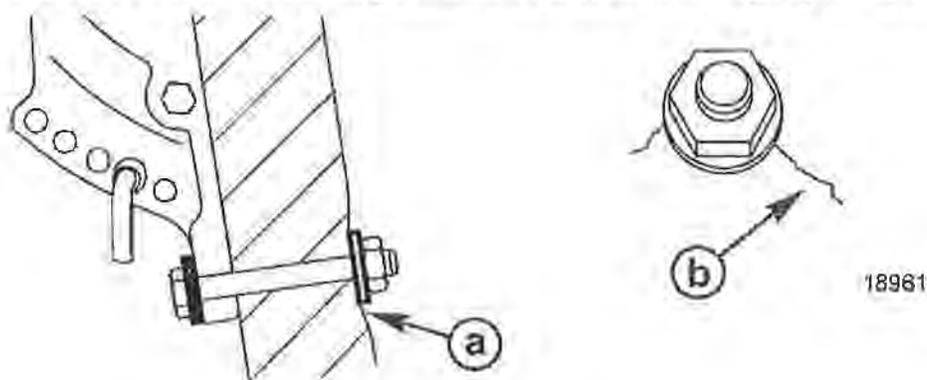
MART000452

OUTBOARD INSTALLATION

Available Outboard Mounting Bolts	
Part Number	Description
10-67755-2	½-20 x 6.50 in. long (2.75 in. thread)
10-8M0028080	½-20 x 7.50 in. long (2.75 in. thread)
10-8M0032860	½-20 x 8.00 in. long (2.75 in. thread)

CHECKING BOAT TRANSOM CONSTRUCTION

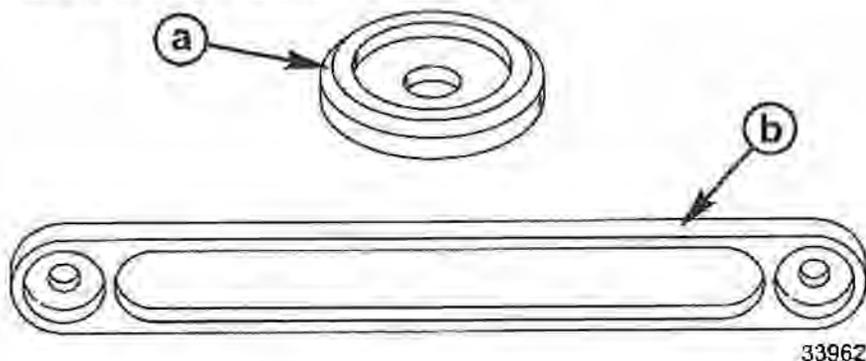
IMPORTANT: Determine the strength of the boat transom. The outboard mounting locknuts and bolts should be able to hold 75 Nm (55 lb-ft) of torque without the boat transom yielding or cracking. If the boat transom yields or cracks under this torque, the construction of the transom may not be adequate. The boat transom must be strengthened or the load carrying area increased.



- a - Transom yielding under bolt torque
- b - Transom cracking under bolt torque

OUTBOARD INSTALLATION

Use a dial torque wrench to determine transom strength. If the bolt or nut continues to turn without the torque reading on the dial increasing, it is an indication that the transom is yielding. The load area can be increased by using a larger washer or a transom reinforcement plate.



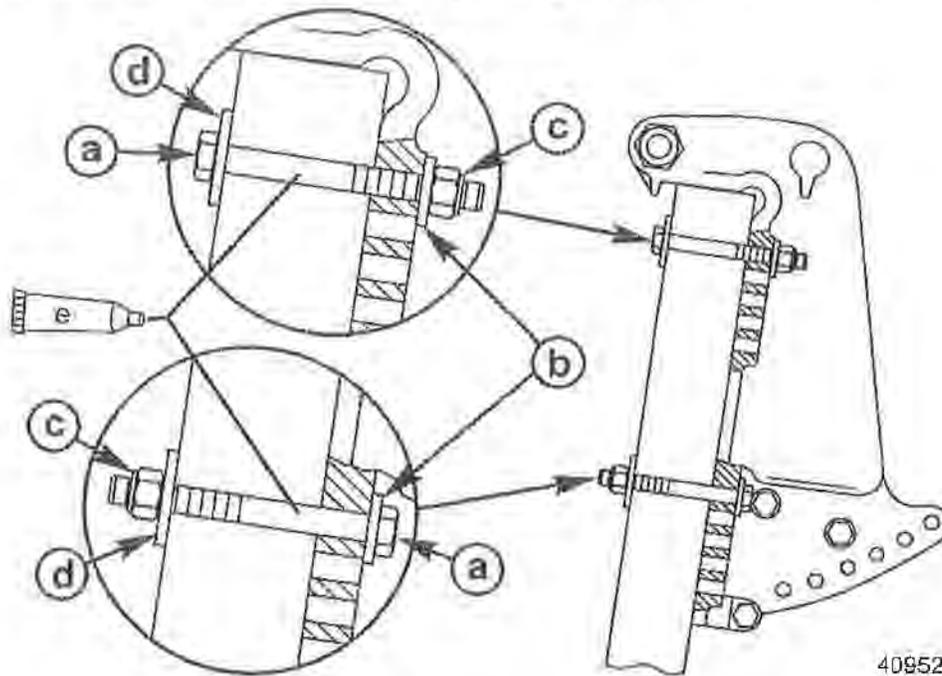
- a - Large transom washer
- b - Transom reinforcement plate

1. Apply marine sealer to the shanks of the bolts, not to the threads.
2. Fasten the outboard with the correct mounting hardware. Tighten the locknuts to the specified torque.

IMPORTANT: Ensure a minimum of two full threads of the mounting bolts extend beyond the locknut after tightening. The locknut must be drawn tight while still engaging the bolt threads and not contacting the shank of the bolt.

OUTBOARD INSTALLATION

NOTE: For more accurate torque, tighten the mounting locknuts rather than the outboard mounting bolts.



- a - 1/2 in. diameter outboard mounting bolt (4)
- b - 7/8 in. flat washer (4)
- c - Nylon insert locknut (4)
- d - 1-1/2 in. flat washer (4)
- e - Marine sealer - apply to the shank of the bolts, not the threads

Description	Nm	lb-in.	lb-ft
Outboard mounting locknuts and bolts - standard boat transom	75		55
Outboard mounting locknuts and bolts - metal lift plates and setback brackets	122		90

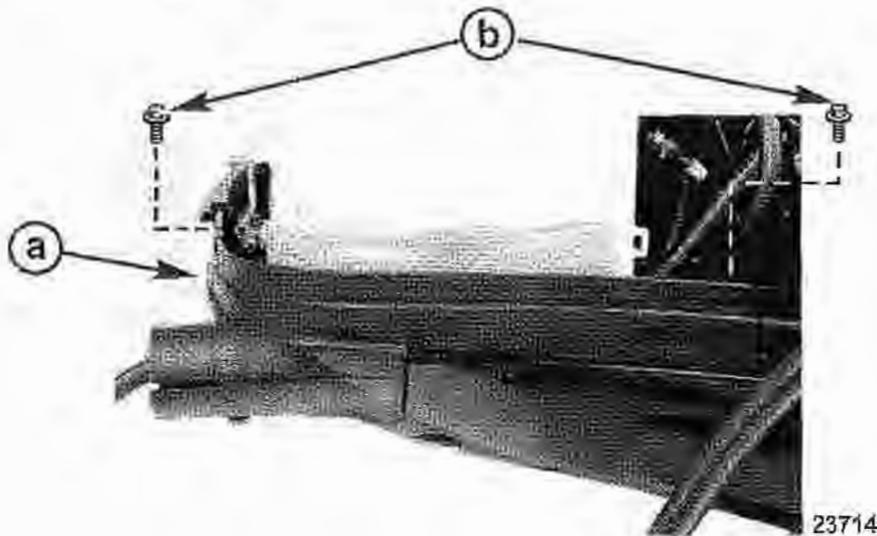
OUTBOARD INSTALLATION

Electrical, Fuel Hose, Flush Hose and Control Cables

FRONT COWL GROMMET

NOTE: Sufficient slack must exist in wiring, battery cables, and hoses that are routed between the grommet and engine attachment points to relieve stress and prevent hoses from being kinked or pinched.

1. Pull up the cowl seal. Remove the access cover from the bottom cowl.

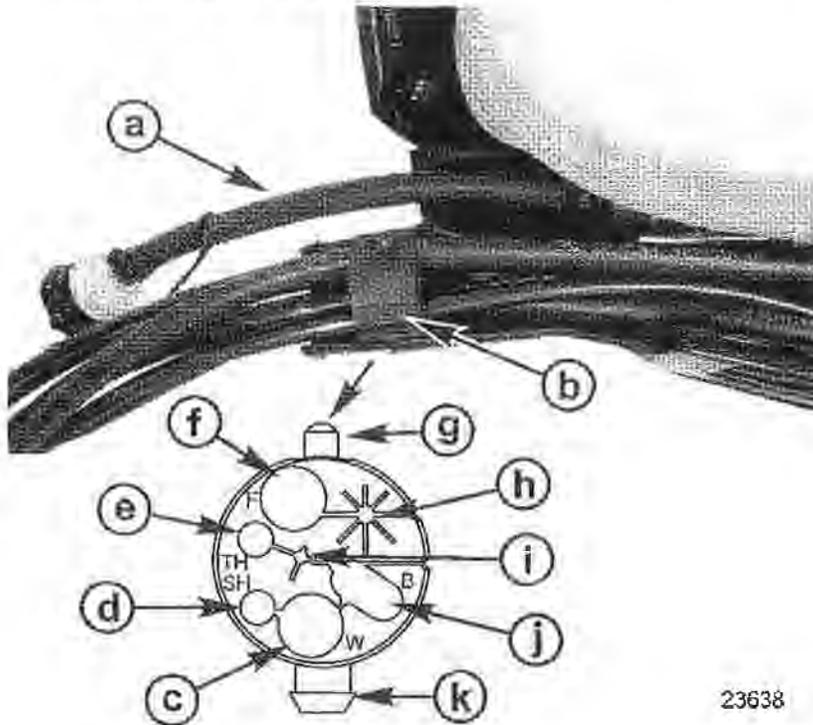


- a - Access cover
- b - Screws

2. Insert the lower alignment pin on the grommet into the hole in the lower cover. Ensure the lettered side of the grommet is facing out.
3. Route the hoses, wiring, and cables through the correct opening in the grommet, as shown.

OUTBOARD INSTALLATION

4. Install the flush hose after removing the knockouts. Refer to **Flush Hose Routing**.

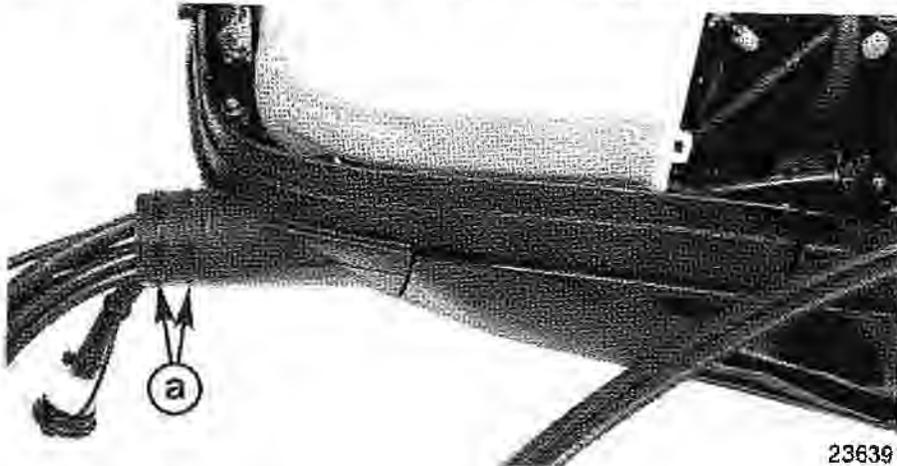


23638

- a - Flush hose
 - b - Grommet
 - c - Remote boat harness
 - d - Shift cable
 - e - Throttle cable
 - f - Fuel hose
 - g - Upper alignment pin
 - h - SmartCraft harness or additional harness opening
 - i - Water pressure tube
 - j - Battery cables
 - k - Lower alignment pin
5. Reinstall the access cover with two bolts. Reattach the cowl seal.

OUTBOARD INSTALLATION

6. Attach two cable ties around the grommet tube.

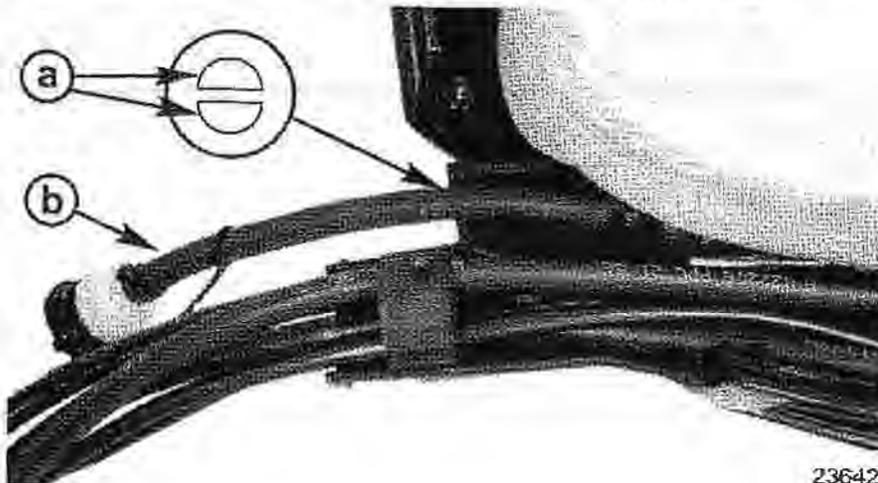


a - Cable tie

FLUSH HOSE ROUTING

If desired, the flush hose can be routed outside the cowling as follows:

1. Using a needle nose pliers, break out the semi-circular knockouts in the access cover and lower cover. Smooth the edges of the knockout with sandpaper or a small knife.
2. Route the flush hose through this opening.

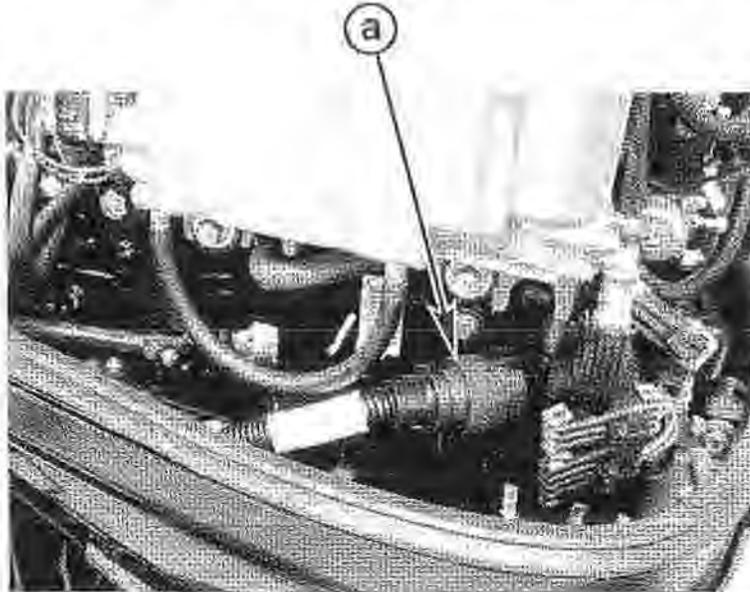


a - Knockout
b - Flush hose

OUTBOARD INSTALLATION

REMOTE BOAT HARNESS

Route the remote boat harness through the grommet. Connect the remote harness to the 14 pin connector on the engine harness.



23699

a - Remote 14 pin boat harness

BATTERY INFORMATION

▲ WARNING

Failure to properly secure the battery leads can result in a loss of power to the Digital Throttle and Shift (DTS) system, leading to serious injury or death due to loss of boat control. Secure the battery leads to the battery posts with hex nuts to avoid loose connections.

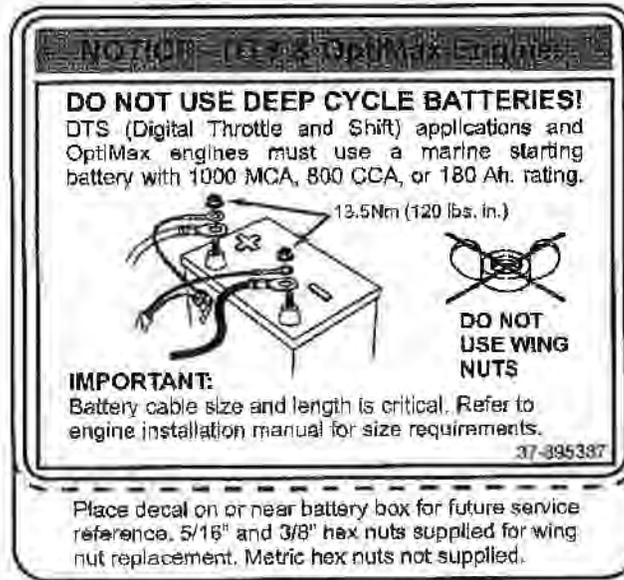
- Do not use deep-cycle batteries. Engines must use a marine starting battery with 1000 MCA, 800 CCA, or 180 Ah.
- When connecting engine battery, hex nuts must be used to secure battery leads to battery posts. Torque nuts to specification.

Description	Nm	lb. in.	lb. ft.
Hex nuts	13.5	120	

OUTBOARD INSTALLATION

IMPORTANT: Battery cable size and length is critical. Refer to engine installation manual for size requirements.

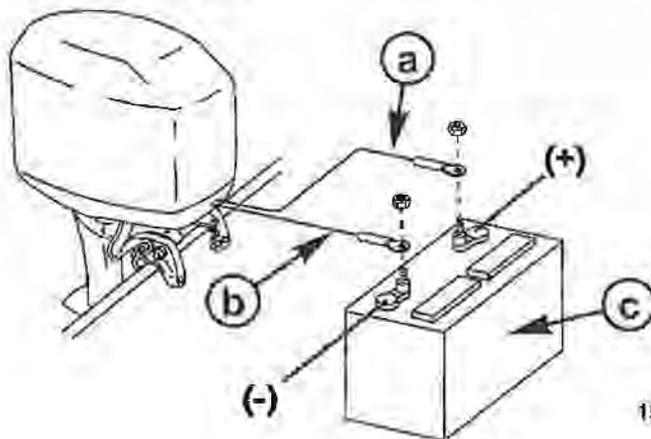
Decal needs to be placed on or near battery box for future service reference. One 5/16 in. and one 3/8 in. hex nut are supplied per battery for wing nut replacement. Metric hex nuts are not supplied.



3486

BATTERY CABLE CONNECTIONS

Single Outboard

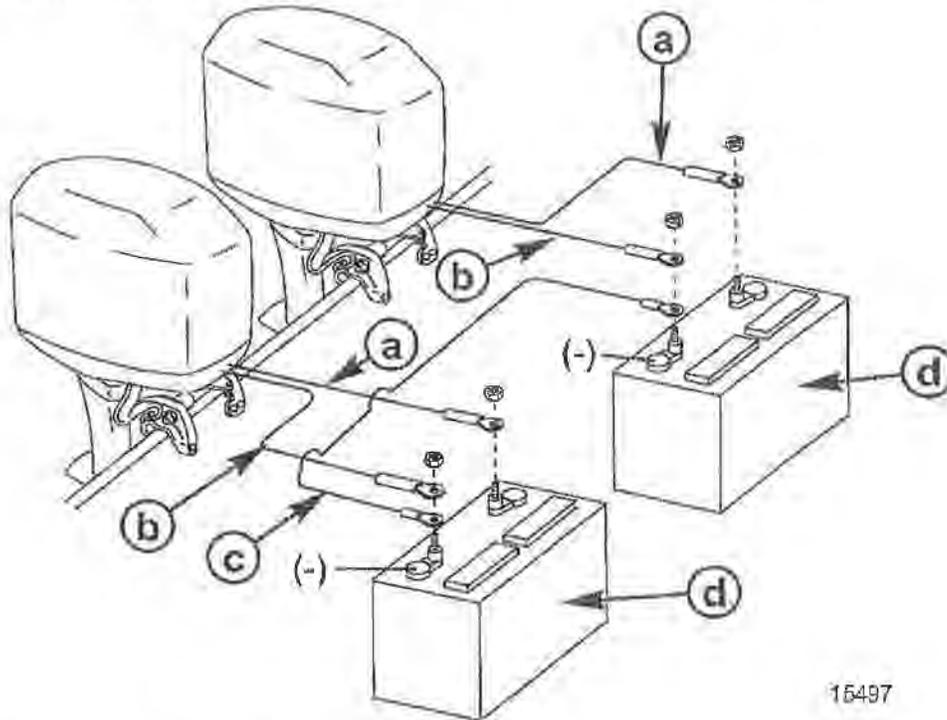


- a - Red sleeve - Positive (+)
- b - Black sleeve - Negative (-)
- c - Cranking battery

OUTBOARD INSTALLATION

Dual Outboards

Connect a common ground cable (wire size same as engine battery cables) between negative (-) terminals on starting batteries.



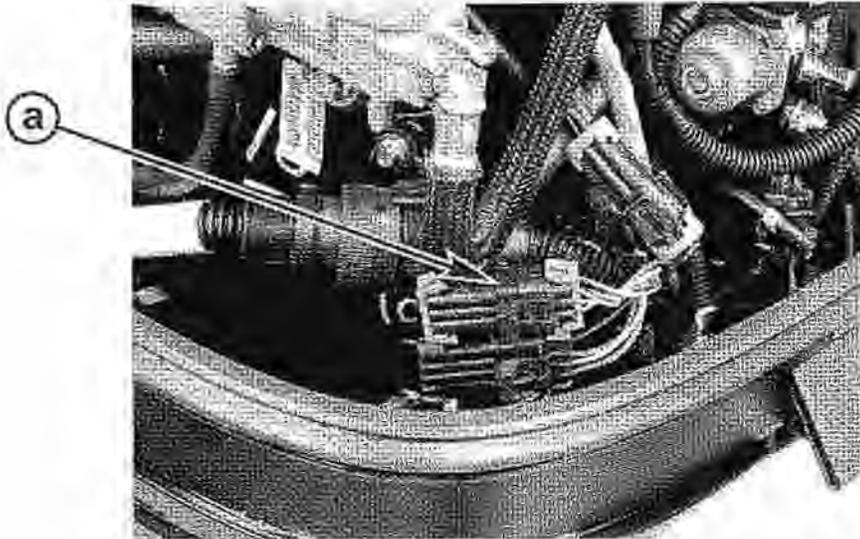
15497

- a - Red sleeve - Positive (+)
- b - Black sleeve - Negative (-)
- c - Ground cable
- d - Cranking battery

OUTBOARD INSTALLATION

SMARTCRAFT HARNESS CONNECTION

If SmartCraft gauges are being used with the outboard, route the SmartCraft wiring harness through the grommet and connect it to the SmartCraft harness connector on the engine.



23700

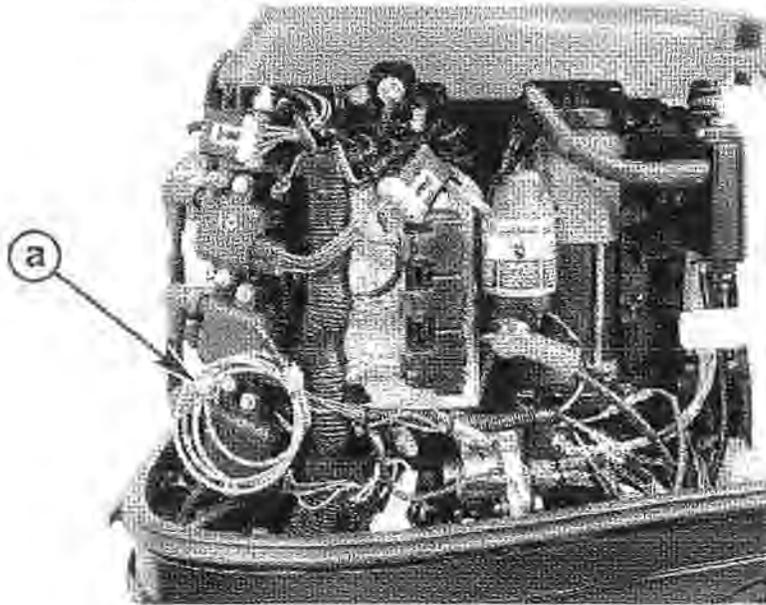
a - SmartCraft harness connector

WATER PRESSURE TUBE CONNECTION

If a water connection to the engine is required for a water pressure gauge, make the connection as follows:

OUTBOARD INSTALLATION

1. The water pressure tube is coiled and attached on the side of the engine. Cut the cable tie and route the water pressure tube out through the grommet.

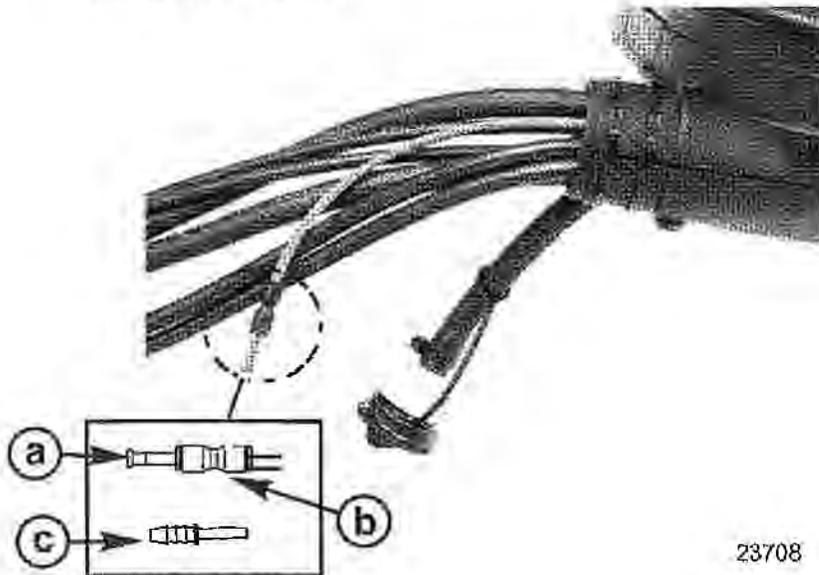


23702

a - Water pressure tube

OUTBOARD INSTALLATION

2. Remove the plug from the coupler and make the connection. A barb fitting (22-859731) can be installed for larger diameter hose connection.



- a - Plug
- b - Coupler
- c - Barb fitting (22-859731)

FUEL HOSE CONNECTION

Remote Fuel Hose Size

Minimum fuel hose inside diameter (ID) is 8 mm (5/16 in.) with separate fuel hose/fuel tank pickup for each engine.

OUTBOARD INSTALLATION

Fuel Hose Connection

Fasten the remote fuel hose to the fitting with a hose clamp.



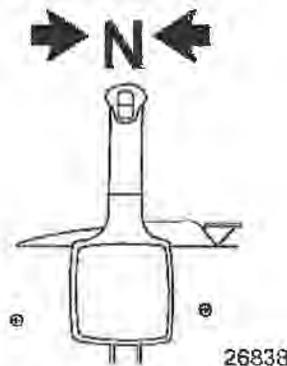
- a - Hose clamp
- b - Remote fuel hose

SHIFT CABLE INSTALLATION

NOTE: Install the shift cable to the engine first. The shift cable is the first cable to move when the remote control handle is moved out of neutral.

Install cables into the remote control following the instructions provided with the remote control.

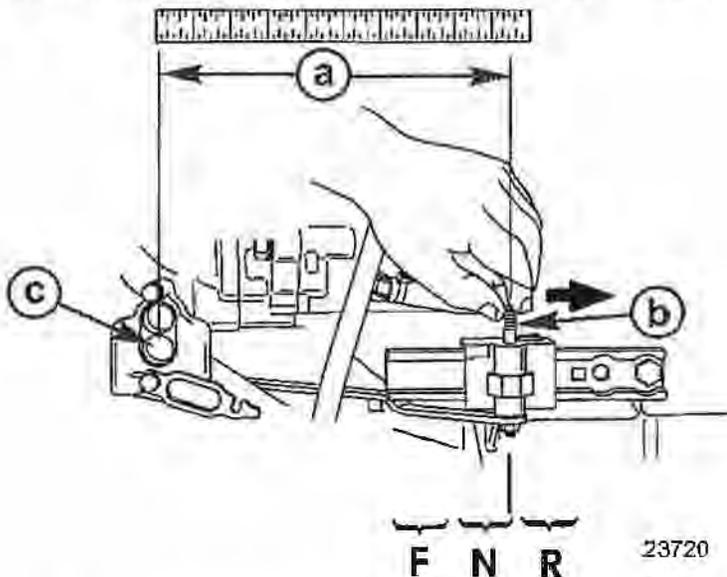
1. Position remote control into neutral.



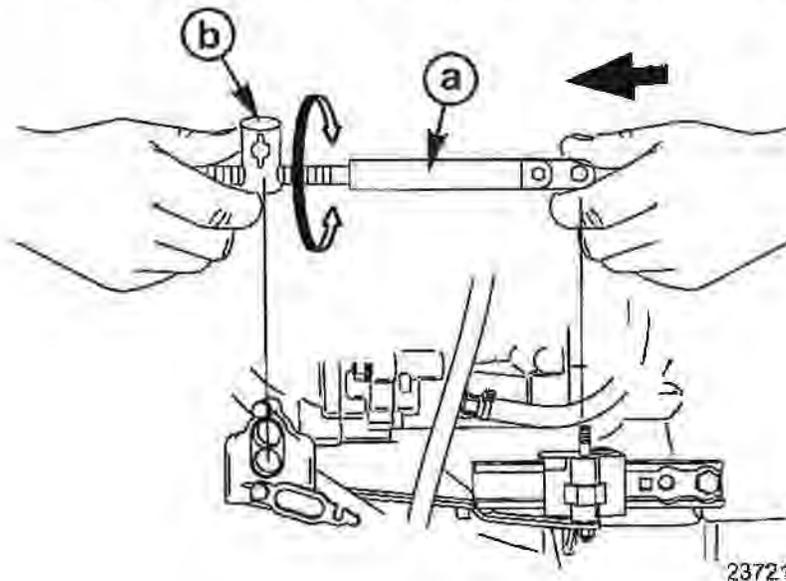
2. Shift outboard into neutral.

OUTBOARD INSTALLATION

3. Measure the distance between pin and center of barrel pocket.



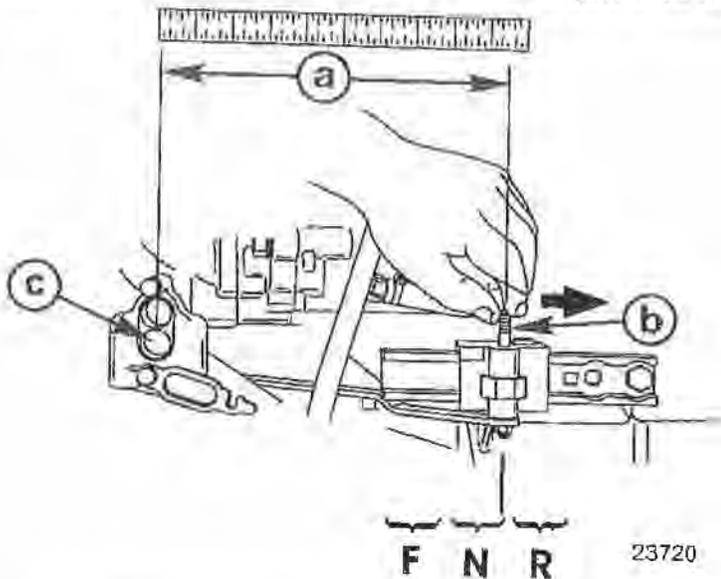
- a - Distance between pin and center of lower hole
 - b - Pin
 - c - Barrel pocket
4. Push in on the shift cable end until resistance is felt. Adjust the cable barrel to attain distance measured in Step 3.



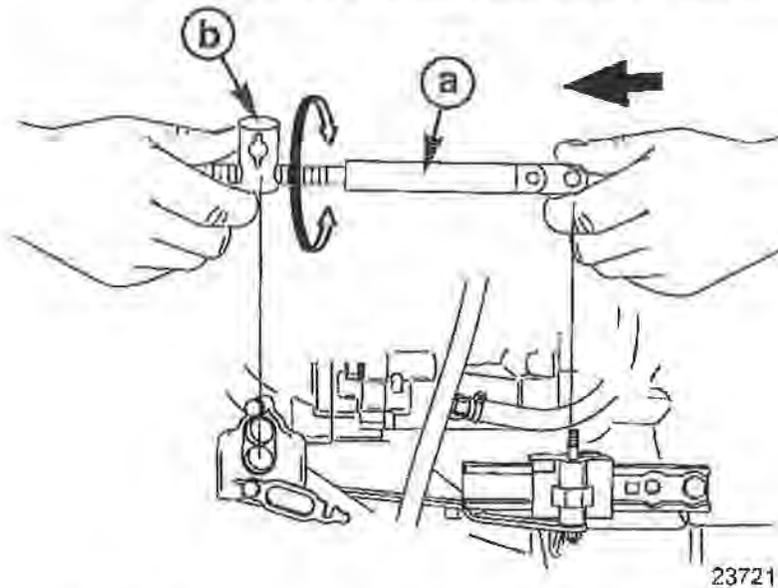
- a - Shift cable end
- b - Cable barrel

OUTBOARD INSTALLATION

3. Measure the distance between pin and center of barrel pocket.



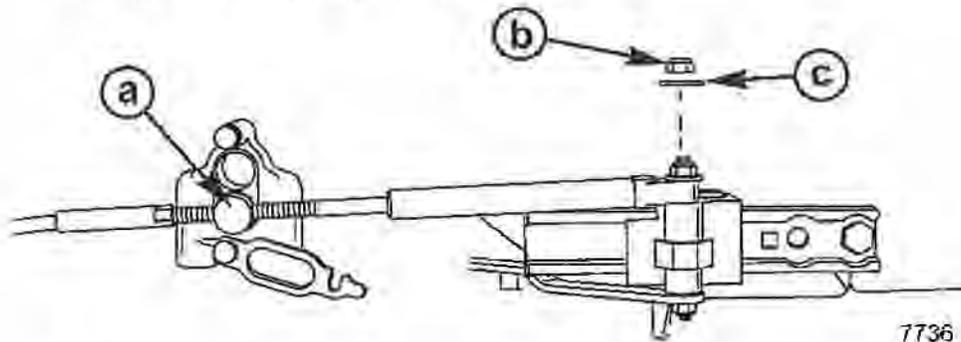
- a - Distance between pin and center of lower hole
 - b - Pin
 - c - Barrel pocket
4. Push in on the shift cable end until resistance is felt. Adjust the cable barrel to attain distance measured in Step 3.



- a - Shift cable end
- b - Cable barrel

OUTBOARD INSTALLATION

5. Place the cable barrel into the pocket. Fasten the cable with locknut and flat washer.



- a - Cable barrel
- b - Locknut
- c - Flat washer

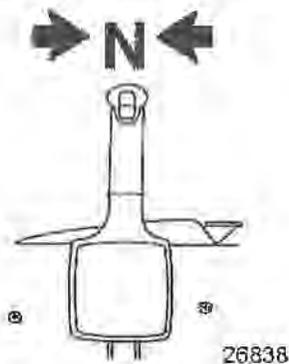
6. Check shift cable adjustments as follows:
 - a. Shift the remote control into forward. The propeller shaft should be locked in gear. If not, adjust the barrel closer to the cable end.
 - b. Shift the remote control into neutral. The propeller shaft should turn freely without drag. If not, adjust the barrel away from the cable end. Repeat steps a and b.
 - c. Shift the remote control into reverse while turning propeller. The propeller shaft should be locked in gear. If not, adjust the barrel away from the cable end. Repeat steps a through c.
 - d. Shift the remote control back to neutral. The propeller shaft should turn freely without drag. If not, adjust the barrel closer to the cable end. Repeat steps a through d.

THROTTLE CABLE INSTALLATION

Install cables into the remote control following the instructions provided with the remote control.

OUTBOARD INSTALLATION

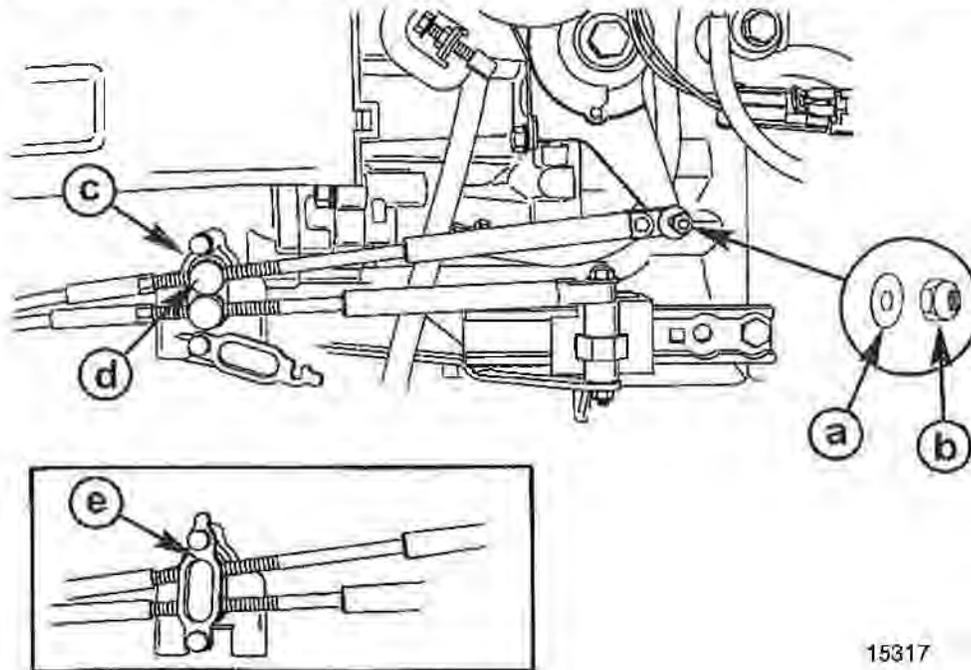
1. Position remote control into neutral.



2. Install the throttle cable to the throttle arm with a flat washer and locknut. Tighten the locknut, then back off the locknut 1/4 turn.
3. Adjust the cable barrel so that the installed throttle cable will hold the throttle arm against the idle stop.
4. Place the cable barrel into the barrel retainer.

OUTBOARD INSTALLATION

5. Lock the retainer and cables in place with the cable latch.

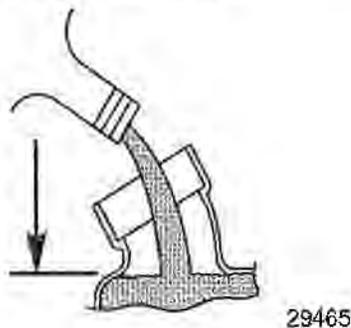


- a - Flat washer
- b - Locknut
- c - Barrel retainer
- d - Cable barrel
- e - Cable latch

Oil Injection Set-Up

FILLING OIL INJECTION SYSTEM

1. Fill the oil tank with the specified oil. Refer to **Filling Oil Injection System**. Add only enough oil to bring the oil level up to the bottom of the fill neck.

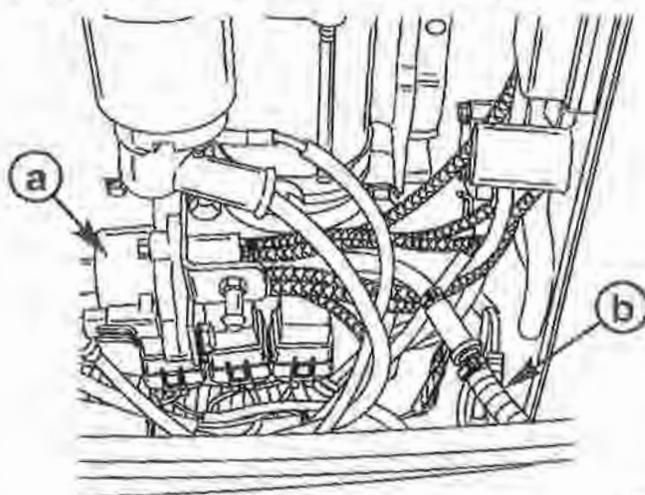


OUTBOARD INSTALLATION

All Models	Capacity	Fluid Type
Oil tank	4.72 liters (5 qt.)	Optimax/DFI 2-Cycle Engine Oil

PRIMING THE OIL INJECTION PUMP

Before starting engine for the first time, prime the oil injection pump. Priming will remove any air that may be in the pump, oil supply hose, or internal passages.



- a - Oil injection pump
- b - Oil supply hose

7912

IMPORTANT: Fill the engine fuel system with fuel before priming the oil injection pump. Otherwise, the fuel pump will run without fuel during the priming process and may be damaged.

Prime the oil injection pump as follows:

1. Fill the engine fuel tank with fuel.

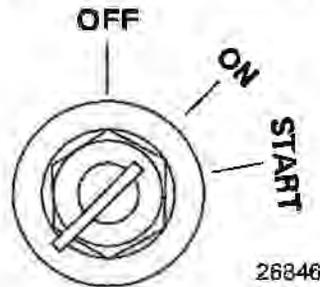
NOTE: Use the primer bulb located in the fuel hose to the engine to draw fuel from the tank to fill the engine fuel system.

2. Position the fuel hose primer bulb so that the arrow on the side of the bulb is pointing up. Squeeze the fuel hose primer bulb until it feels firm.



OUTBOARD INSTALLATION

3. Turn the ignition key switch to the "ON" position.



4. Within the first 10 seconds after the key switch has been turned on, move the remote control handle from neutral into forward gear 3 to 5 times. This will automatically start the priming process.

NOTE: It may take a few minutes for the pump to complete the priming process.

Trim In Pin

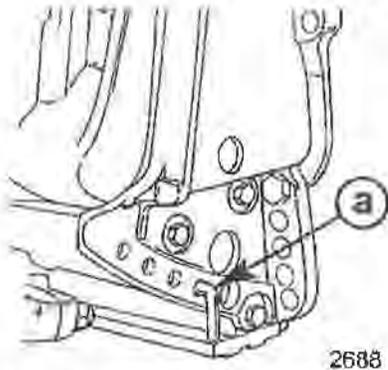
▲ WARNING

Operating the boat at high speeds with the outboard trimmed too far under can create excessive bow steer, resulting in the operator losing control of the boat. Install the trim limit pin in a position that prevents excessive trim under and operate the boat in a safe manner.

Some boats, particularly some bass boats, are built with a greater than normal transom angle, which will allow the outboard to be trimmed further in or under. This greater trim under capability is desirable to improve acceleration, reduce the angle and time spent in a bow high boat during planing off, and in some cases, may be necessary to plane off a boat with aft livewells, given the variety of available propellers and height range of engine installations.

OUTBOARD INSTALLATION

However, once on plane, the engine should be trimmed to a more intermediate position to avoid a bow-down planing condition called plowing. Plowing can cause bow steering or oversteering and inefficiently consumes horsepower.



a - Tilt pin (not included with engine)

2688

Stainless Steel Tilt Pin	17-49930A 1
<p>2749</p>	Limits the down trim angle of the power trim equipped engines, or aids in determining the trim out angle on non-power trim engines.

The owner may decide to limit the trim in. This can be accomplished by purchasing a stainless steel tilt pin from your dealer and insert it in whatever adjustment hole in the transom brackets is desired. A non-stainless steel shipping bolt should not be used in this application other than on a temporary basis.

Whether you're new to boating or simply seeking to improve or update your boating savvy, the "Boater's Knowledge Now" series is a valuable resource. Each in-depth DVD contains a wealth of practical information to help get you started, or to keep your boating experience fun and rewarding.

Boater's Knowledge NOW

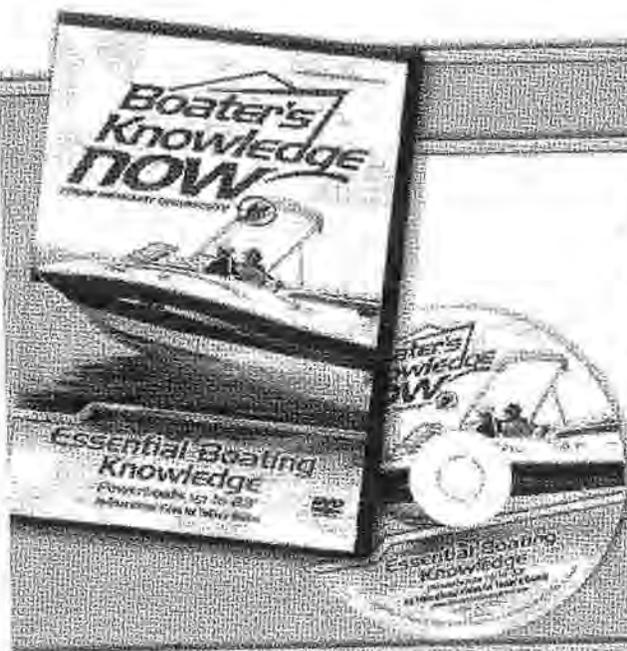
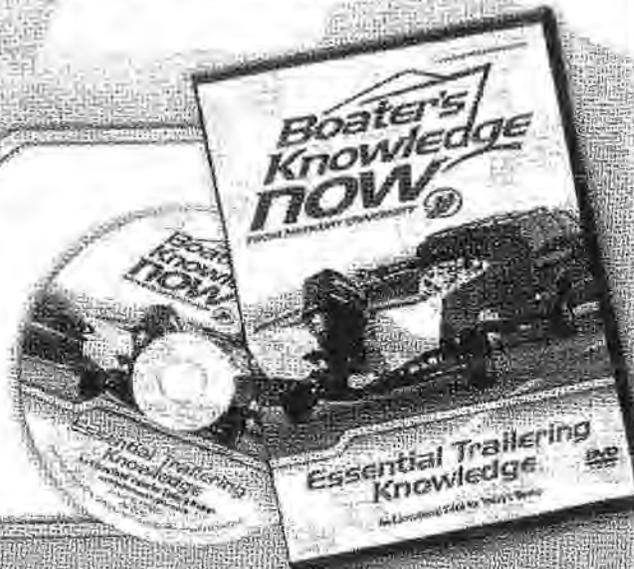
FROM MERCURY UNIVERSITY



Essential Trailering Knowledge

PN# 90-879260Q01

Easy to understand instructions for loading, transporting and unloading your boat.



Essential Boating Knowledge Powerboats up to 23'

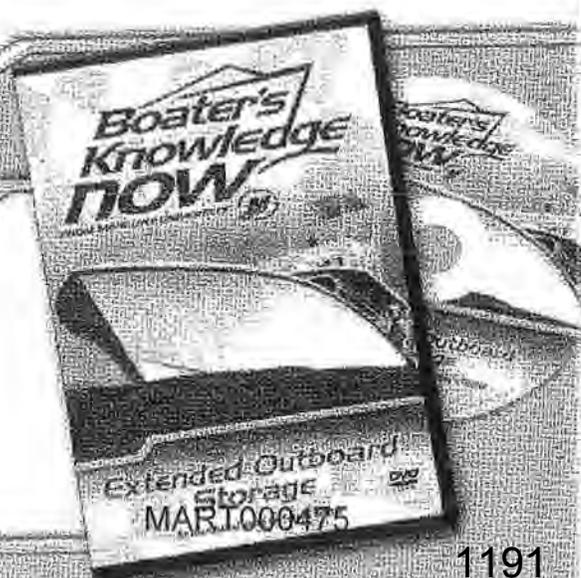
PN# 90-879260Q

A must for anyone new to boating.

Essential Outboard Storage

PN# 90-857990Q

Covers proper storage and storage preparations including oil and fuel care.



MERCURY[®]

Product Protection

Mercury Product Protection is an extended service contract completely administered by Mercury Marine and factory-backed. No other independent provider or insurance company can make this statement. Mercury Marine has been the leader in marine propulsion for more than 65 years and no one knows your Mercury product better than the people who made it.

Mercury Product Protection provides comprehensive component coverage – including labor – for breakdown failures caused by a defect in material or workmanship. Repairs are made with genuine factory Quicksilver and/or Mercury Precision Parts.

Contracts may be purchased within the first three years of factory warranty as long as all other eligibility applies. See the Mercury Plan Benefits and Provisions for complete program details.

Key customer features and benefits:

- MPP is factory backed by Mercury Marine, which means program integrity and exemplary customer service. Mercury has been the leader in marine propulsion for more than 65 years and no one knows your Mercury product than the people who manufacture it. It also means the program is preferred by lending institutions.
- MPP offers similar component coverage as the factory warranty, with a \$25 deductible, giving your customers peace of mind and financial protection for up to 7 years on eligible products. MPP only uses genuine Mercury Precision parts, and labor is included. No "will-fit" substitutes.
- MPP can be transferred to subsequent owners for only \$50 per engine, increasing product value at resale or trade-in time.
- The plan offers up to \$200 toward hoist/haul out on all boats 26 ft or longer and up to \$200 in on-water tow fees for approved repairs on covered product.
- There are more than 5,000 authorized and factory-trained dealers throughout the United States and Canada to service MPP customers. They know how important it is to get your customer back on the water.

For information regarding extended service contracts, please contact:

Mercury Product Protection

888-427-5373

Monday - Friday

7:30 am - 5:30 pm CST

mpp_support@mercmarine.com

Visit us at:

mercuryproductprotection.com

MART000476



THE GEAR YOU NEED.

The best marine engines deserve the very best care possible. Mercury Precision Parts and Accessories are designed, built, tested and refined to the same high standards of performance and corrosion-resistance as Mercury's engines. Quality engine care with Mercury Precision Parts keeps engines running longer and stronger.

**Get the Gear You Need from the World
Leader in Marine Parts and Lubricants.**

Visit your local Mercury Marine Dealer.

www.mercurymarine.com

MERCURY

Precision Parts 000477



GET THE KNOWLEDGE BEHIND YOUR POWER.

Get the knowledge you need to keep your engine running at maximum performance. With over 4,000 different manuals and guides available, Mercury Precision Parts has the knowledge you need.

Order Service Manuals, Owner's Guides, Parts Manuals and more at
www.mercurymarine.com

MART000478

Michael A. Worel (12741)
Ricky Shelton (14784)
DEWSNUP, KING & OLSEN
36 South State Street, Suite 2400
Salt Lake City, Utah 84111-0024
Telephone: (801) 533-0400
mworel@dkolaw.com
rshelton@dkolaw.com
Attorneys for Plaintiff

SECOND JUDICIAL DISTRICT COURT
MORGAN COUNTY, STATE OF UTAH

CRAIG FEASEL, an individual,

Plaintiff,

v.

TRACKER MARINE, LLC, a Missouri
limited liability company; BRUNSWICK
CORPORATION, a Delaware corporation;
and MONTY MARTINEZ, an individual

Defendants.

**DECLARATION OF
CRAIG FEASEL**

Civil No. 140500037

Judge Noel S. Hyde

Pursuant to Utah Code Section 78B-5-705, I, Craig Feasel, declare under criminal penalty of the State of Utah that the following is true and correct:

1. On June 30, 2012, I was injured in a boating accident ("Accident").
2. During the Accident, I was ejected from a boat.
3. The boat then began tightly circling me. The boat and propeller struck me at least three separate times during at least three separate circles.

4. I now understand that a phenomenon can occur where the boat spins in tight circles when running unmanned. I understand this phenomenon is known as the "Circle of Death." When I was stuck by the propeller during the Accident, the Boat was engaged in the

Circle of Death. The Circle of Death caused my injuries in the Accident.

5. Before the Accident, I did not know about the Circle of Death.

6. In my view, the Circle of Death is a different and more threatening type of danger than the danger of being hit by a boat that is not circling. A non-circling boat may strike an ejected occupant once; but a boat engaged in the Circle of Death can strike an occupant multiple times, particularly with the propeller. This different type of danger is not contemplated by the ordinary and prudent buyer, consumer, and user of boats.

7. Before the Accident, the Circle of Death was not a danger that I contemplated for boating.

8. Before the Accident, I did not have any experience or training about the Circle of Death.

9. If I had known about the Circle of Death, I would have insisted that the operator of the boat use a kill-switch lanyard while operating the boat.

10. If I had known about the Circle of Death, I would have not ridden in any bass boat in which the operator is not using the kill-switch lanyard.

11. Now that I know about the Circle of Death, I will not ride in any bass boat in which the operator is not using the kill-switch lanyard.

12. I have been boating for nearly my whole life. In my experience, very few boaters use kill-switch lanyards. One reason for this is because they are cumbersome. Another reason for this is because boaters do not know about the Circle of Death.

13. Since the Accident, I have spoken with many boaters about the Circle of Death. All of these boaters were surprised to learn about the Circle of Death because they had never heard about it.

Executed this 4th day of September, 2016.


Craig Feasel

Jared R. Casper
PETERSON & ASSOCIATES
230 South 500 East, Suite 400
Salt Lake City, Utah 84102
Telephone: (801) 517-3025
jared.casper@farmers.com
Attorney for Monty Martinez

SECOND JUDICIAL DISTRICT COURT MORGAN COUNTY, STATE OF UTAH	
CRAIG FEASEL, an individual, Plaintiff, v. TRACKER MARINE, LLC, a Missouri limited liability company; BRUNSWICK CORPORATION, a Delaware corporation; and MONTY MARTINEZ, an individual Defendants.	DECLARATION OF MONTY MARTINEZ Civil No. 140500037 Judge Noel S. Hyde

Pursuant to Utah Code Section 78B-5-705, I, Monty Martinez, declare under criminal penalty of the State of Utah that the following is true and correct:

1. I was the driver of the boat at the time of the accident at issue in this case ("Accident").
2. Prior to the Accident, where Craig Feasel was injured after being thrown from my boat, I would wear the kill-switch lanyard in stormy weather.
3. Prior to the Accident, I had read that boats could spin in a circle when people were thrown from the boat in stormy weather.
4. Because of this danger in stormy weather, I wore the kill-switch lanyard when I drove the boat in stormy weather.

5. Prior to the Accident, I did not know that people would be thrown from a boat and the boat would spin with no one in them in clear weather.

6. The weather was clear at the time of the Accident so I was not wearing the kill-switch lanyard.

7. During the Accident, Craig Feasel and I were knocked out of the boat, and the boat started spinning in circles.

8. I now understand that when all the people in a boat are thrown out of the boat it can spin in circles regardless of the weather conditions.

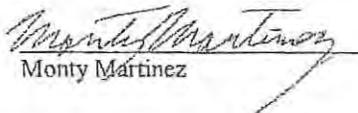
9. Prior to the Accident, I did not know that when all people in a boat are thrown out of the boat it can continue to circle in clear weather.

10. If I had known at the time of the Accident that in clear weather a boat could spin when all people were thrown from the boat, I would have worn the engine-stop-switch lanyard.

11. If I had been wearing the kill-switch lanyard at the time of the Accident, the boat would not have continued to spin.

12. Since the Accident, I now wear the kill-switch lanyard when I drive the boat, irrespective of the weather conditions, because I now know that a boat can continue to spin even without people in the boat.

Executed this 3 day of September, 2016.


Monty Martínez

⚠ DANGER

Contact with a spinning propeller will cause serious injury or death

Operators thrown overboard without a kill switch lanyard attached can suffer amputation or death from contact with propeller blades

Continuous throttle input will cause boat to turn sharply to the right and create a “circle of death” causing multiple propeller strikes



⚠ DANGER

Contact with a Spinning Propeller will cause Serious Injury or Death

Operator must attach lanyard kill switch at all times to prevent amputation or death by contact with spinning propeller

If the operator falls overboard with the engine running--the propeller will steer the boat to the right, creating an ever-tightening "circle of death"

The U.S. Coast Guard states that at 3200 rpm, the propeller can hit you 160 times per second

Wearing the lanyard to cut-off the engine when the operator loses contact with the steering control has been proven to prevent many propeller strikes, amputations and deaths





BOATER'S CHECKLIST

For improved safety and enjoyment check each of these items:

CHECK BEFORE YOU LAUNCH YOUR BOAT:

- Read and understand the Owner's Manual
- Drain plug (securely in place)
- Propeller condition (prop nut tight and secured, not cracked or bent blades)
- Steering system (working smoothly and properly; self locking nuts in place)
- Battery (fully charged, cable terminals clean and tight)
- Capacity plate (are you overpowered)
- Weather conditions (safe to go out)
- Fuel & oil (sufficient for trip, check bilge area for gas odor, no leaks)
- Hoses & connectors (no leaks or damage)
- Electrical equipment (light, horn, pumps, etc.)
- Safety equipment (fire extinguisher, bailer, paddle, anchor and line, mooring lines, signaling device, tool kit, first aid kit, first aid manual)
- Float plan submitted to responsible person (verbal or written)

CHECK BEFORE YOU START YOUR ENGINE:

- Fuel (sufficient for trip, check bilge area for gas odor)
- Control in neutral
- Capacity plate (are you overloaded or overpowered)
- Personal flotation devices on all occupants
- Seating (everyone in proper place)
- Lanyard stop switch (operational and securely fastened)
- No one in water near boat
- Keep a firm and continuous grip on the steering wheel.

PN 121132 M

EXHIBIT

19

tabbles

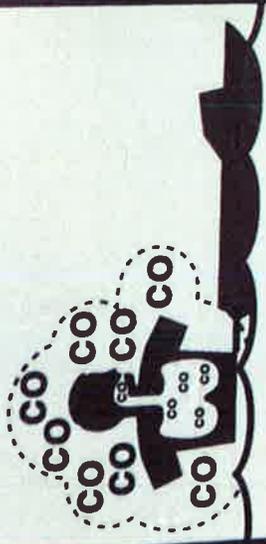
! DANGER !

Carbon monoxide (CO) can cause brain damage or death.

Engine and generator exhaust contains odorless and colorless carbon monoxide gas.

Carbon monoxide will be around the back of the boat when engines or generators are running. Move to fresh air, if you feel nausea, headache, dizziness, or drowsiness.

PN 142672



! WARNING !

Rotating propeller may cause serious injury or death.

Do not approach or use ladder when engine is running.

PN 142669

EXHIBIT
18
Labels