IWWF Waterski Boat Policy

1. IWWF WATERSKI BOAT APPROVAL

The IWWF Waterski Council will publish a list of eligible boats for use in Ranking List (L) and Record Capability (R) events worldwide.

For the purposes of boat testing and approval, the Council relies on the IWWF Boat Testing Committee. The Committee consists of three members one representee from E&A, PanAm, and AAO. The test team shall be comprised of a minimum 3 - D1 Drivers and 1- H1 Homologator. The skiers used in the evaluation shall include Open Men & Open Women (top 50 on Ranking List).

To ensure global consistency and compliance, all tests of boats intended for use in Ranking List (L) and Record Capability (R) events shall be conducted in accordance with procedures approved by the IWWF Boat Testing Committee.

Further, with the agreement of the IWWF Boat Testing Committee, boats may be approved in the country of manufacture. If a model is manufactured in multiple countries, preference will be given to the country of incorporation of the company. If testing in that country is not feasible, testing may take place in another country of manufacture. If none of these options is possible, the IWWF Boat Testing Committee may authorise testing in an alternative country.

2. IWWF WATERSKI REQUIREMENTS AND USE POLICIES

a) The IWWF Waterski Council will publish all technical criteria required for boat approval. Testing requirements have been approved by the IWWF Waterski Council and are based on the testing procedures currently in use by USA Waterski/AWSA.
b) The list of approved model year boats will be published on a yearly basis. Provided that no change has occurred to the wetted surface or other changes (see 2c below), no annual physical retest is required, and the towboat's approval shall remain in force.
c) Changes to the wetted surface, engine, transmission, propeller or speed control software that impact the skier's pull will require retesting and/or approval. If necessary, the IWWF Waterski Council may require any previously approved boat to undergo a new homologation test.
d) Boats shall only be used "as tested" and approved. Speed Control Systems, engine settings, etc. shall not be changed from the configuration as set by the manufacturer and tested by the Committee. No equipment or device will be attached to any boat that affects performance, handling, or maneuverability unless such equipment has been tested as part of the boat tests or such equipment is otherwise tested and/or approved by IWWF Boat Testing Committee.

3. IWWF TOWBOAT TESTING AND APPROVAL – PROCEDURAL STEPS

a) Manufacturers shall contact the appropriate National Federation to initiate the boat approval procedure.
b) The National Federation will then contact the IWWF Waterski Council, which through the IWWF Boat Testing Committee will arrange and oversee the homologation tests.
c) After the test, the IWWF Boat Testing Committee will send a test report to the IWWF Waterski Council and to the appropriate National Federation. If the results are positive, the Committee will request that the boat be added to the list of boats approved for use in Ranking List (L) and Record Capability (R) events.
d) Once approved, the boat is eligible for use at all IWWF competitions for the period of its approval.

4. WORLD WATERSKI CHAMPIONSHIP BOAT RIGHTS

The IWWF Bureau may enter into agreements with the manufacturer of an approved boat for its use at World Championship events. If any hull change has occurred, the boat must first be requalified in accordance with the procedures set out in point 2 c) above in order to remain eligible for use at World Championships.

5. WORLD CHAMPIONSHIP USE OF BOATS

At intervals determined by the IWWF, and whenever deemed necessary, the IWWF will launch a competitive selection process among boat manufacturers to appoint the boat model(s) to be used at IWWF World Waterski Championships (Open, U17, U21, 35+) and IWWF University World Championships.
For each such event, the manufacturer selected through this process shall provide at least two fully prepared waterski towboats (OB and/or CB) meeting at least the following minimum specifications:

- Boat model as per the IWWF list of approved boats
- IWWF-approved waterski speed control
- Bimini top
- Mooring cover
- On-site technical support with a qualified mechanic for the duration of the event

6. NATIONAL FEDERATION BOAT TESTING FOR NATIONAL EVENTS NOT HOMOLOGATED BY IWWF

The testing procedure for waterski boats in non-homologated "L" or "R" events may be conducted by any National Federation without the need for prior approval. However, it is recommended that all testing follow the guidelines set by the IWWF Boat Testing Committee.

PERFORMANCE STANDARDS, TESTING & EVALUATION CRITERIA

Boats to be used in waterski competitions must meet certain performance standards for three event tournaments which will allow skiers, drivers, and officials to perform up to their maximum ability in water ski situations. The Committee shall review these standards annually and change or add to them as deemed necessary.

The technical aspects of the evaluations are designed to measure and test a towboat's performance under simulated tournament conditions. Each test has specific performance criteria, and all towboats must meet or exceed these pre-determined performance standards.

1. POWER AND ACCELERATION

The object of these tests is to determine whether a boat has adequate power to pull slalom and jump events. The distance required to pull a skier from a deep-water start on a competition slalom ski and accelerate to 58kph will be measured. This distance may not exceed 70 meters to pull Record Capability tournaments. The distance required to pull a jump skier at maximum jump speed for the jump event will also be measured (acceleration from 57kphto 61.5kph) and must not exceed 21 meters. A load device (drone), capable of consistently simulating the resistance of a skier throughout the designated course may be used to replace the skier. If a boat passes the power & acceleration test portion**,** its power will be further tested during the slalom and jump deviation tests. Failure to meet these marks indicates lack of appropriate power. All drivers will observe the adequacy of power while pulling skiers under tournament conditions. This test includes the ability to consistently obtain times within the allowed tolerances for slalom and jump courses.

2. SLALOM COURSE CENTERLINE DEVIATION

The amount of boat path deviation, which is influenced by the pull of a slalom skier, will be measured. Two factors will be measured: average deviation and maximum deviation from the boat's path with a slalom skier. Measurements will be made at speeds of 52kph, 55kph and 58kph at 18.25m, 16m, 14.25m, 13m, 12m, and alternatively 11.25m line lengths. The average deviation must be less than 12cm at each buoy.

3. JUMP COURSE CENTERLINE DEVIATION

The amount of boat path deviation, which is influenced by the pull of a jump skier, will be measured. Two factors will be measured: average deviation and maximum deviation from the boat's path with a jump skier. Measurements will be made with the skier skiing at maximum division speed and jumping over the ramp or skiing through a set of buoys that simulate a jump ramp. The average deviation must be less than 24cm.

4. SLALOM SPRAY

While running the slalom course, boat spray should not significantly affect the skier's performance. Since this test is subjective, comments from the test skiers, all experienced competitors, will be recorded for the manufacturer's information. If all testing skiers independently agree that the spray has significant negative effect, the Committee will review the data and may disqualify the boat.

5. SLALOM WAKE

The slalom wake and rooster tail should not significantly affect the skier's performance. Since this test is subjective, comments from the test skiers, all experienced competitors, will be recorded for the manufacturer's information. If all testing skiers independently agree that the wake has significant negative effect, the committee will review the data and may disqualify the boat.

6. TRICK WAKE

The trick wake and table should not have a significant negative affect on the skier's performance. The rooster tail height will be evaluated to ensure that the release person or judge/camera person has adequate view of the ski on the water directly behind the boat. Since the wake test is subjective, comments from the skiers, all experienced competitors, will be recorded for the manufacturer's information. If all testing skiers independently agree that the wake and table have significant negative effect, the committee will review the data and may disqualify the boat.

7. JUMP WAKE

The jump wake and pull should not have significant negative effect on the skier's performance. Since the wake test is subjective, comments from the skiers, all experienced competitors, will be recorded for the manufacturer's information. If all testing skiers independently agree that the wake and pull have significant negative effect, the Committee will review the data and may disqualify the boat.

8. DRIVABILITY

While pulling slalom, jump and tricks, the boat's combination of power package, design characteristics, speed control, and instrumentation should not negatively effect a driver's ability to give smooth, consistent pulls within required record capability tolerances. Comments and evaluations from the test drivers will be recorded. The Committee will review the data, and should significant problems be agreed upon, the boat may be disqualified.

9. HANDLING AND MANEUVERABILITY

Each boat will be required to make a series of turns forming a "figure eight" pattern with circle diameters of 23 meters. Two passes will be made, one at 27 kph and one at 42 kph, both within the same described pattern. The boat will then be required to make a 180 degree turn at 58 kph within the 46 meter diameter course. This pattern will be repeated in the opposite direction at 58 kph. Each boat's performance will be monitored to ensure that all maneuvers are made safely and under control. All turns, both left and right, must be completed successfully to pass this test. See test forms for course diagram.

10. ENGINEERING

The objective of this test is to determine whether a boat's design will in any way hinder the performance of officials or skiers, or whether it presents any obvious safety hazards. The boat will be examined and analyzed from a tournament driver's perspective in areas such as human engineering and practicality for tournament usage. Comments from the drivers will be recorded for the manufacturer's use and information. Serious deficiencies will be noted and if, after presentation of the findings to the manufacturer, the problem cannot be corrected, the boat may be disqualified.

11. SOUND LEVEL TESTING

To ensure that boats are not in violation of generally accepted maximum noise level standards, the noise produced during typical tournament situations will be measured. Specifically, measurements will be taken from shore with a sound level meter during slalom deviation passes. Neither the average sound level for 58 kph passes nor the average sound level for 55 kph passes may exceed 75 dB(A). Failure to meet this standard constitutes a disqualification for the boat. Testing is done from shore as follows:

a) Place dB meter at a point 38 meters from centerline of the slalom course and;
b) Align dBMeter with buoy #2 or #3 on the opposite side of the course from the buoy. That way the skier is farthest from the sound meter to minimize noise from the ski and skier.

12. ENGINE STANDARDIZATION (by protest only)

Bore, stroke, compression, camshaft specifications and other features of the engine in each test boat will be subject to analysis by an independent source that will be on site at the evaluations. Data collected will be compared to the homologation specifications provided in advance by the engine manufacturer.

Boat Testing Forms / Documentation

IWWF Approved Towboat Evaluations

BOAT DATA SHEET

MANUFACTURER / MODEL: _____ **BOAT #:** _____

HULL SERIAL #: _____ **BOAT STATUS:** (Circle One) NEW MODIFIED UNCHANGED

HULL DIMENSIONS: **Length:** _____ **Width at Gunnel** _____

ENGINE: **Manufacturer / Model:** _____

Serial #: _____ **LITERS:** _____ **HP:** _____

TRANSMISSION: **Manufacturer/Model** _____ **Gear Ratio:** _____

SPEED CONTROL: **Software Version:** _____ **Version Number** _____

Jump Switch: Y / N

THROTTLE / SHIFT: **Manufacturer:** _____ **Electronic or cable** _____

STEERING: **Manufacturer:** _____ **Type:** _____

PROPELLER # 1: **Manufacturer:** _____ **Model #** _____

Blades: _____ **Rotation: R / L**

Diameter / Pitch: _____ _____ **Material:** _____

PROPELLER # 2: **Manufacturer:** _____ **Model #** _____

Blades: _____ **Rotation: R / L**

Diameter / Pitch : _____ _____ **Material:** _____

PROPELLER # 3: **Manufacturer:** _____ **Model #** _____

Blades: _____ **Rotation: R / L**

Diameter / Pitch _____ _____ **Material:** _____

STRUT / SHAFT ANGLE: _____

FINS: **Number:** _____ **Size:** _____

RUDDER: _____X_____X_____X_____ **Load Tab: Y/N**

SEATING: **Driver: Y / N** **Judge: Y / N** **Pin person: Y / N**

Open Bow Boats: Is rear facing seat installed in walk thru? Y / N

IWWF Approved Towboat Evaluations

FLUID LEVELS: Gas:_____(Full required) Oil: _____ Transmission: _____

PYLON: Is the pylon securely installed and non-flexing under load? Y / N
Pylon height above water line:_____ Pylon diameter: _____

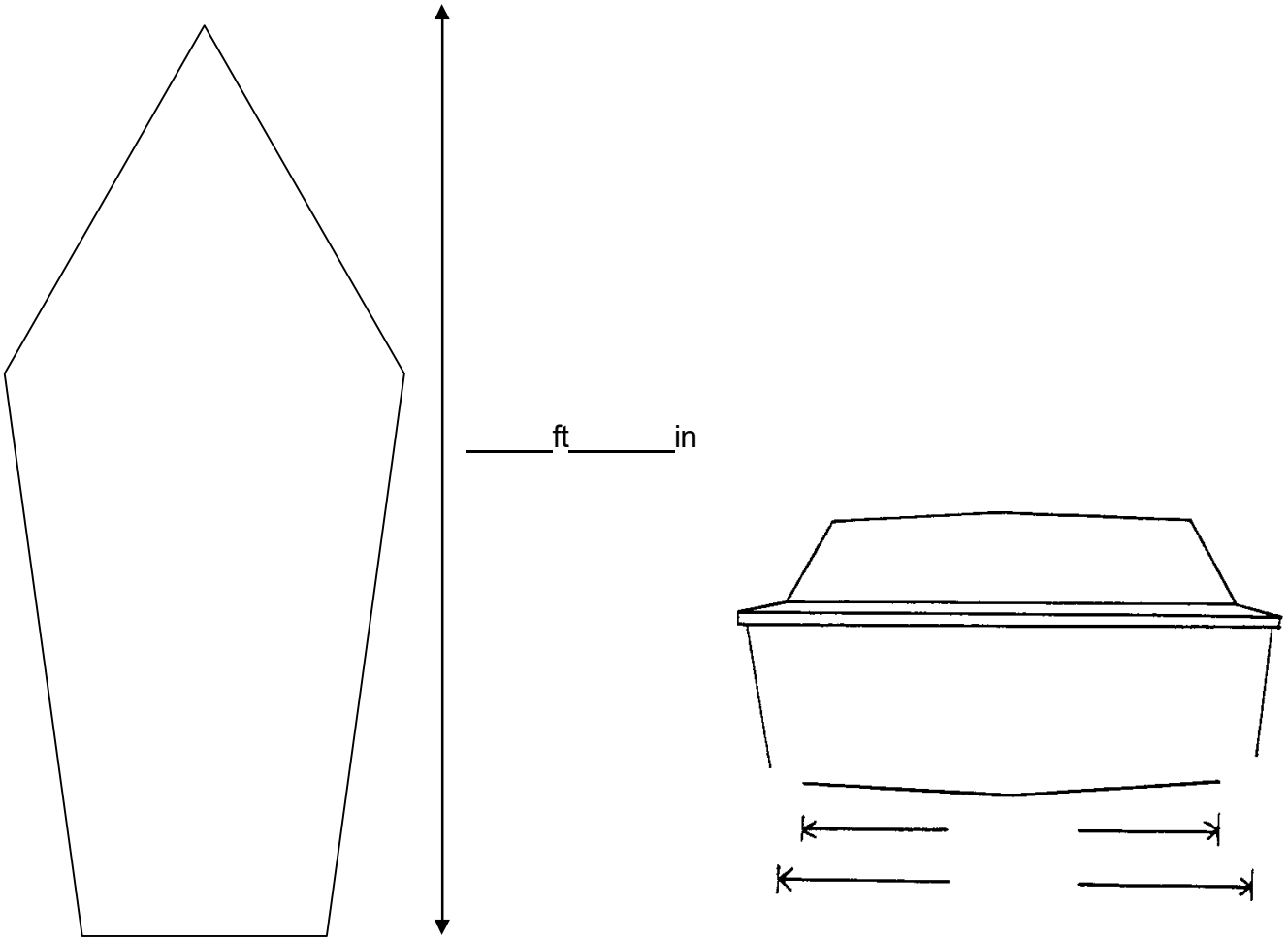
SAFETY CHECK - Are shaft, collar, strut, rudder, propeller, nut and cotter key securely in place? Y / N

GAUGES:

Tachometer:	____	**Amps/Volts:**	____	**Fuel:**	____
Oil Pressure:	____	**Temperature:**	____		
Hour Meter:	____	**Fuses or Breakers:**	____		

Wetted Surface Configuration - on the views below, sketch any spray pockets, propeller slots, and other distinguishing hull characteristics and indicate dimensions.

Number of fins ____ width_____" Depth_____"
Cavitation plate_____ width_____" Depth_____"



ENGINEERING & DRIVABILITY

Boat Model / Manufacturer: **Boat #:**

Please rate the following:

Scale: 3 = Good 2 = Satisfactory 1 = Requires improvement 0 = Does not meet minimum standards

Armrest position:	3	2	1	0
Armrest comfort:	3	2	1	0
Driver visibility of instrumentation & gauges:	3	2	1	0
Driver visibility ahead:	3	2	1	0
Driver peripheral visibility:	3	2	1	0
Driver visibility on start / acceleration:	3	2	1	0
Rear view mirror visibility for driver:	3	2	1	0
Windshield visibility : (Free from glare / distortion)	3	2	1	0
Comfort of driver seat:	3	2	1	0
Foot room for driver:	3	2	1	0
Ease of driver seat adjustment:	3	2	1	0
Driver seat practicality for tournaments:	3	2	1	0
Boat Judge position comfort level:	3	2	1	0
Foot room for Boat Judge position:	3	2	1	0
Boat Judge position visibility of dash guages:	3	2	1	0
Boat Judge position visibility of course:	3	2	1	0
Boat Judge position visibility of skier:	3	2	1	0
Rope handler position comfort level:	3	2	1	0
Foot room for rope handler position:	3	2	1	0
Rope handler position convenience:	3	2	1	0
Rope handler position maneuverability:	3	2	1	0
Steering location & comfort:	3	2	1	0
Steering responsiveness:	3	2	1	0
Steerability:	3	2	1	0
Throttle location & comfort:	3	2	1	0
Throttle responsiveness:	3	2	1	0
Free of safety hazards:	3	2	1	0
Tow line maneuverability (free from snags)	3	2	1	0
Pylon location:	3	2	1	0
Pylon strength:	3	2	1	0
Boat balance:	3	2	1	0

Comments:

HANDLING & MANEUVERABILITY

MANUFACTURER/MODEL:

BOAT #:

Execute the following turns at the specified speeds, safely and under control. The boat must stay within the course markers during all turns to pass the test.

	PASS	FAIL
23 m diameter turn @ 27 kph, Left Turn	☐	☐
23 m diameter turn @ 27 kph, Right Turn	☐	☐
23 m diameter turn @ 42 kph, Left Turn	☐	☐
23 m diameter turn @ 42 kph, Right Turn	☐	☐
46 m diameter turn @ 58 kph, Left Turn	☐	☐
46 m diameter turn @ 58 kph, Right Turn	☐	☐

COMMENTS:

JUMP WAKE ASSESSMENT

MANUFACTURER/MODEL: BOAT #: _____

Procedure

Each boat will pull three skiers. A total of six passes will be run as listed below to determine wake quality.

Using the following numerical references, evaluate the wake characteristics as to any negative effect on a skier's performance.

0 - No Effect
1 - Very Minor Effect
2 - Minor Effect
3 - Moderate Effect (can be overcome)
4 - Serious Effect
5 - Very Serious Effect

Results

Skier	Speed	Wake Height	Wake Hardness
1			
2			
3			

Skier Comments

Skier No. 1:

Skier No. 2:

Skier No. 3:

Power and Acceleration

MANUFACTURER/MODEL:

BOAT #:

1. Top Speed Recorded

PASS # 1		Driver	
PASS # 2		Driver	
PASS # 3		Driver	

2. Distance to 58 kph with drone/skier (minimum distance 70m)

PASS # 1		Driver	
PASS # 2		Driver	
PASS # 3		Driver	

3. Distance 57- 61.5kph with drone/skier (minimum distance 21m)

PASS # 1		Driver	
PASS # 2		Driver	
PASS # 3		Driver	

SKIER SLALOM EVALUATION

MODEL/MANUFACTURER: _____ **BOAT #:** _____

Procedure

Each boat will pull a minimum of three skiers. A total of 12 passes will be run as listed below for use in determining deviation.

Using the following numerical references, evaluate the spray and wake characteristics as to any negative effect on a skier's performance.

0 - No Effect
1 - Very Minor Effect
2 - Minor Effect
3 - Moderate Effect (can be overcome)
4 - Serious Effect
5 - Very Serious Effect

SKIER	SPEED kph	LINE Ft	LINE m	✓	WAKE HARDNESS	WAKE HEIGHT	WAKE TURBULENCE	ROOSER TAIL	SPRAY
1	52	15 Off	18.25m						
(4 Passes)	52	22 Off	16m						
	52	28 Off	14.25m						
	52	32 Off	13m						
	52	35 Off	12m						
	52	38 Off	11.25m						
2	55	15 Off	18.25m						
(4 Passes)	55	22 Off	16m						
	55	28 Off	14.25m						
	55	32 Off	13m						
	55	35 Off	12m						
	55	38 Off	11.25m						
3	58	15 Off	18.25m						
(4 Passes)	58	22 Off	16m						
	58	28 Off	14.25m						
	58	32 Off	13m						
	58	35 Off	12m						
	58	38 Off	11.25m						
	58	39 Off	10.75 m						

SKIER SLALOM EVALUATION

Skier Comments

SKIER NO. 1.

SKIER NO. 2.

SKIER NO. 3.

Suggested Questions

- Feel of the pull from the boat?
- Would this wake be good for lighter weight skiers?
- As the rope gets shorter, does the wake change? Better / Worse?
- How is the wake width impact your skiing?
- Does the wake have an edge that impacts the skier?
- Is there a bump in the middle of the wake?

TOWBOAT SOUND LEVEL

MANUFACTURER/MODEL:

BOAT #:

Testing is done from the shore at 38 meters from centerline of the slalom course. Typical set up is at buoy #2 or #3 on the opposite side of the course from the buoy. That way the skier is furthest from the sound meter, and noise from the ski and skier is minimized.

Sound Level		
55 KPH Average		
	L-R	
	R-L	
	L-R	
	R-L	
Average 55k		
58 KPH Average		
	L-R	
	R-L	
	L-R	
	R-L	
Average 58k		

TRICK WAKE ASSESSMENT

MANUFACTURER/MODEL:

BOAT #:

Procedure

Consider all aspects of the boat as it affects trick skiing, testing it through the range of typical trick speeds. If any items have a negative effect on performance, note the severity using the following numerical reference and use the comment section to explain your answer in detail - be specific.

0 - No Effect	3 - Moderate Effect (can be overcome)
1 - Very Minor Effect	4 - Serious Effect
2 - Minor Effect	5 - Very Serious Effect

	Skier 1	Skier 2
Turbulence (propwash, rooster tail, spray)		
Trick Table (smooth, rough, dished, bubbly, secondary wake)		
Wake Definition (foamy, rounded, crisp, double)		
Balance or Wake Symmetry		
Wake Height or Width		

Skier Comments

Skier #1:
Comments:

Skier #2:
Comments:

TEST SUMMARY SHEET

MANUFACTURER/MODEL: _____ BOAT #: _____

CATEGORY	RESULT	COMMENTS
	YES/NO	
Boat Data		
Power and Acceleration		
Sound Level		
Slalom Course		
Centerline Deviation		
Skier Slalom Evaluation		
Jump Course		
Centerline Deviation		
Jump Wake Assessment		
Trick Wake Assessment		
Engineering & Drivability		
Handling & Maneuverability		
FINAL		

Towboat Test Check List

- Skier's Confidentiality Agreement
- Manufacturer's Confidentiality Agreement
- Clean bathrooms & extra toilet paper
- Radios that work with batteries
- Tape measure and level—for measuring pylon
- Drone that works
- Rope on drone check
- Flag for center course (NOT RED)
- VBOX check -- make sure both boxes work
- Schedule of events (Towboat Forms - Check-in, Power & Acceleration, Center-Line w/slalom skiers, Pylon measuring, Tricks, Jump, Handling & Maneuverability, etc.).
- List of skiers we need for each boat/boat propeller/engine combination, etc.?
- Running orders for skiers, boats, drivers by event
- Fruit and coffee for breakfast
- Lunches--sandwiches. Water, Soda/Gatorade (plates, napkins, plastic utensils)
- Sound meter--check to ensure it works
- How will "center line" testing be conducted? (Sure-Path, Splash-Eye, video tapes, etc.)
- Clipboards/ Pencils

MANUFACTURER CONFIDENTIALITY AGREEMENT
IWWF Water Ski Boat Evaluation

I _____ of _____ Boat Company will uphold the following terms of this Agreement regarding the IWWF Water Ski Boat Evaluations.

1. I will not share any opinions, information or data of the towboat tests, in any form (verbal, written, photos, social media, etc.).

2. I will not take any photos of other manufacturer's equipment.

Signature: _____

Date: _____

SKIER CONFIDENTIALITY AGREEMENT
IWWF Water Ski Boat Evaluation

I _____ will uphold to the following terms of this agreement regarding the IWWF Water Ski Towboat Evaluations.

1. I will be ready to ski when it is my turn according to the running order. "Ready to ski" means having ski and equipment on and ready to ski when the boat is approaching for your turn.

2. I will be objective and not biased in my evaluations of each towboat model.

3. My evaluations and opinions of each towboat model will remain confidential. I will only present my results and opinions to the Boat Test Committee Representative and no other individual.

4. I will not discuss my evaluations, opinions, towboat modifications, or model changes during or after completion of the towboat testing.

Signature: _____

Date: _____