

Specifications for TWRA Custom Airboat

Tennessee Wildlife Resources Agency is seeking to purchase one new custom-built airboat package to include engine and propeller and trailer as per the following specifications.

A. Boat Hull:

1. Aluminum hull construction
2. Length of 16 feet (16')
3. Width of 8 feet (8')
4. Side height minimum thirty inches (30") at transom junction, may taper toward bow
5. Transom height minimum twenty-eight inches (28")
6. Bottom and transom minimum 0.190-inch thickness – 5086 Marine Grade Aluminum
7. Sides minimum 0.125-inch thickness – 5086 Marine Grade Aluminum
8. V-crimped sides, minimum 3 crimps inside V-crimp sides with 2 between crimps
9. Forward deck to extend back minimum thirty-eight inches (38") from bow, welded solid top, sides and bottom
10. Bottom of hull shall be reinforced with a minimum of seven two-inch x two-inch x 3/8 inch (2"x2"x3/8") T-bars or doubled two-inch x two-inch x 1/4 inch (2"x2"x1/4") stringers centers, entire length of hull
11. I-beam Cross Braces of three-inch (3") aluminum; minimum number of two
12. Aluminum plate minimum 0.190 inch thickness – 5086 marine grade aluminum from transom of hull to first cross brace up sides of hull to first v-crimp
13. Bottom of hull sides shall have 20 degree chine turned down to aid in maneuvering
14. Aluminum walk arounds, minimum of two inches (2") with non-skid finish
15. Acceptable supports: two-inch x two-inch (2"x2") aluminum angle welded at seam where sides join bottom of hull; all nuts, bolts, washers, etc. shall be stainless steel at a minimum except engine stand where extra strength is needed
16. Lip at top of transom to extend back a minimum of 8 inches
17. Black Ultra High Molecular Weight (UHMW) polymer attached to full bottom of hull. Three-eighth inch thick (3/8"), installed with stainless steel counter nuts and bolts or attached with 5/16inch aluminum aircraft rivets. Also installed on sides of hull up to first v-crimp.
18. Forward deck to have non-skid finish and recessed deck lid of minimum size sixteen-inch x twenty-six inch (16"x26") with stainless steel lock and hydraulic shock.
19. Stainless Steel bow eye
20. Two (2) one inch drain plugs in transom
21. Double plate transom tie-downs

22. Aluminum flooring coated with non-skid material forward from second cross brace on all walking areas
23. Grass rake with step; aluminum construction minimum of twenty-four inches (24")
24. Side navigation lights (red/green bow lights)
25. Hull shall not be painted

B. Engine Stand

1. Automotive built; minimum tube size one inch (1"), stainless steel box tubing, sixteen (16) gauge
2. All mounts shall be shocked mounted to prevent vibration
3. Mounting bracket shall be incorporated into engine stand for fuel tank
4. Dual battery rack shall be built into the engine frame
5. Heavy duty front and rear motor mounts
6. Sanded, primed, and painted with industrial grade epoxy black

C. Overhead Prop Guard Construction

1. Tubing shall be built of stainless steel 7/8 inch minimum. Stainless steel cover two-inch x four-inch (2"x4") heavy gauge wire mesh 0.135 inch
2. Stainless steel tabs for installation of steering and wiring with rubber coated aluminum clamps. No tie wraps.
3. Installed rudders; quantity two (2); dimension five feet (5'); Air foiled or foam filled. Stainless steel rods with four (4) polymer bushings and minimum of four (4) stainless steel helm joints.
4. Guard shall completely protect propeller area
5. Safety guard shall be installed in front of prop guard
6. Stainless steel expanded metal to the third J-bar
7. Navigation light mounted inside prop guard
8. Expansion tank mounted inside prop guard
9. Four (4) ninety (90) watt led high performance lights mounted inside cage (2 flood and 2 spotlight)

D. Seating

1. Shall accommodate four (4) people
2. Frames shall be constructed of one-inch stainless steel, square tubing (16 gauge)
3. All seats shall have cushions and rain covers
4. Rear seat shall be one (1) elevated operator, large man seat on aluminum box, with one door with stainless steel lock
5. Floorboard/walking surface for operator seat shall have non-skid walking surface

6. Three (3) person passenger bench with seating not higher than the gunnels. Back rest full width of seat. Dry storage box under seat. Easy removal seating.

E. Instruments

1. Instrument panel shall be located at right hand of operator seat, panel with backing plate and breakers to include the following:
 - a. Oil pressure, electrical (Marine)
 - b. Amp meter (Marine)
 - c. Lighted toggle switch (Marine)
 - d. Keyed ignition switch (Marine)
 - e. Electric tachometer with hour meter
 - f. One (1) accessory outlet (Marine)
 - g. Water temperature gauge
 - h. Fuel Gauge
 - i. Three additional high output accessory switches
 - j. Kill switch lanyard
 - k. Grab handle on side of instrument panel nearest operator
 - l. Install two (2) cup holder behind instrument panel
 - m. All gauges and switches shall be labelled

F. Steering

1. Steering cable shall be 3/8 inch cable type made of stainless steel or Teflon coated with stainless steel housings and Teflon locking collar
2. Steering cable with inter-cable stainless steel
3. Steering handle shall be located on driver's left side
4. Stainless steel steering bearing with minimum ¼-inch inter-diameter
5. Lock rings shall be stainless steel or Teflon
6. Aluminum anodized steering grip

G. Throttle

1. Electronic throttle
2. Throttle pedal assembly position shall be located and operated on the driver's right foot

H. Fuel Tank

1. Minimum thirty (30) gallon aluminum tank with remote fuel fill and electric sender
2. Coast Guard and Boat Industry Association approved
3. Shock mounted in rubber

4. Fuel lines shall be coast guard approved

I. Electrical System

1. Dual Marine batteries with selector switch
2. All high current wires ten (10) gauge in diameter
3. All wires shall be encased in convoluted-high abrasive tubing
4. Coast Guard approved navigation lights shall be installed inside prob guard
5. Battery box shall be plastic with no lid with stainless steel angle across top or dual locking lids with straps
6. Number 2-gauge battery cables
7. Minimum three position battery switch

J. Engine

1. Engine shall be federal EPA certified
2. Horsepower minimum: 450
3. Engine type V8 GM
4. Heavy duty starter
5. Minimum 70-amp alternator

K. Engine Accessories shall be included.

1. Large oil cooler with braided oil lines and AN (Army-Navy) fittings
2. Belt drive reduction unit with Heavy Duty Belt. Acceptable ratios:
 - a. CH3 2.3:1 BU or
 - b. Ch4 2.52:1
3. Electric fuel pump with fuel filter/water separator
4. Aluminum Overflow and Oil tanks
5. Easy drain oil line
6. Aluminum radiator: heavy duty racing style installed below engine to include radiator guard installed on back of radiator for protection
7. Marine grade premium quality hoses

L. Belt Reduction Drive-Propeller

1. Three (3) blade
2. Carbon or graphite composite material
3. Acceptable belt ratios mentioned above

M. Exhaust System

1. Stainless Steel three-inch (3") headers

2. Stainless Steel three-inch (3") flex pipe
3. Stainless Steel two-inch (2") band clamps
4. Stainless Steel mufflers with U-clamps two to three inches (2"-3")
5. Stainless Steel three-inch (3") dump pipes (through transom optional)
6. Mufflers – Quantity of two (2) with three-inch (3") inlet/outlet and stainless-steel bracing

N. Bilge Pump System

1. Two (2) bilge pumps
2. 2,000 gallons per hour minimum
3. Manual type
4. Minimum 1 1/8inch threaded hose port size
5. Twelve (12) volt
6. Amperage 7.5A

O. Paint/Powder Coat

1. Exterior of hull not shall
2. be painted
3. Instrument panel, aluminum overflow and expansion tank, box under operator seating shall be painted with black powder coat
4. Webbing sprayed inside hull to reduce glare
5. Non-skid finish color shall be charcoal grey

P. Upholstery

1. Seats shall be covered with replaceable, marine-grade, vinyl material
2. Color: Black and Gray
3. Instrument Panel and Weather Resistant Rain Covers: Black

Q. Trailer

1. Trailer shall fit specified boat without the need for modifications
2. Load capacity and dimensions shall be able to fit and transport specified boat and motor
3. Galvanized Steel or aluminum frame construction
4. Tandem axles with leaf springs
5. Minimum one axle with disk brakes
6. Galvanized or aluminum wheels, minimum 14 inches
7. Trailer shall include fenders
8. Tires shall be load rated for gross combined weight of boat, motor, and trailer

9. Spare tire and wheel shall be mounted on trailer
10. Trailer shall include two (2) easy load ramps with three (3) rollers on each ramp, plus all rollers required mounted on trailer for loading airboat
11. Tongue jack with roller wheel
12. Minimum of two (2) transom tie down straps
13. Two (2) safety chains, minimum 3/8" diameter, with hooks
14. Marine grade carpeted bunk boards (runners and bolsters inside fender wells)
15. Marine grade wheel bearings
16. Fully wired for trailer brakes and lights. LED lights to meet all DOT requirements

R. Manuals

1. Operation and service manuals for the unit shall be delivered with the unit

S. Warranty Requirements

1. Lifetime hull warranty
2. Five (5) year superstructure warranty
3. One (1) year engine warranty
4. One (1) year trailer warranty

T. Delivery

1. Shipping shall be FOB destination delivered to the following address:

TWRA Region 1 Office
200 Lowell Thomas Drive
Jackson, TN 38301

2. Shall call 3 days before delivery to make arrangements.
3. Contact person will be Brad Wheat at 731.423.5725
4. Deliver shall take place within 180 days of receipt of purchase order (May be extended with mutual agreement, if necessary due to current economy/supply issues).