State of California AIR RESOURCES BOARD

EXECUTIVE ORDER U-W-3-15 Relating to Certification of New Spark-Ignition Marine Engines

YAMAHA MOTOR COMPANY LTD.

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, and 43104 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Health and Safety Code Sections 39515 and 39516 and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That the following new spark-ignition marine engine and exhaust emission control system produced by the manufacturer are certified as described below.

Model Year: 2002

<u>Fuel Type</u>: Gasoline <u>Engine Type</u>: 4-Stroke

Level of Cleanliness: Very Low Emission ("Two Stars")

Equipment Application: Outboard

Engine Family: 2YMXM.1972GA

Displacement: 197 cc

Exhaust Emission Control Systems and Special Features:

Engine Modification

Engine models are listed on the attachment. Production engines shall be in all material respects the same as those for which certification is granted.

BE IT FURTHER RESOLVED: That the manufacturer has elected to certify the listed engines to a family emission limit (FEL) of hydrocarbon plus oxides of nitrogen (HC+NOx) described below, expressed in grams per kilowatt-hour (g/kW-hr) in accordance with a plan submitted by the manufacturer to, and approved by, the Executive Officer for compliance with the exhaust emission standard on a corporate average basis pursuant to Sections 2442(a) and (b) of Title 13, California Code of Regulations (13 CCR).

HC + NOx	
FEL	

Certification Level

27.62

25.57

Compliance with the standard on a corporate average basis shall be determined based on the sales-weighted average power of all engines produced for sale in California that are included in the approved corporate average compliance plan for the model year, and as calculated pursuant to 13 CCR Section 2442(b)(4).

BE IT FURTHER RESOLVED: That for the listed engines, the manufacturer has submitted, and the Executive Officer hereby approves, the information and materials to demonstrate certification compliance with the following California emission regulations and requirements. Engines certified under this Executive Order shall conform to all applicable California emission regulations and requirements:

- All applicable requirements in the "California Exhaust Emission Standards and Test Procedures for 2001 Model Year and Later Spark-Ignition Marine Engines"

- Emission Control Labeling and Consumer/Environmental Labeling (13 CCR Sections 2443.1, 2443.2 and 2443.3)

- Emission Control System Warranty (13 CCR Sections 2445.1 and 2445.2)

- Closed Crankcases (Part 1, Section 18.(h) of the "California Exhaust Emission Standards and Test Procedures for 2001 Model Year and Later Spark-Ignition Marine Engines") and

- Quarterly reports of engines produced in this family for sale in California shall be submitted to the Executive Officer no later than 45 days after the end of each calendar quarter.

Executed at El Monte, California this 5 day of April 2001.

R. B. Summerfield, Chief Mobile Source Operations Division

ATTACHMENT

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Model Year: <u>2002</u> Manufacturer Name: <u>Yamaha Motor Co., Ltd.</u> Engine Family: <u>2YMXM.1972GA</u> SI MARINE ENGINE SUPPLEMENTAL INFORAMATION

page 3 Issued:<u>12/19/2000</u> Revised:_

E.O.#: U-W-3-15

S10. MODEL SUMMARY (Use an asterisk (*) to identify worst-case engine model used for certification testing.)

S11	S12	S13		S14	S15	S16	S17		
Engine Model	Engine Code	Sales Codes (Check All appropriate)		Eng.	Rated	Rated	Peak	S18 Peak	
		Calif. Only	49- State	50- State	Displ. (cc)	Power (kW)	Speed (RPM)	Torque (N-m)	Torque Speed
F6MSHA				*	197	4.4	5000		(RPM)
F6MLHA				•	197	4.4	5000	11.1	2500
F8MSHA				+	197	5.9		11.1	2500
F8MLHA				*	197	the second s	5500	11.8	4500
T8PLHA					197	5.9	5500	11.8	4500
T8PLRA				*		5.9	5500	11.8	4500
T8PXHA					197	5.9	5500	11.8	4500
T8PXRA		·		•	197	5.9	5500	11.8	4500
T8MLHA					197	5.9	5500	11.8	4500
TBELRA				•	197	5.9	5500	11.8	4500
				*	197	5.9	5500	11.8	4500
TBEXRA				*	197	5.9	5500	11.8	4500
TBELHA				*	197	5.9	5500	11.8	
T8EXHA				*	197	5.9	5500	11.8	4500