

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-216-4  
Relating to Exemptions Under Section 27156  
of the Vehicle Code

J. BITTLE AMERICAN, INC.  
SHORTY HEADER, MODEL NOS. 1620, 1624, 1627, and 1628

Pursuant to the authority vested in the Air Resources by Section 27156 of the Vehicle Code; and

Pursuant to the authority vested in the undersigned by Section 39515 and 39516 of the Health and Safety Code and Executive Order G-45-5;

IT IS ORDERED AND RESOLVED: That the installation of the Shorty Header manufactured by J. Bittle American, Inc. of 9630 Aero Dr., San Diego, CA 92123, has been found not to reduce the effectiveness of required motor vehicle pollution control devices, and therefore is exempt from the prohibitions of Section 27156 of the Vehicle Code for the following Ford applications:

Model #	Application
1627 & 1628	All 1985-1992 5.0 or 5.8 liter gasoline trucks
1620 & 1624	1986-1992 5.0 liter Mustangs
	1990-1992 5.0 liter Thunderbird engine family MFM5.OV5FXFX
	1986-1992 5.0 liter Lincoln LSC equipped with EEC-4 ECU and sequential EFI
	1984-1985 5.0 liter LTD LX equipped with EEC-4 ECU and central EFI
	1979-1984 5.0 & 4.2 liter V-8 Mustang with EEC-4 ECU
	1980 5.0 liter Crown Victorias and Lincolns equipped with EEC-3 ECU and Variable Venturi
	1982-1983 5.0 liter Crown Victorias and Lincolns equipped with EEC-3 ECU

This Executive Order is valid provided that installaticn instructions for this device will not recommend tuning the vehicle to specifications different from those submitted by the device manufacturer.

Changes made to the design or operating conditions of the device, as exempted by the Air Resources Board, that adversely affect the performance of a vehicle's pollution control system shall invalidate this Executive Order.

Marketing of this device using an identification other than that shown in this Executive Order or marketing of this device for an application other than those listed in this Executive Order shall be prohibited unless prior approval is obtained from the Air Resources Board. Exemption of a kit shall not be construed as an exemption to sell, offer for sale, or advertise any component of the product as an individual device.

This Executive Order does not constitute any opinion as to the effect that the use of this device may have on any warranty either expressed or implied by the vehicle manufacturer.

**THIS EXECUTIVE ORDER DOES NOT CONSTITUTE A CERTIFICATION, ACCREDITATION, APPROVAL, OR ANY OTHER TYPE OF ENDORSEMENT BY THE AIR RESOURCES BOARD OF ANY CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF THE J. BITTLE AMERICAN, INC. #14 GAGE STEEL SHORTY HEADER MODEL NOS. 1620, 1624, 1627, AND 1628.**

No claim of any kind, such as "Approved by the Air Resources Board" may be made with respect to the action taken herein in any advertising or other oral or written communications.

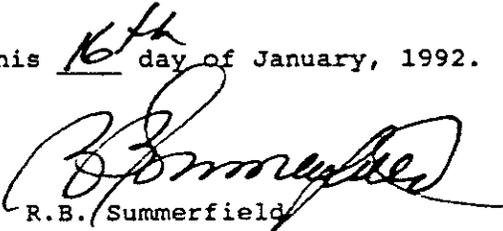
Section 17500 of the Business and Professions Code makes untrue or misleading advertising unlawful, and Section 17534 makes violation punishable as a misdemeanor.

Section 43644 of the Health and Safety Code provides as follows:

"43644, (a) No person shall install, sell offer for sale, or advertise or except in an application to the state board for certification of a device, represent, any device as a motor vehicle pollution control device for use on any used motor vehicle unless that device has been certified by the state board. No person shall sell, offer for sale, advertise, or represent any motor vehicle pollution control device as a certified device which, in fact, is not a certified device. Any violation of this subdivision is a misdemeanor."

Any apparent violation of the conditions of this Executive Order will be submitted to the Attorney General of California for such action as he deems advisable.

Executed at El Monte, California, this 16<sup>th</sup> day of January, 1992.

  
R.B. Summerfield  
Assistant Division Chief  
Mobile Source Division

State of California  
AIR RESOURCES BOARD

EVALUATION OF J. BITTLE AMERICAN, INC. SHORTY HEADER FOR EXEMPTION  
FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156 IN ACCORDANCE  
WITH SECTION 2222, TITLE 13, OF THE CALIFORNIA CODE OF REGULATIONS

January 1992

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AIR RESOURCES BOARD

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by

Mobile Source Division  
State of California  
Air Resources Board  
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El Monte, CA 91731-2990

(This report has been reviewed by the staff of the California Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Air Resources Board, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.)

SUMMARY

J. Bittle American, Inc. (JBA) of 9630 Aero Dr., San Diego, CA. 92123, has requested to update Executive Orders D-216, D-216-2 which exempts JBA's Shorty Header, Model Nos. 1620, 1627, and 1628 from the prohibitions in Section 27156 of the California Vehicle Code (VC). The update is requested to include the 1992 model-year Ford Motor Company trucks with a 5.0 or 5.8 liter electronic fuel injected (EFI) engine and Mustangs with a 5.0 liter EFI engine. JBA has also requested that the update include the addition of Shorty Header, Model No. 1624 and the addition of the following vehicle applications to Shorty Header, Model No. 1620.

1986-1992 5.0 liter Mustang

1990-1992 5.0 liter Thunderbird engine family MFM5.OV5FXFX

1986-1992 5.0 liter Lincoln LSC equipped with EEC-4 ECU and sequential EFI

1984-1985 5.0 liter LTD LX equipped with EEC-4 ECU and central EFI

1979-1984 5.0 & 4.2 liter V-8 Mustang with EEC-4 ECU

1980 5.0 liter Crown Victoria and Lincolns equipped with EEC-3 ECU and Variable Venturi carburetor

1982-1983 5.0 liter Crown Victorias and Lincolns equipped with EEC-3

Based on an engineering evaluation along with results from emission tests previously performed by JBA and confirmed on some applications by the Air Resources Board (ARB), and that the 1992 vehicles for which the exemption update is requested are carry-overs from the model-years for which the exemption has been granted, the staff concludes that JBA's Shorty Header, Model Nos. 1620, 1624, 1627, and 1628 will not adversely affect exhaust emissions from the vehicles for which an exemption is requested.

The staff recommends that JBA be granted Executive Order D-216-4 allowing the installation of their Shorty Header Model Nos. 1620 and 1624 on those applicable 1979-1992 Ford passenger cars with a 4.2 or 5.0 liter engine, and Model Nos. 1627 and 1628 on those applicable 1985-1992 Ford trucks with either the 5.0 or 5.8 liter engine.

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I. INTRODUCTION

J. Bittle American, Inc. (JBA) of 9630 Aero Dr., San Diego, CA. 92123, has requested to update Executive Orders D-216, D-216-2 which exempts JBA's Shorty Header, Model Nos. 1620, 1627, and 1628 from the prohibitions in Section 27156 of the California Vehicle Code (VC). The update is requested to include the 1992 model-year Ford Motor Company trucks with a 5.0 or 5.8 liter electronic fuel injected (EFI) engine and Mustangs with a 5.0 liter EFI engine. JBA has also requested that the update include the addition of Shorty Header, Model No. 1624 and to add other vehicle applications for Shorty Header, Model No. 1620.

II. CONCLUSION

Based on an engineering evaluation along with the results from emission tests previously performed by JBA and confirmed on some applications by the Air Resources Board (ARB), and that the 1992 vehicles for which the exemption update is requested are carry-overs from the model-years for which the exemption has been granted, the staff concludes that JBA's Shorty Header, Model Nos. 1620, 1624, 1627, and 1628 will not adversely affect exhaust emissions from the vehicles for which an exemption is requested.

III. RECOMMENDATION

The staff recommends that JBA be granted Executive Order D-216-4 allowing the installation of their Shorty Header Model Nos. 1627 and 1628 on those applicable 1985-1992 Ford trucks with either the 5.0 or 5.8 liter engine and Model Nos. 1620 and 1624 on those applications listed in table 1.

IV. SHORTY HEADER DESCRIPTION

The JBA Shorty Header is designed to replace the original equipment manufacturer's (OEM) tubular exhaust manifold which has variable diameters and bottle necks. The primary tube diameter of a Shorty Header's individual tubes is 1.5 inches on all models except Model No. 1624 which has a primary tube diameter of 1.625 inches. These dimensions remain constant from the engine block to the four way junction which connects to a single exhaust pipe. The manufacturer claims this feature enhances exhaust flow. The Shorty Header series is manufactured out of #14 gage steel which allows the manufacture to offer a life time guarantee on the product. All other characteristics of the OEM exhaust manifold are the same as the Shorty Header.

V. DISCUSSION OF THE SHORTY HEADER

JBA has requested an update to their Executive Orders D-216 and D-216-2 to allow the use of the Shorty Header Model Nos. 1620, 1624, 1627, and 1628 on those applicable 1992 and older model-year vehicles. JBA Shorty Header, Model Nos. 1627 and 1628 is designed for installation on 1985-1992 5.0 and 5.8 liter Ford trucks and Model Nos. 1620 and 1624 designed for installation on those vehicles in table 1.

Table 1

1620 & 1624 Applications

1986-1992 5.0 liter Mustang  
1990-1992 5.0 liter Thunderbird engine family MFM5.OV5FXFX  
1986-1992 5.0 liter Lincoln LSC equipped with EEC-4 ECU and sequential EFI  
1984-1985 5.0 liter LTD LX equipped with EEC-4 ECU and central EFI  
1979-1984 5.0 and 4.2 liter V-8 Mustang with EEC-4 ECU  
1980 5.0 liter Crown Victoria and Lincolns equipped with EEC-3 ECU and Variable Venturi carburetor  
1982-1983 5.0 liter Crown Victorias and Lincolns equipped with EEC-3

Although Model #1624 has a tube diameter which is 125 thousandths of an inch larger than Model #1620, staff deems this difference in tube diameter is minimal and is well compensated by the increase in metal thickness from #16 gage to #14 gage steel. Therefore, no adverse emissions impact would result from the installation of Shorty Header Model No. 1620 and 1624 on the applicable vehicles. The staff recommends that JBA be granted Executive Order D-216-4 allowing the installation of their Shorty Header Model Nos. 1620, 1624, 1627, and 1628.

These headers are identical to those previously approved for 1991 and older applicable model-year vehicles, except for the increase in metal thickness from #16 gage steel to #14 gage steel which is intended to improve the durability of the product. The #14 gage steel construction also acts as a heat shield which would improve catalyst light-off (reduced heat dissipation would result in faster catalyst light-off). Therefore, no adverse effect in emissions would be caused by the increase in metal thickness on the Shorty Headers. The staff compared the engine design of the 1991 and 1992 model-year vehicles. Since the majority of the 1992 model-year engine families certified for California sales were carried-over from the 1991 model-year, no additional exhaust emission tests were required or performed.

JBA also requested to expand the vehicle application list on Shorty Header Model No. 1620 and add to this exemption Shorty Header Model No. 1624. Prior CVS-75 emission data show vehicle emissions, with the Shorty Header (steel gage #16) installed, are below the vehicle's emission standards (see Table 2).

Table 2

Past CVS-75 Tests Conducted On JBA Shorty Headers

	Engine Size (liter)	Vehicle Tested	(HC	CO	NOx)
Device Standard	4.0	91 Ford Explorer	0.13 0.50	2.25 9.0	0.29 1.0
Device Standard	5.0	91 Ford F-150	0.11 0.50	0.64 9.0	0.57 1.0
Device Standard	5.0	90 Mustang	0.16 0.41	0.49 3.4	0.978 1.0

The additional vehicle applications are within the range of engine sizes previously tested by JBA which showed no adverse impact on emissions.