

E.O.

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-20-3
Relating to Exemptions under Section 27156
of the Vehicle Code

TRI-STAR CORPORATION
"SST-W CAPACITIVE DISCHARGE IGNITION"

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

Pursuant to the authority vested in the undersigned by Section 39023 of the Health and Safety Code;

IT IS ORDERED AND RESOLVED: That the installation of "SST-W Capacitive Discharge Ignition" system manufactured by Tri-Star Corporation and Marketed by Warshawsky & Co., Inc. and J.C. Whitney Co. has been found to not 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 1974 and older model-year vehicles equipped with 12-volt negative ground batteries except the following:

1. 1973-74 Mercedes Benz, Mazda, Audi and Porsche vehicles.
2. All General Motors vehicles equipped with an ignition coil integrated into the distributor.
3. All 1966-70 model-year vehicles equipped with a Dana, Carter, or AQP NOx retrofit device using an electronic speed sensor.

The "SST-W Capacitive Discharge Ignition" is a solid-state electronic device which consists of a d-c to d-c converter, capacitors, diodes, resistors, and silicon controlled rectifier electronic switch.

This Executive Order is valid provided that installation instructions for this device will not recommend tuning the vehicle to specifications different than those listed by the vehicle 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 the 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.

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 "SST-W CAPACITIVE DISCHARGE IGNITION" DEVICE.

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

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

Sections 39130 and 39184 of the Health and Safety Code provide as follows:

"39130. No person shall install, sell, offer for sale, or advertise, or, except in an application to the board for certification of a device, represent, any device as a motor vehicle pollution control device unless that device has been certified by the 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 section is a misdemeanor."

"39184. (a) No person shall install, sell, offer for sale, or advertise, or, except in an application to the board for accreditation 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 accredited by the board. No person shall sell, offer for sale, advertise, or represent any motor vehicle pollution control device as an accredited device which, in fact, is not an accredited 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 Sacramento, California, this 30 day of September, 1975.

WILLIAM H. LEWIS, JR.
Executive Officer

State of California

AIR RESOURCES BOARD

September 2, 1975

Staff Report

Evaluation of Tri-Star Corporation
"SST-W Capacitive Discharge Ignition" System
For Exemption from the Prohibitions of
Section 27156 of the Motor Vehicle Code

I. Introduction

Tri-Star Corporation, Grand Junction, Colorado, has applied for exemption from the prohibitions of Section 27156 of the Motor Vehicle Code for the "SST-W Capacitive Discharge Ignition" system to be marketed by Warshawsky & Co., Inc. and J.C. Whitney Co. Section 27156 prohibits the installation of any device which reduces the effectiveness of motor vehicle pollution control systems. The applicant intends to sell the device as an "after-market" part to augment the existing standard ignition system for 1974 and older model year vehicles equipped with a 12-volt negative ground battery, except the following:

- A. 1973-74 Mercedes Benz, Mazda, Audi and Porsche vehicles.
- B. All General Motors vehicles equipped with an ignition coil integrated into the distributor.
- C. All 1966-70 model-year vehicles equipped with a Dana, Carter, or AQP NOx retrofit device using an electronic speed sensor.

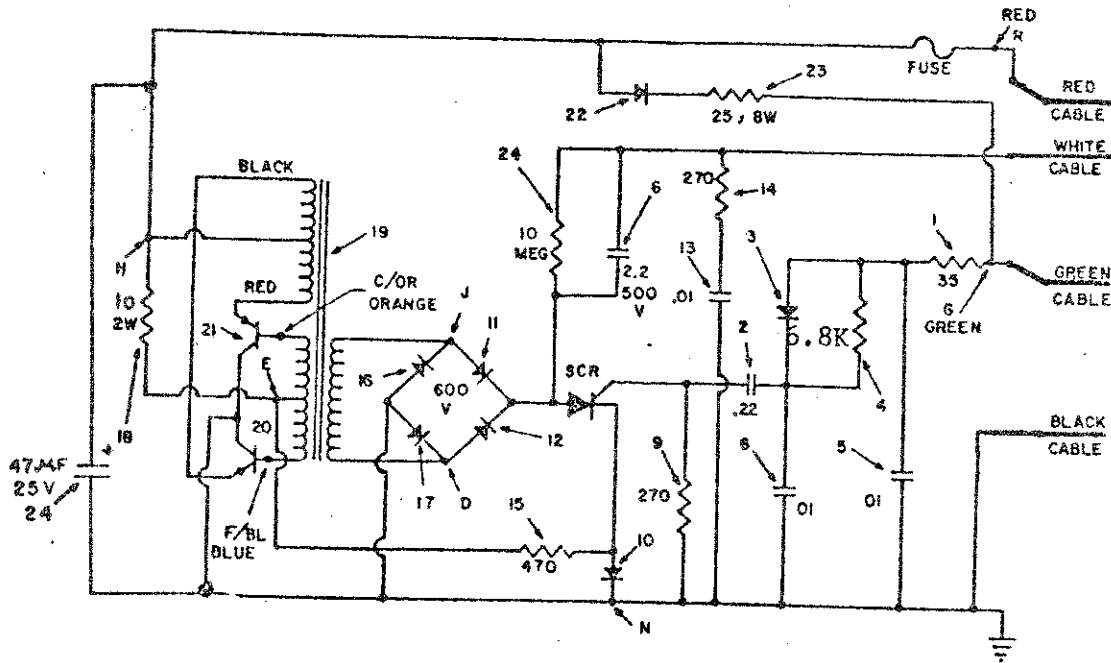
The Air Resources Board has adopted criteria for the evaluation of "after-market" devices for compliance with Section 27156. The basis for evaluation is defined in the "Air Resources Board Criteria for Determining Compliance with Section 27156 of the Motor Vehicle Code", dated February 17, 1971.

II. System Description

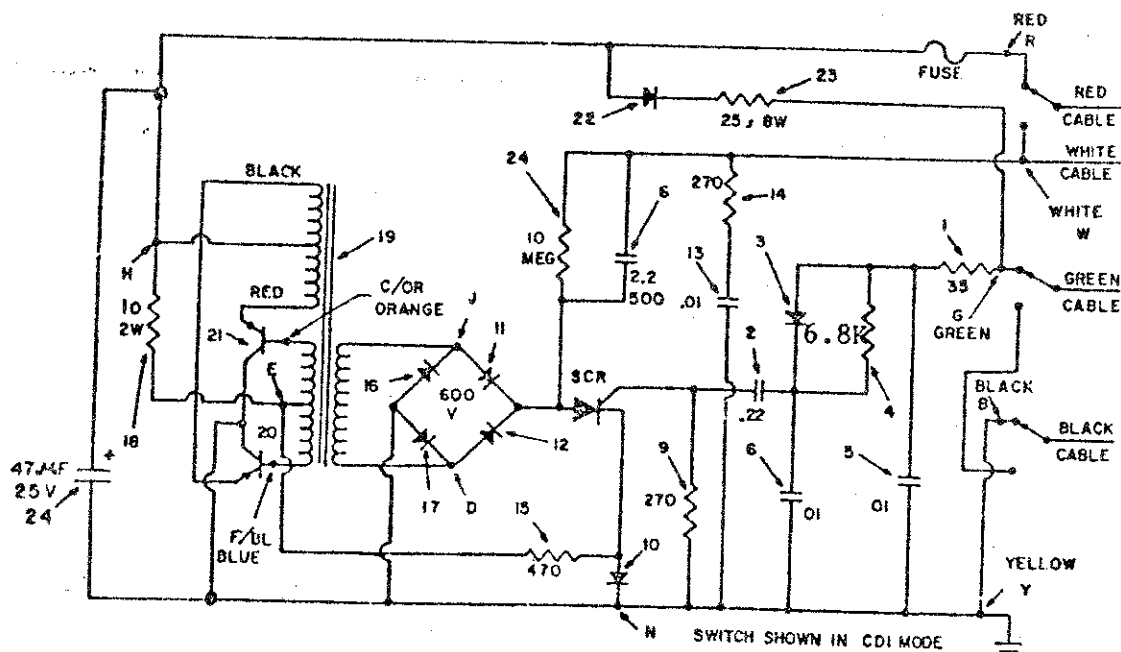
The "SST-W Capacitive Discharge Ignition" is a solid-state printed-circuit ignition system which consists of a d-c to d-c converter, a rectifier bridge, a storage capacitor, a coil, resistors, diodes, and a silicon control rectifier. The module is attached to the frame of the vehicle and used in combination with the standard Kettering ignition system component or with breakerless ignition systems.

An earlier model of the Tiger series manufactured by Tri-Star, the "Tiger SST'", was previously tested by the ARB staff; see staff report entitled "Evaluation of the Tri-Star Corporation "Tiger SST", dated June 12, 1974. The "SST-W" device is technically the same as the previously evaluated "Tiger SST" device. The "SST-W" model, however, is not equipped with a function switch allowing restoration of the standard ignition. Aside from the function switch there is no significant circuit difference between the "Tiger SST" and the "SST-W" devices as shown in the following comparison of schematics in Figure I.

Figure I



SST-W
SCHEMATIC DIAGRAM



TIGER SST
- SCHEMATIC DIAGRAM

III. Staff Evaluation

The ARB staff report entitled "Evaluation of the Tri-Star Corporation "Tiger SST", dated June 12, 1974 shows that the installation of the "Tiger SST" electronic capacitive discharge ignition system will not adversely affect the existing emission control devices in a motor vehicle. Since the "SST-W" and the "Tiger SST" devices are identical except for the function switch deleted from the "SST-W" model, the ARB staff believes that the "SST-W" should have no adverse effects on exhaust emissions.

IV. Conclusions and Recommendations

It is the staff opinion that Tri-Star Corp. "SST-W" Capacitive Discharge Ignition" system will not adversely affect motor vehicle exhaust emissions. Therefore, the "SST-W" Capacitive Discharge Ignitions" system should be exempt from the prohibitions of Section 27156 of the Motor Vehicle Code for 1974 and older model-year vehicles equipped with a 12-volt negative ground battery except the following:

- A. 1973-74 Mercedes Benz, Mazda, Audi, and Porsche.
- B. All vehicles equipped with an ignition coil integrated into the distributor or with an electronic ignition system whether it is a breakerless, capacitive discharge, or transistorized type.
- C. All 1966-70 model-year vehicles equipped with a Dana, Carter, or AQP NOx retrofit device using an electronic speed sensor.

Tri-Star Corporation

"Exhibit A"

PHONE (303) 243-5200 ■ P.O. BOX 1727 ■ 730 INDEPENDENT AVENUE ■ GRAND JUNCTION, COLORADO 81501

July 8, 1975

G. C. Hass, Chief
Division of Vehicle Emissions Control
Air Resources Board
9528 Telstar Avenue
El Monte, California 91731

Dear Mr. Hass:

This is a request to extend coverage of our exemption granted by Executive Order D-20-2 to include units built by us but marketed by Warshawsky & Company.

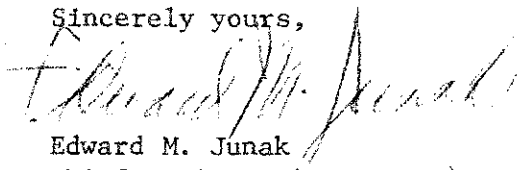
The units marketed by Warshawsky are identical in all details to our TIGER SST except that:

1. The name TIGER SST is not displayed on those units.
2. The electrical switch, which allows selection of either STANDARD ignition or C.D. ignition, is deleted along with associated nomenclature.

The units as built have only connection sequence printed on them identical to our SST. Additional identification can be added if necessary.

Thank you for your early consideration of this matter.

Sincerely yours,


Edward M. Junak
Chief Engineer

EMJ/fs

Tri-Star Corporation

"Exhibit A"

PHONE (303) 243-5200 ■ P.O. BOX 1727 ■ 730 INDEPENDENT AVENUE ■ GRAND JUNCTION, COLORADO 81501

August 6, 1975

Mr. K. D. Drachand, Chief
Vehicle Compliance
Air Resources Board Laboratory
9528 Telstar Avenue
El Monte, California 91731

Dear Mr. Drachand:

In reference to previous correspondence and telecom with Mr. Luczynski on August 4, 1975, we are enclosing requested data concerning the exemption of our SST units sold by Warshawsky and Whitney.

1. Units will be identified with nomenclature "SST-W Capacitive Discharge Ignition". Nomenclature will be printed on the unit end plate. No model or part number is used since only the one model is marketed with this designation.

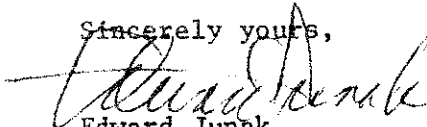
2. With regard to "design changes" there are none from our SST. Deletion of the switch which allows selection of original configuration ignition is not considered a design change but an option change. Deletion of the switch has no effect on performance of the capacitive discharge ignition unit. Note that identical components are used and connected in the SST-W as used and connected in our SST except:

1. The switch is deleted along with its mounting rivets.
2. Wires routed through switch in the SST are connected directly to circuit board on the SST-W part.
3. The end plate on the SST-W has 3 less holes punched due to deletion of switch and switch rivets.
4. Nomenclature printed on unit is different.

Enclosed is schematic of the SST-W unit along with schematic of the SST unit in current production.

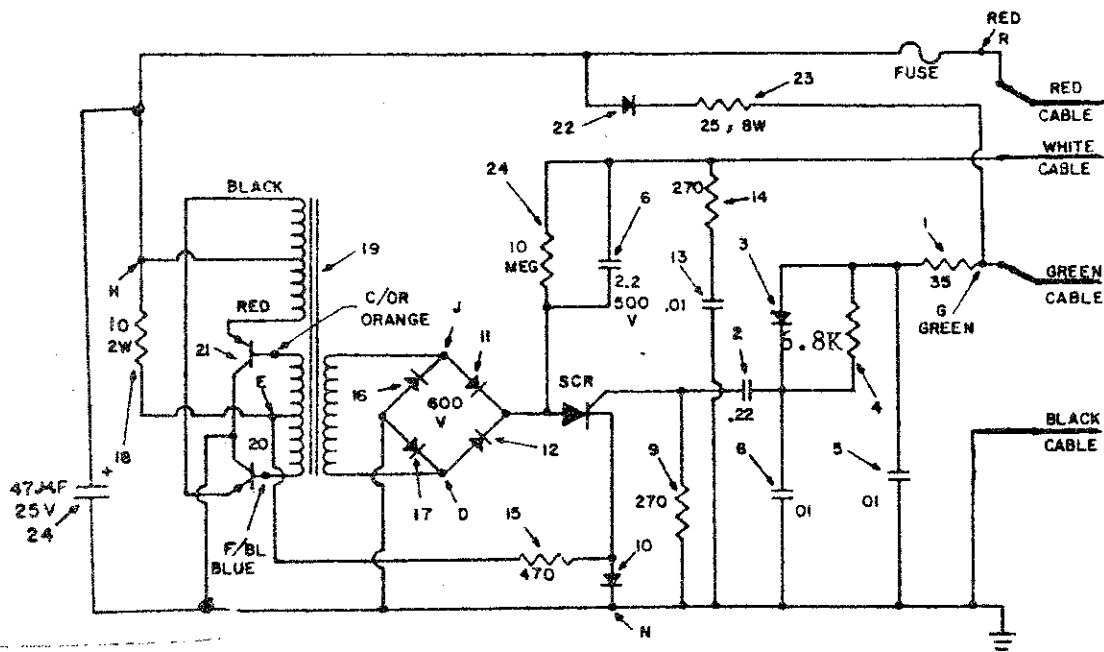
Your early consideration in extending the D-20-2 exemption is appreciated. Please call collect if any additional information is required.

Sincerely yours,


Edward Junak
Vice President
Engineering

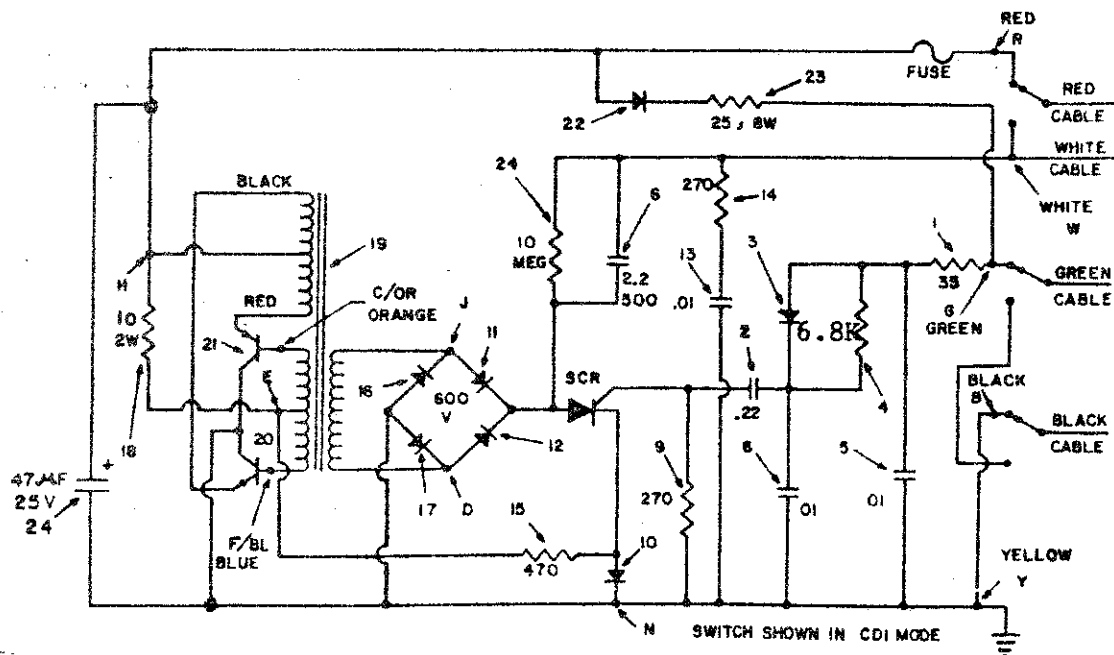
EJ/ei
Enc.

"Exhibit A"



SST-W
SCHEMATIC DIAGRAM

"Exhibit A"



TIGER SST
SCHEMATIC DIAGRAM