WASHINGTON METROPOLITAN AREA TRANSIT COMMISSION
WASHINGTON, D. C.

ORDER NO. 1135

IN THE MATTER OF: Served May 5, 1971

Request for Rule Making of Greater-Washington Alliance to Stop Pollution, Inc.) Formal Complaint No. 22) Docket No. 227

As an outgrowth of the proceedings which were initiated by a formal complaint and petition for rule making filed by the Greater-Washington Alliance to Stop Pollution, Inc.[1] we, on January 14, 1971, issued a notice of proposed rule making relating to the reduction of diesel exhaust emissions. We asked for comments by March 1, 1971. Fifty-eight replies were received from carriers, the general public and government agencies, nearly all of which were highly favorable. A summary of the comments on the specific proposals, and our reaction to them, is as follows.

We will adopt proposed regulations 102-15, requiring use of a throttle delay control device, and 102-16 requiring periodic checking of transmission governors, as no objection to those requirements was made. Nor was there objection to the requirement for periodic stall tests in proposed regulation 102-18 which has been clarified as applicable only to vehicles with automatic transmissions.

Several comments were received concerning the cost of implementing proposed regulation 102-17 which would require conversion, within one year, of fuel injectors in all diesel buses under our jurisdiction, to low-sac volume fuel injectors and injector spray tips.

The use of low-sac volume fuel injector equipment is one of the most efficacious methods for the reduction of both noxious and obnoxious emissions. We believe that their use

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[1] See Orders Nos. 994, 1003, 1094, and 1113.

is a key ingredient in an effective program of exhaust emission reduction. At the same time we are not inclined to impose on the carriers a cost burden which is disproportionate to the benefit to be received, a burden which is inevitably passed on to the ratepayer. We believe the costs in this case are substantial enough to warrant spreading them over a period longer than one year. Therefore, we will allow a two-year period in which injectors must be equipped with low-sac volume spray tips, while maintaining the requirement that all buses be equipped with low-sac injectors within one year. Since the injector itself achieves a major reduction in emissions, we believe this compromise will bring substantial emission reduction in the near future with no undue cost and will result in completion of the injector conversion program within a reasonable time.

Another proposed regulation contemplated a requirement of certain engine modifications in order to achieve high compression. Raising the compression ratio of an engine will reduce exhaust emissions while increasing available horsepower generated by the engine. However, in response to our proposed regulation on modifications to achieve higher compression, the Environmental Protection Agency, the federal agency responsible for air pollution control, pointed out that while higher compression will reduce visible exhaust, it will cause an increase in emissions of oxides of nitrogen.

We consider that requiring conversion to low-sac volume injectors, use of a high-grade fuel, and the institution of maintenance programs specifically aimed at exhaust emission reduction, are the major aspects of the regulations we are promulgating. While engine modifications to achieve higher compression ratios would contribute to the reduction of exhaust emissions, their contribution would be relatively minor. Weighing that fact against the concern expressed by the Environmental Protection Agency with an increase in oxides of nitrogen, and considering that these modifications entail additional expense we will not, at least at this time, adopt the proposal for engine modifications.

Proposed regulation 103-09 would require the use of a high-quality diesel number one fuel. The fuel specifications we are adopting are the same as those we originally

proposed with two minor changes: the minimum flash point has been lowered as suggested by two carriers, which has enabled us to also lower the 90% volatility point, a factor in promoting complete combustion. Further, we have strengthened a proposal which required independent laboratory tests of fuel to be filed with the Commission by requiring regular route carriers to file such tests annually or when a new fuel or supplier is used, and additionally by requiring that all carriers make such tests available to the Commission upon request.

Proposed regulation 103-07 would prohibit pumping fuel from a storage tank immediately after the tank had been filled. The required settling time was to have been one hour per foot of depth of the tank in question. Both carriers and fuel suppliers questioned the length of the settling time proposed as being unnecessarily long and therefore unreasonably burdensome. We have determined that settling times proposed are indeed longer than necessary for high quality diesel bus fuel, and that as we are requiring disposable element fuel filters (regulation 103-06) and periodic removal of water and sludge from fuel storage tanks (regulation 103-08), we can reduce the required fuel storage tank settling time to one hour.

In passing, we note that one carrier claimed its use of sophisticated filter equipment rendered some of our fuel storage regulations superfluous and burdensome. If any carrier can show its current equipment to be more effective than the standards established by our regulations, we will, of course, entertain a request for an exemption from our regulation.

The inspection and equipment reports required by proposed regulations 110-04b. and 110-05b. will remain as proposed except that such records need not be maintained beyond the service life of the vehicle. Similarly, the requirements for the daily examination of all vehicles operated (regulation 106-05) and for the training of drivers in the reduction of exhaust emissions (regulation 111-15) also remain as originally proposed. Regulation 106-05 requires visual inspection of vehicles for "excessive" smoke. For reasons we discussed in proposing this standard, we consider it to be reasonable and have retained it.

The requirement in proposed regulation 111-16j., that engines of buses at a scheduled layover of three minutes or more be

turned off, was the subject of more comments than any other proposed regulation. Although the emission reduction involved in this requirement is not inconsiderable, we believe that the many pleas directed toward maintaining the highest possible standards of passenger comfort deserve consideration. Therefore, we have altered that proposed regulation to allow vehicle engines to idle during the final three minutes of a layover, or if passengers are aboard during a layover, so long as heating or air-conditioning equipment is being used to provide for passenger comfort.

Finally, we are amending existing regulation 106-04, Exhaust Gases, in two places. We have eliminated the current general constraint on exhaust emissions as being no longer necessary, and additionally we are increasing the distance forward from the rearmost part of a bus from which exhaust may be discharged. Previously discharge was to be within six inches of the rear of the vehicle, but new tail pipe configurations have made fifteen inches adequate. The prohibition against vertical exhaust pipes remains unchanged however. In Order No. 1064 issued July 9, 1970, we granted D. C. Transit an exemption to this part of regulation 106-04 to allow testing of five E.I.P. buses equipped with vertical exhaust systems, and we will take no further action on the section pending the outcome of that test. We are aware of the fact that the Alexandria, Barcroft and Washington Transit Company may seek to operate thirty E.I.P. buses commencing in June 1971, but in such a case we believe that that would be another situation where a special exemption would be the most appropriate course of action.

Some carriers requested a hearing on the proposed regulations in the event the revisions they suggested were not adopted. We have adjusted the requirements contained in the original proposal in those instances where the comments submitted indicated some different approach is appropriate. We do not believe that any further factual issues remain to be resolved and therefore do not consider that a hearing is necessary prior to the adoption of the new regulations.

The new regulations will be effective June 1, 1971. This will, we believe, afford the carriers adequate time

to prepare to come into compliance. However, if it is impossible for a carrier to be in compliance with some particular aspect of the regulations within that period, it should submit an application for waiver in sufficient time to allow us to consider it before the effective date of the regulation. No request for waiver will be considered unless accompanied by fully detailed justification.

THEREFORE, IT IS ORDERED that the following regulations be, and they are hereby, adopted effective June 1, 1971:

1) Add section 102-15 to read as follows:

102-15. Throttle Delay Control Device. Vehicles with two-stroke cycle diesel engines and automatic transmissions shall be equipped with a properly functioning throttle delay control device set in accordance with the manufacturer's specifications.

2) Add section 102-16 to read as follows:

102-16. Transmission Governor. The shift speed setting of transmission governors shall be checked every 6,000 miles and reset as required in accordance with the manufacturer's specifications.

3) Add section 102-17 to read as follows:

102-17. Fuel Injectors and Spray Tips. By June 1, 1972, every diesel engine shall be equipped with injectors having a sac volume at or below the lowest sac volume available from the manufacturer of that engine. By June 1, 1973, every diesel engine shall be equipped with injector spray tips having a sac volume at or below the lowest sac volume available from the manufacturer of that engine. At the time of every injector replacement, injectors and injector spray tips having a sac volume at or below the lowest available from the manufacturer of the engine shall be installed.

4) Add section 102-18 to read as follows:

102-18. Stall Test. Each automatic transmission diesel vehicle shall undergo a stall test every 6,000 miles. If the stall speed (in R.P.M.'s) is outside the range accepted as satisfactory by the manufacturer, or if visible smoke is emitted, this condition must be rectified before the vehicle is returned to service.

5) Add section 103-06 to read as follows:

103-06. Fuel Storage Tank Filter. All diesel fuel used by certificated carriers shall be pumped from a fuel storage tank equipped with a disposable element filter in the dispenser hose.

6) Add section 103-07 to read as follows:

103-07. Fuel Storage Tank Settling Time. No diesel fuel shall be pumped from any storage tank into a vehicle of a certificated carrier until a period of at least one hour has elapsed after delivery of fuel to that tank.

7) Add section 103-08 to read as follows:

103-08. Fuel Storage Tank Maintenance. All fuel storage tanks owned or operated by certificated carriers used for fueling vehicles operating subject to these regulations shall be emptied of water and sludge at least every fourteen days.

8) Add section 103-09 to read as follows:

103-09a. Diesel Fuel Specifications. Fuel used in vehicles with diesel engines shall be Diesel No. 1, and shall meet the following minimum standards:

Cetane Rating	45	Min.
Pour Point	0° F.	Max.
Flash Point	120° F.	Min.
Carbon Residue (10% Bottom)	.05%	Max.
Water and Sediment	Trace	Max.
Volatility		
Initial Boiling Point	325° F.	Min.
90% Condensed	500° F.	Max.
End Point	550° F.	Max.
Viscosity, SU, at 100° F. - secs.	34.4	Max.
Sulphur	.20%	Max.
Corrosion (Copper-3 hrs. at 212°F.)	1A	Max.
Ash Content	.01%	Max.
Alkali or Mineral Acids	Neutral	
Odor	Non-Offensive	

103-09b. Each regular route carrier shall maintain on file with the Commission and up-to-date independent laboratory test of its current diesel fuel which shall indicate at least those characteristics specified in Regulation 103-09a. Such laboratory tests shall be filed at least once every twelve months, and additionally whenever a new fuel type or supplier is employed.

103-09c. Upon request from the Commission, a certified carrier must file with the Commission within seven days, an up-to-date independent laboratory test of its current diesel fuel.

9) Amend section 106-04 to read as follows:

106-04. Exhaust Gases. Every bus shall be constructed and maintained so as to prevent the entering of exhaust gases or engine fumes into the passenger compartment. The motor and appurtenances thereof shall be operated in such a manner and maintained in such a condition as to minimize the quantity of obnoxious or harmful elements present in the engine fumes. The exhaust system shall discharge to the atmosphere at or within fifteen (15) inches forward of the

rear-most part of the bus. This also applies to the exhaust of the air-conditioning equipment. Vertical exhaust pipes are prohibited where exhaust fumes are more than three (3) feet above the street level.

10) Add section 106-05 to read as follows:

106-05. Daily Examination. Every vehicle operated shall be visually examined for smoke upon its return to the garage. Any vehicle emitting excessive smoke shall be removed from service until that condition has been remedied. Each carrier shall maintain a daily listing of bus number of those vehicles cited as emitting excess smoke.

11) Add section 110-04b. to read as follows:

110-04b. Inspection Records. Exhaust emission control inspection and maintenance records. Each carrier shall keep an up-to-date record of exhaust emission control inspection and maintenance operations performed for every vehicle in the fleet as required by regulation 110-05, showing the date and total vehicle miles at which each inspection and maintenance operation was performed. These records shall be maintained for the entire service life of each vehicle, and made available, on request, to this Commission or its duly authorized representative.

12) Amend section 110-05 to read as follows:

110-05. Obligation to Advise WMATC. Every carrier shall maintain on file with this Commission an up-to-date description of all periodic inspection and maintenance operations setting forth the intervals (miles, vehicle hours, days) at which equipment inspections and maintenance operations are performed, and how records thereof are maintained. Should any change be made in the intervals at which such equipment inspections

and maintenance operations are performed or in the manner in which such records are to be maintained, this Commission shall be notified immediately. Every carrier shall establish maintenance and inspection procedures and schedules for the reduction of exhaust emissions including, but not limited to, inspection and maintenance performed on: air intake screens, air intake ducts, air cleaners, air box pressure, fuel storage tank, fuel storage tank filter, primary fuel filter, secondary fuel filter, fuel injectors, fuel injector spray tips, injector rack, pistons, piston rings, and cylinder liners.

13) Amend section 111-15 to read as follows:

111-15. Passenger-Driver Training Programs. All passenger carriers, either singly or collectively, shall establish comprehensive driver training programs, the objectives of which shall be to thoroughly train drivers in the operation of the vehicles to be driven; acquaint drivers with their responsibilities and duties, improve the drivers' compliance with all applicable rules, regulations and laws, thereby showing said drivers the importance of and inculcating in them a desire to observe the fundamental precepts and practices of safe driving. Such driver training programs shall include education in the importance of minimizing exhaust emissions, and emphasize what practices operators must avoid in order to prevent unnecessary emissions.

14) Add subsection 111-16j. to read as follows:

111-16j. Driver's Duty at Layover. Engines of vehicles at a scheduled layover or period of inactivity of three minutes or more shall be turned off unless it is both: during the last

three minutes of such layover, or passengers are aboard; and the outside temperature is less than 45°F. and the heater is operating, or the outside temperature is over 75°F. and the air-conditioner is operating.

BY DIRECTION OF THE COMMISSION:

DOUGLAS N. SCHNEIDER, JR.
Executive Director

HOOKER, Commissioner, not participating