MEMORANDUM

TO: Senator Thomas F. Eagleton

SUBJECT: March 28 Hearing -- The Auto Industry

The auto industry testimony will state as follows:

1) Air pollution from automobiles is already dropping, particularly regarding HC and CO. Delaying implementation of Federal standards one year will make a minimal difference in the problem.

2) Emission reductions of 80% for HC, 70% for CO and 30% for NOx have already been achieved when compared to uncontrolled (pre-1961) cars, and the Act requires reductions of 97-98% for HC and 96-97.5% for CO which is too much to expect. These stiff requirements for HC and CO make achievement of the 1976 NOx standard much more difficult.

3) The imposition of the standards will substantially raise costs in purchase price through diminished fuel economy; car performance will be adversely affected.

4) While there are prototype vehicles that meet the '75 and '76 standards, it is not known if they can meet the durability requirements.

5) Unless an "averaging" approach is adopted for compliance testing, meeting the standards will be impossible.

6) Consideration of alternative power sources is out of the question for 1975 and 1976 considering the long lead times necessary to mass produce them.

The auto makers' statements should be judged against this background:

Auto emissions were conclusively proven to be a major source of air pollution in the early 1950's. The State of California initiated a program to control auto air pollution in the late 1950's.
Soon after auto emissions became recognized as an air pollution problem, the auto companies allowed their trade association, the Automobile Manufacturers Association, to take control of the emissions control effort. AMA supervision continued until 1966. In January 1969 the Justice Department filed a civil anti-trust suit against the auto makers and AMA. A Justice Department memo recommending criminal prosecution stated:

"The automobile manufacturers, through AMA, conspired not to compete in research, development, manufacture, and installation of control devices, and collectively did all in their power to delay such research, development, manufacturing and installation."

Key features of this conspiracy to retard development of emission control devices were pressures applied against auto companies developing such devices and a "cross licensing agreement", which appeared to be a vehicle to share information but really served to eliminate competition in developing pollution control devices and prevent third parties from dealing with individual manufacturers to sell new inventions.

In September 1969 the Justice Department settled the case out of court with a consent decree prohibiting further cooperative action to develop emission control devices without consent of the Justice Department.

Points to emphasize in questioning automakers:

1) Possibility of ending preemption of state control (see pp. 3 and 4 of March 9 memo, section B). EPA and now the RECAT (Regulatory Effects on the Costs of Automotive Transportation) report suggest a "two-car" strategy. RECAT even suggests we could go to a three- or four-car strategy -- auto industry support for this position is assumed. The "two-car" strategy is supported by EPA and RECAT data indicating major differences in automotive air pollution impact among metropolitan areas and between metropolitan and rural areas.

Auto companies should be asked if there are these great differences, why not let each state set auto emission standards which it believes necessary to meet air quality standards set under Title I. The premises which support a two-car strategy and suggest a three- or four-car strategy equally could support a ten- or twenty-car strategy, but this would price cars out of the market.
3) **Problems with averaging** (see pp. 6 and 7 of March 9 memo, section D):
   
a) the statute says "each vehicle";

b) inspection and warranty requirements are impossible to maintain at statutory levels if averaging is allowed;

c) averaging as applied to brakes would mean that if some cars had "excellent" brakes and some cars had "bad" brakes the average would be "good" brakes, but this would not be acceptable. The principle is the same here.

4) **Extension of the 1975 deadline and the "good faith" issue** (see p. 9 of March 9 memo, section F):

a) Mercedes already testified that they expect to be able to meet the 1975 standard (HC and CO) with the diesel engine. March 14 discussion:

   Senator Eagleton: "You are confident you can meet 1975 standards for hydrocarbons and carbon monoxide with your diesel engine?"

   Mr. Uhlenhaut (Mercedes-Benz): "Yes."

   Why hasn't the diesel received greater attention?

b) The Justice Department memo indicates that devices have been available since 1960 to reduce NO\textsubscript{X} emissions by up to 85%, but they have received little attention from the automakers:

   "Mr. Albert Jensen...described a device for the reduction of oxides of nitrogen developed at the Cornelius laboratory which...reduced NO\textsubscript{X} emissions 85%.

   "The automobile industry was notified of the existence of the Cornelius device in the latter part of 1960, yet none of the companies took any particular interest in the device."
c) Engelhard Industries will testify Monday that they have a catalytic converter that meets the 1975 standards and is good for 25,000 miles. Why not use these and include the cost of an extra one in purchase price to meet the 50,000 mile warranty requirement? (You should make it clear that such an approach to the warranty requirement does not necessarily have your support.)

d) The stratified charge engine (PPOCO engine) which Ford will suggest as a possible clean engine was patented in the 1950's and has been "on the shelf" at Ford for 15 years. Why wasn't its development pushed faster if it is cleaner without losses in performance and fuel economy which affect the cleanup of the present engine?

e) Mr. Wallace Minto testified that he met with some General Motors staff to discuss his Freon engine. Then: "Shortly thereafter, we received a curt note from General Motors telling us to get lost." Minto also testified that he had a discussion in 1967 with Ford executives but, after the discussion: "Ford just said they were not interested, that is all."

How can auto companies claim good faith if this is their attitude toward scientists who come to them with new ideas for clean engines?

f) American Motors (AMC) has entered into an agreement with GM under which GM will perform some of AMC's technical work in developing emission controls. This arrangement has been approved by the Justice Department as an exception to the consent decree, in correspondence with AMC.

AMC should be asked for copies of their correspondence with Justice and details of this cooperative arrangement.

5) General Motors testified in the House as to the importance of fuels technology to the emission control effort. To aid the record on importance of fuels technology they should be asked to indicate why fuels technology and increasing the volatility of fuel is so important to their program.

6) Chrysler will attack the standards as too stringent in terms of what is really needed to protect health. We should have material from California to counter this.
MEMORANDUM

SUBJECT: Background on Attack on the Standards

The following details the Administration-industry attempt to undermine the auto emission standards in the Clean Air Act through:

(1) developing the averaging, maintenance and replacement compromise; and

(2) attacking the strict standards as unnecessary and too costly.

Today there is an organized and concerted effort -- with the appearance of some impropriety -- to frustrate achievement of the goals for reduction of auto emissions set in the 1970 Clean Air Amendments. This scheme, proceeding with total disregard for the health and welfare of the American public, has the Administration-auto-oil complex joining hand-in-hand to:

-- assert that Congress acted arbitrarily and capriciously in requiring a 90% reduction in auto emissions by a date certain;

-- claim that the 90% emission reductions are not necessary to protect public health and discredit data supporting strict emission controls;

-- scare the public with inflated cost figures and predictions of poor drivability which suggest that great sacrifices must be made to achieve clean air;

-- divert attention from the public health issue by focusing discussion upon controls feasible with current technology, not those necessary to protect health;

-- make testing procedures so complicated that checking all new cars to assure they are clean can be alleged to be an impossible task;

-- refuse to consider any alternatives to the existing internal combustion engine, and set standards of comparison which only the internal combustion engine can meet.
This new joint effort against public health has but one difference
from the great auto pollution conspiracy of the fifties and sixties. Today
a friendly Administration sits in with the industry so no one need fear
embarrassing anti-trust actions.

The Administration and the auto industry began their joint meet-
ings to discuss emission controls in November 1969, shortly after the out-
of-court settlement of the anti-trust suit against the industry. The
settlement barred further cooperative activities among the auto makers
relating to emission controls. At the November 1969 meeting, the industry
generally agreed to an emission reduction program to cut auto emissions
to levels safe for public health by 1990. In 1970 Congress decided that
1990 was too long to wait and adopted the tougher emission controls now
in the law.

During 1971 the auto industry voiced their opposition to these
controls publicly at EPA hearings in May and privately at meetings with
EPA officials and others within the Administration.

The Administration-industry position aimed at discrediting the
Act was crystalized during January 1972. The most significant event in
this period was a private meeting at the Western White House of industry
representatives and some Federal and state control people. This meeting
set the plan which would guide the Administration-industry attack on the
Clean Air Act. Key agreements at this meeting -- as reported in its
sanitized minutes -- were:

1. "...the present standards are based upon data over
which various experts disagreed, and further short-
and long-term epidemiological studies are urgently
required."

2. "Most of the participants felt that too much emphasis
had been placed on the validity of a precise number
for the emission standard of a particular pollutant,
in view of the uncertainties involved in the deriva-
tion of emission standards from air quality standards...."

"The necessity of requiring a 90% reduction from the
1970-71 levels of all three pollutants -- NOx, CO,
and HC -- in exhaust emissions by 1975 was open to
serious question."

3. "General consensus was reached among the representatives
of the automobile manufacturers that it would be virtually
impossible for them to reach the 1975-76 Federal Emission
Standards, operating on current ground rules. They felt
that the following provisions would facilitate the meeting
of the Federal standards:
1) A reasonable maintenance requirement for control devices would have to be enacted to ensure that, for example, catalysts are working.

2) Unleaded gasoline would be available in sufficient quantities.

3) The averaging concept for vehicle emission certification would be necessary rather than the requirement that every car be tested and required to pass the emission standards."

That this was the auto manufacturers' position becomes significant in reading other apparently unrelated statements.

At approximately the same time as the San Clemente meeting, the National Academy of Sciences published its study which concluded:

"While there is no certainty today that any 1975 model year vehicles will meet the requirements of the Act, the status of development and rate of progress make it possible that the larger manufacturers will be able to produce vehicles that will qualify, provided that provisions are made for maintenance, for averaging of production vehicles, and for the general availability of fuel containing suitably low levels of catalyst poisons. Conversely, if the above provisions are not deemed acceptable by EPA it appears most unlikely that any manufacturer will be able to meet the requirements of the Act. The Committee believes that the emission levels required in the Clean Air Amendments will not be achieved in service, in any event, unless regular, periodic maintenance of the emission-control system is required of the owner."

These conclusions were based primarily on auto industry data, as NAS stated:

"...most of the pertinent data required were in the possession of the various concerned manufacturers, primarily the automobile companies. Necessarily, therefore, the analyses to follow rest primarily upon the information received from those sources."
Though NAS had relied almost entirely upon the auto industry for their data, this did not deter the industry from citing the NAS report as authority for the conclusion that meeting the 1975 standards was not technologically feasible in testimony before the House in January and this Subcommittee on March 28.

On February 8, EPA Administrator William D. Ruckelshaus, sent a letter to Chrysler essentially agreeing to the three conditions proposed by the industry at the Western White House. It stated:

"(1) General availability of suitable fuel - Proposed Regulations which will assure the general availability of lead-free and phosphorus-free fuels for use in 1975 and later model year vehicles equipped with emission control catalysts are presently undergoing Federal agency review. We anticipated that these proposed regulations will be published in March. The regulations at 40 CFR 85.71 applicable to 1975 certification test procedures already specify that the lead content and octane rating of the fuel to be used shall be in the range recommended by the vehicle or engine manufacturer.

"(2) Maintenance - There is no question that the complex control systems being designed to meet the 1975 standards will require more maintenance attention than do the control systems now in use. We have presently under development proposed regulations that would allow increased maintenance under certain guidelines. These regulations contemplate catalyst replacement and other reasonable maintenance.

"(3) Assembly-line testing - Assembly line test procedures now under consideration contemplate that emissions measured from tested vehicles will be averaged to determine compliance with applicable standards, subject to allowable upper limits of emissions which no vehicle may exceed. Averaging of emissions is clearly consistent with both normal quality control practices and with the intent of the Congress in establishing the 1975 standards in the Amendments to the Clean Air Act."

That so many apparently separate individuals and agencies could arrive at three such similar conclusions, all in a time period of about one month is a matter of particular interest.

In a March 28 statement to the Subcommittee, Sydney Terry of Chrysler called these three points "major concessions in the regulatory area." Ernest Starkman, Vice President of General Motors testified that he might rather have these concessions and not have an extension of the 1975 deadline than have the deadline extended a year without the concessions.
"I think the averaging for 1975 might be a less stringent target than every car in 1976."

The Periscope section of the April 24, 1972 section of Newsweek further indicated that this "compromise" is developing:

"Clean Air, Clean Cars

The highly charged Washington hearings on auto pollution are expected to end with some deft maneuvering. First, Environmental Protection chief William Ruckelshaus is not likely to give Detroit the year's grace it wants before the law dictating 90% emission-free cars by 1975 takes effect. That would quiet the clean-up groups and defuse the political issue. Ruckelshaus, however, will allow auto men to "average" emissions, so that each car would not have to be 90% clean, and he would put the burden of replacing exhaust-cleaning devices on the car owner."

Attack has also come from another angle, suggesting that a lesser level of control is all that is really necessary.

Henry Ford in his 1971 year end report noted:

"We are confident that we can produce 1975 model cars that would meet the original California and originally proposed Federal standards for 1975. These levels do not match those set forth in the present Federal Government standards but we believe they represent a realistic assessment of public needs for the 1980's. A number of advanced power plants and emission control concepts are being worked on in our laboratories that may enable us to achieve still lower levels."

In mid-February the White House circulated to the auto manufacturers for comments a draft report on the costs of air pollution and safety regulations applied to automobiles. This report, as finally made available to Congress and the public in mid-March, contained a number of interesting statements and appeared designed to justify a set of predetermined conclusions. This "RECAN" study stated:

"...the excess of control costs over benefits for the 'conversion decade' will average about $63 billion, or about $6.3 billion annualized over the decade. After 'conversion', the annual excess of costs over benefits will average about $3.8 billion."
"A major portion of the control costs previously discussed is attributable to meeting the 1976 model year NO\textsubscript{x} standard of 0.4 gm/mile. On the basis of information which this Committee has received from numerous experts, it would appear that the permissible level of NO\textsubscript{x} emission could be increased 1 to 2 gm/mile without materially harming the effort to improve ambient air quality in many regions."

These "numerous experts" are identified in a later passage deep in the body of the report as the auto manufacturers.

"Relaxation of the prescribed Federal limit for 1976 of 0.4 gm/mi to about 1-2 gm/mi would greatly ease the difficulty of finding a solution to NO\textsubscript{x} control according to auto manufacturers."

Interestingly such reductions of NO\textsubscript{x} are approximately the levels agreed to at the 1969 Administration-industry White House Conference suggested as feasible in Henry Ford's year end statement, and subsequently called for by Ford in their April 1972 presentation to EPA when they suggested an interim standard.

The auto companies also provided the major input for the REC AT advice that greater controls lead to poor performance. And the "averaging" approach to compliance testing advocated by the auto companies is recommended by REC AT.

"...It seems reasonable to require manufacturers to meet the emission standards on an average basis, with a cut-off point of acceptability at some maximum level of emission which is somewhat higher than the Federal standards. This cut-off point will have to be determined from an analysis of the quality control reasonably attainable in automotive production."

The REC AT report also noted:

"It is generally conceded that Title II of the Clean Air Act establishes an ad hoc basis for automotive-emission reduction. The reductions specified in the Act were stipulated before the ambient air quality standards were established, and they are not derived from these standards."

Who "generally conceded" the "ad hoc" basis for Title II is unclear. It certainly was not Congress which carefully considered the basis for its standard setting action. Hopefully it was not EPA which recognized the close and important relationship between auto emission controls and air quality standards in their state implementation plan guidelines."
This last observation of the RECAT report was closely paraphrased in an attack on the Clean Air Act by Fred Hartley, President of the Union Oil Company, who told the Subcommittee hearing in California:

"I consider the 90 percent reduction of 1970 car emissions itself to be completely arbitrary. It was established without any regard to ambient air quality standards considered as necessary for public health. In fact, the air quality standards were developed after the emission standards had been set for 1975-76 cars."

Hartley also echoed Henry Ford and the 1969 White House meeting when he stated:

"The currently proposed California emission standards are substantially different and in general less severe than the controls imposed by the Clean Air Amendments.

"At this point I would like to suggest for your consideration maximum 1975-76 emission limits which in my opinion would expedite improvement in air quality commensurate with reasonably attainable technical developments."

Mr. Hartley participated in the January Western White House meeting. Another participant in that meeting, Peter F. Schabarum, a Los Angeles County Supervisor, attacked the standards as unnecessary to protect health during the Subcommittee hearing:

"This requirement must have resulted from a lack of understanding of the degree of control actually needed for each of these three contaminants. The standards established by EPA in implementing this instruction require much greater control of carbon monoxide emissions than is needed to comply with any of the air quality standards for this contaminant. This is an overkill on carbon monoxide."

Schabarum stated that a major air pollution problem in Los Angeles County was nitrogen oxides, but in a subsequent dialog with Senator Tunney, he steadfastly maintained that the liberalization of the NOX standard advocated in the RECAT study would be no problem if limited to the 1.5 gm/mile level.

Reviewing this record and the documents presented to support it, it becomes apparent that key recommendations and positions now adopted by the White House and other opponents of the standards are derived from positions originally advocated by the auto makers.
MEMORANDUM

TO: Senator Edmund S. Muskie and Senator Thomas F. Eagleton

FROM: Leon G. Billings and Donald G. Alexander

SUBJECT: Auto Company Violations of the Clean Air Act

The auto companies appear to be engaged in a major effort to subvert the intent of the Clean Air Act. EPA discovered in early July that emission control systems installed on some 1973 cars shut off automatically under certain normal driving conditions. Regulations permit shut-off for safety purposes only under unusual or short-term driving conditions. It has been reported that shut-offs of the emission control systems have been found when the engine is idling, when outside air temperature is below 57 degrees, and when the car air conditioner is turned on. These faults were not discovered in testing because the EPA tests are conducted in a narrow 68-68 degree temperature range on cars without major accessories.

On July 13 or 14, EPA advised the major auto companies that within 30 days they should disclose all details about cutoff devices which are not already revealed. Where EPA determines that such devices are inconsistent with the intent of the Act, it will require that after 15 days from notification vehicles leaving the assembly line not have any operative cutoff devices. Temporary certificates of conformity will be issued to allow production during this review period of cars with potentially prohibited shut-off devices.

This discovery is only the latest evidence of EPA's failure to adequately monitor development of emission systems by the auto companies and the auto companies' apparent effort to subvert the Act. Previous examples:

-- the revelation on June 19 that ten auto companies plan to produce models for periods longer than the 365-day period specified in the Act despite a March 27 EPA notification that the 365-day limit would be enforced. EPA's response: change the March 27 interpretation to allow a longer "model year" production period;
-- the June 12 report of the General Accounting Office which examined EPA's procedures for certification testing and monitoring of the manufacturers' testing practices and concluded that EPA had no effective way to discover violations by the manufacturers;

-- the May discovery that Ford performed unauthorized maintenance on prototype vehicles submitted for 1973 certification tests and the later admission by Ford that similar unauthorized maintenance had been performed on 1972 test vehicles;

-- the failure, to date, of EPA to prosecute Ford for these acts;

-- Ford's action in late 1971 shipping 200,000 vehicles to dealers before certification had been granted -- for which they were fined $10,000 or $.05 per car.

The sum of these actions is clear evidence that the Nixon Administration is allowing the auto companies to subvert the intent of the Clean Air Act and commit fraud upon the public by (a) refusing to develop an adequate enforcement and monitoring staff and procedures to oversee auto companies' testing practices despite the repeated demonstration of auto companies' bad faith, and (b) changing the rules of the game to permit business as usual every time a violation is discovered. The impact on the public is particularly significant at this time when auto companies are making presentations to the Price Commission justifying auto price increases of $35 or $90 because of Federally required safety and emission control devices.

A hearing which invited the chief executive officers of the auto companies to testify could dramatize the failure of the Nixon Administration to enforce the Clean Air Act, the Administration's continuing refusal to take stronger enforcement measures and the Administration's continuing desire to leave testing completely to the auto companies despite the repeated examples of bad faith by the auto companies. These hearings could also discuss the issues of environmental blackmail because the auto companies have, in effect, challenged the Federal government either to ignore violations of the Clean Air Act or close down the companies at the expense of the jobs of hundreds of thousands of innocent auto workers. The hearing could, in questioning the auto companies, demonstrate that a more vigorous monitoring, testing and enforcement effort by EPA would have discovered and avoided many of the difficulties in the past and could in the future reduce the threat to jobs.

There is some belief that the repeated auto company violations of testing procedures in 1973 are intended to test the will of the Federal government to enforce the Clean Air Act, including the 1975 deadline.
If strong measures against the companies are not taken -- either through EPA administrative action or through the adverse publicity which could be generated by Congressional hearings, similar and perhaps greater challenges will occur in the future, particularly when tougher standards are required in 1975.

The hearing would provide an excellent forum to:

a) demonstrate that the Nixon Administration is working hand-in-glove to allow big business to avoid the impact of Federal law;

b) demonstrate Congressional concern for the working man by castigating industry and the Administration for allowing workers' jobs to become pawns in the power play to subvert the Act;

c) emphasize again the history of auto company bad faith in emission control efforts;

d) seize the legislative initiative by proposing tough amendments to the Clean Air Act before the auto companies and the Administration come up with weaker ones (an outline of the proposals is attached);

e) take the economic issue away from those who oppose environmental legislation by demonstrating that if enforcement action had been quicker and tougher, the threats to jobs would have been avoided.
MEMORANDUM

TO:        Senator Edmund S. Muskie
FROM:      Leon G. Billings
SUBJECT:   Assault on the Clean Air Act

August 15, 1972

Last month I was asked to participate in a meeting arranged by
the Chairman for representatives of the National Coal Association, the
private electric utility industry and others associated with the coal
industry. The ostensible purpose of the meeting was to discuss the
problems of compliance with the requirements of the Clean Air Act by
the utility industry and the associated impact of such compliance on
the coal industry.

Carl Bagge, President of the National Coal Association, led the
discussion. He indicated that the coal industry was facing calamity
as a result of the sulfur requirements imposed on utilities for both
existing and new plants in air quality regions where standards for
sulfur oxides were not being met. Bagge indicated that the market for
clean for these utilities was rapidly being lost to low sulfur residual
fuel oil. He also indicated that while the market in the Northeast had
already been lost through unrestricted imports of residual fuel oil,
imports were being made into coal markets in the Midwest through the
Great Lakes.

After some discussion of the technology to control stack gas
emissions (there are apparently two commercially available processes)
and further discussions of the implications of oil import policy on
control of stack gas sulfur, David Toll of the National Association
of Electric Companies bluntly interrupted to "get to the point of the
meeting". Toll then launched into an attack on the Clean Air Amendments
of 1970 and indicated that it was his understanding that the purpose of
the meeting, as outlined by Senator Randolph, was to discuss the manner
in which an amendment to that Act would be put through to relieve the
electric utility industries from the requirements imposed as a result
of air quality standards. Barry very quickly suggested that the immediate
discussion of an amendment to the Clean Air Act would be less than fruitful
-- that the groundwork for such an amendment would have to be laid -- and
that the best way to accomplish this would be to have an open non-adversary public discussion of the issues raised by the coal industry. It is to this suggestion that the colloquium, referenced in the attached press release, refers.

To date the staff of the Subcommittee on Air and Water Pollution has control over the colloquium. We are making every effort to see that there is a balanced discussion of the issues involved. However, this could change. In order to protect your interests I indicated during the meeting with Gagge, et al, that Mr. Toll was misguided if he thought that an immediate exemption for the electric utility industry would be written into the Clean Air Act -- that some Members of the Committee would take a different view of the issue -- and that the best advice I could give would be for the utility industry to go "balls out" to apply the very best technology that would be available to them. If, by the 1975 deadline, after all good faith effort had been made -- all technology had been applied -- all alternative fuels had been exhausted -- and an adequate investment in development of new technology had been made -- then the Congress would consider an extension. Needless to say that broke up the meeting with a considerable amount of invective directed at me.

The colloquium presents a potential and a problem. With active participation on your part it has the potential of providing a public forum to expose the electric utility industry's attack on the Clean Air Act. The problem is that, without your involvement, the basis could be established for claims that the utility industry is making.

Senator Randolph is obviously going to have his colloquium. You can either participate and in so doing direct the result or stand back and let it be a "coal industry show". The dates tentatively suggested for the event are September 20 or 21. That week has been chosen because Congress will be in session and most Members will be here. I would hope to commit you to a date for this event as early as possible.
MEMORANDUM TO FILES

November 13, 1972

SUBJECT: Violation of Title II of the Clean Air Act

In the summer of 1972 the Washington area experienced its worst season of air pollution danger alerts. In September, 1972, the National Academy of Sciences reported that air pollution is responsible for greatly increased incidences of lung cancer in urban areas.

These are among the more recent developments that point to continued seriousness of air pollution in the Nation. More than half of all pollution nationally, and more than 80 percent of the air pollution of some urban areas, is directly attributable to the automobile.

For this reason the Congress, in 1970, approved legislation which requires strict control of air pollution from automobiles. The Nixon Administration opposed enactment of the 1970 Clean Air Amendments, and a veto of this Congressional initiative to protect the public health was threatened.

Today, an organized and concerted effort may be underway to undermine the strict controls and deadlines for cleaner automobiles and frustrate the public's demand for clean air. This effort is spearheaded by the auto companies. They have initiated an attack on the basis for the judgments made in the 1970 Act and are violating the law where it is not convenient to comply. The industry attack is being abetted by the Administration's hesitancy to enforce the Clean Air Act.

Clean Air Act Background:

In September of 1969, the Administration entered into a consent decree to settle a civil anti-trust suit against the auto companies for conspiring for more than a decade to thwart development of pollution control devices. During consideration of that suit, the Justice Department prepared a memo recommending criminal prosecution of auto executives for collusive efforts to thwart development of clean engine systems from 1953 through the late sixties. That memo stated: "The automobile manufacturers, through the AMA, conspired not to compete in research, development, manufacturing, and installation of control devices, and collectively did all in their power to delay such research, development, manufacturing, and installation."

An industry record of bad faith in air pollution control was thus clearly established by this and other facts readily available, to all, though the civil suit was dropped and the recommended criminal prosecution ignored.

In late 1969, auto industry executives gathered for a secret meeting with the President at the White House to make a deal to permit dirty cars for ten years. An agreement was worked out which stated that until the 1980 models, autos could be manufactured with emission levels higher than required for public health. This meant that it would be 1990 before the automobiles' contribution to air quality would no longer endanger public health.
On March 15, 1970, the Administration made public a required study which indicated that reductions in emissions from uncontrolled automobiles of 93.6% for nitrogen oxides, 92.5% for carbon monoxide and 99% for hydrocarbons were necessary to protect public health. Additional data provided to the Subcommittee on Air and Water Pollution indicated that emission reductions of about 90% from the 1970 auto standards would be essential to protect public health.

The Congress decided that the Administration-industry timetable put off the healthy air deadline for too long. Thus, in late 1970, the Clean Air Amendments were enacted over Administration opposition. That Act mandated the auto industry to achieve a 90% reduction in hydrocarbons and carbon monoxide emissions by 1975 and a 90% reduction in nitrogen oxide emissions by 1976 -- more than twenty years after auto emissions were generally recognized as an air pollution problem.

This Congressional action created an interesting reaction from the Administration and the industry. Both claimed that legislative timetables or specific levels of emission reductions were inappropriate -- even though they had jointly agreed on a timetable and a specific level of emission reduction at a secret White House meeting. Despite all the questions that had been raised the EPA Administrator, in a statement sent to Senator Eagleton in May of 1972 reaffirmed that the Clean Air Act standards were, according to EPA's best judgment, necessary to protect public health.

"It is important to point out, as we did in 1970, that our ability to predict air quality levels is still very much in the embryonic stage. We are working hard to improve this knowledge, but as of today the best information available to us indicates that emission reductions along the order of those required by the 1975-76 standards are necessary to protect public health."

The Situation Today (11/15/72):

In May of 1972, the Administration received much praise for its public action in denying the auto industry request to delay implementation of the 1975 auto emission standards. Today it appears that less publicized or totally unpublicized Administration actions are reversing their superficially tough public stance. Seven significant events have occurred over the past year which indicate that the Administration and the auto companies are in league to undermine the Clean Air Act.

1. In late 1971, the Ford Motor Company shipped 200,000 cars to dealers before the Environmental Protection Agency had certified compliance with Federal emission standards. This was a clear violation of the law. For this flagrant violation, the first major test of this Administration's will to enforce the Clean Air Act, the Administration -- like the anti-trust case before it, settled the case by a consent decree. Ford paid a fine of five cents a car -- a mere $10,000. This lack of aggressive action accompanied by a miniscule penalty could only signal that the Administration would not be tough on the auto companies.
2. In May of 1972, Ford Motor Company revealed that unauthorized maintenance has been performed on prototype vehicles submitted for 1973 certification tests. This unauthorized maintenance had not been reported, as required by law, in vehicle certification applications submitted to EPA. The maintenance regulations which Ford violated had been in essentially the same form since 1968. Therefore, there is little doubt that the performance of unauthorized maintenance was intended to circumvent to requirements imposed by Federal standards. To date, even though as many as 800 "errors" in maintenance have been "discovered", no prosecutions have been initiated. The Environmental Protection Agency studied the matter for four months, then, rather than recommend any action, it turned the matter over to the Justice Department for even more study.

3. Later in May, Ford disclosed that there also had been discrepancies in the "facts" submitted as a part of their testing results for 1972 cars.

What has been the Administration's response to date?

Again, the Administration has not initiated any criminal prosecutions even though the basis exists. There have been no fines. But there was a lot of scrambling around to develop interim procedures to allow Ford to continue business as usual despite their violations of the law.

4. Because of the Ford incidents and the apparent failure of EPA to monitor adequately auto company test procedures, Senator Muskie, on May 23, asked the General Accounting Office to examine EPA's procedures for independent testing and monitoring of the auto manufacturers certification testing practices.

The GAO reported back on June 12. As GAO noted: "EPA has operated the certification program on the basic assumption that the auto companies will act in good faith, comply with EPA certification regulations and submit complete and accurate data to EPA." This was clearly naive in light of the past twenty years of auto company bad faith efforts to develop a clean car. Their report indicated other shocking inadequacies:

-- As of June 1, 1972, only 17 people were assigned to EPA to automobile certification work involving 52 auto companies with hundreds of different models.

-- EPA had no staff for monitoring at the auto companies or inspection of auto company records.

-- EPA pays test personnel such low salaries that they have great difficulty hiring and retaining competent people.

-- Because of inadequate staff, EPA's testing facility is functioning at only one-third capacity.

GAO concluded: "EPA's procedures have not been adequate for ensuring that manufacturers comply with Federal regulations."
Though the case was clearly made by GAO for major upgrading of EPA testing and monitoring operations, the Administration did not make any request for increased support for monitoring efforts. The relationship between the Administration and the auto companies perhaps does not intend too much public information on the auto companies' "errors", "discrepancies" and "failures".

When the Senate passed the Clean Air Act, the Committee on Public Works specifically addressed the issue of funding and manpower. The following statement appears in the Senate report:

"The committee emphasizes that the act, the deadlines proposed, and the new programs authorized will be without meaning unless supplemental manpower (doubling present staffing of National Air Pollution Control Administration) and supplemental funding (an increase of at least $44 million over the present budget request) are provided in this fiscal year."

In 1970 the Administration had stated that to implement the Clean Air Act effectively, it would need $320.1 million for fiscal year 1973, excluding the research program. The Administration's 1973 budget called for $159.8 million for air pollution control, including the research program.

On May 23, 1972, the Chairman of the Committee on Public Works, Senator Randolph, asked EPA if they would need more money to improve their testing and monitoring practices. EPA replied on July 11, during the final mark-up of the fiscal 1973 appropriations bill (and a month after the GAO report), that they were trying to develop figures on needs and that "once we have developed these figures, we will be in a position to determine if they are available within our FY '73 budget request or whether it will be necessary to request additional resources from the Congress." No such request for additional resources was received.

The clear intent of the Clean Air Act is not being carried out. The unwillingness to provide manpower and funds is evidence of this failure. There cannot be effective implementation or enforcement without these elements. The Congress can only question whether the Administration really intends to enforce the law.

5. In March of 1972, EPA sent a memorandum to all the auto manufacturers stating what was the clear intent of the Clean Air Act, that vehicle certifications granted by EPA would apply for one year. EPA stated: "The statutory language limits to 365 consecutive days the period of time (production period) during which a manufacturer may product individual models." The intent of this one year limit on certification was to assure some degree of quality control over production models by making sure that there is no change in the capacity of the engine to meet clean air standards.
The key provision of section 206 of the Act states: "The Administrator shall issue a certificate of conformity upon such terms, and for such period (not in excess of one year), as he may prescribe." Despite this clear direction, EPA revealed on June 19 that ten auto companies planned to produce models under 1972 certification for periods longer than 365 days, ignoring the EPA March notification that the 365-day limit would be enforced. The ten auto companies were: Alfa Romeo, Avanti, Chrysler, Citroen, Ford, General Motors, Lamborghini, Maserati, Mercedes Benz, and Nissan.

EPA's response was not to enforce their March decision but to write a new memo saying that a year is not a year but any "model year" period the auto makers chose to make it.

The problems created by extending certifications for a period longer than a year would be mitigated if the EPA had developed a test to check cars for compliance at the factory or on the road. But EPA has not done this even though the Clean Air Act clearly requires development of such tests and even though Administration officials testified in 1970 that such a test could be developed within two years. This means that EPA has no way of knowing how cars coming off the production line perform. This means new vehicles produced during and after the certification year may or may not meet the standards. And this means the public may or may not be receiving what they pay for.

California has a production line test, and New Jersey recently implemented an in-use emission testing program. These tests may not be perfect, but they certainly are a device to check the efficiency of emission control systems. In light of this, it is difficult to believe that EPA cannot develop a test to check the exhaust of cars coming off the production line, unless this is another secret deal with the auto companies.

6. In mid-July EPA announced that auto makers were installing emission control devices for 1973 cars which automatically shut off under many normal driving conditions that would not be covered by the narrow and unrepresentative test procedure EPA has established. This is a clear and flagrant violation of the law.

Specifically, it was reported that emission control systems would shut off when the engine is idling, when outside air temperature was below the minimum test level of 68 degrees or when major accessories such as air conditioning units were operative. None of these faults were discovered by EPA because their test procedures are conducted in a narrow temperature range on cars without major power-using accessories in operation.

As with other violations, EPA discovered these violations inadvertently, EPA advised the auto companies that, within thirty days, they should disclose all details about cut-off devices which they had not already revealed. EPA also announced that where it determined that the cut-off devices were inconsistent with the Act, it would require that after fifteen days of notification, vehicles leaving the assembly line should not have any operative cut-off devices. In the meantime, temporary certificates would be issued to allow production of cars with such cut-off devices. What happens to these cars running around on the streets with the prohibited devices is not clear. What is clear is that another violations of the law was sanctioned by the Administration.
Except for a procedural letter to the auto manufacturers, there has been no visible action from EPA, though a violation of the Act is clearly apparent. Section 203 of the Clean Air Act prohibits manufacturers or their dealers from making any emission control device inoperative.

Further, because systems are in violation of the law, the 1973 requests for certification filed with EPA which fail to report such cut-off devices -- and some apparently do not -- constitute false statements. Providing false and misleading information may be a criminal violation of the Clean Air Act under Section 113 because the companies have stated that emission control devices will function when, in fact, they will not.

7. In early November EPA proposed modifications of regulations relating to maintenance of motor vehicle emission control systems. These regulations indicated that EPA might allow the auto industry to require replacement of catalytic converters during initial 50,000 miles of motor vehicle operation -- with cost of replacement to be paid by the consumer at time of replacement. The Clean Air Act, in section 207 (a) requires that emission control systems of each new motor vehicle be designed to meet emission control regulations and be free from defects, which would cause the emission control system to fail to perform, for the useful life of the motor vehicle (established by law at 5 years or 50,000 miles). This provision means that as with existing motor vehicle warranties, when a key element of the system breaks down it will be replaced by the manufacturer at no cost to the consumer (i.e., the cost is included in the initial purchase price of the motor vehicle). EPA's newly proposed interpretation is clearly inconsistent for this provision of the law. Further, it is directly contrary to good practice which was suggested by EPA Administrator William D. Ruckelshaus testifying before the Subcommittee on Air and Water Pollution on May 22.

... "We are not certain at this point that a replacement will be necessary. We are hopeful it will not, and I am sure the automotive companies are hopeful it will not, and that they can produce one that will last. In order to achieve the standard, as I have tried to state on page eight of my decision, one replacement was necessary. It is my belief that this ought to be paid for at the time the car is purchased. We are currently researching our authority. I am not sure that I have the authority to require this under the Act. In the event that we do, it is my feeling that the consumer is far more likely to replace the catalyst when necessary, than if we leave that replacement cost up to his own discretion, or being caught in some test that requires replacement."

On July 27, 1972, EPA provided Senator Muskie with a legal opinion stating that they did indeed have authority to require that the cost of replacements in the emission control system be paid for at the time of purchase.

To deal with the point raised by Mr. Ruckelshaus on May 22 that replacement was more likely if the cost was included in initial purchase price, the EPA proposed rule making suggested that consumers could be made to replace devices and pay for them at a later date through application of a combination
of effective state inspection systems and monitoring devices attached to the automobile to check the performance of the emission control system. At the time of the proposed rule making EPA had developed neither a state inspection system nor a monitoring device to assure these controls. Thus, in effect, EPA proposed a procedure which was not only inconsistent with the law but also dependent for success on technology which did not yet exist. Such dependence on technology which did not yet exist is interesting in light of frequent Administration criticism of Congress for allegedly legislation standards dependent on technology which did not yet exist.

These actions provide ample evidence that the Administration intends to permit the auto companies to subvert the Clean Air Act. The refusal to develop an adequate enforcement and monitoring staff and procedures to oversee auto companies' testing practices, despite the repeated demonstration of auto companies' bad faith, and the repeated changes in the rules of the game to permit business as usual when violations are discovered, is undermining the credibility of the program and destroying pressures to create new clean car technology.

This failure is particularly significant at a time when auto companies are claiming increased costs of $35 or $90 to pay for Federally-required safety and emission control devices. How much of that price increase is attributable to the cost of devices to make the emission control system not work? How much will the public pay for systems that fail? How much profit and inflation will be justified by auto companies who have a proven record of misleading the public?

What has been the effect of the Nixon Administration's failure to curb the auto industry's violations of the Clean Air Act?

First, the failure of the Administration to enforce the law appears to have encouraged the greater and more arrogant violations by the auto companies which have been reported recently -- violations which, unlike the earlier ones, almost force a choice between closing down the industry or turning our backs on the law.

Second, because the industry appears to have achieved some success in getting the government to back down on enforcement by suggesting plant closure as the only alternative, the livelihoods of hundreds of thousands of auto workers are going to be put in continual peril as industry executives -- who don't have to worry about layoffs -- use the workers' jobs as pawns in their political power plays to undercut the Clean Air Act.

Third, the auto industry is being given the impression that if they refuse to comply with the law nothing will happen, that inaction or illegal action will be rewarded and controls changed as they desire. Such an impression stifles any incentive for innovation or compliance. The impression need not be corrected by plant closures, it can be corrected by criminal prosecution, leaving innocent workers unharmed.
Today, the auto industry is presenting the Federal government with a bold and direct challenge, testing the Federal government's will to enforce the relatively mild emission control requirements for 1972 and 1973. If they succeed, as it appears they have, their challenges to enforcement of emission controls and safety regulations are likely to get more arrogant and irresponsible in the future. The whole purpose of the Clean Air Act will be subverted. The ultimate loser will be the public which will have to continue to endure more expensive but equally dirty automobiles.
Let's Have Clean Air
—But Let's Not Throw Money Away!
There was very little public recognition of the industry's achievements over the years, but there was a great sense of urgency about cleaning up the atmosphere. The result was the passage of the Clean Air Act of 1970.

THE 1970 CLEAN AIR ACT

Among other things, that Act requires that by the 1975 model year, automotive emissions of carbon monoxide and hydrocarbons must be reduced 90 percent from 1970 levels. By 1976, emissions of oxides of nitrogen must be 90 percent below average levels of uncontrolled 1971 vehicles.

What is often overlooked is the fact that emissions of hydrocarbons are already 80 percent below those of uncontrolled vehicles. Carbon monoxide emissions have already been cut 70 percent, and oxides of nitrogen have been cut by 50 percent. (Fig. 1)

The fact is that the 1975-76 standards actually require a 97 percent reduction of hydrocarbons compared with uncontrolled vehicles, 96 percent on carbon monoxide, and 93 percent on oxides of nitrogen. (Fig. 2)
sources, such as turbines, electricity, and steam were often suggested as logical approaches to meeting the new standards.

Given all these assumptions, it is a little easier to understand how men who were sincerely trying to solve what they believed to be a very real problem could devise the 1970 Act. The motivation was strong, and in the absence of fact, a stringent approach seemed to be the most appropriate.

MEETING THE STANDARDS

The initial industry response, after the shock wore off, was to determine how to meet those standards. Our engineers explored the suggested alternatives—turbines, electricity, and steam. But extensive testing and experimentation led to the conclusion that within the time limits imposed on the industry, there seems to be no power source other than the internal combustion engine that will meet the requirements for driveability, durability, fuel consumption, and cost on schedule.

Basically the same drawbacks apply to the second option, emission control devices added on outside the engine. These catalytic and reactor applications leave a lot to be desired in terms of cost, efficiency, and durability.

The third option is to continue improving the internal combustion engine. The industry has already made a great deal of progress with this approach, and at a reasonable cost to the consumer. That progress was adequately summed up by Dr. A. J. Haagen-Smit, head of California’s Air Resources Board and the man who first discovered the automobile’s role in photochemical smog, when he observed: “The problem is so far over the hump that I’m beginning to lose interest.”

ASKING THE WRONG QUESTION

That conclusion points up what is wrong with the way many people in the automobile industry have been dealing with the issue. Certainly the automobile companies have an obligation to try to meet government standards. But they also have an obligation to express their opinion on bad law. Perhaps everyone has concentrated too much on the question of how these standards are to be met, instead of raising the far more relevant question: why should they be met?

NEW SCIENTIFIC INFORMATION

Ever since the Clean Air Act was passed there have been concerted efforts in the scientific and technological communities to gather the facts required for a reasoned, unemotional, informed approach to identifying and solving the air quality problem. But instead of seeing a growing number of debates and discussions over the validity of the standards, we are constantly harrased by headlines telling of some real or imagined breakthrough or failure in the struggle to meet them.

It seems that all of this is totally beside the point in view of the facts that have been gathered about the assumptions that were being made back in the late 60s by the public and by those pressing for cleaner air. Those facts all raise the question of why.

Here are a number of the key assumptions and the facts now available which refute them:

CITY AIR IS GETTING CLEANER

The first assumption was that America’s air quality was getting steadily worse.

The fact is, according to a recent study for the Council on Environmental Quality, there has been a marked improvement in air quality in communities of all sizes.

These improvements, of course, are a result of the work that has been done by other industries in controlling emissions from stationary sources, and also the replacement of older cars by those equipped with effective control devices—controls which were being developed long before ecology became a household word.
AUTOMOTIVE ATMOSPHERIC IMPROVEMENTS IN UNITED STATES

As these improvements continue, there will be continued improvement in air quality. (Fig. 3)

NATURE OUT-POLLUTES MAN

The second assumption was that man—and especially his automobile—was the prime source of emissions.

The fact is that nature itself, and not man, is the major source of the three basic atmospheric gases emitted by the automobile. Perhaps the most surprising discovery in the past year is the fact that natural sources constantly produce about 15 times as many oxides of nitrogen as man, about 10 times as much carbon monoxide, and six times as many hydrocarbons. (Fig. 4)

EMISSIONS
NATURAL VS. MAN-MADE SOURCES

NATURE NITROGEN OXIDES
MAN NITROGEN OXIDES

NATURE CARBON MONOXIDE
MAN CARBON MONOXIDE

NATURE HYDROCARBONS
MAN HYDROCARBONS

Fig. 4

NATURE CLEANS THE AIR

Moreover, it has been determined that nature is not only a source for these substances, but it also has effective ways of disposing of them. As just one example of these natural disposal systems, fungus in the soil in the United States alone has the capacity to consume more than double the total carbon monoxide produced by all the motor vehicles and factories in the world. This is not to say there should be no motor vehicle emission controls, but it does help show that automotive emissions are not the problem many once believed.

AUTOMOTIVE THREAT EXAGGERATED

The third assumption was that the automobile was a primary source of emissions that are harmful to health.

The fact is that while the automobile may be the source of 40 percent of this country's man-made emissions by weight, weight is not a valid measurement of harmfulness. Actually, concentration and toxicity are the important factors. In fact, looking across the entire spectrum of air pollutants, it is now estimated that motor vehicles account for only about 10 percent of the total problem of potentially harmful emissions produced by man. (Fig. 5)

EVALUATION OF TOTAL MAN-MADE U.S. EMISSIONS BY ENVIRONMENTAL EFFECTS (TOXICITY)
(1969)

Fig. 5

EMISSION PERCENTAGE
100%
10%-12%
MOTOR VEHICLES
OTHER
EMISSIONS AT SAFE LEVELS

It is common knowledge that prolonged exposure to extremely high levels of any pollutants—including the automotive emissions—can have an adverse effect on health or behavior. However, the fact is that in heavily populated urban areas, there is no evidence that even prolonged exposure to average street level concentrations of automotive emissions is a threat to health.

For example, present studies show the carbon monoxide blood levels of non-smokers in the crowded cities across the country are already well below the two percent level that the EPA set as a goal for good health. (Fig. 6) That is also, incidentally, well below the CO blood level of smokers who are in the five to 12 percent range.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>CO BLOOD LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMOKERS</td>
<td>5% – 12%</td>
</tr>
<tr>
<td>NON-SMOKERS</td>
<td></td>
</tr>
<tr>
<td>Chicago</td>
<td>1.88%</td>
</tr>
<tr>
<td>New York</td>
<td>1.43%</td>
</tr>
<tr>
<td>Washington, D.C.</td>
<td>1.39%</td>
</tr>
<tr>
<td>Denver</td>
<td>1.90%</td>
</tr>
<tr>
<td>San Francisco</td>
<td>1.65%</td>
</tr>
<tr>
<td>Seattle</td>
<td>1.56%</td>
</tr>
</tbody>
</table>

4th—It was assumed that the 1975-76 standards were necessary to achieve a desirable air quality.

The facts indicate they are not. There were a number of inaccuracies in the assumptions used to establish the automotive emission levels. Accordingly, EPA is currently reviewing the calculations for the automotive standards. In addition, EPA has said that the original ambient air quality standard for oxides of nitrogen may be too restrictive because of errors in the method used to measure atmospheric concentrations. As a result, the original standard for ambient oxides of nitrogen is also under review by EPA.

A MORE REALISTIC APPROACH

California, which is highly susceptible to air pollution problems, believes that the 1975-76 federal automotive emission standards are more restrictive than necessary. California has recommended 1975-76 standards which are very stringent, but more realistic than the federal standards, and which are tough enough to meet the requirements of the state with the worst automotive emission problem in the country. California is asking for a 94 percent reduction in hydrocarbons from uncontrolled levels, an 81 percent reduction in carbon monoxide, and a 75 percent reduction in oxides of nitrogen. (Fig. 7)

ENVIRONMENTAL OVERKILL

Fifth—it was assumed that the average citizen, simply by driving his car, contributes an inordinate amount of pollution to the air.

<table>
<thead>
<tr>
<th>FEDERAL AND CALIFORNIA STANDARDS</th>
<th>PERCENT REDUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(from uncontrolled levels)</td>
</tr>
<tr>
<td></td>
<td>HC</td>
</tr>
<tr>
<td>Federal</td>
<td>97</td>
</tr>
<tr>
<td>California</td>
<td>94</td>
</tr>
</tbody>
</table>

Fig. 7
The fact is that each vehicle with present controls contributes extremely small amounts. If we apply the even more stringent 1976 automotive standards to other activities of the average car owner, we find that the vegetation in his back yard, just in the process of growing and decaying, would give off as many hydrocarbons as his automobile.

If he burns one log in his fireplace, he'll have used up his daily allotment of carbon monoxide. If he's using oil heat, he's limited to three gallons of oil each day, which will last about eight hours, or he'll be over the limit in oxides of nitrogen. This is the degree of overkill represented by the 1976 standards.

**ANNUAL BENEFITS BY SOURCE**

**(EPA PROJECTIONS—1971)**

**(MILLIONS)**

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>HEALTH</th>
<th>MATERIALS</th>
<th>RESIDENTIAL</th>
<th>VEGETATION</th>
<th>TOTAL</th>
<th>BENEFIT</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile</td>
<td>86</td>
<td>2,540</td>
<td>2,540</td>
<td>2,540</td>
<td>8,030</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solid Waste</td>
<td>145</td>
<td>145</td>
<td>119</td>
<td>436</td>
<td>224</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auxiliary Fuel</td>
<td>3,812</td>
<td>3,812</td>
<td>3,812</td>
<td>3,812</td>
<td>9,626</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial Processes</td>
<td>1,202</td>
<td>1,202</td>
<td>1,202</td>
<td>1,202</td>
<td>2,404</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industries Not Studied</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL BENEFIT</td>
<td>55,307</td>
<td>56,164</td>
<td>8,164</td>
<td>$14,176</td>
<td>$12,208</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Fig. 8*

**COSTS 8 TIMES GREATER THAN BENEFITS**

Sixth—it was assumed that the benefits of these standards would more than justify the cost.

The fact is that two different government studies show exactly the opposite. A 1972 EPA report to Congress estimates that in 1977, when all controls on motor vehicles are in effect, the annual cost of these controls will be more than $8 billion. The projected national annual benefit to "material and vegetation" will be less than $1 billion. The EPA report points out that health benefits were excluded from the estimate "because of an almost complete lack of data." Establishing the health effects of carbon monoxide, hydrocarbons, and oxides of nitrogen at ambient levels. (Fig. 8)

Occasionally a small-scale isolated study does appear to show an adverse health effect from abnormally high concentrations, usually in combination with some other health or environmental factor. However, these same studies, when repeated under carefully controlled conditions representative of the normal city environment generally have not been validated. The fact is that years of research, involving millions of people in hundreds of community studies, and in laboratory studies, have not developed any evidence showing any threat to health from average ambient levels of automotive emissions.

**ESTIMATED COST OF EMISSION CONTROL**

**Fig. 9**

**WHY COSTS ARE SO HIGH**

The cost estimate of these controls comes from a study by the Office of Science and Technology. (Fig. 9) According to this report, the 1975-76 federal standards could raise the price of a new car as much as $500. We estimate the cost of the California standards at about one-third of that.

The study committee concluded that the nation is embarked on an air pollution program of enormous scope, complexity, and cost, with
little measure of the relative harmfulness of the several pollutants being considered."

ENGINEERS CAN'T MEET THE STANDARDS

And seventh—the assumption was that the industry could meet the standards and with relatively inexpensive technology.

The fact is that we have no technology—expensive or inexpensive—that will meet all the requirements of the act. And as far as we know, no one—no manufacturer, no supplier, and no backyard inventor—has yet devised a control system that will meet the required emission levels for five years or 50,000 miles in customer service.

WASTE RESOURCES

The fuel cost penalty of as much as 30 percent associated with currently proposed emission control systems has to be included in any cost-benefit analysis. The additional cost to the nation's car owners could be as much as $10 billion a year. (Fig. 10)

![ANNUAL COST OF FUEL ECONOMY PENALTIES](image)

The only emission control systems that we see with any hope of meeting the 1975-76 standards use catalysts which would require lead-free fuel. In 1975 about ten percent of the car population would require this new fuel, and a recent White House study estimates that it would cost the petroleum industry almost $5 billion for the new refinery equipment and the distribution system needed to get it from the well to the car.

A good share of that cost will go toward the development of an entirely new transportation system, separate from the leaded fuel system. Separate bulk storage tanks, tank cars and trucks, station pumps and storage tanks, and some sort of protection system to prevent accidental use of the wrong fuel in the wrong car. That's a big and expensive job, and we don't believe it's necessary.

Beyond this the current trend in the development of proposed catalysts involves the use of exotic and very expensive metals—platinum and palladium—which will add significantly to the cost of an automobile. These metals are sourced outside the United States, and the cost of importing about half the world's annual supply would have a negative effect on our country's balance of payments. The increase in fuel consumption would also add substantially to the nation's annual $4 billion outlay for oil imports with a further negative impact on our country's trade position.

These are the major facts that we believe have to be made known. There are others.

We invite anyone who is interested in all the basic scientific studies on which our position is based to examine our extensive bibliography or any other, and to read these reports.

NEEDLESS CONFRONTATION

In light of the facts presented here, we believe the country is headed for an economic and technological confrontation which nobody needs or wants, and which will do nothing for the cause of clean air.

There is no reason why this confrontation has to take place. We would like to suggest an alternative.
RECOMMENDATIONS

First, the Administrator of the EPA should defer the 1975 standard as the law allows him to do. This decision needs to be made soon. Time is running out. We must commit huge capital investments in new tools and facilities, make long-term agreements with suppliers, and make binding decisions now so we can meet our production schedules for 1975. The oil industry must also make commitments for the new refineries, separate fuel transport systems, and storage tanks it will need for the lead-free fuel that will be required by the fall of 1974.

Second, Congress should suspend the 1975-76 standards, and transfer to the EPA the authority for establishing new automotive emission standards based on need, cost, and feasibility. EPA already has this authority for emissions from stationary sources, and should have it for mobile sources as well.

If the present standards are maintained, we could then devote our full attention to an economical emission control system which Chrysler Corporation believes in all likelihood could meet the proposed California standards, on cars sold in California, by the 1976 model year. And we believe we could meet them without catalysts.

CALIFORNIA STANDARDS

If necessary, we believe we can meet those same California standards nationwide by the 1977 model year.

Not only are these California standards tough enough to protect the state with the most severe automotive air quality problem in the nation, but they could save the car buyer several hundreds of dollars in original purchase cost and in operating costs. The buyer would not have to pay for catalytic systems on his new car. He would not have to buy expensive replacement catalysts. He would not have to pay extra for lead-free fuel, or suffer a severe mileage loss. And he would still be helping the cause of clean air, because his car would have controls which are even beyond the needs of the nation's environment.

Our nation, in turn, would conserve its limited resources, protect its balance of payments from further erosion, and serve the cause of clean air with responsibility. We urge your support in getting that job done.
IN SUMMARY...

Even if automotive engineers could meet the 1975-76 federal motor vehicle emission standards, Chrysler Corporation would oppose them because they are wasteful, unnecessary, and unrealistic. In place of these overly stringent standards, the company recommends the following actions to conserve the nation's limited resources while protecting the environment and the public health and welfare.

EPA should defer the 1975 standard as provided by law. This would avoid investing millions in the next few months for control systems the country does not need.

Congress should then carefully review its original legislation, revoke the 1975-76 standards, and transfer to EPA authority for setting any new mobile emission standards on the basis of current scientific information.

Chrysler believes it may be possible to meet the 1975 California standards nationwide by the 1977 model year without expensive catalysts. The stringent California standards which are adequate to protect the state with the most serious automotive air quality problem should be more than adequate for the rest of the nation.

The text of this booklet is printed on paper manufactured exclusively from waste materials.
January 5, 1973

MEMORANDUM

TO    : Senator Edmund S. Muskie
FROM  : Leon Billings and Don Alexander
SUBJECT: Efforts to undermine the Clean Air Act

Current auto industry efforts to undermine the Clean Air Act are taking two directions, publicity campaigns to discredit the Act and efforts to convey to auto workers the impression that enforcement of the Act will cost jobs.

The publicity campaign is typified by the following charges:

1. The Clean Air Act will substantially raise car cost, compromise performance and fuel economy and even threaten auto safety.

2. Levels of emissions controls required are unreasonable and technologically unachievable.

3. Serious health effects of auto-related air pollution have not been proven.

4. Auto-related air pollution is declining so there is no need for stricter controls.

The essential purpose of this campaign is to divert attention from health dangers to cost and technical matters, where, rightly or wrongly, the public concedes the auto industry as a degree of expertise. The argument fails because:

1. Severe health dangers are well-documented.

2. Several foreign manufacturers have already indicated they expect to be able to meet the standards without severe performance penalties now feared.

The threat to worker's jobs have come from talk about impossibility of meeting the standards and the threat this creates for closing down the auto industry. Auto workers have been continually
reminded of potential for job losses by recent and rather flagrant violations of the law by the auto companies, and EPA statements in conjunction with the auto companies that to enforce the law against these violations would result in shutdowns.

So far, in each instance where a major violation of the law has been discovered, the auto companies have been let off the hook with minor penalties or with changes in rules of the game to make violations, non-violations. Ignored in all the discussion about the potential for shutdown has been the option of criminal prosecution for all those responsible for the auto companies' actions. With this option, it is those responsible for the violations who pay the cost, rather than workers who would be laid off in shutdowns.

As a background for the discussion with Leonard Woodcock, you might also make the following points:

1. Even if the Clean Air Act were repealed tomorrow, the "energy crisis" will soon require major restructuring away from current emphasis on private vehicles with gasoline powered internal combustion engines for transportation.

2. Only with vigorous enforcement of the Clean Air Act will the auto companies be forced now to begin developing more efficient engines (and perhaps more efficient sizes), which they would otherwise be forced to do in a few years, perhaps with greater worker dislocation when the full impact of energy supply problems becomes apparent.

3. Auto workers being also homeowners or renters have a vested interest in assuring that there is available adequate fuel at reasonable prices.

4. Currently all of the major developments of new engine technology are by foreign manufacturers. If the auto manufacturers do not act now, and they will apparently act only if they are forced to) the competitive position of the auto industry and the industry job picture may worsen in the future.

The real issue with which the automobile manufacturers are concerned in terms of compliance with the 1970 Act and the 1975 standards is the warranty provision which requires a car to comply for its useful life (5 years - 50,000 miles). While the automobile manufacturers can develop a "prototype" which meets the standard, it is highly unlikely that production line vehicles or on-the-road vehicles will comply either at the point of sale or after some use.
The automotive manufacturers and others (including Phil Hart's staff) are emphasizing the problems of the "automotive aftermarket" (Independent garages and equipment makers who make other than original equipment parts). The industry is alleging that the warranty provisions of the Clean Air Act will create a monopoly for them and shut off the automotive aftermarket from either repairs or replacement parts for the emission control system. The staff thinks this is a red herring developed to draw attention from the real issue of continued compliance after sale. Should the warranty provision be vitiated, the auto buyer may well be investing a couple hundred bucks in systems which don't work.

The UAW is concerned with the mass transit-highway trust fund issue. You may wish to discuss the re-introduction of "Cooper-Muskie" and what kind of support can be expected in the Senate. This is particularly important in light of the soon to be announced national air quality implementation plans which will call for major reduction in individual automobile use in a number of major metropolitan areas. (It is anticipated that gasoline consumption must be reduced by as much as 85% in the Los Angeles air basin.) Obviously, failure to make a major national policy decision on mass transit funding this year would only exacerbate the pressures to undermine the Clean Air Act.

A discussion of mass transit and the Clean Air Act necessarily leads to the issue of the "energy crisis". A major cause of the energy crisis is a reliance on individual use of automobiles. A substantial reduction in the use of individual automobiles could relieve the pressure on our oil reserves.

Associated with this discussion should be recognition of the fact that Senator Jackson is mounting a major effort to discredit the move to remove oil import quotas. Jackson will argue that national security is jeopardized by increasing dependency on foreign resources. He will start hearings to make this point on January 10.

Finally, Mr. Woodcock is extremely interested in environmental adjustment assistance legislation, a draft of which has been prepared and made available to his staff. We have attached a memorandum on that legislation to this memorandum. I suspect that he will urge early action on such a bill.
January 26, 1973

MEMORANDUM

TO : Senator Edmund S. Muskie
FROM : Leon Billings

SUBJECT: Effort to overturn the auto emissions standards

At the request of your office, the staff of the Subcommittee on Air and Water Pollution met with representatives of the Mobil Oil Company to discuss that company's proposed policy as regards the 1975-76 auto emission standards. On January 24, the company began a series of New York Times Op-Ed page advertisements, the purpose of which is to urge an extension of time by the Environmental Protection Agency and a re-consideration of the statutory standards by the Congress. The first Mobil ad takes a position which is identical with that which was agreed to during a meeting with White House officials, oil industry representatives and auto company people at the western White House in January of 1972. This same position has been the basis of the public relations campaign conducted by the auto companies and their allies subsequent to that meeting.

In essence the argument is that the so-called "California standards" for 1975-76 are technically feasible and therefore should be adopted as the Federal standards. I do not know where the reference to "California standards" comes from. The first time these reduced standards were proposed was at a meeting with the auto industry and the petroleum industry with President Nixon in November of 1969. The 1969 meeting recommended a series of standards for 1975 and a second series of standards for 1980 as being necessary to protect the public health and welfare by 1990. The Congress later adopted the 1980 standards for 1975 on the premise that 1990 was too long to wait to protect public health from the automobile.

The industry position since November 1969 is obviously unchanged. They have set their sights for the so-called "California standards" articulated in agreement with the White House in 1969 and apparently have not pursued the requirements of the 1970 Act. It is interesting to note that although four years have passed since those so-called "California standards" were first articulated and three years have passed since the Senate reported more rigorous 1980 standards for 1975-76, no new feasible technology has been developed according to the
auto industry. In any event it is apparent that the auto industry and
the oil companies have decided to use the "California standards" as the
focal point for their campaign to undermine the 1970 Act and have gone
ahead to compile statistics which prove the validity of their position.

The campaign is well underway. It is being pressed at every
level. Dealers across the country have been contacted. Independent
oil dealers as well as oil companies have been enlisted. Members of
Congress are being contacted on a day to day basis. Automobile parts
manufacturers are attacking the standards from the antitrust point of
view. Chrysler has published a book which purports to provide new
evidence which invalidates the basis on which the standards of the 1970 Act
were established. (It does not.)

As to the Mobil ad I understand that they are planning a series
of four, three of which will attack the Clean Air Act and one of which
will support mass transit alternatives (not from the Trust Fund). I
would recommend that we begin now to prepare a response to this attack.
I think that we can obtain equal space on the Op-Ed page of the N.Y. Times
to respond. Such an article or articles should focus on the following
issues.

1. The Mobil ad cites cost figures which are premised on
industry data. There is no basis whatsoever other than industry statistics
for their validity.

2. The ad assumes that the "California standards" will provide
"acceptable air quality" and yet there is no basis at this time to
suggest that the ambient air quality standards for oxidant (the key
pollutant in California) is in err or that something less than the 1975-76
standards on all cars is required to assure achievement of that standard.

3. The ad assumes that the "California standard" is the only
technologically feasible alternative. This is not true as pointed out in
the Shep Lee memorandum (copy attached) which you have been before. There
are other technologically feasible alternatives. The fact of the matter
is that the industry has chosen to ignore all alternatives but improvement
of the internal combustion engine.

4. The ad argues that there has been substantial improvement
in air quality as result of the standards that have been applied over the
last several years. In fact there were more air pollution episodes in
Washington this summer than ever before. Washington had its first winter
air pollution episode in history this year. The Cities of Miami and Denver
have found that ambient concentrations of auto related pollutants are higher
this year than prior to the application of controls. And yet, better than
50 percent of the vehicles on the road today should have emissions 23
than 2/3 pre 1968 models if vehicles produced since 1966 in fact continue to meet original standards. This suggests that, not only has the auto industry failed to come up with new technology but its past efforts have been less than adequate. Rather than relaxing the standards the Congress may wish to consider even stricter controls on individual cars. Or to paraphrase Mobil Oil there hasn't been a $66 billion dollar mistake but there may have been a $66 billion hoax perpetrated by the auto industry on the American public.
MEMORANDUM

TO : Senator Edmund S. Muskie
FROM : Leon Billings

SUBJECT: Bentsen-Tower Amendment to the Highway Bill

As you know the staff recommended last year that you oppose the Bentsen-Tower Amendment to the Federal Aid Highway Act which proposes to remove a segment of highway (located in San Antonio, Texas) from the Federal aid system. The basis for a staff recommendation was that approval of the amendment would be an unfortunate precedent in light of the fact that environmental objections had halted construction.

You will also recall that this recommendation was particularly difficult because the proposed alternatives to the controversial route generally would displace low income persons or are no longer feasible because of construction of a major college complex. You voted against Bentsen-Tower, both in Committee and on the floor but in both cases you were in the minority.

Last year's House bill included a similar provision and the conferees reached agreement. The San Antonio project would not be an issue had the Congress completed action on the Federal Aid Highway Act last year.

However, the Subcommittee again has reported a bill with the Bentsen-Tower Amendment. Senator Buckley will propose an amendment to strike. If Senator Buckley fails in Committee it is likely that there will be an effort on the floor to delete the Bentsen-Tower Amendment. I have indicated to the Sierra Club (the leading opponent of the Bentsen-Tower Amendment) that I intended to recommend to you that you not support Senator Buckley's Amendment. My recommendation is based on the assumption that Senator Kennedy will insist that the Senate conferees on the bill represent the will of the Senate majority regarding mass transit. If your amendment prevails on the floor and there are no other amendments Senator Kennedy can, in fact, demand representative conferees. If, however, San Antonio amendment is also offered and rejected Senator Randolph and Senator Bentsen will be able to argue that it is equally important to reflect the will of the Senate majority on San Antonio as it is on mass transit and cloud the entire issue.
Obviously, you cannot insist on conferees because of your membership on the Committee. But there are no such limitations on Senator Kennedy who has been poorly treated by the Chairman on this issue for the past three years. I would only hope that if Senator Kennedy makes this effort it will not be mooted by a tangential and, in the overall, relatively de minimis issue such as San Antonio.

Unfortunately the San Antonio issue is much more important to the conservation community, that is trust fund diversion. They have given little more than lip service to the mass transit amendment and undoubtedly, if San Antonio is an issue on the Senate floor will spend more time lobbying for it than behalf of the mass transit amendment. I see no reason why your position on urban mass transportation should suffer because of the narrow interest of the conservation community. When I informed the Sierra Club that I intended to make this recommendation they indicated that this would cause considerable alaram among all of the traditional conservation organizations. You will recall that it was the traditional conservation community which actively and ardently opposed your position on the National Environmental Policy Act, opposed any amendments to the Jackson land use bill, attempted to undercut the conference agreement on the water pollution bill because of the clarification of the relationship of EPA water pollution activities and NEPA, and have failed consistently to support urban oriented environmental legislation. (They also opposed Dickey Lincoln School even though Dickey is a compromise to save the Allagash.) In fact it would probably do you more good than harm at this particular time to have a position that was different than the conservationists.
MEMORANDUM

TO: Senator Edmund S. Muskie

FROM: Leon G. Billings

SUBJECT: Additional Amendments

There is a possibility that Senator Randozph will recommend that the Committee adopt language prohibiting any additional requirements to remove lead from gasoline.

Apparently on October 29, EPA was ordered by the Court to either put up or shut up on lead regulations based on public health and welfare within thirty days. Thus EPA is required by November 29 to make a decision on whether or not there is a basis for regulating lead out of gasoline for public health and welfare reasons at a rate faster than required for auto emissions control reasons.

While it is true that lead does reduce crude consumption in refining, it seems in appropriate to legislate in this area without hearing from all the parties at issue, especially when we don't know what EPA is going to do on November 29.

We do know that EPA has resisted lead regulations based on health because they do not think the evidence is adequate. Whether or not they continue to hold that position, I don't know. In any event this should be a matter subject to hearings after EPA has made its own decision.
MEMORANDUM

TO: Leon G. Billings

FROM: Karl Braithwaite

SUBJECT: Study by Columbia/MIT/Harvard on Auto Standards

We can either let this study die quietly or take it on directly. The auto companies are attempting to let the NAS study die quietly, and then play up this NSF study.

If we want to counterattack, perhaps the best thing to do would be to ask EPA to do a comparative study between the NAS report and the NSF report. I am sure that such an analysis would point out that most of the assumptions of the NSF study are outdated or were initially incorrect.

The problem with a comparative study by EPA is that it would give EPA an occasion to publicize its 2.0 NOx recommendation once again.

I will draft a letter requesting such an EPA comparison if you think it is worthwhile.
Columbia University issued a press release for Friday, October 18, discussing a study that has been done by the three schools listed above. NSF was caught off guard by this press release, and does not have anything to distribute to Congressional offices. They do have three of four reading copies of the rather large study available at their offices and are making a summary available to Congress some time this week.

I have talked with NSF officials, with Albert Rosenthal, the Co-director of the study from Columbia, and with Richard Bay at MIT. The study appears to be very flawed.

The stimulus for the technical comments that attack the present Act comes from the same old Harvard-MIT complex of engineers and economists. Haywood at MIT appears to be the principle stimulus for the anti-catalyst, pro-stratified charge approach. One of the economists on the team is Greg Ingram, the same economist who did most of the work under John Myer for the NAS study.

This study was virtually completed in March of 1974. The report was given to NSF in June or July, and then sent to reviewers. Rosenthal appeared to be surprised by the issuance of the press release, and commented that the study may already be irrelevant and obsolete.

Their attack on the catalyst appears to be based on a number of false assumptions, including the belief that the catalyst was non-durable, that tests would be inadequate, and that there would be no sanction available to force replacement and that the catalysts would not last for 50,000 miles and that 50,000 miles is not an adequate lifetime period. They also assumed that a commitment to the catalyst would stop the development of other technology. None of these seems to be correct assumptions. The group appears to have
deferred to Haywood and the MIT economists on this aspect of the report.

No health effects scientists involved in this. I am always amazed that so-called interdisciplinary work frequently includes a very narrow slice of the disciplines. Anyone who does not bring in the public health aspect of the Clean Air Act does severe disservice to their own study, as well as to the public.

Bailey Guard tells me that Wayne Smithy said that the auto companies had copies of this study a number of weeks ago, as part of their participation on some kind of Advisory Committee to NSF. It appears that no one stimulated the Columbia University press release, but I still wonder about that. If the auto companies had copies of this, they may have stimulated the publication of what is now an out-dated study to help counterbalance the NAS study, since the NAS did not turn out to be as useful to them as they had hoped.

There has been no commitment from any publisher to publish this study. Rosenthal indicated that it would probably take subsidization by NSF to some University press to get it published. NSF has agreed to buy a number of copies. NSF Congressional liaison people told me that the National Technical Clearing House of the Commerce Department might publish it, but no plans at all have firmed up.

NSF was quite irritated that they had not been given any advanced notice by Columbia of the press release. There is nothing in the arrangement with Columbia that would require such advance notice, but it would certainly be expected procedure. Bailey said that NSF told that they had not reviewed the study internally or externally. The normal course of events would not include NSF publication of the study.
I called Gary Tim, who works for Eric Stork, to find out if they had been contacted or had a copy. No one from the study has talked with EPA recently, as far as Tim knows.
MEMORANDUM

TO: Senator Edmund S. Muskie

FROM: Leon G. Billings

SUBJECT: Auto Emission Options

According to the National Academy of Sciences and EPA data, there is no question but that the auto industry can meet technically the .4 HC, 3.4 CO statutory auto emission standards. NAS also suggests that the .4 NOx standard can be met by 1978. The question of sulfates and the defensibility of the NOx standard are open as is the fuel economy question.

The Committee has several options to deal with short term issues, one of which is to change the 1977 Federal NOx standard (set in 1972 at 2.0 grams per mile) to the 1975-76 level of 3.1 grams per mile which would provide a three year freeze on emissions at the 1975 levels and trigger the statutory standards in 1978. This would give EPA time to complete development and implement a production line test procedure and would permit the industry to tool now for one standard in 1978 rather than shift its certification base in 1977 for NOx only which is an expensive and time consuming operation.

An option on the same theme would be to keep the current interim for yet another year (1978), thus postponing statutory standards to 1979. Yet another option, if fuel economy is determined to be a basis for action, would be to keep the 1977 interim standards for four years (through 1980) for any car which achieves an average of 20 miles per gallon on the EPA test. Cars with poorer fuel economy would have to meet the statutory standards. This would take the pressure off the industry in terms of cracking down on emissions and improving fuel economy in the new models they are trying to introduce while keeping emissions pressure on those more traditional models (the bigger cars which hold down the average fuel economy anyway). This also makes sense from an economic point of view because the more restrictive standards would have a smaller percentage cost impact on bigger cars. Finally, this proposal would be somewhat consistent with Leonard Woodcock's position that any relaxation in emission standards ought to be accompanied by mandatory fuel economy improvement requirements.
If the Committee determines that temporary relaxation of emission standards and/or deadlines is necessary, but wants to keep momentum in reducing overall emissions, the Committee should consider directing EPA to promulgate emission standards for medium and heavy duty trucks, motorcycles, and busses. Not only will these sources become increasingly significant contributors to urban air pollution as auto emissions are reduced, but also controlling them to a higher degree will lessen the adverse impact of relaxation of light duty vehicle controls.

Also, the Committee may wish to consider extending the opportunity provided by the so-called California waiver of the motor vehicle preemption to States which have serious auto-related urban air pollution problems in order to provide those States with additional tools to substitute for more Draconian and less publicly feasible VMT (vehicle miles traveled) reductions.

On oxides of nitrogen, the Committee may wish to raise the statutory standards to 1.0 grams per mile in recognition of the uncertainty of current data while maintaining the momentum for development and/or introduction of a reasonably clean automobile and/or development of alternative engine systems. The 1.0 grams per mile standard combined with a statutory mandate to the Administrator to implement controls on new sources of oxides of nitrogen should go a long way towards removing NOx from both the nitrogen dioxide health problem and the oxidant formulation problem.

After 1½ years of concentrated study of the potential danger of sulfuric acid emissions from catalyst cars, there is a great deal of uncertainty and disagreement within EPA and within the scientific community. It is not possible to accurately estimate how such sulfate exposure a given individual in a given area will experience in the next ten years. Nor do we know what the chemical nature of sulfates are; nor do we know what the ambient residence time of sulfuric acid auto emissions is. Finally, little is known about the nature or danger of sulfates from stationary sources which are thought to be a far more significant contribution to urban sulfate concentrations.

Options available to minimize sulfuric acid emissions from catalyst equipped cars include:

1. Freeze the standards at the 1975 Federal interim levels of 1.5 HC, 15 CO through 1979, as Russell Train has recommended, with promulgation of a sulfuric acid emission standard for the 1979 model year. This approach would hold sulfuric acid emissions at current level, but probably would not cause a significant reduction, as the auto manufacturers would most likely continue to use the present oxidation catalyst technology.

2. Maintain current 1978 deadline for achievement of statutory HC, CO and NOX standards, and mandate promulgation of a sulfuric acid emission standard for that model year. There are two catalyst technologies which could be probably available in 1978 to meet all statutory standards with very low sulfate formation -- the three-way catalyst and the dual catalyst.
Because there may not be adequate time for EPA to promulgate the ultimately desirable sulfuric acid emission standard, the law could specify that the 1978 models at least do not emit more sulfuric acid than the 1975 models. This would be consistent with Train's estimate of the time available before harmful sulfate levels are reached. Other possible technologies for post-1980 with low sulfuric emissions would be the CVCC and Ford PROCO stratified charge engines.

3. Maintain current schedules for achievement of statutory standards and require desulfurization of gasoline. Gasoline desulfurization would require approximately three years lead time, so for the 1978 model year it might be necessary to allocate available desulfurized gasoline to areas with existing high sulfate levels (primarily the East Coast). Estimates of industry costs, from the recent A.D. Little Study done for EPA are: for 100 ppm sulfur unleaded gasoline are $2.4 billion incremental investment, 0.8 cents per gallon incremental gasoline cost, and a reduction in gasoline volume of 204,000 barrels of gasoline per day (2.6 percent). For 50 ppm sulfur would require an investment of $3.9 billion, 1.6 cents per gallon, and 515,000 barrels per day (6.5 percent).

100 ppm sulfur in gasoline would reduce catalyst sulfate emissions to now noncatalyst car levels. 50 ppm sulfur would reduce sulfate levels of noncatalyst cars. In addition, the absence of sulfur in gasoline might make possible the use of base metal catalysts which are poisoned by sulfur exposure.

Oil industry cost estimates are much higher, ranging from $3 billion to $10 billion.

4. Blending and allocation of low sulfur gasoline: this would be a short-term solution (two year) for areas of the country where sulfate levels are high now, such as the East Coast and the Great Lakes regions, until sulfuric acid emissions are regulated. It would not require major additional hardware, but oil companies feel that if desulfurization is to be required, blending and allocation would be counterproductive to that effort.

I have appended to this memo four items which are generally useful as background to any consideration of the auto emissions question. Included are a brief history of the auto emissions issue; an EPA paper which identifies their best judgment of the implications of various alternative emission scenarios; a summary of the recent NAS findings on auto emissions (together with a staff analysis); and a table which identifies the various sets of emission numbers and their auspices. That same table will be duplicated on a larger chart for Committee use.

In addition to the above, there are several important issues associated with the emission standards themselves which not only complicate the discussion but also affect what the actual numbers mean in a major way. Regardless of the outcome of the "numbers game" the issues should be addressed and resolved.
Averaging: The auto companies contend that only the average of their sales weighted production should have to meet emission standards because it is an "average" reduction in overall auto emissions which will result in the improvement in air quality which the Clean Air Act requires. They argue that averaging is technically sound and feasible from an engineering point of view; that cars are produced on the average; and that, in any randomly selected group of production cars, half will be above the standard and half will be below.

From an enforcement point of view, averaging makes no sense. There is no way to effectively trigger either an individual car compliance program or a recall program if a particular vehicle never was required to be in individual compliance with the standard in the first place. Unless each and every car is required to meet an enforceable standard throughout its useful life, it is not possible to impose a warranty requirement on the industry or a maintenance responsibility to the consumer.

Warranty: The question of averaging ties directly into the warranty issue. If the cars are built on the average and thus arguably never meet a precise number, it is impossible to establish a warranty requirement based on the performance of a vehicle to a specific standard. Fortunately, the law has a "defect" warranty (to supplement the performance warranty) which is useful and has been used, but this only provides protection when there is a defective part and provide no protection where non-performance is systemic.

Yet another difficulty is that the auto industry only produces a very few cars which meet the standards. These so-called certification prototypes are submitted to the Administrator who independently tests some vehicles but most often reviews industry test data and determines on the basis of that review whether or not a particular engine family mix can be certified as meeting the standard in production. At the present time the Administrator does not have a production line or an in use test to indicate whether or not cars being produced and sold in use actually meet the standards. And even if he did, his test would have to reflect the averaging concept because even though the 1970 Act voided averaging, the auto industry still produces cars as if they only had to meet the standard on the average.

Operation and Maintenance: Finally, the statute specifies that the auto companies are only responsible for failure to comply with standards in use if the automobile is properly operated and maintained. (Ironically, the companies argue that average compliance with emission standards is appropriate for production vehicles but contend just as strongly that proper operation and maintenance must be required, even though it is the normal not proper operation and maintenance which impacts ambient air quality.)

The Committee should address the issues of "averaging", "Warranty", and "Operation and Maintenance" as separate and distinct questions from any resolution of time schedules or emission standards for autos.
If the Committee determines that the industry's contention regarding averaging is correct, but at the same time wants to develop a standard which is enforceable throughout the useful life of the vehicle and wants to require compliance with that standard in a manner in which automobiles are actually used, then an entirely different set of emission numbers can be developed and several other significant changes in the law would result.

If averaging is accepted and the Congress wants to have standards applicable to each and every car produced, the industry should be required to produce cars which would, in actual use throughout their useful life, meet emission numbers approximately 2-2 1/2 times those which are specified currently in the statute. If it is, in fact, the average of all emissions which impact air quality, then these numbers should indicate a level that no vehicle should ever exceed in order to remove the automobile from the pollution problem.

If this approach is adopted, then the Committee could appropriately require that these higher numbers be met during normal use and with normal operation and maintenance rather than with proper operation and maintenance. A statutory deadline for the development and implementation of a production line test would be essential. Once the statutory standards are implemented (and presumably frozen) certification testing should become the responsibility of each company. EPA's concern would be that models which come off the production line meet the standards, taking into account deterioration and normal operation and use factors.

The Committee may also want to consider requiring regional (or State) auto inspection and maintenance programs in areas where air quality is a serious problem as a necessary supplement to this approach. Such mandatory inspection and maintenance requirements would have the effect of insuring that the standards are met through the useful life of the automobile if in fact the cars were produced to comply under normal operation and maintenance conditions.

This approach would also eliminate the very legitimate concern of the aftermarket industry which fears that the implementation of the performance warranty requirements of existing law (which require that proper operation and maintenance be demonstrated) would exclude non-auto company repair shops from repair work and non-company parts from maintenance. This is a legitimate concern because the industry tends to argue that proper operation and maintenance includes use of company parts and strongly implies that maintenance must be performed at dealerships. Under the provisions which require a normal compliance under normal conditions there would be no aftermarket problem at all.
TO: Senator Edmund S. Muskie
FROM: Leon Billings and Karl Braithwaite June 10, 1975
SUBJECT: Technical Issues - Automobile

1. National Academy of Sciences - Committee on Motor Vehicle Emissions

The Clean Air Act in section 202 required the establishment of a study group in the National Academy of Sciences funded by EPA to do "a study" of auto emission technology. The idea was to provide technical expertise that would allow adequate judgement of the ability of the manufacturers to meet standards. Each time the Academy has issued a study, EPA has then attempted to dissolve the Committee. This might have been understandable if the deadlines had remained in place for 1975, and only one study had been needed. But until statutory standards are attained, the CMVE ought to be a permanent body providing expertise to EPA and Congress. The Administration could have taken this interpretation under existing language, but has chosen instead to eliminate support for this group.

2. Antique and Limited Edition Cars

Without creating a loophole, it seems sensible to allow very unique cars to avoid certification procedures and emission control standards. These limited edition cars, such as the excalibur are not intended for significant sales and have no impact on air quality.

3. Broaden Tampering Provision

Presently dealers cannot tamper with emission control devices, but specialty shops and corner service stations can. Action could be taken to apply the tampering prohibition to (1) all shops other than the individual owner; (2) all major service dealers; or (3) specialty shops which advertise the modification or removal of emission control devices as a specialty service for consumers.
4. **Aftermarket Parts**

In order to maintain competition, aftermarket companies might be allowed to participate in the maintenance of automobiles while the warranty provision still applies to the automobile. This would require certification of replacement parts and a requirement that owner's manuals state that use of such parts and services will not cause a warranty lapse.

5. **Catalyst Replacement**

In spite of the GAO opinion rendered in 1972 that replacement costs for catalysts must be at the manufacturer's expense, EPA has not adopted such a requirement. Litigation may occur on this issue if catalyst replacement becomes significant (it is very modest now) but in order to settle the issue, Congress might want to clarify the matter.

6. **Low Emission Certification Board**

The program to encourage the Federal government to purchase low emission vehicles has never developed. This section might be transferred to some other agency, or eliminated from the statute. A report of the program has recently been received from EPA, with a suggestion that the program could be dropped.
MEMORANDUM TO THE RECORD

SUBJECT: Auto Emission Alternatives

We have isolated four basic auto emission alternatives for full Committee consideration:

1. A concept of 'phase-in' to statutory standards; under this approach in 1978 a certain class or category of vehicles would be required to meet such standards. After a two-year freeze, except for that class, phase-in of the entire production could be required. Phase-in can be accomplished on the basis of weight, price, engine displacement, new modelling or through an economic incentive-disincentive approach,

2. Modification of the statutory standard for NOx to permit early achievement of the .41 hydrocarbon standard and delay in the NOx standard of 1.0 until 1980. This would provide time for the industry to tool-up to introduce the fuel metering systems which appear necessary for the effective durable operation of catalyst systems which control NOx and would also permit the removal of the "air pump" which would be necessary to minimize sulphate emissions in response to a sulphate standard.

3. Adopt the House proposal which requires the industry to go to the current so-called California standards of .9/9/2.0 in 1978 and .4/3.4/.4 in 1980, with permission for an EPA waiver of the NOx standard until 1985.

4. Adopts the current California standards .9/9/20 for 1978 and 1979, but require that the industry produce cars which meet those standards on an each and every basis for 50,000 miles with a financial responsibility to correct any failure in any vehicle which is not in compliance at 50,000 miles.
The effect which would be the same as having a .4/3.4/1.0 standard if the industry is only required to meet the standards on the basis of average performance. This provision would be consistent with requirement for in-use vehicle test and inspection and maintenance program in those metropolitan areas which require transportation control.
CONTROVERSIAL AMENDMENTS

1) Assembly line testing - provides for averaging of emissions in assembly line testing.

2) In-use testing - establishes an every-car compliance standard for in-use testing, warranty and recall which is not more than 150% of the certification standard.

3) Useful life - increases useful life for certification after 1980 to 10 years or 100,000 miles or actual useful life, and provides for a definition of maintenance requirements board on actual consumer maintenance patterns.

4) Maintenance instructions - requires approval of maintenance instructions to protect warranties and prevent anticompetitive effect on after-market parts industry.

5) Normal maintenance - substitute concept of normal maintenance and use for proper maintenance and use requirement.

6) Public disclosure - requires publication with certification results of description of maintenance performed.

7) Replacement cost - requires cost of replacing any emission control device or component, greater than $50 (including labor) to be included in purchase price of vehicle.

8) Tampering - extends prohibition on tampering with emission control device to repair shops and fleet operations.

9) Testing by small manufacturers - allows makers of less than 150 cars per year to run 5,000 mile certification tests rather than 50,000 miles.

10) New source design standards - allows EPA to set design, equipment or operational standards for new sources rather than strictly emission standards.

11) Conflict of interest - prohibits former EPA employees from appearing before the agency for 2 years except in on-the-record appearances.

12) EPA Representation - amends current provision to allow EPA to appear in court directly (other than Supreme Court) rather than through Justice Department.

13) Judicial review attorneys fees - allows court to award costs including attorneys fees to petitioner without economic interest in matter under judicial review.
1) Production line test - mandates the establishment within 6 months of a test procedure for the assembly line test authorized by existing law.

2) Cost of technology - includes costs, energy requirements and environmental impact in control technology information published by EPA.

3) State program grants - allows States with general budget reductions to not lose air pollution program grants because of maintenance of effort requirement.

4) International pollution abatement - eliminates abatement conference enforcement method except for international pollution.

5) President's Advisory Board - eliminates this Board as has already been done by administrative action.

6) Administrative procedures - provides procedures for the promulgation of rules following existing EPA procedure.

7) Board membership requirements - provides a conflict of interest test for members of boards or agencies under section 110 and 120 copied from what is in the water act.

8) New definitions - includes Indian governing bodies in definition of air pollution control agency.

9) Employee protection - adds a provision for employee protection nearly identical to that in the water act.

10) Public participation - makes a general provision for public participation, including hearings, in plan development; for the distribution of draft documents under section 108(f) for agency and public comment; and for the procedure to be followed in any public hearing.
1. Deadlines for all standards
   A. Hart proposal which affects deadlines for NO\textsubscript{x} only for 1.0 until 1981 and .4 until 1985 with technology innovation waiver
   B. Domenici proposal at 1979 plus NO\textsubscript{x} study
   C. McClure proposal at 1979 plus 1980-81 standard at .9/9.0/1.5 with statutory at 1982
   D. Muskie-Buckley proposal at 1978 except for cars which get 20 mpg or better on the urban cycle.

2. Modify 1977 NO\textsubscript{x} from 2.0 to 3.1 gpm

3. Modify warranty and compliance testing requirements to take into account variations in production in determining compliance with emission standards and require that vehicles be certified in accordance with normal rather than proper customer maintenance.

4. Effective with the 1980 model year, extend the "useful life" definition to 100,000 miles or ten years for light duty motor vehicles, and provide the Administrator with authority to establish a definition of "useful life" for other kinds of vehicles.

5. Direct EPA to determine the extent to which acid sulfates should be controlled, and perform a cost-benefit analysis on the alternative methods to achieve any proposed reduction. While this would in no way inhibit the Administrator from setting such a standard under his present authorities, he would be asked to report on this new study to the Congress by January 1, 1977.

6. Require EPA to publish and promulgate an emission standard on all new trucks, buses, and motorcycles, effective with the 1979 model year, which standard would reflect the general degree of control required for new automobiles, unless the Administrator of EPA finds and reports to Congress that another level of control is appropriate. The Administrator would also be authorized to set emission standards for existing heavy duty trucks and buses.