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Smog--status and coverage

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In line with our conversation on the subject I shall attempt to put in perspective here the situation on smog as it involves Ethyl, and review the means by which it has been and can continue to be covered. I shall do so under five headings: Legislation, Press and Public Attitudes, Technical Aspects, Information Sources and Correspondence, and Long Range Factors and Policy.

A. Legislation

1. Los Angeles. The most important single starting point and test area of smog legislation--local, state and federal--continues to be Los Angeles. This is so despite the fact that the most recent smog season in Los Angeles (late summer and fall) was the least onerous in at least ten years, and that the county Air Pollution Control District felt able to ask for a reduced budget for fiscal 1958.

The Los Angeles County APCD is the most active smog control agency in the country. It exercises relatively severe restrictions on industry of all kinds, including, notably, the oil industry. In 1957 it was given power by the California legislature to regulate the sale and enforce the use of exhaust control devices for autos. This power will not take effect until a suitable device is available. Recently auto industry spokesmen said no realistic date for the availability of such a device can be set. Lack of a catalyst that will convert combustion products in exhaust into non-smog-forming substances, and at the same time tolerate the presence of lead compounds sufficiently, seems to be the main obstacle.

Los Angeles officials may be expected to continue their demands upon the auto industry for a workable exhaust device. The County Board of Supervisors has proposed setting a deadline for this 18 months or two years away from the starting time, after which the sale of new cars or resale of used ones would be prohibited within the county.

For metropolitan areas around the rest of the country, the powers and activities of the Los Angeles APCD have already been to an extent, and probably will be further, a guide to local anti-smog action.

The situation in Los Angeles has also given rise to considerable legislative activity in California's state capitol. It led in 1947 to

KE 0004886

N 7180

May 23, 1958

establishment of the law under which the Los Angeles APCD was set up, and under which at least five other Air Pollution Control Districts have also since been set up. One is the Bay Area (San Francisco) APCD which takes in Pittsburg. Other states have borrowed the APCD idea. At the urging of Los Angeles officials the California legislature also considered a bill to create a statewide air pollution control mechanism, in 1957. This bill did not pass, due partly to opposition by the California oil and chemical industries, which hold that the smog problem is local, primarily, and should be controlled locally.

At the national level, Los Angeles supplied the impetus for the first major federal legislation on air pollution passed in 1955. Introduced by California Senator Thomas Kuchel, this legislation, Public Law 159, provides for the expenditure of \$25 million over a five-year period, mainly for research and for cooperation with local agencies not of an enforcement nature.

In hearings for the Schenck Bill in Washington in March, Los Angeles representation was most prominent of any. The bill would direct the Surgeon General to enforce limitations of specified exhaust emissions.

Largely due also to suggestions and appeals from Los Angeles, a national conference on air pollution will be conducted in Washington during the week of November 15, 1958, under auspices of the Department of Health, Education and Welfare. The conference will range widely over national problems of research, control and legislation.

2. Other Municipal Areas--Practically every major urban area in the country has an air pollution problem, as do many small communities with a special industry and/or geographical situation. Practically all have ordinances applying to density of emission or types of odor. Many such ordinances are antiquated.

Some cities now have regulations against visible exhaust, and this type of restriction is becoming more widespread. In general much more attention has been paid lately to the contribution of exhaust to urban air pollution, and more detailed regulations may be expected to be put into effect in coming years. Much may hinge on the availability of an economical exhaust device for cars.

According to one expert there is also a trend toward broader municipal control ordinances. These are based on the Los Angeles County ordinance which prohibits the emission of all toxic and nuisance effluents, gaseous and particulate. It is thought too that the country control district type of air pollution agency will become more prevalent. This breaches the situation in which the large city is unable to control its suburbs.

been mentioned above. Under 159, the Federal Government has carried out an extensive program of research and technical assistance to states and communities at its Robert A. Taft Sanitary Engineering Center in Cincinnati. Courses in air pollution are given for officials and specialists from all over the country. Air samplings are taken from any and all communities and analyzed. Teams of experts from the Taft Center visit communities as advisors in conferences on local problems and methods of research, analysis and control. A member of one of these teams, Dr. Fred H. Hornum, was given newspaper publicity at Denver last year over his statement to the effect that urban air pollution would be a long way toward solution with the removal of lead in gasoline--having in mind its interfering effect on present catalyst-purifying devices using catalysts.

The Schenck Bill presently is under study by the Subcommittee on Traffic Safety of the House Committee on Interstate and Foreign Commerce. Hearings on the bill have brought out the fact that lead in gasoline currently is one serious obstacle to the purification of exhaust. Passage is not expected this session, but proponents feel they have hold of a live public issue and probably will keep working on it. In the meantime the bill makes for an occasional focus of publicity on the exhaust problem and possibly--ultimately--on the lead in gaso-

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3. State Legislation--More than half the states have air pollution powers statewide, primarily as included in general duties or prerogatives of state boards or departments of health. Within the last dozen years there has been a rise in the number of states adopting legislation setting up agencies specifically charged with studying and controlling air pollution. These include New Jersey, Oregon, California, Florida, Kentucky, New York, Delaware, and Washington. None as yet with the exception of California has passed bills bearing on exhaust in such a way as to involve lead.

Outside of California there apparently has been little if any discussion of the lead in gasoline, in state legislative hearings, though exhaust in general has drawn increasing attention. In state legislative sessions this year, bills dealing with air pollution have been numerous. But at last word no important additions or changes had been passed.

A new type of governmental organization for research and control of air pollution is the interstate compact. At present there is just one of these in operation, the Interstate Sanitation Commission, which takes in New York, New Jersey and Connecticut. It was set up originally, more than 20 years ago, to deal with water pollution of New York Harbor and connecting waters. The ISC currently is studying metropolitan New York air pollution with a view to issuing recommendations in February 1959. It already has pointed to auto exhaust as one of the prime sources of trouble.

May 23, 1950

Two other Congressional groups have interested themselves in the exhaust aspects of smog. These are the House Subcommittee Number Five of the House Select Committee on Small Business, headed by Representative James Roosevelt of California; and the House Intergovernmental Relations Subcommittee headed by Representative L. H. Fountain of North Carolina. Neither has been active on the subject so far in the current session of Congress.

B. Press and Public Attitudes

1. Los Angeles--Relative quiet prevails in Los Angeles these days. Residents apparently agree that smog has slackened somewhat, and there seems to be a fair degree of approval for anti-smog control operations. The press continues to play up news of research and exhaust device developments, but without much editorializing. There is however a basic continuing dissatisfaction over the lack of an exhaust device. This is countered somewhat by resistance to a device that would cost the individual motorist very much--say more than \$20 a year--no matter how effective it would be. There has been no news of crackpot activities in at least a year.
 2. National--Around the rest of the country there is slowly-rising concern over air pollution in general and increasing concern over motor vehicle exhaust in particular. This is evident in regular coverage by newspapers throughout the country of news from Los Angeles and Detroit having to do with exhaust devices. Ford's announcement last August of vanadium pentoxide, a promising catalyst from the standpoint of lead toleration and economy, was given two and three-column stories everywhere, along with many editorials generally praising the development as evidence of sincere effort by the auto companies.
- The main focus of interest, however, is the reported linkage of auto fumes with rising incidence of lung cancer. References to lead poisoning, in practically any connection, also continue to be picked up widely. As has been noted before, the press reacts to the singling out of exhaust as a threat to health with a nearly universal crusading spirit. In part the recent criticism of big cars, and to a lesser extent of high octane gasoline, has been associated with the rising agitation over exhaust fumes.

San Francisco takes second place to Los Angeles now in publicity and discussion over exhaust. Of course much of this results from continued

May 23, 1956

nonprofit research organizations and by universities, subsidized by both government and industry. Under local officialdom data is taken regularly in many communities to determine local air content. Many individual companies and plants are studying and working to control their local emissions.

Predominantly the research is of an engineering nature as distinct from having medical or health goals. More is being learned about what air pollution is, and where it is coming from, than about what it does. And of course much of the uncertainty over what should be done about it results from lack of knowledge of its effects.

Of all technical aspects, this department probably has most reason to be interested in the search for a catalyst that will live with lead in an exhaust device. For several years the only organization carrying out this work was the Oxy-Catalyst Company. A number of other firms are looking now, among them the auto companies. Ford has made the biggest splash so far with vanadium pentoxide, but this is not yet commercially feasible. Detroit has been keeping in close touch with the search for a catalyst.

Next in order of interest is the work on auto exhaust in general. Ethyl's own efforts in this field have been highly significant and useful. The Air Pollution Foundation, to which Ethyl contributes, now devotes all of its research support to exhaust. Projects it is sponsoring are being carried out at the Stanford Research Institute, South Pasadena (with co-support by the API's Smoke and Fumes Committee); the Midwest Research Institute in Kansas City (in working cooperation in the recent past, on some projects with Ethyl); the Franklin Institute of Philadelphia; the University of California at Riverside; the Armour Research Foundation, Chicago; and the Atlantic Research Corporation, Alexandria, Virginia.

The Air Pollution Foundation's purposes are to learn more about or expedite: (a) basic mechanism of the formation of smog from auto exhaust; (b) fundamental principles of afterburner design; (c) elimination of nitrogen oxides from auto exhaust; and (d) development of lead-insensitive oxidation catalysts. These might be considered the leading aims of exhaust research as a whole, with the implied inclusion of reducing hydrocarbon emissions.

Other groups most prominent in exhaust research are the Automobile Manufacturers Association, the Coordinating Research Council--a joint organization of the Society of Automotive Engineers and the API with active participation by Ethyl--and the Los Angeles County Air Pollution Control District.

Of further interest among technical aspects is the question of "smogless gasoline," or whether changes in the composition of motor fuels might help reduce smog. This has been a lively issue for more than a year in Los Angeles, since "selective elimination or reduction of highly reactive olefins" was suggested as "a possible means to abate the smog nuisance" by an APCD researcher. Emphatic doubt of this possibility has been expressed by the Western Oil and Gas Association. Further investigation is being conducted by the APCD, by WOGA and by the U. S. Bureau of

KE 0004890

May 23, 1958

Mines at Bartlesville. Since suggesting the reduction of olefins, the APCD has stated that high octane gasolines developed for high-combustion engines in the last few years have inadvertently helped remove some of the eye-sting from L. A.'s smog.

D. Information Sources and Correspondence

1. Legislation--The most concentrated and thorough coverage of legislation carried on has been the scanning of weekly bulletins of state legislative activities sent by state Petroleum Industries Committees. Experience has shown that such regular scanning does not pay out in the long run. Other sources can give warning of any upcoming or pending bills that might be cause for concern, and the state PIC officers can be asked in individual cases for special coverage of most state bills. The primary other legislative source to be relied upon is the Manufacturing Chemists' Association, through its legislative bulletins and through correspondence to those on the mailing list of its Air Pollution Abatement Committee. I have been receiving both types of material. A few others in the Company, including the law department and Dr. Charles Smith, receive the legislative bulletins only, state and federal. The MCA itself will give detailed information on a bill on request, and can furnish or lend copies of bills or laws. Last year the MCA supplied a summary of air pollution legislation for 1957 state sessions. It may do so this year unless it deems the subject not worth special attention since only 16 state legislatures have been in session in 1958--though at least half of these have taken up air pollution in some manner.

In coverage of state bills by PIC secretaries in the various capitols, six states must be excepted. Five of these are covered by the Western Oil and Gas Association: California, Oregon, Washington, Nevada and Arizona. The remaining state, Texas, is covered legislatively by the Texas-Midcontinent Oil and Gas Association, headquartered in Dallas.

For reference on the prevailing body of air pollution legislation across the country there are in the files two detailed and fairly recent articles. One is by Samuel M. Rogers, of the U. S. Public Health Service, the other by Frederick S. Mallette of the American Society of Mechanical Engineers. The Rogers article has a bibliography of source material on air pollution legislation. In addition the files contain copies of a number of state laws on air pollution.

Clippings also have furnished occasional leads on state legislation. But to a much greater extent they tell what is going on at county and city levels: local agitation and discussion, and word of actual new ordinances. For more than a year we have not been receiving clippings under the head of air pollution; we have been getting the ones touching upon exhaust and lead only. As of May 29 the inflow is to be cut off entirely. But some feel of the national-local situation can be maintained by regular perusal of "Smog News," a twice-monthly collection of clippings put out by the ASME, the American Society of Mechanical Engineers, to which the department subscribes.

KE 0004891

May 23, 1958

2. Miscellaneous--Keeping in touch with events in Los Angeles is by now mainly a matter of keeping in touch with Howard Hesselberg. Hess and others of Detroit and San Bernardino are of course directly involved in much of the research on exhaust and device development. As you know, Detroit has been cooperating with the APCD in supplying samples of AK-33X for study of any possible effect on smog formation. In addition the Los Angeles office and MOGA continue as information outposts.

For staying informed of press and public attitudes, reading "Smog News" is again important. It may be of help for a while also to have on hand some of the more fact-laden and significant articles and clippings of the past two years or so. They provide a background for much of what will be happening. In the files the clippings are sorted under Los Angeles, San Francisco, West Coast, and National-Canadian-International. Also of use are occasional items in the trade press, and part of the contents of the monthly New York City "Air Pollution Control News," which is received free.

On technical developments, apart from direct word from Detroit and elsewhere in the Company, there is once again "Smog News," plus trade press items, and the monthly "APCA Abstracts," which summarizes current literature of air pollution. APCA means Air Pollution Control Association. This organization, of which several Ethyl people are individual members, also publishes the quarterly "Journal of the Air Pollution Control Association," which prints papers delivered at meetings of the Association, and other material.

Meetings of the APCA constitute another prime source of technical information and they are attended regularly by Ethyl's assigned technical people, as during this week in Philadelphia, where the annual national meeting is in progress. Regional meetings occur at other times during the year.

In addition, API Division of Refining meetings regularly schedule air pollution sessions, attended by Howard Hesselberg as a new member of the Smoke and Fumes Committee. Other groups that have sponsored important meetings in the past two years are the Southern California Chamber of Commerce (annual Southern California Conference on Air Pollution); the Armour Research Foundation and the Midwestern Air Pollution Prevention Assn. (co-sponsors); the Air Pollution Foundation; the Los Angeles APCD, the Franklin Institute of Philadelphia, and the Society of Automotive Engineers.

On all of these matters of information and information sources, the twenty-odd folders of the smog file supply background and details.

KE 0004892

May 23, 1958

E. Long-Range Factors and Policy

Dr. W. L. Faith, Director of the Air Pollution Foundation and thought a sound prophet, predicted not so long ago that it will be two or three years before a suitable exhaust device will be available for autos. This may mean that it will be this long before a suitable lead-tolerating catalyst can be found and put into catalytic afterburners on a wide scale. During this time the contribution of exhaust to air pollution, in many communities, may increase. And new studies of the content and effect of exhaust gases will be publicized. It is likely that the general public will become more aware in this period of the role of lead in hampering exhaust purification, and it is possible that new findings on exhaust will link it definitely to the rising incidence of lung cancer and to other bad effects on health. So, during the next couple of years at least, before autos can be furnished efficient exhaust purifiers, the lead in gasoline could come under more attack--more persistent and general attack than has had to be dealt with so far, except during the twenties.

It can be said now--from the vantage point of more than two years' observation--that in most states and urban areas there is little chance that laws will be put into effect directly running counter to the use of lead in gasoline, before an exhaust device is ready. But there is a threat in the Schenck Bill, a federal bill. If enough excitement is generated over harmful effects of exhaust, this bill could draw heavy and national publicity, this year or next year or the one after. And with this could arise much negative comment on the presence of lead in gasoline, and possibly some pressure on the oil industry to remove it, before an exhaust device is available. Such pressure might be linked with a de-emphasis of octane numbers, and conceivably even some decline in octane levels should there be a strong and long-drawn-out demand for more economy and a cessation of the horsepower race in cars. This is speculation which arises from a concept of smog coverage as a kind of steady sentry duty requiring alertness to both sudden emergencies and remote threats.

In the lack of an exhaust device, the TEL economics story might have to be put to wide use in defense of the product. Perhaps it would be good to have some material of this kind, along with updated information on the safety factor of lead in air, prepared for the national conference on air pollution set for the week of November 15, 1958 in Washington. The agenda for this conference itself has not yet been announced. It might be advisable to find out from the Public Health Service soon what compulsory occasions might arise during the conference for stating, or inserting into the record, the case for lead.

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