

FEDERAL ADVISORY COMMITTEE ACT
CLEAN AIR ACT ADVISORY COMMITTEE
MOBILE SOURCES TECHNICAL REVIEW SUBCOMMITTEE

CO-CHAIRS: MICHAEL WALSH AND ROBERT SAWYER

DESIGNATED FEDERAL OFFICIAL: PHILIP LORANG

Minutes from the Quarterly Meeting of July 15, 1998
EPA's National Vehicle and Fuel Emissions Laboratory
Ann Arbor, Michigan

Welcome and Introductions

Dr. Robert Sawyer, subcommittee co-chair, opened the meeting and welcomed the members. He introduced one new member, Eileen Gauna, from Southwestern University. A list of members and interested parties attending the meeting is attached at the end of this document.

Revisions to the April 15, 1998 Minutes

William Becker of STAPPA-ALAPCO noted the reference on page 8 to "reasonable further progress" should instead read "request for proposal." Dr. Alan Lloyd of Desert Research Institute commented that one statement on page 4 should refer to emission standards, and that on page 3 a reference should be changed to electricity or electrical energy. John Kowalczyk of the State of Oregon Department of Environmental Quality asked for clarification of a statement regarding air toxics.

Agenda and Administrative Issues

Phil Lorang, Designated Federal Officer, noted changes to the agenda. The Tier II presentation has been postponed because EPA staff are currently in the process of finishing the Tier II document. As a replacement, Mike Walsh will discuss recent developments from Europe. Other items noted were:

- All Ann Arbor OMS phone numbers have been changed to 734-214-4, closing with the last three digits of the old phone number.
- Dr. Sawyer and Dr. John Johnson received awards for prompt return of invitational travel vouchers. In the future, invitational travel arrangements will not be made until vouchers from previous meetings have been returned. The group applauded EPA staff members involved in travel and meeting arrangements as they were introduced.
- All requests made to Paul Rasmussen, Designated Federal Officer of the CAAAC, for ICF Kaiser contractor assistance to workgroups must go through Jennifer Criss, FACA Management Officer for OMS.

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- Two committee members, John Kowalczyk and Steve Gerritson of LADCO, have changed positions. These individuals may remain on the subcommittee or other members from their organizations may become subcommittee members.
- The subcommittee has expressed an interest in having a representative from the vehicle service sector.
- OMS is interested in coordinating chassis testing with heavy-duty vehicles. Projects are underway at a number of institutions. Some form of coordination would be useful over the next few years as projects proceed. A FACA workgroup is under discussion.

Vehicles, Fuels, and Climate Change: Recent Developments in Europe - Michael Walsh, Consultant

Michael Walsh, subcommittee co-chair, made a presentation on recent developments. Approximately four years ago, Europeans began the EPEFE Auto/Oil Program. Goals were to look at emission reduction needs, select methods for reductions among several sources, and initiate policy options (e.g., new standards, fuel changes). A time-intensive process ensued, with a focus on the 15 members of the European Union (EU). Outcomes in the EU are also expected to occur in neighboring non-EU countries (e.g., Norway, Switzerland) in addition to Eastern Europe. Mr. Walsh reviewed the standards that have been adopted and then compared them to efforts in the U.S.

When Europe required catalysts in 1992, the standards were adopted in two stages. Standards recommended for 2005 have been adopted as final. NO_x levels from diesel vehicles are approximately three times higher than those from gasoline vehicles. There is no formal vehicle recall program in Europe. Sweden has had a recall program and there is pressure from the Dutch/Germans to call in and fix vehicles, but there is no legal requirement. There is current debate in the Swedish Parliament regarding the mileage requirement for useful life (80,000 km in 2000 and 100,000 km in 2005).

On-board diagnostics (OBD) begins in light-duty gasoline vehicles in 2000, diesel in 2003, and heavier light-duty trucks in 2005. Tax policies and economic incentives are being used in some European countries for purchasing vehicles that meet early introduction of 2005 standards. Mr. Becker asked why tax policies appear to work well in Europe. Mr. Walsh replied that taxes tend to be higher in Europe so the incentive is greater in absolute monetary terms. Politically, there is also more willingness to tax gasoline than in the U.S.

There is a stronger interest in air toxics (hydrocarbons) as opposed to CO, so the cold test standard is for both pollutants. The hydrocarbon of most interest is benzene. There is much debate around fuels, primarily on sulfur issues. The 2005 maximum sulfur values are mandatory at 50 ppm for both gasoline and diesel fuels; the average is expected to be less. Year 2000 values

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are 150 ppm sulfur for gasoline and 350 ppm for diesel. There are fiscal incentives to use low sulfur fuels. In Sweden and the United Kingdom, low sulfur fuel is taxed at a lower rate. Virtually all of the fuel in Sweden is very low sulfur. Mr. Walsh noted that vehicle manufacturers agreed to the tight emission standards, but were only willing to agree if low sulfur fuel were available. The oil industry position was split among refiners because some are already making these low sulfur fuels. Lead phaseout occurs by 2000 with limited derogations to individual countries on a case-by-case basis until 2005. There will also be a uniform monitoring system to check fuel quality. The Auto/Oil II program may make additional recommendations in 1999.

Refiners are questioning the wisdom of investing in older refineries when overcapacity already exists in Europe. Existing diesel vehicles are being retrofitted in Sweden with continuous regenerative diesel traps that work with low sulfur fuels. Mr. Walsh compared the U.S. and European standards for NOx for gasoline vehicles and particulates for diesel vehicles. NOx standards are roughly equivalent. Diesel particulate standards are closer to U.S. standards, but less stringent than ULEV. The year 2005 requirement in Europe is two to three times higher than LEV II or SULEV. He also noted that there is a limited U.S. diesel market for light-duty vehicles. Because there are many existing diesel vehicles, the standards are less stringent in Europe. The certification test fuel in Europe is currently similar to Indolene fuel, but is planned to be closer to commercial fuel after 2000. Useful life requirements can be compared from the table below. Walsh noted that the climate and economic conditions tend to keep vehicles on the road for a very long time. Europeans are ahead of the U.S. on sulfur levels in diesel fuels. Mr. Kowalczyk inquired whether Canada might follow the European standards. Walsh responded that Canada may instead follow U.S. standards.

Useful Life (km)

CA proposed option	240,000
US	160,000
EU 2005	100,000
EU 2000	80,000

Future challenges for vehicles include a significant concern about greenhouse gases in Europe. The proposed CO₂ reductions range from 186-90 g CO₂/km. Mr. Walsh noted that the engine technology is moving from spark- ignition (SI) engines or indirect injection diesel to direct injection (DI) gasoline and DI diesel with additional efforts on timing and reduced engine sizes. The commitment to CO₂ reductions is the driving factor.

International Harmonization of Mobile Source Test Procedures - Thomas Baines, EPA

Tom Baines, EPA, discussed global harmonization of automotive standards. The "Technical Barriers to Trade" section of the World Trade Organization (WTO), as well as the National Technology Transfer and Advancement Act of 1995, strongly encourage the use of existing

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“voluntary consensus standards” in rulemakings. These standards are developed by organizations such as ASTM, SAE, and ISO, among others. The U.S. recently signed an Agreement that establishes an international process, under the United Nations/ECE, that focuses on the development and harmonization of global technical regulations that are applied to automobile safety and environmental requirements. The purpose of this Agreement is to promote high levels of automotive environmental and safety protection on a global basis while providing a predictable regulatory environment for the regulated industry. An important feature is that needed levels of environmental protection will not be compromised to obtain a harmonized regulation. The Agreement emphasizes transparency in the development of global technical regulations and to this end, EPA will take steps to ensure transparency in the consideration of global regulations being developed under the Agreement. The Agreement provides for subnational governments (e.g., California) to adopt more stringent standards. A signing ceremony in Geneva occurred recently with Margo Oge as the opening speaker. The Agreement takes effect after five signatories have agreed (including the U.S., EU, and Japan). This is expected to take a year or more.

Mr. Baines also discussed the International Organization for Standardization (ISO) voluntary consensus standards body. ISO is open to all interested parties but currently is primarily composed of industry participants. ISO develops standards in many areas. EPA is taking a more active role in some of these committees. One of the committees handles highway rules and is looking at emissions sampling using current technology and harmonization of engine family definitions. Another committee handles off-highway issues such as: engine (all sizes) sampling and analysis procedures that can be used on a global basis; certification and in-use procedures for smoke from off-highway engines; and revised weighting factors for hand-held equipment. He encouraged interested parties to become involved in these programs. Finally, he added that EPA has instituted an Internet site (on the OMS web page under “International Programs”) to coordinate diesel particulate characterization discussions and information exchange worldwide.

OMS Outreach Activities and Partnerships and the Transportation Air Quality Initiative - Lucie Audette, EPA

Lucie Audette of OMS’ Transportation and Market Incentives Group of the Regional and State Programs Division led the discussion. OMS is taking a stronger role in communicating environmental messages to the public. EPA has historically been a technology organization, but the Agency is developing its role at the national level to assist local partners with outreach efforts. There are many unique, local programs to encourage individual actions. OMS seeks to enhance the links between transportation, air quality, and public health and reinforce the idea that individuals do make a difference. The outreach goals include increasing public awareness and understanding and fostering individual/community action. She noted the rapid growth in ozone action programs in the last few years. EPA has used Section 105 grants to support state and local programs. The outreach is focused on environmental education for youth (future drivers and consumers), transportation choices unique to each community, car care, ozone mapping and

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forecasting, and heavy-duty diesel (on- and off-road). Core partners include state and local air management agencies, the Environmental Health Center, STAPPA/ALAPCO, and the Service Technicians Society of SAE. OMS is working with the State of Utah on car care issues and with NESCAUM to develop creative programs that can be replicated in other parts of the country.

There is a new partnership among OMS, FHwA, and FTA that was initiated two years ago. Significant research went into reviewing past outreach findings (e.g., surveys) and focus groups determining what states and local governments need. The program goals are to make the Federal role more value-added in supporting and supplementing local activities. The program offers national context for local messages about air quality and transportation choices. Two main themes are less congestion and improved air quality. The program is community based and seeds local efforts with monies as well as technical assistance. A national transportation/air quality coalition links existing programs and allows networking. National messages will be developed to support local calls to action. Messages for TV and print media have been developed via the use of surveys and focus groups. Focus groups highlighted the need for messages to be positive in tone and substance and reinforce ongoing good behavior. The messages need to suggest "doable" options. Ms. Audette showed three video spots being tested in San Francisco, Dover, and Milwaukee. Surveys to evaluate the test message in the three pilot cities go out in September, and results will be available in November.

The OMS Transportation Air Quality Center (TRAQ) is now on the internet. This site allows access to key EPA information on transportation and air quality issues and includes information on funding sources, databases, successful programs, and contacts around the nation. Technical assistance and tools are provided rapidly via the internet. Other partnerships include voluntary measures with the California Air Resources Board and the Metropolitan Washington Council of Governments, the heavy-duty engine retrofit programs in New Jersey and NESCAUM, and the commuter choice programs in Minneapolis and New York to assess programs that work. The TRAQ center also provides guidance documents and there is an information request line at www.epa.gov/omswww/traq.

Mr. Bruce Bertelsen, MECA, noted that getting information out to the public on the National low-emission vehicle (NLEV) program is important. Mr. Becker suggested that one day be set aside in the future when states can give seminars at schools and other community meeting places so that national information can be focused locally.

Nitrous Oxide (N₂O) Discussion - Phil Lorang, EPA

Phil Lorang led the discussion of N₂O issues. N₂O emissions have increased with the addition of catalysts on vehicles. There has been a change in IPCC emission accounting techniques for greenhouse gases. Each year, participating countries submit an accounting of greenhouse gas emissions. In 1996, the IPCC revised their document on how to quantify global emissions. EPA created the national inventory for the U.S. and the N₂O estimate increased significantly. EPA has

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identified the data on which IPCC guidance is based and is preparing an alternative estimate based on their identification of problems with the IPCC change. EPA focused on testing Tier I cars as a way of checking the revised EPA estimates. The IPCC estimate was 0.27 g/mile and the cars in the test ranged no higher than 0.22 g/mile and averaged 0.065 g/mile. Tier I vehicle results averaged 0.075 g/mile and included tests with and without air conditioning in high-temperature conditions. Mr. Walsh noted that there were several other anomalies in the revised estimate such as changes in definitions used by DOE and vehicle miles traveled (VMT) allocations among catalyst vehicles.

Lab Upgrade Workgroup Summary - Michael Sabourin, EPA

Mike Sabourin, EPA, began with a brief overview of the activities of the Lab Upgrade Workgroup over the past several months. This discussion was preceded by a tour of the EPA laboratory facilities and emissions testing capabilities of the lab. He introduced Bob Jorgensen, Cummins Engine Company, who presented a review of EPA's NVFEL Equipment Modernization Plan. The workgroup was formed in July 1997 and includes representation from several stakeholder groups. The workgroup has reviewed EPA's September 1997 Equipment Modernization Plan. The scope of the plan includes vehicle testing of cars and trucks, engine testing of heavy-duty engines, engine testing of grounds care and utility engines, fuels issues, and personnel-related issues. The key points of the Modernization Plan: NVFEL needs to be a state-of-the-art national laboratory; future plans need to address personnel issues; NVFEL needs adequate funding to equip and staff the laboratory; stakeholders should be regarded as customers; and accurate information and well-written procedures and measurements will lead to sound regulations and cleaner air. After considering the core business functions of the lab, the workgroup developed several recommendations. The recommendations are divided into the following categories: general, vehicle testing, heavy-duty engine testing, grounds care and utility engines, fuels testing, and personnel issues. Mr. Jorgensen discussed each of the recommendations in these categories. In summary, he stated that OMS should be commended for developing a Modernization Plan and seeking stakeholder review and recommendations. He also stated that OMS should add a human resource component to the plan. OMS should also seek ISO 9000 certification for the lab.

Dr. Sawyer asked about the agency budget for the lab. Mr. Jorgensen replied that the workgroup conducted their work without regard to budget. Dr. Randall Guensler added that if the recommendations come from FACA, they might have greater impact on the budget-making decisions of the agency than if they come from OMS alone. Phil Lorang commented that EPA will soon know the 1999 budget. Mr. Walsh added that EPA should keep the subcommittee informed as to the status of EPA's treatment of the lab upgrade recommendations when the future budget is known. Dr. Timothy Johnson of Corning, Inc. stated that the presentation did not address evaporative emissions. A workgroup member replied that the emphasis was on the core business of the lab, although evaporative emissions were discussed. Mr. Kowalczyk asked about inclusion in the plan of dynamometers capable of testing four-wheel drive vehicles, since testing

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these vehicles in the two-wheel drive mode may distort in-use emission estimates. Mr. Sabourin stated that this testing capability has been identified as a low-priority recommendation at this point, but there is still some internal EPA debate about the importance of this testing capability. Dr. Guensler asked about second-by-second test data archiving capability, and integrating EPA data with data from contractors and other labs. Workgroup members discussed this issue at length and gave their support to making these data public and accessible. Mr. Sabourin closed by expressing Margo Oge's appreciation to the workgroup for their work over the past year. He also said the Modernization Plan is a living document that will continue to evolve.

On-Board Diagnostics (OBD) Workgroup Report - Ed Gardetto, EPA

Ed Gardetto, EPA, presented information on the status of the OBD Workgroup. The workgroup is addresses OBD test implementation issues, particularly early implementation, pilot lane efforts, and an EPA testing program. Four states are currently doing OBD checks in I/M programs. Several additional states are expected to implement OBD testing prior to the EPA requirement in the year 2001. The workgroup is concerned that problems experienced by states implementing early testing may negatively effect the January 2001 implementation. A subgroup was formed to develop recommendations regarding early implementation. These recommendations will be finalized at the July 16, 1998 OBD workgroup meeting and the recommendations will be forwarded to the subcommittee.

EPA is also performing a pilot test of OBD checks. The agency currently has a contract to perform OBD I/M checks in high-volume I/M lanes. EPA will use data and experience from this pilot to develop OBD test implementation guidelines. A total of 1,238 vehicles have been tested in lanes to date. There are some initial concerns about data quality. EPA is also conducting a testing program which was started in October 1997. The goal of this program is to recruit and test 200 vehicles equipped with OBD that have an illuminated MIL. EPA has tested 42 vehicles thus far; CARB has tested 7 vehicles. The specific test procedures include identifying the vehicle, performing an IM240, draining the fuel and filling with Indolene fuel, preconditioning using LA-4, performing a 12-hour soak, an FTP dynamometer test, and then an immediate IM240 test again. Virginia McConnell asked if repair effectiveness is being addressed. Mr. Gardetto replied that some information is being found indirectly about repair effectiveness, but the study wasn't designed to determine it. She added that repair effectiveness is very important in determining credit from OBD checks. One workgroup member said that states that have not addressed OBD implementation prior to the required time may experience difficulty when the requirement hits. States will face many technical issues, so it may be useful to give them some incentive to get onboard early.

FACA Representative Member Issues - Hale Hawbecker, EPA

Mr. Hale Hawbecker, EPA Attorney Advisor, spoke about legal requirements for representative members of EPA advisory committees. He began with a review of the Federal

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Advisory Committee Act (FACA) and discussed its requirements. FACA requires balanced membership, open meetings, and availability of records. He discussed these requirements in detail. Workgroups are not subject to the full requirements of FACA, but are encouraged to be open to all interested parties.

Update on MSTRS Web Site - Randall Guensler, Georgia Institute of Technology

Professor Guensler presented updated information about the website. A monitor has been added. About 1,100 "hits" have been made to the website during the last month. All pages have been accessed at least 200 times. Members can contact Dr. Guensler if they have information to be posted.

Meeting Wrap-Up - Phil Lorang, EPA

It was suggested that the subcommittee form a workgroup to look at toxics and mobile sources. A workgroup can be formed if there is enough interest. EPA will publish a Daft Urban Area Toxics study in August that includes mobile sources, so this workgroup could be timely. It could be used as a communication forum and to aid in EPA's rulemaking process. Mr. Drew Kodjak, NESCAUM, volunteered to be a co-chair. The workgroup will primarily focus on emissions and exposure.

Dr. Guensler noted that two reports about modeling are now available on the website.

Meeting dates: Meetings will be held in October 1998 and January 1999. The October meeting is tentatively scheduled for October 14 in southern California. Anyone with particular agenda items for the October meeting should forward them to Phil Lorang. Currently, there will be a presentation on California's low-emissions vehicle (LEV) proposal and a presentation from the Incentives Workgroup.

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Attendance List: Members

<u>Name</u>	<u>Organization</u>	<u>Phone No.</u>
Gordon Allardyce	Chrysler Corporation	810-576-8053
William Becker	STAPPA-ALAPCO	202-624-7864
Bruce Bertelsen	Manufacturers of Emissions Controls	202-296-4797
Kelly Brown	Ford Motor Company	313-322-0033
Gregory Dana	Assn. Of International Automobile Mfrs.	703-525-7788
John Duerr	Detroit Diesel Corp.	313-592-7090
Rich Denbow	ICF Kaiser International	703-218-2692
John Elston	New Jersey Dept. Of Env. Protection	609-292-6710
Eileen Gauna	Southwestern Univ. School of Law	213-738-6752
Richard Gibbs	New York Dept. of Env. Conservation	518-485-8913
Randall Guensler	Georgia Institute of Technology	404-894-0405
Michael Ingham	Chevron	510-242-2654
John Johnson	Michigan Technological University	906-487-2576
Tim Johnson	Corning Corporation	607-974-7184
Robert Jorgensen	Cummins, for Christine Vujovich	812-377-3101
Drew Kodjak	NESCAUM	617-367-8540
John Kowalczyk	Oregon Dept. of Env. Quality	503-2296459
Sam Leonard	General Motors Corporation	313-556-7711
Alan Lloyd	Desert Research Institute	702-677-3107
Philip Lorang	EPA - Office of Mobile Sources	734-214-4374
Virginia McConnell	Resources for the Future	202-328-5122
Margo Oge	EPA - Office of Mobile Sources	202-260-7645
Robert Sawyer	Univ. of CA Berkeley	510-642-5573
Robert Schaffhauser	Engelhard Corporation	732-205-5651
Robert Slott	Consultant	508-771-7699
Douglas Teague	Chrysler Corporation	248-576-2182
Michael Walsh	Consultant	202-783-7800
John T. White	EPA - Office of Mobile Sources	734-214-4353

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Attendance List: Non-Members and Interested Parties

<u><i>Name</i></u>	<u><i>Organization</i></u>	<u><i>Phone No.</i></u>
Jane Armstrong	EPA	734-214-4471
Lucie Audette	EPA	734-214-4850
Thomas Baines	EPA	734-214-4366
Richard Barrett	State of Colorado	303-692-3123
Douglas Berens	Ford Motor Company	313-594-2915
Benjamin Bonazza	Walbro	517-673-8181 x227
Art Bublitz	Horiba Instruments	734-213-6555 x810
Charles Cetnar	Mercedes-Benz	734-995-3066
John Chapin	SPX Corporation	616-894-5609
Wendy Clark	Automotive Testing Labs, Inc.	937-666-4351
Thomas Durbin	Univ. of CA.	909/781-5794
Susan Field	Toyota	734-995-2086
David Fordham	Air Transport Commission	
Edward Gardetto	EPA	734/214-4322
Frank S. Gerry	BP Oil Company	216-586-6173
Peter L. Gertz	State of Pennsylvania	717-783-5842
Gerard Glinsky	Environmental Testing Corp.	303-344-5470
Nabil Hakim	Detroit Diesel Corp.	313-592-7455
Marcel Halberstadt	AAMA	313-871-2303
Erik Herzog	EPA	734-214-4487
David Ingersoll	Chrysler Corp.	248-576-7310
Cindy Jacobs	EPA	734-214-4857
John Jacobs	Vicks	
William Jordon	State of TX - NRCC	512-239-2583
Leonard Kata	Volkswagen	248-340-4704
Matthew Kevnick	Toyota	734-995-3759
Barbara Kiss	AAMA	313-871-2305
Stacy Klein	Mitsubishi	202-659-8742
Gay MacGregor	EPA	734-214-4438
Robert Maxwell	Consultant	734-434-6667
Douglas McGregor	Rover	310-574-7326
Harvey Michaels	EPA	734-214-4184
Donald Nagy	GM	248-685-6385
Koji Okawa	Toyota	734-995-3753
Roger Orteca	Chrysler	248-576-8066
David Raney	Honda	310-783-3264
Michael Rodgers	Georgia Inst. of Technology	404/894-5609
John Shipinski	Toyota	734-995-3754
Robert Strassburger	Nissan	202-659-8742
Takanori Shiina	Honda	248-304-4886
Suanne Thomas	Volkswagen	248-340-4706

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