



CRC Organizational Overview



CRC Objectives

To serve as a focal point for cooperative, precompetitive research between the mobility and petroleum industries.

To make technical information available to be used:

- by industry to ensure compatibility and customer satisfaction
- by industry, Government and the public to achieve clean air and other goals



CRC History

Started in 1920's as SAE committee.

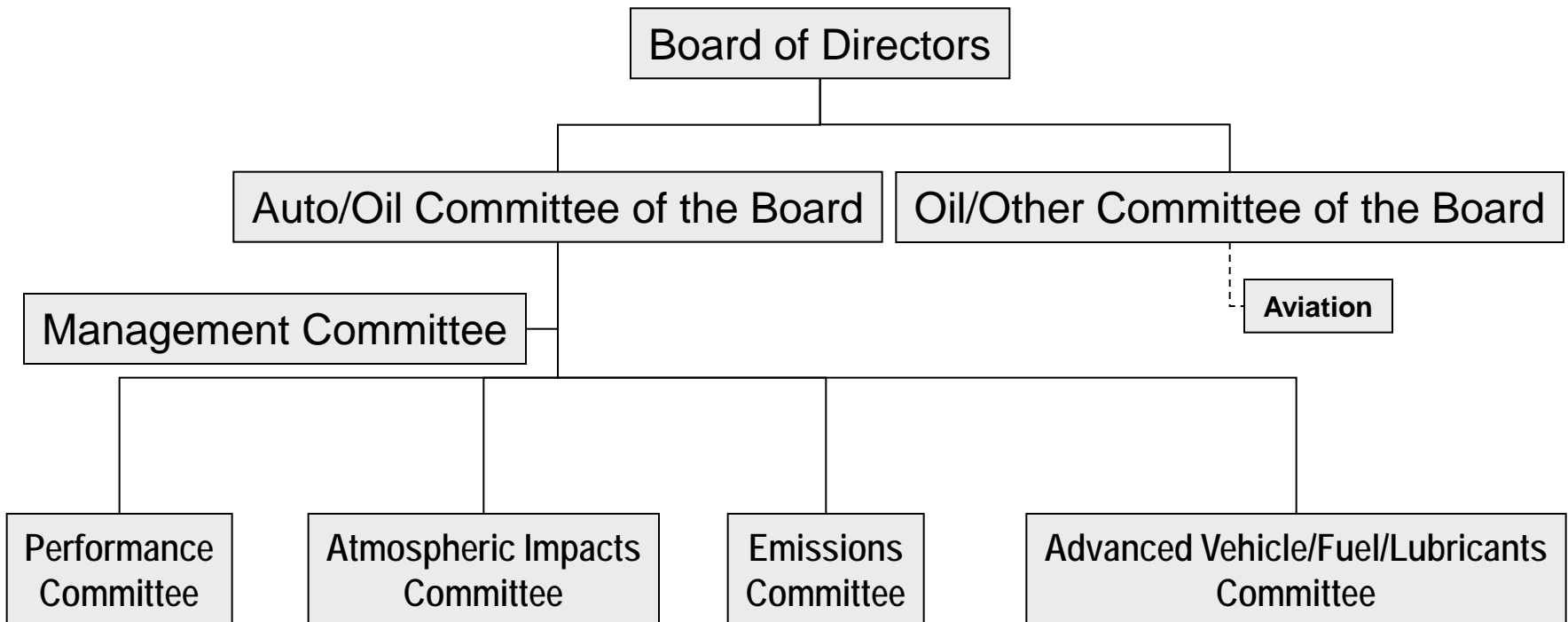
Became independent organization in 1942.

Initiated environmental research in 1960's

- Air Pollution Research Advisory Committee in 1968
- Auto/Oil in 1989
- Post-Auto/Oil in 1996



CRC Organization





- Fiat-Chrysler
- Daimler
- Ford
- GM
- Honda
- Mitsubishi
- Nissan
- Toyota
- Volkswagen
- Aramco
- BP
- Chevron
- Phillips 66
- ExxonMobil
- Marathon Petroleum
- Shell



Identifying Projects

Bottom up flow identifying needs:

- project groups
- allied organizations, ASTM, SAE, API, AAM, USCAR
- planning sessions

Top down flow identifying needs:

- CRC Board
- regulatory agencies



Project Operations

Technical groups oversee research:

- plan study
- select investigators or divide work
- critique or write reports

Organizations doing research include:

- industry laboratories
- independent laboratories & consultants
- universities



Funding

API and Auto Industry Members equally support projects:

- approve annual budgets
- allow flexibility for unanticipated needs

Outside organizations support many projects:

- Government agencies
- alternative fuel interests
- additive suppliers
- individual states
- aviation industries



CRC Research Priorities

Understand fuel property impacts on vehicle performance

- ❑ Conduct research and analysis, including causes for field issues, to ensure that fuel specifications and test methods are adequate to meet consumer needs, consistent with automobile and engine manufacturers' recommendations.
- ❑ Examples: studies of driveability, biodiesel stability and causes of IVD deposits.

Understand the efficiency of the vehicle/fuel system

- ❑ Study the interactions of existing and future vehicle engine and drivetrain technologies with existing and future fuels, considering efficiency, emissions and full lifecycle GHG impacts, and including technologies for both the near term (0-3 years), and longer term (3 - 10 years).
- ❑ Examples: gasoline property impact on efficiency and emissions of future SIDI engines and "well-to-wheel" lifecycle analysis studies of direct and indirect effects.

Understand mobile source impacts on air quality

- ❑ Contribute to air quality modeling science to improve the accuracy of modeling and provide better understanding of the effect of mobile source emissions on air quality.
- ❑ Example: air quality modeling studies of impacts of Tier 1 to Tier 2 to Tier 3 regulations on ozone and PM.



Performance Committee Role

To relate physical and chemical properties of gasoline to vehicle performance

- driveability/volatility relationship
- octane response

To develop engine and vehicle test procedures to use in commerce and regulations and use these procedures to monitor vehicle/fuel performance:

- deposits
- driveability index



Emissions Committee Role

To define interactions between automotive hardware and fuel composition and their effects on emissions.

To measure vehicle emissions contribution to pollutant inventory.



AVFL Committee Role

Advanced automotive hardware and new fuel formulation effects on automotive emissions

Durability and operability of new fuel formulations in advanced hardware



Atmospheric Impacts Committee Role

To improve ability to predict effect of emissions on air quality by:

- improving inventories
- understanding air chemistry
- strengthening air quality models

To predict importance of emerging data, i.e., particulate measurements.



Aviation Committee Role

To address issues regarding the interactions and performance of aircraft hardware, fuels, and related equipment and operating fluids.

- Advanced research test methods
- Aviation gasoline, aviation jet fuel, additives
- Fuel stability, handling, and safety
- Emerging fuels
- Performance and emissions



CRC Webpage

www.crcao.org