European pollution

Towards lead-free auto fuel

Brussels

EUROPE is edging closer to a substantial reduction in exhaust pollution. But the ride has been far from smooth. Last week, the European Commission added the final flourish to proposals designed to phase lead out of petrol (gasoline). But only a few days earlier, West Germany announced its intention to apply US exhaust emission standards, which are twice as strict as those now in force in Europe, by 1989, rather than following the Commission's two-stage timetable.

With many of the 90 million cars on European roads expected to be running on super petrol by the early 1990s, the European Commission has ruled that the EEC countries should sell a single super-grade unleaded petrol from October 1989, although countries such as Italy and France, with a considerable market for small-engined cars, will still be able to sell a normal lower octane-rating unleaded petrol as well. (Unleaded petrol in Europe in fact means a lead content of between 0.01 and 0.02 grams per litre. The US content is 0.0135 grams per litre.)

Since both leaded and unleaded petrol will have to be available until old cars have been phased out, the super-leaded petrol will be marked with a red dye, to avoid mistakes in filling but also to make spot checks on "wilful misfuelling". The Commission feels price incentives should be encouraged, but this has so far been left to national governments.

Other technical specifications for the petrol (density, volatility, etc.) will be standardized by the European standards body, Le Comité Européen de Normalisation (CEN).

The proposals are the final touch to a series of European emission controls which environment ministers have to decide upon by the end of the year:

- Reducing the lead content of leaded petrol throughout the Community to 0.15 grams per litre, by 1989. Only two EEC countries, West Germany and Denmark, apply the minimum limit laid down by the 1978 EEC directive. But it is likely that the United Kingdom and the Netherlands will be allowed to impose that limit in 1986.
- Introducing unleaded petrol for new models of cars from 1989, and for all new cars sold from 1991 onwards.
- Imposing a limit of 5 per cent for benzene contained in the new petrol "cocktail" dictated by the removal of lead. Benzene is thought to be the source of a particularly toxic aromatic hydrocarbon in automobile exhausts. Some EEC countries would like the 5 per cent limit to apply to leaded petrol as well.
- Reducing other exhaust emissions (carbon monoxide, hydrocarbons, nitrous oxides) to Japanese and US standards in two stages by 1995.

Last June there appeared to be a consensus among environment ministers to adhere to the Commission's timetable. But more recently Denmark, Luxembourg and the Netherlands have seemed inclined to change to US standards in an earlier single move, and West Germany announced on 19 September that from 1 January 1989 new models of cars would have to be fitted with anti-pollution devices. The law would apply to 2-litre engines from 1988.

Whether West Germany will dare to go it alone is questionable, because of EEC rules on competition and free movement of goods. The European Commission is also doubtful about the tax incentives linked to the purchase of cars which are "environmentally friendly" (*Umweltfreundlich* in German), which could be seen as an unfair subsidy for the West German motor manufacturing industry.

While British and French car manufacturers have been quick to protest about unfair competition in Europe, West Germany fears competition just as much from the Japanese, whose ready-made models already fitted with catalytic converters for the home and US markets will, they fear, invade the West German market.

Meanwhile, Chancellor Helmut Kohl has also been severely criticized by the opposition parties for bowing to the industrial lobby, and delaying West Germany's original move to lead-free petrol scheduled for 1986.

West Germany's unilateral intentions have made a breach in the European consensus and could slow down progress on emission control in Europe unless ministers can reach a compromise before their meeting on 6 December.

Once the decision on these emission controls is taken, perhaps attention will be directed to the 10 million lorries and the 10 per cent of private cars that run on diesel fuel.

In addition to other pollutants (but not lead), diesel engines spew carcinogenic unburnt particulates (smoke) into the air. So far neither the United States nor Japan has been able to solve that problem either.

Anna Lubinska

Lead and pollution

Brussels

TWENTY per cent of air pollutants such as carbon monoxide, nitrous oxides and hydrocarbons come from the exhausts of motor vehicles. Permitted emission levels have been lowered four times since the European Community started regulating exhaust emissions in 1970.

The latest proposal involves reducing emissions in two stages to the very strict US and Japanese levels. These are as follows:

	Japan (grams per km)	United States (grams per mile)
Hydrocarbons	0.39	0.41
Carbon monoxide	2.7	3.4
Nitrous oxides	0.48	1.0

The first stage — by 1989 — aims at reducing emissions of carbon monoxide by 20 to 50 per cent (depending on the type of vehicle), hydrocarbons and nitrous oxides (which together form smog) by 20 to 40 per cent, and nitrous oxides alone by 30 to 45 per cent. Although emission levels in diesel-run cars are also to be reduced, they cannot be reduced to the same extent.

But the second stage, by 1995, requires the use of further technology. Although the development of lean-burn and fast-burn engines (which would produce less pollution in the first place) has been stepped up, the most efficient anti-emission pollution technology available today is the three-way catalytic converter. Fitted to the exhaust of a car, it chemically converts polluting exhaust emissions into the harmless components of the air we breathe: carbon dioxide, water, oxygen and nitrogen. Although research has been carried out into catalytic converters which have some tolerance of leaded petrol, their efficiency is limited.

Catalytic converters now in use are damaged by lead. Hence the need, even if lead were a doubtful health risk, to remove it from petrol. In order to fit "cats", which would reduce smog, in the early 1970s, the United States had to get rid of lead first. Europe has approached the problem from the opposite angle. Anna Lubinska

Weinberg *et al.* threat from animal lib

"Researchers beware!" was one of the immediate and somewhat unexpected British responses to the *Nature* conference on the molecular biology of cancer, at Boston two weeks ago. Within a week of the meeting, a document was widely distributed to laboratories in Britain, insisting that the paper presented by R. Weinberg ("Neoplasms as uncontrolled regenerative hyperplasia") would produce "horrible tissue trauma and wound healing experimentation. . . that must be publicly revealed, legally examined, morally questioned and humanely stopped".

Weinberg was accused of secretly communicating his "wretched and detestable experimentation" at a closed meeting rather than openly publishing it in the literature. How the Animal Liberation Front, the authors of the warning, intends to "punish those responsible" is unclear, but the organization claims that it will not tolerate the use of experimental animals in cancer research. □