



## **Combating air pollution**

### *Air pollution*

#### **Peter Evans**

Air pollution was once all too visible in the cities of Britain. Dense smogs pervaded places like London, causing severe health problems in the growing industrial world. The London smog of 1952, caused the deaths of four thousand people, and led to the 1956 clean air act. In the London of today, and increasingly in cities around the world, such conditions are considered unacceptably extreme. But we know that pollution has not gone away, it's just become less visible.

#### **Prof. John Ayres, Birmingham Heartlands Hospital**

Particles, which are the sort of little bits of gritty smut if you like, which, are probably remembered by many people from the big smogs of the 1950's which led to the first clean air act, are in fact now derived from vehicles to a very large degree. and of course the source therefore is different, therefore the composition is different.

#### **Peter Evans**

The more mobile we become, the more transport contributes to pollution in the air we breathe, but, we can't blame cars and lorries for all of it.

#### **Prof. John Ayres**

Air pollution is a mix of various emissions from largely vehicles cars and lorries, but also from factories, and in particular power stations.

#### **Peter Evans**

If you'd stood on this hill thirty years ago, looking over what we still call the black country around Birmingham, smoke would have been everywhere. Today, the air seems relatively clean, and to be fair, it's a great deal cleaner than it was then. But as technologies change, so do the sorts of pollution they cause. So, while once it was obvious that an industrial process or a city heated by coal fires produced harmful emissions, today's emissions are more subtle, many invisible. So, how do we know, that the air is safe to breathe. In this programme, we're going to look at some of the technology that makes it possible for us to know. We're going to start with a form of transport that we often overlook when considering air pollution, and with some research, that was done around the town of Vlissingen in the Netherlands. We'll come back to Birmingham later in the programme. We've come to expect the air at the sea to be healthy, good for the lungs not harmful, but just as cars burn petrol, so ships burn fuels, which range from diesel to heavy oils, termed residual fuels, effectively anything that's left at the bottom of the barrel. So it's reasonable to expect that emissions from shipping might have some effect on air quality in busy ports, but what effect. That's the question that faced ship classification society Lloyds register, which carried out the Vlissingen study. It's not an easy question to answer in itself, and for Lloyds register, the study was only one part of a wider quest to look at the overall impact, of shipping on air quality. So how did Lloyds register get involved with air pollution, and how did it set about finding answers. It all began in early 1989. Lloyds were asked to comment on two papers that had been submitted to the international maritime organisation. One suggesting that atmospheric pollution caused by shipping, was greater than that caused by any other industrial source. The other, that its contribution was negligible.

#### **John Carlton, Principal Surveyor, Lloyds Register of Shipping**

When we delve a little deeper into this question, we found that most of the data, was particularly old, so there was no real data set that related to engines that had to work for their living, and were of the modern design and type. We needed to obtain data, which related to these current engines in service, and we embarked on a research programme.