



Fast efficient fumigant extraction



top right: Safety equipment used as a precaution against the absorption of toxic vapours encountered in fumigated cargo containers.

above: New equipment for removal of toxic vapours facilitates the inspection process.

Customs trials of a faster and more effective fumigant extraction system for containers are having encouraging results.

Sea cargo containers shipped internationally are often fumigated with toxic gases to thwart vermin and pathogens for quarantine purposes, and many industrial adhesives and coatings continue to give off toxic formaldehyde for some time after manufacture.

As the first line of defence at the border, Customs officers often must deal with toxic gases and vapours trapped inside sea cargo containers, which they open for inspection.

To protect the health of Customs officers, it is necessary to remove these toxic compounds from the container before the inspection begins.

To now, Customs cargo-examination facilities have relied on passive ventilation and low-intensity forced ventilation of containers.

Passive ventilation takes days to achieve the desired result on one container, and forced ventilation takes many hours.

A more effective fumigant extraction system has been found and the prototype trialled in Customs cargo-examination facilities in Sydney and Melbourne. Clearing a container of fumigants generally takes between 30 and 90 minutes depending on how tightly packed the container is and the fumigant concentration.

Designed and manufactured in New South Wales, the system consists of a vacuum pump assembly which is clipped to the opening of the cargo container. The extracted air can be released into the atmosphere directly or passed through a chemical filter for scrubbing the fumigants.

Commonly encountered fumigants in Australia include methyl bromide, ethylene dibromide, ethylene oxide, hydrogen cyanide, phosphene and sulphuryl fluoride.

It is intended that this system will be deployed around the country on completion of the evaluation in Sydney.