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UK MINISTRY OF DEFENCE USE OF OZONE DEPLETING SUBSTANCES – IMPLICATIONS OF THE NEW EUROPEAN COUNCIL REGULATION

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Most of you will be familiar with the Montreal Protocol, which controls the production of the ozone depleting substances. These have been used extensively in fire protection and refrigeration in military equipment and systems. The implications of the Protocol for the military forces of NATO states were covered in LTSS/44, and the worthy conclusions and recommendations were reported in the opening sessions of the Symposium.

I wish to describe, initially, the current legislative position on ozone depleting substances within the European Union. I will then discuss the policies that the UK Ministry of Defence has in place, and the progress that has been made, so far, in reducing use of the substances. Of course, legislation continually evolves, and I will then summarise recent developments in the European Union, finally suggesting that NATO could, perhaps, play a valuable, more proactive, part in the development of new international environmental legislation.

Within Member States of the European Union, the Montreal Protocol is implemented by a European Council Regulation. The Regulations are proposed by the European Commission, and negotiated and agreed by the European Council of environment ministers from all the Member States.

Essentially, the current Regulation, dating from 1994, imposed production bans on the CFCs and halons, similar to those required under the Montreal Protocol. But potentially more significantly, it introduced use controls on HCFCs. These included the immediate banning of their use as fire extinguishants, and the banning of their use in the production of large-scale refrigeration equipment from the end of 1999. Individual Member States are able to introduce additional controls if they so wish, and a number of countries have done so. However, there is currently no other related legislation within the UK.

Ministry of Defence (MOD) policy on ozone depleting substances was established within this legislative framework. It was built on the premise that the legislation would continue to tighten, and that use of the materials could not continue indefinitely. Policies therefore go beyond the current legal requirements.

Ministers require that MOD does not install any new applications of the ozone depleting substances, and does not use the materials in any new designs of equipment. In all existing uses, emissions are to be minimised and the materials are to be replaced wherever it is technically and economically feasible to do so.

Applications for which no alternatives are feasible are classed as MOD Essential Uses. They are supported from a central Bank of recycled materials – users themselves cannot buy the substances. This approach is intended to secure the supply of the materials for as long as needed, whilst retaining tight control on which applications are allowed to continue. The MOD's Essential Uses of CFCs and halons are largely in front-line equipment. Examples include CFC refrigeration and halon fire protection systems on ships and submarines, in aircraft and armoured vehicles, and in a few command and control centres and research facilities. The list of Essential Uses is regularly reviewed and the users must regularly re-assess the feasibility of conversion of their equipment.

Good progress in the replacement of the substances has been made in several areas, particularly in the CFC refrigeration applications. Trials of hydrofluorocarbon (HFC) alternatives have shown them to be acceptable in many applications, with modifications to equipment being relatively minor. In other circumstances, equipment has been replaced with new plant. The Royal Navy, for example, historically the largest MOD user of CFCs, has reduced its installed capacity of CFC-12 by over 80% since 1994. Technical difficulties with the conversion of halon and refrigeration systems in armoured vehicles have been solved and conversion programmes started. Halon systems in many buildings have been, and continue to be, replaced.

Generally, in these cases, CFCs are being replaced by pure HFC refrigerants, normally HFC-134a, or blends containing them. The halons are being replaced by a mixture of traditional extinguishants, such as carbon dioxide or sprinklers, the newer inert gases such as Inergen™, or HFC extinguishants such as FM200™.

But, as reported in the LTSS/44 study, there are a number of important applications where use of recycled ozone depleting substances will still be necessary for some time to come. For example, suitable alternatives to CFCs in existing submarines have only recently been confirmed as suitable, because of toxicity issues and concerns about their performance and their compatibility with air purification equipment. The necessary modifications to the equipment can only take place during planned ship refits and programmes will therefore take a number of years to complete.

Suitable alternatives to the halons in current ships, submarines and aircraft have not yet been found. Unless better options become available, they will most likely have to continue in use for the remaining life of the equipment.

Another particular difficulty concerns the replacement of halon 1211 in some portable extinguishers. Whilst the extinguishers can be replaced with traditional alternatives in the vast majority of cases, they are still necessary in aircraft and armoured vehicles. In these situations, occupants need a safe and effective extinguishant that will not obstruct them in the performance of their duties.

In most of the remaining Essential Uses of the halons, replacements have not been identified for one or more reasons. Normally, the available options do not perform well enough; or they are too toxic in use, or they possess unsuitable physical or chemical characteristics. But work continues to find and evaluate potential solutions.

Last Summer, the European Commission proposed a new Regulation on ozone depleting substances. It was based on the assumption that alternatives were readily available for nearly all the applications of CFCs and halons. Consequently, the Commission advocated a significant tightening of controls, including use controls on the CFCs and halons for the first time.

For example, it was proposed that use of CFCs, including recycled CFCs, in the maintenance and refilling of refrigeration systems, should be banned from the end of 1999. No exemptions were considered to be necessary. It was also proposed that all use of the halons, including recycled halons, to refill or top-up fire protection systems would be banned from the end of 2003. The Commission did recognise that not all the halon uses could be replaced. A limited number of Critical Use exemptions were envisaged, for aircraft, military vehicle crew compartments, and the inerting of occupied spaces where flammable liquid release may occur. Only the halon portables used on aircraft, and by military and police forces "on persons", were considered to be critical.

It was quickly appreciated that the MOD could not possibly comply totally with such a proposal. Even if it might be possible to install alternatives within the time-scales specified, any of the available options would result in an unacceptable reduction in the safety of personnel and the performance of the systems. If these risks were to be accepted, most front-line equipment would then have to be called in for modifications, at enormous cost. Finally, it was expected that the

capacity of the UK defence industry would be inadequate to complete the necessary work in time. Even with the best efforts, operational capability of UK forces would have been unacceptably compromised.

Any decision to maintain operational capability and not comply with the environmental legislation would undoubtedly be a politically sensitive one.

So the MOD became actively involved in negotiations, through the UK Department of the Environment, Transport and the Regions. We managed to convince the UK negotiators that the proposal would cause insurmountable difficulties. It was agreed that the UK would attempt to negotiate a deferral of the CFC use ban to give all users (not just the military) more time to convert. The UK would also seek some form of flexible exemption mechanism for the halons and CFCs used by the military sector and other "critical users" in industry.

During early negotiations, these suggestions met with no support at all from other European Union Member States. None could see that the UK would face any real difficulties in replacing all its remaining uses of CFCs within a year or so. The UK negotiating team modified its position several times, initially agreeing to the principle of a fixed list of halon critical uses, but suggesting, with a number of other countries, a few additional applications. But there was, for some time, still no support for any exemptions to the CFC use ban.

However, in the steady progress towards a compromise Regulation to which all Member States could agree, the UK delegation managed to gain the most important changes sought by the MOD. The CFC use ban was deferred until the end of 2000, with the possibility of military exemptions from then until the end of 2008. Any such exemptions will be considered and authorised by the European Commission on a case by case basis. The list of halon Critical Uses was expanded to cover the most important remaining military applications, including halon 1301 in occupied spaces and engine compartments of military vehicles and naval vessels and in occupied military communication and command centres, and halon 1211 in aircraft engines, cargo and dry bays. But the legislation was rushed through so quickly that exactly what is and is not covered is not really clear. A few technical issues were not resolved, and still have to be clarified.

Several changes agreed during the negotiations went against the interests of remaining users. There was a further tightening of some of the use controls. For example, the halon use ban was brought forward to the end of 2002 – some negotiators wanted to bring it forward to 2000, the same as for the CFCs. It was also agreed that non-critical halon systems must be decommissioned by the end of 2003, so users do not have the option of retaining their systems for "once only" protection.

A few minor changes to the list of halon Critical Uses need to be argued during the annual review process. Otherwise, MOD will be forced to convert some of its halon 1211 systems, in aircraft and military vehicles for example, to halon 1301. Since the latter has a much higher ozone depletion potential, the argument for the changes would seem to be convincing, but it is still to be made and accepted.

It is important to note that, at this time, the European Parliament has yet to evaluate and approve the version of the text agreed by the Council of Ministers. Historically, the Parliament is notably greener than the other organisations, and it may yet be necessary to defend the hard-won concessions described here. Only when the Parliament and Council have both agreed the text will the Regulation be adopted and come into effect.

A number of lessons have been learnt during the processes so far that will lead to the new Regulation. It seems to be very difficult for an individual defence ministry to act effectively to influence the development of environmental legislation in Europe.

Those who draft and negotiate the legislation are often not sufficiently aware of the detailed environmental implications and technological complexities of maintaining military capability. With one or two exceptions, good links between the relevant ministries do not seem to have been forged or maintained.

Yet the legislators are exposed to organised lobbying from interest groups in industry and the environmental movement. These interests are not necessarily compatible with those of the military. In this case, they were clearly against the interests of the UK Ministry of Defence and other responsible users of the ozone depleting substances. In the end, the measures in this environmental legislation seem to have been defined more by economic and trade concerns. Arguably, the ozone layer could be better protected, with a range of measures to ensure the responsible management of the phase out of the remaining uses of the substances. Instead, blanket bans on usage will almost certainly be introduced without enough consideration of how to ensure that the unwanted materials are safely collected, or what to do with them then, or who might pay for their destruction. Unless these issues are resolved quickly by all the Member States, significant emissions of the gases may result in the near future.

To try to prevent some of these problems from occurring again, I feel strongly that there is a need for NATO Defence ministries to act more closely together on environmental matters, and particularly during the development of new international legislation. It is especially important to liaise with and inform those in the European Commission who draft the legislation. At the drafting stage, there is opportunity for detailed discussion of issues such as technical and economic feasibility, and the impact of possible measures on military organisations and on the environment. Afterwards, during negotiations, there is much less opportunity to argue for substantial changes in the philosophy or approach of any proposal, should they be thought necessary or desirable. Reasoned arguments tend to be ignored or forgotten in the drive towards an acceptable political compromise.

I think there would be much to gain from a single NATO focus for co-ordinating NATO Member States' activities on environmental issues, and for representing the interests and concerns of the militaries at both the European and international level. NATO should take a more proactive role in the development of legislation. It should also ensure that legislators and the public appreciate the positive attitude that now exists towards environmental protection in military organisations, and the range of skills and expertise that exists. It should emphasise the significant investment and progress that have been made, and continue to be made, across the full range of environmental protection issues. But it should also ensure that legislators are aware of the genuine difficulties that some military organisations face, particularly with respect to legacy issues.

Precisely how this NATO focus might be established, I do not know. But I would like to see some form of permanent environment committee, drawn from member states, and ideally supported by a NATO technical and policy secretariat.

The benefits might be numerous. It could easily be argued, for example, that:

- Military interests would be more effectively represented;
- Information and experiences would be more effectively shared between states;
- Environment-related research activities would be better focussed and co-ordinated;
- Interoperability would be enhanced;
- Impact of NATO forces on the environment would be reduced;
- Costs and impact of compliance efforts would be reduced;
- Better legislation would result.

But there is also no time to waste. There are a number of important environmental legislative initiatives that are gathering momentum. To give just one example, although it is probably the most significant one, there is the Kyoto Protocol. This has established legally binding limits on the emissions of the main greenhouse gases, which include the hydrofluorocarbon gases now being adopted as replacements for the halons and CFCs.

Although there are no specific controls on HFCs mentioned in the Kyoto Protocol, each signatory country must consider a range of options if it is to reduce its emissions of these greenhouse gases. Use controls are a very obvious option.

Since most military organisations are beginning to rely on the HFCs in particular, in a number of applications, simply because no other acceptable options exist, the military perspective needs to be brought to the attention of those involved in the legislative processes. This is being done to some extent through the relevant expert committees, by individuals and single countries acting alone, but the concerns, suitably focussed and co-ordinated, need also be taken straight to the environmental legislators themselves. Undoubtedly, NATO could, and should, play an important part in this activity.