# SEA POLLUTION

## BRITISH CALL FOR ACTION BY ALL MARITIME COUNTRIES

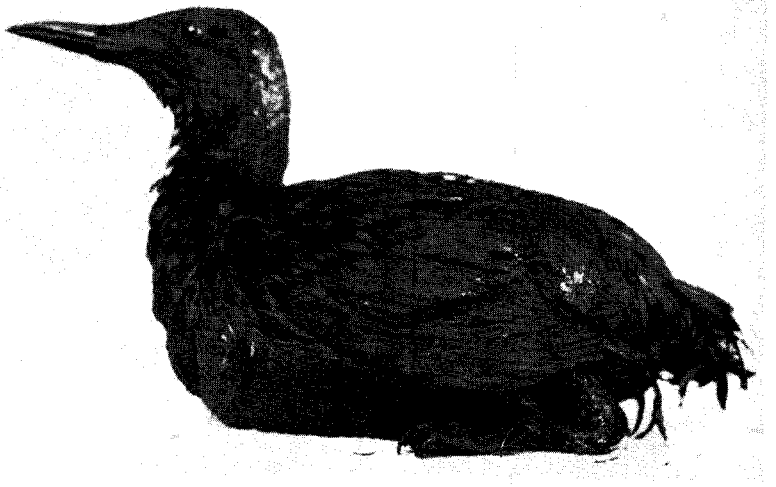
By Lieut.-Colonel C. L. Boyle

To secure international action to stop oil pollution of the sea the British Government has invited some forty other maritime countries to send representatives to a conference in London in April. For years the pollution by oil of coastal waters and of the shores of Britain and other countries has been an expensive nuisance to humanity and has led to the lingering and horrible death of countless sea birds. It has now become intolerable. It is true that since 1922 discharge of oil within three miles of the coast has been legally prohibited and that in 1926 ship-owners of many countries voluntarily adopted a 50-mile limit. Unfortunately little success has rewarded these efforts.

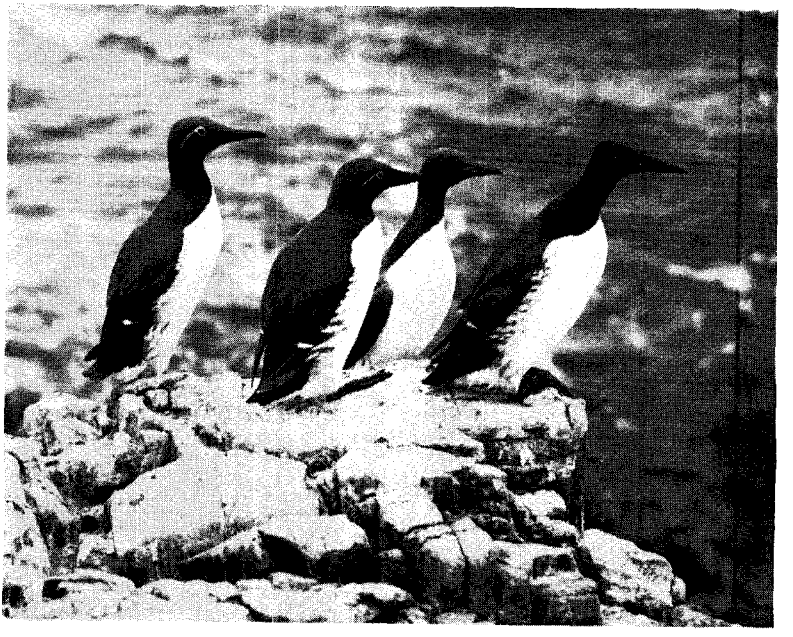
Many private organizations concerned with the protection of nature, besides public bodies dealing mainly with beach amenities, have tried to tackle this evil, but until 1952 there was little co-operative action between them. In March, 1952, however, the Co-ordinating Advisory Committee on Oil Pollution was formed, combining very wide interests, and in July, 1952, the Ministry of Transport appointed an official committee to consider what measures could be taken. A year later this committee, under the chairmanship of Mr. P. Faulkner, issued its report,* setting out not only the causes of pollution but also what must be done to end it.

The oily refuse on the sea and beaches comes from only two important sources—tankers and oil-burning ships other than tankers. During the voyage of a deep-sea tanker carrying a cargo of crude oil, an oily sludge collects at the bottom of its tanks; this sludge—in, for example, a tanker coming to Britain from the Middle East—may amount to 20 or 30 tons. If there are no facilities at the home port for the reception of the sludge, it must remain in the tanks. But, before leaving port again, the empty tanker fills some of its cargo tanks with sea water as ballast. This, of course, becomes mixed with the sludge and other oily matter from the tanks. At sea all tanks are cleaned and all contaminated water pumped overboard; this may amount to between 4,500 and 7,500 tons of liquid from a single

* Report of the Committee on the Prevention of Pollution of the Sea by Oil. H.M. Stationery Office, 1953. 2*s*.



OILED GUILLEMOT PICKED UP BY AN R.S.P.C.A. INSPECTOR AT BLACKPOOL.



CLEAN GUILLEMOTS. [*Photograph by Eric Hosking*

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tanker. Tankers which observe the 50-mile limit do not carry out this process nearer shore.

The problem of coastal tankers is slightly different, for these usually carry not crude oil, but kerosene or fuel oil. Their tanks are generally cleaned only during repairs, when tank washings are discharged into port facilities; the problem of the disposal of their oil-contaminated ballast water remains.

Most oil-burning ships other than tankers have permanent tanks for water ballast, but it is often necessary for them to use also their empty fuel tanks for this purpose. Before the ship refuels, the sea water in these tanks, now contaminated with oil, is usually pumped into the sea.

## Film over Wide Area

Crude oil washings pumped overboard spread rapidly as a film over a wide area. In laboratory experiments the film has been found to coalesce and to form, on an artificial beach, a thin dirty line made of specks of brown sludge clinging to the sand. A very large proportion of the pollution on coastal waters and beaches is crude oil sludge and washings from tankers.

Fuel oil washings also spread very quickly from their source. Then they seem to coalesce into a resinous emulsion of oily water and air, resembling a heavy grease more than the original oil. The oil on the plumage of dead sea birds is usually found to be this fuel oil.

Much investigation and many experiments have been carried out to discover the extent to which the oil and oily emulsions can spread over the surface of the sea and how long oily films will persist. No exact limitations of either time or distance have been found. The oil seems to be able to float indefinitely. Even if it thins out so much as to become invisible, it may persist and drift ashore.

The problem can be simply resolved into two parts. In dry cargo ships—i.e. all oil-burning ships except tankers, the question is how to prevent discharge of oily water into the sea, when fuel tanks which have been carrying ballast water are emptied. In tankers the question is how to prevent the discharge into the sea of oily sludge residue and oily washings from cargo tanks.

In the case of dry-cargo ships, if the oily water is not to go into the sea, either oil and water must be separated on board the ship or the mixture must be got rid of in port. As the provision of sufficient facilities at all ports for the reception of all contaminated ballast water from ships is not practicable,

the Faulkner Committee recommended, subject to certain exceptions, the compulsory fitting of separators in all new ships which will use tanks alternately for fuel oil and water ballast; and further that a date should be fixed by which time existing ships, again with certain exceptions, should be similarly equipped. On 30th June, 1952, 745 out of the 1,322 ships investigated were found to be fitted with separators.

## Port Facilities Needed

Unlike dry-cargo ships, tankers do not need to use their fuel tanks for water ballast—their cargo tanks provide ample capacity; therefore they need not wash out fuel tanks before refilling with fuel oil for their own use. If, however, the process of washing out their cargo tanks at sea were entirely stopped, vast amounts of oil-contaminated sea water would have to be dealt with in port. But this amount of oil-contaminated water need neither be brought to port nor pumped into the ocean. An empty tank can be used as a " slop tank " and the contaminated water pumped into it. After separation of oil and water has taken place by gravity in the " slop tank ", upwards of 80 per cent of the liquid will contain only a negligible amount of oil and can safely be discharged overboard. This method is already sometimes used by tankers which do not wish to go outside the 50-mile limit, but it presupposes that the tanker is going to a port where the remaining 20 per cent of oily matter can be received.

The committee considered that, as the above procedure is practicable, the compulsory fitting of separators in tankers is not necessary. What is necessary is the provision and compulsory use at all ports of adequate facilities for dealing with the remaining oily residues from ships.

The committee also investigated the question of the disposal of the oily residue on shore. They discovered that at least five refineries were already prepared to receive shipments of oily refuse and some were already doing so. Waste oils, even when they have to be shipped coastwise to a refinery, may, at the least, have some value to offset the cost of providing reception facilities.

## Interim Palliative

The fitting of separators in all ships and the provision of adequate port facilities will take time. Meanwhile a palliative is necessary. The Faulkner Committee recommended that the discharge of oil should be prohibited in a zone to include

the whole of the North Sea, the Bay of Biscay, and the Faroe Islands, and to stretch from the British Isles, nearly 2,000 miles W.S.W. across the Atlantic. Britain can, of course, apply the compulsory fitting of separators and the compulsory use of port facilities only to ships on the United Kingdom register. The same applies to the prohibited zone, which is designed solely to protect the shores of the British Isles. Such unilateral action cannot solve the problem even so far as British shores are concerned; more than half the tankers bringing oil to the United Kingdom are registered in foreign countries. Pollution on foreign shores, except those adjacent to the prohibited zone, would hardly be affected. The sea birds can be saved and the beaches kept clean by international action, and by no other means.

An unofficial international conference was held in London last October, presided over by Mr. James Callaghan, chairman of the Co-ordinating Advisory Committee, and opened by Mr. Alan Lennox-Boyd, Minister of Transport. Representatives of Belgium, Denmark, Finland, the Netherlands, Norway, Sweden, and South Africa, as well as Britain, took part and twenty-six other nations were represented by observers. During the conference new aspects of the problem presented themselves: pollution had reached the Antarctic, where seals had been seen covered in a thick tarry mess, and penguins clogged with oil, waiting a slow death. It was stated on behalf of British shipowners that they had accepted the Faulkner report. But throughout the conference one theme was uppermost, the need for international action. This is the theme, and the justification for the April meeting.