

# HOLOCAUST ON THE CLYDE

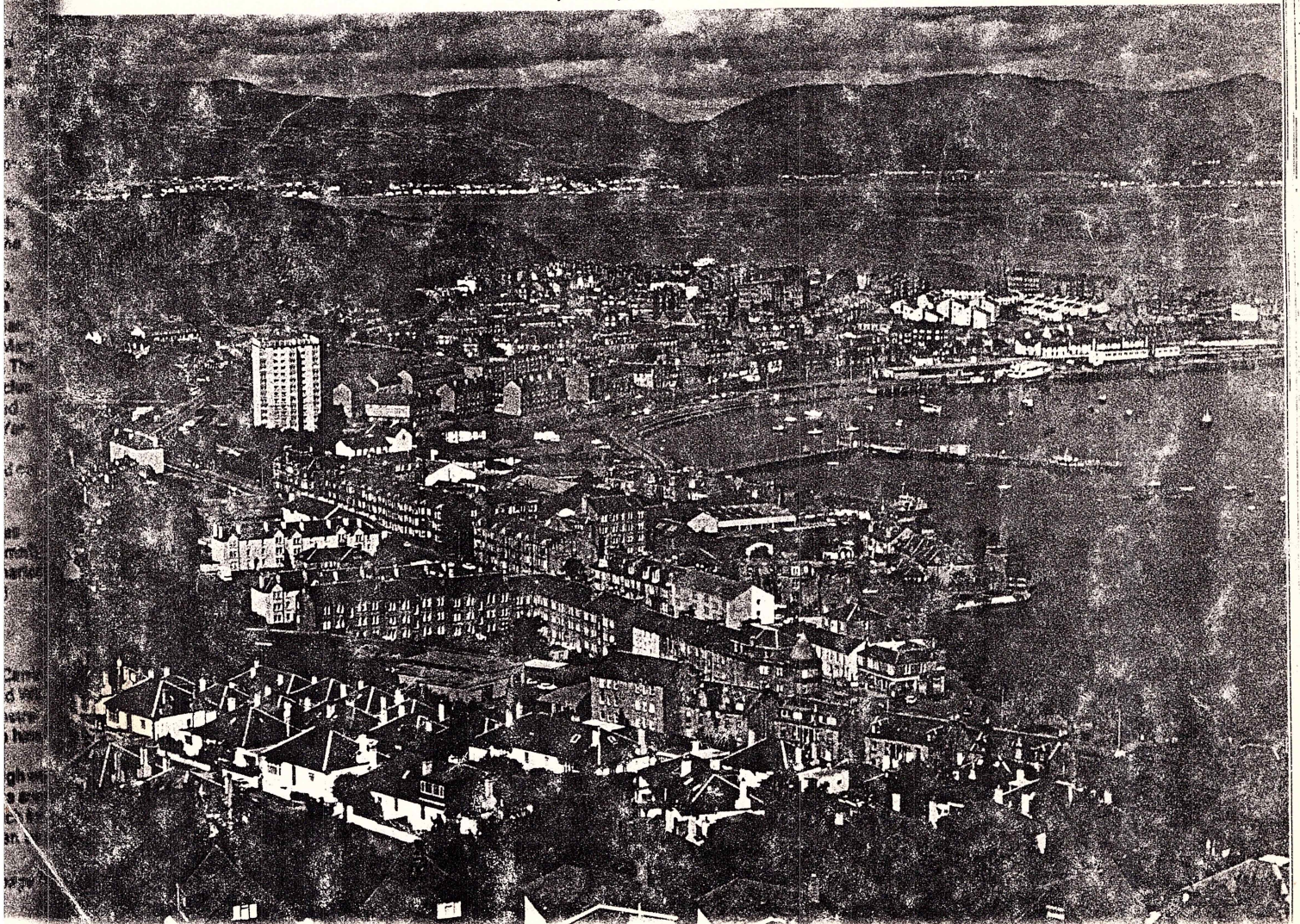
The government's announcement that a £6 billion Trident investment will be based on the Clyde has raised a storm of protest. George Rosie examines Scotland's vulnerability in the event of nuclear attack.

There are many imponderables in the strategic equation, but one factor is absolutely certain; the Clyde and the west of Scotland rank very high on the 'hit list' which the Kremlin would issue to their missile commanders and 'backfire' pilots in the event of a war. Since World War 2 there has been a profound shift in the strategic importance of Scot-

land in general, and the Clyde in particular. The Clyde is now a front-line target, which houses not only HMS Neptune at Faslane, the base for Britain's nuclear deterrent, but also a nuclear weapons store at Coulport, the US Navy's supply and repair base at Holy Loch, and (on the perimeter) RAF Machrihanish, an important NATO 'forward' airbase (which contains another store for nuclear weapons, guarded round the clock by US military personnel).

Of the strategic 'tapestry' around the Clyde by far the most significant element is HMS Neptune at Faslane, which, according to the Royal Navy is "quite simply the most important naval base in Europe. It is very very important." What remains of the United Kingdom's independent nuclear deterrent is carried in the hulls of the four Polaris submarines which use Faslane as their base; HMS Revenge, HMS Renown, HMS Repulse, and HMS Resolution. Each is equipped with 16 American built A-3 Polaris missiles (although with British warheads) and can lob them on targets 3,000 or so miles into Eastern Europe. A £1,000 million spending spree code-named 'Chevaline' was carried out recently to update the warheads and guidance systems of the Polaris missiles. "After that of course, we

*A view of the Clyde from Dunoon.*



ve the Trident programme coming along" says the Ministry of Defence. The government have already announced that the £6 billion worth of Trident hardware will be based at Faslane. Less well known is the fact that Faslane is also the base for the Royal Navy's Third Submarine Squadron, a small fleet of hunter-killer submarines (five of which are nuclear powered, although not nuclear armed). Their job is to guard Atlantic convoys against Soviet submarines "and to make sure that our own Polaris boats can get in and out of the Clyde." The large stock of nuclear warheads for the 64 Polaris missiles are kept buried in the hills behind Coulport on the other side of Gare Loch from Faslane, while a few miles away, round the Holy Loch, the United States Navy run a supply and maintenance base for their fleet of Polaris boats. (Strategists think the Holy Loch base has a short future; the US Polaris boats are due to be replaced by Tritons, whose longer range will allow them to operate out of bases on the continental US, like Norfolk in Virginia).

All of which, of course, makes the Clyde a prime target. In fact, in the recent 'Square Leg' civil defence exercise, the British military and civil-defence planners decided that the Russians would probably drop around eight nuclear weapons onto the Clyde, 15 megatons in all (i.e. the explosive equivalent of fifteen million tons of TNT), a force thousands of times more powerful than the weapons which laid waste Hiroshima and Nagasaki in 1945. The 'Square Leg' scenario is calculated on the best information the NATO intelligence networks had to offer, and ran thus:

HMS Neptune at Faslane would be destroyed by a *five megaton* groundburst.

The nuclear weapons store at Coulport would be hit by two, one megaton groundbursts.

The US Navy base at the Holy Loch would suffer one, megaton groundburst.

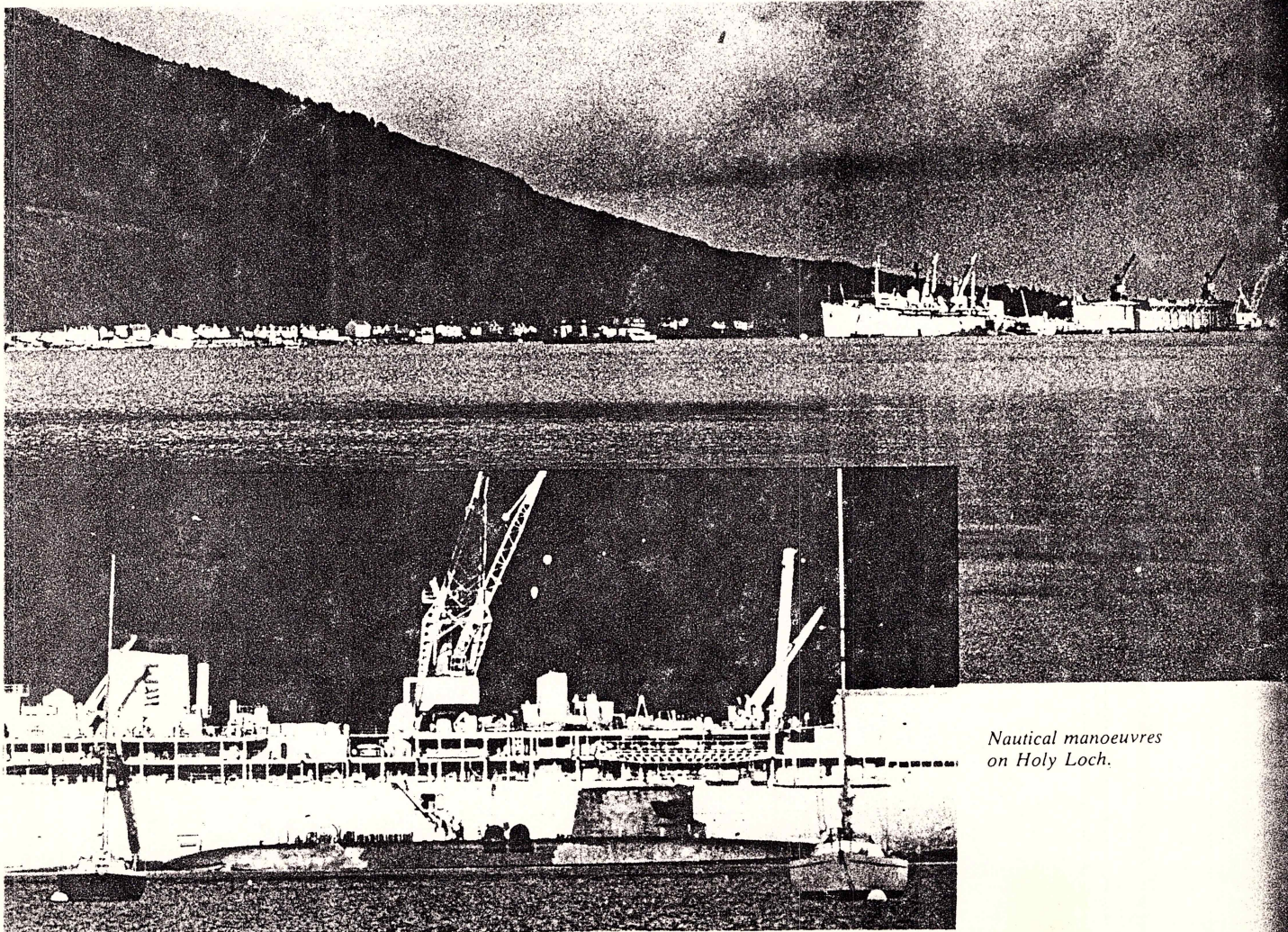
A one megaton waterburst would be dropped in Gare Loch to block the exit of any Polaris/Trident boat which might have escaped the initial attack.

Another one megaton waterburst would be dropped in the mid-Clyde estuary, with a view to flooding Greenock, Gourock, Helensburgh, Dumbarton, Clydebank and most of Glasgow.

6. The NATO base at Machrihanish would be destroyed by two, one megaton weapons (one airburst and one groundburst).
7. Glasgow itself would be hit by three, one megaton bombs, one airburst over Bearsden, and two at Rutherglen (one airburst, one groundburst).

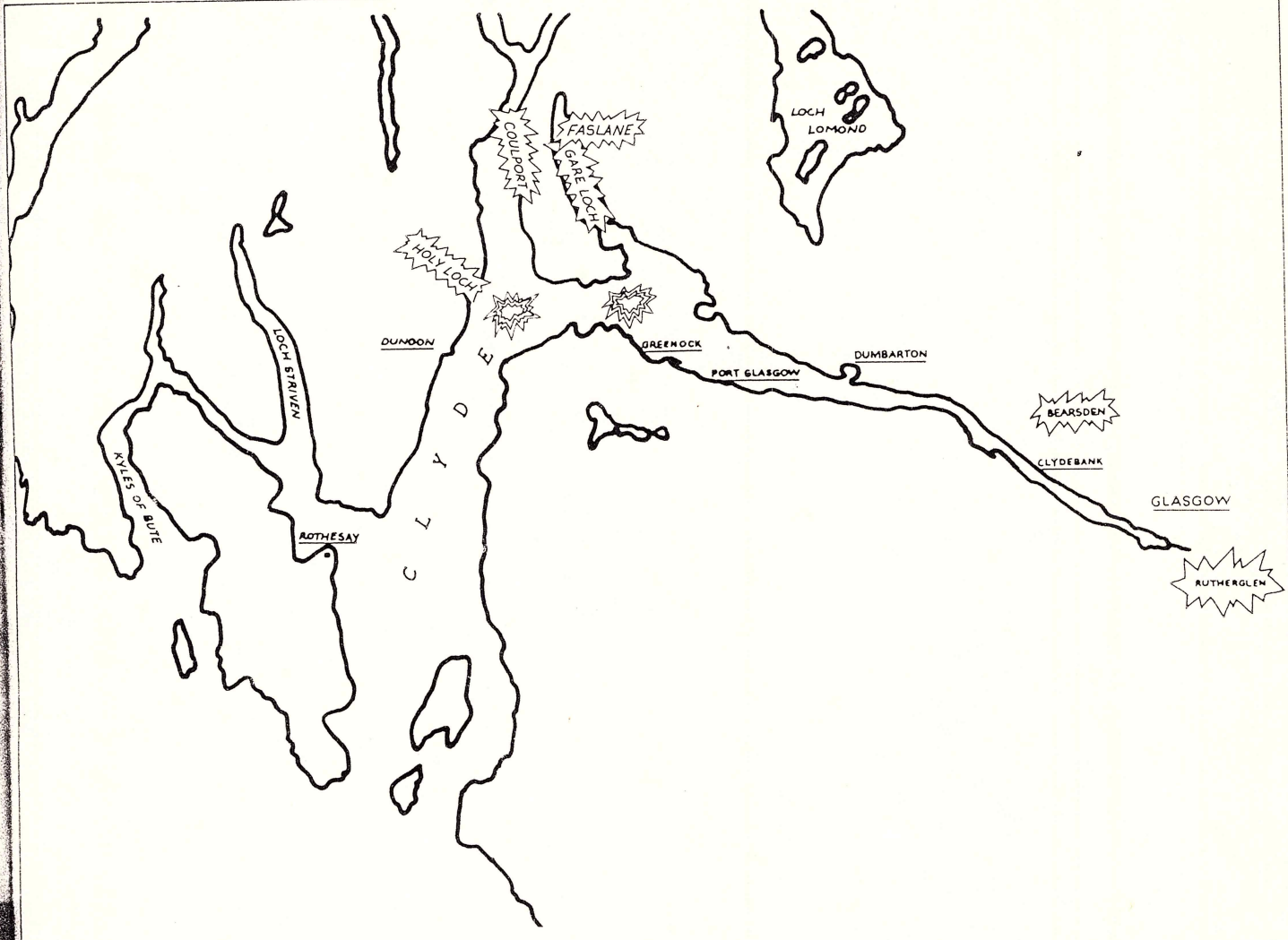
This mixed 'cocktail' of groundbursts, airbursts and waterbursts would have the most devastating effect on the entire Clyde estuary. All three varieties of explosions have different characteristics. A *groundburst* (i.e. a weapon which explodes at ground level) would suck up large quantities of earth, dust, debris (and human remains) contaminate it all with a dose of lethal radioactivity, then deposit it back on the ground. The only 'good' thing about a groundburst is that 'an appreciable amount of energy' (in the official jargon) would be dissipated forming a deep crater. An *airburst* on the other hand (i.e. a weapon exploded in the air above the target) has the effect of maximising the blast damage, while at the same time producing a much greater 'spread' of radiation. A *water burst* (i.e. a weapon detonated just under the surface of water) would have the effect of forming a cloud of radioactive vapour, which would condense in the chilly upper reaches of the atmosphere, and turn into lethal rain.

All of which raises the question, what would be the effects of such a devastating spread of nuclear thunderbolts on the Clyde? The answer, of course, is that nobody *really* knows. Government planners may (or may not) have a shrewd idea, but they are saying very little (in case they create panic?). But a large and growing number of people outside of government have been pitting their expertise and imagination against the question, and have been coming up with some chillingly well-informed scenarios. By far the most disturbing contribution to the nuclear debate has come from the ranks of the medical profession (a body of men and women not noted for their radical stances on anything). Over the past year an organisation calling itself the Medical Campaign Against Nuclear Weapons (MCANW) has been sprouting branches all over Britain, and some of their Scottish members have put together a hard-headed, and devastating, picture of the likely effects of a nuclear assault on Scotland, and on the Clyde/Glasgow area in particular.



Nautical manoeuvres on Holy Loch.

The land po  
a milli  
million  
900,00  
Scotlan  
areas a  
the Cl  
indeed  
The  
that ro  
to the l  
damag  
stripp  
by red  
ation.  
doctor  
in Sco  
Anc  
struct  
buildi  
the pr  
the in  
which  
the co  
object  
point  
better  
The  
would  
place  
the ef



Our map shows the Clyde region where a "mixed cocktail of groundbursts, waterbursts and airbursts" would devastate the entire estuary.

The casualty figures are nightmarish. Out of a total West of Scotland population of around 3,500,000 the estimate is that 30% — over a million people — would be killed. While another 45% — or 1.5 million — would be seriously injured. A mere 25% or less than 900,000 would be left to (literally) pick up the pieces. The rest of Scotland would suffer in much the same proportion, particularly the areas around the Firth of Forth and the Firth of Tay. The survivors on the Clyde could expect no help from any quarter of Scotland (or indeed any quarter of the UK).

The doctors, physicists and biologists of the MCANW estimate that roughly 80% of the buildings around the Clyde — from Dunoon to the East end of Glasgow — would either be destroyed utterly, or be damaged seriously. Even light damage such as blown-in windows, stripped roofs, and ruined doors would serve to compound the horror by reducing the amount of shelter available from the ensuing radiation. "The government tell us to white-wash our windows" says one doctor. "What's the point, if there will be hardly a window left intact in Scotland. It's a nonsense."

And while the human frame is an admirably flexible and resilient structure (and can, in fact, withstand blast which would ruin rigid buildings) there is a limit to its resilience. People who have survived the primary blast, are pathetically vulnerable to what scientists call 'the indirect effects of blast', i.e. the blizzard of high-speed projectiles which the blast carries with it. 'Blast death therefore can result from the collapse of occupied buildings, from people being blown against objects or from projectiles and falling masonry' as the MCANW point out in their pamphlet 'NUCLEAR WAR' 'prevention is better . . .'

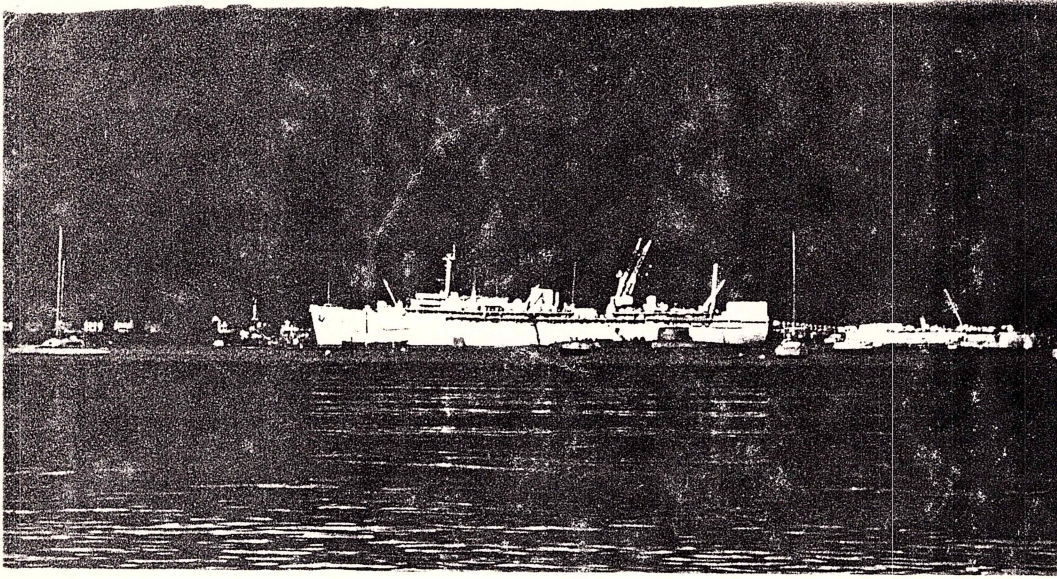
The two megaton waterbursts at Gare Loch and the Clyde estuary, would create catastrophic flooding, as the millions of tons of displaced water 'bored' its way up and down the Clyde. Calculations of the effect of waterbursts are hard to come by, but when the Ameri-

cans tested a paltry 20 kiloton bomb at Bikini in 1946 (a bomb 1/50th of the size of a one megaton bomb) the explosion displaced more than a million tons of water, and created a primary tidal wave more than 90 ft. high. Two megatons in the Clyde would be a different matter entirely, especially as the effect would be concentrated by the hills on either side of the river. All the towns on both sides of the Clyde would be hit by fearsome floods, and thousands of survivors crouched in cellars and under staircases (as the government recommends) would be drowned like rats in traps.

One of the characteristics of nuclear weapons is that they generate mind-numbing degrees of heat, and the entire Clyde area would become a 'fire-zone' with huge fire-storms ripping through the streets (as happened at Hiroshima, Nagasaki and, indeed, Dresden in 1945). In Hiroshima, the big majority of the people killed died from burns. The Clyde could expect the same. The fact is, that if 18% of the skin of an adult body is burned (or 12% in the case of a child) the loss of fluid and protein is so great, that death is inevitable. The trauma of the burn causes the body to stop feeding the blood supply to non-vital and then vital organs.

"The treatment for burns is very intensive" explains Dr. James Dyer, a consultant at the Royal Edinburgh Hospital and one of the founder-members of the MCANW. "Patients with burns need constant nursing, sedation, all kinds of pain killers, drips and massy supplies of protein and anti-biotics. None of that would be available. In fact right now we have the kind of facility for about 30 patient. That's all, Glasgow can handle about 100 or so." So what hope there for the hundreds of thousands of badly-burned survivors of nuclear attack? "None at all" Dyer says. "Most of the doctors and nurses would be dead anyway."

Most of the people who survived the blast, the flooding, the heat waves and the firestorms, would fall victim to the radiation from the bombs and missiles. Almost everyone who was subjected to high



*Submarines at Holy Loch.*

loses — 400 to 600 rads — would die off fairly quickly, after a few days of vomiting, bleeding, hair loss, diarrhoea and misery. One of the effects of radiation is to reduce the production of white cells in the blood, so the body's capacity to fight off infection is drastically lowered. Colds and flu would become fatal, minor cuts would result in death, trivial scratches and grazes would kill hundreds. Long term survivors could expect to be ravaged by a plethora of cancers, ranging from leukaemia, to cancers of the thyroid, breast, bone, lung, stomach, and lymph glands.

In fact, most of the doctors, biologists and medical specialists of the CANW agree that the people snuffed out in the first attack would be the lucky ones. For the survivors — injured or intact — life might not be worth a candle. The ruined towns around the Clyde would be littered with hundreds of thousands of rotting corpses, and survivors would be stunned, feeble and enervated to dispose of them. "Which would mean hordes of rats and mice" says Dr. Ken Jones of Edinburgh University's department of genetics. "There would be plenty of

corpses for them to feed on, so we would be overrun with rats, probably carrying plague and other diseases." Jones points out that many lethal diseases — like cholera, typhoid, hepatitis etc. — are only kept at bay by good, well-maintained drains, sewers and a clean water supply. All of which would be out of the question in the aftermath of a nuclear attack. Flocks of survivors could expect to die from a loathsome spread of medieval-type diseases.

What the psychological/social effects would be the doctors can only speculate. Other disasters, even Hiroshima and Nagasaki are not comparable. The rest of Japan was untouched by the atomic bombing, and within days emergency relief was being rushed to the devastated cities. But in the event of a full-scale nuclear attack on the Clyde, there would be no emergency relief, no help from the outside. Only an apocalypse of deranged and demented survivors, either in a state of panic or apathy, scratching for food and shelter in the disease-soaked ruins of what was once a great and thriving conurbation. □

*On the East Coast at Grangemouth, Scotland's industrial core could be wiped out at the touch of a button.*

