vessels. Bombs exploded all around the convoy with little damage, until a most serious incident occurred: there was a direct hit on the *Rohna* on our port side by an object with flames trailing behind it, apparently from beneath one of the aircraft, and at one stage seemingly heading for us. This, in fact, was a glider bomb, and it caused the unfortunate vessel to explode into engulfing flames almost at once. The casualty list was obviously high. The sergeant and I, having witnessed this with horror, then saw that a bomb was dropping on the *Highland Princess*, and, indeed, appeared to be coming straight for where we stood on the port side aft. It is strange that bombs seem to fall slowly from an open sky, but this one missed the side of the ship just where we were standing by a few yards. There were no casualties because the bomb failed to explode, but the sergeant and I were soaked as it hit the water. The unfortunate *Rohna* was left behind blazing, and years later we learnt that those of us who saw the incident had possibly witnessed the greatest troop

transport disaster of the war, the casualties numbering 1170. Over half of those on board were killed.

The next attack was off Crete on 29 November. A ship's concert was in full swing, the music again being provided by the RAMC orchestra. The figure shows a copy of the programme.

Once more their performance was interrupted by alarm bells and again we went to our stations. This time we saw the *Orion* being hit, but the bomb did not explode and seemed to bounce across the ship to land in the water on its port side. At least one aircraft was shot down.

The RAMC orchestra reached Port Said safely, and on their return to civilian life some of its members became household names in the world of entertainment. It was clearly good fortune that they were not casualties in a disaster comparable to that of the *Rohna*.

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Successful cardiac resuscitation with electricity in the 18th century?

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Today's treatment of cardiac arrest is based mainly on simultaneously applying external cardiac massage and electrical defibrillation or cardiac pacing. These methods are often highly successful, and have become standard treatment all over the world. External cardiac massage had been described in the 18th century, but was more systematically applied in 1958-60 by Kouvenhoven¹ and his group at Johns Hopkins in Baltimore. The first report on defibrillation by electric shock in ventricular fibrillation is attributed to Beck.² Zoll³ was the first to report a temporary response to electrical stimulation in asystole. Standard textbooks on the subject⁴ mention no earlier attempt to use electric shocks in cardiac resuscitation.

I therefore thought it appropriate to call attention to a communication from 1774 that appeared in the *Transactions of the Royal Humane Society*.⁵ This society was formed in England in 1774 for the purpose of restoring life in people who appeared to be dead after accidents such as drowning. Reports on incidents in which resuscitative methods had been successful were presented at regular meetings and published in the proceedings of the society. In the proceedings for 1794 there is a communication (fig 1) about a child, Sophia Greenhill, who became unconscious after a fall from a window, appeared to be dead, and was declared dead by surgeons at the Middlesex Hospital in London. She was then given electric shocks, presumably produced by a friction-type electricity machine. When shocks were transmitted "through the thorax" a regular pulse was established, and afterwards the child was apparently restored to complete health. In a comment on this case, Mr W Henly, FRS, suggested (fig 2) that the immediate application of electric shocks to the brain and heart might be particularly useful in cases in which the organs are apparently undamaged and "only their motion suspended."

These observations, recorded in the style of the period,

obviously do not prove that the child had cardiac arrest and that the electrical stimuli caused the heart to resume normal activity. This seems, however, to be the most satisfactory explanation for what occurred. That the event occurred in a hospital and

FIG 1—Original report by Mr Squires on use of electric shocks in resuscitation in 1794.

IN CASES OF APPARENT DEATH from *drowning, &c.* wherein the organs are found, and only *their motion suspended*; instead of losing time in the application of slight stimuli, why not have recourse to the most potent stimulus in nature, which can instantly pervade the inmost recesses of the animal frame? —Why not immediately *apply electrical shocks* to the BRAIN and HEART, the grand sources of motion and sensation, the *primum vivens et ultimum moriens* of the animal machine?

W. HENLY.

FIG 2—Extract from statement by W Henly, FRS, on use of electricity in resuscitation. (Both reproductions from *Transactions of the Royal Humane Society*, 1774.)

that the child was initially pronounced dead by two members of its staff lends credibility to this interpretation.

I think that this communication deserves to be rescued from oblivion, since it constitutes further proof of the imagination and daring of British doctors in the 18th century. Their application of electric shock to the heart as a resuscitative measure predates by more than 150 years what are generally considered to be the first reports of this therapeutic procedure.

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Outside Europe

The medicine of ocean yacht racing

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Since the confirmation that the world is round man has been obsessed with circumnavigation. Successful trading for exotic foods and fabrics in the far corners of the earth brought power and prosperity to European countries. At first it was enough just to return from these arduous voyages, but by the late eighteenth and early nineteenth century speed of passage became paramount. The highest prices for grain and tea went to the first ship home. Fierce rivalry stretched the men, the ships, and their masters' skill to the limit. From these beginnings the ocean yacht races of today have evolved.

In 1973 the first fully crewed round the world yacht race took place under the sponsorship of Whitbread Brewery and the Royal Naval Sailing Association. Over 150 men and women in 17 yachts took part. They were away from land for periods of up to 60 days and endured every weather condition that the oceans can offer. In 1977 a second round the world yacht race took place.

This paper records my medical experiences of the first race as a competitor and of the second as an advisor. The races were organised in four legs with stops at Cape Town, Sydney (Auckland on the second race), and Rio de Janeiro. All yachts were class 1 and ranged from 50 to 84 feet. Crews varied from five to 14 with the size of the yacht. With the race beginning in

the English autumn it was hoped that the best weather conditions would be encountered during the voyage, but even in summer in the Southern Ocean icebergs and freezing wind and seas were a hazard.

Preparation

The safety rules for the race were extremely rigorous and safety equipment was carefully inspected before the start of each leg. Each yacht had to have an adequate medicine chest including two doses of papaveretum per crew member and a medical manual. The presence of a doctor in the crew was not obligatory, but common sense dictated that someone with medical knowledge would be a great help. There was no place for heroic surgical deeds but a great need for advice to the captains on the severity of illness or injury.

Drawing from experiences on the first race, I fitted out a medical chest and compiled a booklet for the second. The content of the medical chests was adjusted for each crew, taking into consideration the various pre-existing ailments on the different yachts. It is a common, but understandable, failing to try to include too much rather than too little.

PROPHYLAXIS

The crews were vaccinated against smallpox and inoculated against yellow fever, cholera, typhoid, tetanus, and polio before embarking. Although these were not obligatory for all ports of call, injury or illness may cause an unscheduled stop where some of these diseases are endemic. A full medical check by a family doctor was advised for the first race, and before the second race BUPA carried out examinations of all crew members on the British yachts. Several chronic conditions were discovered and treatment started. These

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