man is not clearcut. This may be attributed to his ability in most cases to minimise the effects of stress by changing his environment or adapting himself to it.

A single prospective study has suggested that a group of people with particularly hard-driven personalities are less successful at this than their more languid counterparts. This observation however leaves little scope for reducing the risk of IHD in servicemen, any more than does the evidence that major changes in social environment (such as those encountered by soldiers leaving families in British Army of the Rhine for four-month unaccompanied tours in Northern Ireland) are associated with increased risk. However the conclusion drawn from the Marmot Study that "traditional" Japanese with strong family and social ties are less at risk than their more individualistic Americanized brothers, should augur well for those who live in tightly-knit service communities.

Many whose coping mechanisms have not succeeded in warding off unpleasant cardiovascular symptoms seek psychiatric help. Service psychiatrists have considerable scope in manipulating a serviceman's environment, as well as assisting him in improving his personal adaptation. They even use beta-blockers. It would be helpful to know if they reduce the risk of ischaemic heart disease in these individuals. However their impact on the total population at risk is unlikely to be large. It is those who have not had symptoms or have not sought help in the earlier stages who are in the greatest danger, since it is generally accepted that where there is established ischaemic heart disease the risks from stress are most substantial.

Finally clinicians need no reminding in their management of both cardiovascular symptoms and cardiovascular disease that fear of IHD, whether rational or irrational, spontaneous or iatrogenic, is itself a stress which can be incapacitating or even lethal.

3 Prevision and Prevention

ROUTINE SCREENING OF AIRCREW

RECENT HISTORY AND DEVELOPMENT

AIR CDRE J N C COOKE, OBE, MD, FRCP

Pathologist colleagues find an incidence of 25 per cent of significant coronary occlusion in autopsies of aircrew. Yet in Service aviation we have yet to be certain of a case where an accident was caused by IHD. In worldwide civil aviation there have been no more than eight fatal accidents in 18 years due or partly due to IHD. The risk in scheduled airline flights is less than 20 million to one that an accident will be due to **all** the medical causes of acute incapacitation — of which IHD is not the commonest.

Yet public and professional concern remains high about this tiny risk — a reflection of the present epidemic status of IHD. As a result there have been

two recent reports on the cardiovascular health of aircrew, the Bethesda report of 1975 and Royal College of Physicians (RCP) report of 1978.

While the risk factor of hypertension has always been carefully considered, and some lip service given to other risk factors, the main screening for IHD in aircrew has consisted of routine electrocardiography. In the UK this requirement is of surprisingly recent origin and dates only from 1963 when both the RAF and Civil Aviation Authority introduced various measures. This has resulted in a present established pattern of resting ECG examination at entry, repeated at regulated intervals related to age. For the first time in UK Service and civil aviation this procedure demanded the assessment of ECG abnormalities discovered in symptomless individuals. The resulting toll of loss of aircrew status was high and increased to a peak in 1974 (Table III).

Table III
Loss of licence from cardiovascular causes professional civil aircrew (UK)

Year	Number	Year	Number	Year	Number
1966	8	1970	19	1974	44
1967	12	1971	23	1975	40
1968	5	1972	22	1976	17
1969	15	1973	40	1977	9

The rise in disqualifications in civil aircrew was mirrored in Service aircrew. It reflected two main factors, firstly the increasing proportion of middle aged pilots at that time and secondly the effects of the fatal civil crashes at Staines 1972 (Trident Papa India) and at Leeds 1974 (Single pilot Air Taxi) where the findings indicated IHD in the pilots in command as a contributory cause in the former and a casual factor in the latter.

In retrospect a number of the decisions to disqualify may have been too arbitrary but the medical consultants were very naturally affected by the court proceedings in their outlook on suspicious cases. Since then their attitudes have changed by the use of improved protocols and standards of examination. These standards were really reset by the Bethesda and RCP reports. These reports are to a great extent complementary though constructed by entirely contrasting methods. Both are open to considerable detailed criticism and neither have been accepted in their entirety as practical recommendations. Perhaps their most useful function was to require a searching reappraisal of the methods and logic of the management of cardiological problems in aircrew by both the participants and the witnesses. The reports would undoubtedly form a reference basis for litigation in any future "Trident type" legal action but are being modified by a continuing review of the practical application of their contents by consultants and aviation medicine doctors from both Service and civil organizations sitting in committee to review the details of medical standards and allowable waivers.