talked about, who could not live with such stress. It was the study of psychological breakdown among bomber crews, observed Professor Geoffrey Rose in his obituary of Professor Donald Reid, that was the beginning of psychiatric epidemiology. The book by Revie is one of the few that I have seen that mentions this very real aspect of air warfare and gives some poignant personal accounts. He quotes one source suggesting that 2000 men were stripped of their rank and flying badges for what was at first known as "lacking in moral fibre" (LMF) and later as "forfeiting the CO's confidence." Such cases, when men refused to fly, malingered to avoid flying, or flew and deliberately did not fulfil their mission objectives in order to avoid danger, appear to have been dealt with at squadron level and kept from senior officers. Revie states that he raised this subject with Sir Arthur Harris after the war. He received the simple answer "LMF? What's that? I've certainly never heard of it!" I do not know what to make of that answer. Perhaps the problem was small. But if it did concern 2000 aircrew then it suggests that Harris was out of touch with the feelings of some of the men he commanded or he did not recognise the problem among the men whom he so greatly admired.

Today private flying is statistically safer than riding a motorbike, although when airborne one is aware that if anything goes wrong there is further to fall. But flying is exhilarating. One of the best short poems describing this is *Dancing the Skies* by John Magee (*Skywriting*. James Gilbert, 1978):

Oh I have slipped the surly bonds of earth
And danced the skies on laughter silvered wings;
Sunward I've climbed, and joined the tumbling mirth
Of sun-split clouds—and done a hundred things
You have not dreamed of—wheeled and soared and swung
Hung in the sunlit silence. Hov'ring there
I've chased the shouting wind along, and flung
My eager craft through footless halls of air

Up, up the long, delirious, burning blue
I've topped the wind-swept heights with easy grace
Where never lark, nor even eagle flew—
And while with silent, lifting mind I've trod
The high, untrespassed sanctity of space,
Put out my hand and touched the face of God

Magee was an American serving with the Royal Canadian Air Force. He was only 19 in 1941 when his Spitfire rammed another aircraft in cloud and he was killed. The poem was found on the back of an envelope among his personal effects.

Reference

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Have jet, will fly

D E BRADFORD

Being sick at the speed of sound can hardly be called projectile vomiting but, in the back seat of a Phantom F4, the effect could have been as dramatic. A quick struggle with the retaining clip on my oxygen mask and a rapid grab for the standard issue "bag, air sickness Nato stock No 8105-99-130-2180" and in a few seconds it was all over. This minor upset did little to spoil what was for me a most successful first flight in a fast jet and the climax of two years' discussion on my suitability to fly.

Eight years before that day when I journeyed forth at just over Mach 1 I had suffered a myocardial infarction and two years before had had a triple coronary artery bypass graft for increasing angina. A respectable time after surgery, when I felt as if I had been given a new engine, I joined an active air force station and the opportunity for fast flying presented itself.

I soon got the impression that fighter pilots were only too pleased to fly eager medical officers but one important necessity was a medical certificate. Medical authority was united and was definitely not happy about my flying. Take the odd helicopter ride if you must, but "Oh, no, fast jets are different." That difference, I discovered, was called G force.

At the Royal Air Force Institute of Aviation Medicine at Farnborough there is a large centrifuge and although I was able to arrange a visit to the unit I still found a reluctance to help, made all the easier by the fact that, during my short stay, the centrifuge was in the middle of a test programme. My visit served only to reinforce my desire. Sitting in a mock up of a Phantom seat not only whetted my appetite at the time, but a little familiarity with surroundings was to come in useful later.

About a year after Farnborough the breakthrough occurred when I discovered that fitness to fly fell into three categories. Category one referred to the very fit, category two was for the fit, while category three was ordinary passenger flight. I was already category three and if I stopped pushing for category one who knows what might happen?

The morning of the flight was marred by fog but the delay only added to the excitement. I met my pilot, who immediately left me for the next hour with the ground crew. The actual donning of flying kit for the first time was a lot more exacting than watching a well trained instructor slip in and out of his garments in front of a class. The anti-G suit fits over the lower abdomen and legs and many minutes were spent adjusting and readjusting until the fit was perfect. Next came the Mae West, a sort of short string vest on which or in which were found the few essentials of life, such as the inflatable life jacket, the personal radio beacon, the oxygen regulator, and the lanyard for fixing me to my life raft. Last came the long and detailed fitting of the helmet with its own trimmings, the face mask, and visors.

Just over an hour later my pilot reappeared and we went over the emergency drill. The usual chestnut for first time flyers is for the pilot to say "and if I shout 'Eject' don't attempt to discuss it because I will no longer be there." I got what is probably standard chat for doctors. "The ejection grip is between your legs, a not unusual place to grab in an emergency. Takes a good pull, sometimes up to mid-chest, but there's usually no difficulty when the adrenalin is running." I was reassured that in the event of an ejection I could expect the rescue helicopter to be on site almost before I landed (it had occurred to me that if I did eject I would also be getting my first ever parachute jump).

As the flying suit was tailored to the individual so the seat of a fast jet is tailored to the trappings on the suit—oxygen tube, G-suit, and radio. Only when man and his seat were one and the same was the seat made active. The days of climbing out and jumping, holding

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your parachute, are long since gone. Ejection today is done using a series of explosive charges. First the cockpit canopy is blown off, then the seat and occupant explode out as a single entity to be separated later. To prevent any jack in the box manoeuvres while stationary the seat is fixed by a series of pins and my only task in the preflight countdown was to check that all such pins were visible and lined up in front of me. I counted them at least a dozen times.

Sit well back into an easy chair, look over your right shoulder, and watch the world receding at speed and you will probably begin to understand the feelings on take off. Suddenly realising that we were climbing vertically I faced the instruments. The artificial horizon had turned itself inside out and the air speed indicator and the altimeter were chasing each other. I opened my mouth to say to the pilot that my certificate went only to 15 000 ft but he got there before me. As we banked a moment later I first became aware of a gentle hug from my G-suit and from then on the only sensation of gravity was the occasional squeezing and relaxing of my outer garments.

With eyes firmly fixed on the instrument panel orientation in space was no problem and since the outside view was most often vast expanses of nothingness it was almost easier to watch the instruments dancing than to crane my neck. Even when something was pointed out to me I found it took a little time before I actually caught sight of it. If the sensory clues on position—that is, visual, vestibular,

and tactile—all add up to zero then the brain is happy; but if one of them suggests that the flyer is upside down while all the others know that he is upright then emesis occurs. The view was superb. The mountains were about 60 miles away breaking through cloud. As I looked for them the pilot pointed them out. "High, at about 11 o'clock over your left shoulder." I looked up and had been admiring them for a few seconds when my brain worked out that at 12 000 ft I must be looking down on the mountain from above. I threw up.

The ground crew who so lovingly fitted me into my flying gear had, at the same time, warned me that they would be none too pleased if any one of a million knobs and switches were exposed to gastric acidity. In my haste to eject into the little blue bag I completely forgot to switch off the microphone in the face mask. For a few moments the inside of the pilot's dome must have echoed like the sound track of a monster movie. There was a suitable pause, while I recovered breath and composure, before he said, without a trace of a smile in his voice, "Would you like to try a loop?"

The landing was success all the way. While the pilot did all the work I was busy giving thumbs up to the control tower. Rolling to a stop the seat was quickly disarmed and I was let out. Strolling over to the hangar (it is difficult to swagger when clutching a little paper bag) I could not help wondering what effect inside and outside loops would have on a coronary artery bypass graft.

Death in the clouds

RICHARD WAKEFORD

We are half way through the entrée when the call goes out, "If there is a medical doctor on board would he please make himself known to the cabin staff." A quick glance up and down the cabin expecting to see the usual forest of willing medical and paramedical hands, but no one responds.

The cabin staff look anxious. I put an arm out to a hurrying stewardess and say something tentative like: "I'm not a doctor but if it's an issue of resuscitation then perhaps I can help." "Please come," she says. At the back of the aircraft an elderly man, his face an unhealthy colour, is lying on the floor. A stewardess puffs oxygen from a mask towards his face. She is joined by a steward. Together they start to make a fair attempt at mouth to mouth inflation and external cardiac massage.

At the man's head stands another volunteer who looks as uncomfortable as I feel. We exchange credentials. He graduated in medicine from Harvard ten years previously but has never practised medicine. He subsequently qualified as a lawyer. I explain that I am a psychologist who works in medical education research. I have helped develop teaching materials on the management of cardiac arrest, so I may have some relevant skills—I can pass an oropharyngeal tube (on a manikin, anyway).

We take over inflation and massage. It is messy: the man is incontinent. We ask for the medical equipment. A first aid box appears which contains bandages—and a tube, thankfully. The airway clear and tube inserted, we ask what other medical equipment is available to monitor vital signs. There is none.

This is Concorde. At twice the speed of sound the noise level is

high and the floor vibrates. We can detect no cardiac output but suspect that in these surroundings we never would, even with a stethoscope. We can see no spontaneous breathing. We massage and inflate. Nothing. After a while we wonder how long we should go on, how long we could go on. The doctor lawyer is unhappy about being party to this decision. Unqualified to diagnose death and incompetent to do so, I have nevertheless to decide whether to continue—in which case we all go to some God forsaken spot in eastern Canada—or to stop. I remember the lectures and ward rounds at which I have been a "participant observer." Wasn't lack of pupillary reflex a key sign? There is no reflex, nor any other sign. We can detect no life. We stop. The aircraft bends towards New York.

The staff are grateful. No wonder: there are insufficient staff for two of them to spend much time resuscitating passengers, the rest of whom want their coffee and brandy. And the passengers are grateful: Concorde is not going to go to Goose Bay or wherever. You do not pay £1400 to be diverted to Goose Bay.

Emotionally and physically drained, I try ineffectually to clean and tidy the body, but we have not yet finished. "Regulations," we are told, "prohibit an aircraft landing with a body in the gangway. Could you possibly get him back in a seat?" I suggest that this would be inappropriate. So we heave him between the back two rows and struggle to manoeuvre the body so that no part protrudes into the aisle. Concorde shoots past Long Island, lowers its nose, and drops arrogantly on to the runway at Kennedy Airport.

Two armed and bulky New York Port Authority policemen board. They seem to have to bend to push down the gangway to the rear. Key witnesses cannot disembark until statements have been taken down. "What time did the death occur?" "That's difficult, it was over the middle of the Atlantic, whose time do you mean?" But the police are in no mood for quibbling. "American time." The doctor lawyer says medical things to the police. And, after our addresses are taken, we are permitted to go.

In the terminal I sit exhausted with a beer, awaiting my

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