



Everyone on board this aircraft, burned out in a landing accident, escaped with his life. It can be done . . .

SURVIVAL Saving lives when an accident has happened

. . . if proper training and equipment are provided



By definition, accidents are bound to happen. In many of them lives could be saved—and "accident" revert to "incident"—if more measures were taken to ensure that airliner passengers and crew had an environment which gave them greater chance to evade the hazards of an emergency. In this survey "Flight" staff member John Bentley reviews some of the developments which will give aircraft occupants in the 1970s a better chance of surviving any accidents that may occur.

ACCIDENT REPORTS from American authorities occasionally contain the chilling phrase "This accident was non-survivable." Such a finding is inevitable when an aircraft breaks up in mid-cruise, or hits the ground at descent speed; but many accidents occur in which the question of survival—the difference between life and death—is a hairsbreadth, which becomes even narrower as the years go by. This narrowing is due to several causes—mainly because of stronger airframe construction and the provision of better safety equipment and training. But, ideally, if an accident is "survivable"—that is, if one person survives—then all the occupants should be able to survive. Although this ideal may seem remote, it is by no means impossible so; indeed, many of the means of preventing fatalities are available now—at a price. Two lie in basic areas which need attention.

The first is a 15 per cent increase in airframe structural strength on all newly built aircraft. The effect of this on weight and payload/range considerations is unacceptable to operators but airworthiness experts believe not only that the incidence of in-flight structural failure would be reduced but that survival of all occupants in a "survivable" accident could be assured if this additional strengthening was incorporated. That this would be so is difficult to establish, but it is certainly the case that modern jets, with airframes constructed from metal machined out of solid billets, are much more "crashworthy" than the older sheet-skinned aircraft. Unfortunately, this aspect is somewhat masked by the higher speeds at which the jets tend to crash; but these speeds have virtually steadied out in the 100kt-plus region and future construction methods which produce stronger structures should prove their worth.

The second basic aspect of survival concerns fires and, in particular, fuels. Very few airlines use JP.4 nowadays; but that does not stop an awful lot of damage being done, and some hundreds of lives being lost each year, because the aircraft crashed and burned. A recent Civil Aeronautics Board study

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