

# SAFETY

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*(Editor's note: "Safety" was one of a series on "The Airline Pilot" first published in the Journal of the Canadian Air Line Pilots Association. It was subsequently reprinted in the United States by the Flight Safety Foundation. It is felt that these comments are equally applicable to soaring pilots, and so, with the permission of Captain Smith and the Canadian Air line Pilots Association, we are printing it as our "Safety First" column in this issue of SOARING. You will find it interesting reading. It might even save your life.)*

The most important word in the language of airline pilots is "safety," a word and a thought which we can never ignore. So vital is it that this series would be inadequate and incomplete if space were not allotted to its contemplation.

A popular misconception is to allot positive value to the term "safety." We say that this is "safe" and that is "unsafe," as if with "this" no harm can possibly befall us and with "that" we are sure to come to a bad end whatever we do. This is a wrong definition for the word has only relative value, being more descriptive of how something is done, and by whom, rather than it is of the thing itself.

To explain, there is nothing which man does which does not involve taking a risk of some sort. People have killed themselves by getting out of bed, by eating, and even by sleeping. No one can go through a single day without taking innumerable risks of one kind or another, most of them small, some of them perhaps big. The term "safety" does not mean freedom from danger because there is no such thing, danger being about us always. It does mean the application of skill and knowledge to a given situation of risk, which results in a good reduction of the hazard.

Hazard and risk are terms which have positive value, in that they describe the amount of danger inherent in any given activity. Most of the duties of life contain little risk, some are very hazardous, and some so dangerous that few men, if any, will attempt them. These we say are unsafe, but we are misusing the term, for they may be unsafe or they may be safe depending on the knowledge,

skill and suitability of whoever is doing them. A man conditioned to an undertaking of great hazard, who fully understands the dangers which oppose his success, and who possesses or has devised a "safe" method of combatting these dangers, may actually be safer among his risks than he might be doing things which he considers are without hazard. The term "unsafe," as applied to any dangerous undertaking, relates to the improbability of avoiding the risks which are inherent. When methods have been devised which give the individual an acceptable chance of success over these risks, the activity becomes "safe" — for those who understand the methods and who are fitted to apply them. It is still "unsafe" for those who are not suited and who remain in ignorance.

There are innumerable examples of the truth of this statement and only a few days ago the writer witnessed an excellent one. A high rigger threw his hat in the air from the top of a one hundred foot tree — and beat it to the ground. To say the feat was hair-raising is an understatement. To say it was risky is indisputable, for the hazards of that mad scramble down the tree were most evident. But to say it was unsafe is wrong, for the tree climber was a professional performer who had been doing the same stunt twice a day for a number of years, and who has never been hurt doing it. Similarly, there is a man in California who has made a good living for many years crashing aircraft for the movies. He has at times been hurt, but he has not yet been killed, even though he makes an occupation of something at which most people get killed on their first try. It is obvious that he has devised safe methods of doing a very dangerous thing.

When a stunt man finally gets killed doing his specialty, it is popular to note his passing with the observation that his stunt was most unsafe. It would be more correct to say that his dangerous occupation had become unsafe for him at the moment of his accident and it is probably that one or more of three reasons will explain its cause. First, he may have been unsuited, for men often display more nerve than good judgment in their ambitions. Second, the performer, his awareness of danger dulled by overfamiliarity with his

act, may have become careless in some way in the application of his techniques. Third, some hazard, unforeseen and hitherto unencountered, may have, in this instance, transformed an act which had been safe for him into one which was unsafe, and he had not been able to solve his problem in the limited time available to him.

The man who wishes to do the hazardous and live must first be suited to his task. Then he must maintain a constant appreciation of the danger of what he is doing, and hold in deep respect the forces of destruction which are about him. He must, too, be vigilant in his search for hidden dangers, ones which he has not encountered and hopes he will, but which may face him some day in a most unexpected way. When he has discovered these he must try to devise techniques which will defeat them, for if they catch him unawares he will be lost.

This abstract discourse on the relation between hazard and safety, and the life and death of the stunt man, is appropriate for pilots because flying is one of the world's most hazardous occupations. Yes, we who are accustomed to think of ourselves as sober and cautious men, pillar-of-the-community types, are actually closely related to the high rigger and the high wire performer. For flying is simply loaded with risks. We are as surrounded with them as we are with instruments: risks of engineering, of construction, of maintenance, of performance, of traffic, of weather and of our own abilities. A good way of evaluating the actual net hazard of the occupation is to contemplate the chance which an ordinary individual, untaught and ignorant of aircraft, has of stepping into a modern airplane and successfully completing any kind of a flight. The probability of such an attempt ending happily is comparable to that of the same individual, no less well prepared, duplicating the feat of the high rigger.

But as the rigger, with knowledge, skill and practice is able to perform his act with safety, so is the pilot. We learn to fly. We study out the many hazards inherent in our occupation and are taught techniques which remove them. This is the only safety in flight, for the risks are ever present, unchanged from the days of the Wright brothers. It is the improvement and invention of technique, both of pilot and engineer, the enormous increase in knowledge of