

# LETTERS

## The Future of Aircraft Engineering

Pasadena, California

Sirs:

As his one-time student, I am not surprised to find Dr. A. L. Klein stating, in his article: "The Future of Aircraft Engineering" (*Engineering and Science*, January, 1955) many things I cannot believe he means.

For instance, Dr. Klein justifies his unbending disbelief in personal aircraft by stating: "If our colleagues . . . cannot solve the automobile accident problem, we . . . have no chance of solving the problem of safe personal aircraft." Does "Maje" really "disbelieve" in the personal automobile?

He subsequently makes the unbelievable remark that "safety for aircraft is largely psychological" and "safe, small aircraft do not sell." Since he has stated there cannot be

a safe small aircraft, we find it hard to follow his reasoning. And we wonder what psychiatric treatment Dr. Klein recommends for engine fires in flight. In passing, it should also be noted that accident records show best safety statistics for the more popular small aircraft.

Well, perhaps, as he says, some people "buy small aircraft to inflate their ego." It's true, I guess, that that psychological attitude is occasionally "similar to that of mountain climbers." It is, of course, also similar to that of authors of semi-technical papers, (although physically somewhat more demanding).

The crowning blow, however, falls with: ". . . if everyone were properly adjusted, none of these (small aircraft, mountain climbers, hot-rodgers) would exist." This would, we presume, leave the properly adjusted world free to follow some adjusted

pursuits outlined by Dr. Klein, such as ". . . enable us to escape into space." Perhaps the "international tensions WILL "continue for the next 50 years," or even, with just the right dose of proper adjustment, "a war will replace the present turmoil," as he hopefully suggests. This will, of course, do little for mountain climbing or personal aircraft, but might precipitate the well adjusted into the promised land, where the designer, as Dr. Klein sees him, "will be used to large calculating machines, and familiar with the characteristics and capabilities of analogs." He might even have a miniaturized, multi-dimensional one to solve his poly-dimensional, nonlinear problems directly."

Dr. Klein doesn't say how he will solve his other problems, which is perhaps just as well. I prefer to look to a different future, anyway.

J. C. Schwarzenbach,  
MS, AeE, '42

President  
U. S. Propellers, Inc.


Dr. Klein replies:

I discovered in reading Mr. Schwarzenbach's letter and from some other comments that perhaps I was too severe on personal aircraft. In my article I meant to refer to "no purpose" aircraft usage, and was not referring to corporate users and other serious users of airplanes. The Air Safety Foundation statistics and other sources of information indicate that private airplanes are at least 40 times as dangerous as automobiles when operated by amateur pilots. The corporate users of aircraft and other professional users have excellent safety records approximately equal to those of the airlines.

I am sorry I offended Mr. Schwarzenbach and caused him to react so violently to my article. I still believe, however, that our experience in the industry does indicate that most amateur users of aircraft have a hot-rod psychology.

A. L. Klein  
Professor of Aeronautics

California Institute of Technology



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