EDITORIAL

ACTUARIAL RESEARCH

Those of us interested in actuarial research find the present both encouraging and discouraging. On the positive side:

1. The Society has an active Research Policy Committee, and three *Yearbook* pages of other committees committed in one way or another to the research effort. There is also a full-time Research Director.

2. After a slow start, the Actuarial Education and Research Fund, through which five actuarial organizations join forces to promote research, has had some recent success.

3. The Committee on Research, one of the earliest of our research efforts, continues to hold successful seminars on university campuses, and to sponsor ARCH.

4. The top vote-getter in the 1984 membership poll of Society priorities was "Develop More Practical Research". (See Corbett article in the April issue). Whether the word "more" modifies "practical" or "research", the membership has expressed its interest.

All of the above is to the good — but lest we become complacent:

5. We note the following from the May report of the Director of Publications: "Within the past year there has been a substantial decrease in the number of papers submitted for publication in the *Transactions*, along with a decline in quality. Volume 37 is likely to contain no more than 10 papers, compared with the normal 15-20."

6. Actuaries have always been busy practitioners, for the most part not very research minded. Reasons may be many and varied, but they include the lack of incentive toward research in the typical actuarial environment.

7. Some actuaries, willing to spend effort for the profession and capable of research, are bogged down in the profession's prodigious E&E effort (which effectively passes on present knowledge, but seldom adds to it).

8. The actuarial-academia interface is not what it might be. Academic actuaries are few and scattered. Although there are some new centers of university-based actuarial activity, some of the established centers have gone into decline.

The Actuary is of the opinion that any profession must expand its area of expertise at least as fast as competing professions — or it will slowly die. If actuaries have in the past been slow in this regard, let us hope that the tide has turned.   *C.L.T.*

INTERNATIONAL MATHEMATICAL OLYMPIAD

A team of six American high school mathematics students captured second place in the 26th International Mathematical Olympiad held in Helsinki, Finland, in early July. The team from Romania took first place. Third through sixth places were won by Hungary, Bulgaria, Vietnam, and the USSR. Teams from 30 nations took part in this annual competition.

In the International Olympiad each team member, during two three-hour sessions, develops solutions to six difficult mathematical problems. A panel of judges evaluates each answer and assigns points (on a 0-7 scale). Individual scores are the sum of the points awarded on the six questions (best possible score 42), and the team score is the total of its members' individual scores. The U.S. team score was 180, 21 points short of Romania's winning performance, but 12 points ahead of third place Hungary and 40 points ahead of sixth place Russia.

High school students from Illinois, New York, Massachusetts, California, Connecticut and Pennsylvania made up the U.S. team. Members were chosen on the basis of their performance in the U.S. Mathematical Olympiad held in April, and on their work at a three-week training session in June.

Mathematical Olympiad activities in the U.S. are sponsored by seven national associations in the mathematical sciences, headed by the Mathematical Association of America and including the Society of Actuaries and the Casualty Actuarial Society. Financial support is provided by IBM, Hewlett-Packard, and two U.S. government research offices.

A sample problem from the 1985 international event indicates the level of mathematical sophistication required.

"Given a set M of 1985 distinct positive integers, none of which has a prime divisor greater than 26, prove that M contains at least one subset of four distinct elements whose product is the 4th power of an integer."

The Actuary will be pleased to hear from readers who (1) were able to solve the sample problem (in the allotted 60 minutes?), or (2) have an explanation for the U.S. being the only place-winner among the nations of the non-Communist world.   □