NOTES ON A PROPOSED RESEARCH PROJECT AND SYMPOSIUM
18 March 1952.

It is proposed that a symposium be established during the summer of 1952 under the program of the Institute for Numerical Analysis of the National Bureau of Standards located at the University of California at Los Angeles. The symposium will be mathematical in nature. It is intended

1. To provide a convenient and attractive, but private, setting in which workers, most of whom have already been chosen, who have attacked problems in a field of interest to the sponsor of the symposium may exchange information, ideas and results;

2. To provide a facility which may be used to initiate a later constructive research effort, mathematical in nature, directed toward solution on computing machines or otherwise of problems assigned as indicated below.

The agency sponsoring the symposium and possibly the later mathematical research is part of the Department of Defense. It is visualized that the symposium might be financed by this agency under a transfer of funds to the National Bureau of Standards; these funds would be used for salaries and expenses, including computing expenses, but it might also happen that some of the participants would be supported by their own organizations during the symposium.

The sponsor will:

1. Be the source of problems toward which the activities of the symposium (and, if it is later established, the mathematical research activity) will be directed;

2. Specify some persons, all highly cleared, who will join the symposium and later, if it is sponsored, specify some persons who will join the mathematical research project;

3. Clear or reject clearance on all other persons nominated as participants in either of these activities;

4. Furnish at least one technically trained member to monitor the symposium particularly as regards information which may be furnished participants;

5. Accept and utilize results;

6. Finance the symposium;

7. Attempt to set up a continuing mathematical research effort with the National Bureau of Standards looking to continuing use of some of the facilities of the Institute for Numerical Analysis;

8. Provide funds for any necessary computing at the Institute for Numerical Analysis following the Symposium.

Any transfer of funds between the Defense Department and the National Bureau of Standards for this symposium, the computing which might follow the symposium, or the later mathematical research activity which might be set up will be likely to be through the Office of Naval Research. If this is the case, the scientific officer monitoring the transfer and the work done under the transfer will be the head of the Logistics Branch of the Office of Naval Research.

A Special Committee Advising in Mathematics (to the Defense Department sponsor) will also have duties of assuring that important work is taken up at the Symposium (but more important, at the later continuing mathematical research project if it is set up). Presently SCAM consists of the following mathematicians: S. S. Cairns of the University of Illinois, H. T. Engstrom of the Engineering Research Associates, Incorporated, H. P. Robertson of the Department of Defense (shortly to be at the California Institute of Technology), Claud Shannon of the Bell Telephone Laboratories, C. Tompkins of the George Washington University (shortly to be at the National Bureau of Standards Institute for Numerical Analysis), and John von Neumann of the Institute for Advanced Study. SCAM is not subservient to the sponsor. It will

1. Provide part of the staff of the symposium;

2. Monitor assignments to the symposium and to the mathematical research project, if it is established, and learn results;

3. Know the sponsor intimately and attempt to guarantee the importance of problems assigned as legitimate abstractions pertaining essentially to urgent problems;

4. Assure the quick and proper utilization of results of the symposium or of the possible later mathematical research project by the sponsor and advise in this utilization;

5. Provide a leader for the symposium (Dr. S. S. Cairns can serve in this capacity);

6. Suggest participants in the symposium and, more important, in any continuing mathematical research project and, if convenient, talk with these people about the problems to be attacked or their general nature;

If the continuing mathematical research project is established, its leader will be added to SCAM if this is in any way feasible, and in any event SCAM will advise him.

The National Bureau of Standards is expected to:

1. Provide at the Institute for Numerical Analysis a congenial mathematical background for the summer symposium during the summer of 1952;

2. Provide any of the INA computing machinery which may be required in connection with the symposium with the understanding that the symposium will furnish programming, coding and, if necessary for security, operation and that the Bureau of Standards will provide maintenance and required operation;

3. Provide private but not necessarily plush space for the symposium (about eight to ten members) with conference space, desks, blackboards and other appropriate furnishings;

4. Seek personnel as required and contract with them;

5. Carry out computing required as a result of the symposium on machinery at INA after the symposium has terminated;

6. Try to initiate the continuing mathematical research project in a way which will permit this project to use the desirable assets of INA by interchange of personnel and equipment on a part time basis, the mutual gain of an enlarged mathematical atmosphere, etc.

It should be pointed out that the choice of agencies participating in the proposed program is based on careful study and that none is easily replacable by another agency without some expected loss. There was no choice of the sponsor, of course, since that is where the problems originate.

The Office of Naval Research is the part of the Department of Defense most familiar with research of this type, most experienced in its production.

The mathematicians making up SCAM have already served in an advisory capacity to the sponsor. SCAM is the set of mathematicians of a group in whom a great investment in clearance and education has already been made.

INA is unique in having provided a congenial atmosphere in which directed and free research related to numerical analysis has been successfully conducted under government sponsorship. It has been selected by the Office of Naval Research as the principal center of research sponsored by the Navy in numerical analysis and related fields. At INA the Bureau of Standards possesses experience and equipment for computing which can be duplicated at few other places. The position of the INA branch of the Bureau of Standards on the UCLA campus provides a pleasant setting, professionally and in living conditions, which will be important in attracting desired workers either during

the summer months, during sabbatical leave years or permanently.
This location is central for much numerical analysis by aircraft interests, computing machine manufacturers and others.
The administration of the NBS applied mathematics division
has provided protection from undue interference with its
workers in the past and it has been successful in getting good
results from its workers. A contract now in existence with
UCLA will permit utilization of some of the University facilities
where they are best applied to the symposium or the later
research. It is likely to be able to secure adequate arrangements in a congenial and large mathematical atmosphere. It
has energetic direction of Dr. John H. Curtiss of the Applied
Mathematics Division of the NBS and in Los Angeles the presence
of Dr. D. H. Lehmer, the director of research there. Dr. Curtiss
has been successful in recruiting competent personnel for the
NBS. Dr. Lehmer is one of the world's outstanding number
theorists, and as such he is potentially of tremendous value
to the continuing program proposed. He is experienced in many
other fields, including computing, which would bear fruitfully
on the problems envisaged.

                                    C. B. Tompkins.