

Experience in systems design and computer programming.

In October, 1961, after the Reserve Bank decided to purchase an electronic computer (IBM 1401 Ramac), I was invited to work half-time on a team of programmers converting the Bank's accounting and data processing to the new method. The programs which I wrote are listed below. I was represented by one or more programs in each major type of accounting work performed at the Bank.

- 029 Treasury Tax and Loan Account Call Advices to Commercial Banks
- 032 Treasury Tax and Loan Account Quarterly Report
- 039 Savings Bonds Consignment Master Code Book
- 044 Savings Bonds Consignment Monthly Statement
- 051 Member Banks' Reserve Accounts Daily Statement
- 057 Audit Reconciliation of Deferred and Reserve Accounts
- 061 Daily Transfer of Federal Deferred, Gold Wire, and C.I.D. Balances
- 063 Ramac Load for Daily Department Settlement Sheet
- 064 Inquiry into Department Settlement Sheet
- 065 Daily Statement of Settlement Sheet
- 070 Reserve Status Computation
- 072 Year-to-date Payroll Register
- 075 Payroll Ramac Load
- 077 Quarterly F.I.C.A. Report
- 086 Reserve Accounts Summary Load
- 087 Reserve Accounts Summary Update

During 1962, a large portion of my activities in the Research Department was concerned with computer systems and programs for performing arithmetic and statistical operations on economic time series data and for processing data collected on a routine basis by the Research Department. The work completed so far this year falls into the following categories:

- 1) A number of general purpose subroutines for Ramac operations, multiplication, division, logarithms, etc.
- 2) A number of statistical operation programs, including adaptation of a seasonal adjustment program to Ramac equipment, programs for differences and ratios of time series, and programs to put data into formats specified for seasonal adjustment and multiple regression programs.
- 3) A set of 4 Trace programs for the IBM 1401 which form a substantial contribution to the techniques available for testing and debugging programs on this computer.
- 4) Sets of programs for each of 4 special studies undertaken in cooperation with other economists on the staff.
- 5) A set of 9 programs to process Quarterly Reports of Condition from member banks, and a set of 3 programs to process Reports of Consumer Credit.

Since July, 1962, I have been supervising 3 programmers in the Research Department, one on a full-time basis and the other 2 on half-time. In addition, I have been named as the Bank's representative on the System Committee on Computers, and Chairman of the Subcommittee on the Program Library and Programming Techniques. In this capacity, I have established a Program Library and procedure for exchange of computer programs among the Reserve Banks. The Library presently consists of about 250 programs, of which I have contributed about 50.