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TO BE CONTINUED

Editor's Note: This article is submitted by the Committee on Health Insurance. Comments will be welcomed by the Committee and by the Editor.

Use of Small Computers in a Small to Medium Sized Group Operation (40 Million Premium Income)

by Russell Henry

Perhaps many Group Actuaries have become frustrated by their inability to economically computerize certain actuarial and underwriting functions. During the last 15 years they have no doubt watched their companies purchase large computer systems and automate their ordinary systems. A few may have ambitiously attempted to build major group systems on these large computers much to their financial regret.

In the past three or four years, however, a new breed of computers has arrived called "mini" or "small" computers. There is some difference of opinion over where mini's end and small computers begin. I am talking about a system in the price range of \$15,000—\$100,000. The equipment may include the following:

- A Terminal with Keyboard
- Cathode Ray Screen
- Core up to 32K
- One or more Tape Cassette Drives

A card reader (standard IBM punch cards) reading up to 300 cards per minute. With or without mark sense capability.

A disk storage device with up to 10 megabytes capacity. May be floppy disk.

A high speed printer (up to 450 lines per minute). Thermal or metric dot.

A typewriter terminal.

Tape or direct line interface with larger computer system.

Under NAIC rules this equipment is depreciable over an 8 year period. The annual cost of equipment then is in a range of \$1,875 to \$12,500. Service, or a service contract, will add to this cost.

Considering the salary and fringes paid to clerks these days, justification for most of this equipment is easily made if a net savings of one clerk can be realized. Due to the power of this equipment, such a savings is easily achieved.

Deaths

Coll C. Sinclair

Several models are available, such as Burroughs, Honeywell, DEC, Hewlett-Packard, IBM, NCR, and Wang (this is not an exhaustive list). Each has its own variations and characteristics including programming language.

In our case we chose equipment that had these two features:

(1) Equipment is modular — i.e., you can begin with small pieces and expand as you desire. We began with a terminal including 4K core and high speed printer but no disk or card reader. As we developed a facility with the equipment we quickly added 8K core, a combination punch card-mark sense card reader and a 5 megabyte disk. Several months later we added another terminal with 20K core which time shares automatically with disk and with printer by means of a manual switch.

(2) Programming language is simple basic language which above average clerks could learn and apply. We wanted to utilize clerks who already knew the work.

In two years we have computerized the following:

(1) Rate Manual calculations for renewal underwriting, actuarial testing, and about half of our field offices. We ultimately expect to have all manual proposals for the field in the system.

(2) All refund calculations and retention illustrations.

(3) Lag factor analysis used to produce casualty claim reserve.

(4) Asset share program used in developing group ordinary product.

(5) Matched up expense margin in our premium structures against actual expenses. (An impossible hand task).

(6) Several financial reports.

(7) Production reports and bonus calculations.

(8) A complete administrative system for Group Ordinary.

While accomplishing the aforementioned tasks we realized a net savings of three clerks or roughly \$28,500 annually. We actually eliminated five positions but added two full time programmers. Our equipment cost was approxi-

mately \$60,000 producing an annual depreciable cost of \$7,500 plus about \$1,500 in service costs. The equipment vs. people savings is \$19,500 per year. The actual value, however, is considerably greater.

No one in our unit had other than a very limited knowledge of computers. Originally we were very conservative in our estimates of what we could accomplish. We have already achieved much more than we had hoped. However, we feel we really haven't scratched the surface and that a vast potential lies before us. We are now doing things we couldn't hope to do before, either because it was an impossible hand task or too costly to do on a large computer. Thus, this system has opened up new horizons in all facets of our operation.

Some of the obvious advantages of small computer systems are:

(1) Little or no communications problems. Persons already familiar with work do the programming.

(2) Turnaround time is fast. User has full control over output. Schedules are set to meet our own deadlines.

(3) Use of clerks at \$750/mo. to program. Simple program language.

(4) One time programs for small project calculations feasible. Example: Budget use.

(5) Simple to debug as well as to make modifications.

(6) Working clerks are computer oriented. They see more uses than might otherwise be seen.

(7) Jobs can be done which are not financially feasible on large equipment.

(8) Being totally user oriented output easily used.

Small computers provide a major breakthrough to the traditional centralized system equipped primarily by large computers and run by computer oriented personnel at a very high cost. With their power and simplicity, they provide an economical de-centralized line oriented facility controlled and run by line oriented personnel. This produces maximum operating efficiency and flexibility.

While our application is limited to the group area, the key elements make small computers practical in any line of business and any size company for types of work not economically justifiable on large scale computers. □