

Progress since Fall, 1958

A. Further Application

How much accounting can be done on computers? Is the preparation of interim statements made more practicable by computers? Would they lead to valuable information for market analysis?
profitability by line of business?
profitability by plan of insurance?
Federal income tax analysis?

B. Conversion

What further functions have been integrated into the system by those companies converting to Electronic Data Processing function-by-function? What progress has been made by companies converting to a complete system agency-by-agency? What problems, if any, have been encountered in either type of conversion?

C. Savings

Is it any clearer what the ultimate savings from Electronic Data Processing will be? Can any generalization be made as to what applications will be profitable? What problems have been met with employees who have been displaced by Electronic Data Processing?

MR. JASPER E. MOORE said that punched card work which preceded computer operation in his company (Crown Life) had already been designed to integrate many billing, dividend, loan, commission and the related accounting functions including a cash report and basic accounts by branch summarized to the general ledger. An intermediate stage studied was to combine these procedures using a medium-scale electronic computer (magnetic drum memory with punched card input and output). It was found that such a step would not produce economic or other advantages and attention was turned to a faster computer (magnetic core memory with magnetic tape input and output), for which economic and other advantages are expected.

Because of the geographical diversity and attendant variability due to operations in several foreign countries, it was not feasible within the limits of the computer capacities to produce cash values, reserves, dividends and commissions by general formulas. Instead, a policy tape record is planned which will incorporate two policy years' tabular values which will enable them to generate accounting entries for surrenders and automatic premium loans, and to produce the monthly reserve increments and a monthly surplus calculation on a revenue accounting setup. These month-

ly (or quarterly) calculations of total company surplus increments are expected to be reasonably accurate and fairly close to the trend of the year-end statements.

It is hoped that the additional work to distribute miscellaneous accounts by territory and currency and participating and nonparticipating business can be done economically so that interim statements on a quarterly basis shortly after the close of each period will become available with minimum effort. Also, as the techniques for the computer's use are evolved it is hoped that estimates of surplus based upon gross premium valuations with varying interest, expense, mortality and persistency assumptions will follow the same pattern.

He suggested the possibility of expanding the subclassifications of his company's accounting routines so as to obtain by-product information such as recording a premium income item as a contribution to loading, mortality and reserve, a salary item as a combination of several functional expense items as an aid to cost measurement. Market analysis information for his company's needs appears to be available from other sources so that computer work appears not indicated. He said that if their computer were installed and in operation, they would have attempted programming for the new Federal tax formula. He stated that their concept of profitable use of a computer extends routine policy processing to the development of the continuing profit picture, thus rounding out the consolidated functions plan.

MR. CHARLES F. PESTAL (Northwestern National Life) said that computers are not being fully utilized. As an example, he suggested "management by exception" in which the computer would be utilized to maintain a complete commission accounting record to produce the financing checks for each agent. The computer would check whether each agent had qualified, and prepare a complete status only for those who had not qualified.

MR. CHARLES G. GROESCHELL (Northwestern Mutual Life) said that his company had not yet developed accounting applications for their computer beyond those arising from basic insurance, mortgage loan and settlement option applications; also, that statement work, market research and analysis of securities, and Federal income tax are still untapped areas for his company.

MR. WILLIS J. LUTZ (Minnesota Mutual) said that an electronic computer (magnetic drum memory computer with magnetic tape) is being used to summarize and classify approximately 1,000 summary items, collected in the same way as was previously done for their earlier punch card system, to prepare interim and annual statements (pages 2 through 14), to

replace corresponding punch card operations which had been in effect for several years. The process is to store the 1,000 items of information in the internal memory of the computer, which then works through the first fourteen pages of exhibits one by one. Since the program is quite extensive and beyond the internal capacity, it is fed into the computer memory from magnetic tape a section at a time to prepare each exhibit. Intermediate results and results needed in subsequent exhibits are stored until needed, in the memory. He said that the computer operation to prepare and print the exhibits is accomplished in about 15 minutes, and that photostats of the computer listings will be used for interim statements, but that for annual statement purposes these would be typed onto the blank printer's copy pages.

He said that the "Distribution of the Gain and Loss" and the "Analysis of the Increase in Reserves" exhibits have not yet been included in the program, as it was felt desirable to await final determination of the Federal income tax basis, which is an element in the distribution. It is planned to add additional programs to prepare the Federal income tax return; a distribution of the source of earnings by line of business; an analysis of gross interest earned by type of investment; rearranged reports of the "Summary of Operations" figures, for management and for publication in various home office or field publications; and for production of the various items required for publication in individual states.

It is also expected that a more automatic method of gathering the information for the initial input will be developed, by inserting programs which will utilize accounting cards or other input to assemble the individual items into the basic 1,000 items needed.

MR. J. STANLEY HILL (Minnesota Mutual) said the development of the life insurance reserve liability by methods which simulate the gain and loss formula on a seriatim basis has not appeared feasible with computers of present day efficiency factors, although such an application, if it could be worked, has many desirable features.

MR. JOHN J. FINELLI (Metropolitan Life) said that the seriatim and inventory idea of valuation appears to have greater possibility of becoming feasible with the second generation of computers that are coming along. It appears to be a question of memory size.

Some speakers on section B stated that their companies are converting to E.D.P. on an agency-by-agency basis. MR. GROESCHELL and MR. HILL stated that their companies' programs for developing accurate converted records have shown significant improvement since the start of conversion. The coordination of cut-off dates between the old system and the E.D.P.M. system during the transition periods poses difficult problems.

Other speakers stated that their companies are converting on a function-by-function basis. MR. DAVID H. HARRIS (Equitable of New York) and MR. FINELLI stated that their companies have been converting to tape (on ordinary premium notice business in the case of the Metropolitan) the entire detail files maintained to serve the various functions. Their ultimate goal is the consolidation of detail records into a single tape detail file serving all major functions.

MR. A. DOUGLAS MURCH (Prudential) described the substantial progress in his company in converting to tape on a function-by-function basis within regional home office. His company is utilizing for case work the newer punch card machines which are better suited to this work than tape-operated machines.

MR. HARRIS reported that in the Equitable of New York the main emphasis has been on the development of "integrated processing" systems for large-volume administrative jobs, and expressed satisfaction that there are major cost savings in this use of E.D.P. equipment.

In such an approach, the question of which of the formerly separate functions contributes more and which less to the over-all saving is unimportant except as it may (possibly) influence the order of conversion. Some elements that go into the new system may actually produce no direct gain when viewed by themselves, although their conversion is vitally necessary to fill in gaps that would otherwise exist in the new system. Similarly, there are questions of marginal as against proportionate cost allocation in considering the extent of the savings attributable to any isolated element of a new over-all system.

The Equitable's experience suggests that the gains are relatively greatest for the parts of the work which are particularly complex, for the parts which have previously involved manual procedures, and, obviously, for the parts with largest volume. In particular he felt that those parts of the new system which represent a more or less direct transfer from E.A.M. to E.D.P.M. processing do not generally show much direct gain, although such transfers are often very necessary as part of an over-all plan.

The E.D.P. equipment has been used quite extensively for special jobs such as rate book preparation, and for actuarial research purposes. This work could not, of course, justify by itself a machine like the 705, but—using a 705 because it is available in the company—is definitely "profitable" both in dollar savings and in faster results.

He felt that isolated administrative applications, not a part of the main integrated-system development, are not profitable unless they are quite large, because of the substantial investment of time needed in developing program specifications, writing the program, testing it, and then keeping

it up to date in the light of changing needs and new developments. This is particularly true now when there is so much still to be done to achieve all of the "large application" gains which are foreseeable.

MR. HUDSON STOWE of the Manufacturers Life stated that his company has been on a functional approach for quite some time, and in some areas, including a very good mortgage application, already are operating with quite a substantial reduction in the size of staff.

He emphasized that a fairly good system, when operating, will handle increased volumes of work with little or no increase in staff, and that, as volumes increase, savings will mount.

He also stressed that, particularly in the policy service area, a large amount of educational work is needed in the branch offices which use the new material.

MR. ROBERT G. PERRY of the Aetna Life Group Division felt that despite enormous conversion difficulties and initial investments, computers have a potential which is beyond our imagination. What actuary is not intrigued by the thought of having immediately available completely accurate mortality and morbidity statistics of a broader nature than is currently possible? How often have we wished for means to more significantly measure the effect of impairments, plan variation, policy size, etc.? Who among us has not yearned for the tool that would aid us in shaping more meaningful product research, market analyses, and sales effectiveness measurements? These and many other dreams are within the power of computers on the market today, but fulfillment can only be obtained through an understanding of the tool which is available to us. *The* role of the actuary in Electronic Data Processing may vary according to individual assignments and company organization, but a role of major proportions is essential to any actuary who wishes to remain abreast of progress in his field.

MR. GROESCHELL stated that the Northwestern Mutual was not far enough along in the conversion to see any appreciable savings yet. On the other hand, they have a displaced people problem of older career employees which will continue for the next five to ten years.

MR. MURCH also felt that the picture of the ultimate savings of broad applications has not yet clearly emerged, but he reported that the Prudential has found that applications of limited scope have yielded quick and measurable savings which were greatest where the prior methods were clerical rather than machine.

MR. HILL felt it important to attempt to achieve savings of significant magnitude. He quoted a simple rule of thumb which they use that, in a

good application of the computer, the computer part of the application should cost only about one-half of the present cost.

He observed that there are many small applications which meet the test but which unfortunately don't make much of a dent in the total objective.

MR. FINELLI reported that the Metropolitan Life Insurance Company had a similar rule of thumb to that mentioned by Mr. Hill, but a more stringent one with the factor of one-half reduced to one-third.

In the displacement of employees area, they haven't run into the main problem yet, but anticipate it when they begin to move into places with high average service and age. He felt that one shouldn't dwell too much on the partial and measurable gains visible now, but recognize the fact that it is a total systems approach and concept that is needed.