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DIGEST OF SMALLER COMPANY FORUM

ELECTRONIC DATA-PROCESSING

A. At what point in a company's development is it feasible in view of equipment now obtainable to convert to electronic data-processing? Is there experience available to indicate whether or not expense reduction or other advantages actually materialize to justify adoption of EDP by smaller companies?

B. What special problems in personnel do the smaller companies meet when the decision is made to install an EDP system? Are there problems peculiar to small companies in adapting actuarial work to an EDP system?

C. Have any proposals been made or investigated to bring, through joint use of facilities, the benefits of EDP to companies that hesitate to adopt it alone? What difficulties stand in the way? Are there recent developments to overcome such difficulties in modern means of transmission of data? In other ways?

MR. WILLIAM L. BARBER: It should be remembered that back in 1954 it was estimated that perhaps fifty companies in this country (not only life insurance companies) could eventually use electronic brains. By the end of 1958 over twelve hundred companies had installed over two thousand systems. Today over eight thousand computers are operating and affecting our operations in many ways. This number is reflected in the approximately thirty manufacturers who are producing a wide variety of hardware for their customers.

Since 1954, when Metropolitan pioneered by adopting the first electronic computer for the insurance industry, there has been great progress, and it is estimated that now two small or medium-sized computers are being installed each working day in life insurance companies.

Now I do not know whether all these installations have been feasible, but I do know that they are being made. Neither do I know of any company which can specifically and conclusively demonstrate that it has experienced expense reduction to justify adoption of a computer.

We do know, however, that the break-even point has been considerably reduced with a drastic improvement in speed and cost of computers.

Generally speaking, we might think of small computers as renting for less than $5,000 per month and medium-sized computers renting for up to $10,000 per month. In the small group we might mention National Cash 390, I.B.M. 1401 Card, Burroughs 260, and Control Data 160. In the medium group we have R.C.A. 301, I.B.M. 1401 Tape, Burroughs

280 Tape, G.E. 225, Minneapolis-Honeywell 400, and National Cash 315.

Of some help to smaller companies has been the Life Office Management "Automation Committee II," which is composed of small and medium-sized companies which have computers installed and operating. Represented on this committee is a company with assets of about $17 million and insurance in force of about $150 million as of the end of 1961. This company is currently operating an I.B.M. 1401 Card Ramac and doing an excellent job.

We at Union Mutual have installed an I.B.M. 1401 Tape Ramac. Our assets are about $136 million, with $1.3 billion insurance in force. We are still in the process of converting our "Consolidated Function Punched Card System" with conventional equipment to the computer. We anticipate that this will be completed by the middle of the year.

In attempting to put a present value on our expense savings, it appears that our break-even point will be five years hence. However, if all we achieve from the system is a savings over our current system, we will have failed to take full advantage of the power and ability of the computer. The computer can be used for rate computations, dividend and nonforfeiture calculations, as well as proposals of all kinds. Then, too, top management can be given better and more current reports for decision-making, and certainly there are a number of operations research projects that all of us feel are needed.

Now many of you recognize these comments as old stuff, but to the company that must face the decision of whether or not to adopt a computer they are far from being just that.

I believe there is enough evidence to demonstrate that size alone is no longer a determinant, especially since the cost of a computer can now be brought down to the size of most companies. Then, too, there are some who feel that it is a lot easier to convert a small company to a computer than a large one. Of special interest now is the fact that solid-state techniques contribute to the practicality of modular design and system expandability. Through the use of a wide variety of peripheral equipment the range of applications of a given basic computing unit may be extended. As a result of these developments the clear distinction between small, medium, and large computers have pretty much disappeared. The user is now in a position to specify his requirements, to pay for only his current needs, and to expand his system whenever he desires to do so.

I guess that in effect what I have been saying is that, regardless of size, there is a computer of some kind that can meet a company's needs.

MR. IRWIN T. VANDERHOOF: Qualifications to speak on this topic would depend upon diversity of experience with installations of various

types in various size companies. It would also presume acquaintanceship with some operations that were successes and some that were failures. My own experience is limited to three installations in New York City. These include a peripheral contact with an installation in a giant company and close contact in a medium-sized company (about 100,000 policies) and a small company.

I indicated that I thought contact with both successful and unsuccessful operations was a desirable experience, and here we come to the anomolies in this area. To the best of my knowledge, there have been no installations that have been unlimited successes or failures. The lack of successes is that the expense reductions seem in general to be "phantom savings." I define "phantom savings" as the savings realized by not adding personnel, in years subsequent to the installation, to do the work done by the EDP. These are the "we would have had to hire more additional personnel" or "this would have taken fifty clerks ten years to do this using desk calculators" savings. I do not know of one case where a company's Exhibit 5 expenses went down significantly from one year to the next as a result of such an installation.

As I also said, however, I know of no real failures. I know of no company that has abandoned an installation and gone back to simpler equipment. On the other hand, every company seems to be thinking in terms of heavier equipment.

My conclusion, from these observations, is that expense reductions do not materialize but that other advantages do. These advantages include:

1. Improved speed and accuracy of preparation of statistics for managerial control of the company.
2. The ability to provide better service to the agents and agencies. Since these men are the producers of the company, anything that keeps them away from paper work and out selling has real meaning to a company.
3. The actuarial advantages can be immense. Suitable equipment can make it possible to calculate rates, cash values, and reserves on several different sets of assumptions, and have final values within a week of the start of investigation of a new plan of insurance.

These considerations mean that, even though there will be little effect on expenses, there can be a substantial effect on sales and profits.

The answer to the question when, as far as I am concerned, is now. The more difficult question is what level of equipment. In my opinion, a small company should set up for an installation of such size that the company can expect 60 per cent utilization within one year.

There are two reasons for this—personnel and Parkinson's Law. Before I get into personnel, I would like to make two points:

1. Do not spend too much time trying to evaluate hardware. There are many good machines available, all of which have marginal advantages and disadvantages. Equipment is widely available today that outperforms the best available ten years ago and costs one-tenth the price the older equipment did. Worry about software programming techniques supplied by the manufacturer. Compilers, such as Algol, Cobol, and related systems such as Fortran, which simplify programming, are, to my mind, crucial.
2. Prefer general-purpose equipment, suitable for actuarial calculation, to strictly accounting equipment. If you can afford strictly accounting EDP, you are not, to my mind, a small company.

As to personnel, I feel that a small company cannot afford the staff necessary to design from scratch their own system to be put into operation on delivery day. I think such a company needs at least one person who actually knows a working EDP accounting operation from the inside. I have not seen a manufacturer's packaged plan for a life company that looked good to me. They leave out too many details that someone who has been through the mill would know. On the other hand, with only one person, an evolutionary approach, rather than instant full utilization, is necessary. As far as normal actuarial calculations, I do not think there is any problem. With a few weeks of experimentation, using an Algol or Fortran type compiler, anyone who can understand a formula can program it.

As far as joint use is concerned, I tried several times but was not able to make an arrangement in this area. Others have, I understand, been more successful.

MR. MORTON J. KENT: I would just like to tell you that some companies have had expense savings. We installed a 650 five years ago and have had actual expense savings through the nonreplacement of personnel. Next week a 1410 will be delivered, and we do not anticipate expense savings. Looking to the future, we see our product getting so complicated that we see advantages, but we do not see immediate savings.

One approach which a salesman for a manufacturer would never suggest to a small company is to purchase a piece of used equipment in A-1 condition for about 15 per cent of the original cost. We paid something in excess of $250,000 for our 650. Now, it is probably marketable for from $35,000 to $50,000.

Our operation at the Interstate Life and Accident Insurance Company involves a large amount of repetitive work. We handle a million policies, and basically that is why we showed a direct immediate expense saving by putting our machine into operation.

Programming is a tremendous factor in putting the fancier machines into operation. A company which does not operate on budgets may overlook this. We went into a budgeting program about two years ago and have found that the programming for the 1410 is costing us about 30 per cent of the cost of the machine—a substantial figure.

MR. W. TRIS STEVENS: I would like to touch on both Items B and C. There are several special problems peculiar to small companies entering electronic data processing. If a company is small, the planned system must encompass many functions in order economically to justify the hardware. A large company may have enough volume of work in a single function to justify its hardware. The change from a somewhat autonomous functional operation to a close-knit consolidated functions approach requires extensive systems analysis, education of the entire company, programming, and methods development. The small company will have few staff people trained in these areas. Therefore, these functions all become the responsibility of the Electronics Department.

To do this job in anything less than a decade will require at least one man per function. A small company will not have the necessary manpower and therefore must turn to outside hiring. Since a person with all the necessary qualifications is not likely to be available at any price, the company will have to be satisfied with lower qualifications and be prepared to do a certain amount of training.

Once having formed the staff, consisting of present employees to be taught programming and new employees to be taught life insurance, watch out for two very large traps. First, do not underestimate the time involved in the necessary training before useful production from new men can be expected. Second, do not make plans and set deadlines in the expectation that every member of your staff will be capable and that they all will stay throughout the project. Some people will not be capable, and contrariwise, your good people can easily find other opportunities, not just in life insurance but in industry generally.

One more point. Small companies tend to be more informal in their systems and thus are willing to make exceptions to rules and procedures, and, frequently, many procedures are not written down. This, of course, creates real problems when changing to electronics, and every detail of a particular function must be known. Exceptions, which are not properly recorded when they are made, will turn up if and when someone remembers the details.

Turning to Part C, Hartford Life's Electronic Plans are based on joint usage of equipment with our parent company, the Hartford Fire

Insurance Company. This allows us to plan for a comprehensive consolidated functions system using hardware we could not possibly justify ourselves. Our home office is in Boston, while our parent company and the machines are in Hartford. Present plans are to communicate electronically with the equipment one hundred miles away. Each company has its own programming staffs but will share the same operators. It will be interesting to see if the advantages of having a more powerful system at our command will eventually outweigh the following disadvantages:

Compromise on equipment needs.
Scheduling of test time for one company and production for the other. Which is more important, and who is going to have to work late?
Scheduling of production runs with peak loads for both at the same time—month ends, year ends, etc.
Down time. Whose schedule gets socked hardest?
Distance. One hundred miles between headquarters and equipment.
Difference in approaches. We are planning a consolidated functions system using random-access real-time processing, while our parent company is using a functional approach with tape-oriented, batch processing.

As I mentioned earlier, we plan to communicate electronically directly into our equipment one hundred miles away on a real-time basis. Software, supposedly available to allow interruption of other production, is not available and will not be for another year. This is a major problem, and no proposed substitute has proved entirely satisfactory so far. The hardware people were late getting into the telecommunication field, and as a result the equipment available is, with relation to the actual processors themselves, slow, inaccurate, and very expensive. We are planning to use a very simple, unsophisticated, and inexpensive communication link, and yet almost 40 per cent of our cost is due to the need for electronic communication over a distance of one hundred miles. Later, we plan on communication links to various offices throughout the country. This will speed service but also will magnify our expense and control problems.

Hardware is improving, however, and I believe significant advances can be expected in the near future. Just recently, I.B.M. announced a data communication system with a twelve-month delivery date which is both better and cheaper than anything they have presently available.

One other aspect to remember is that in many cases the communication will be done over common carrier lines, requiring a third party to the negotiation. The chance for misunderstanding is multiplied, equipment from two manufacturers must be joined successfully, and agreements on

installation dates, preventive maintenance, actual down time, and so forth, must be reached.

While we are awaiting teleprocessing equipment installation, we are using vehicular transportation—buses, armored-car services, personal cars—all having their own problems, but considerably less expensive than our eventual equipment. Allied with this problem is that of personnel. Necessarily, there is a considerable amount of personal commutation at all levels from management to operators while in the program testing stage. For management, it is inconvenient; for operators, it may be impossible. Finding people who want to spend a lot of time on the road at pay rates normal for equipment operators is not easy.

In conclusion, for the advantages of a sophisticated system on a powerful equipment configuration at a distance of one hundred miles, we are paying quite a price in money and problems. We will be proud of it when it finally works.

MR. GEORGE E. IMMERWAHR: Our gain from electronics at Monumental Life is not to be measured in a reduction of previous costs but in the facts (1) that we can now do so many things faster and better than previously; (2) that the changing nature of our business is constantly imposing new problems that could not readily be solved without electronics; and (3) that we are lessening the effect of continuously rising clerical costs. Viewed in this light, I feel we have made a very substantial savings.

In 1962 we purchased a tape 1410 system to replace the 650 system we had previously rented. Based on what we have seen of the performance and capacity of the new system, the ability to add or replace peripheral items in future years as needed, and the tax advantages, we feel that the decision to purchase will prove economically most advantageous.

I am particularly impressed by the tape-sort feature of the new equipment. We have total ordinary and industrial in force of $1.25 billion, but it is made up of well over a million policies, and, in dealing with a work load of this type, this feature is extremely valuable.

We have also been able to develop effective actuarial computation programs as well as data-processing programs with a comparatively small programming staff.

MR. ROBERT C. TOOKEY: There are two new EDP systems that should be of interest to the smaller company, the Univac 1004 and I.B.M. 1440. Other manufacturers that have come out with small systems include Burroughs, General Electric, Minneapolis-Honeywell, National

Cash Register, and R.C.A. Today the company can afford to shop and should select the system most suited to its needs regardless of which manufacturer of business machines it has previously dealt with.

The company with less than $150,000,000 in force is nearly always better off with conventional tabulating equipment, but, upon reaching this size, it should consider the possibility of an EDP system. There is really no exact minimum size, because situations vary and the number and type of transactions will determine what the actual savings is. The tangible savings apply to salaried help, machines, supplies, and the intangible savings relate to speed, timing, quality of service to customers, information available to management, and so on. It is not too difficult to estimate the tangible savings in clerical costs and equipment, but the best estimate of intangible savings is often a figure pulled out of the air. Before installing equipment, one should show a dollar value in savings of approximately twice the cost of equipment and the special personnel required to run it. This is necessary to be sure of recovering nonrecurring costs. A rule of thumb in use is that each million dollars of premium income can justify $500 in monthly machine rental; thus the $150,000,000 company would have about $3,000,000 of premium income and could afford around $1,500 of machine rental, which is about the cost of a stripped-down Univac 1004 system.

The expense reductions do not materialize at once but are realized as full utilization in machine capabilities is attained and debugging is completed. Errors in savings estimates generally err in only one direction, not due just to enthusiasm of the salesmen, but due, for the most part, to failure to attain full utilization. This failure is caused partly by incomplete planning. The importance of having top management fully informed on the importance of EDP planning cannot be overstressed. Often the machine will relieve many clerks of a certain proportion of their workloads without actually releasing any "whole bodies" so to speak. Therefore, it is important to reassign work so that the remaining staff will be completely occupied, and the size of the staff can be reduced through normal attrition.

Sometimes a rapidly expanding company will decide to install EDP before it can actually be justified from a cost standpoint. Reasons for starting in early include (1) reduction of conversion costs and elimination of conversion headaches; (2) immediate improvement of quality of service to policyholders; (3) improvement of service to agents, for example, net costs schedules printed from the computer have a certain glamor and look good in a proposal; (4) the latest computer systems are designed on the block principle and can be supplemented with additional equip-

ment as required by the company's continued growth. New equipment is so designed that it can be added to existing computers, greatly increasing the capacity without changing the basic characteristics. Existing procedures do not have to be reprogrammed.

Generally speaking, the cost savings fall short of the estimates in most companies but the quality of service is considerably improved. The company that can assign responsibility for the computer to its actuary can often install a data-processing system sooner than would otherwise be the case. The actuary can adapt a number of his actuarial calculations to the computer and provide general supervision. This will often eliminate the need to hire a full-time computer expert which would add to the cost of the EDP system. One company, managed by an FSA, installed a monrobot computer when it had only about 40 million in force.

Shortage of trained personnel is the biggest problem facing the small company. To take full advantage of the computer's capabilities, one must achieve certain breakthroughs which can be accomplished only if one person gives the project his undivided attention. In a small company, the personnel qualified to do the job must usually wear too many hats to concentrate on the computer. However, today there are consulting firms in many major cities that can make available, on an hourly basis, experienced computer experts in programming and system design. An expert working closely with the actuary or controller of the small company can devote full time, for several months, to getting all the systems on EDP. The fee is of a nonrecurring nature and often will be offset by the expense savings in the first year.

We have several times recommended that small insurance company clients in the same city go in together and make joint use of an EDP system. The principal barriers are psychological in nature. Questions arise as to protection from disclosure, scheduling of computer time, procedures to follow in the event of machine breakdown, allocation of charges between companies, and how to handle the year-end rush. Only companies whose managements enjoy a high degree of mutual trust and who can work in a true spirit of co-operation should consider a joint facility. The company should not have to be persuaded to go into it, but the desire to participate should exist before the group even begins its feasibility study. Since it might be necessary for the companies to enter sequentially, it may appear to the others that the company that is first is getting a competitive edge.

Computer service bureaus have some of the characteristics of joint facilities. A customer of a service bureau can obtain economically the use of data-processing equipment that he could not normally afford—and

without undergoing the trials of establishing a joint facility. On the other hand, since these bureaus are operated for a profit, the customer may be paying somewhat more than he would pay were he to operate his own facility in conjunction with others. Furthermore, a joint facility offers a certain degree of flexibility that cannot be obtained from a service bureau because of its independent profit-making character. Temporary or emergency use of the service bureau might be the answer to the problem of the year-end rush in a joint facility. If there simply is not enough time for all member companies to get their year-end work done, some of them could take the work to a service bureau, with the bill being shared by all participating companies.

A. Have smaller companies competed successfully in the field of pension trust sales? What problems exist for smaller companies with respect to such sales?
B. What agency compensation plans have been developed to stimulate growth and how successful have they been as to both amount and quality of business? What incentives for production have been incorporated in training allowance programs? Have persistency elements in compensation plans proved effective?

MR. MELVIN M. GOLD: There has been an increase in new stock life insurance companies which are partially owned by insurance agents. The promoters of these new companies, often agents themselves, deliberately seek a broad base of ownership by agents on the theory that these agents will submit a good portion of new business to companies in which they have a financial stake. Sometimes commissions are reduced with such a program and sometimes they are not. I believe it is too early to say how this incentive program will work.

I have found that often too much money is being spent by management of these companies who are agents themselves. They seem to spend too much time working with marginal sales ideas when they should be spending their time on regular ordinary insurance plans. A few of these companies have been very successful, but others have wasted money on marginal schemes.

MR. JOHN S. MOYSE: My experience has been that persistency elements in compensation plans are effective only when used in moderation. There is danger in overemphasizing persistency to the point where persistency can have too great an effect on compensation.

Such a plan will tempt the agent or manager to avoid lapses by paying the premium himself or shifting lapses into another category such as allowing a policy to lapse near the end of the first policy year and thereby avoid a penalty from a renewal lapse.

When this happens, I feel that the designers of the compensation plan are to blame rather than the agent or manager. Two examples of compensation plans that overemphasize persistency are (1) a bonus per thousand payable on new business which varies sharply according to the renewal lapse ratio range, and (2) the old times contract for debit agents which provides for full charge back of first-year commissions on a chargeable lapse, no matter when this lapse occurs.

In my opinion persistency is primarily controlled by conditions present

at time of issue such as amount of premium, mode of premium payment, effectiveness of agent's presentation, suitability of insurance needs, and also by certain conditions arising subsequent to issue such as changes in general economic conditions, the financial circumstances of the insured, insurance needs, etc. The efforts of the agent in subsequently saving a policy from lapse is of minor effect compared with these other factors which are beyond his control in renewal years, and therefore he should not be overly rewarded or penalized for persistency. This is even more so when applied to the manager, who may be called on to save policies written prior to his appointment.

It should be remembered that the normal compensation plan does have persistency elements in that first-year and renewal commissions are contingent upon the continuance of premium payments. Any additional persistency elements should be of a minor nature.

UNDERWRITING

A. Have smaller companies been active in the field of experimental underwriting of substandard risks and in what areas?

B. What are the advantages and disadvantages in the use of a limited number of substandard extra premiums in lieu of permanent extras? Was the level of substandard extra premiums revised at the time of adoption of the 1958 CSO Mortality Table?

MRS. ANNA MARIA RAPPAPORT: Standard Security introduced a new substandard program in November, 1962. Extra premiums for all medical impairments are on a temporary basis. The extra premium period is from one to thirteen years on permanent plans and from one to twenty years on term. The premium period is determined by age and substandard classification. All occupational ratings on females were eliminated. First-year commissions on substandard premiums are payable at the first renewal rate.

The advantages of temporary extras seemed to us to be: (1) a lower mortality on the total substandard group because fewer lives are removed by rating reduction; (2) lower lapse rates; (3) fewer problems of reducing and removing ratings; (4) an improved financial position because, in the many situations where extra mortality decreases by duration, the premiums are collected at the time the extra mortality is being experienced; and (5) the program itself is a very good selling point.

The main disadvantages seem to be that special reserves may be required which may involve seriatim handling and the fact that only reduced commissions can be paid during the first year.

MR. COURTLAND C. SMITH: The 1962 edition of the publication *Who Writes What?* lists 133 companies that accept risks at high substandard ratings. The 1956 edition listed 125 companies—almost the same number. The highest rating at which risks were accepted by the companies listed in 1962 was reported to be 1500 per cent, compared to 1000 per cent in the 1956 edition. Roughly a third of the companies listed in the latest edition underwrite risks at ratings above 500 per cent. The edition of six years prior showed only five companies in this category. These figures are probably representative of little beyond themselves, but they do indicate that in recent years life insurance companies have shown an increased willingness to underwrite substandard risks in the experimental range.

Few small companies have gone in for experimental underwriting, but those that have done so seem to have entered the field quite aggressively. The company listed in the latest edition of *Who Writes What?* as accepting risks up to fifteen times standard is a new, small, but fast-growing company located in the Northeast. One of the major sources of experimental submissions to my company, North American Reassurance Company, in recent years has been a small concern in the Midwest which actually advertises a preference for substandard risks.

Almost any small company considering entering the field of high substandard underwriting will, because of its limited claims experience, underwriting background and retention limits, rely heavily on reinsurance in this area. The question immediately comes to mind, "Whom or what can the reinsurance companies rely on?"

Actuarial literature contains very little mortality experience by impairment on risks insured in the high substandard range. In the 1956 *Transactions*, John Stearns summarized New England Life's experience with some 3,500 pension-trust issues on risks declined for insurance at regular ratings. Most of the risks were considered to be in the 1000 per cent class. The experience showed ratios of actual to expected mortality which decreased with advance in age and in duration—the ratios averaging 533 per cent of the 1946–49 Select Basic Table. Roughly 67 per cent of the deaths was from cardiovascular causes, and 75 per cent of the exposure was rated uninsurable by reason of cardiovascular impairments. At North American Re we have found upward of 90 per cent of our experimental risks so rated for cardiovascular impairments. Stearns did not report mortality by impairment in any greater detail perhaps because of paucity of numbers.

The only available experience by impairment covers survivorship following recovery from a significant medical event, for example, coronary thrombosis or operation to remove a malignant neoplasm. It is difficult, however, to utilize general clinical data for life insurance underwriting without modification, because life insurance risks are not generally as candid in applications for insurance as they are with their personal doctors during the taking of a history.

The major element in experimental underwriting is good clinical judgment on the part of your medical director in deciding what additional information should be obtained on a case and in combining the data that are made available into a consistent picture to yield a reasonable assessment of the appropriate premium to charge for a risk. At my company during the last few years, we have underwritten experimental risks up to about eighteen times standard mortality.

We have developed some guide lines for dealing with high substandard submissions. First of all, we prefer insurance sold for a business or tax purpose rather than strictly personal insurance. A high substandard risk desiring insurance for his family presents an anti-selective hazard that is difficult to evaluate and to protect ourselves against. We consider key-man insurance ideal on a high substandard life.

Second, we prefer applications for amounts of $25,000 and up. Underwriting expense is a large element of cost in experimental underwriting —so large that it can be justified only if an adequate premium is to be collected and sufficient coverage is offered the insured. The high not-taken rate—now well in excess of 75 per cent for my company—is another factor contributing to cost.

Third, experimental cases cannot be handled by underwriting trainees. They require experienced, sophisticated personnel who are broadly trained in a well-integrated combination of lay and medical underwriting.

Fourth, we require an extensive work-up in most experimental cases. It is next to impossible for an underwriter to form an intelligent judgment on a risk unless he receives a complete and consistent picture of the risk on the basis of a variety of independent tests, supported by other supplemental requirements including attending physicians' statements. By training, underwriters learn to be able to make decisions on incomplete data. Experimental underwriting is an area where they have to learn to suspend final decision if any further digging for facts seems advisable.

Fifth, we have come to the point where we place great reliance on allowing a sufficient waiting period to elapse for applicants with histories of coronary disease, operation for cancer, and so on. For example, we feel that a minimum of a year after return to normal activity following a heart attack is highly desirable before the probable future survivorship of an experimental risk in this category can be evaluated with reasonable confidence.

Recently, a number of companies have started charging temporary extras payable for one, two, three, or five years for medical impairments customarily charged permanent multiple table extra premiums. For instance, last year one southern company came out with temporary or commuted extra premiums which promise the insured fairly substantial savings. For example, for 200 per cent mortality at age 30, this company charges a permanent substandard extra premium of about $6.30 on the ordinary life plan. The commuted extra payable for five years would be only around $10.70.

Some of the advantages of temporary or commuted extra premiums are:

1. Commuted extra premiums may be more appropriate than permanent extras for most impairments (other than overweight and hypertension) which show reducing extra percentage mortality with advance in duration. It seems unreasonable to continue charging for a medical impairment after the period of excess risk is passed.

2. The temporary extra acts as a kind of lock-in device once a substandard policyholder has completed paying his three or five temporary extras and returns to a standard premium basis. He is much less likely to lapse his policy or to allow it to be twisted.

3. Temporary extras largely eliminate requests for re-rating to a standard basis. Thus the substandard cohort may be expected to be less likely to show poorer mortality at later durations than originally assumed.

4. Temporary extras may yield a more favorable net cost picture. One, three, or five temporary extras will usually total less than ten or fifteen comparable permanent extras, particularly at the higher ages and ratings.

5. The actual cost to the policyholder may be reduced even further, since it is customary to pay no commission at all on a temporary extra of five years or less or to pay commissions just at the renewal rate.

6. Commuted extras may produce larger margins over risk premium (yearly renewable term) reinsurance costs and other expenses, after discounting for interest, mortality and withdrawal, and allowing for probable investment gains over assumed rates.

However, there are a number of disadvantages to charging a limited number of substandard extras in lieu of permanent multiple table extra premiums:

1. The prospect of having to pay a higher premium outlay in the early policy years may have little sales appeal. A policyholder may prefer to pay a level premium throughout the life of the policy or even perhaps pay a somewhat reduced premium in the early durations. Introducing temporary extras where permanent extras were charged previously actually bucks the trend observable in recent years of reduction in premium payments in the early durations, as on modified premium payment plans.

2. The use of a temporary extra premium may seem inequitable particularly to those substandard lives who are forced to withdraw for financial or other reasons. It may appear to them that they have to pay more than their share of the cost of insurance.

3. The use of temporary extras for essentially multiple table risks would entail an implicit requirement for the company to accumulate special reserves to provide for the extra mortality expected after the cessation of extra premium payments. Special reserve calculations of this type may introduce complications in valuation that appear excessively forbidding to small companies with limited actuarial staffs.

4. Agents and brokers may object to the reduced rate of commission payable on these temporary extras, particularly in the first year. I have heard of one or two companies which use these commuted extras on a basis providing no commission at all on the substandard portion of the premium.

5. State insurance authorities may require companies charging temporary extras of this type to consider paying cash values at withdrawal on a scale differing from that used for other substandard lives.

6. It may be inequitable to use commuted extras for substandard risks with impairments like high blood pressure and overweight, which have a largely deferred incidence of extra mortality cost. If anything, it would seem more equitable to such risks for the insurer to charge extra premiums which are relatively small in the first few durations and jump to a higher level later, particularly since only standard cash values are generally allowed.

With regard to the adoption of the 1958 CSO mortality table, I would say that this has brought some revision of substandard mortality rates which are multiples of standard mortality. Reductions in these rates have occurred, however, in the last year or two.

The major reinsurers have been coming out with new suggested substandard extra premiums for their client companies. These rates are particularly designed for companies going over to the new valuation table and reducing their rates in the process. The extra premiums suggested by the reinsurers contain substantial reductions, especially at the higher ages and ratings.

Some of the companies have based their reductions in extra premiums on the explicit assumption that underwriting will in the near future become somewhat more stringent than heretofore. My own company dissents from this view. We feel that, in the absence of a business recession, future underwriting standards and practices will remain about the same as in the recent past, particularly considering the increasingly competitive market in which life insurance is currently operating in the United States and Canada. However, with decreases in yearly renewable term reinsurance costs in recent years, we feel that ceding companies recognize that they can afford to charge somewhat reduced permanent extra premiums and should be encouraged to do so. One reinsurer has apparently computed its multiple table suggested extras on the assumption of a grading down of experience substandard mortality at the higher ages to about one hundred fifteen per cent of standard at around age 80 for survivors in all substandard mortality classes. Their experience and the experience of a number of other companies would seem to justify some form of grading down at the higher ages.

A. What bases are currently being used to calculate rates for basic hospital policies, including maternity benefits included in such policies? Are the companies being selected against by young married couples in regard to maternity benefits? What measures are being used to prevent such anti-selection?
B. What success have the smaller companies had in the sale of individual major medical plans? What reinsurance arrangements have been made to protect the small insurer? What has been the experience in this line?
C. What problems are involved in instituting rate increases on individual guaranteed renewable hospital coverages? What has been the reaction of policyholders?

MR. RALPH G. SWAIL: At Colonial Life, the rates are derived from Nelson and Warren Hospital and Surgical Experience Tables, which are based on the 1956 Hospital and Surgical Tables combined with 1941 CSO at 2½ per cent. We have also used the New York Insurance Department's *Voluntary Health Insurance and the Senior Citizen.*

We are being selected against on maternity benefits and have not been very successful in preventing it. Our only defenses are to refuse to include maternity benefits in a policy for a wife only, unless the husband is physically uninsurable, and to set the premiums for maternity benefits as high as competition will permit. Despite this anti-selection, our over-all loss ratio on individual hospital policies is quite satisfactory.

We feel that a smaller company is in as good a position as a larger one to sell major medical in the brokerage market. In this market the most liberal plans sell well, and vice versa. Stop-loss reinsurance is available for individual major medical.

MR. MORTON J. KENT: At Interstate Life and Accident, we state in the policy that every seven years there will be an increase in rates and specify what the minimum increase will be. Our experience of the last three years has been so good that we may decrease rates. We do not know why it has been this good, but we do restrict our daily hospital benefit amount to 25 per cent of the weekly earned income.

MISCELLANEOUS

A. How may the information-at-source reports on interest payments of $10.00 or more best be handled?

B. Are there methods of expense analysis that can be presented fruitfully to the agency department and to management to emphasize the part expenses play in eventual profit? How may the actuary assist in budgetary and other controls to attain current and long-range financial objectives?

MR. J. STANLEY HILL: At Minnesota Mutual we explain the advantages of paid-up additions over accumulations to the policyholder and tell him that, unless we hear differently within thirty days, we will transfer his accumulations to paid-up additions. If he does not agree, he signs the enclosed Government Form 3435 and returns it. We are getting about 10 per cent of the Form 3435's back. Many may be returning it just because they saw there was a form there, so we have remodeled the letter to clear up any misunderstanding. Only 5 out of 20,000 have so far objected to this doctrine of implied consent.

We are attempting to educate agents to sell the paid-up addition option. We are also changing the option to paid-up additions on new applications as they come in. Any who really want the accumulations will notify us on delivery of the policy. We have also prepared a sticker for printed sales material which suggests that a different dividend option from the one demonstrated may be more desirable.

We do not require any evidence of insurability for transferring any amount to paid-up additions.

The government produced a specific regulation on taxability of interest on dividend accumulations. Most of us have assumed for many years that the interest was taxable, but the new regulation permits us to present it as news.

MR. REUBEN I. JACOBSON: At Lutheran Brotherhood we are changing accumulations to paid-up additions the same as Mr. Hill described.

There is quite a sales pitch you can give the management on adopting this kind of deal. Since you get close to 100 per cent acceptance, there is no anti-selection. The agency men will be delighted with the increase in insurance you can project.

We are asking the agent to explain now why the applicant wants accumulations. We want to get them out of the habit of ticking off accu-

mulations on the application. Our sales literature will be based on paid-up additions, and our new policies will have the paid-up additions as the automatic option.

Another pitch is that, if paid-up additions are participating, in most cases he will get the insurance for nothing. In other words, the cash value of the paid-up additions at age 65 will be greater than the dividend accumulation after deducting the tax on the interest.

So far as I know we have had no outright complaints, although we have had lots of confusion, even among our own agents. We feel the same as Mr. Hill, namely, that a lot of requests are coming back to keep the accumulations just because they are being "agreeable" and signing the enclosed form.

We do not change dividend accumulations to paid-up additions on term policies.

MR. RALPH E. EDWARDS: There may be a tax problem if an insured has paid a tax on the interest during the period while dividends are accumulating and has switched the total accumulation to paid-up additions. The tax levied in a future year on surrender or maturity of the policy is based on the excess of the sum received over the sum paid. There may then be no record of the amount on which tax was paid, so it may be taxed twice. I am informed that, even if the record is available, tax regulations may be interpreted as not allowing the double taxation to be avoided.

MR. ROBERT H. JORDAN: In regard to Part B, at Life Insurance Company of North America we have made use of a set of expense rates similar in form to those used by Mr. Pedoe in his papers (*TSA* IV and XIII). Using Schedule Q's of other companies, certain LIAMA studies, and a process of general reasoning, field acquisition expense rates were determined that are considered satisfactory objectives for us. Management and sales executives are directing their efforts toward attainment of these objectives and measuring the success of field units by these objectives.

By using the entire set of expense rates as the measure of ultimate expense objectives and applying these to projections of our business, both new and in-force, we have been able to demonstrate the dollar difference between expenses and "provision for expenses," the trend of such differences, the relative positions of the field and the home office with respect to the "provisions" for each, and the effect of excess expenditures on profitability in any year. We believe that these demonstrations have had an important effect in the setting of budgets as well as in giving

management an index of the efficiency of the two basic parts of the operation as well as its whole.

We should expect to produce about the same results as any other company in mortality, interest earnings, and lapse rates. Therefore, in essence we compete with other companies primarily on an expense basis, that is, the extent to which we can be more efficient than they. Based on this premise, it seems desirable to use a standard set of expense rates, so you can see where other companies stand and where your own company stands relative to your standard.

MR. MELVIN M. GOLD: With new companies, the question of expenses is the most crucial area of all. The problem is to tell whether the management is dissipating surplus or investing it. With new companies, practically all other questions fade into the background. Usually the management is spending too much money, since they think all new life companies will show a loss for the first seven years anyway, and analyzing and controlling this is one of the prime tasks of the actuary.

MR. JAMES G. BRUCE: If you are going to spend money to develop an agency, you must get all your capital back, you must get interest on the capital while it is being used, and you should get a profit, because there is a risk involved.

Many people feel that you should just go ahead and spend money and that business will come in and make a profit. I feel that nobody knows just how this profit is coming back. Money does not always just roll in, because you spend it in developing new business.

At Hartford Life, I developed model company figures, using a company very nearly like our own. I projected the additions to surplus into 1970 on a tremendous number of different bases as to mortality, persistency, interest rates, and expenses. The difference in results between the most favorable and least favorable assumptions varied all the way from starting to really get our money back in just a few years to a deficit getting deeper and deeper.

The agency force and the executives studied the figures and apparently agreed that they understood the power of the different elements in it.