



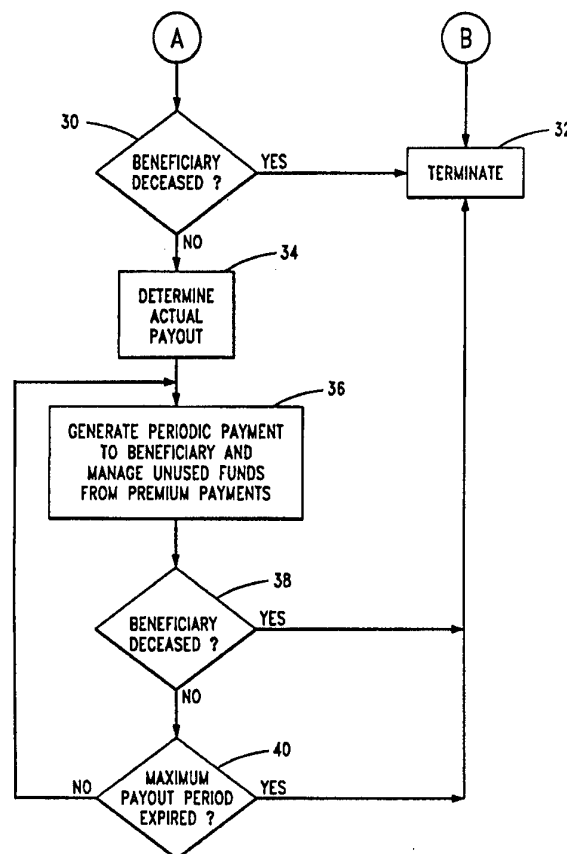
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(54) Title: METHOD OF PROVIDING FUTURE BENEFIT CONDITIONED ON LIFE EXPECTANCIES OF AN INSURED AND A BENEFICIARY

(57) Abstract

A method of providing for a future stream of payments (36) solely to a beneficiary who survives an insured (30) utilizing data including the ages of both the insured and one specific beneficiary (14) to define a premium (16) for providing funding for the potential future liability to the specific beneficiary.



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METHOD OF PROVIDING FUTURE BENEFIT
CONDITIONED ON LIFE EXPECTANCIES
OF AN INSURED AND A BENEFICIARY

Background of the Invention

5 This invention relates generally to a data
processing method for administering a program to provide
benefits to beneficiaries who survive respective
insureds. More specifically, the present invention
relates to a method of providing for a future stream of
payments solely to a beneficiary who survives an insured,
10 wherein such payments are derived from premiums paid in
response to conditions including the ages, from which
life expectancies are measured, of both the insured
person and one specific beneficiary.

15 Traditional methods for providing for one's future
financial condition, or that of one's family, include
those which utilize annuities and life insurance.

Using a single life annuity, a person (the
annuitant) can obtain future payments during an annuity
period based on amounts paid in. If the annuitant dies
20 during the annuity period, no further payout is made
under the annuity. That is, there is no beneficiary
under a single life annuity.

Under other annuities, there can be obligations to
pay during an annuity period even after the death of the
annuitant. Such annuities can be for a fixed time period
25 or for the remaining life of a designated beneficiary.
If the annuity is for a fixed time period, the amount
will be paid for the set period. Payout will go to a
designated beneficiary or an estate if the annuitant dies
30 during the set period. If the annuity is for the
remaining life of a designated beneficiary, and the
beneficiary survives the annuitant, then payments are
made to the beneficiary but without further obligation
upon the death of the beneficiary. Prior to the death of
35 the annuitant, the beneficiary can be changed under these
annuities.

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For any of these annuity methodologies, the annuitant is entitled to the annuity if the annuitant lives long enough.

5 Additionally, for any of these annuity methodologies, the annuitant's estate is entitled to an amount based on what has been paid in if the annuitant dies before the annuity period. Thus, prior to the annuity period the annuity policy has a "cash value."

10 Pricing of these annuities depends on the amounts desired to be received in the future (or the amounts to be paid in can be defined first and the amounts to be received in the future determined in response). That is, for a given desired future benefit, a certain present payment is determined in accordance with conventional
15 actuarial principles. This typically involves a time factor based on the period from the then present time to the beginning of the annuity period as related solely to the annuitant. That is, if an annuity is purchased for a 25-year-old annuitant to receive a certain payout
20 beginning when the annuitant is 65, the price of the annuity will be different than for a 55-year-old annuitant under otherwise identical conditions because the 25-year-old has a longer period for investment growth to accrue to his or her benefit than does the 55-year-old
25 (i.e., 40 years versus 10 years if both were to survive to 65). These different time periods also affect pricing in that even if both a 25-year-old and a 55-year-old had to pay in the same total amount for identical annuities, the 25-year-old would have a smaller periodic payment
30 (e.g., \$ total/40 years vs. \$ total/10 years) if the total were to be paid in over time.

35 As to payout between a single life annuity and an annuity providing for payout to a survivor after the death of the annuitant, the latter has a lesser payout than the former. For example, whereas relative to a \$1,000.00 monthly payout for a single life annuity, a joint survivorship annuity potentially benefitting the

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annuitant's spouse, for example, may have a monthly payout of only \$750.00 to the annuitant. The \$250.00 differential is the cost for the survivor benefit, which survivor benefit is even less than the \$750.00 (e.g., \$375.00). This exemplifies what a person's choices may be under a non-contributory retirement plan. The person can select either a higher paying single life annuity to the exclusion of a beneficiary, or the person can select a lower paying joint survivorship annuity which provides for a survivor, albeit at an even lower payout to the survivor. Furthermore, under the joint survivorship annuity, the \$250.00 reduction (or other differential relative to a single life annuity) continues even if the beneficiary predeceases the annuitant.

In methods for providing for a future payment to a beneficiary using life insurance, a person can obtain a certain payment for a designated beneficiary upon the death of the insured. Prior to the death of the insured, the beneficiary can be changed. The future amount to be paid upon the death of the insured is fixed and the obligation to pay the full amount is certain. This obligation is certain because the amount of the insurance is to be paid even if there is no surviving beneficiary; then the payment would be to the insured's estate. One or more payments, or premiums, to be made to obtain life insurance are determined in response to one or more factors, typically including the sex, age and health of the insured.

One type of life insurance is referred to as whole life or permanent life insurance. Typically, an amount to be paid upon death is set and a premium schedule of fixed periodic amounts is then defined whereby the coverage is maintained as long as the premiums are paid and thereafter once all the scheduled premiums are paid. As the premiums are paid, a "cash value" accrues. This cash value can be redeemed by surrendering the insurance coverage.

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Another type of life insurance is term life insurance. This provides life insurance for a limited period (e.g., one year) in return for a premium paid at that time (e.g., one premium paid at the beginning of the year of coverage). No cash value accrues under term life insurance so the only recipient of proceeds from term life insurance is the designated beneficiary or the insured's estate. Whereas the premiums for permanent life insurance are typically fixed amounts, term insurance premiums increase as the insured ages.

Pricing in both conventional annuity and life insurance methodologies is related solely to the insured. Regardless of the particular actuarial principles, analyses and computations applicable to one of the aforementioned conventional methods, as a particular insured grows older, it may become more difficult for the insured to use one of these conventional methods. For example, even if the total cost under a particular annuity method were the same for a person regardless of whether he or she were 25 or 55, the periodic burden at 55 would be greater than at 25 if the person had to pay in the amount over time. That is, as mentioned above, the person at 55 would have larger periodic payments from age 55 to a specified future date than the person would have had if periodic payments had been made at the same frequency from age 25 to the same future date. Such greater burden is clearly evident in term life insurance pricing, which rises with age regardless of when the first term coverage was obtained. This greater burden can price older potential insureds out of the market for amounts of future benefit they may need, which is significant because many people do not start to make definite plans about future financial needs until they are older.

In view of the foregoing, there is the need for a new method by which an older person can provide for future payments for a beneficiary at a lesser burden than

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by using the aforementioned traditional methods, whereby future financial security can be more readily obtained at an older age.

Summary of the Invention

5 The present invention overcomes the above-noted and other shortcomings of the prior art by providing a novel and improved data processing method for administering a program to provide benefits to beneficiaries who survive respective insureds. More particularly, the present
10 invention provides a method of providing for a future stream of payments (e.g., monthly payments) solely to a specific, unchangeable beneficiary who survives an insured, wherein such payments are derived from premiums paid in response to conditions including at least the
15 ages of both the insured person and the one specific beneficiary. Basing the methodology on both the insured and a specific beneficiary results in relatively lower pricing while still providing for the future of the beneficiary.

20 The present invention provides for more efficient and flexible financial planning. With regard to the aforementioned example of the choices previously available to a person with a non-contributory retirement plan, the person can now select the higher paying single
25 life annuity and yet obtain beneficiary protection at a lower relative cost than if the joint survivorship annuity had been used. Referring to the above example, the person could receive the \$1,000.00 monthly payments under a single life annuity purchased via the retirement
30 plan. The person could additionally use the present invention, at a cost less than the \$250.00 referred to above with regard to a joint survivorship annuity, to provide for a surviving beneficiary an amount at least equal to what would have been provided under the joint
35 survivorship annuity. Furthermore, using the present invention, any further cost for obtaining beneficiary

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protection ceases if the beneficiary predeceases the annuitant of the single life annuity.

5 The present invention method comprises determining for each insured, by digital data processing and in response to actuarial mortality data for both the insured and the respective beneficiary, a respective premium periodically required for participation in the program. For participation, a respective premium is payable only during the shortest of the remaining life of the insured, 10 the remaining life of the beneficiary, and a predetermined maximum premium payment period. The method further comprises entering participation payment data and managing by digital data processing participation payments to provide for payouts only to beneficiaries who survive respective insureds. 15 The method also includes entering data about the death of insureds and survival by the respective beneficiaries. Upon death of an insured and survival by the respective beneficiary, periodic payout data is determined for the respective surviving beneficiary. 20 The method further comprises generating by digital data processing, in response to the determined periodic payout data, periodic payouts only to the respective surviving beneficiary.

25 The invention can be more broadly defined as comprising the following steps: identifying an insured and a beneficiary; determining, in response to both the age of the insured and the age of the beneficiary, a premium to be paid periodically during the shortest of the remaining life of the insured, the remaining life of 30 the beneficiary, and a predetermined time period; and retaining at least a portion of a paid premium in a financial reserve from which a future stream of payments is to be made solely to the beneficiary upon the condition that the beneficiary survives the insured.

35 Another definition of the present invention is as a method, with the aid of a digital computer system including a printer, of preparing a policy for insuring

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a future stream of payments solely to a beneficiary who survives an insured named in the policy. This method comprises: acquiring identification of an insured, a beneficiary, the age of the insured, the age of the beneficiary, a maximum premium payment period, a maximum payout period, and a selected one of a premium payment and a minimum payout; applying the acquired identifications to the digital computer system; acquiring data defining information about premiums and payouts responsive to both the age of an insured and the age of a beneficiary; storing the acquired data in the digital computer system; actuating the digital computer system to determine a specific combination of a premium and a payout in response to the acquired identifications applied to the digital computer system and the acquired data stored in the digital computer system; and actuating the printer to print the policy at the determined specific combination of premium and payout.

Therefore, from the foregoing, it is a general object of the present invention to provide a novel and improved data processing method for administering a program to provide benefits to beneficiaries who survive respective insureds. Other and further objects, features and advantages of the present invention will be readily apparent to those skilled in the art when the following description of the preferred embodiments is read in conjunction with the accompanying drawings.

Brief Description of the Drawings

FIG. 1 is a block diagram of a data processing computer system which can be used for implementing the method of the present invention.

FIGS. 2A and 2B are a flow chart of a data processing method in accordance with the present invention for administering a program to provide benefits to beneficiaries who survive respective insureds.

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Detailed Description of Preferred Embodiments

The present invention is an automated data processing method for administering a program to provide benefits to beneficiaries who survive respective insureds. The specific method of the invention provides for a future stream of payments solely to a beneficiary who survives an insured. This is accomplished in a particular implementation by creating a reversionary annuity conditioned on life expectancies of both the individual insured and the respective specific beneficiary, who in the particular implementation is assumed to be the insured's spouse; however, the present invention can be applied to other multiple life expectancy conditions so that it is not limited to the aforementioned specific assumption. The present invention is also not limited to a reversionary annuity as the method of the present invention can be implemented or used with other insurance concepts (e.g., group plans).

The present invention is implemented with the aid of a digital computer system to perform digital data processing in accordance with the method of the present invention. One example of such a system is represented in FIG. 1. The illustrated digital computer system includes a central processing unit (cpu) 2 having data, address and control buses and connections to which memory means 4, data entry means 6 and output means 8 are connected for control by the cpu 2.

The memory 4 includes a main operating program 10 under which the cpu 2 operates. The main operating program 10 includes conventional programming for the particular cpu 2 used, and it also includes the particular application program implementing the method of the present invention as further described below. Based on the description of the invention set forth in this specification, conventional programming languages and techniques can be used by those skilled in the art to

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write a specific application program for specifically implementing the method of the present invention.

5 The memory 4 also includes encoded signals defining the means by which premium (pricing) and payout (benefit to surviving beneficiary) data are determined in the preferred embodiments of the present invention. These signals can be part of the stored program 10, but in FIG. 1 they are identified as database 12. In the implementation as a database, these signals in effect provide look-up tables keyed to particular input parameters so that premium and payout data are obtained from predetermined numerical data in the database in response to particular input data. Alternatively, the means by which premium and payout information are obtained can be implemented with mathematical equations encoded and stored in the memory 4 and defined by parameters corresponding to the input data. The computer system solves these equations using specific input data to obtain corresponding premium and payout information. 10 The database and equation implementations can be used separately or in combination.

15 The memory 4 further includes additional memory space for working space and for storage of input data entered with regard to particular insureds and beneficiaries.

25 The data entry means 6 includes any suitable device or combination of devices. Examples include a keyboard, a magnetic tape, and a floppy disk.

30 The output means 8 includes any suitable device or combination of devices. One example is a cathode ray tube (CRT) monitor. A particularly desired device is a printer which is the output device 8 specifically identified in FIG. 1.

35 The components of the digital computer system represented in FIG. 1 can be particularly implemented by any suitable devices capable of performing the digital data processing of the present invention. The computer

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system of a particular implementation is a mainframe computer, but it is contemplated that any other class (e.g., microcomputer, minicomputer) of computer can be used if it includes suitable components to handle the quantity of data and desired operating speed. It is to be noted that the invention can be implemented with systems having single (as shown in FIG. 1) or multiple central processing units and associated devices. Multiple systems can have the respective subsystems utilized within one or more networks or individually.

The method of the present invention will now be described with reference to the flow chart of FIGS. 2A and 2B. As mentioned, this method can be implemented using the digital computer system of FIG. 1.

The method of the invention will be described with reference to a pair of people including an insured and a beneficiary. In actual implementation there will be many such pairs preferably sufficient to define a suitable statistical universe for conventional actuarial principles to be validly applied. As to each pair, one and only one specific insured and one and only one specific beneficiary are identified. In the preferred embodiments, this includes acquiring identification of an insured and a beneficiary (e.g., names, genders), the age of the insured, the age of the beneficiary, a maximum premium payment period (also referred to herein as the maximum payin period), a maximum payout period, and a selected one of a desired premium payment and a desired minimum payout. In a particular implementation, the identification also includes a health factor (e.g., smoker or non-smoker) for at least the insured and preferably for both the insured and the beneficiary.

As to the age factor, in a particular implementation the age of the insured must be within the range of 40 to 70 as of the last birthday of the insured, and the age of the beneficiary must be within fifteen years of the age of the insured. This particular implementation is also

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implemented by assuming the insured and beneficiary have opposite gender and are married to each other. These limitations are not applicable to the broader aspects of the present invention.

5 Also with regard to a particular implementation, the maximum premium payment period is selectable by the insured as either ten years or twenty years, but neither of these specific time periods is limiting of the broader scope of the invention.

10 By way of further example but again not limiting of the broader scope of the invention, in a particular implementation, the maximum payout period is selectable by the insured as either ten years or the life of the beneficiary.

15 As to the identification of a desired premium or a desired benefit (payout), if a desired premium is selected, then the payout is determined in the present invention. If a desired payout is selected, the method of the present invention determines the corresponding
20 premium to be paid. In a particular implementation, the premium and payout are defined as respective monthly dollar amounts; however, other respective periods and monetary denominations can be used.

 The acquired identification data is entered via data
25 entry means 6 into memory 4 of the digital computer system as represented at block 14 in FIG. 2A. Inputting or applying the aforementioned acquired identifications to the programmed digital computer system includes encoding and storing in the computer signals specifying
30 the ages of the insured and the beneficiary; encoding and storing in the computer signals specifying the selected maximum premium payment period; encoding and storing in the computer signals specifying the selected maximum payout period; and encoding and storing in the computer
35 signals specifying the selected one of a desired premium and a desired minimum payout. Any other needed

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identification data (e.g., gender, health) is likewise encoded and stored.

With the entered data, the method further comprises generating an output from the computer in response to the input data. The output identifies a minimum payout and a premium. This requires steps of determining the minimum payout or the premium in response to the other being given and of printing a report or policy for the insured as shown in FIG. 2A by blocks 16, 18, respectively.

As to premium/payout determining step 16, in a particular implementation a fixed minimum periodic payout is determined in response to desired periodic premium data having been selected and entered. The fixed minimum periodic payout is the guaranteed minimum amount to be paid to the beneficiary during any time period the beneficiary survives the insured subject to the maximum payout period that has been specified in the entered data. For example, if the insured desires to pay \$250.00 per month, the method determines a fixed minimum periodic payout (e.g., \$650.00 per month) guaranteed to be paid to the beneficiary if the beneficiary survives and subject to the selected maximum payout period (e.g., ten years).

If instead of the desired premium being entered a desired minimum periodic payout is selected and entered, a periodic premium to be paid for not more than the specified maximum premium payment period is determined. In a particular implementation, the amount of the periodic premium is fixed whereby the payment amount remains constant.

Given a desired payout or premium, the determination of the other is made. This determination is made by digital data processing and in response to one or more of the aforementioned identification factors for both the insured and the respective beneficiary. For example, the ages of both can be applied to actuarial mortality data acquired from known actuarial principles as the primary

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pricing factor. Although known actuarial data is preferably used to implement the present invention, any specific such data, its development and the underlying actuarial principles and equations do not form part of this invention. Thus, specific numerical data and equations referred to herein can be used in implementing the present invention but they do not define or limit the invention. Actuarial details referred to herein have been provided by Allen Bailey & Associates, Inc. of Austin, Texas. In general, this data defines information about premiums and payouts in response to both the age of the insured and the age of the beneficiary (in a particular implementation, the premium and payout data is also based on gender and health factors and other known factors, see the Example at the end of this specification). The acquired data is stored in the digital computer within the memory as explained above. It is used by actuating the digital computer to determine a specific combination of a premium and a payout in response to the acquired identifications stored in the digital computer for the respective insured/beneficiary pair. Since the premium and payout data are directly related, one can be found given the other along with the other defined parameters.

The actuarial data can be in the form of actuarial equations as explained above. To determine a premium, these equations are solved in the computer system in response at least to the ages of both the insured and the beneficiary. In a particular implementation, the fixed minimum periodic payout is determined by multiplying the current monthly payout value at the time of issue by the ratio of the annualized premium per \$100 of current monthly income to the Commissioner's Reserve Valuation Method (CRVM) beta net premium per \$100 of monthly income. The CRVM beta net premium is the guaranteed maximum premium determined with regard to the input data pertaining to both the insured and the beneficiary. The

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current monthly payout is the actual payout that would be made if the insured were to die immediately after the policy is issued. The current monthly payout value is set on a periodic basis (e.g., annually) in response to any suitable factors, such as including the then current investment projections as to what investment returns can be expected during the period. The actual payout can be greater than the guaranteed minimum due to realized investment gains, if any, which arise due to the managing step described below. If the premium is to be determined given a desired payout, the foregoing formula is used to solve for the annualized premium. This annualized premium may be derived either on a current or a guaranteed basis.

The actuarial data can be in the form of the database 12 as explained above. The database includes encoded signals defining premium amounts for respective combinations of insured age, beneficiary age, maximum premium payment period, maximum payout period, periodic payout amount and other identification data if used. Examples of such data are given in the particular example at the end of this specification. This data is obtained by using the aforementioned actuarial equations.

Because the premium/payout data for a respective pair of people is determined based on both the insured and the beneficiary, the beneficiary cannot be changed under the preferred embodiment of the method of the present invention (of course, the insured cannot be changed as well, but that is conventional).

Once the premium/payout data are known from the foregoing steps, a report or policy for the insured is obtained by actuating the printer 8 in the computer system of FIG. 1. A particular implementation of the printed report or policy lists the age of the insured, the age of the beneficiary, the maximum premium payment period, the maximum payout period, the fixed periodic premium, and the fixed minimum periodic payout. Other

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information, including gender and health data, can also be listed.

As premium payments are received, participation payment data is entered in the computer system. Data as to death of an insured and death/survival of the respective beneficiary is also entered. This information is necessary in the preferred embodiments wherein a respective premium is due periodically for continued participation in the program administered within the present invention, but only during the shortest of the remaining life of the insured, the remaining life of the beneficiary, and the predetermined maximum premium payment period. These aspects of the present invention are shown in FIG. 2A by blocks 20, 22, 24, 26.

With this tracking process, the present invention also includes managing the participation payments to provide for payouts to surviving beneficiaries. This managing function is implemented using the data processing of the computer system and by retaining at least a portion of a paid premium in a financial reserve from which a future stream of payments is to be made. This function is shown in FIG. 2A by block 28.

In a particular implementation, during the premium paying period reserves are calculated on the basis of the 1980 Commissioner's Standard Ordinary Mortality Table, age last birthday, male/female, smoker/nonsmoker for the insured while beneficiary mortality and the corresponding death benefits are based on the 1983 Individual Annuity Mortality Table "a". Both components are discounted at four and a half percent (4.5%) in a particular implementation and are based on the current monthly payout value at issue. The equation set forth above regarding block 16 is preferably used to obtain values to ensure exemption from a deficiency reserve requirement.

When an insured dies as determined at block 22 in FIG. 2A, the method then determines whether the beneficiary has survived the insured (see block 30 in

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FIG. 2B). If not, termination occurs with respect to that respective insured/beneficiary pair as shown at block 32 in FIG. 2B. This termination also occurs if the beneficiary predeceases the insured as shown by blocks 24 (FIG. 2A) and 32 (FIG. 2B).

If the beneficiary survives the insured, an actual payout to the beneficiary is determined as shown at block 34 in FIG. 2B. In the preferred embodiments, fixed periodic payout data for a respective surviving beneficiary is determined by data processing in response to the date of death of the insured. Although a minimum payout was selected at block 14 or computed at block 16, upon death of the insured and survival by the beneficiary an actual periodic payout is determined to account for actual increases if realized over the period from the initial premium payment to the death of the insured. In the preferred embodiments, the actual periodic payout cannot be less than the minimum payout determined through the method performed to block 18 in FIG. 2A.

In a particular implementation, the actual monthly income at death of the insured is determined by the following equation: the current monthly payout value at issue times the ratio of the annuity factor at six percent (6%) to the annuity factor at the then current payout rate. In no event will the current payout rate drop below four and a half percent (4.5%), which is the guaranteed minimum interest rate in this particular implementation.

The method of the present invention further comprises generating periodic payouts by digital data processing in response to the determined actual fixed periodic payout data. For example, monthly payments are made to the beneficiary. During this phase management of unused funds continues. In a particular implementation, payout reserves are calculated on the basis of the 1983 Individual Annuity Mortality Table "a", discounted at the interest rate guaranteed at the time of death (e.g., 6%

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in the aforementioned example). However, the interest rate used in determining reserves will not exceed the maximum valuation interest rate permitted by law. These functions are shown at block 36 in FIG. 2B.

5 As shown by blocks 38, 40 in FIG. 2B, periodic payouts are made only to a respective surviving beneficiary and only during the previously selected payout period (either life of the beneficiary or the shorter of the life of the beneficiary and ten years in
10 the illustrated particular implementations). When one of these events occurs, termination as to the respective beneficiary occurs. Thus, the preferred embodiment of the method of the present invention provides no payment to the insured or anyone or anything (e.g., the insured's
15 estate) other than the one specific beneficiary if such beneficiary survives the insured. That is, there is no "cash value" as that term is used above with reference to prior annuity and life insurance methods.

20 Following is an example showing sample data for a database from which premium/payout data can be obtained in accordance with the present invention. Actuarial equations are also listed.

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ExamplePricing Assumptions**Profit Objective**

A profit objective was defined.

Premium Payment Options

Premium payment options were defined: either 10 years or 20 years.

Mode of Premium Payment

The mode of premium payment assumed in pricing was monthly automatic deposit.

Benefit Options

The benefit option was selected: either
a) lifetime of beneficiary but not more
than 10 years or
b) lifetime of beneficiary

Insured Mortality

Preferred Nonsmoker: 82% of 75-80 Select & Ultimate mortality table for nonsmokers, ALB

Standard Nonsmoker: 110% of 75-80 Select & Ultimate mortality table for nonsmokers, ALB

Smoker: 100% of 75-80 Select & Ultimate mortality table for smokers, ALB

Beneficiary Mortality

1983 Individual Annuity Mortality Table "a", Male/Female, ALB

Withdrawal Rates

The lapse rates used were a variation of the Linton B table. The following lapse rates were used:

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<u>Rate</u>	<u>Year</u>	<u>Lapse Rate</u>	<u>Year</u>	<u>L a p s e</u>
	1	15.0%	9	5.4%
	2	12.0	10	5.0
	3	10.0	11	4.8
	4	8.8	12	4.6
	5	8.0	13	4.4
	6	7.2	14	4.2
	7	6.4	15+	4.0
	8	5.8		

Non-Underwriting Expenses

Non-underwriting expenses were defined.

Underwriting Expenses

Underwriting expenses by age and initial policy size were defined.

Investment Earning Rate and Discount Rate

The investment earning rate used for all years was 7.50%.

The discount rate used for all years was 15.0%.

Reinsurance

No reinsurance was assumed for the purpose of this example.

Commissions

A commission schedule was defined.

From the foregoing information, the following database was obtained.

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Current Annual Premiums per \$100 Monthly IncomeIndividual Rates
CRVM ReservesLifetime Benefit Option - 10 Year Premium Payment Period

Insured Age	Beneficiary Age	Male			Male			Female			Female		
		Insured	Pref NS	Std NS	Insured	Smoker	Insured	Insured	Pref NS	Std NS	Insured	Std NS	Smoker
55	45	\$307.95		\$372.66	\$505.41		\$200.18	\$237.50		\$315.66			
55	50	283.67		343.70	470.55		180.63	214.20		287.67			
55	55	255.79		309.76	429.28		159.01	188.06		255.68			
55	60	224.42		270.98	381.49		136.09	160.13		220.86			
60	50	391.86		475.07	604.41		254.15	302.02		374.46			
60	55	356.77		432.21	554.27		226.56	268.22		335.28			
60	60	316.47		382.42	495.76		196.42	231.16		291.99			
60	65	271.15		326.22	429.22		163.81	191.46		245.06			
65	55	509.65		618.97	744.96		311.83	368.57		430.03			
65	60	456.09		553.23	670.26		273.60	321.36		377.52			
65	65	395.25		478.16	584.70		231.57	270.00		320.05			
65	70	328.41		395.71	489.74		186.95	216.63		259.82			

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Current Annual Premiums per \$100 Monthly IncomeIndividual Rates
CRVM Reserves

10 Year Benefit Option - 10 Year Premium Payment Period													
Insured u Age	Beneficiary Age	Male			Male			Female			Female		
		Insured	Pref NS	Std NS	Insured	Smoker	Pref NS	Insured	Std NS	Insured	Smoker	Pref NS	Insured
55	45	\$185.22		\$219.82	\$288.71		\$132.35	\$153.80		\$196.98			
55	50	181.79		215.95	285.39		127.04	147.71		191.02			
55	55	175.71		208.81	278.95		119.07	138.33		181.38			
55	60	165.68		196.64	267.27		108.25	125.39		167.40			
60	50	243.39		289.85	359.49		173.78	202.81		244.71			
60	55	238.05		283.27	353.34		165.91	193.12		234.95			
60	60	227.88		270.72	341.32		153.75	178.21		219.52			
60	65	210.74		249.68	320.36		136.47	157.44		197.27			
65	55	328.83		392.67	463.65		223.17	259.56		297.09			
65	60	318.22		379.56	450.67		210.46	243.57		280.89			
65	65	299.10		356.23	427.38		190.72	219.53		256.07			
65	70	268.88		319.66	389.59		163.48	187.41		221.94			

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Thus, the present invention is well adapted to carry out the objects and attain the ends and advantages mentioned above as well as those inherent therein. While preferred embodiments of the invention have been described for the purpose of this disclosure, changes in the construction and arrangement of parts and the performance of steps can be made by those skilled in the art, which changes are encompassed within the spirit of this invention as defined by the appended claims.

10

CLAIMS:

1. A method of providing for a future stream of payments solely to a beneficiary who survives an insured, comprising:
 - identifying an insured and a beneficiary;
 - 5 determining, in response to both the age of the insured and the age of the beneficiary, a premium to be paid periodically during the shortest of the remaining life of the insured, the remaining life of the
 - 10 beneficiary, and a predetermined time period; and
 - retaining at least a portion of a paid premium in a financial reserve from which a future stream of payments is to be made solely to
 - 15 the beneficiary upon the condition that the beneficiary survives the insured.
2. A method as defined in claim 1, further comprising printing a report for the insured and beneficiary designating the fixed premium, the
- 20 predetermined time period, and a periodic payment amount defining a minimum for the future stream of payments in the event the beneficiary survives the insured.
3. A method as defined in claim 1, wherein the ages of the insured and the beneficiary are within a
- 25 predetermined range.
4. A method as defined in claim 1, wherein the age of the insured is within the range of 40 to 70 and the age of the beneficiary is within fifteen years of the age of the insured.
- 30 5. A method as defined in claim 1, wherein determining a premium is further responsive to the gender of both the insured and the beneficiary.
6. A method as defined in claim 1, wherein determining a premium is further responsive to a health
- 35 factor of both the insured and the beneficiary.

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7. A method as defined in claim 1, wherein determining a premium is further responsive to gender and health factors of both the insured and the beneficiary.

8. A method as defined in claim 1, wherein:
5 the ages of the insured and the beneficiary are within a predetermined range;
the step of determining a premium is further responsive to gender and health factors of both the insured and the beneficiary; and
10 said method further comprises printing a report for the insured and beneficiary designating the fixed premium, the predetermined time period, and a periodic payment amount defining a minimum for the
15 future stream of payments in the event the beneficiary survives the insured.

9. A data processing method for administering a program to provide benefits to beneficiaries who survive respective insureds, comprising:
20 determining for each insured, by digital data processing and in response to actuarial mortality data for both the insured and the respective beneficiary, a respective premium periodically required for
25 participation in the program, wherein for participation a respective premium is payable only during the shortest of the remaining life of the insured, the remaining life of the beneficiary, and a
30 predetermined maximum premium payment period;
entering, for digital data processing, participation payment data;
managing by digital data processing
35 participation payments to provide for payouts only to beneficiaries who survive respective insureds;

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entering death of insured and survival by the
respective beneficiary data;

determining by digital data processing periodic
payout data for a respective surviving
beneficiary in response to the date of
death of the insured; and

generating by digital data processing, in
response to the determined periodic payout
data, periodic payouts only to a
respective surviving beneficiary.

10. A method as defined in claim 9, wherein the
difference between the age of an insured and the age of
a respective beneficiary is within a predetermined range.

11. A method as defined in claim 9, further
comprising printing a policy schedule listing the age of
the insured, the age of the beneficiary, the maximum
premium payment period, the maximum payout period, and
the premium, and a guaranteed minimum payout.

12. A method as defined in claim 9, wherein
determining a premium is responsive to at least the age
and gender of both insureds and beneficiaries.

13. A method as defined in claim 9, wherein
determining a premium is responsive to at least the age
and a health factor of both insureds and beneficiaries.

14. A method as defined in claim 9, wherein
determining a premium is responsive to the gender and a
health factor of both insureds and beneficiaries.

15. A method as defined in claim 14, wherein
determining a premium is also responsive to the age of
both insureds and beneficiaries and the difference
between the age of an insured and the age of a respective
beneficiary is within a predetermined range.

16. A method as defined in claim 15, further
comprising printing a policy schedule listing the age of
the insured, the age of the beneficiary, the maximum
premium payment period, the maximum payout period, and
the premium, and a guaranteed minimum payout.

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17. A method of administering a program to provide benefits to beneficiaries who survive respective insureds, comprising:

inputting data into a programmed computer,
including:

encoding and storing in the computer
signals specifying an age of an
insured to be named in a policy;

encoding and storing in the computer
signals specifying an age of a
beneficiary named by the insured;

encoding and storing in the computer
signals specifying a maximum premium
payment period;

encoding and storing in the computer
signals specifying a maximum payout
period; and

encoding and storing in the computer
signals specifying a selected one of
a desired premium and a desired
minimum payout; and

generating, in response to the input data, an
output from the computer identifying in
response to a specified desired premium a
minimum payout to be paid to the
beneficiary during any time period the
beneficiary survives the insured subject
to the specified maximum payout period and
identifying in response to a specified
desired minimum payout a premium to be
paid for not more than the specified
maximum premium payment period.

18. A method as defined in claim 17, wherein
generating an output includes determining a specific
premium or payout in response to the ages of both the
insured and the beneficiary and printing a policy
schedule listing the age of the insured, the age of the

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beneficiary, the maximum premium payment period, the maximum payout period, the premium, and the minimum payout.

5 19. A method, with the aid of a digital computer system including a printer, of preparing a policy for insuring a future stream of payments solely to a beneficiary who survives an insured named in the policy, comprising:

10 acquiring identification of an insured, a beneficiary, the age of the insured, the age of the beneficiary, a maximum premium payment period, a maximum payout period, and a selected one of a premium payment and a minimum payout;

15 applying the acquired identifications to the digital computer system;

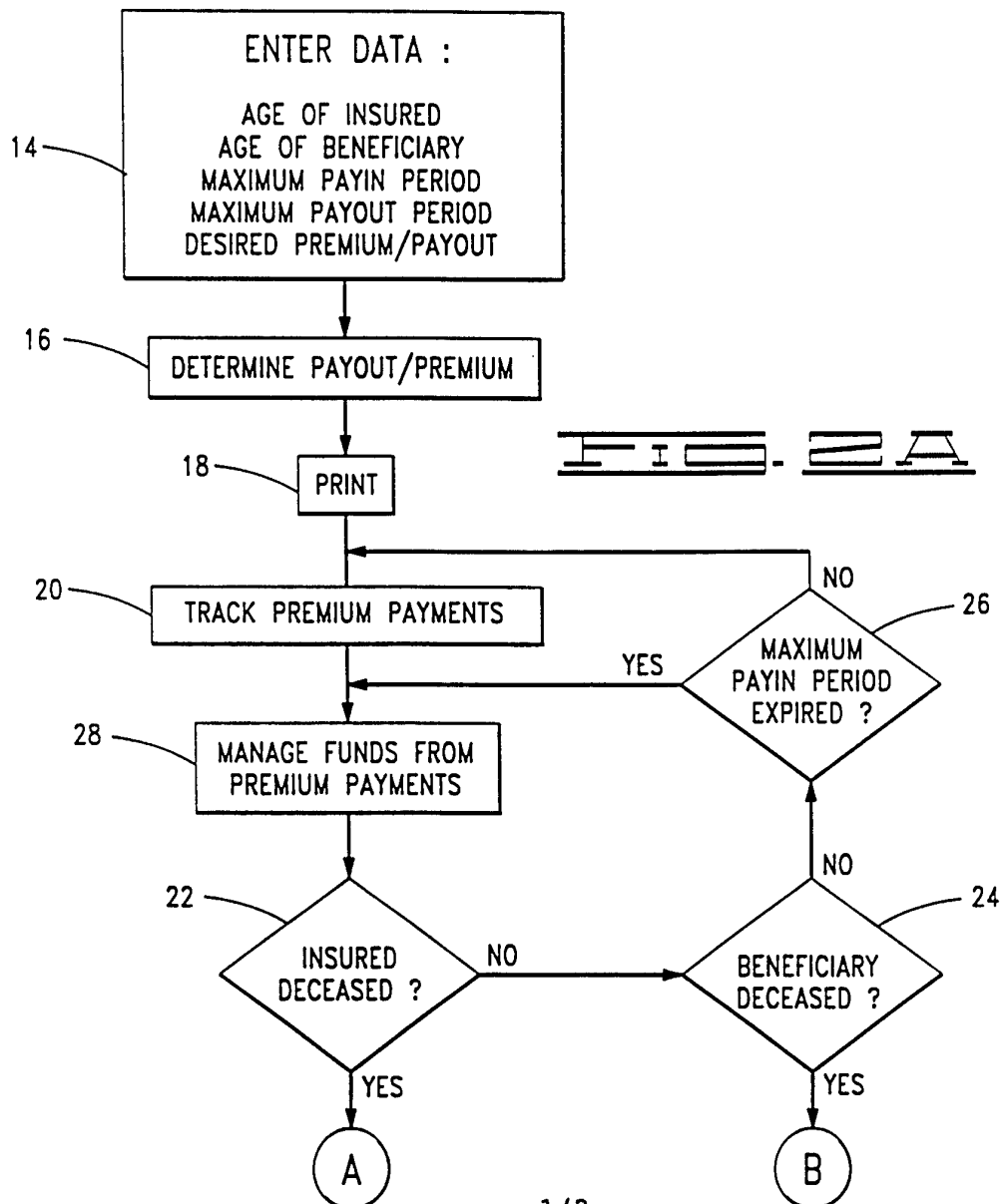
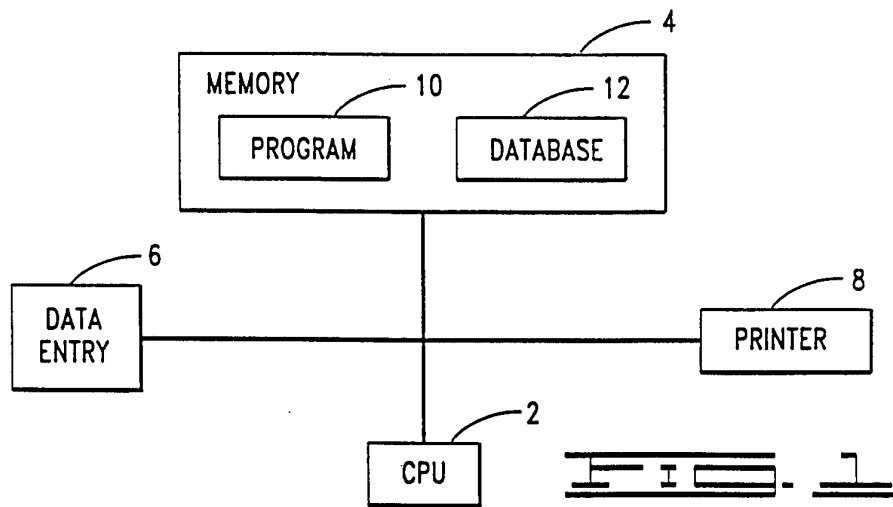
acquiring data defining information about premiums and payouts responsive to both the age of an insured and the age of a beneficiary;

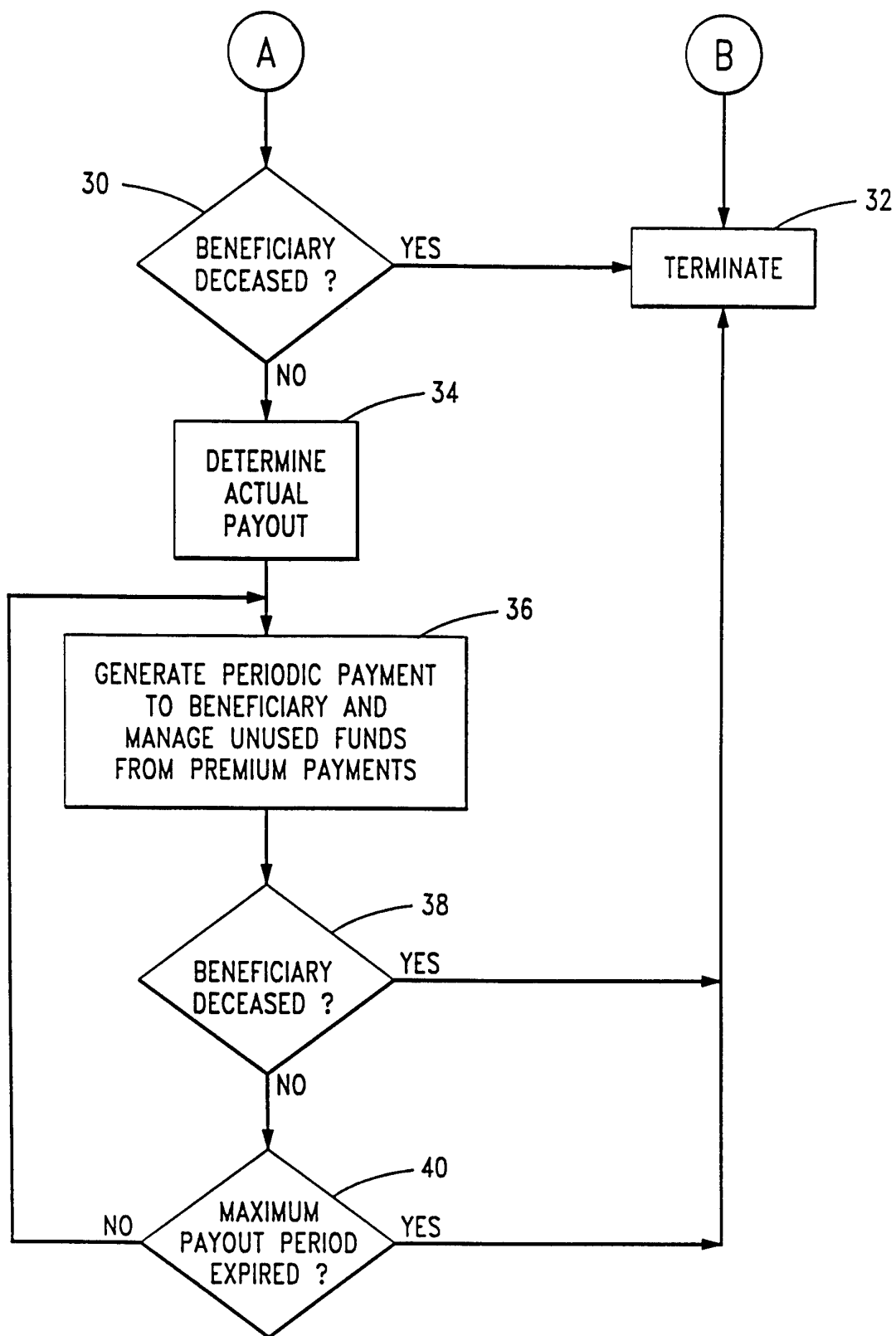
20 storing the acquired data in the digital computer system;

actuating the digital computer system to determine a specific combination of a premium and a payout in response to the acquired identifications applied to the digital computer system and the acquired data stored in the digital computer system; and

25 30 actuating the printer to print the policy at the determined specific combination of premium and payout.

35 20. A method as defined in claim 15, wherein the age of the insured and the age of the beneficiary are within a predetermined range.



FIG. 2B

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US96/07524

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : G06F 17/60; G06G 7/48

US CL : 364/401R, 406, 408

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 364/401R, 406, 408

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS, DIALOG:

search terms: annuity, annuities, life insurance, premium#, reversionary annuity, survivorship annuity

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US, A, 5,231,571 (D'AGOSTINO) 27 JULY 1993 see all figures, cols. 13-19	1-20
A	US, A, 5,291,398 (HAGAN) 01 MARCH 1994 see cols. 1-2	1-20
A,E	US, A, 5,523,942 (TYLER ET AL.) 04 JUNE 1996 see cols. 13-14	1-20
A	Society of Actuaries' Textbook on Life Contingencies, Jordan Jr., 1975, pages 255-264	1-20
Y	Life Insurance (Eleventh Edition, Revised), Black Jr. et al., 1987, page 111	1-20



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be part of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
E earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*G* document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

08 JULY 1996

Date of mailing of the international search report

14 AUG 1996

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer
Gail O. Hayes
GAIL O. HAYES

Telephone No. (703) 305-3800

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US96/07524

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Dialog Abstract: File 751, Acc# 00272700; VANTAGE-ONE Administration System; The Continuum Company; First Installed January 1985	1-20
A	Dialog Abstract: File 751, Acc# 00242936; Life Support Plus 4.1; Genelco, Inc.; First Installed June 1985	1-20
Y	Potter; "UK: The Role of Annuities in Life Insurance"; Insurance Age; April 24, 1990; page 24 (see entire printout)	1-20
A	"UK: The Purchased Life Annuity -- Not So Boring After All"; Planned Savings; August 27, 1990; pages 31-35 (see entire printout)	1-20
A	Sherrid; "A Retiree's Inflation Beater"; U.S. News & World Report; v116 n10; p75(3); March 14, 1994; (see entire printout)	1-20
A	Blease; "Status of Annuities is Increasingly Fragile"; Best's Review (Life/Health); v95 n1; pages 62-65; May 1994; see entire printout)	1-20
A	US, A, 4,722,055 (ROBERTS) 26 January 1988 see Abstract	1-20
A	US, A, 4,766,539 (FOX) 23 AUGUST 1988 see Abstract	1-20
A	US, A, 5,025,138 (CUERVO) 18 JUNE 1991 see Abstract	1-20