Loss reserves, too, would seem to be a budgetary estimate of future or potential liabilities. Reserves are necessary primarily because either the liability has not been established or the extent of liability has not been established. I would concur that if the extent of liability has been established and payment is not tendered, then some of the funds which offset these budgetary estimates do belong in theory to the *claimant* (who may or may not be the policyholder).

Through this paper, Mr. Bailey has again presented a valuable contribution to the literature of the Casualty Actuarial Society. The blueprint which he advances merits serious consideration by the members of our society. This paper represents a challenge to the rest of us to explore the attendant problems, such as:

a) The assumption of equal liquidity as respects loss reserves and capital investments.

b) Do the policyholders have an equitable estate in the "liabilities" or in the "assets"?

c) Should we act like an investment house if these assumptions are correct?

d) How can the opponents pass off investment gains as easily as the proponents pass off the market setbacks?

e) Should we subject the carriers of other lines to the fluctuations of the casualty business by combining the carriers into groups?

f) Who are we protecting if we encourage the carriers to dissipate their surplus?

g) If we intend to include IBNRs, to whom do we owe that money?

Mr. Bailey's paper in my estimation is a fine attempt to reconcile the diverse opinions available in our industry. Moreover, he has astutely directed his attention toward what will probably be one of tomorrow's facts of life. Before endorsing Mr. Bailey's general premise, however, let's be sure that we aren't about to protect Mr. Public to death by reducing his ability to obtain protection.

DISCUSSION BY RICHARD L. JOHE

Mr. Bailey states his hope that his "suggestions and data will contribute to a better understanding of the problems and possible answers regarding how much underwriting profit is realized from investments." He develops his definitions of investment income, invested assets, and "the stockholders'

funds." He states that "we should match invested assets first against stockholders' funds and then only the remainder against policyholders' funds."

"Stockholders' funds" apparently consist of "adjusted capital and surplus" defined as "the capital and surplus (including special surplus funds) plus the equity in the unearned premium reserve, the non-admitted assets, unauthorized reinsurance, any voluntary reserves carried 'above the line,' and any reserves for dividends declared to stockholders." Under this definition, some minor amounts of uninvested funds such as agents' balances over ninety days old would be found in the non-admitted assets, and reserves for dividends declared to stockholders would probably be represented by cash. Therefore, a very large portion of "stockholders' funds" would consist of invested assets. Exhibit A shows investment income on "stockholders' funds" calculated by the author's method compared with with the investment yield percentage applied to "stockholders' funds."

The author does not give his definition of "policyholders' funds" or "funds held in trust for policyholders." However, the arithmetic of his method for developing "the total investment income from underwriting" suggests that the "policyholders' funds" portion of his invested assets approximately consists of the reserve for losses and loss expense plus the reserve for unearned premium less "the equity in the unearned premium reserve," all reduced by the agents' balances admitted asset and by cash (excluding reserves for dividends declared to stockholders). Investment income using this definition is shown in Exhibit B for four insurer groups compared with the investment income produced by the author's suggested method.

In his method for allocation of his "underwriting income from investments" to "kind of insurance," the author appears to substantiate this approximate definition with his statements that:

> "Funds for unpaid losses are more available for investment than funds for unearned premiums. Large portions of the funds for unearned premiums are tied up in balances due from agents and in prepaid acquisition expenses neither of which are available for investment by the insurer."

For the four insurer groups, Exhibit B shows that the reserve for unearned premium excluding "balances due from agents and prepaid acquisition expenses" represented 43.5 percent of the unearned premium reserve (total of the four insurer groups). If we assume that this portion of the unearned premium reserve is completely invested and that the balance of the cash

held represents loss and loss expense reserves, we find that 76.5 percent of the author's "funds held in trust for policyholders" consists of the investable portion of loss and loss expense reserves.

Mr. Bailey states that his purpose "is to suggest some guidelines on how to measure the portion of investment income that is earned on funds held in trust for policyholders" and he labels this portion of investment income "underwriting profit from investments." Underwriting income for property and casualty companies has been well defined by court decisions and by the NAIC (National Association of Insurance Commissioners). It does not include any part of the investment income on invested assets.

The author's attempt to re-label a portion of the investment income and call it underwriting profit seems to rest on his assumption that the invested portions of the loss and loss expense reserve and the unearned premium reserve represent "funds held in trust for policyholders." He cites no authority for this assumption even though the past fifty years have seen substantial recorded opinion and decision to the contrary.

His reasoning with respect to loss and loss expense reserves appears to be that if an insurer ceased its insurance business, becoming solely an investment trust, the invested assets represented by the invested portion of these reserves would disappear from the balance sheet. Because of this disappearance, the investment income would also disappear somehow to the benefit of policyholders rather than the stockholders.

If the loss and loss expense reserves were not deficient, but adequate to discharge the liabilities represented by such reserves, it is difficult for this reviewer to understand why subsequent investment income would not accrue to the benefit of the stockholders. This is especially so in view of the author's statement that "any evidence of additional redundancies or deficiencies in the loss reserves should be presumed to be inconclusive in the face of the insurer's affirmation that its annual statement is a 'full and true' statement."

This reviewer also examined the loss reserves held by his company for workmen's compensation and for the automobile lines (B.I., P.D., & physical damage combined). Approximately 30 percent of the current workmen's compensation loss reserves represent long term "pension" reserves. The tabular values prescribed for reporting such cases (e.g., National Council Widow's Benefit Table and Disability Table) for ratemaking purposes already reflect a discounting for interest. In addition, the latest ten year history of our automobile lines showed an underwriting loss of $26,546,697

but an increase of $44,343,535 in loss reserves which could have come about only by a substantial reduction in stockholders' funds.

Mr. Bailey states that "Investment income has long been recognized in making rates for life insurance . . ." and ". . . my purpose is to suggest some guidelines on how to measure the portion of investment income that is earned on funds held in trust for policyholders." He then develops an allocation method which reminded this reviewer of a similar allocation in phase 1 of the Life Insurance Income Tax Act of 1959 (Public Law 86). Phase 1 provides a basis for calculating taxable investment income by splitting investment yield into the policyowners' share and the company's share. The arithmetic in this phase utilizes the lower of the current earnings rate or the five year average earnings rate, both calculated from the ratios of net investment earnings to "all of the assets of the company (including non-admitted assets) other than real and personal property (excluding money) used by it in carrying on an insurance trade or business." The lower of the two earnings rates is used in computing the deduction for interest needed to maintain reserves.

This deduction, the policy interest liability requirement, expressed as a percentage of the investment yield, produces a percentage known as the policyowners' share of the investment yield. The difference between the investment yield and the policyowners' share of the investment yield is known as the company's share of the investment yield.

In spite of the apparent similarity to Mr. Bailey's proposal, there is one very important difference. The phase 1 calculation of the policyowners' share of the investment yield utilizes only the reserves:

1. which are computed or estimated on the basis of recognized mortality or morbidity tables and assumed rates of interest, and
2. which are set aside to mature or liquidate future unaccrued claims.

These are policy reserves of the type found in Exhibit 8 of the Life and A&H companies' annual statement (Association edition). They are comparable to the active life reserves produced by guaranteed renewable and non-cancelable health insurance policies and included in the unearned premium reserve (Part 2B) of the fire and casualty annual statement (Association edition).

As these policy reserves accumulate at interest, they act to reduce the amount at risk and are not in any way comparable to the loss and loss expense reserve liabilities which Mr. Bailey considers to be a very large part of the "funds held in trust for policyholders." Life companies do establish and

carry reserve and claim liabilities which are comparable to the loss reserve liabilities held by property and casualty companies. However, the Life Company Income Tax Act of 1959 uses this latter type of reserve as a deduction in phase 2, gain from operations. There is no provision in phase 2 for calculation of the policyowners' share of investment yield on such reserves.

It is certainly true that compound interest plays an extremely important role in the level premium life insurance system. However, the interest element is negligible in rates for non-participating yearly renewable term life insurance compared with the gigantic role interest plays in level premium whole life insurance rates.

Some idea of the magnitude of the deliberate net premium overcharge in the first years of a non-participating whole life insurance contract can be seen from a comparison of age 35 rates of $19.48 per thousand for whole life insurance with a $6.88 rate per thousand for 5 year renewable and convertible term life insurance. This deliberate overcharge in excess of the mortality cost (claim cost) in the first years of a whole life insurance contract gives rise to cash values and other non-forfeiture benefits as well as minimum reserve requirements. The rates charged for most property and casualty lines of business certainly do not contain a deliberate pure premium overcharge of the type found in the level premium life insurance system. The fact that "investment income has long been recognized in making rates for life insurance . . ." is not related to the purpose of the author's paper and has no bearing on the problem for which he presents suggestions and data.

The author states that "Investment income is also recognized in dividend formulas for group accident and health insurance . . .". While the latest versions of such dividend formulas and experience rating formulas are usually closely guarded company secrets, enough information leaks through the screens of secrecy to warrant qualifying the author's statement.

Dividend formulas applying to a participating form of group insurance very well might be found to include an interest element on some types of funds held as reserves against contingencies. An experience rating formula used on non-participating forms of group insurance operates on premiums, incurred claims, and expenses to produce policyholder deficits or indicated excesses which are not usually contractually guaranteed as are retrospective additional or return premiums in other casualty lines of business. As with dividend formulas, experience rating formulas sometimes provide an interest element on some types of contingent reserve funds. However, it is not valid

to assume that all dividend and experience rating formulas recognize investment income.

It seems obvious from this discussion that there is much in Mr. Bailey's paper with which this reviewer disagrees. However, there should be no disagreement with the opinion expressed in the author's last paragraph.

During at least the last fifty years, self-appointed critics of the property and casualty insurance business have many times confused themselves and the public with the assertion that investment income is not considered in ratemaking. They really mean that investment income is not, but should be, *directly included* in ratemaking.

This smoke screen is periodically raised, confusing the real issues in the industry's efforts to obtain and maintain adequate rates. For this reason, there are political and public relations reasons for arguing that some part of investment income should be reflected in ratemaking procedures but it has been this reviewer's consistent opinion that such investment income must be restricted to the investment yield on the invested portion of unearned premiums minus the equity in such unearned premiums. This reviewer certainly agrees with Mr. Bailey that such investment income "should not be added to the expected underwriting profit in the rates as an estimate of the total underwriting profit." Rather, it "should be combined with the actual (other) underwriting profit or loss" to obtain an evaluation of the reasonableness of the underwriting profit and contingency allowance to be included in a future rate.

Comparative Estimates - Investment Income On "Stockholders' Funds"
(000 Omitted)

	U.S.F.&G.	State Farm	Allstate	Aetna Casualty	Travelers	I. N. A.	Liberty Mutual	Detroit Auto	Michigan Mutual
Investment Yield Method									
*(1) Invested Assets	831,600	1,285,441	1,246,178	1,116,064	1,195,066	1,448,093	1,027,267	107,227	96,278
*(2) Net Investment Gain	26,690	51,783	52,016	35,947	48,148	50,765	32,953	2,673	3,450
(3) Investment Yield Percentage (2) ÷ (1)	3.21	4.03	4.17	3.22	4.03	3.51	3.21	2.49	3.58
*(4) Adjusted Surplus	502,999	519,928	525,460	485,043	487,440	902,419	409.634	35,261	16,704
(5) Estimated Investment Income On "Stockholders Funds"(3)X(4)	16,146	20,953	21,912	15,618	19,644	31,675	13,149	878	598
Bailey's Allocation Method									
*(6) "Underwriting Profit From Investments"	10,542	30,863	30,065	20,310	28,504	19,138	19,802	1,794	2,853
(7) Bailey's Estimated Investment Income on "Stockholders Funds" (2) - (6)	16,148	20,920	21,951	15,637	19,644	31,627	13,151	879	597

*These figures, except for USF&G, were taken from Mr. Bailey's paper "Underwriting Profit From Investments". USF&G figures were taken from the 1966 Annual Statement.

Note: This exhibit compares the results of the investment yield method, line (5), with Bailey's allocation method results in line (7). The results of the two methods compare very closely which suggests that the investment yield method applied to "Policyholders' Funds" should produce results which compare closely with Bailey's allocation method if "Policyholders' Funds" can be defined.

Exhibit B

"Policyholders' Funds"
(000 Omitted)

	U.S.F.&G.	Aetna Casualty	Travelers	Liberty Mutual	Totals
Comparative Estimates					
*(1) Bailey's Estimated Investment Income On Policyholders' Funds	10,542	20,310	28,504	19,802	79,158
*(2) Net Investment Gain	26,690	35,947	48,148	32,953	143,738
(3) Investment Yield Method Estimated Investment Income On "Stockholders' Funds", Exhibit A, line (5)	16,146	15,618	19,644	13,149	64,557
(4) Balance As Estimate Of Investment Income On "Policyholders' Funds" (2) - (3)	10,544	20,329	28,504	19,804	79,181
*(5) Reserve For Losses and Loss Expense	255,404	519,763	598,065	525,604	1,898,836
(6) Cash and Bank Deposits	25,957	59,544	56,097	19,707	161,305
(7) Stockholders' Dividends Declared and Unpaid (Reduction of Cash)	2,948	1,883	-	-	4,831
(8) Estimated Investable Unpaid Loss and Loss Expense (5) - (6) + (7)	232,395	462,102	541,968	505,897	1,742,362
*(9) Reserve For Unearned Premium	326,127	338,393	400,841	164,956	1,230,317
*(10) Acquisition Expense and Tax Ratio	27.5	22.7	25.7	11.2	-
(11) Equity In Unearned Premium Reserve (9) X (10)	89,685	76,815	103,016	18,475	287,991
(12) Agents Balances Admitted	123,808	99,448	122,972	61,159	407,387
(13) Estimated Investable Unearned Premium (9)-(11)-(12)	112,634	162,130	174,853	85,322	534,939
(14) Estimated Investable "Policyholders' Funds"(8)+(13)	345,029	624,232	716,821	591,219	2,277,301
(15) Investment Yield Percentage, Exhibit A, Line (3)	3.21	3.22	4.03	3.21	-
(16) Estimated Investment Income on "Policyholders' Funds", Investment Yield Method (14)X(15)	11,075	20,100	28,888	18,978	79,041
(17) Estimated Investable Unearned Premium As Percentage of Reserve (13) ÷ (9)	34.5	47.9	43.6	51.7	43.5
(18) Estimated Investable Unpaid Loss and Loss Expense As Percentage of "Policyholders' Funds"(8)÷(14)	67.4	74.0	75.6	85.6	76.5

*These figures, except for USF&G, were taken from Mr. Bailey's paper "Underwriting Profit From Investments". All other figures were taken from 1966 Annual Statements.

Note: Line(16) compared with lines (1) and (4) show that this definition of "Policyholders' Funds" produces results which are not as good as the results produced by the "Stockholders' Funds" definition. Aetna Casualty and Liberty Mutual are short, indicating Bailey has included some other investable assets, while USF&G and Travelers are over, indicating Bailey's estimate includes some type of reduction in "Policyholders'" investable assets.