SCHEDULE P ON A CALENDAR/ACCIDENT YEAR BASIS

RUTH SALZMANN

INTRODUCTION

Schedule P has been the subject of considerable discussion and criticism over the years. Just recently two NAIC committees—the Actuarial (F5) Subcommittee and the Legislation to Modify Schedule "P" (D1) Subcommittee have been active in the Schedule P area. In the *Report on the Annual Statement* released in 1965 by the Committee on Annual Statement of this Society, Schedule P was listed as one of the subjects of persistent criticism directed toward the annual statement blank by the insurance industry.

The time is appropriate therefore to re-evaluate Schedule P. Serious consideration of ideal solutions and ultimate concepts should continue to be explored, but this paper directs its attention only to those improvements which are practical and feasible at the present time.

CALENDAR/ACCIDENT YEAR EXPLAINED

The proposal in the paper substitutes calendar/accident year data for split policy year data. This concept is not new. It has been inherent in several prior proposals including the one made by the Michigan Insurance Department to the Actuarial (F5) Subcommittee for its meeting on December 5, 1966.

The calendar/accident year basis recommended in the paper is one which assigns loss and loss expense to the year in which the accident occurred and assigns premiums earned to the calendar year in which such premiums were recorded as earned. Thus the earned premiums for each year are the same as the earned premiums reported on page 6 of the annual statement for that year. This means that the earned premiums, against which accident year losses are charged, remain a constant value or are "frozen" as of each year end.

On this basis, changes in accident year ratios from year to year in Parts 1 and 2 of Schedule P are the result of reserve developments entirely. Likewise calendar year loss ratios reported on page 8 can be compared with the loss ratios that subsequently develop for that year in Schedule P—Parts 1 and 2.

There is little question that calendar/accident year loss ratios are theoretically less accurate than policy year loss ratios. This is because the calendar/accident year basis does not match losses against the exact premiums for exposures generating such losses. However, it is to be remembered that the primary purpose of Schedule P is to assist in the determination of adequate reserve levels—not the precise measurement of loss ratios.

An illustration for the XYZ Company is appended to show with hypothetical data how the transition from policy year to calendar/accident year can be accomplished. The illustration is for workmen's compensation only, but a separate Exhibit D shows how the differences for bodily injury liability will be accommodated.

The proposed distributions of unallocated loss expense payments by accident year are the same as the present distributions in Parts 3 and 4 of Schedule P except that they are converted to an accident year basis. The distribution percentages reflect this conversion only. Although the present percentages may be arbitrary and need further study, the transition from policy year to accident year is not dependent upon the completion of such a study.

EXPANSION OF THE CALENDAR/ACCIDENT YEAR BASIS FOR SCHEDULE P

In addition to the redesign of Schedule P on a calendar/accident year basis, the proposal includes rearrangements of old items and the introduction of new items so that the advantages of the calendar/accident year basis can be fully exploited. The major advantages are three-fold:

1. *Simplification*

   With the elimination of policy year data from Schedule P, a simpler format results as can be noted in the appended illustration. Also with calendar/accident year data in Schedule P, the recording of policy year will no longer be necessary for annual statement purposes. This saving can be made without any loss in the real value of Schedule P, because loss and loss expense reserves can be tested equally well on an accident year basis.

2. *Total Loss Developments by Line*

   By rearranging and by adding certain information in Part 5, a retrospective reserve test for each Schedule P line in total can be made available in addition to the present tests by accident year.

   At the present time, loss reserve developments for each Schedule P line in total can be derived with considerable effort from various exhibits in the statement. For instance, developments over the last twelve months can be calculated by subtracting the loss volume for the current accident year in Part 5 from the respective calendar year incurred loss volume on page 8. This arithmetic produces developments on a Schedule O basis. For aggregate developments over a longer period of time than twelve months, Part 5 and Parts 1 and 2 for the current year are needed to produce the developed data from which accumulated losses in prior Parts 1 and 2 are then subtracted. This arithmetic produces loss developments for each successive calendar year similar to the continuation of developments shown in Schedule G.

To eliminate this separate arithmetic, a "prior year" line has been added to Part 5. Also sub-totals have been introduced so that aggregate reserve developments through sixty months will eventually be available. (These changes are shown in Exhibits B-3 and C-3 appended.)

In summary, then, the new Part 5 eliminates policy year detail; it continues loss reserve developments by accident year; but most important, it adds data so that aggregate reserve tests, now available for other lines in Schedules G and O, will be directly available for Schedule P lines.

3. *Prospective Evaluation of Liabilities*

Schedule P in its present form provides for retrospective reserve tests. Some simple uniform prospective test is needed to preempt the introduction of other complicated reserve testing formulas and exhibits. The author has created such a prospective evaluation and recommends that it become a new Part 6 for Schedule P. (See Exhibits B-4 and C-4 appended.)

In this new Part 6, current loss and loss expense reserves can be compared with reserve levels for prior accident years at the same stage of development. Such previous reserve levels are not those actually carried in the statement as of that date, but rather the reserve levels that should have been carried at that time in the light of subsequent developments. For example, to obtain the reserve dollars that should have been carried as of 12-31-61 for 1961 accident year, the payments for 1961 accident year in 1961 calendar year are subtracted from accumulated loss and loss expense incurred as currently reported in Parts 1 or 2. If the current date is 12-31-67, then the recalculated reserve for 1961 accident year as of 12-31-61 has the benefit of six years of hindsight.

Because each additional calendar year provides more information about more of the claims for any accident year, the current estimate of loss and loss expense incurred is more likely to approximate the final value than did any of the previous estimates. Likewise the current estimate should generate reserve levels for earlier stages of development by subtraction which are more accurate than any figure previously established.

Comparisons of current reserve levels with re-established reserves for prior accident years at the same stage of development will be most informative in appraising the reasonableness of current reserve levels. Emphasis is placed on the word "informative" because it must be recognized that a prospective evaluation of reserves, when only dollars are used, does not furnish any conclusive evidence regarding the adequacy of current reserve levels. An increase in paid ratios may reflect higher closing costs, a lower relative earned premium level, or a speeding-up of loss and loss expense payments. In the first two instances, a similar increase should be reflected in the liability; in the third instance, the increase should be offset in the liability. Variations are therefore not fully significant in themselves and cannot be arbitrarily used in measuring the adequacy of current reserve levels. However, such comparisons provide considerably more insight into current reserve levels than exists at present.

Obviously the most sophisticated approach in prospective evaluations of loss reserves is one that includes averages on closed claims, open claims, and total reported claims, and the percentage of claims closed through each stage of development. It is indeed unlikely that evaluations in such detail will ever be possible on a uniform basis in the annual statement. A prospective evaluation in dollars therefore is the more feasible approach.

Part 6 includes loss and loss expense. Losses only could have been used, but the author prefers the more comprehensive evaluation. If losses only were to be included, then of course the entire exhibit could be completed immediately because all of the historical data necessary are available except for earned premiums for homeowners and commercial multiple peril liability coverages in Part 6C.

THE COMPLICATION OF MINIMUM STATUTORY RESERVES

It is apparent from the above discussion that the change to calendar/accident year does not compromise the purpose of Schedule P; the only complication is in the fulfillment of minimum statutory reserve requirements. And this complication may be less formidable than one might at first expect. The following rationale was included on page 3 of Attachment 1 of the Actuarial (F5) Subcommittee proposal:

> "The statutory minimum ratios when applied to the latest 3 accident years produce a more conservative requirement than when applied to latest 3 policy years because the latest 3 accident years include all of the latest 3 policy years plus the premiums earned during the latest 3 years on policies written in previous years."

There is sound logic in the above statement, enough perhaps to accommoderate the recommended change under the existing statutes or at least sufficient encouragement to change the statutes to a calendar/accident year basis. However, if this reasoning is not enough, the author believes that the advantages which will accrue when the calendar/accident year basis is completely exploited will also produce the necessary additional incentives for regulatory authorities to endorse the calendar/accident year basis for calculating minimum statutory reserves. It is only on a calendar/accident year basis that the extra benefits described can be fully attained.

CONCLUDING REMARKS

The redesign of Schedule P proposed in this paper encompasses changes that can be put into effect now—if accident year data can serve as an acceptable basis for calculating minimum statutory reserves. The purpose of this paper was limited to that accomplishment. Further studies, however, are necessary in many areas not touched in this paper, such as:

1. *Lines of Business Included*

   a. Package policies now complicate the isolation of specific Schedule P coverages. The question therefore arises as to whether more meaningful and accurate data would be produced if losses were expanded to match total policy premiums (or easily quantified portions thereof) rather than the present method of apportioning indivisible premiums to get an income figure for Schedule P exposures only.

   b. Reinsurance assumed now complicates the isolation of specific

Schedule P coverages. The question therefore arises as to whether more meaningful and accurate data would be produced if Schedule P were on an "adjusted direct" basis (with or without facultative cessions) rather than the present net basis.

c. International business now complicates the compilation of Schedule P data. The question therefore arises as to whether more meaningful and accurate data would be produced if only domestic business were included.

2. *Distribution of Unallocated Claim Expenses*

The present percentages used to distribute unallocated claims expense by policy year or accident year in Schedule P are arbitrary. Industry studies might be undertaken to determine unallocated claims expense distributions by size of claim and by age of claim.

3. *Elimination of Premiums Earned*

Without earned premiums in Schedule P, many problems associated with the matching of claims against premiums as discussed in above (Item 1) will be eliminated. Schedule P losses could then be strictly limited to bodily injury liability and compensation coverages. The advantages of a Schedule P without premiums will only become possible, of course, if minimum statutory reserve requirements are related to some criterion other than premiums.

Schedule P needs further study in the above areas, and perhaps others as well, before it becomes a truly meaningful Schedule. This does not prevent us, however, from taking some constructive steps now. This paper addresses itself to those constructive steps which should be taken now—changes that will improve Schedule P and will also eliminate much of the present criticism of the Schedule.

APPENDIX

Illustration
XYZ Company
Workmen's Compensation

A. Present Policy Year Basis—December 31, 1966
(Rearranged to facilitate comparisons with Sections B and C)

A-1 Schedule P—Part 2

A-2 Schedule P—Part 5D

B. Initial Year of Transition—December 31, 1967

B-1 Schedule P—Part 2

B-2 Schedule P—Part 4

B-3 Schedule P—Part 5D

B-4 Schedule P—Part 6D

C. Ultimate Calendar/Accident Year Basis—December 31, 1967

C-1 Schedule P—Part 2

C-2 Schedule P—Part 4

C-3 Schedule P—Part 5D

C-4 Schedule P—Part 6D

D. Special Notes for Bodily Injury Liability Coverages

XYZ Company

December 31, 1966

Schedule P - Part 2

(Present Policy Year Basis)

Reserve for Unpaid W.C. Loss & Loss Expense December 31 of Current Year

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Year Policies Issued	Premiums Earned	Losses Paid	Losses O/S	Losses Incurred	Losses Ratio	Loss Expense Alloc. Paid	Loss Expense Unalloc. Paid	Loss Expense O/S	Loss Expense Incurred	Loss Expense Ratio	Loss & Loss Expense Incurred	Loss & Loss Expense Ratio
< 1959	$25,000	$14,000	$ 850	$14,850	59.4	$ 650	$1,870	$ 20	$2,540	10.2	$17,390	69.6
1959	2,500	1,500	150	1,650	66.0	70	170	10	250	10.0	1,900	76.0
1960	2,800	1,600	200	1,800	64.3	75	180	15	270	9.6	2,070	73.9
1961	3,000	1,800	300	2,100	70.0	85	195	25	305	10.2	2,405	80.2
1962	3,500	1,900	350	2,250	64.3	95	200	35	330	9.4	2,580	73.7
1963	4,000	2,200	500	2,700	67.5	120	220	45	385	9.6	3,085	77.1
Total first period	40,800	23,000	2,350	25,350	62.1	1,095	2,835	150	4,080	10.0	29,430	72.1
1964	4,700	2,200	1,000	3,200	68.1	105	230	110	445	9.5	3,645	77.6
1965	5,100	1,800	1,800	3,600	70.6	85	215	205	505	9.9	4,105	80.5
1966	2,650	500	1,800	2,300	86.8	10	105	205	320	12.1	2,620	98.9
Total second period	12,450	4,500	4,600	9,100	73.1	200	550	520	1,270	10.2	10,370	83.3
Total	53,250	27,500	6,950	34,450	64.7	1,295	3,385	670	5,350	10.0	39,800	74.7

Computation of Reserve for Unpaid W.C. Loss & Loss Expense

	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
	65% P.E. in Col. 1	L & LE Payments (2)+(6)+(7)	Remainder (13)-(14)	L & LE O/S (3)+(8)	(15) or (16) whichever is greater	← old format →			
1964	$3,055	$2,535	$ 520	$1,110	$1,110				
1965	3,315	2,100	1,215	2,005	2,005				
1966	1,723	615	1,108	2,005	2,005				
Total	8,093	5,250	2,843	5,120	5,120				
(22) Reserve for O/S L & LE, first period					2,500				
(23) Reserve for O/S L & LE, second period					5,120				
(24) Total					7,620				

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XYZ Company

December 31, 1966

Schedule P - Part 5D

(Present Policy Year Basis)

Development of Incurred W.C. Losses

Policy Year	Accident Year	Reserve Date 12-31-61	12-31-62	12-31-63	12-31-64	12-31-65	12-31-66
1961	1961	$1,290	$1,280	$1,270	$1,260	$1,255	$1,250
1961	1962	X	870	865	860	855	850
*1961	1963	X	X	0	0	0	0
*1961	1964	X	X	X	0	0	0
1962	1962	X	1,475	1,450	1,425	1,410	1,400
1962	1963	X	X	880	870	860	850
*1962	1964	X	X	X	0	0	0
*1962	1965	X	X	X	X	0	0
1963	1963	X	X	1,700	1,700	1,700	1,700
1963	1964	X	X	X	1,060	1,030	1,000
*1963	1965	X	X	X	X	0	0
*1963	1966	X	X	X	X	X	0
1964	1964	X	X	X	2,000	2,000	2,000
1964	1965	X	X	X	X	1,250	1,200
*1964	1966	X	X	X	X	X	0
1965	1965	X	X	X	X	2,200	2,200
1965	1966	X	X	X	X	X	1,400
1966	1966	X	X	X	X	X	2,300

* These lines to be filled in only by companies which charge all losses under policies running for a period of more than one year to the original policy year of issue.

XYZ Company

December 31, 1967

Schedule P - Part 2

(Initial Year of Transition)

Reserve for Unpaid W.C. Loss & Loss Expense December 31 of Current Year

Policy Year Policies Issued	Calendar Year Policies Earned	Accident Year Losses Incurred I	II	(1) Premiums Earned	(2) Losses Paid	(3) Losses O/S	(4) Losses Incurred	(5) Losses Ratio	(6) Loss Expense Alloc. Paid	(7) Loss Expense Unalloc. Paid	(8) Loss Expense O/S	(9) Loss Expense Incurred	(10) Loss Expense Ratio	(11) Loss & Loss Expense Incurred	(12) Loss & Loss Expense Ratio
< 1960	< 1967	< 1961	< 1964	$27,500	$15,555	$ 905	$16,460	59.9	$ 725	$2,040	$ 25	$2,790	10.1	$19,250	70.0
1960	"	60 & 61	60 - 64	2,800	1,610	170	1,780	63.6	80	180	10	270	9.6	2,050	73.2
1961	"	61 & 62	61 - 65	3,000	1,865	225	2,090	69.7	85	195	20	300	10.0	2,390	79.7
1962	"	62 & 63	62 - 66	3,500	1,945	300	2,245	64.1	100	200	25	325	9.3	2,570	73.4
1963	"	63 & 64	63 - 66	4,000	2,265	415	2,680	67.0	130	220	35	385	9.6	3,065	76.6
1964	"	64 & 65	64 - 66	4,700	2,490	650	3,140	66.8	155	245	45	445	9.5	3,585	76.3
Total first period				45,500	25,730	2,665	28,395	62.4	1,275	3,080	160	4,515	9.9	32,910	72.3
1965	"	1965 & 1966		5,100	2,390	1,060	3,450	67.7	150	245	100	495	9.7	3,945	77.4
1966	"	1966		2,650	1,330	870	2,200	83.0	50	120	145	315	11.9	2,515	94.9
-	1967	1967		5,800	1,150	2,785	3,935	67.8	20	240	320	580	10.0	4,515	77.8
Total second period				13,550	4,870	4,715	9,585	70.7	220	605	565	1,390	10.3	10,975	81.0
Total				59,050	30,600	7,380	37,980	64.3	1,495	3,685	725	5,905	10.0	43,885	74.3

Computation of Reserve for Unpaid W.C. Loss & Loss Expense

			(13) 65% P.E. in Col. 1	(14) L & LE Payments (2)+(6)+(7)	(15) Remainder (13)-(14)	(16) L & LE O/S (3)+(8)	(17) (15) or (16) whichever is greater	(18) ←	(19) old	(20) format	(21) →
1965	< 1967	1965 & 1966	$3,315	$2,785	$ 530	$1,160	$1,160				
1966	"	1966	1,723	1,500	223	1,015	1,015				
-	1967	1967	3,770	1,410	2,360	3,105	3,105				
Total			8,808	5,695	3,113	5,280	5,280				
(22) Reserve for O/S L & LE, first period							2,825				
(23) Reserve for O/S L & LE, second period							5,280				
(24) Total							8,105				

I Companies assigning term policies to each annual policy year involved

II Companies assigning term policies to original policy year

SCHEDULE P

XYZ Company

December 31, 1967

Schedule P - Part 4

(Initial Year of Transition)

Distribution of Unallocated Compensation Claim Expenses

Policy Year	Accident Year I	or II	(1) Current Year Distribution %'s B	or A*	(1) Current Year Paid	(2) Prior Years Paid	(3) Total Paid (Col. 1 + Col. 2)
< 1964	< 65	< 67	0		$ 0	$2,835	$2,835
1964	64 & 65	64 - 66	5		15	230	245
1965	1965 & 1966		10		30	215	245
1966	1966		5		15	105	120
-	1967		80		240	0	240
Total			100	100	300	3,385	3,685

I Companies assigning term policies to each annual policy year involved.
II Companies assigning term policies to original policy year.
A For Companies which have been issuing policies less than 5 years.
B For Companies which have been issuing policies 5 years or more.
* Determine %'s by expanding the %'s in B for the number of years applicable to 100%.

NOTE: The B distribution %'s were taken from IASA, Insurance Accounting - Fire and Casualty, p. 168 (2nd Edition)

XYZ Company B-3

December 31, 1967

Schedule P - Part 5D

(Initial Year of Transition)

Development of Incurred W.C. Losses

Policy Year	Accident Year	Reserve Date 12-31-62	12-31-63	12-31-64	12-31-65	12-31-66	12-31-67
< 1962	< 1964	$20,800	$20,700	$20,600	$20,500	$20,400	$20,330
1962	1962	1,475	1,450	1,425	1,410	1,400	1,400
1962	1963	X	880	870	860	850	845
*1962	1964	X	X	0	0	0	0
*1962	1965	X	X	X	0	0	0
1963	1963	X	1,700	1,700	1,700	1,700	1,695
1963	1964	X	X	1,060	1,030	1,000	985
*1963	1965	X	X	X	0	0	0
*1963	1966	X	X	X	X	0	0
1964	1964	X	X	2,000	2,000	2,000	1,990
1964	1965	X	X	X	1,250	1,200	1,150
*1964	1966	X	X	X	X	0	0
1965	1965	X	X	X	2,200	2,200	2,150
1965	1966	X	X	X	X	1,400	1,300
1966	1966	X	X	X	X	2,300	2,200
Sub-total		X	X	X	X	34,450	34,045
-	1967	X	X	X	X	X	3,935

* These lines to be filled in only by companies which charge all losses under policies running for a period of more than one year to the original policy year of issue.

XYZ Company

December 31, 1967

Schedule P - Part 6D

(Initial Year of Transition)

Comparison of Reserves by Accident Year for W.C. Loss & Loss Expense December 31 of Current Year

	Calendar Year (Premiums Earned)/Accident Year (Loss & Loss Expense)													
	1961*	1962*	1963*	1964*	1965*	1966*	1967	1961*	1962*	1963*	1964*	1965*	1966*	1967
				Dollars								Percentages		
						Summary Data from Schedule P - Part 2								
1. Premiums Earned							5,800	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2. Loss & Loss Exp. Incurred							4,515							77.8
						Loss & Loss Expense thru 12 Months								
3. Paid							1,410							24.3
4. Reserve (2)-(3)							3,105							53.5
						Loss & Loss Expense thru 24 Months								
5. Paid							X							X
6. Reserve (2)-(5)							X							X
						Loss & Loss Expense thru 36 Months								
7. Paid						X	X						X	X
8. Reserve (2)-(7)						X	X						X	X
						Loss & Loss Expense thru 48 Months								
9. Paid					X	X	X					X	X	X
10. Reserve (2)-(9)					X	X	X					X	X	X
						Loss & Loss Expense thru 60 Months								
11. Paid				X	X	X	X				X	X	X	X
12. Reserve (2)-(11)				X	X	X	X				X	X	X	X

* The completion of data for these years is optional

SCHEDULE P

Schedule P - Part 2

(Ultimate Calendar/Accident Year Basis)

Reserve for Unpaid W.C. Loss & Loss Expense December 31 of Current Year

Calendar Year Policies Earned/ Accident Year Losses Incurred	(1) Premiums Earned	(2) Losses Paid	(3) Losses O/S	(4) Losses Incurred	(5) Losses Ratio	(6) Loss Expense Alloc. Paid	(7) Loss Expense Unalloc. Paid	(8) Loss Expense O/S	(9) Loss Expense Incurred	(10) Loss Expense Ratio	(11) Loss & Loss Expense Incurred	(12) Loss & Loss Expense Ratio
< 1960	$25,950	$15,000	$ 850	$15,850	61.1	$ 700	$1,955	$ 20	$2,675	10.3	$18,525	71.4
1960	2,700	1,570	170	1,740	64.5	75	170	10	255	9.4	1,995	73.9
1961	3,000	1,775	175	1,950	65.0	80	190	15	285	9.5	2,235	74.5
1962	3,300	1,900	290	2,190	66.4	90	200	25	315	9.5	2,505	75.9
1963	3,700	2,190	350	2,540	68.7	130	200	30	360	9.7	2,900	78.4
1964	4,400	2,435	540	2,975	67.6	135	240	40	415	9.4	3,390	77.0
Total first period	43,050	24,870	2,375	27,245	63.3	1,210	2,955	140	4,305	10.0	31,550	73.3
1965	4,900	2,465	835	3,300	67.3	180	250	60	490	10.0	3,790	77.3
1966	5,300	2,115	1,385	3,500	66.0	85	240	205	530	10.0	4,030	76.0
1967	5,800	1,150	2,785	3,935	67.8	20	240	320	580	10.0	4,515	77.8
Total second period	16,000	5,730	5,005	10,735	67.1	265	730	585	1,600	10.0	12,335	77.1
Total	59,050	30,600	7,380	37,980	64.3	1,495	3,685	725	5,905	10.0	43,885	74.3

Computation of Reserve for Unpaid W.C. Loss & Loss Expense

	(13) 65% P.E. in Col. 1	(14) L & LE Payments (2)+(6)+(7)	(15) Remainder (13)-(14)	(16) L & LE O/S (3)+(8)	(17) (15) or (16) whichever is greater	(18) ←	(19) old	(20) format	(21) →
1965	$ 3,185	$2,895	$ 290	$ 895	$ 895				
1966	3,445	2,440	1,005	1,590	1,590				
1967	3,770	1,410	2,360	3,105	3,105				
Total	10,400	6,745	3,655	5,590	5,590				
(22) Reserve for O/S L & LE, first period					2,515				
(23) Reserve for O/S L & LE, second period					5,590				
(24) Total					8,105				

SCHEDULE P

December 31, 1967

Schedule P - Part 4

(Ultimate Calendar/Accident Year Basis)

Distribution of Unallocated Compensation Claim Expenses

	(1)			(2)	(3)
	Current Year			Prior Years	Total Paid
Accident Year	Distribution %'s		Paid	Paid	(Col. 1 + Col. 2)
	B	or A*			
< 1965	0		$ 0	$2,955	$2,955
1965	10		30	220	250
1966	10		30	210	240
1967	80		240	0	240
Total	100	100	300	3,385	3,685

A For Companies which have been issuing policies less than 5 years.

B For Companies which have been issuing policies 5 years or more.

* Determine %'s by expanding the %'s in B for the number of years applicable to 100%.

NOTE. The B distribution %'s were taken from IASA, Insurance Accounting - Fire and Casualty, p 168 (2nd Edition).

XYZ Company C-3

December 31, 1967

Schedule P - Part 5D

(Ultimate Calendar/Accident Year Basis)

Development of Incurred W.C. Losses

Accident Year	Reserve Date 12-31-62	12-31-63	12-31-64	12-31-65	12-31-66	12-31-67
< 1962	$20,000	$19,880	$19,770	$19,665	$19,565	$19,540
1962	2,275	2,270	2,255	2,245	2,235	2,190
Sub-total	22,275	22,150	22,025	21,910	21,800	21,730
1963	X	2,580	2,570	2,560	2,550	2,540
Sub-total	X	24,730	24,595	24,470	24,350	24,270
1964	X	X	3,060	3,030	3,000	2,975
Sub-total	X	X	27,655	27,500	27,350	27,245
1965	X	X	X	3,450	3,400	3,300
Sub-total	X	X	X	30,950	30,750	30,545
1966	X	X	X	X	3,700	3,500
Sub-total	X	X	X	X	34,450	34,045
1967	X	X	X	X	X	3,935

XYZ Company

December 31, 1967

Schedule P - Part 6D

(Ultimate Calendar/Accident Year Basis)

Comparison of Reserves by Accident Year for W.C. Loss & Loss Expense December 31 of Current Year

	Calendar Year (Premiums Earned)/Accident Year (Loss & Loss Expense)													
	1961	1962	1963	1964	1965	1966	1967	1961	1962	1963	1964	1965	1966	1967
	Dollars							Percentages						
	Summary Data from Schedule P - Part 2													
1. Premiums Earned	3,000	3,300	3,700	4,400	4,900	5,300	5,800	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2. Loss & Loss Exp. Incurred	2,235	2,505	2,900	3,390	3,790	4,030	4,515	74.5	75.9	78.4	77.0	77.3	76.0	77.8
	Loss & Loss Expense thru 12 Months													
3. Paid	740	850	925	1,090	1,235	1,260	1,410	24.7	25.8	25.0	24.8	25.2	23.8	24.3
4. Reserve (2)-(3)	1,495	1,655	1,975	2,300	2,555	2,770	3,105	49.8	50.1	53.4	52.2	52.1	52.2	53.5
	Loss & Loss Expense thru 24 Months													
5. Paid	1,400	1,590	1,790	2,090	2,300	2,440	X	46.7	48.2	48.4	47.5	46.9	46.0	X
6. Reserve (2)-(5)	835	915	1,110	1,300	1,490	1,590	X	27.8	27.7	30.0	29.5	30.4	30.0	X
	Loss & Loss Expense thru 36 Months													
7. Paid	1,690	1,900	2,210	2,595	2,895	X	X	56.3	57.6	59.7	59.0	59.1	X	X
8. Reserve (2)-(7)	545	605	690	795	895	X	X	18.2	18.3	18.7	18.0	18.2	X	X
	Loss & Loss Expense thru 48 Months													
9. Paid	1,840	2,065	2,400	2,810	X	X	X	61.3	62.6	64.9	63.8	X	X	X
10. Reserve (2)-(9)	395	440	500	580	X	X	X	13.2	13.3	13.5	13.2	X	X	X
	Loss & Loss Expense thru 60 Months													
11. Paid	1,940	2,180	2,520	X	X	X	X	64.7	66.1	68.1	X	X	X	X
12. Reserve (2)-(11)	295	325	380	X	X	X	X	9.8	9.8	10.3	X	X	X	X

SCHEDULE P

Special Notes for Bodily Injury Liability Coverages D

1. Schedule P - Part 1

Suit data can be included in Part 1 in its present detail. The amount charged for each suit, however, can be converted to an accident year basis as follows:

Initial Year of Transition

Policy Year Policies Issued	Calendar Year Policies Earned	Accident Year Losses Incurred I	or II	Amount Charged for each Suit
< 1960	< 1967	< 1961	< 1964	$1,500
1960	"	60 & 61	60 - 64	1,000
1961	"	61 & 62	61 - 65	1,000
1962	"	62 & 63	62 - 66	1,000
1963	"	63 & 64	63 - 66	850
1964	"	64 & 65	64 - 66	850
Total first period				
1965	"	1965 & 1966		750
1966	"	1966		750
-	1967	1967		750
Total second period				
Total				

Ultimate Calendar/Accident Year Basis

Calendar Year Policies Earned/ Accident Year Losses Incurred	Amount Charged for each Suit
< 1960	$1,500
1960	1,250
1961	1,000
1962	1,000
1963	925
1964	850
Total first period	
1965	800
1966	750
1967	750
Total second period	
Total	

2. Schedule P - Part 3

The B distribution %'s for Part 3 were taken from IASA, Insurance Accounting - Fire and Casualty, p. 168 (2nd Edition), as were the B distribution %'s for Part 4 shown in exhibits B-2 and C-2. These distribution %'s are as follows.

Initial Year of Transition

Policy Year	Accident Year I	or II	Distribution %'s B
< 1963	< 64	< 66	0
1963	63 & 64	63 - 66	5
1964	64 & 65	64 - 66	10
1965	1965 & 1966		10
1966	1966		5
-	1967		70
Total			100

Ultimate Calendar/Accident Year Basis

Accident Year	Distribution %'s B
< 1964	0
1964	10
1965	10
1966	10
1967	70
Total	100

DISCUSSION BY FRANCIS J. HOPE

It was a pleasure to review this paper, because it is concise, the ideas are clearly stated, and it suggests some things that could be done now and some thought-provoking subjects for the future.

The first stated purpose of the proposed revision of Schedule P is simplification, and with this we can hardly have any quarrel. If the primary purpose of Schedule P is to give some indication of current reserve position, then it may be done equally well on an accident year basis as on a policy year basis, and with less detail in processing. Admittedly the minimum statutory requirements present a hurdle to be overcome.

Certain rationale is cited from the report of the Actuarial (F5) Subcommittee of the N.A.I.C., to the effect that application of the statutory minimum ratios to three years of calendar/accident year premium would produce a more conservative requirement than when applied to three policy year premiums, since the calendar year premium would be greater.

As a technical point it might be noted first that, with respect to policies still in effect at the beginning of the period, such policies would be contributing losses as well as premium into the calendar/accident year period, and thus would not necessarily make the requirement more conservative. Policies which had already expired would quite probably contribute positive amounts to earned premium in the form of audit premiums, but these might be more than offset by negative amounts from retrospective adjustments from time to time.

This technical point should hardly be a deterrent to the use of earned calendar year premiums, since the effect would be quite negligible, and the statutory minimum ratios themselves do not suggest any precise form of measurement.

There is a proposal to revise Part 5 so as to show various sub-totals and aggregate developments by line, and this might be done in a number of ways. If space permits, we would suggest that an additional column be inserted between the columns as proposed, in which the amount of calendar year development could be shown by accident year. This again would merely be a saving in arithmetic, and would show at a glance the amount of contribution to calendar year incurred loss made by each accident year.

The most interesting and challenging part of the paper is the section on prospective evaluation of liabilities. Miss Salzmann would add a new Part 6 to Schedule P, in which she would trace paid and incurred losses by accident year through a series of year-end evaluation dates. By subtracting