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DISCUSSION OF PAPERS PRESENTED
AT THE SPRING MEETINGS

THE KOREAN WAR HAZARD

JAMES T. PHILLIPS

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ARTHUR A. WINDECKER:

Mr. Phillips' paper is especially valuable because it helps to focus attention on the methods which the life insurance industry has used to control the war hazard. The following methods are mentioned:

- (1) Extra premiums
- (2) War clauses
- (3) Selective underwriting
- (4) Amount limitations
- (5) Plan limitations
- (6) Agency limitations

Mr. Phillips has explained why the use of extra premiums (Method 1) is likely to be ineffective.

A war clause (Method 2) is simply a coverage limitation. The universal use of war clauses would solve the problem nicely were it not for the fact that life insurance companies, after all, are in business to provide as complete protection as possible. Consequently, during the past 3 years, most companies have tried to provide some protection (Methods 4 and 5) without a war clause to carefully selected risks (Method 3).

In addition, many companies have applied one or more types of agency limitations (Method 6). For example, many companies will not accept military risks from brokers. The "quota system" is another agency limitation.

The "certain agency steps" which Mr. Phillips mentions would presumably also fall in this class. I don't know what he has in mind, but two obvious steps would be to discourage the hiring of new military specialists and to encourage military specialists already in the organization to develop nonmilitary markets.

The companies with debit agents have what might be described as an automatic agency limitation, because most debit agents have nonmilitary rounds to cover, and this tends to keep them from military specialization. A company with nothing but debit agents obviously has a far different problem controlling the war hazard than does the company with nothing but Ordinary agents.

The Equitable and the New York Life are similar in a number of important respects. For example, they are mutual companies of about the same size, with home offices in New York City and with no debit business. Accordingly, we were particularly interesting in comparing Equitable experience with that of the New York Life. Although we did not carry out a detailed analysis, we prepared the following summary which is intended to correspond in part to the first section of Mr. Phillips' Table 10:

EQUITABLE ORDINARY DEATH CLAIMS FROM JULY 1, 1950
TO DECEMBER 31, 1952
WAR DEATHS

	Issued on or before June 25, 1950	Issued after June 25, 1950	Total
Killed in Action	\$710,685	\$101,182	\$811,867
Missing	100,823	18,784	119,607
Total	\$811,508	\$119,966	\$931,474

Estimating total New York Life Ordinary death claims for the 2½ year period from July 1, 1950 to December 31, 1952, we then prepared the following tables:

WAR DEATH CLAIMS AS A PERCENTAGE OF TOTAL DEATH CLAIMS
FROM JULY 1, 1950 TO DECEMBER 31, 1952

	Issued on or before June 25, 1950	Issued after June 25, 1950	Total
	Based on \$237,500,000 total claims (estimated)		
New York Life:			
Killed in Action	0.71%	0.24%	0.95%
Missing	0.20%	0.08%	0.28%
Total	0.91%	0.32%	1.23%
	Based on \$191,037,794 total claims		
Equitable:			
Killed in Action	0.37%	0.05%	0.42%
Missing	0.05%	0.01%	0.06%
Total	0.42%	0.06%	0.48%

These figures suggest that losses due to the first 2½ years of the Korean War were relatively more than twice as heavy for the New York Life as for the Equitable. Moreover, this relationship holds for policies issued on or before June 25, 1950, as well as for policies issued after June 25, 1950.

This difference in experience cannot be accounted for, so far as I have determined, by any important differences between the methods employed by the two companies to control the war hazard. It may be due primarily to a difference between the two companies in the degree to which some agents or agencies have been specializing in military business.

I believe it is particularly significant that the relationship mentioned above holds for policies issued before June 25, 1950. When war ends, there is a natural tendency to relax controls immediately. These figures suggest that business subject to a potential military hazard must be watched carefully at all times.

EDWARD A. LEW:

Mr. Phillips has performed a notable service in presenting us with analyses of the New York Life's experience on military risks in the Korean War and with a closely reasoned examination of the underwriting considerations involved. Particularly valuable are his data on variations in combat death rates by branch of service, age, rank, and duty branch. These figures highlight the possibilities of antiselection by those members of the armed forces who have some appreciation of combat hazards.

In the Metropolitan, antiselection was controlled without the use of war clauses. This proved possible largely because the company's field force confined its canvassing predominantly to people living in the agents' debit territory. No agents specialized in insuring military personnel and it was distinctly understood that canvassing at ports of embarkation and similar military establishments was "out of bounds." Under these circumstances, merely limiting the Ordinary insurance issued to persons in or liable to military service to amounts ranging from \$2,500 in the case of privates to \$15,000 in the case of the higher ranking commissioned officers was sufficient to control antiselection. Furthermore, because the company had been declining fighter pilots for some years and because other military aviation risks were not affected by the war to the same degree as fighter pilots, it was feasible to continue insuring the acceptable types of military aviation risks subject to peacetime extra premiums with the amount limitations just indicated.

The Ordinary insurance applications received by the Metropolitan on military risks during the period of time covered by the Korean War comprised only a very small proportion of the total applications received (less than one percent). In relatively few cases was it necessary to decline ap-

plications on military risks or to limit the amounts of insurance applied for.

On Ordinary policies issued on or after June 25, 1950, the Metropolitan has paid 105 claims for \$343,000 on account of deaths from enemy action in the Korean War. The average amount paid on these claims was considerably smaller than the average size policy issued on the lives of military personnel. When these claims are related to the estimated amounts of insurance issued since June 25, 1950, on the lives of military personnel, it appears that the Metropolitan's Ordinary policyholders in the armed forces were subject to an extra death rate of approximately 2 per 1,000 a year on account of enemy action. This may be compared with a death rate of 2.6 per 1,000 among all United States troops, based on those reported as killed in action or died of wounds (3.4 per 1,000 including those missing or captured who died or are presumed to have died) and indicates that by and large there was no selection against the company by applicants in or liable to military service.

The figure of \$2 a year per \$1,000 of insurance does not represent the full extra cost to the company of issuing Ordinary policies to persons in military service during the Korean War. In addition, the death rate from accidents and disease among United States troops other than aviators was at least 1 per 1,000 a year higher than that of Ordinary policyholders of comparable age. The total extra cost to the company of issuing Ordinary insurance to persons in military service has been estimated at about \$3.00 a year per \$1,000. With a two year average period of service in the armed forces, this extra cost comes to about \$6 per \$1,000 of insurance, which does not add a substantial amount to the normal cost of insurance when spread over the lifetime of a policy.

The Metropolitan's experience on Ordinary policies issued after the outbreak of hostilities in Korea indicates that the company obtained a cross section of the military risks among its usual clientele. On the other hand, the New York Life's experience on policies issued without war clauses after July 1, 1950, suggests that it received a relatively high proportion of applications on individuals in military service who were subject to greater than average hazards. In particular, the New York Life appears to have insured a very high proportion of aviation risks; these must have been predominantly flying personnel since the number of combat deaths among nonflying personnel in Korea was extremely small. The New York Life also seems to have insured a relatively high proportion of officers as compared with enlisted men among other than aviation risks. To the extent that officer personnel are more likely than enlisted men to have advance knowledge of their military assignments as well as a better under-

standing of combat hazards, they are probably in a superior position to exercise antiselection.

Mr. Phillips' analyses of the New York Life's experience by branch of service, age at issue, rank, and duty branch bring out clearly which assignments and individuals in the armed forces were subject to hazards materially greater than average during the Korean War. From recently published data relating to World War II, I have been able to compile similar but very much more comprehensive information showing the widely vary-

TABLE 1
VARIATIONS IN BATTLE HAZARDS BY ECHELON
U.S. ARMY IN WORLD WAR II
Experience in European Theatre from D Day to V-E Day

Echelon	Estimated Battle Death Rate* per 1,000 per Year	Average Proportion of Troops Exposed to Combat
All Combat Divisions	220	Virtually 100%
Infantry Divisions	240	Virtually 100%
Armored Divisions	140	Virtually 100%
Airborne Divisions	190	Virtually 100%
All Corps troops	160	About 70%
Corps troops not assigned to combat divisions	35	.....
All Army troops	130	About 50%
Army troops not assigned to combat divisions	35	.....
All Theatre troops	55	About 20%

* Includes killed in action, died of wounds, and missing or captured who died or were presumed to have died.

Sources: (1) *ASF Monthly Progress Report—Health*, May 1945.

(2) *Army Battle Casualties and Nonbattle Deaths in World War II*, Department of the Army, 1953.

ing battle hazards in World War II by echelon, by arm or service (duty branch), by military specialty, by rank, according to tactical operations, and for combat air crews in different phases of the war. This information is given in Tables 1 through 6.

Table 1 presents the variations in Army combat death rates according to echelon. It shows that in the European Theatre from D Day to V-E Day the infantry, armored, and airborne divisions were subject to combat death rates from 140 to 240 per 1,000 a year, or from four to eight times as high as those among Army troops not assigned to combat divisions.

Table 2 indicates the differentials in combat death rates according to arm or service (duty branch). It shows that in the European Theatre and

in all overseas theatres combined the highest combat death rates in World War II were experienced in the infantry, the armored divisions (including the cavalry) and among flying personnel in the Air Corps (predominantly officers). In sharp contrast, personnel in the Quartermaster Corps, Ordnance, Transportation, and other services in the Army were subject to relatively small combat hazards.

TABLE 2
VARIATIONS IN BATTLE HAZARDS BY ARM OR SERVICE
U.S. ARMY IN WORLD WAR II
Experience in European Theatre and All Overseas Theatres
from December 1941 to March 1945

ARM OR SERVICE	ESTIMATED BATTLE DEATH RATE* PER 1,000 PER YEAR			
	European Theatre		All Overseas Theatres	
	Officers	Enlisted Men	Officers	Enlisted Men
Infantry.....	123	120	78	72
Armored.....	†	96	†	66
Cavalry.....	85	55	60	48
Field Artillery.....	39	18	31	15
Air Corps.....	62	13	51	11
Engineers.....	15	10	11	8
Chemical Warfare.....	13	10	12	13
Medical.....	4	10	4	7
Coast Artillery.....	9	6	9	6
All other.....	2.6	1.8	3.3	2.2
Total Ground Troops...	32	38	23	24
Total Ground Troops and Air Corps.....	46	31	35	21

* Includes killed in action, died of wounds, and missing or captured who died or were presumed to have died.

† Officers in armored divisions were assigned either to infantry or cavalry.

Sources: (1) *ASF Monthly Progress Report—Health*, May 1945.

(2) *Army Almanac*.

(3) *Battle Casualties*, by G. W. Beebe and M. E. De Bakey, 1952.

(4) *Army Battle Casualties and Nonbattle Deaths in World War II*, Department of Army, 1953.

(5) Annual Report of the Secretary of the Army, 1948.

Table 3 brings out the differentials in combat hazards according to military occupational specialty in the Army. It indicates that riflemen, automatic riflemen, squad leaders, platoon sergeants, and section leaders were subject by far to the greatest hazards of being killed, wounded, or missing in action.

Table 4 illustrates the differentials in Army combat death rates according to rank. It indicates that second lieutenants (who were often squad or section leaders) had the highest combat death rates among officers, and that first lieutenants ranked next with combat death rates about half those of second lieutenants. Staff sergeants frequently had duties similar to those of second lieutenants and showed the highest combat death rates among enlisted personnel.

TABLE 3
VARIATIONS IN BATTLE HAZARDS ACCORDING TO
MILITARY OCCUPATIONAL SPECIALTY
U.S. ARMY IN WORLD WAR II

Based on Experience in European, Mediterranean and
Pacific Theatres in Various Campaigns

Military Occupational Specialty	Index of Relative Hazard of Being Killed, Wounded, or Missing in Action
Rifleman	432
Automatic rifleman	280
Squad leader	212
Platoon sergeant	155
Section leader	151
Combat air crews	125
Litter bearer	140
Gunner	134
Ammunition handler	132
Scout	118
Auto mechanic	18
Truck driver	28
Radio operator	34
Cook	29
Clerk	32
All Troops	100

Source: *Battle Casualties*, by G. W. Beebe and M. E. De Bakey, 1952.

Table 5 brings out the wide variations in combat hazards in different types of Army tactical operations.

Table 6 compares the hazards of combat air crews operating against Germany with those of all Air Corps personnel and with those of troops in ground combat divisions. It indicates that in the early stages of World War II combat air crews were subject to very much greater hazards than the average of troops in the ground combat divisions, but that over the entire four-year period of World War II there was little difference between the battle death rates of combat air crews operating against Germany and those of ground combat divisions. The battle death rates experienced by

TABLE 4
VARIATIONS IN BATTLE HAZARDS BY RANK
U.S. ARMY IN WORLD WAR II
 Experience in European Theatre and in Overseas Theatres
 from December 7, 1941 to December 31, 1945

RANK	ESTIMATED BATTLE DEATH RATE* PER 1,000 PER YEAR	
	European Theatre	All Overseas Theatres
Major or Higher	15	11
Captain	22	17
First Lieutenant	45	34
Second Lieutenant	87	66
Warrant and Flight Officers	29	22
All Officers	46	35
Master and First Sergeant	4	3
Technical Sergeant	35	24
Staff Sergeant and Technician 3d grade	52	34
Sergeant and Technician 4th grade	32	21
Corporal and Technician 5th grade	14	9
Private First Class	34	22
Private	38	25
All Enlisted Men	31	21

* Includes killed in action, died of wounds, and missing or captured who died or were presumed to have died.

- Sources: (1) *Army Almanac*.
 (2) Annual Report of the Secretary of the Army, 1948.
 (3) *Army Battle Casualties and Nonbattle Deaths in World War II*, Department of the Army, 1953.
 (4) *Battle Casualties*, by G. W. Beebe and M. E. De Bakey, 1952.

TABLE 5
VARIATIONS IN BATTLE HAZARDS AMONG GROUND
TROOPS ACCORDING TO TACTICAL OPERATION
U.S. ARMY IN WORLD WAR II
 Based on Operations in Selected Campaigns

Type of Tactical Operation	Estimated Battle Death Rate* per 1,000 per Year
Beachhead operations	1,000
Offensive breakthrough	650
Reduction of towns	550
Assault on fortified lines	450
River crossings	450
Defensive operations against enemy attack	350

* Includes killed in action, died of wounds, and missing or captured who died or were presumed to have died.

Source: *Battle Casualties*, by G. W. Beebe and M. E. De Bakey, 1952.

the combat air crews operating against Germany were from ten to twenty times as high as the average for all Air Corps personnel.

As indicated by Mr. Phillips the combat hazards in the Korean War differed in many respects from those in World War II. However, when allowance is made for the smaller part played in the Korean War by the Navy, by the armored and airborne divisions of the Army, and by the strategic bombers of the Air Force, the broad pattern of combat hazards

TABLE 6
VARIATIONS IN BATTLE HAZARDS AMONG COM-
BAT AIR CREWS OPERATING AGAINST
GERMANY IN WORLD WAR II

	ESTIMATED BATTLE DEATH RATE* PER 1,000 PER YEAR		
	Combat Air Crews Operating against Germany	Total Air Corps All Over- seas Theatres	Ground Combat Divisions
1942	500	26	.....
1943	390	19	.....
1944	190	23	.....
Jan.-Mar. 1945	70	8	.....
Total Period...	220	17	.....
D Day to V-E Day .....	.....	.....	220

* Includes killed in action, died of wounds, and missing or captured who died or were presumed to have died.

Sources: (1) *Battle Casualties*, by G. W. Beebe and M. E. De Bakey, 1952.

(2) *Army Battle Casualties and Nonbattle Deaths in World War II*, Department of the Army, 1953.

(3) Annual Report of the Secretary of the Army, 1948.

in the Korean War by echelon, arm or service (duty branch), military occupational specialty, rank, and tactical operations was probably quite similar to that in World War II. If this pattern were to hold in future military operations, then the pertinent data cited by Mr. Phillips as well as those drawn from the experience in World War II should certainly be helpful in any program of selective underwriting, irrespective of whether such a program visualized the use of war clauses or whether it was confined to limiting the amounts of insurance issued to persons in or liable to military service. In the Metropolitan, the underwriting rules in effect before the close of hostilities in the Korean War provided for more liberal

amount limitations on those categories of military personnel who appeared unlikely to be exposed to the more serious combat hazards.

As a matter of record also, I should like to present a more complete comparison between the United States battle death rates in the Korean War and those in World War II, by branch of service. The Korean battle death rates are based on the final Department of Defense release on casualties dated October 8, 1953, and on figures for strength of the armed forces drawn from official sources. The final Department of Defense release on casualties showed 25,604 deaths in action or as a result of wounds and 7,955 missing in action presumed dead, or a total battle death toll of 33,559. This is somewhat more than one-tenth the corresponding figure for World War II and compares with well over 50,000 battle deaths suffered by the Army land forces alone in the Pacific area during that conflict.

BATTLE DEATH RATES—KOREAN WAR AND
WORLD WAR II

	BATTLE DEATH RATE* PER 1,000 PER YEAR	
	Korean War June 25, 1950— Oct. 8, 1953	World War II 1942—1945
Army.....	6.3	10.0
Navy.....	.2	4.2
Marine Corps.....	6.9	14.3
Air Force.....	.5	7.0
All.....	3.4	8.9

* Includes killed in action, died of wounds, and missing or captured who died or were presumed to have died.

PEARCE SHEPHERD:

The Society is very grateful for so many detailed statistics on this subject. I have been interested in comparing some of the figures with corresponding figures for my company, which has pursued a somewhat different course of action over the years.

For issues prior to Korea we incurred 521 claims in the nonaviation class as compared to 418 shown in Mr. Phillips' paper. This is a little less in proportion to the volume of Ordinary business in force in the two companies and reflects probably the large proportion of Ordinary business written by debit agents. However, we had a number of Ordinary agents specializing in military business but tried to discourage additional specialists following World War II.

In the aviation classification we incurred 37 claims as compared to 161 for Mr. Phillips' company. In my opinion this reflects a more conservative approach to the aviation hazard following World War II.

We started using a war clause one month after the outbreak of hostilities in Korea. On issues in the nine months following Korea, we incurred four claims and all were on policies issued without a war clause in the first month of this period, as compared to 100 deaths for Mr. Phillips' company, aviation and nonaviation combined.

On issues in the second nine months of the Korean War, we showed three deaths as compared to seven for Mr. Phillips' company, with the volume of business about half theirs during this period.

Combining figures from some of Mr. Phillips' tables, it appears that his company had 37 claims on issues after Korea on applicants who were civilians at the time they were insured, whereas we had 27. It appears that our practice of using war clauses on potential military risks was somewhat effective in reducing the claim rate.

RALPH KEFFER:

Mr. Phillips has presented certain tables of combat death rates which he has defined as ratios of numbers killed in action to total lives in the armed forces. He did not quote the actual exposure in the armed forces, but from the figures in Table 6 it can be seen that the average number of military personnel, excluding the air force, for the first year of the war would be approximately 1,730,000 and that the total in subsequent years was increased to more than 2,500,000. Very large proportions of these lives were stationed in the United States and various parts of the world other than Korea and for the most part were not subject to any unusual insurance hazards.

From some testimony before a Congressional Committee given in 1951 by General Marshall, then Secretary of Defense, it was possible to estimate the annual combat death rate during the first year among the armed forces in Korea. His testimony which was reported in full in the *New York Times* for May 13, 1951 included a statement of the number of casualties per week per hundred men for each separate two-week period from June 25, 1950 to May 4, 1951. He stated that the figures referred to personnel in the combat area, that is, Korea itself.

The casualty rates given by General Marshall were combined with published figures of total casualties during this period to make estimates of the number of troops in Korea at any time during the first ten months of the war. The numbers were relatively small at the start, but increased to approximately 350,000 at the end of six months and then appeared to remain

fairly constant for the remainder of the ten month period. The average number of troops in Korea during the first year of the war would thus be about 275,000 which is only 16% of the total military forces used as the basis in Mr. Phillips' rates.

This would mean that the average annual rate of known combat deaths among the armed forces in Korea during the first year would be about 46 per thousand as compared with Mr. Phillips' ratio of 7.4 based upon all lives in the armed forces. The rate would, of course, be substantially increased by deaths among the very large number reported missing and by subsequent deaths among the approximately 50,000 wounded.

Mr. Phillips also referred to World War II figures quoted by Mr. Lew. These can be supplemented by the mortality experience under National Service Life Insurance during World War II reported in the paper by Mr. William A. Poissant, in the *Transactions* for June 1950. In the one year 1944, N.S.L.I. death claims due to the extra hazard of service amounted to $1\frac{1}{2}$ billion dollars or 940% more than the normal claims. The death claims among those under age 30 were 1100% in excess of normal claims even though millions of men in the service never were exposed to actual war conditions.

All of these figures support the conclusion of Mr. Phillips and nearly everyone else who has analyzed the situation that the real war hazard is not a hazard that can be underwritten by an insurance company.

The National Service Life Insurance was limited to \$10,000 on each life. It furnishes the best example of a plan of offering insurance in limited amounts without war restrictions, but the benefits actually paid could not have been provided by the life insurance companies of this country even if all joined together in the undertaking. Obviously, a plan of limiting amounts will be successful only if the number of policies issued by any company is also severely limited.

The system of establishing quotas for each agent or using other methods to limit the number of policies appears to involve a large element of discrimination. Such plans provide that insurance benefits will be paid for war deaths of a few selected individuals, but the major portion of those in the armed forces will be denied coverage.

Limitations by age, rank, branch of service or other factors may reduce the number of war claims an insurance company would be called upon to pay, but the beneficiaries under such policies would not seem to have any greater need nor would their social status entitle them to more favorable treatment than the dependents of those to whom the insurance companies could not offer coverage against the hazards of war.

The war clauses which are permitted today neither fully protect the

companies nor provide a means of offering benefits on a nondiscriminatory basis. They permit avoidance of payment for many war deaths, but the requirement of full coverage while the insured is in the Home Areas is only justified on the assumption that war will not come to the Home Areas. Exclusion of certain territories and inclusion of others leaves wholly to the chance of military assignment whether any insured will be covered if a war death should come to him. The required full coverage for death six months after return to the Home Areas favors the wounded who happen to be sent to hospitals in the United States instead of being kept in military hospitals elsewhere. The dependents of those killed instantly in battle have no lesser need than the families of those who were wounded and sent home to die at a later date.

The rush to eliminate war restrictions from new and old business after the cessation of hostilities must rest in the belief that a negligible amount of future war service will be required. If a war hazard arises again in future years, the companies can only hope that few of their policyholders will be called into service and that the military forces of the future will be made up largely of young men who are not insured.

The hazards of war cannot be met by the application of insurance principles; they are hazards directly imposed upon large groups of the population by deliberate action of governing bodies, necessary though such action may be. They are not the accidental or fortuitous events commonly spoken of as "acts of God," to which all are subject; they are hazards which the individual in the military forces cannot avoid and over which his normal urge toward self-preservation will be of no avail.

Since payments, even in limited amounts, for all deaths resulting from military service or war cannot be provided through the regular operations of life insurance companies, it is reasonable that there should be a uniform exclusion of the war hazard applicable universally and without discrimination. It seems to be clearly established that the responsibility should rest upon the taxpayers of the nation to provide whatever compensation for death from war hazards is necessary for those who are inducted into military service. The consequences of war must be met by the body of citizens as a whole.

(AUTHOR'S REVIEW OF DISCUSSION)

JAMES T. PHILLIPS:

I wish to thank those who contributed to the discussion. Their comments are very valuable in supplementing the information in the paper because they point out how methods of handling the military problem may be influenced by the characteristics of a company's business. The

variations in underwriting practices among the companies represented in the discussion provide a framework from which other companies can get some idea of what underwriting program for military risks will best suit their particular needs.

Mr. Windecker's comparison of the Equitable and New York Life ratios of war claims to total claims brings out the fact that, in spite of the similarity between the two companies and between their methods of underwriting the war hazard, their mortality results were markedly different, with the New York Life experiencing a much higher proportion of war claims to total claims than the Equitable. This difference holds for prewar issues as well as for policies issued during the war. Although the degree of agency specialization in military business is an important factor, I believe a large part of the difference in results between the two companies can be attributed to other factors—particularly to the variation between the two companies in the distribution of business by age at issue. As compared with other companies, the New York Life issues a relatively high proportion of total business at the younger ages which of course would give rise to an unusually high ratio of combat death claims to total claims during a war period.

Mr. Lew's figures on the proportion of military business and the extra death losses of the Metropolitan demonstrate the relative absence of antiselection on business produced by agents on a debit system. Mr. Lew has indicated that the military issues of the Metropolitan during the war years were less than 1% of total issues and that combat deaths per year per thousand (excluding presumed dead among missing in action) were below those for the armed forces as a whole—2 per thousand as compared to 2.6 per thousand. By contrast, during the period when we were generally not using war clauses (the first 9 months of the war) the military issues of the New York Life were over 8% of total issues. Combat losses (including presumed dead among missing in action) on these issues for the entire war period were about 4 a year per thousand.

Although the two sets of figures are not strictly comparable, the divergence in the figures clearly indicates that the necessity for increased control of antiselection varied considerably by type of company. It can be seen that in order to control the military hazard more stringent underwriting restrictions were needed for companies with types of business and types of agency forces similar to those of the New York Life than for companies with debit agents. The effectiveness of the use of a war clause in controlling antiselection is apparent from the statistics on our issues during the second nine months of the war (when war clauses were generally used). During this period the proportion of military issues to total

business dropped to about 5% and the combat claims on these issues for the entire war period were only about 1 a year per thousand.

The difference in our combat death rates between the first and second nine months' issues reflects the difference in the character of the war as well as the effect of war clauses. In the paper we attempted to eliminate the effect of differences in the character of the war by comparing our experience for the two periods with the Armed Forces combat mortality experience. The experience of the Prudential as presented by Mr. Shepherd provides a better basis for eliminating differences in the character of the war so as to measure only the effect on the combat experience of using war clauses.

The Prudential had war clauses during all but one month of the war and their losses for both the first and second nine months issue periods were very small (4 deaths on issues in the first period and 3 on issues in the second). Our losses to December 31, 1952, on the other hand, were 100 deaths on issues in the first period and 7 deaths on issues in the second. On the assumption that the military exposures of the Prudential were about half as large as ours, the comparison of these figures provides convincing evidence of the effectiveness of the war clause in curbing antiselection and thereby holding down the extra mortality.

Mr. Lew mentions the small cost of Korean War claims when distributed over the life of the policies. Although it might be argued that an extra cost of \$8 per thousand dollars of insurance over a two year period (our experience on the first 9 months' issues) is not substantial when spread over the life of the policy, we are convinced that under a sound underwriting program the military hazard should not be considered lightly during a period where relatively large numbers of the population are engaged, or likely to be engaged, in war. As indicated in the paper as well as in the tables presented by Mr. Lew, the hazard varies widely by branch of service, age, rank, and duty branch, as well as between men stationed in combat and noncombat areas. Thus, it would seem that underwriting restrictions are needed during a war emergency to minimize the effect of antiselection. In addition, not having the advantage of hindsight it is impossible to estimate the scope or duration of the war hazard at the outset of or during such an emergency. Finally, in the interests of a consistent underwriting program on substandard risks, since extra hazards of even a temporary nature are generally not ignored there is good reason for adopting restrictions on military business during the existence of a definite war hazard.

We were pleased to note that the combat death rates for the total military forces which we approximated from published government

casualty figures and exposures based on published mean strengths of the Armed Forces were very close to the official figures developed by Mr. Lew, as can be seen from the following table which compares the two sets of figures. The small differences arose chiefly from the handling of the "missing in action and presumed dead" category.

BATTLE DEATH RATES—KOREAN WAR

	BATTLE DEATH RATES* PER 1,000 PER YEAR	
	Developed by Mr. Lew from Official Sources June 25, 1950— Oct. 8, 1953	Approximate Rates Devel- oped from Pub- lished Data June 25, 1950— August 19, 1953
Army.....	6.3	6.1
Navy.....	.2	.2
Marine Corps.....	6.9	7.2
Air Force.....	.5	.6
Total.....	3.4	3.5

* Includes killed in action, died of wounds, and missing or captured who died or were presumed to have died.

The tables presented by Mr. Lew, showing the variations in battle hazards for different subdivisions of the Armed Forces during World War II, should prove to be of great value in setting up an underwriting program for military risks. By interpreting these figures in the light of the characteristics of a particular emergency it should be possible to get a reasonable estimate of the relative hazard for particular groups.

I was very much interested in Mr. Keffer's presentation of figures taken from General Marshall's testimony on the annual rate of combat deaths for persons in the Armed Forces in Korea during the first year of the war. The figure of 46 per thousand is of the same order of magnitude as the World War II figure for personnel in the combat areas, and it demonstrates that the range of hazard for men in combat areas is likely to be as great in a limited conflict as it would be in an all-out war. This of course is the principal factor producing antiselection.

I agree with Mr. Keffer that a uniform exclusion of the war hazard, applied universally and without discrimination, would in theory be the ideal solution for underwriting the military hazard. However, since the attainment of this objective is probably impossible (except when the country is

TABLE 3a

NEW YORK LIFE ANNUAL COMBAT DEATH RATES PER 1,000—BY POLICIES
 Korean War Experience to July 27, 1953 under Policies Issued from July 1, 1950
 to December 31, 1951 on Lives in U.S. and Canadian Armed Forces
 OTHER THAN AVIATION RISKS

BRANCH OF SERVICE	1ST YEAR OF WAR		2D YEAR OF WAR		3D YEAR OF WAR		3 YEARS OF WAR		
	Deaths from 7/1/50 to 6/30/51		Deaths from 7/1/51 to 6/30/52		Deaths from 7/1/52 to 7/27/53		Deaths from 7/1/50 to 7/27/53		
	Ann. Death Rate per M	No. of Combat Deaths	Ann. Death Rate per M	No. of Combat Deaths	Ann. Death Rate per M	No. of Combat Deaths	Ann. Death Rate per M	No. of Combat Deaths	Total Exposures
(a) Issued 1st 9 Months of War (without War Clauses)									
U.S. Army	14	28	4	12	0	1	5	41	8,006
U.S. Navy	1	1	1	1	0	0	0	2	4,731
U.S. Marines	17	7	2	1	3	2	6	10	1,625
Canadian Forces	3	3	8	17	1	3	4	23	5,325
All	9	39	4	31	1	6	4	76	19,687
(b) Issued 2d 9 Months of War (with War Clauses)									
U.S. Army	0	0	1	1	1	1	1	2	1,943
U.S. Navy	0	0	0	0	0	0	0	0	1,440
U.S. Marines	0	0	0	0	0	0	0	0	247
Canadian Forces	0	0	2	1	1	1	1	2	1,440
All	0	0	1	2	1	2	1	4	5,070
(c) Issued 1st 1½ Years of War—(a)+(b)									
U.S. Army	14	28	3	13	0	2	4	43	9,949
U.S. Navy	1	1	0	1	0	0	0	2	6,171
U.S. Marines	17	7	1	1	3	2	5	10	1,872
Canadian Forces	3	3	7	18	1	4	4	25	6,765
All	8	39	3	33	1	8	3	80	24,757

TABLE 4a

NEW YORK LIFE ANNUAL COMBAT DEATH RATES PER 1,000—BY POLICIES
 Korean War Experience to July 27, 1953 under Policies Issued from July 1, 1950
 to December 31, 1951 on Lives in U.S. and Canadian Armed Forces
 AVIATION RISKS ONLY*

BRANCH OF SERVICE	1ST YEAR OF WAR		2D YEAR OF WAR		3D YEAR OF WAR		3 YEARS OF WAR		
	Deaths from 7/1/50 to 6/30/51		Deaths from 7/1/51 to 6/30/52		Deaths from 7/1/52 to 7/27/53		Deaths from 7/1/50 to 7/27/53		
	Ann. Death Rate per M	No. of Combat Deaths	Ann. Death Rate per M	No. of Combat Deaths	Ann. Death Rate per M	No. of Combat Deaths	Ann. Death Rate per M	No. of Combat Deaths	Total Exposures
(a) Issued 1st 9 Months of War (without War Clauses)									
U.S. Air Force	5	8	4	9	2	4	3	21	6,114
U.S. Army	33	2	13	1	0	0	14	3	221
U.S. Navy	3	1	4	2	2	1	3	4	1,386
U.S. Marines	51	2	0	0	0	0	14	2	138
Canadian Forces	0	0	0	0	0	0	0	0	471
All	6	13	4	12	2	5	4	30	8,330
(b) Issued 2d 9 Months of War (with War Clauses)									
U.S. Air Force	0	0	3	3	0	0	1	3	2,386
U.S. Army	0	0	0	0	0	0	0	0	24
U.S. Navy	0	0	0	0	0	0	0	0	328
U.S. Marines	0	0	14	1	9	1	11	2	185
Canadian Forces	0	0	0	0	0	0	0	0	171
All	0	0	3	4	1	1	2	5	3,094
(c) Issued 1st 1½ Years of War—(a)+(b)									
U.S. Air Force	5	8	4	12	1	4	3	24	8,500
U.S. Army	33	2	11	1	0	0	12	3	245
U.S. Navy	3	1	3	2	1	1	2	4	1,714
U.S. Marines	51	2	8	1	6	1	12	4	323
Canadian Forces	0	0	0	0	0	0	0	0	642
All	6	13	4	16	1	6	3	35	11,424

* Includes both flying and nonflying aviation personnel.

involved in a large scale war requiring general mobilization) because of competitive reasons and reasons of public policy, it would seem that the use of a selective underwriting program tailored to the needs of each company provides the best practical solution to the military underwriting problem.

As hostilities in Korea have terminated since the completion of my paper, it seems appropriate to present the experience by branch of service for the entire war period. Tables *3a* and *4a* shown above are related to Tables 3 and 4 in the original paper and they show the experience for the two blocks of issues for the entire war period. Any small changes in the experience during the early periods are due to deaths or additional information reported after the paper was completed.

In conclusion, I should like again to express my appreciation for the valuable discussions. Although the emphasis on military underwriting has lessened because of the Korean truce there is a continuing need for the study of the problem of underwriting the war hazard. I hope that my paper and the discussions will be helpful to other companies in developing an underwriting program for military risks should the need again arise.