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# HEALTH

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# **HEALTH**

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DISEASE AND INJURY

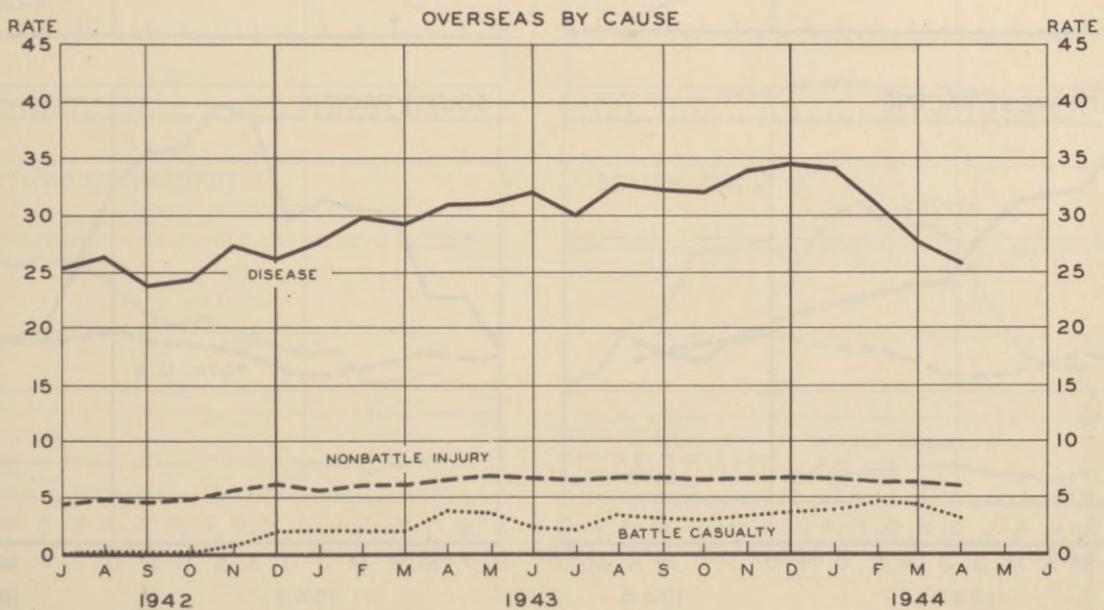
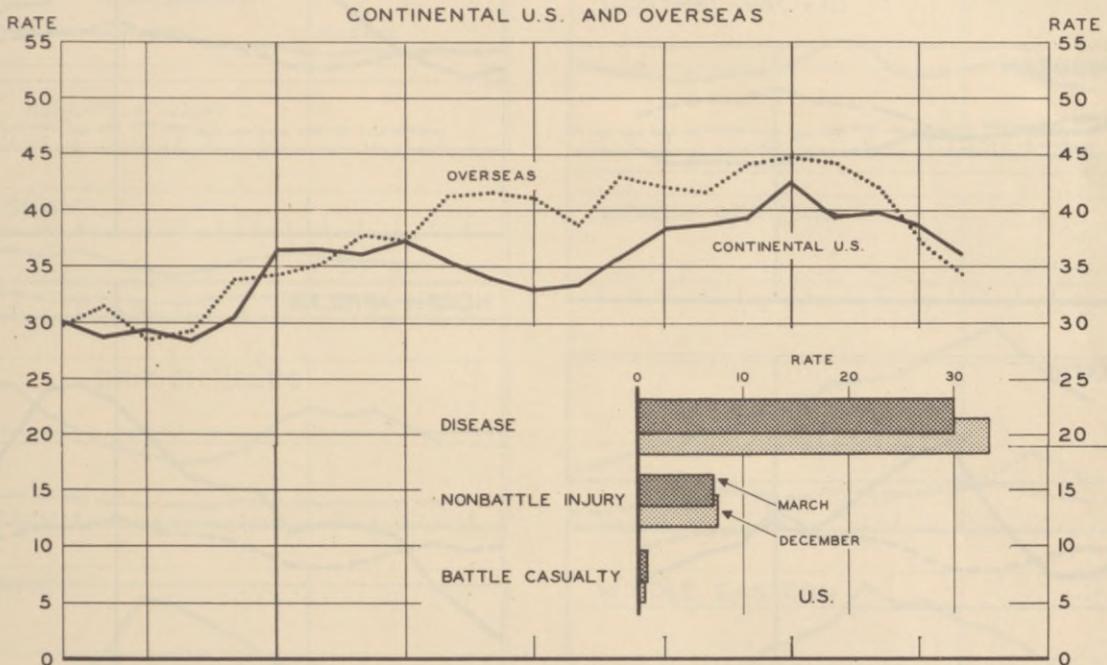
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NONEFFECTIVE RATES, U. S. AND OVERSEAS

During April the average daily noneffective rate for troops in the Continental U.S. declined about 8 percent to reach 36 noneffectives per thousand men per day. Evacuees from overseas may account for about 4 or 5 noneffectives per thousand strength and are included in the estimate of 36 for the U. S. Battle casualties alone represented 1 noneffective per thousand U. S. strength during March. Provisional estimates for all troops overseas suggest a further decline during April to about 34 per thousand strength, the lowest rate since December, 1942. The inset panel below provides estimates of the disease, nonbattle injury, and battle casualty components of the U. S. noneffective rate for March, 1944, in comparison with December, 1943. The continued decline in the total U. S. rate is primarily a reflection of the fact that the noneffective rate for disease has been falling.

The chart at the bottom of the page depicts the recent trend in noneffectiveness overseas. The steady decline in noneffectiveness attributable to disease is the counterpart of generally lower admission rates for respiratory disease, malaria, and diarrhea and dysentery. The drop in the battle casualty component was induced by the decline in the parallel North African rate. The reported North African rates are 16.1 for March and 10.7 for April.

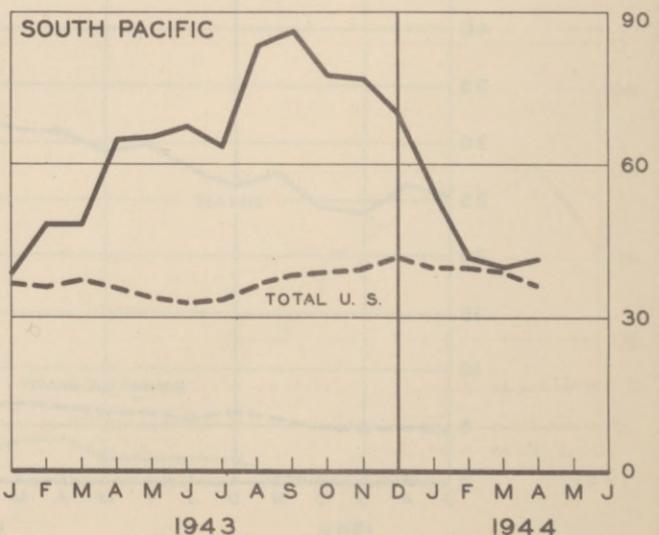
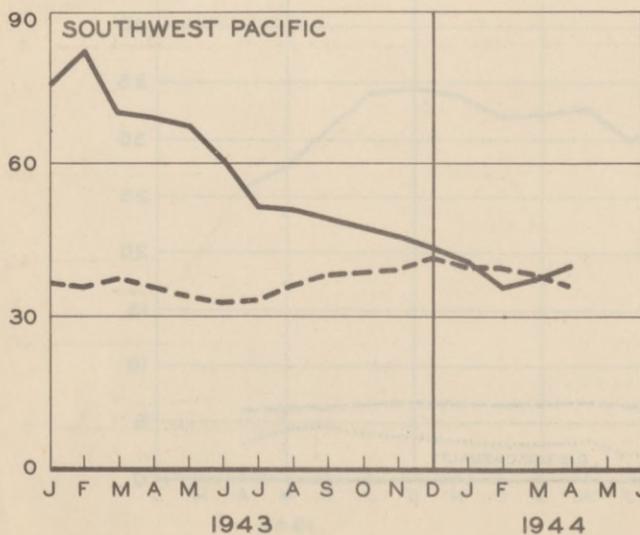
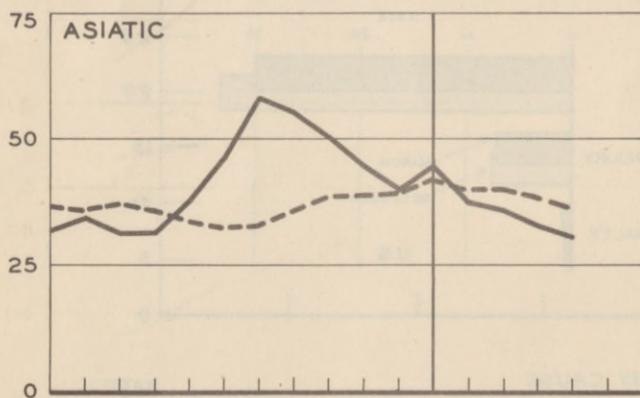
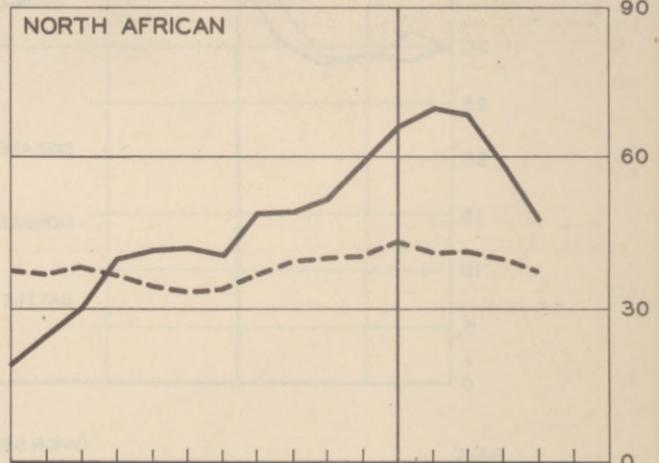
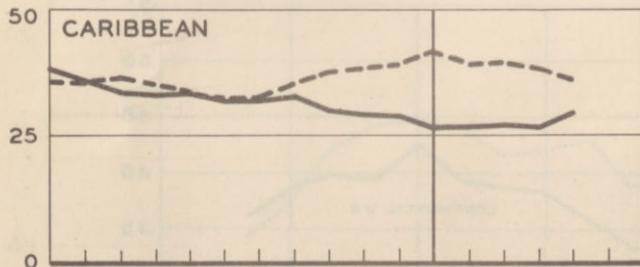
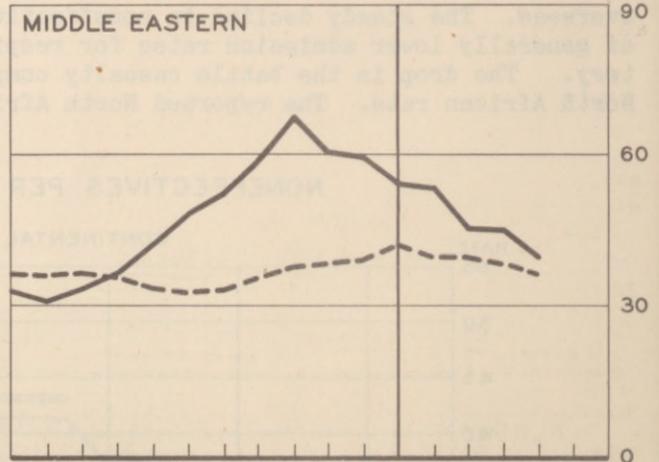
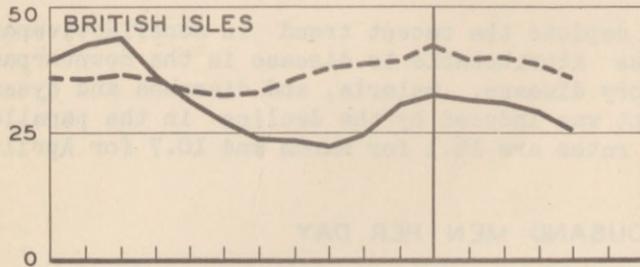
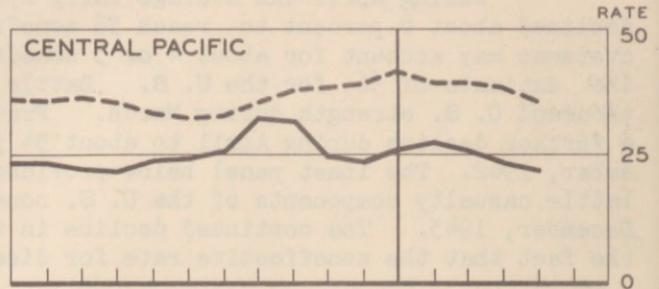
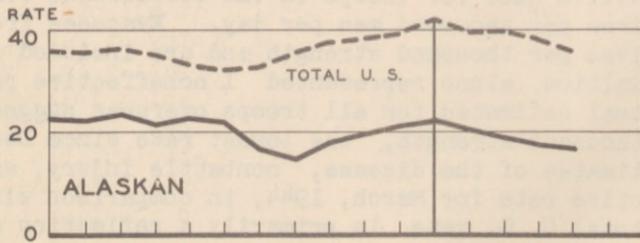
NONEFFECTIVES PER THOUSAND MEN PER DAY



# DISEASE AND INJURY

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## NONEFFECTIVES PER THOUSAND MEN PER DAY ALL CAUSES, OVERSEAS COMMANDS



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# DISEASE AND INJURY

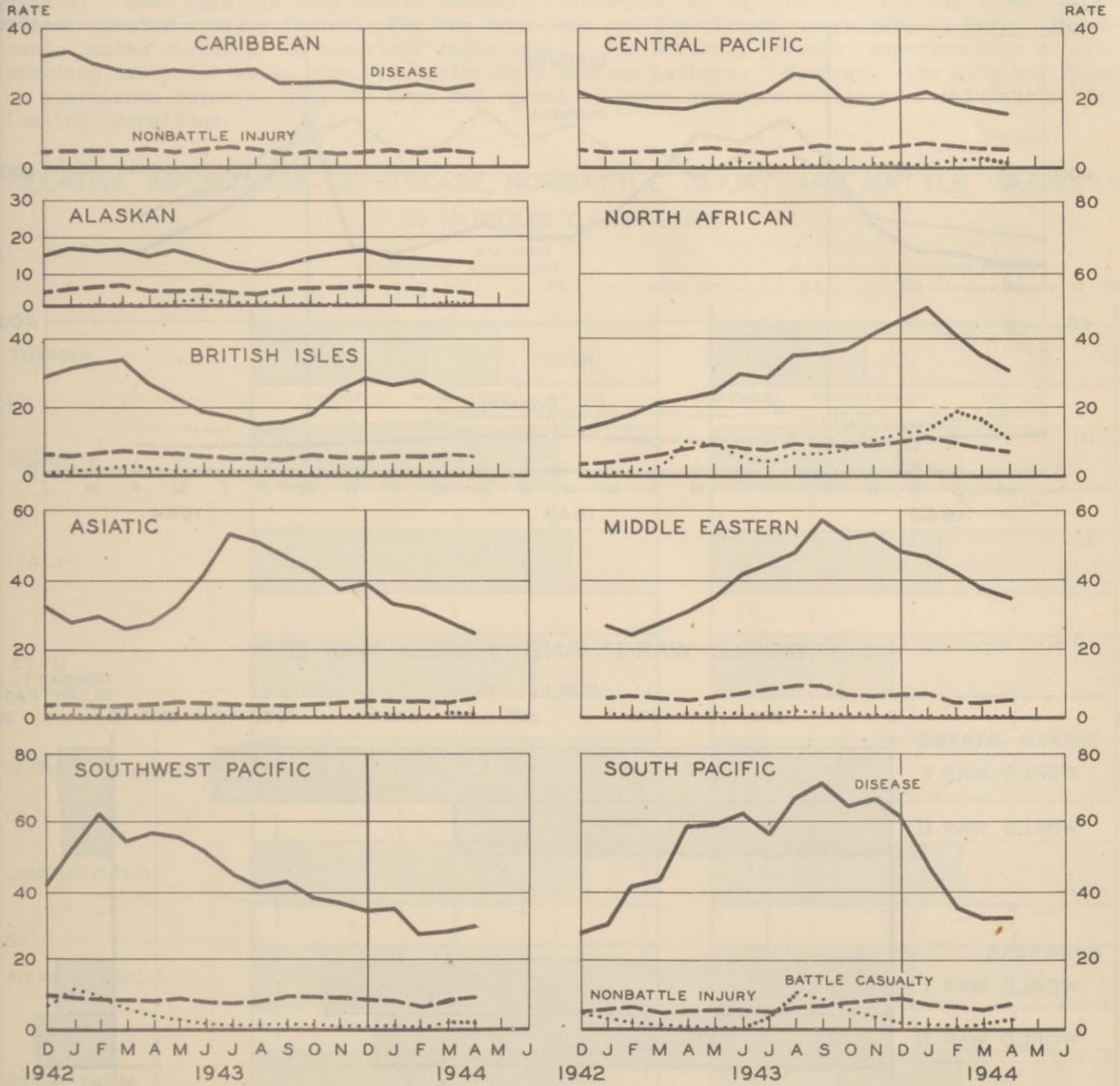
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## NONEFFECTIVE RATES OVERSEAS, BY MAJOR COMPONENT

During April, noneffectiveness from all causes continued to decline in all overseas commands except the Caribbean and the Southwest Pacific. The rise in the Southwest Pacific was caused by an increase in noneffectiveness attributable to disease and nonbattle injury. It represents the first increase in the total rate since the steady decline which followed the peak of 82 per thousand men per day in February 1943. In the chart below, the total rates shown on the panels across the page are separated into the components attributable to disease, nonbattle injury, and battle casualty. Points for the most recent months are based upon provisional radio reports, some of which have been found to be subject to considerable error.

The decrease in noneffectiveness because of disease, which began in North Africa in February, continued into April and was accompanied by a drop in the rate for battle casualty as operations slackened during the month.

### NONEFFECTIVES PER THOUSAND MEN PER DAY OVERSEAS COMMANDS



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# DISEASE AND INJURY

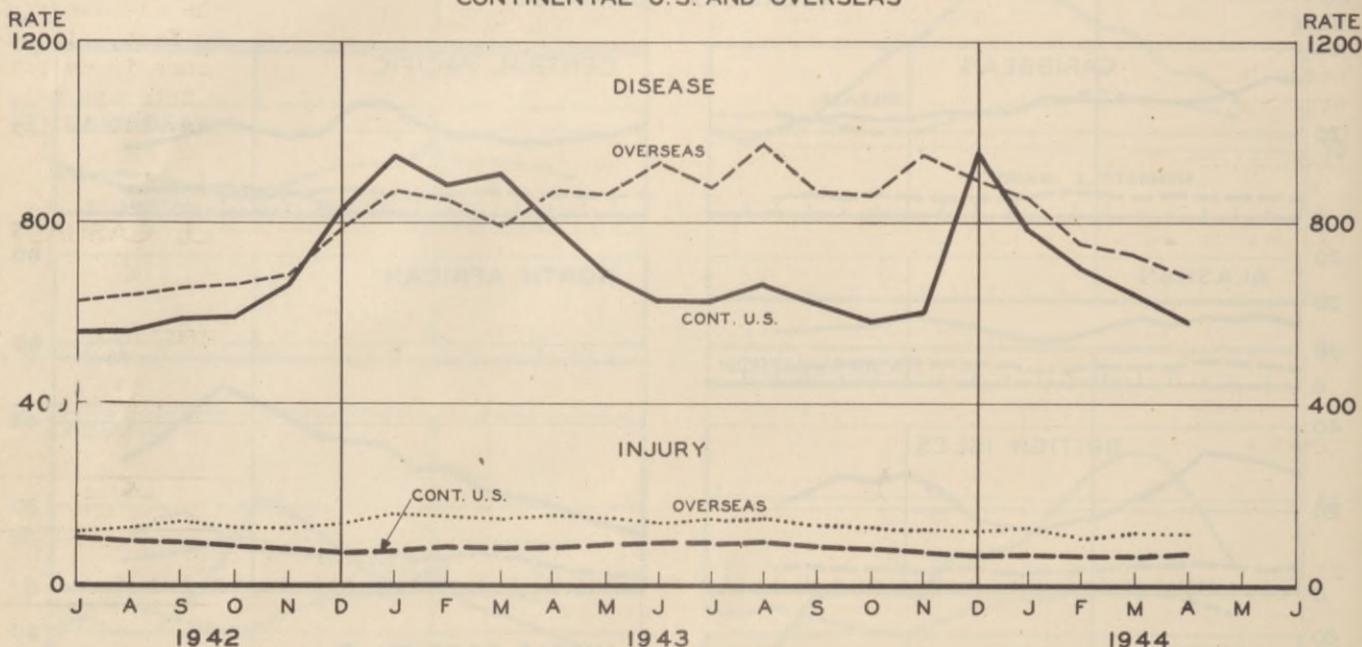
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## DISEASE AND NONBATTLE INJURY

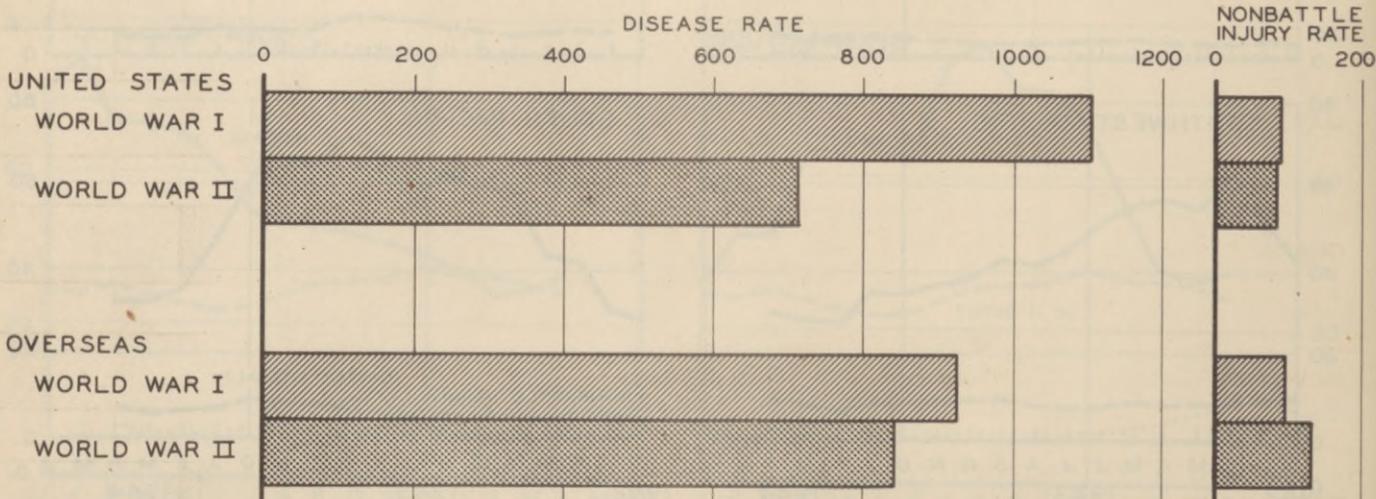
During April the admission rate for all disease declined both in the U. S. and overseas. The provisional rates of 580 for the U. S. and 680 for troops overseas are lower than any since the last quarter of 1942. However, according to preliminary telegraphic reports the admission rates for all disease rose substantially in the Middle Eastern and Asiatic Theaters. The admission rates for nonbattle injury remained substantially unchanged during April both in the U. S. and overseas.

The chart at the bottom of the page compares the incidence of disease and nonbattle injury between troops in the U. S. and overseas during World War I and World War II through January 1944. For troops both in the Continental U. S. and overseas the World War II admission rate for disease is less than that for World War I. Increased mechanization of the Army and the greater frequency of aircraft accidents probably account for the greater injury rate overseas in World War II than in the A.E.F. in World War I.

**DISEASE AND INJURY, ADMISSIONS PER THOUSAND MEN PER YEAR  
CONTINENTAL U.S. AND OVERSEAS**



## WORLD WAR I\* AND WORLD WAR II



\* Adjusted to include estimate of quarters cases.

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# DISEASE AND INJURY

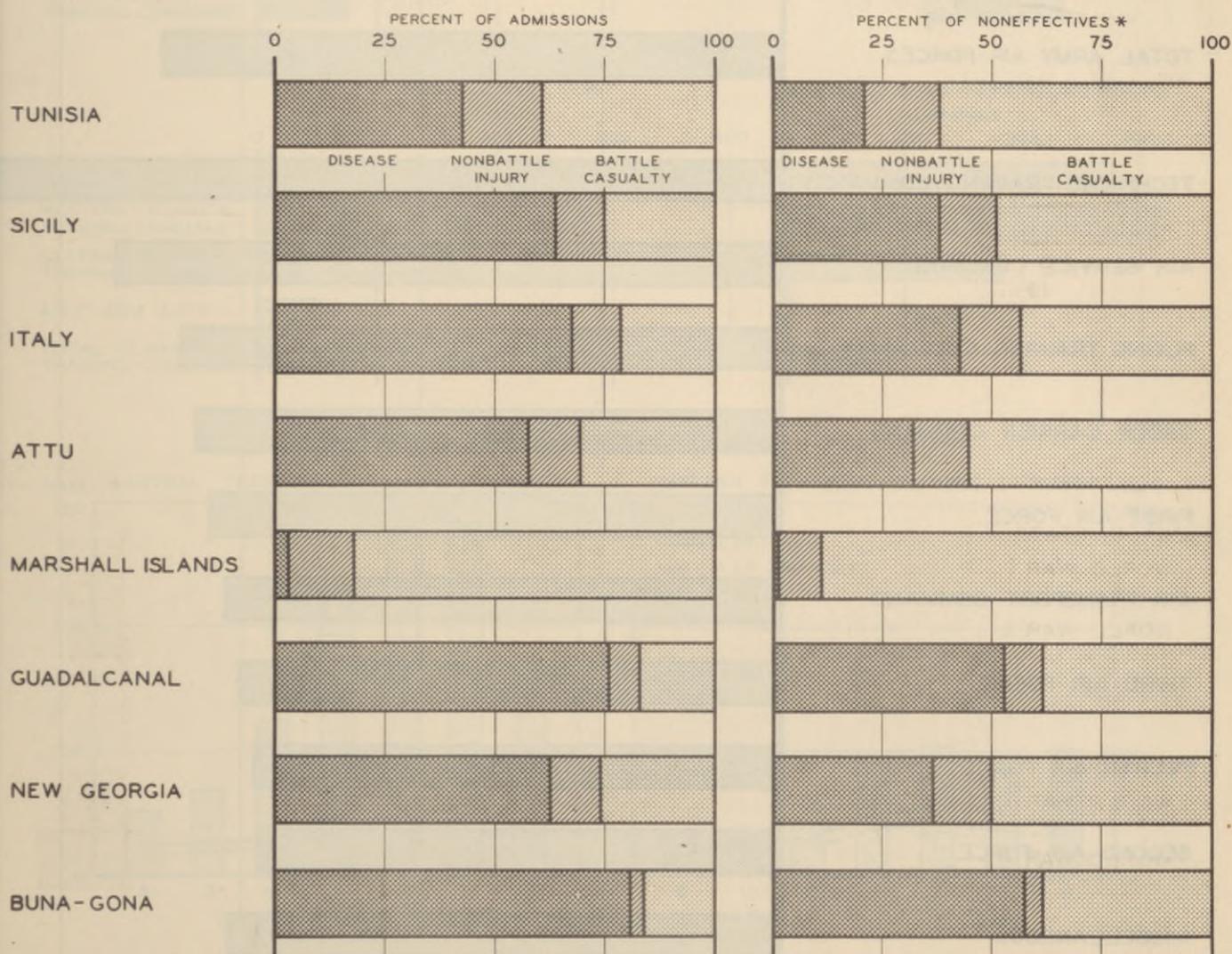
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## IMPORTANCE OF DISEASE DURING COMBAT OPERATIONS

Although noneffectiveness from nonbattle causes is perhaps most subject to control by the Army in the sense that it is not so largely determined by enemy action, in most of the campaigns of this war, as in previous wars, disease and nonbattle injury outweigh battle injury as a cause of noneffectiveness. The accompanying charts give the average experience of eight campaigns in which U. S. troops have participated in World War II. Deaths are excluded from the computations.

The left-hand panel gives the proportions of total admissions attributed to disease, nonbattle injury, and battle casualty in each of the eight campaigns studied. The right-hand panel gives parallel proportions of noneffectives obtained by weighting the figures of the first panel by the average days lost per admission overseas for disease, nonbattle injury, and battle casualty during 1943. Initially, any admission to sick report is a noneffective, but with the passage of time more disease cases are quickly returned to duty than is true of battle or nonbattle injury cases. This is exemplified by the average weights employed, 13 days for disease, 25 days for nonbattle injury, and 42 days for battle casualty. Thus the right-hand panel corrects the picture of initial losses revealed by the left-hand panel by allowing for the earlier return to duty on the part of patients admitted for nonbattle causes. When this is done battle casualty increases in importance, but the disease component remains a major factor. For the Buna-Gona and Guadalcanal campaigns, in fact, it exceeds battle casualty in numerical importance. The Marshall Islands experience is an outstanding exception to an otherwise relatively uniform pattern. However, the data are based on operations covering only six days and cannot be taken as representative of any but initial landing operations.

## RELATIVE IMPORTANCE OF DISEASE, NONBATTLE INJURY AND BATTLE CASUALTY IN VARIOUS CAMPAIGNS



\* Estimated; average weights used for all campaigns may not apply closely to individual campaigns.

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# DISEASE AND INJURY

## ARMY AIR FORCE ADMISSION RATES FOR DISEASE

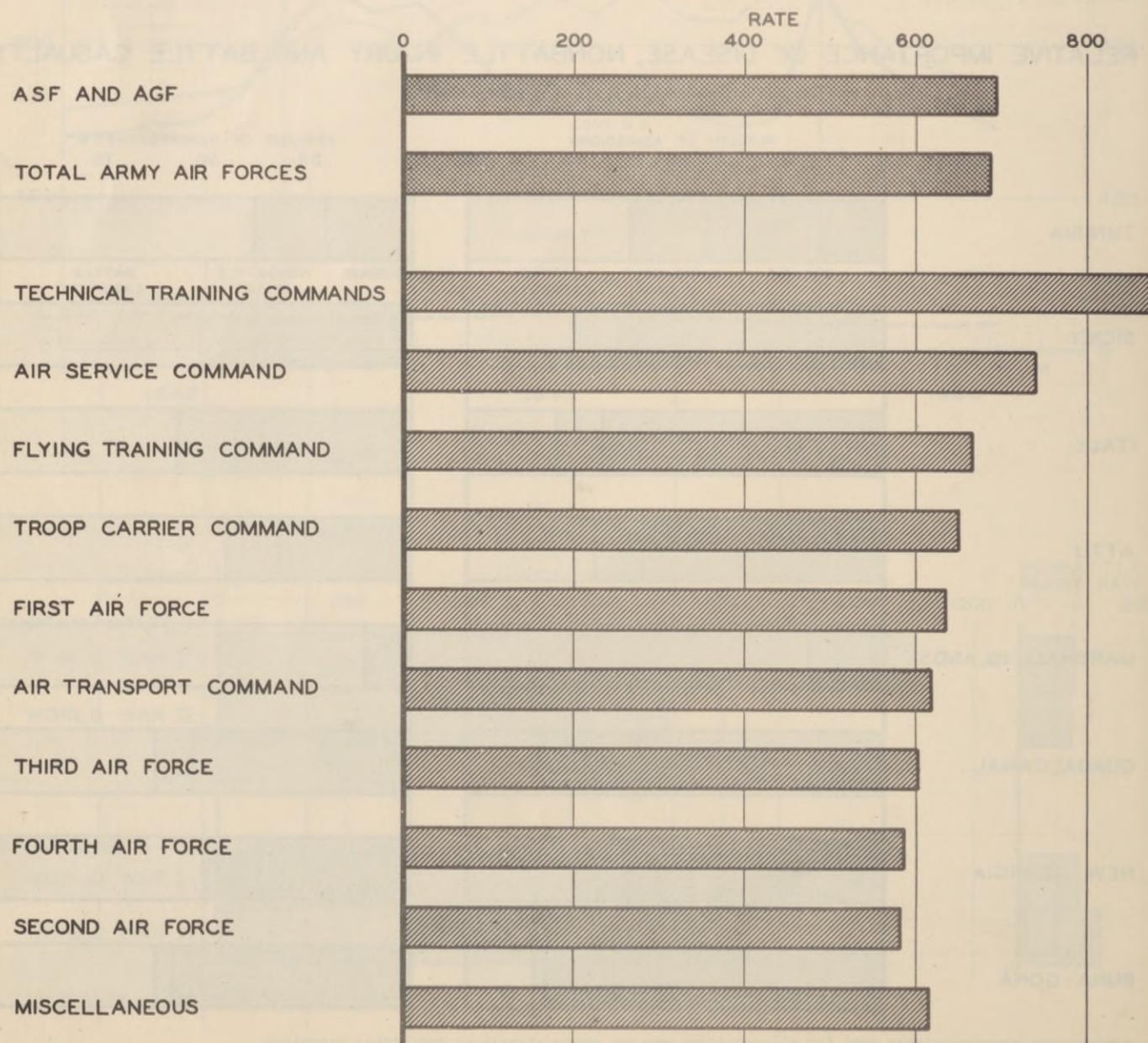
Although the admission rate for disease among A.A.F. personnel in the Continental U. S. approximates closely that for all other Army troops stationed here, there are considerable variations among the major A.A.F. commands. During the period September, 1943, through March, 1944, when the average rate for the A.S.F. and A.G.F. strength was 698 admissions per 1,000 men per year, the parallel A.A.F. rate was 692. As may be seen from the chart below, however, the various Technical Training Commands and the Air Service Command experienced rates well above the Army Air Force average, while the various Air Forces enjoyed much more favorable rates. During March the several Technical Training Commands represented about 20 percent of the total A.A.F. strength in the Continental U.S.

Personnel entering the A.A.F., whether as air cadets or through selective service, are given a period of 6 to 9 weeks of training in one of the basic training centers operated by the Technical Training Commands. Thus, a large component of T.T.C. strength consists of new recruits and the rate of turnover for these unseasoned recruits is more rapid than in other commands. It is believed that this accounts in large part for their consistently unfavorable communicable disease experience. As the number of basic trainees declines, there is good reason to expect that the disease experience in the T.T.C. will be much more favorable.

## DISEASE ADMISSIONS PER THOUSAND MEN PER YEAR

AIR FORCE COMMANDS, CONTINENTAL U. S.

SEPTEMBER 1943 - MARCH 1944



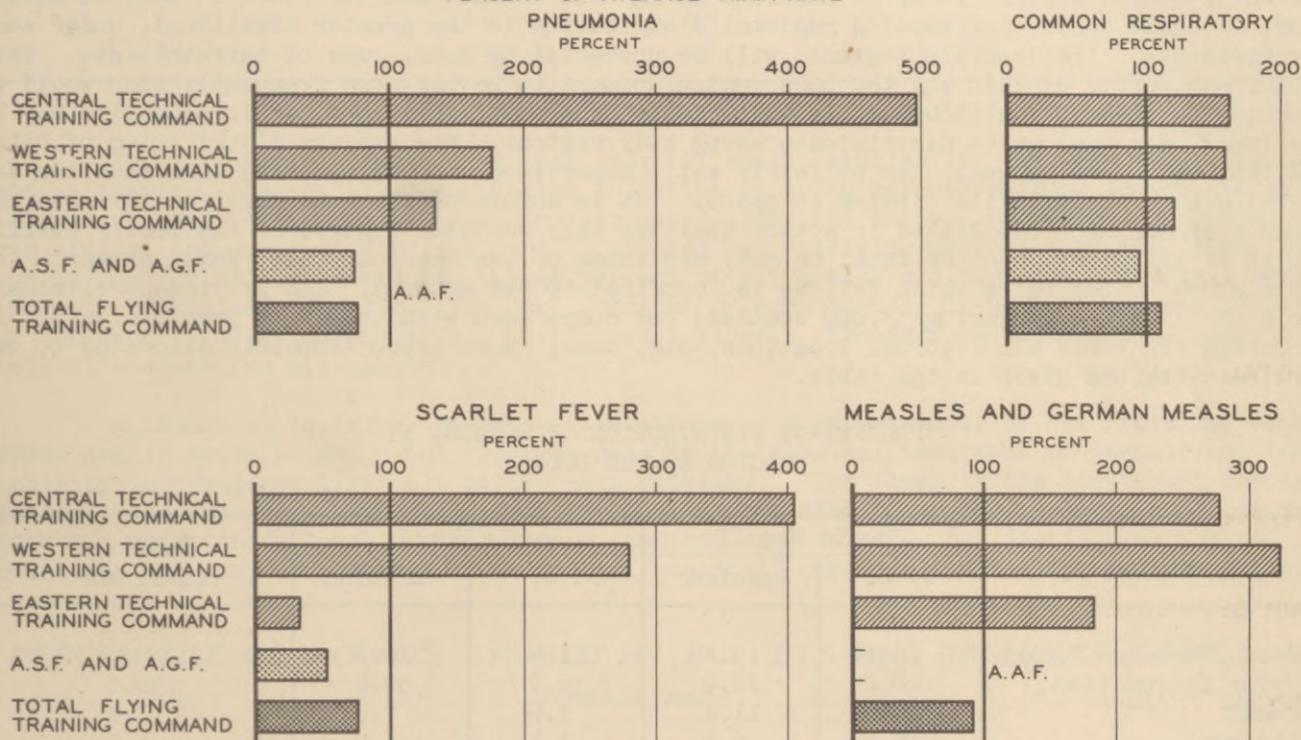
# DISEASE AND INJURY

## ARMY AIR FORCE ADMISSION RATES, SPECIFIC DISEASES

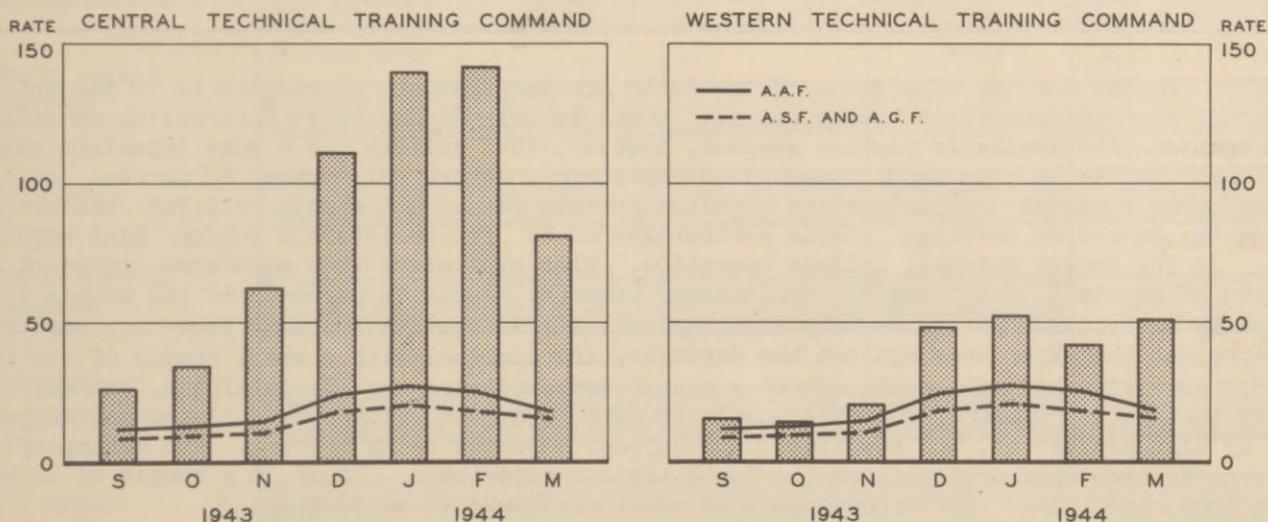
On the charts below appear the comparative details on pneumonia, common respiratory disease, scarlet fever, and measles together with German measles. The three components of the Technical Training Command are shown separately and in relation to both the total A.S.F. and A.G.F. rate and the rate for the Flying Training Commands. In each case the rates are shown as percentages of the average A.A.F. rate for comparative purposes. Thus the top left-hand panel shows that the Central Technical Training Command had a rate about five times the average A.A.F. rate for pneumonia. Its average rate of 92 for the seven month period is exceptionally high as is that of 33 for the Western Technical Training Command, and for that reason additional details are shown in the two panels at the bottom of the page. There the actual admission rates are shown for each month in relation to both the average A.S.F. plus A.G.F. rate and the A.A.F. rate. The data are from the reports of the Air Surgeon.

### ARMY AIR FORCE, ADMISSIONS FOR SELECTED COMMUNICABLE DISEASES TRAINING COMMANDS, SEPTEMBER 1943 - MARCH 1944

PERCENT OF AVERAGE A.A.F. RATE



### PNEUMONIA ADMISSIONS PER THOUSAND MEN PER YEAR



**DISEASE AND INJURY**

REGIONAL DISTRIBUTION OF WOUNDS AND THEIR CAUSATIVE AGENTS

Although great changes have been wrought in ordnance, particularly in the development and use of high explosives, there appears to have been little change in the distribution of wounds throughout the various regions of the body. Perhaps the chief factor in the regional distribution of wounds is the distribution of the surface area of the body itself. This is even more true, of course, of the distribution of all hits, whether fatal or not, since the greater vulnerability of certain regions, notably head, chest, and abdomen, permits

PERCENTAGE DISTRIBUTIONS OF BODY SURFACE AREA AND OF HITS, AMERICAN CIVIL WAR

Distribution	Head, Face Neck	Upper Extremity	Trunk	Lower Extremity
Body Area, Percent	6	19	36*	39
Hits, Percent	15	31	23	31

\* Includes neck

fewer men hit to survive long enough to be counted among the wounded. This is one reason why extremity wounds appear to be so numerous among the wounded men who receive medical attention. A third factor influencing regional distribution is the greater likelihood, under some circumstances, that certain regions will be protected by gear, use of terrain, etc. This factor may partly explain why the head region appears to be hit more frequently than would be expected by chance. Although it is undoubtedly true that rifle and machine-gun fire may be so closely directed as to discriminate among body regions, the average distribution of hits, and that of wounds as well, can be fairly well understood without assuming that missiles are anything but randomly distributed in space. It is unfortunately true that so few observations are made upon the killed in action that the only reliable figures on the bodily distribution of all hits, whether fatal or not, are those of the American Civil War, shown in the table above. The table which follows is confined to the wounded, and provides preliminary World War II data (covering 33,000 wounded) for comparison with those of previous wars. In preparing the table all reported locations, e.g. back, were proportionately allocated to the pertinent regions given in the table.

PERCENTAGE DISTRIBUTION OF WOUNDS, BY  
REGION OF THE BODY

Region	World War II		World War I		American Civil War
	U. S.	Russian	U. S.	British	
Head, Face and Neck	16.1	9.1	11.4	16.8	9.1
Upper Extremities	28.2	28.0	36.2	30.4	36.6
Chest	9.8	11.4	3.6	7.8	11.7
Abdomen	5.6	6.2	3.4	4.7	6.0
Lower Extremities	40.3	45.3	45.4	40.3	36.6
Total	100.0	100.0	100.0	100.0	100.0

Except for the experience of the North African Theater, where perhaps 70 percent of the total wounded casualties have occurred, there is only fragmentary information on causative agents. The available samples suggest, however, that bullets are a more important cause of wounds in the Pacific areas than in North Africa, where only about 20 percent of the wounds among hospital admissions are credited to this cause. A sample of 1,700 admissions during the Buna-Gona campaign yields percentages of 64 for bullets and 36 for high explosives. In the recent Marshall Islands operation, high explosives were much more important as a cause of wounds. According to preliminary reports, about 40 percent of the wounds were caused by bullets and 60 percent by high explosives. If samples such as these are employed to represent the experience against the Japanese, and combined with a small sample of the 8th A.A.F. casualties and the quite reliable proportions reported for North Africa, one may estimate that about 30 percent of the wounds to date have been caused by bullets, and 70 percent by high explosives, the few blast and bayonet injuries being omitted. The accompanying table gives some further detail on the North African experience, based on a sample of 12,000 Fifth Army casualties. The predominance of shell fragments is noteworthy.

# DISEASE AND INJURY

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## REGIONAL DISTRIBUTION OF WOUNDS AND THEIR CAUSATIVE AGENTS (Continued)

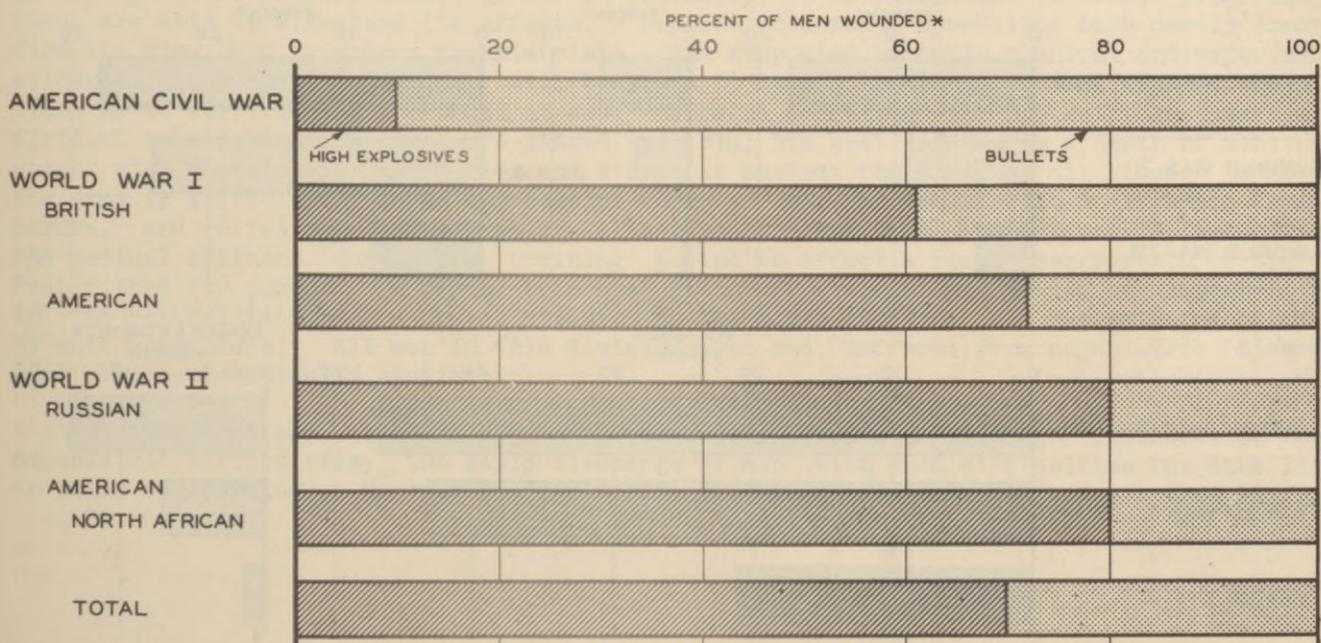
CAUSATIVE AGENTS, WOUNDED MEN ADMITTED TO HOSPITAL,  
ITALIAN CAMPAIGN

Agent	Number of Wounded Men
<u>Bullets:</u>	
Unclassified	1,575
Rifle	333
Machine Gun	256
Total	2,164
<u>High Explosives:</u>	
Unclassified	1,569
Shell	7,018
Mine	482
Bomb	329
Boobytrap	53
Blast	430
Total	9,881
<u>Total</u>	12,045

In North Africa there have been several small studies in the important area of wound ballistics, especially of men killed in action or dying before reaching an aid station. If the results of such observations are projected into the entire casualty experience in North Africa, and combined with the data on wounded men receiving medical aid, one finds that about 25 percent of the total hits and 40 percent of all deaths are caused by bullets. About 35 percent of the men hit by bullets die outright or subsequently in comparison with 17 percent for men hit by fragments driven by high explosives. The average lethality is approximately 21 percent for all agents.

Although it is quite important that there be good estimates of the fatality among wounded men in order to gauge the progress made in the surgical treatment of casualties, comparability is rendered difficult by two main problems. The first is the matter of distinguishing those who were killed outright from those who died of wounds. The second is the matter of selecting a level or echelon of medical care in order to distinguish the set of wounded men who may be presumed to have had "hospital" care. If fatality percentages are

## PERCENTAGE OF WOUNDS CAUSED BY BULLETS AND HIGH EXPLOSIVES VARIOUS WARS



\* Excluding those killed in action

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**DISEASE AND INJURY**

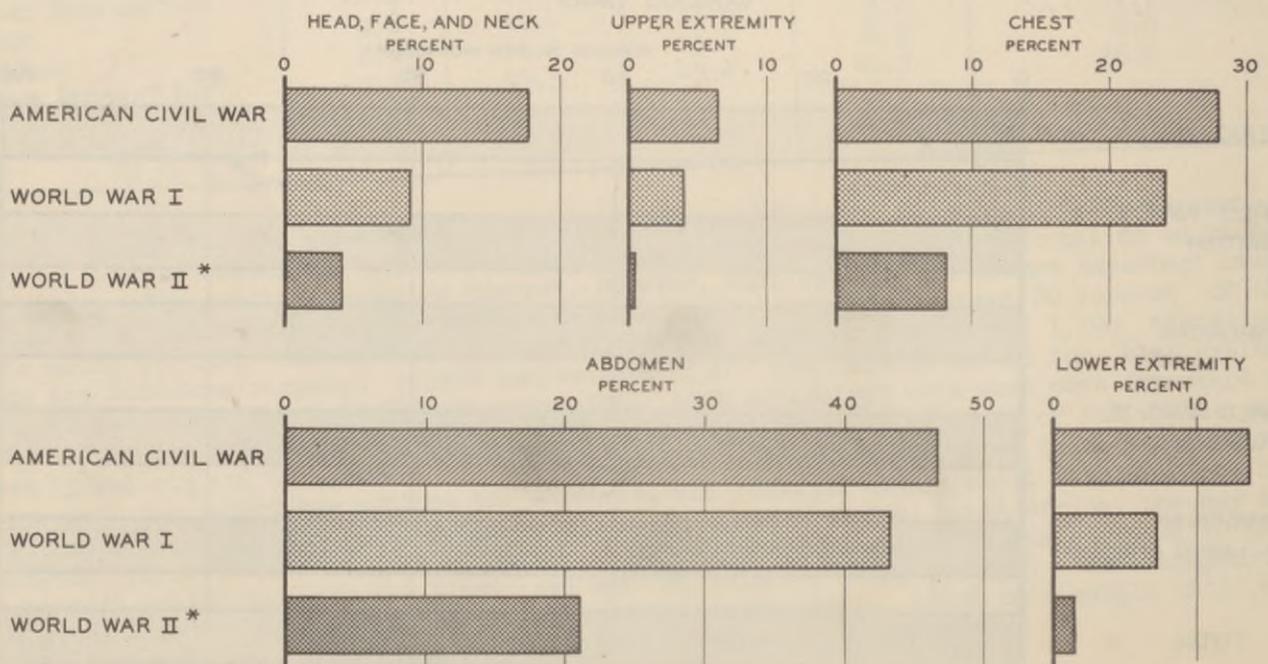
REGIONAL DISTRIBUTION OF WOUNDS AND THEIR CAUSATIVE AGENTS (Continued)

computed on the basis of all men "seen alive", for example, they may be much larger than those derived from hospital admissions only. Although the present reporting is none too rigorous, for the most part the World War II estimates pertain to hospital admissions, whereas those for World War I pertain to all wounded who received medical attention. Furthermore, in North Africa, at least, it is customary to regard as a hospital a clearing station equipped for emergency surgery. Although the fatality of perhaps 3.0 to 3.5 among hospitalized wounded men in this war is not directly comparable with the figure of 8.1 percent for World War I, it is believed that the current fatality experience is much more favorable than in World War I.

The difficulties of estimating fatality extend to the sphere of regional incidence also and are further complicated by variations in the practice of defining the several body regions. Although the Southwest Pacific Theater has made an excellent study of the regional incidence and fatality of battle casualties, it is not readily summarized by the use of the conventional body regions. The best available material pertains to a sample of 12,000 hospital admissions during the Italian Campaign. The results of this study are shown in the accompanying chart in relation to the average experience in both the American Civil War and World War I. The Italian figures are surprisingly close to those drawn from a much smaller sample of the Guadalcanal experience where the average fatality was also almost identical.

It must be borne in mind that World War II figures for all wounded who received medical attention would be somewhat higher than those shown in the chart. Although a close comparison of magnitudes may not be warranted therefore, it is believed that a real reduction in fatality has occurred for wounds of all parts of the body. There are many factors which have contributed to the reduction in mortality, the most important of these being excellent surgery. Never before in the history of warfare have battle casualties received such prompt surgical care by such highly skilled specialists. This has been made possible by a combination of two factors, first, the plan of medical service in the combat zone and second, the availability of formally trained and well qualified young surgeons. Underlying the organization and plan of medical service in the combat zone is the well-established principle that the sooner a wounded man receives proper surgical treatment the more successful is the result. Accordingly, formally trained surgeons, well qualified in their respective specialties and grouped in teams with all the equipment necessary for the proper performance of their functions, are attached to mobile installations which are placed far forward so that wounded men can be given adequate surgical treatment within a short time after injury. The availability of this group of well-trained young surgeons is the result of the assiduous efforts of civilian medical teaching centers during the past two decades to standardize and formulate more effective and suitable programs of post-graduate medical education.

**PERCENTAGE OF DEATHS AMONG WOUNDED MEN BY LOCATION OF MAJOR WOUND  
VARIOUS WARS**



\* Hospital admissions only. Percentages for all wounded men would probably be somewhat higher, but not as high as those for World War I.

## DISEASE AND INJURY

**CONFIDENTIAL**THE NEUROPSYCHIATRIC PROBLEM

An important lesson of the last war was that a considerable number of men who met the physical requirements for service were nevertheless noneffective as soldiers because of mental deficiency and emotional disorders of various kinds. It seemed obvious that these men were of no value to the Army and that attempts should be made to prevent their induction or to effect their discharge from the Army when discovered. There ensued what has been called the "era of diagnosis and disposal" in military neuropsychiatry. It was held that "normal" men did not develop psychiatric disorders, and that those who were susceptible could be detected in advance and thus prevented from gaining entrance into the Army. A corollary was that the man who developed a psychiatric disorder was somehow inherently susceptible and not a "normal" individual. Despite great strides in the theory and practice of psychiatry, therefore, many military authorities and even some psychiatrists believed that psychiatric noneffectiveness could be minimized by scrupulous screening on the part of induction boards and by a diligent weeding out of susceptibles during the training period. The realities of the war to date have proved the inadequacy of the former view and have focused attention upon the probable reactions of the normal individual under stress, and upon the techniques which he may use to control and to direct into effective military behavior the powerful psychological forces which might otherwise cause psychiatric symptoms and noneffectiveness.

Application of the Army's high standards for mental health and emotional stability led to the rejection of roughly 12 percent of the selectees examined during 1942 and 1943. This represented a third or more of all medical rejections, and was six times the rejection rate of 2 percent during World War I. Despite the rigorous screening, however, the neuropsychiatric admission rate seemed seriously high at 25 to 30 per 1,000 men per year and the prompt discharge of neuropsychiatric admissions provided no solution. Early reports from combat theaters showed that 15 to 25 percent of the combat casualties were likely to be neuropsychiatric, and about 30 percent of the patients evacuated to the U. S. from overseas have been neuropsychiatric cases. Finally, perhaps 165,000 men or 40 percent of the disability discharges, have been discharged from the Army for supposed neuropsychiatric disabilities, entirely apart from mental defectives and others with behavior problems whose discharge is effected under Section VIII, AR 615-360.

The failure of screening as a solution to the neuropsychiatric problem is only partial, for without effective screening the incidence of neuropsychiatric disorder would have been much greater. There are psychiatric disorders and degrees of mental deficiency which are clearly recognizable to the trained neuropsychiatrist and which would immediately render noneffective individuals whose admission into the Army was allowed. However, such cases constitute but a small fraction of all the neuropsychiatric cases. It is the psychoneuroses which contribute most to the problem, 90 percent in the case of neuropsychiatric disorders occurring during combat, and about 70 percent at other points. Moreover, studies in the field suggest that 30 to 60 percent of these cases occur in individuals whose histories are devoid of any sign of predisposition to psychiatric disorder. In most cases there can be demonstrated a degree of situational stress which the personality is unprepared to resist. As the pressure is increased, either in intensity or by extension in time, progressively fewer are able to withstand its effects. Reports on combat operations have merely exemplified the view held by modern psychiatrists, and supported by ample clinical and experimental evidence, that every individual will be found to have a breaking point if exposed to sufficient or to sufficiently prolonged stress. Careful screening will not help the average individual to withstand the pressure placed upon him; his best defense is a depth of motivation which will sustain his aggression and direct it against the enemy at all times. Moreover, the Army is sufficiently large and complex to have room for men of widely different breaking points, and relies upon its system of classification and upon observations of line officers and medical officers during the training period to effect a rough segregation of the men best fitted for combat. A psychiatric evaluation of personnel has played an important role in the rehabilitation of a combat division in the South Pacific, the review being initiated by unit commanders. All men in this division who had suffered from psychiatric disorders were also systematically studied.

Just as screening has been inadequate to prevent a fairly high incidence of neuropsychiatric difficulties, the rapid discharge of men with such difficulties has done little to solve the problem. Many of the men with psychiatric symptoms will recover promptly under

## DISEASE AND INJURY

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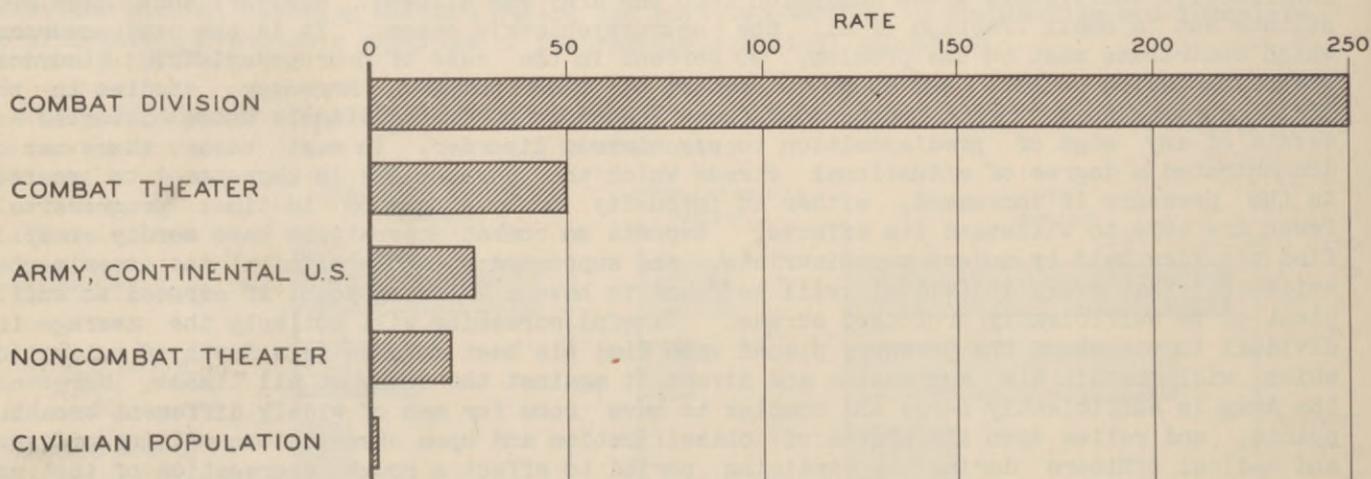
## THE NEUROPSYCHIATRIC PROBLEM (Continued)

good management once the situational stress is removed. This is especially true of combat reactions, and to discharge such men would entail an unnecessary waste of manpower. Moreover the previous policy of easy discharge cleared an escape passage for men emotionally unprepared to serve in the Army, and who perhaps could be prepared for military service with proper orientation toward their task, although careful studies have revealed very little conscious malingering. To circumvent the escape mechanism and remove the chance of secondary gain from illness it became evident that it might even prove necessary to retain within the Army at least some psychiatric noneffectives rather than to discharge them to civilian life. The failure of the discharge policy thus further encouraged the view that major emphasis should be placed upon the strengthening of morale and of the forces protecting men subjected to severe or prolonged stress and upon the salvaging of neuropsychiatric cases for further duty rather than discharging them.

The basic facts of incidence may be read from the accompanying chart, although the average estimates for World War II are quite approximate. Troops in active combat experience the highest rates more or less in proportion to the intensity of combat and the proportion of men having combat assignments within the unit. Thus it is the smaller combat units, some of which are more likely to be involved in intense or prolonged combat operations, which tend to have the highest rates. In general, also, active overseas theaters have higher rates than have inactive theaters. The average U. S. level lies between that for combat theaters and that for inactive commands. The most revealing comparison, however, is that between Army and civilian rates. This is because 80 to 90 percent of the neuropsychiatric cases admitted to Army hospitals would never be considered for hospitalization in civilian life with its infinitely fewer and less exacting demands upon the personality. The Army expects performance and conformity to such a degree that even mild disturbances will cause a man to drop out of the ranks, after which there has been no place for him except the hospital until recently. The essential difference between Army and civilian experience is further highlighted by the fact that the obvious neuropsychiatric cases have been kept out of the Army by the induction screening process.

NEUROPSYCHIATRIC ADMISSIONS  
PER THOUSAND PERSONS PER YEAR

COMPARISON OF CIVILIAN AND VARIOUS ARMY RATES



## DISEASE AND INJURY

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THE NEUROPSYCHIATRIC PROBLEM (Continued)

Behind the high admission rates in combat are the basic factors of intensity and prolongation. As has been shown previously in HEALTH (Feb, p. 13, and Dec, p.11) the trend of neuropsychiatric admissions follows closely the trend of battle casualties, but for small units the duration of combat is perhaps equally important. Difficulty of sleeping in open foxholes under shell fire, extremes of temperature, wet and mud, cold food, and constant demands for physical exertion produce a state of physical and mental fatigue which is of paramount importance in precipitating psychiatric symptoms. Rest, induced by sedation, appears to be the most important factor in their recovery. Another situational factor of key importance is leadership. It has been found repeatedly that outfits fighting side by side under the same conditions and composed essentially of the same type of troops may have widely divergent neuropsychiatric rates. Units in which the men had confidence in their leaders have been shown to have experienced lower admission rates than have units in which confidence was lacking. The development of psychiatric reactions in officers has had especially deleterious effects upon the men under their command.

Increasingly attention is focused upon the motivation of men as the best protection against the development of neuropsychiatric disorders. Those who are highly motivated against the enemy on political, social, and moral grounds, who are outraged by the terror and destruction wrought by the enemy, and who identify themselves with the effort to destroy him, are considered best equipped to sustain and to redirect the terrific situational stress placed upon them. Their morale and operating efficiency are superior. American soldiers generally lack this motivation in any real depth, having been drawn from the matrix of a civilian population almost remote from the war. Unlike soldiers of the overrun Allied countries, U. S. troops have not themselves experienced facism and do not recognize it as the real enemy. If an optimum level of motivation is to be achieved, and it can be achieved only if there is an understanding of the reasons why they fight, then American soldiers must know the meaning and the threat of facism. Loyalty to their leaders, fear of loss of status and prestige, a sense of duty, and similar factors are all important, but they do not serve to direct the powerful forces of fear and aggression which war generates. Unless these forces are oriented toward the enemy they are likely to be directed toward his fellow soldiers, his leaders, the home front, and the like, thus leading to militarily undesirable behavior if not to actual psychiatric symptoms.

To the extent that the immediate environment of the individual soldier can be influenced at all, it requires exercise of the command function. In order to provide psychiatric insight into the situational factors operating against the maintenance of optimum emotional health and morale, psychiatrists have recently been added to the staffs of combat divisions. As an advisor to the commanding general the division psychiatrist can recommend corrective measures necessary to remove or to alleviate untoward circumstances. Psychiatrists have also been placed in the command headquarters of each basic training center where they engage in screening, prevention, and treatment. In order to realize the benefits of preventive psychiatry it has thus been necessary to transfer many of the better men from hospitals to the field, leaving many wards in rear hospitals to be covered by medical officers of lesser training. Paradoxically this step may afford opportunity for better treatment as well as prevention, for there is ample evidence that early treatment pays large dividends in the proportion of men returned to duty. The addition of psychiatrists to the staffs of evacuation hospitals is a step in this direction also.

Another step in the preventive program is the recent decision to administer a course of six lectures on mental health to all officers as a part of their training. Personal adjustment, personality structure, motivation, specific stress factors, signs of impending breakdown, and measures to maintain mental health are among the topics covered. Enlisted men receive an analogous course dealing with personal adjustment, the handling of fear and aggression, the bodily effect of emotions, and the elements of a wholesome view of their role in the Army.

The larger subject of developing and maintaining morale is the special province of the Morale Services Division, with which close liason is maintained by the Neuropsychiatry Division of the Office of The Surgeon General. Current news and information concerning the background and causes of the war are furnished to the troops and those in training have an hour each week to discuss current news and problems. The valuable sampling studies of morale conducted by the Morale Services Division (See MPR Section 10) have done much to reveal the unsatisfactory state of Army morale and to point to specific areas of difficulty.

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# DISEASE AND INJURY

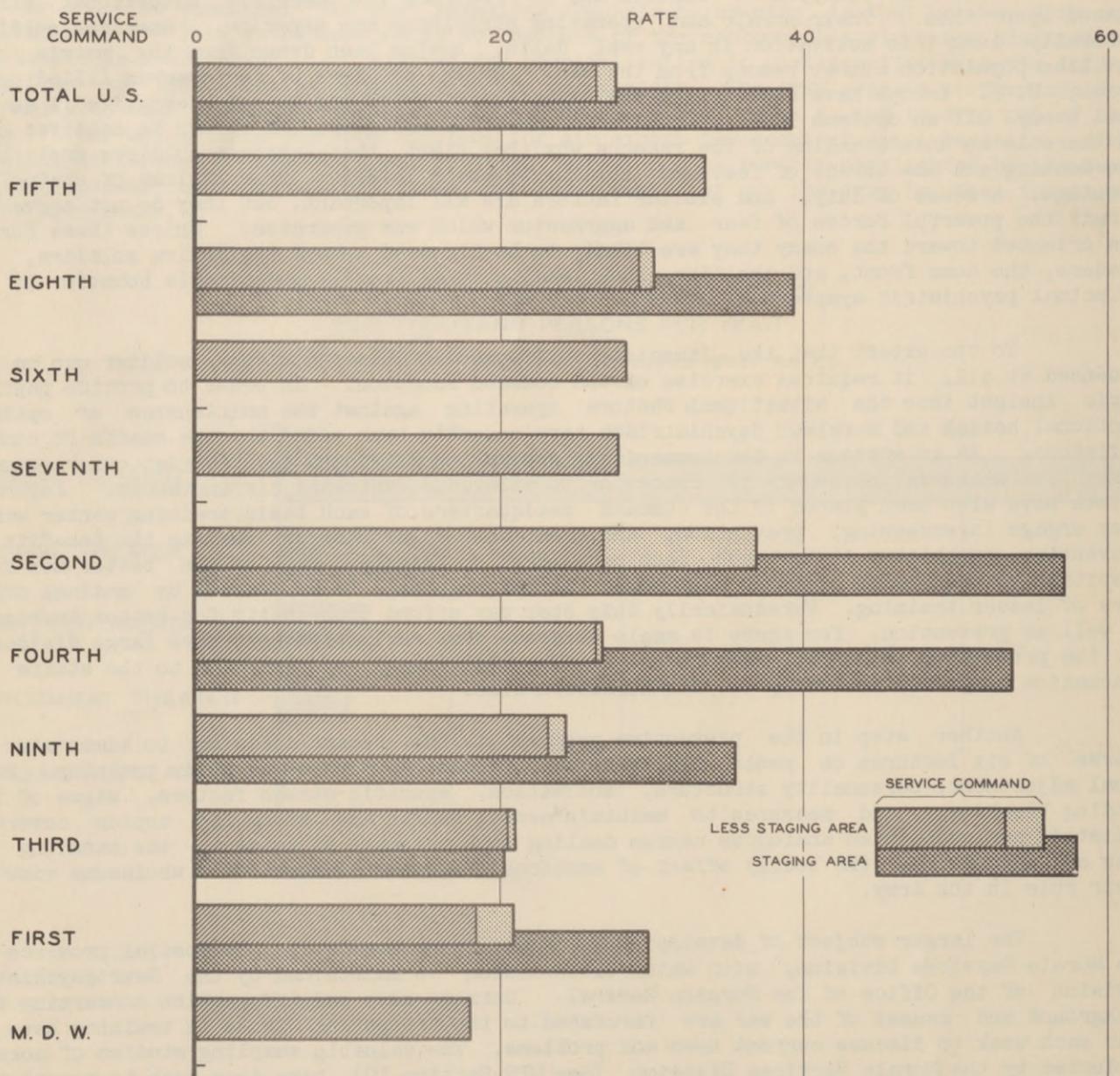
## VENEREAL DISEASE, SERVICE COMMANDS

The wide variations in the incidence of venereal disease in the Army from one service command to another are attributable to the differing proportions of white and Negro troops and to the presence or absence of staging areas. It must also be presumed that the prevalence of infection in the civilian population and related epidemiological factors play a major role.

The chart below compares the incidence of all venereal infection among all troops in the service commands, and among all troops excluding those in the staging areas. The entire length of the upper bars represents the rate for all troops within the geographical limits of the service commands and the heavily shaded portions state the rates for the commands excluding both the cases and the strength of the staging areas. The lower bar gives the average incidence for the staging area strength alone. All of the rates have been standardized for color to minimize the variations attributable to this factor. The order of the commands is that of their rates with the influence of the staging area removed.

### VENEREAL DISEASE ADMISSIONS PER THOUSAND MEN PER YEAR

SERVICE COMMANDS AND STAGING AREAS  
JULY 1943 - FEBRUARY 1944, ADJUSTED FOR COLOR



# DISEASE AND INJURY

## VENEREAL DISEASE, SERVICE COMMANDS (Continued)

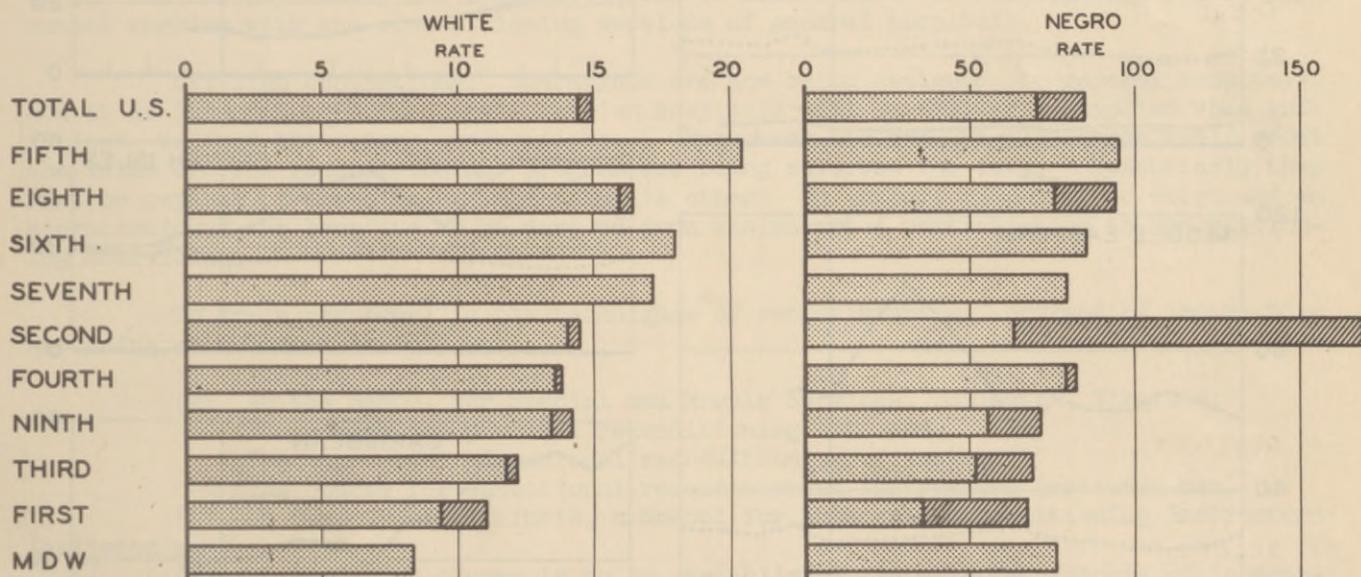
The variations among service commands are quite marked when the rates for each color group are studied, but the Fifth Service Command has the highest rates in every comparison except that which pertains to syphilis among Negroes. The inclusion or exclusion of the staging areas virtually determines the average service command rates for Negroes, their influence upon rates for whites being much smaller. In the charts below the total rate for each service command has been subdivided in order to compare that proportion of the rate attributable to cases acquired by troops in staging areas. The rates for whites have been drawn on an expanded scale so that the variation among service commands and staging areas may be more readily compared. The high rates for the Second Service Command reflect in large part the extent of infection acquired by Negro troops in the New York Port of Embarkation and its associated staging areas.

During the period from July 1943, to February 1944, Negro troops comprised about 8 percent of the Army in the Continental U. S. and accounted for more than 40 percent of the admissions for venereal disease. During this same period they represented about 18 percent of the average strength of the staging areas and accounted for about 75 percent of the admissions for venereal disease.

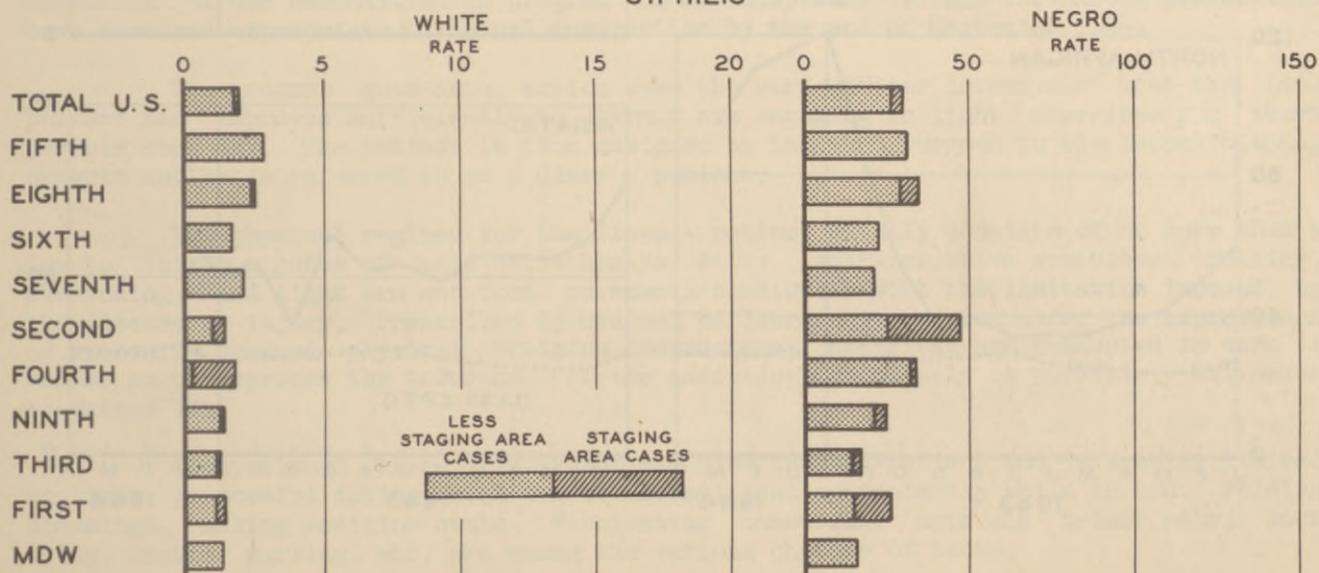
## VENEREAL DISEASE, ADMISSIONS PER THOUSAND MEN PER YEAR BY COLOR

SERVICE COMMANDS, JULY 1943- FEBRUARY 1944

### GONORRHEA



### SYPHILIS



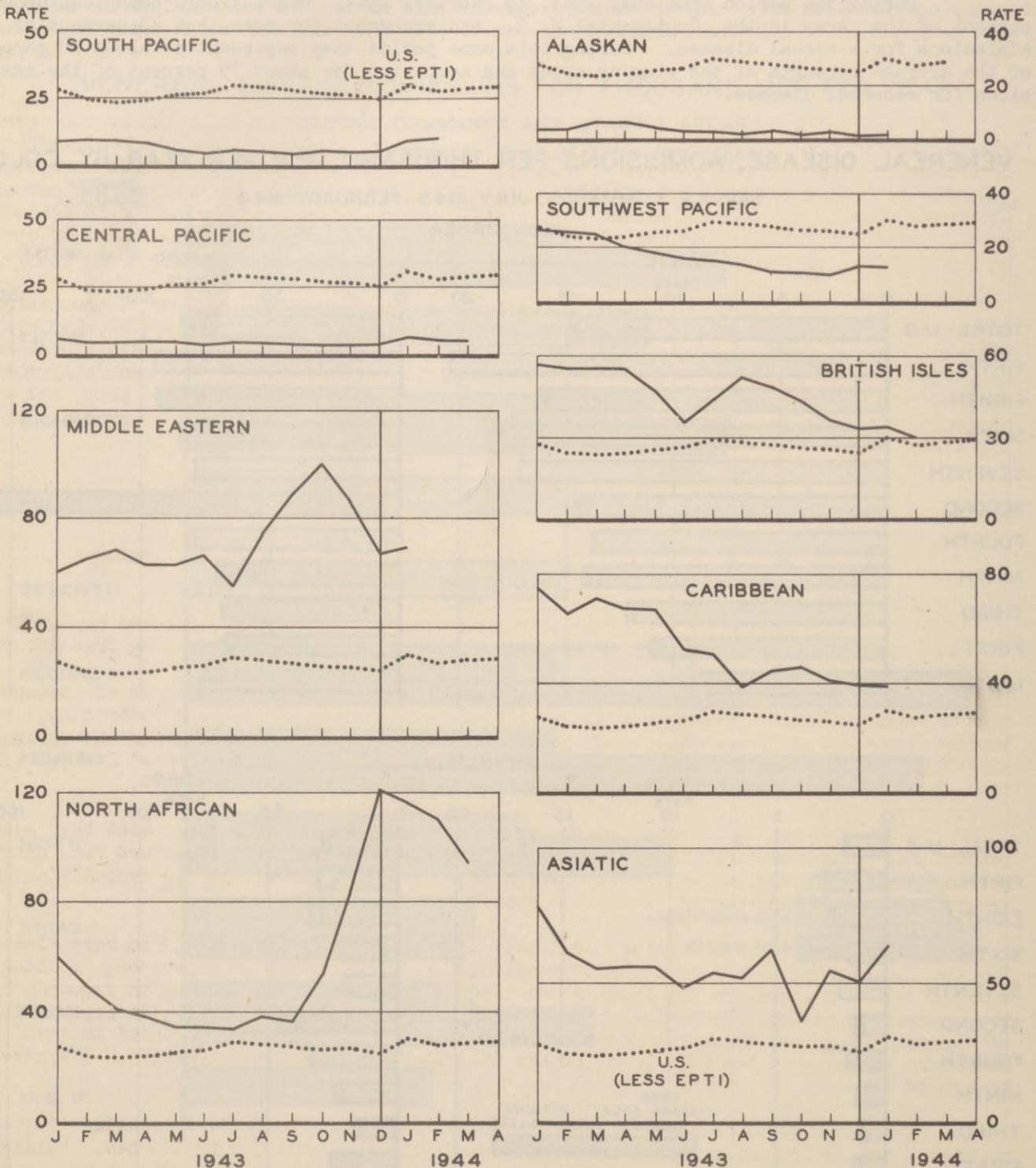
DISEASE AND INJURY

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VENEREAL DISEASE, OVERSEAS THEATERS

Since January 1943 the incidence of venereal disease among troops overseas has declined in all theaters except North Africa and the Middle East. As a result of the sharp increase in the rates in North Africa, attributable mostly to cases contracted on the Italian peninsula, the rate for the Army overseas, which had been at about the same level as that for the U. S. (EPTI infections excluded), increased during October 1943, reached a peak in December and began to decrease slowly as the incidence in North Africa declined. The panels below present the admission rates for all venereal disease in the various overseas theaters and lesser commands against the background of the U. S. rates as a base.

VENEREAL DISEASE, ADMISSIONS PER THOUSAND MEN PER YEAR OVERSEAS COMMANDS



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## DISEASE AND INJURY

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### THE RECONDITIONING PROGRAM IN ARMY SERVICE FORCES HOSPITALS

In all Army Service Forces hospitals a program of physical and educational reconditioning activities has been established primarily to return the greatest possible number of hospitalized soldiers to a full duty status as soon as possible and in excellent physical and mental condition. The responsibility for the development and guidance of this program has been placed in the Reconditioning Division of the Office of The Surgeon General.

In addition, the reconditioning program provides a laboratory where men who may be disqualified for further military service can be tested for their ability to return to duty, where the capabilities and limitations of men unfit for full duty and yet ineligible for medical discharge may be studied with a view to appropriate reassignment, and where preoperative patients may be better prepared for operation and their postoperative convalescence period shortened. Furthermore, the program will determine that the soldier who is disabled for further military duty receives such individual and group guidance as will facilitate his resumption of civilian status and his acceptance of a new role in the war effort.

Responsibility for the operation of the program has been delegated to each service command and to the Military District of Washington. In addition to the headquarters personnel in the various service commands, officers of company grade who have been wounded in action and who are classified as limited service will be assigned to reconditioning work to the maximum extent practicable. Such officers are superior in leadership, and are physically and mentally suited to such duties as will be required of personnel working with the reconditioning sections of general hospitals.

Civilian occupational therapists are now being assigned to general hospitals, and it is intended that the larger station hospitals will be similarly supplied when sufficient trained therapists are available. Personnel who are highly enthusiastic about the value of the reconditioning program are being selected for duty. Essentially they must be capable of arousing or implanting in others an intense devotion to duty, and an appreciation of the benefits to be derived from wholehearted participation in reconditioning activities.

To train personnel in the techniques of reconditioning, courses of instruction are being established as follows:

- (1) At the School for Special and Morale Services, Lexington, Virginia:  
The course for physical reconditioning officers.  
The course for educational reconditioning officers.  
The course for educational reconditioning instructors (enlisted men).
- (2) At Camp Grant, Illinois, a School for Physical Reconditioning Instructors (enlisted men).
- (3) An emergency course is to be established in selected schools of occupational therapy to train young women, qualified in specified skills and techniques, to become occupational therapists. It is hoped that sufficient personnel for the proper operation of the reconditioning program of ASF Hospitals within the United States will have received appropriate technical instruction by the end of September 1944.

The program goes into action when the ward officer determines that the bed-patient has improved sufficiently to permit his engaging in light exercises for short periods each day. The patient is then assigned by the ward surgeon to the reconditioning program and he is referred to as a Class 4 patient.

The physical regimen for the Class 4 patient usually consists of no more than a few to thirty minutes of mild calisthenics daily, self-resistive exercises, rolling, stretching, and light arm and foot movements consistent with the limitation imposed by the disease or injury. Prescribed by medical officers and executed under the supervision of specially trained physical training instructors, exercises are conducted in such a manner as to approach the tolerance of the individual as closely as possible, but never to exceed it.

Occupational therapy is prescribed for the bed-patient and is usually limited to light, purposeful duties which can be accomplished conveniently while in bed. Folding dressings, making medicine swabs, fabricating camouflage nets and helmet nets, knot tying, leather working, etc. are among the various choices of tasks.

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## DISEASE AND INJURY

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### THE RECONDITIONING PROGRAM IN ARMY SERVICE FORCES HOSPITALS (Continued)

The educational content of the program for Class 4 patients includes news analyses, radio programs, books and periodicals, lectures, and informal discussions with fellow patients about topics of general interest. It is designed to divert the mind by relieving anxiety and the strain of war and by preventing the boredom and weariness resulting from enforced physical inactivity, and to stimulate active and purposeful interests. Educational opportunities are many and varied, and effective use is made of material for self-teaching and of correspondence courses of the United States Armed Force Institute. Such interests are directed toward inculcating in the patient a desire to learn and to return to duty in good mental condition as rapidly as possible. While recuperating from illness or wounds, educational reconditioning offers the soldier a definite opportunity to improve his interests, to complete his education, and to seek after the truth.

When the patient becomes ambulatory he is known as a Class 3 patient. He is then able to engage in more arduous activities. He is called upon to make his own bed, to police his bed area, and to assist Medical Department personnel in performing various jobs, both in his own ward and in other parts of the hospital. In the occupational therapy section of the hospital the ambulatory patient may construct many useful things such as leather billfolds and pocket picture frames, wooden file boxes, and medicine trays; he may operate printing presses and engage in book binding and woodworking; and he may choose to make useful needed articles for the hospital. Trained occupational therapists are available to direct treatment procedures and to instruct him in almost any of the arts and crafts in which he may be interested.

Class 3 patients are required to be physically active from two to three hours daily. Exercises are carried out either in the ward, in a gymnasium, or out-of-doors in the area immediately adjacent to the ward if weather permits. In some hospitals, in an effort to "take the gymnasium to the ward", carts have been constructed which are equipped with Indian clubs, dumb-bells, arm and leg exercisers, medicine balls, hand grips, etc. In addition to calisthenics and gymnastics these patients are able to engage in mild games such as croquet, throwing horseshoes, modified soft ball, volley ball, tether ball, etc.

Patients who no longer require hospitalization are either returned to duty, discharged from the service, or admitted to the Advanced Reconditioning Section for further physical training. Patients whose stay in hospital has been so brief as not to permit any great impairment to their general physical condition, are returned directly to duty. In many instances a decision cannot be made concerning a disability discharge until the patient has been tried in the program of Class 2 and 1.

Patients assigned to the Advanced Reconditioning Section are known as "trainees". They are divided into two groups; the Class 2 Group consists of those who are in early stages of training; and the Class 1 Group is composed of trainees who have been restored almost completely to physical fitness. In this section of the hospital every effort is made to create a "line company" atmosphere. To this end the trainees are housed in barracks detached from the hospital; they wear regular duty uniforms; they sleep on cots instead of hospital beds; they are issued Class A passes; and they are generally granted all the privileges normally enjoyed by soldiers on a full-duty status. The trainees are assigned to platoons commanded by a sergeant who is a member of the staff of the Reconditioning Service of the hospital. Squad leaders are selected from among the trainees.

All activities in the Advanced Reconditioning Section are scheduled as in the average training company. Beginning with reveille and ending with retreat every man is fully occupied during the entire day. Two hours per day are devoted to academic military instruction. The remainder of the day is taken up by various physical activities. The military subjects taught in these sections of general hospitals actually constitute refresher courses in basic military training and emphasize such subjects as map reading, scouting and patrolling, weapons and their uses, sanitation and hygiene, defense against air, mechanized and chemical attacks, first aid, etc. Standard texts, manuals, and visual aids are utilized, and military equipment is provided for teaching. At the station hospitals, however, program content is selected so as to suit best the training needs of the major units stationed at the post. Military subjects are taught outside of the hospital proper.

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## DISEASE AND INJURY

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### THE RECONDITIONING PROGRAM IN ARMY SERVICE FORCES HOSPITALS (Continued)

For those trainees who have been recently admitted to the Advanced Reconditioning Section (Class 2), the physical training activities are comparatively mild, but as they progress the regimen increases in both character and duration until, during their last week under the Class I program, they are participating in six hours daily of grueling exercises, some of which are general in nature, while others are designed to strengthen a particular weakness. The physical training program provided for trainees in this section includes calisthenics, games, gymnastics, swimming and water-resistive exercises, remedial exercises, marches up to fifteen miles, combative exercises, drill, obstacle course running, and physical fitness tests.

Many incidental medical matters are cared for during the trainee's stay in the advanced reconditioning section. Each man has his eyes examined and spectacles are prescribed when required. A dental survey discloses any dental defects and all indicated treatment is administered before the trainee returns to duty. Every effort is made to send the soldier back to his organization fit in every respect to perform full military duty.

Movies, shows, dances, games, hobbies, and various other forms of group and individual recreation are enjoyed by all trainees as a result of the efforts of the American Red Cross and the Special Services officer.

At some posts, in an effort to conserve and more properly utilize man-power, commanders of the major tactical units stationed there have attached classification officers to the hospital for the purpose of reclassifying and/or reassigning patients unfit for the duties to which they were formerly assigned, whether by reason of maladjustment or a physical disability which prevents the performance of full military duty but does not warrant discharge from the service. With the assistance of the reconditioning officer these classification officers are able to study such trainees under working conditions with a view to recommending reassignment to duties compatible with their limitations. G-1 of the War Department General Staff at present is developing a plan to assign personnel placement officers in all hospitals of 500 beds and larger.

The blind are assigned to one of two hospitals for specialized treatment. Here they are taught self-care, how to walk, dress, eat, type, tell time with a Braille watch, and to achieve independence in a new environment. Blind and sighted instructors are available for this purpose and to teach habits of posture, dress and techniques of walking about. When a blind person has derived the maximum benefit from hospitalization, he continues social adjustment training which will enable him to undertake with confidence the course of vocational training provided by the Veterans Administration, and later to find suitable employment. In order to apply this principle effectively the social adjustment training is completed before the blind person is discharged from the service.

The deaf are retained in one of three hospitals, designated as centers for soldiers with impaired hearing, until tests have been made and hearing aids fitted to those who will derive benefit from them. Teachers instruct the men in the art of lip-reading. Instructors in speech correction are on hand to prevent deterioration of speech.

The soldier who suffers an amputation is sent to one of five designated hospitals. He is retained in service until he has been fitted with a temporary artificial limb, if this is feasible, and has learned how to use it properly. Six months after discharge, a permanent artificial limb of the most modern design may be secured from the Veterans Administration. Reconditioning of the amputee is closely coordinated with the special surgical techniques instituted for the care and treatment of the amputation stump and fitting of the prosthesis. Physical reconditioning, educational reconditioning, and occupational therapy play an important part in the care of all prolonged cases.

While the disabled soldier of this war is convalescing the reconditioning program restores to him the strength, endurance, agility, and coordination requisite to effective participation in rigorous military training or exhausting combat, as well as the essential qualities of mind that constitute morale. By recommending that men found to be unfit for general military service be reassigned to duties commensurate with their physical limitations, it is possible to place in assignments formerly occupied by men qualified for general service, many soldiers who would otherwise be discharged from the Army.

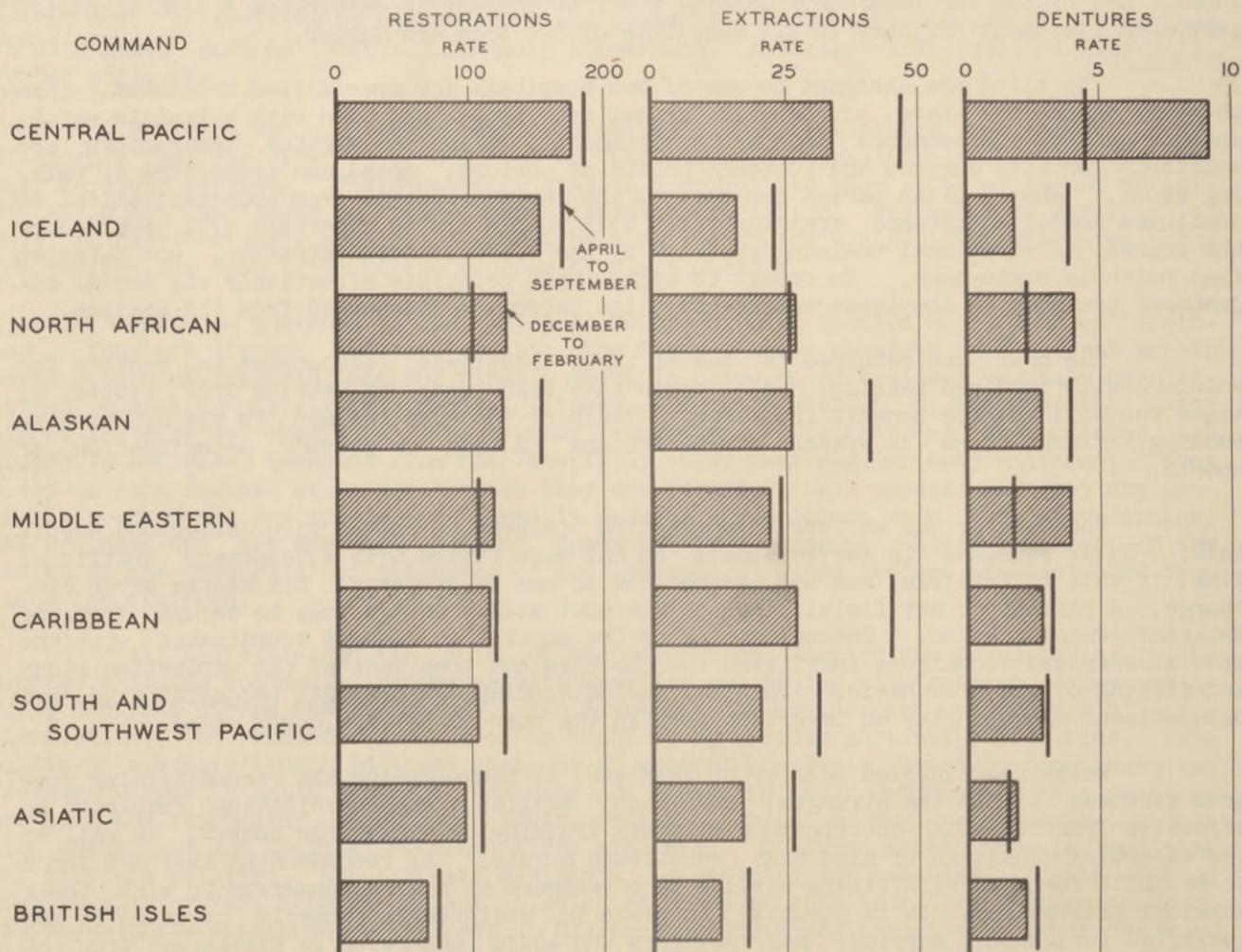
# DISEASE AND INJURY

## DENTAL SERVICE, OVERSEAS COMMANDS

During the period December 1943 through February 1944 the ratio of dental officers to overseas strength has been slightly higher than one dental officer per thousand men, except in Hawaii where it has been about .8 per thousand men. This has also been true of the individual large commands. Were the factors governing the opportunity and need for dental work the same in all theaters, the average accomplishment per dental officer should be about the same from one theater to the next. However, there are special circumstances which interfere with the ready comparability of the various theaters, especially combat and training activities, troop movements, climate, supplies, and the dispersion of troops. For example, in Hawaii and Iceland conditions are more comparable with those prevailing in peace-time, and there is more opportunity for dental work to be done. In some instances, also, dental officers have been assigned non-professional functions which have reduced their opportunity to meet the dental needs of the commands which they serve. Despite these qualifications it is believed instructive to compare the average accomplishment per dental officer in the large commands.

The charts below give the number of restorations, extractions, and dentures per dental officer per month during December through February. The vertical lines associated with each bar give comparable estimates for the six months ending September 1943. Hawaii, with the fewest dental officers in proportion to strength, has consistently reported the greatest average accomplishment. The accomplishment of the North African Theater has been rather high in the light of its combat mission. In the British Isles, on the other hand, the averages have been uniformly low. Iceland had the highest ratio of dental officers to strength during the three months ending February 1944, but its average accomplishment per officer has perhaps been above average.

**RESTORATIONS, EXTRACTATIONS, AND DENTURES PER DENTAL OFFICER PER MONTH**  
OVERSEAS COMMANDS, APR - SEP 1943 — DEC 1943 - FEB 1944



# HOSPITALIZATION

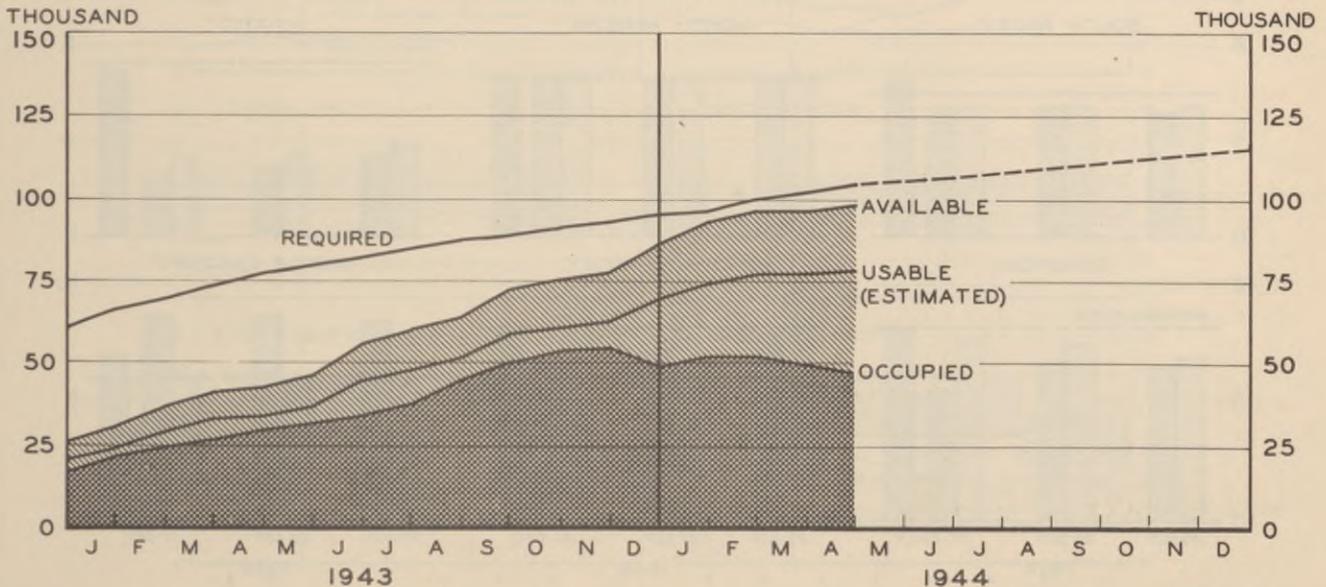
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## AVAILABILITY AND UTILIZATION OF BEDS IN NAMED GENERAL HOSPITALS

Recent changes in the reporting of general hospital facilities make it essential to reconsider the inter-relationships among bed requirements, available facilities, and hospitalized patients. Prior to the revision of AR 40-1080 in December 1943, required and available beds meant "normal" beds, these being defined as standard units in suitably equipped buildings and having 72 square feet of floor space in wards and other rooms designed to hold patients. Although the pre-war standard was 100 square feet, shortages of labor and building materials necessitated a reduction to 72 square feet, well below average civilian space standards, and bed requirements were calculated in these terms. The development of a surplus of station hospital beds resulting from the shipment of troops overseas, led to the abandonment of the emergency criterion of 72 square feet in favor of 100 square feet. Although it was apparent that general hospitals could not operate on this basis, the change was also extended to them in the interest of uniformity. This would result in a 20 or 25 percent reduction in the count of normal beds. To compensate for this change it was necessary to abandon the normal bed concept for planning purposes and to define expansion capacity so that the total bed count (normal plus expansion beds) could be employed in lieu of the normal count. Therefore, the revision of AR 40-1080, WD Circular No. 43, and supplementary instructions redefined expansion beds and made it mandatory to report, not simply those beds which were set up, but the total number on hand which could be set up within space approved for hospital use on the basis of 72 square feet per bed. To insure accurate and comparable reports, the space at each general hospital has recently been reviewed and the bed capacity of each hospital fixed on the basis of 72 square feet per bed. Except for possible minor changes, the totals set by this process are relatively firm. Convalescent beds, and those which could be placed in corridors, solaria, etc. are now excluded. On this basis there were about 98,000 general hospital beds available at the end of April, or perhaps 93 percent of the calculated requirement for that date, including approximately 8,000 beds in receiving and evacuation hospitals.

The changes in definition of normal and expansion beds led to some confusion in the bed reports of individual hospitals, for not all hospitals changed their counts of normal capacity in conformity with the new definition. Consequently, it has been necessary to estimate the capacities intervening between the change in definition and the recent recount. The results are shown graphically in the accompanying chart, in comparison with the requirements calculated at 1.0 percent of the total Army strength plus 0.7 percent of the overseas strength, with an allowance for prisoners of war. The chart also shows the number of beds occupied and the number of usable beds, estimated at 80 percent of those available, because experience shows that an average dispersion of 20 percent is required for effective ward specialization and the like. The projected requirements are 107,000 for 30 June, 1944, and 115,000 for 31 December, 1944. Although recent re-estimates of prospective evacuees from overseas have suggested that a larger number of beds may be needed, it is hoped to divert to the new regional station hospitals a large part of the present general hospital load arising from Z.I. installations and to shorten the length of stay in hospitals by transferring patients to convalescent facilities as soon as possible.

REQUIRED AND AVAILABLE GENERAL HOSPITAL BEDS  
CONTINENTAL U.S.



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# HOSPITALIZATION

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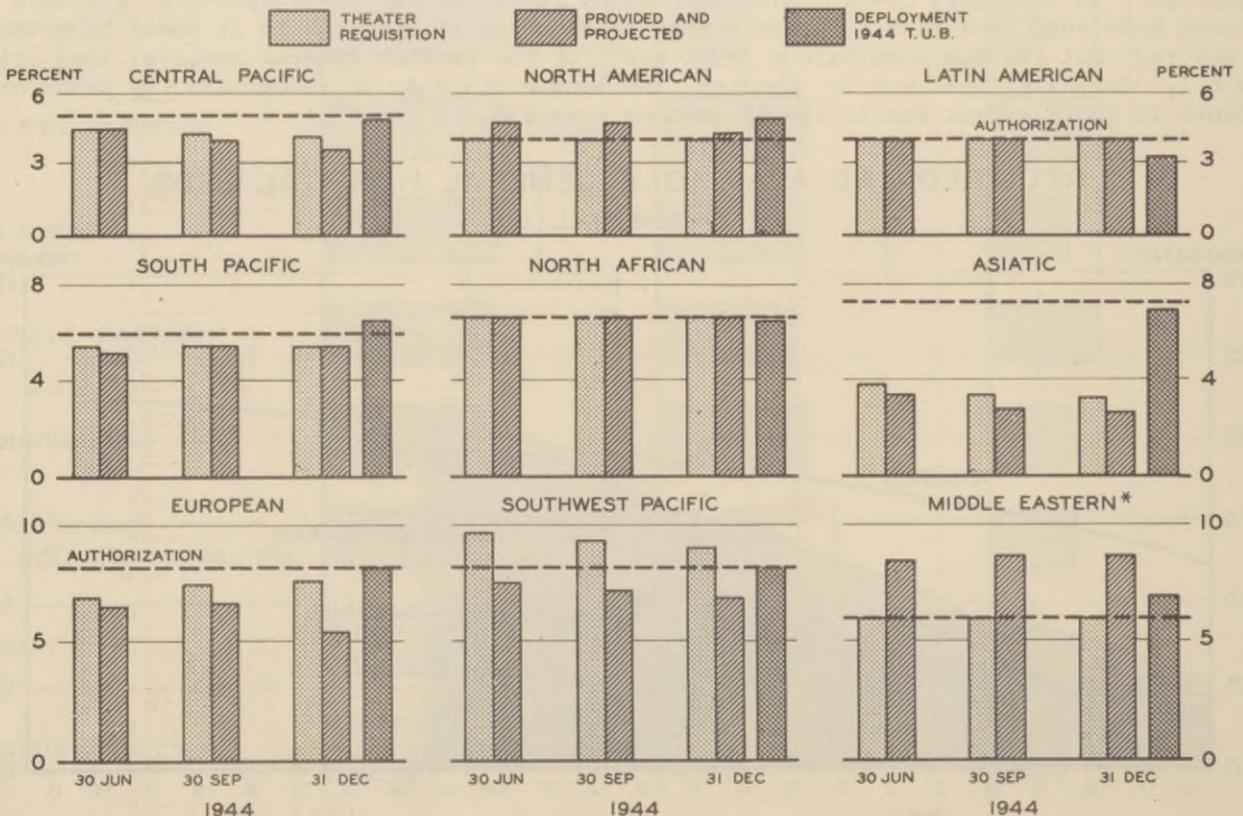
## HOSPITALIZATION OVERSEAS

Although the 1944 War Department troop unit basis calls for 246 numbered general and 97 field hospitals, at the end of April only 143 general and 67 field hospitals had been activated. The situation is more favorable with respect to station hospitals. The numbered station hospitals already shipped approximate closely the 1944 troop basis only because it calls for even fewer units than did the 1943 troop basis. Because of the acute shortage of enlisted personnel, the activation of general and field hospitals is far short of the 1944 WD troop unit basis and of theater requirements. Extreme difficulty is experienced in meeting current theater requirements because sufficient units are not authorized for activation. Those few authorized cannot be adequately trained before dispatch overseas, thereby requiring the theaters to accept such units "short-trained".

The implication of the present situation is plain: unless corrective measures can be taken immediately to provide the personnel needed to accelerate the activation schedule, the bed requirements of the more active, growing theaters cannot be met. Following a re-study of bed requirements in each theater, on 25 April the Deputy Chief of Staff approved new authorizations for fixed hospital units in overseas theaters. According to these authorization levels, according to the theater requisitions as revealed by the 14th revision of the WD Projection List, and according to the latest Operations, G/S Deployment of the WD T.U.B. List, there will be serious shortages of fixed hospital units in the European Theater, the Asiatic Theater, and the Central Pacific Area. Less serious shortages will exist in the South and Southwest Pacific, according to these data.

The details for each theater are shown below graphically. The horizontal line on each theater panel gives the new War Department authorization (25 April 1944) for fixed units. The first vertical bar in each set represents the number of beds (as a percentage of the projected strength) requisitioned by the theater for 30 June, 30 September, and 31 December, according to the 14th revision of the War Department Projection List. The second bar in each set is an estimate of the number of fixed bed units which can be provided under the present conditions of activation and training. The third vertical bar, shown only for 31 December, gives the latest Operations, G/S deployment figures for the end of the year. The Southwest Pacific requisitions were submitted under the previous authorization of 10 percent.

PROJECTED AVAILABILITY OF FIXED HOSPITAL UNITS OVERSEAS  
BEDS AS PERCENT OF STRENGTH



\* And Persian Gulf Command.

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HOSPITALIZATION

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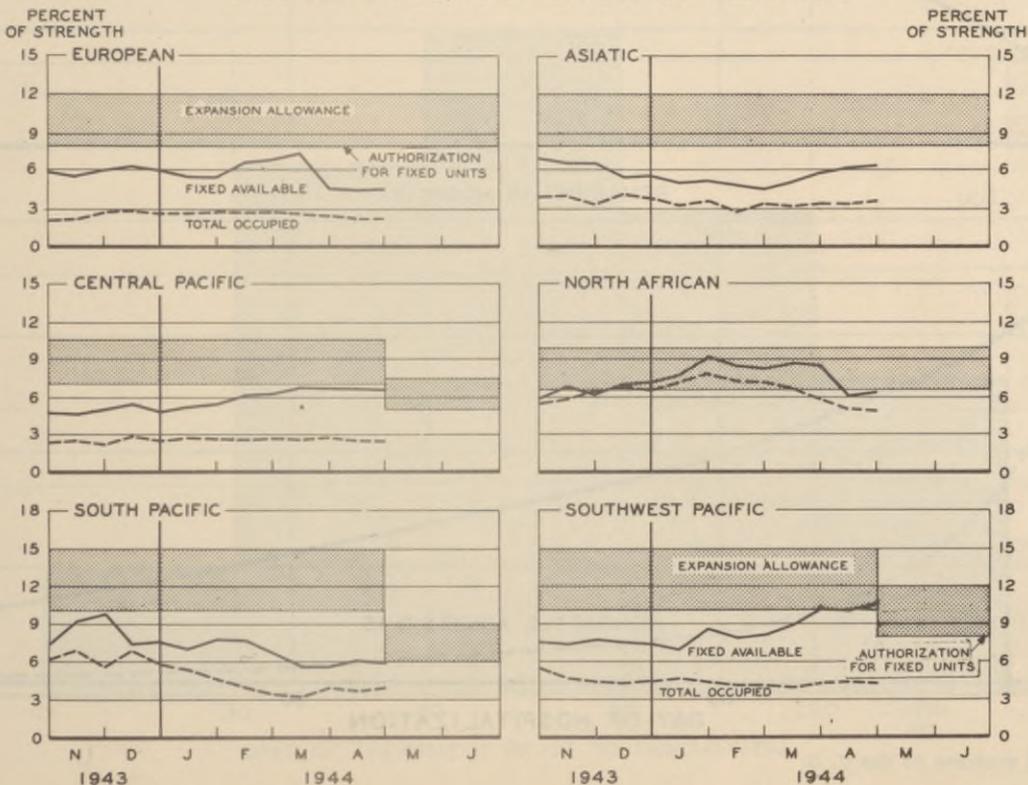
HOSPITALIZATION OVERSEAS (Continued)

In comparison with the five percent of U.S. strength currently provided in the U.S. for station plus general hospitals, some overseas theaters require 10 percent or more in beds in fixed hospital units (station, general, and field hospitals). The question of theater hospitalization needs is subject to continued study. Estimates of their requirements must take into consideration not only tactical activity, present and planned, but also the probable incidence of disease and nonbattle injury, facilities for the evacuation of patients needing special treatments or extended periods of hospitalization, the evacuation policy itself, and the presence of prisoners of war and civilians requiring treatment. In the Asiatic Theater, provision is made for hospitalization in support of Chinese units in India which are excluded from the strength. On 25 April, certain changes with regard to the levels of authorization for fixed hospital units were approved by the Deputy Chief of Staff. The authorization for the Central Pacific was decreased from 7.0 to 5.0, while that for the South Pacific was decreased from 10.0 to 6.0 and that for the Southwest Pacific from 10.0 to 8.0. In addition, the North African Theater has been permitted to expand the T/O capacity of existing units sufficiently to meet the authorized level.

The panels below detail the recent changes in fixed hospitalization for the more active theaters. Each panel shows the percentage of beds authorized in fixed hospital units, all available fixed beds (including expansion beds), and all hospitalized patients in the theater. In all cases the data are expressed as percentages of the theater strength. The authorization shown for the Asiatic Theater pertains to units authorized for the hospitalization of American troops only and differs from the Asiatic panel on the opposite page, for the latter pertains to both Chinese and American strength. Over and above the authorization for fixed hospital units, use of expansion equipment is authorized to the extent of an additional 50 percent of T/O capacity, which is shown by the shaded area in each panel. However, the use of such facilities necessitates a degree of utilization of personnel not intended by tables of organization except as an emergency measure. All occupied beds in the theaters are shown in place of merely occupied fixed beds, and thus compared with available fixed beds. This is done in order to indicate what the fixed hospital load would be were all mobile facilities required to move in support of tactical operations.

The decrease in the percentage of fixed beds available in the European Theater during the latter part of March and April is attributable to the influx of troops at a more rapid rate than beds and to changes in reporting. The North African Theater no longer includes some of the expansion beds previously reported.

AUTHORIZATION FOR FIXED BEDS, EXPANSION ALLOWANCE, ALL FIXED BEDS AVAILABLE, AND TOTAL BEDS OCCUPIED



# HOSPITALIZATION

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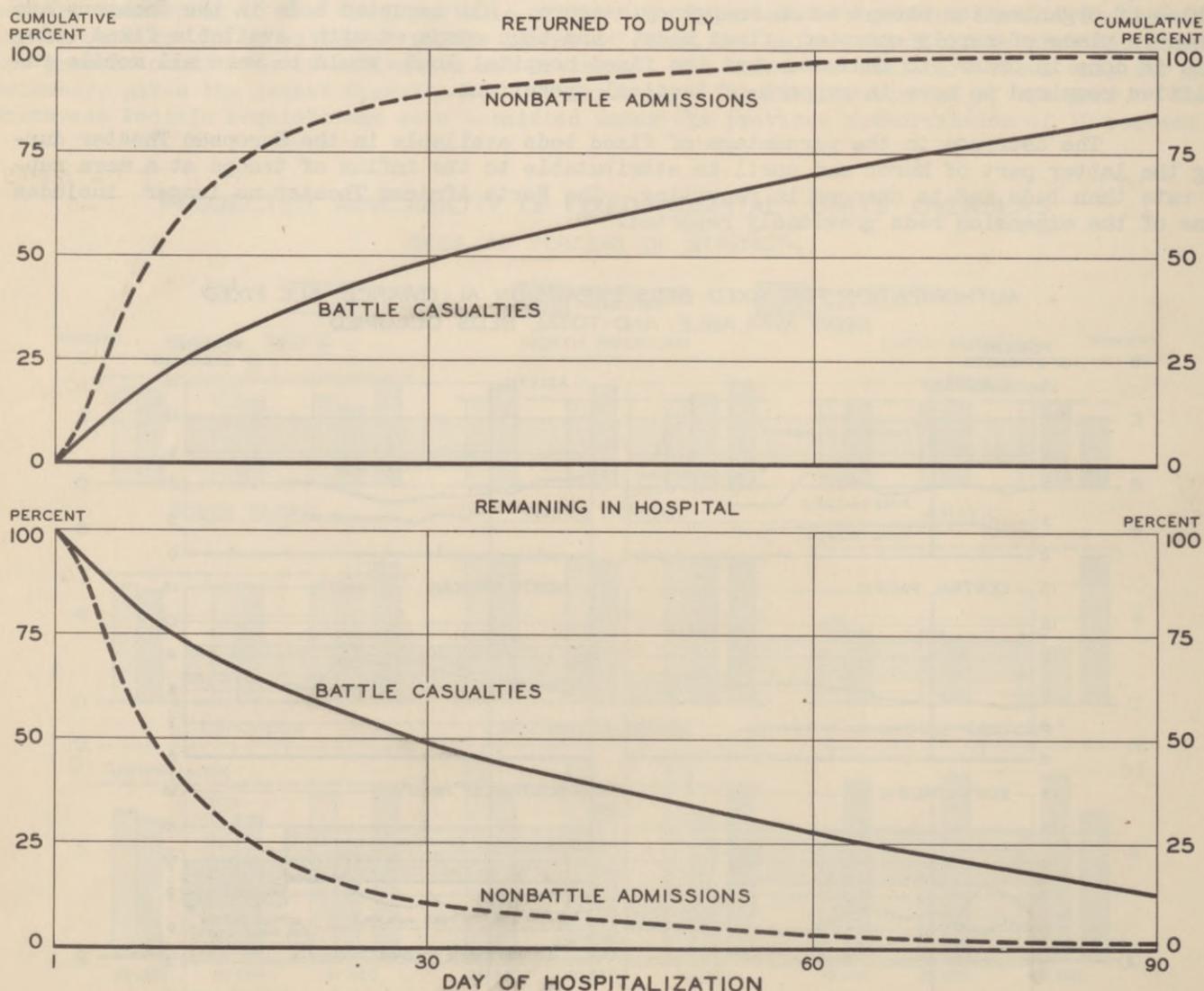
## LENGTH OF HOSPITALIZATION IN NORTH AFRICA

During the first six months of 1943 approximately 100,000 men were treated in hospital or quarters in North Africa, excluding those who died prior to admission, and those who lost no time from duty. Of these admissions some 90,000 were returned to duty, 270 died, and the remainder were evacuated to the U. S. Numbered among the patients returned to duty were 86,000 who had been admitted for disease or nonbattle injury. About 75 percent of these cases were treated in hospital in comparison with 97 percent of the 4,000 battle casualties.

The charts at the bottom of the page detail the experience of all admissions to hospital, except those later evacuated to the U.S., during the first 90 days of hospitalization. The first panel shows the percentage of admissions who were returned to duty after a given number of days of treatment. The second panel shows the proportions remaining under treatment.

The difference between the series for battle and nonbattle admissions reflects the longer period of hospitalization necessary for the battle casualties. The curves show, for example, that about 50 percent of all nonbattle cases were returned to duty within 8 days, while only after 32 days were 50 percent of the battle casualties returned to duty. Less than 1 percent of nonbattle admissions and 12 percent of battle casualty patients were hospitalized more than 3 months. This indicates that a 90-day evacuation policy was essentially in effect for disease patients.

**PERCENT OF HOSPITALIZED PATIENTS\*  
REMAINING IN HOSPITAL AND RETURNED TO DUTY  
NORTH AFRICA, JAN - JUN 1943**



\*Excluding evacuees to the U. S.

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HOSPITALIZATION

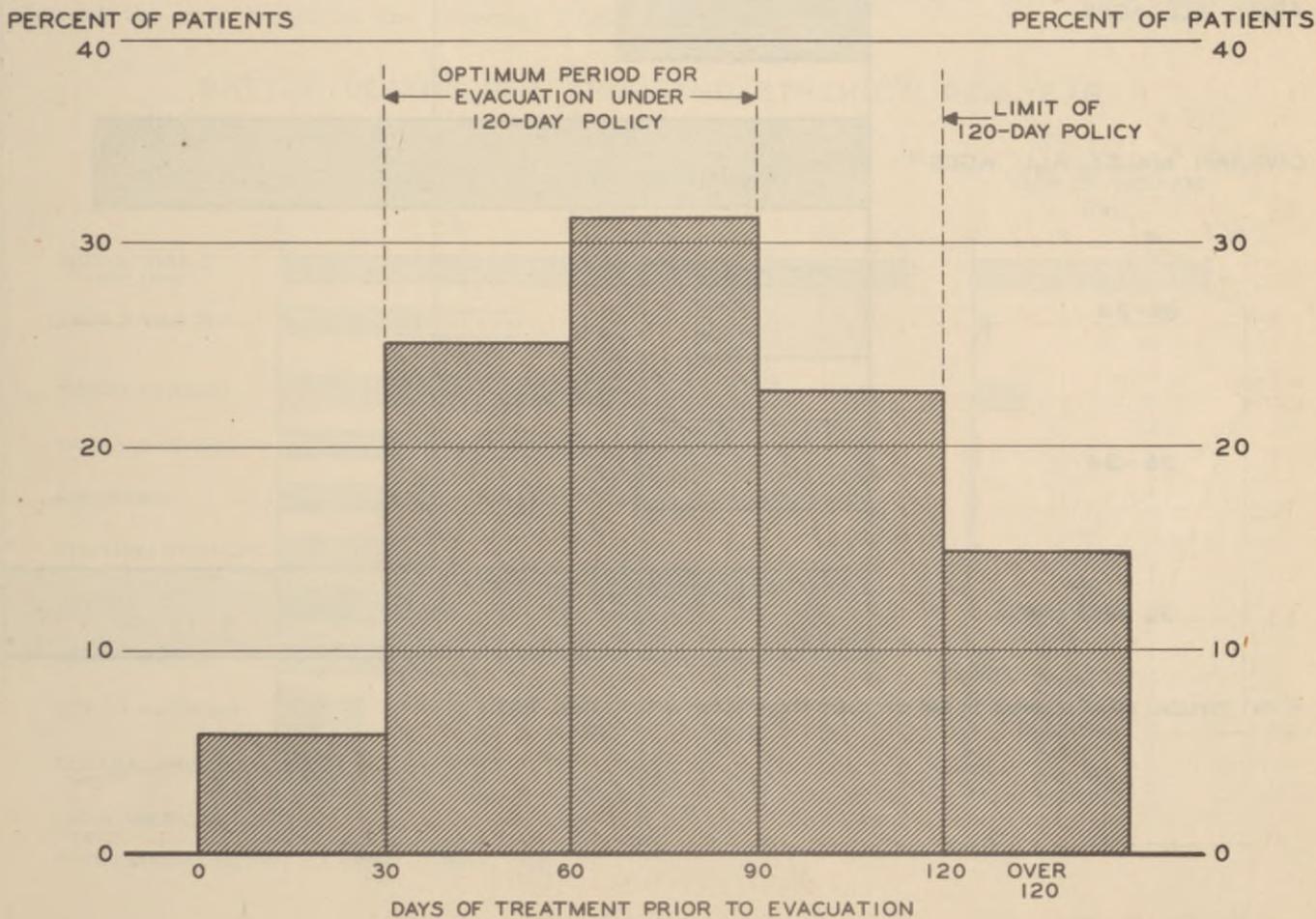
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EVACUATION OF PATIENTS FROM OVERSEAS

Provisional estimates of evacuees for April reveal a considerable decline in the number of U. S. Army patients received from overseas. In comparison with about 8,900 during March, there were only about 6,500 during April. Together with the increase in strength overseas this fact reduced the rate of evacuation to 2.0 per 1,000 overseas strength per month, the lowest point since February and March of 1943.

The chart below gives a distribution of evacuees according to length of stay prior to evacuation for the 2,400 traumatism cases received in the U.S. during November and December of 1943 from all theaters. The data have the weakness that almost 30 percent of the cases are unknown for length of stay. However, if it can be assumed that the known cases are representative, the sample suggests that a significant proportion of traumatism patients, whose condition precludes return to duty within the period specified by the policy, may be kept overseas longer than is needed to prepare them for evacuation. Most overseas theaters maintain a 120-day evacuation policy, which means that those requiring more than 120 days of hospitalization should be evacuated, not after 120 days, but as soon as possible. In most cases it is possible to determine soon after injury whether or not the patient can be returned to duty within the limits of the evacuation policy. The condition of many patients will not permit immediate evacuation, but a month to six weeks should prepare the average case for evacuation. Early transfer of patients to the Z.I. promotes greater efficiency in hospitalization and personnel, and also permits earlier definitive treatment. The ideal pattern of evacuation should show graphically as a rapid rise in incidence after the first month with a peak in the second to third months, and a rapid decline thereafter. The decline would represent the few cases in which there was error in judgment regarding their possibility of return to duty or in which the development of subsequent complications precluded their return to duty within the period of the evacuation policy. Any discrepancy between the actual and the theoretical distribution may, of course, reflect transportation difficulties. The fact that two theaters were following a 180-day policy does not determine the shape of distribution shown below.

LENGTH OF TREATMENT PRIOR TO EVACUATION  
TRAUMATISM PATIENTS RECEIVED DURING NOVEMBER AND DECEMBER 1943



# MORTALITY

**RESTRICTED**

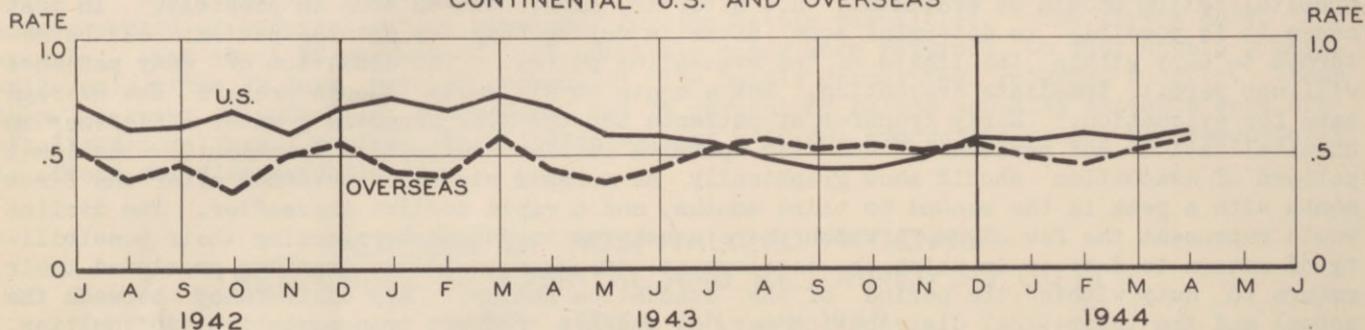
## DEATHS FROM DISEASE

Mortality from disease increased slightly during April both in the United States and overseas. The preliminary estimates are .59 per thousand men per year for troops in the U. S. and .56 for the Army overseas.

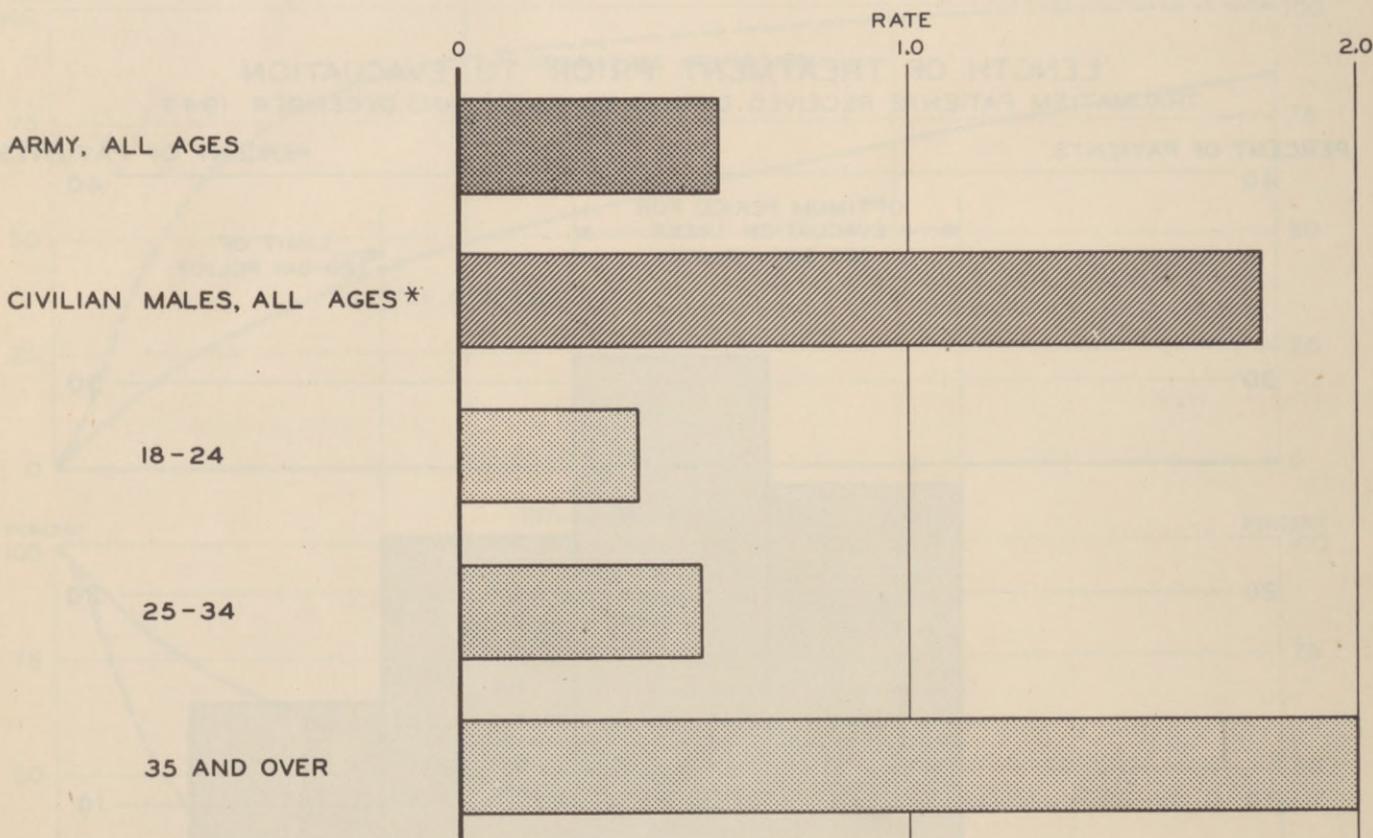
The chart at the bottom of the page gives provisional death rates from disease for broad age-groups in the Army during 1943. The age-specific rates for the Army follow the pattern of civilian rates but at a much lower level. During 1941 a large group of males in the U. S. civilian population, having the age and color composition of the present Army, would have experienced a disease death rate of 1.8 per thousand men per year, about three times the average Army rate.

### DISEASE DEATHS PER THOUSAND MEN PER YEAR

CONTINENTAL U.S. AND OVERSEAS



CONTINENTAL U.S. BY AGE, 1943



\* 1941 Civilian Rates Adjusted to Age and Color Composition of U.S. Army, 1943.

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MORTALITY

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DEATHS FROM BATTLE CAUSES

Although there are now more troops overseas than there ever were in World War I, the comparative inactivity of this war has thus far been attended with far fewer deaths from battle causes. The following table compares the most recent A.G.O. tabulation of World War II casualties, that for 31 March 1944, with the World War I data. The World War I counts of

BATTLE CASUALTIES IN WORLD WAR I AND WORLD WAR II\*

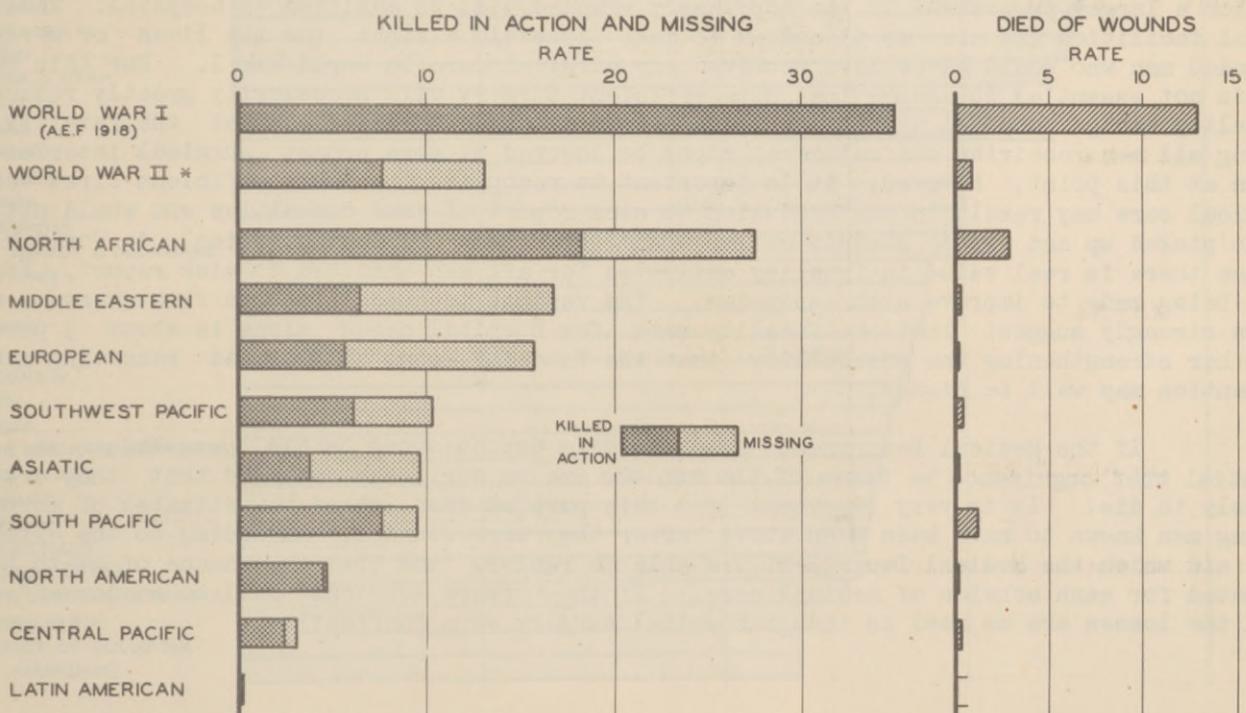
Type of Casualty	World War I A.E.F. 1918	World War II	
		Total	Excluding Philippines
<u>Deaths</u>			
Killed in action	36,700	21,800	20,800
Dying of wounds	13,700	2,400	2,400
<u>Wounded</u> (Including those who died)			
Gas	70,600	0	0
Other	153,500	59,600	57,900

\* See Text

wounded and of men who died of wounds include all those who received medical attention, whether or not they subsequently reached a mobile or fixed hospital. The A.G.O. count of wounded in World War II is believed to include only hospital admissions, but the reported number of men dying of wounds includes an undetermined number who failed to reach hospitals. In addition to the casualties tabled above, 29,900 are reported as "missing" in World War II, including 14,800 in the Philippine operation, the proper classification of which might well bring the World War II totals closer to those for World War I. In order to make a conservative comparison the accompanying charts include rates based on the assumption that all "missing" were killed in action. This portion of the rate in each case is shown as a light extension of the rate based on the recorded figures in each case.

BATTLE DEATHS PER THOUSAND STRENGTH PER YEAR

OVERSEAS COMMANDS



\* Excluding Philippines, and through 31 March, 1944.

## MORTALITY

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DEATHS FROM BATTLE CAUSES (Continued)

Expressed as annual rates per 1,000 strength the differences in mortality are even more striking, but the incomplete strengths for the Philippine experience make its exclusion essential. The World War I rates are those of the A.E.F. for 1918. For the year 1918 the average death rate in the A.E.F. was 35 per 1,000 strength for men killed in action, about three times the World War II rate even if all the missing are assumed to have been killed in action. In North Africa, however, the rate is well in excess of the overseas average to date as may be seen in the chart on the previous page. In each case the strength employed is the average strength since the theater opened.

The estimates of fatality among wounded men during World War II may not be very reliable because of the difficulty of distinguishing between those who are "killed in action" and those who "die of wounds". Moreover, the World War I figures are probably much more inclusive than those of The Adjutant General for World War II, which pertain to hospital admissions. Only one careful study of World War II material is known to have been made in such fashion as to insure comparability with World War I figures. This sample pertains to the first 2,379 wounded men receiving medical attention in the Southwest Pacific, and it yields a fatality estimate of 5.9 percent. That such an estimate, covering all wounded admitted to sick report, may be appreciably higher than one covering only hospital cases is suggested by the fact that the A.G.O. data for about the same period yield a fatality rate of only about 3 percent. Inquiry revealed that half of the deaths studied by the surgeon of the theater had been classified as killed in action by the A.G. Casualty Section. In theory the Statistical Health Report to The Surgeon General should include all wounded who receive any medical attention, but it is by no means certain that the total reported for the number of men dying of wounds is sufficiently large. For example, the Statistical Health Reports from the Southwest Pacific Theater agree closely with those of the A.G.O. with respect to men who died of wounds. Their counts of total wounded are otherwise, however, considered to be more comparable with the World War I figures than are the A.G.O. figures for hospital admissions. Hence the estimate of about 3.0 to 3.5 percent derived from the Statistical Health Reports has been used as the only real estimate of fatality available for the total World War II experience to date. However, if deaths from wounds were well counted it seems likely that the figure might be higher. This possibility of error may partly explain why the ratio of killed to died of wounds appears to have risen from 2.7 in World War I to 9.1 in World War II if the A.G.O. figures for World War II are used.

If the frequency of deaths from wounds is to be taken as an index of surgical effectiveness, perhaps only cases admitted to hospital (including clearing stations equipped for surgery) should be studied. However, as surgical aid is brought closer to the line of action a larger proportion of the hopelessly wounded will be admitted to hospital. Thus surgical facilities are now so placed as to make possible a fight for the lives of seriously wounded men who would never have received any surgical care in World War I. For this reason it is not essential to assume that more efficient surgery will necessarily greatly reduce the fatality among hospital admissions. However, it would be expected that the fatality rate among all men receiving medical care might be lowered by more prompt surgical interference. Even at this point, however, it is important to recognize that more efficient first echelon medical care may result in the admission to sick report of some casualties who would not have been picked up and whose classification would have been "killed in action" in World War I. Hence there is real value in fatality estimates for all men admitted to sick report. Efforts are being made to improve such estimates. The various technical reports from overseas theaters strongly suggest that the fatality rate for hospital cases alone is about 3 percent, further strengthening the possibility that the fatality among all wounded receiving medical attention may well be higher.

If the Medical Department is to minimize deaths among battle casualties, it is essential that cognizance be taken of the men who are so seriously wounded that they are very likely to die. It is very important for this purpose that there be estimates of mortality among men known to have been seen alive after they were wounded, according to the extent of the aid which the Medical Department was able to render, and that the chance of death be estimated for each echelon of medical care. If the forward echelons fail to render effective aid the losses are as real as though hospital surgery were ineffective.

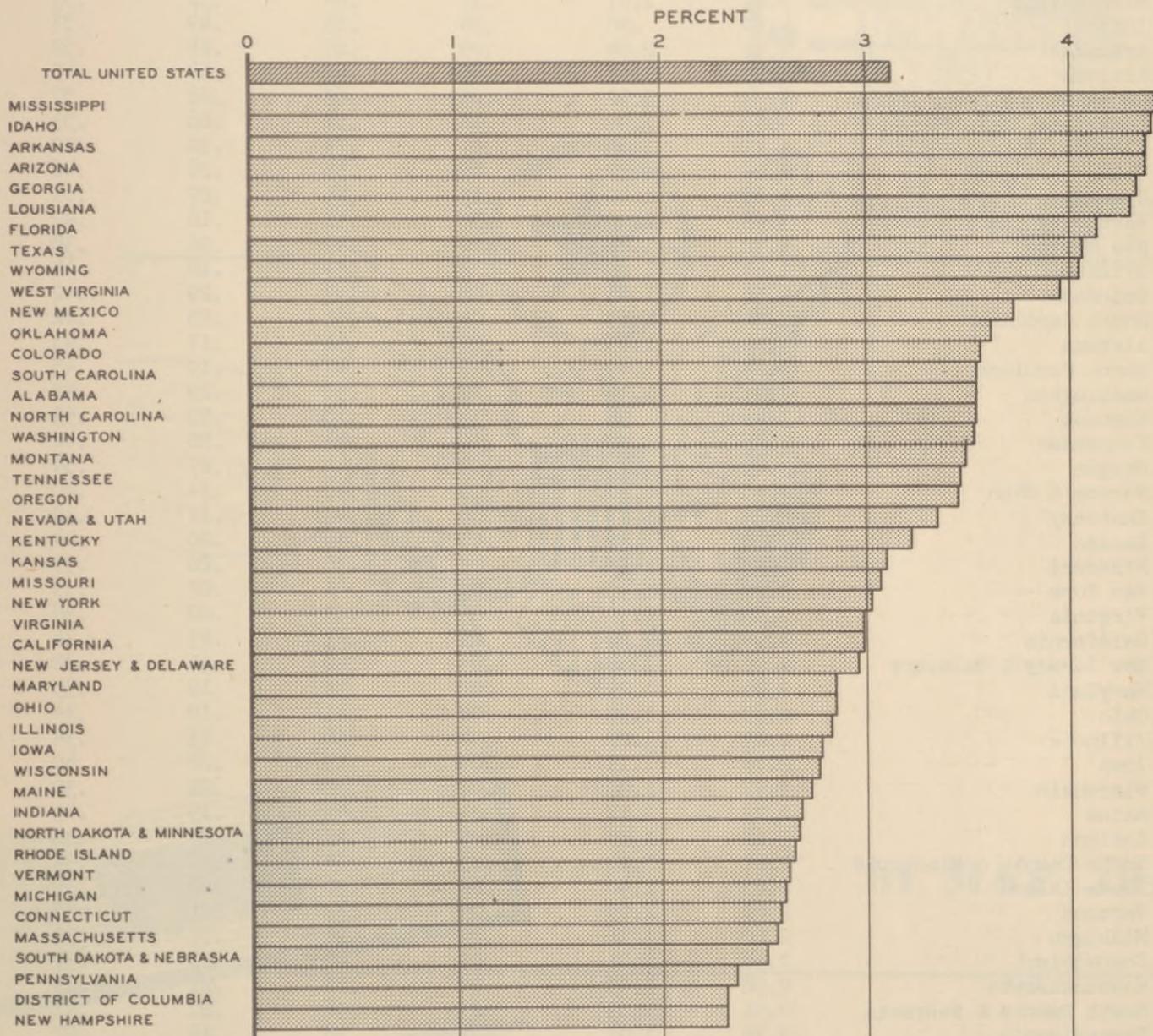
MISCELLANEOUS

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DISABILITY DISCHARGES AMONG INDUCTEES FROM VARIOUS STATES

During the period 1 July 1941 to 31 March 1943, there were inducted or enlisted in the Army about 5,300,000 men, of whom 165,000 or 3.1 percent were discharged for mental or physical disability between 1 July 1941 and 30 July 1943. During this period there were other disability discharges among men previously enlisted or inducted. The chart below presents the disability discharge rates by state of induction and reveals that the rates range from 2.3 to 4.4 percent in comparison with the average of 3.1 percent. Causes of discharge were not available by state of induction or enlistment prior to those for May 1943. However, there was available a large sample covering the discharges for May, June, and July, 1943. Since there was no guarantee that this sample was representative of all 165,000 discharges studied here, the Veterans Administration provided for comparison a tabulation of 67,000 adjudicated claims on the part of men inducted or enlisted subsequent to 1 July 1941. Comparison of the two distributions revealed that they were less different than might have been anticipated, and the May - July, 1943 sample of discharges was taken as the basis for subdividing the total discharge rates by cause for each state.

PERCENT OF INDUCTEES OR ENLISTEES DISCHARGED FOR DISABILITY BY STATE OF ENLISTMENT OR INDUCTION\*



\* For men inducted or enlisted between 1 July 1941 and 31 March 1943 and discharged by 30 July 1943

CONFIDENTIAL

MISCELLANEOUS

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DISABILITY DISCHARGES AMONG INDUCTEES FROM VARIOUS STATES (Continued)

More refined observations would be required to probe deeply into the causes of variation among states with respect to the percentage of their inductees who were later discharged. It is believed that differential screening power with respect to some disqualifying defects, marked variation in available quality of manpower, disability acquired during military service, and the fact that the data for some states relate largely to volunteers, are all factors producing the observed variation. However, the outstanding result of the study is the narrow range of the observed variation and the fact that the data reveal no outstanding screening failure on the part of any state.

PERCENT OF INDUCTEES DISCHARGED FOR SELECTED MEDICAL CAUSES, BY STATE  
FOR MEN INDUCTED BETWEEN 1 JULY 1941 AND 31 MARCH 1943  
AND DISCHARGED PRIOR TO 30 JULY 1943 (ESTIMATED) \*

<u>State of Induction or Enlistment</u>	<u>All Medical Causes</u>	<u>Neuro- psychi- atric</u>	<u>Tuber- culosis</u>	<u>Eye, Ear Nose and Throat**</u>	<u>Cardio- vascular</u>	<u>Musculo- Skeletal, Hernia and Feet</u>
Total U. S.	3.13	1.38	.05	.45	.24	.38
Mississippi	4.41	1.87	.10	.64	.32	.59
Idaho	4.40	.90	.04	.69	.49	.57
Arkansas	4.37	2.04	.09	.67	.24	.52
Arizona	4.37	1.67	.12	.95	.14	.45
Georgia	4.33	1.92	.09	.63	.26	.57
Louisiana	4.30	1.94	.08	.57	.28	.53
Florida	4.13	1.62	.07	.74	.32	.49
Texas	4.06	1.72	.10	.55	.28	.46
Wyoming	4.05	1.40	.17	.65	.27	.61
West Virginia	3.95	2.00	.06	.51	.18	.42
New Mexico	3.72	1.62	.20	.49	.26	.38
Oklahoma	3.61	1.60	.12	.51	.18	.44
Colorado	3.56	1.46	.08	.53	.29	.42
South Carolina	3.54	1.63	.04	.51	.25	.42
Alabama	3.54	1.65	.07	.54	.17	.43
North Carolina	3.54	1.49	.10	.47	.19	.45
Washington	3.53	1.34	.17	.56	.29	.38
Montana	3.49	.98	.14	.18	.55	.53
Tennessee	3.46	1.60	.10	.41	.28	.42
Oregon	3.45	1.32	.03	.44	.27	.54
Nevada & Utah	3.35	1.21	.09	.48	.34	.40
Kentucky	3.22	1.43	.08	.44	.17	.38
Kansas	3.10	1.30	.05	.44	.20	.44
Missouri	3.07	1.31	.07	.38	.26	.39
New York	3.03	1.41	.03	.41	.27	.35
Virginia	2.99	1.39	.05	.43	.20	.38
California	2.99	1.22	.08	.43	.23	.34
New Jersey & Delaware	2.96	1.35	.04	.42	.31	.32
Maryland	2.85	1.29	.09	.39	.19	.35
Ohio	2.85	1.30	.04	.41	.19	.34
Illinois	2.83	1.27	.04	.38	.23	.34
Iowa	2.78	1.13	.04	.35	.28	.40
Wisconsin	2.77	1.22	.02	.38	.22	.39
Maine	2.73	1.17	.04	.52	.15	.43
Indiana	2.68	1.18	.05	.40	.23	.31
North Dakota & Minnesota	2.67	1.10	.05	.34	.22	.33
Rhode Island	2.65	1.40	.02	.36	.12	.39
Vermont	2.62	1.09	.00	.43	.16	.35
Michigan	2.60	1.16	.04	.36	.17	.33
Connecticut	2.58	1.01	.02	.44	.23	.37
Massachusetts	2.56	1.09	.04	.42	.21	.29
South Dakota & Nebraska	2.51	1.03	.03	.38	.21	.31
Pennsylvania	2.36	1.07	.02	.38	.18	.27
District of Columbia	2.31	1.10	.11	.33	.15	.18
New Hampshire	2.31	.90	.03	.59	.13	.24

\* See text \*\* Includes respiratory system.