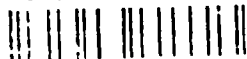


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SURVEY: PERCEPTIONS ABOUT THE ARMY CHEMICAL CORPS

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JUN 02 1992

BY

Colonel Samuel Earl Mims
United States Army

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USAWC CLASS OF 1992

U.S. ARMY WAR COLLEGE, CARLISLE BARRACKS, PA 17013-5050



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SURVEY: PERCEPTIONS ABOUT THE ARMY CHEMICAL CORPS

AN INDIVIDUAL STUDY PROJECT

by

Colonel Samuel Earl Mims

United States Army

Colonel Charles E. Heller

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ABSTRACT

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As the Army is poised to reduce its overall size in response to the end of the Cold War and tighter budgetary constraints, the author fears that the future of the Chemical Corps might be in doubt. This view is sustained in part by memory of the previous effort to eliminate the Chemical Corps in 1973; by the 1991 attempt to close Fort McClellan, Alabama, the home of the Chemical School; and by the author's perception that the Chemical Corps is not regarded as a military necessity by other Army personnel.

A survey was designed to obtain data on the perception of the Chemical Corps held by serving military officers and to propose meaningful recommendations regarding the future of the Chemical Corps. United States military students attending the United States Army War College, Class of 1992 were selected as the survey population.

The survey affirms the Chemical Corps as a vital and integral part of a prepared and ready Total Army. However, as this survey has revealed, improvements may be necessary to strengthen and enhance the Corp's ability to better achieve the goal of NBC preparedness for the integrated battlefield of the present and future.

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INTRODUCTION^{1, 2}

In 1972, the United States Army (USA) leadership decided that it no longer needed a separate corps to deal with the problems associated with the potential devastation of nuclear, biological, or chemical (NBC) warfare. Toward this end, it implemented a series of actions designed to eliminate the USA Chemical Corps, and retain its expertise under the auspices of the USA Ordnance Corps, with cadre holding additional skill identifiers. Thus, in July 1973, the USA Chemical School and Center was deactivated and its personnel and other assets moved from Fort McClellan, Alabama, to the Ordnance School and Center at Aberdeen Proving Grounds, Maryland. As one might imagine, the period between 1973 and 1979 was not an easy time for personnel assigned to the Chemical Corps. The attempted "marriage" of the Ordnance and Chemical Corps was not a happy union.

The action to eliminate the Chemical Corps was perhaps precipitous, because Congressional approval is required to disestablish what it had, by law, established. The Army had not obtained such approval prior to implementation of its elimination plan. As it was, the 1973 Arab-Israeli War proved to be the deciding factor in the Chemical Corps' remaining a separate entity. The Israel Defense Forces discovery of Soviet supplied NBC equipment, carried by captured Egyptian soldiers during the 1973 war, highlighted the existence of previously unknown Warsaw Pact advances in NBC warfare technology. Though the captured equipment

was primarily defensive in nature (i.e., agent detection and decontamination devices), it alluded to a significant Soviet offensive NBC capability as well. The discovery of the Soviet NBC equipment caused Congress to non-concur with the Army plans to dissolve the Chemical Corps.

While the 1973 Arab-Israeli War may have been the catalyst for the reversal of fortune for the Chemical Corps, it was not until 1979 that the authority and resources were given to reestablish the Chemical Center and School at Fort McClellan, Alabama. The first classes at the new facility were conducted in the summer of 1979. Today, the school enjoys a reputable status as the Army's sole reservoir of NBC defense knowledge and expertise.

The rebirth of the Chemical School and Center at Fort McClellan carried with it the promise that the Chemical Corps' future was, at last, secure. However, such has not been the case. From 1979 to 1990, it seems that every new study or proposal for the Army's evolving force structure includes the Chemical Corps as a "bill payer". Even when the threat of a reduction or the demise of the Chemical Corps is only rumor, the resultant effect is continual uncertainty and lowered morale among Chemical Corps personnel.

The Chemical Corps latest temporary "savior" appears to have been the Iraqi dictator, Saddam Hussein. The threat of chemical/biological warfare during Operation Desert Storm heightened the awareness of the need for continual and credible preparations for NBC defense. However, this renewed interest was short-lived. With the defeat of the Iraqi troops, interest in the Chemical Corps has, again, waned.

As might be expected, the Chemical Corps' relatively unstable past causes some concern about its future survivability, particularly when viewed in the context of the Army's proposed downsizing in the aftermath of the Cold War. After all, the proposition that one must continually "sell the case for the Chemical Corps," whether myth or reality, does not exactly foster confidence that the Corps will survive in a downsized Army.

With the preceding information as a background, action was initiated to determine how military officers currently perceive the Chemical Corps. Is there an NBC threat that justifies the existence of a Chemical Corps and if so, what force structure mix, roles, and missions are appropriate for the future?

A survey of military officers attending the United States Army War College (USAWC), Class of 1992, was the vehicle for obtaining the desired information. Officers attending the USAWC have the breadth of knowledge and experience, coupled with the senior leadership potential that makes their perceptions both credible and important. These officers diversity of experiences and assignments are a microcosm of other officers with comparable rank and service tenure, accordingly their opinions about the Chemical Corps should provide a good representation of opinion at the Army senior officer level.

METHODOLOGY

Respondents

USAWC attendees include officers from all of the United States (US) military services, civilians of federal government agencies

and International Fellows. Because the topic is most relevant to the US military officers, civilians and international students were excluded. The joint military environment of the USAWC and a desire to utilize all available data sources prompted the surveying of all United States military personnel. However, it was realized that the most relevant data would come from Army students.

The USAWC administrative data base was utilized to obtain information on US military students in the Class of 1992. Data is summarized in the table below.

TABLE 1. USAWC CLASS OF 1992, US MILITARY POPULATION

	RESIDENT	SSCF	TOTALS
US Army	180	034	214
US Army Reserve	010	000	010
US Army National Guard	010	009	019
US Air Force	017	000	017
US Navy	008	000	008
US Marine Corps	009	000	009
US Coast Guard	001	000	001
TOTALS	235	043	278

Procedure

On December 6, 1991, surveys were distributed to resident military students. The USAWC student population is divided into 18 seminar groups of 16 students each. A follow-up letter was sent to each seminar group to ensure that all intended recipients received

a survey. This resulted in the distribution of an additional 20 surveys. Senior Service College Fellows (SSCF) were in residence and participating with the seminar groups during the week of December 9, 1991, and survey distribution to them was made on December 10, 1991. Table 2 below shows survey distribution.

TABLE 2. SURVEY DISTRIBUTION

Resident	234
SSCF	038
Total Sample	272*

*The "6" difference between the 278 total military population as shown in Table 1, and the 272 sample distribution shown in Table 2 is attributable to the following:

1. The author is one of the resident population and did not participate in the survey..
2. Five SSCF students are assigned outside the United States and are not included in the distribution.

The requested response date was "not later than" December 16, 1991. Although, surveys were received as late as January 10, 1992, all returned surveys were included in the analysis.

Survey Instrument

The survey entitled "Perceptions about the Army Chemical Corps" is designed to gauge how military officers other than those in the Chemical Corps think about the need, performance, and viability of the USA Chemical Corps. The survey consists of 24 "close-ended"

questions and an "additional comments" option. Two of the 24 questions also allow for comment. All of the comments are included and are found in Appendices B, C, and D. About one fourth of the questions establish respondent demographics.

Analysis Tools

Close-ended responses were analyzed using the SPSSX-PC+ statistical analysis package.³ Descriptive and comparative analyses were performed on all appropriate questions. The data were analyzed for the total group and separately for each respondent category. Chi-square analyses were conducted to compare responses from individuals who did and did not serve in South West Asia (SWA) during Operation Desert Storm. Open-ended responses were considered for commonality and used to help explain data.

RESULTS

Response Rate

By January 10, 1992, a total of 195 surveys were returned resulting in a response rate of 71.7 percent (195 returned of 272 distributed). A follow-up would have resulted if the return rate was less than 70 percent.

Demographics

Tables 3-7 describe the respondent population.

TABLE 3. COMPONENT/SERVICE

	<u>NUMBER</u>	<u>PERCENT</u>
US Army	157	80.5
US Army Reserve	10	5.1
US Army National Guard	12	6.2
US Marine Corps	5	2.6
US Air Force	6	3.1
US Navy	5	2.6
TOTAL	195	100.0

TABLE 4. SERVICE ARM

	<u>NUMBER</u>	<u>PERCENT</u>
Combat	100	51.3
Combat Support	44	22.6
Combat Service Support	51	26.2
TOTAL	195	100.0

TABLE 5. FORMER BATTALION COMMANDER OR EQUIVALENT

	<u>NUMBER</u>	<u>PERCENT</u>
YES	171	88.6
NO	22	11.3
	193	99.9

TABLE 6. BRANCH

	<u>NUMBER</u>	<u>PERCENT</u>
Adjutant General	7	3.6
Air Defense	6	2.1
Armor	17	8.7
Army Nurse	1	.5
Aviation	17	8.7
Chaplain	3	1.5
Engineer	16	8.2
Field Artillery	13	6.7
Finance	3	1.5
Infantry	32	16.4
Judge Advocate	1	.5
Medical Corps	5	2.6
Medical Service	6	3.1
Military Intelligence	12	6.2
Military Police	5	2.6
Ordnance	9	4.6
Quartermaster	9	4.6
Signal	16	8.2
Special Forces	1	.5
Transportation	6	3.1
Veterinary	1	.5
OTHER	<u>3</u>	<u>4.6</u>
	195	100.0

TABLE 7. DESERT SHIELD/STORM EXPERIENCE

	<u>NUMBER</u>	<u>PERCENT</u>
YES	65	33.3
NO	130	66.7
	<u>195</u>	<u>100.0</u>

The demographics show that a majority of respondents (80.5%) are in the Active Army. The total Army respondent population

percentage of 91.8 gives the survey results a significant Army perspective. Slightly over half (51.3 percent) were in the Combat Arms with a good representation from all branches. One third (33.3 percent) of respondents had served in Desert Shield/Storm. Most (88.6 percent) of the respondents also had commanded at the battalion or equivalent level.

Survey Analysis

The survey data are grouped in sections one through six based upon their relation to an individual thesis. Following is a discussion of each section:

Section I. Credible Need. This section looks to examine whether there is a credible need for a Chemical Corps based on the existence of an NBC threat and whether or not there is a wartime NBC mission. On the premise that a respondent with personal experience and knowledge of his Chemical Corps counterparts is a more credible data source than one without such credentials, a separate analysis was conducted.

Section II. Soldier Performance. Section II addresses concerns about the professionalism, effectiveness, task accomplishment, and personnel utilization in the Chemical Corps. These are issues common to all soldiers and the relative perceptions should be of interest to personnel and training development planners. Included in this section is the perceptual view of how the Chemical Corps' unstable existence affects its professional image.

Section III. NBC Equipment. This section addresses the adequacy of currently fielded NBC equipment. This is a central

issue because the Chemical Corps is the primary proponent for the development and procurement of the Army's NBC equipment.

Section IV. Roles and Missions. This section examines the essentiality of the missions currently assigned to the Chemical Corps. Missions are also addressed in terms of who should perform and should there be additional missions. The mix of chemical units in the Active and Reserves is also evaluated.

Section V. Future Status. Section V addresses the issue of whether or not the Chemical Corps should be retained as a Corps, and if either the officer or enlisted components should be separately disbanded.

Section VI. General. This section addresses the compilation of responses drawn from the "additional comments" section of the survey document.

All data are arrayed in terms of number of respondents who responded to a given question. In some instances, when there are few responses to a scale value and/or the percentage fails to influence the graphic display, descriptors such as "ineffective" and "very ineffective" are lumped together under the less negative descriptor.

When a bar graph is used for graphic depiction, the figures shown beneath the graph show the number of respondents by category for each of the different perceptions. The actual bar graph represents the percentage distribution within each respondent category as a mechanism for relative comparison with other respondent categories.

Section I. Credible Need

"Have you served with chemical officers (CO) as...:"

TABLE 11. RESPONDENT SERVICE WITH CHEMICAL OFFICERS

<u>Value Label</u>	<u>Frequency</u>	<u>Percent</u>
Peers	82	44.6
Superior to a CO	46	25.0
Subordinate to a CO	8	4.3
Peer/Superior	31	16.8
Peer/Subordinate	6	3.3
Superior/Subordinate	1	.5
All	4	2.2
No	<u>6</u>	<u>3.3</u>
Totals	184	100.0

Table 11 serves to establish the credibility of the respondents - 97 percent have some work related experience with chemical officers. The survey data are useful because the vast majority of respondents were in positions to observe and work with the Chemical Corps, giving their judgements more credibility.

=====

"A nuclear/biological/chemical threat exists in the world."

There is little requirement for discussion of this issue; at least 98 percent of each respondent category ("All" = all respondents, "Army" = Army only, "Army/SWA" = Army in South West Asia, "Army CDR" = Army Commander, and "Army CDR/SWA" = Army Commander in South West Asia) depicted in Figure 1 agrees or strongly agrees that there is a world NBC threat. This level of agreement is important because it lends credence to the notion that the United States needs to be militarily prepared to counter such a threat. In the "SWA" groupings notice that there are zero "disagree" or "neutral" labels.

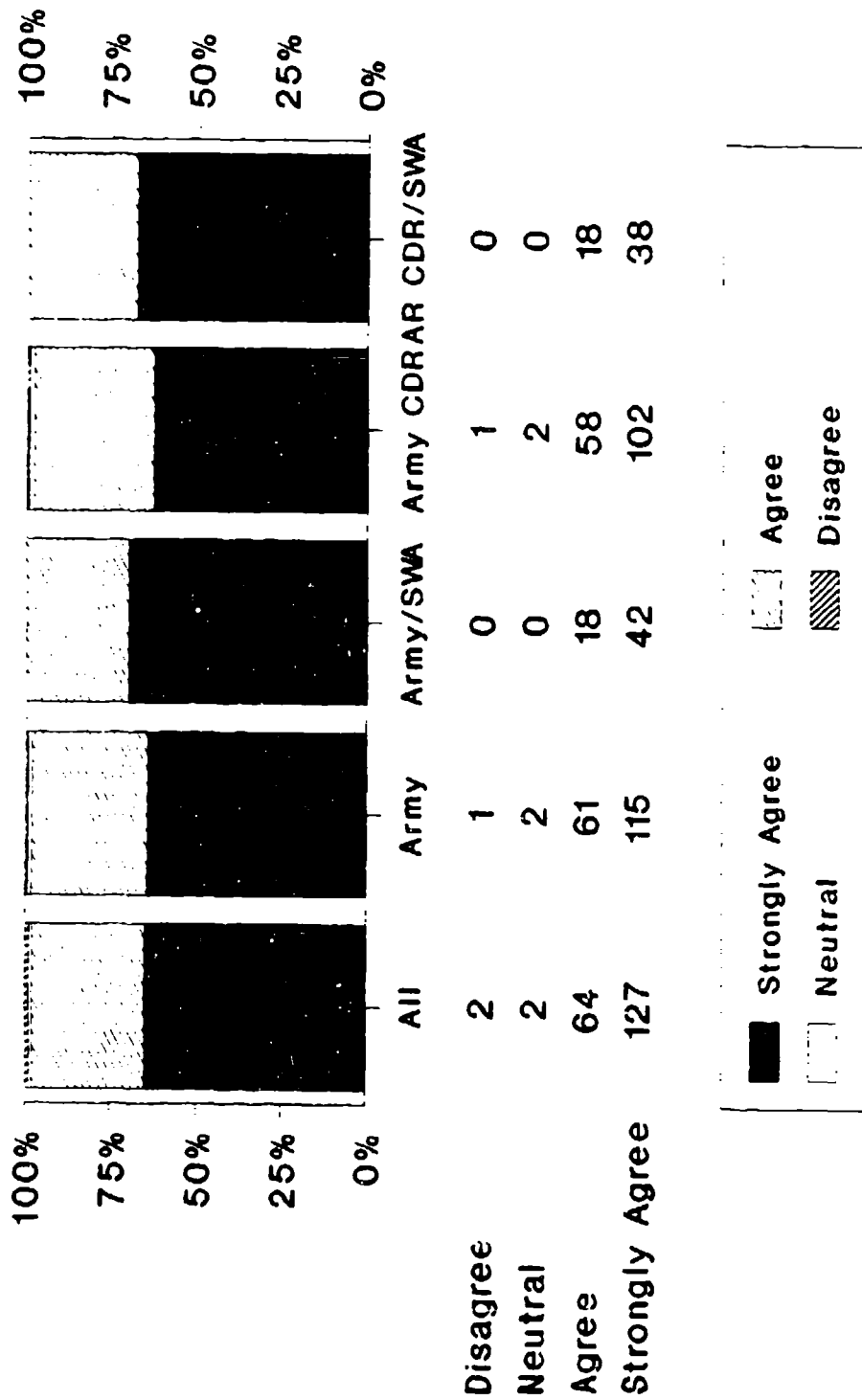
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"The Chemical Corps does NOT have a wartime mission."

Figure 2 data is confirmation that the rest of the Army believes that the Chemical Corps has a wartime mission. This belief is held by 90 percent of all respondents and 91.4 percent of Army respondents.

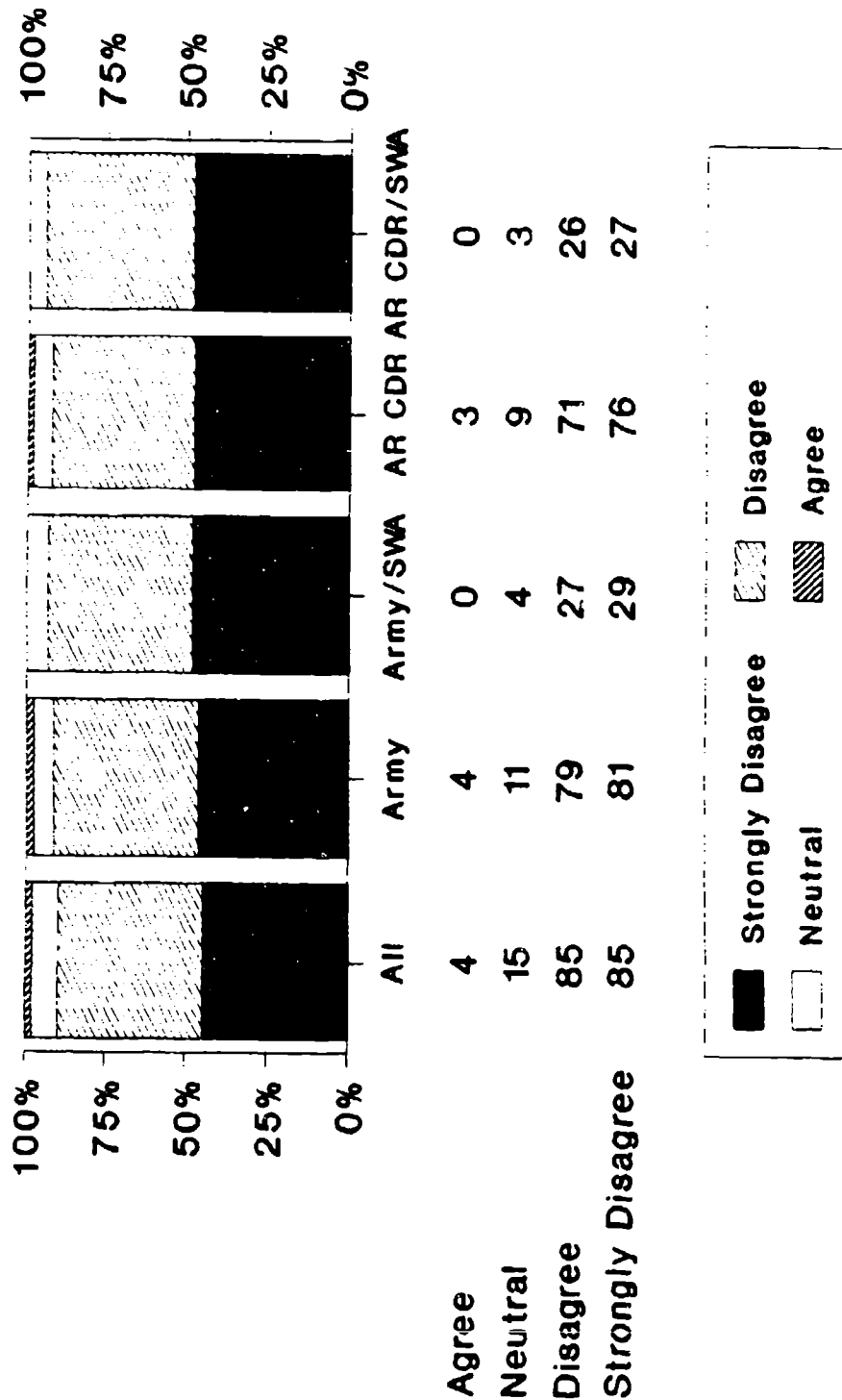
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FIGURE 1.
A WORLD NBC THREAT EXISTS



Graph depicts percentage within each respondent category

FIGURE 2.
WARTIME MISSION DOES NOT EXIST



The ultimate credibility test for a branch of service is its expected contribution to any war effort

"The Army needs to have a separate and distinct Chemical Corps to accomplish NBC missions."

Figure 3 graphically depicts impressions about the need for a separate Army branch dedicated to NBC. Over 70 percent in all categories "agree" or "strongly agree" with the thesis statement. The combined labels of "agree" and "strongly agree" gives the following respondent percentages: 68.8 for "All," 70.4 for "Army," 65.0 for "Army/SWA," 70.8 for "Army CDR," and 66.1 for "Army CDR/SWA." SWA experience results in a slightly less positive vote for a separate Chemical Corps.

The opinion that others might be able to perform chemical missions (56.3 percent of Army respondents thought so) apparently does not override the belief that the Army needs a separate Chemical Corps (70.4 percent of Army respondents).

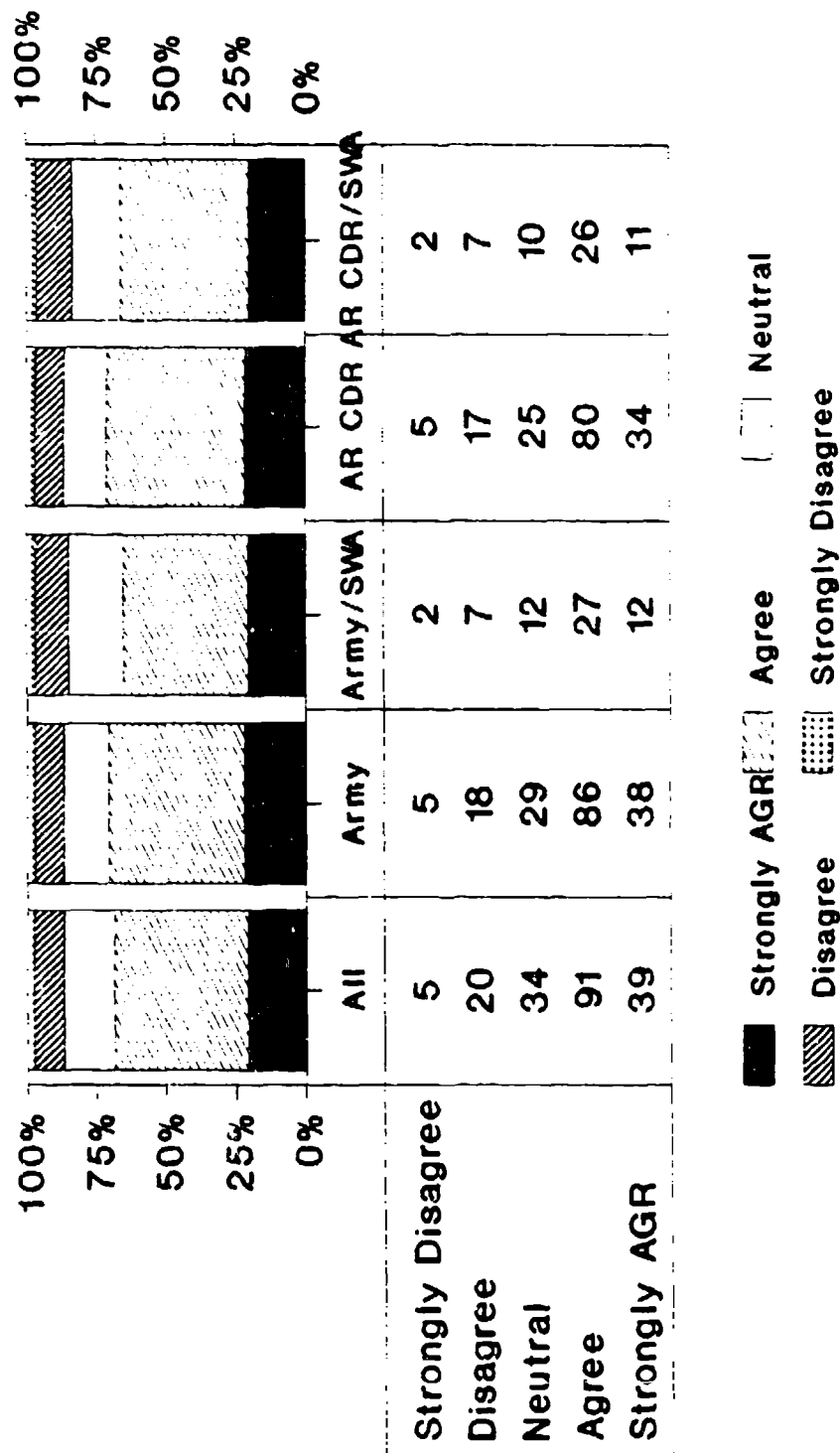
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Section II. Soldier Performance

"How do you view the Chemical Corps as a professional branch of the Army?"

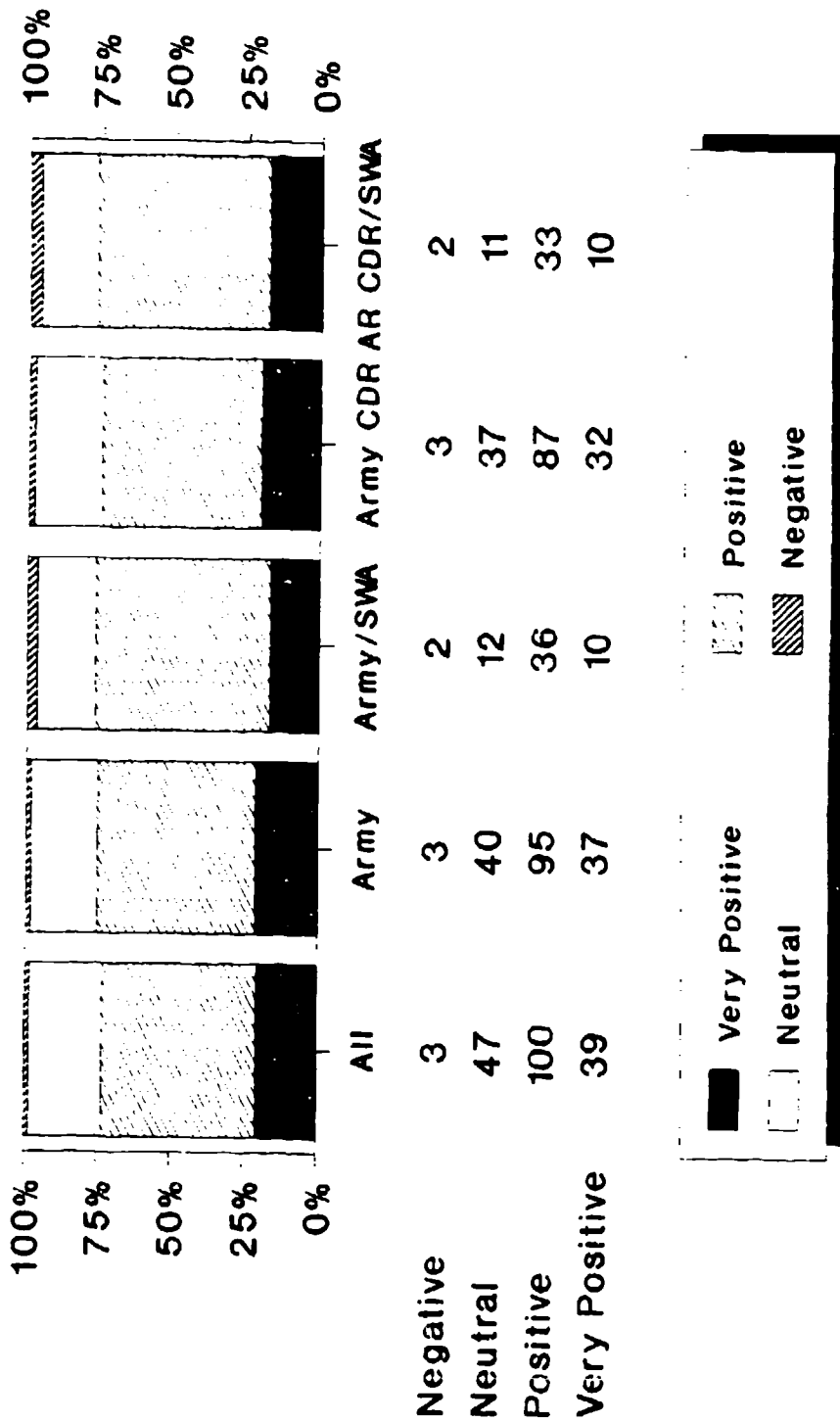
See Figure 4. There is little difference between the various groups. Positive perceptions about the professional nature of the Chemical Corps extends to about three-fourths of respondents in all categories.

FIGURE 3.
SEPARATE AND DISTINCT CHEMICAL CORPS*



*The Army needs to have a separate and distinct Chemical Corps to accomplish NBC missions

FIGURE 4.
CHEMICAL CORPS AS A PROFESSIONAL BRANCH



Perceptual view of the Chemical Corps
as a professional branch of the United
States Army.

SWA battalion commanders were more likely to have an opinion in the negative or positive range, rather than no opinion, 19.6 neutral percentage versus 25.2 for non-SWA commanders. SWA commanders also accounted for 2 of the 3 negative views.

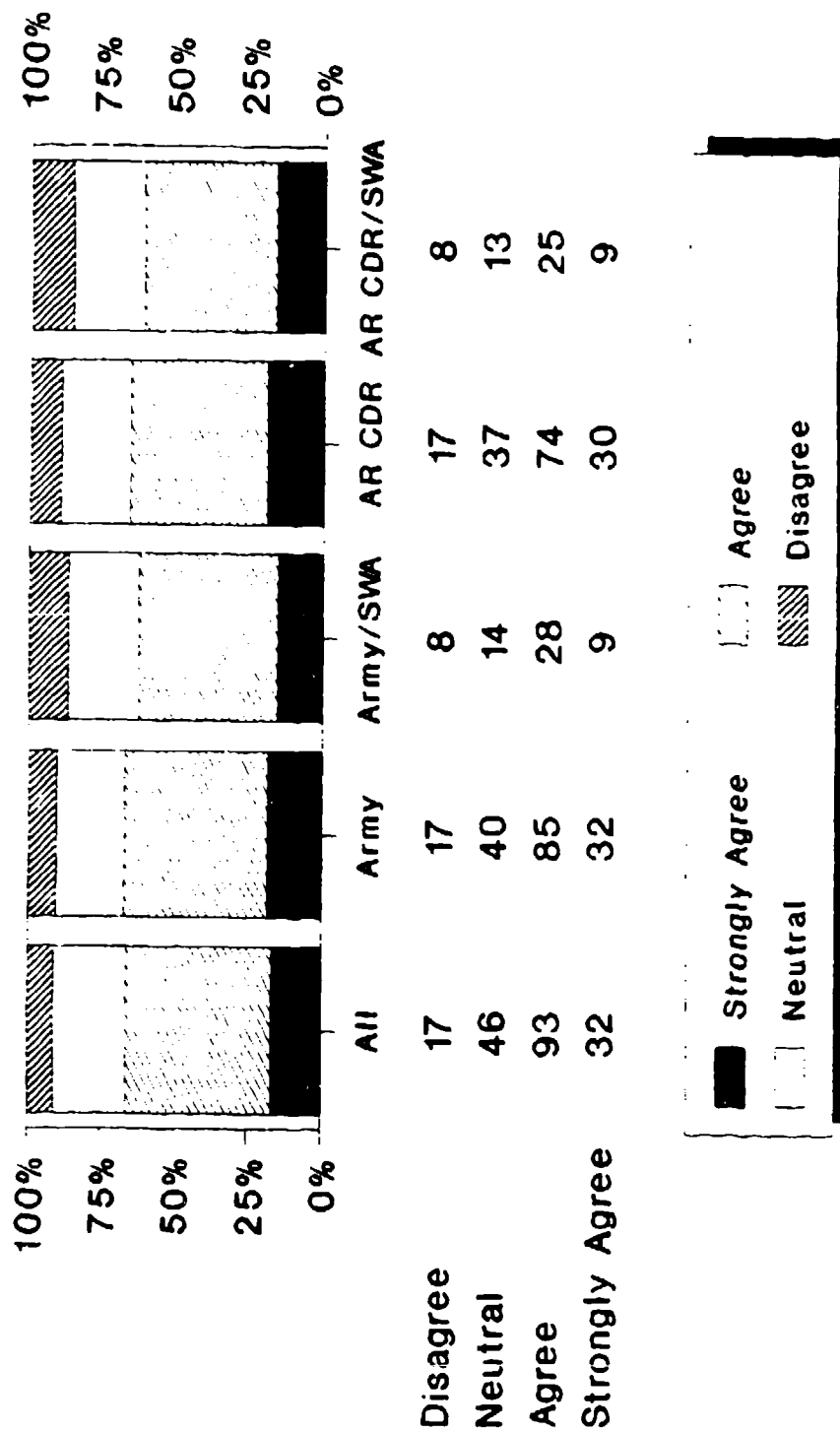
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"Continual uncertainty over the Chemical Corps status as a permanent branch is detrimental to its professional image among other branches."

Figure 5 graphically portrays the data. The overall result is that 66 percent of "all" respondents and 67.2 percent of "Army" respondents, believe that the Chemical Corps' professional image is negatively affected by uncertainty over its permanence. There are those who might ask, what uncertainty? Among many chemical officers, this is an issue, and the data tends to support the perception as valid. Although "SWA" respondents were more likely to "disagree" than others, 65 percent still agreed that uncertainty over the Corp's future had a detrimental effect on the Corp's image.

=====

FIGURE 5.
UNCERTAINTY DETRIMENTAL TO CORPS IMAGE



This question evolved from the author's perception that this was true based on his own experience

"Describe your impressions of the Chemical Corps' effectiveness."

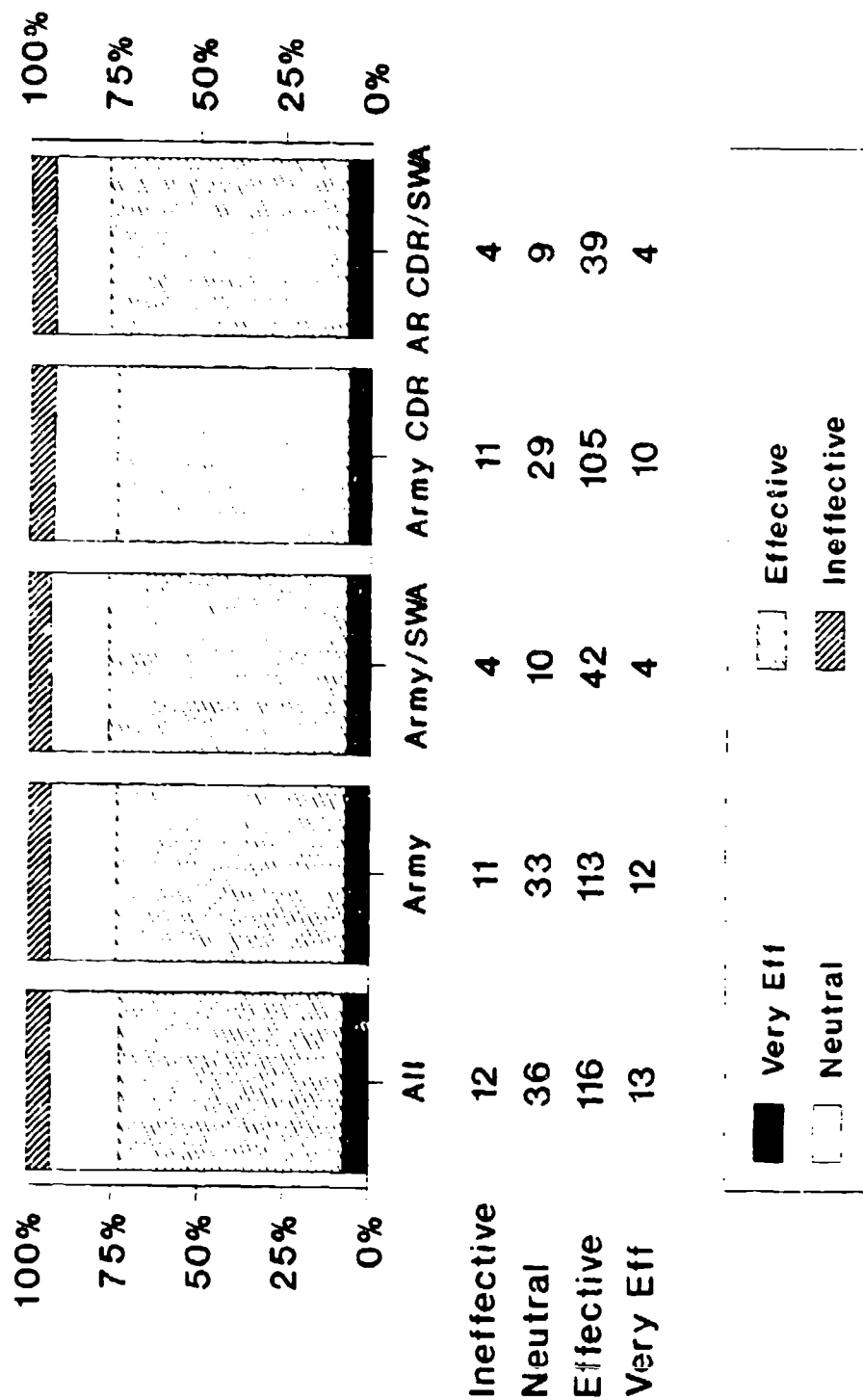
See Figure 6, "Chemical Corps Effectiveness." Figure 6. depicts the assessment of the Corps' effectiveness by various categories. The Chemical Corps is overwhelmingly perceived as being effective. The graph illustrates that there is little discord between the different respondent pools. When "effective" and "very effective" are summarized together, the resultant percentages are 72.9 percent for "All," 73.9 percent for "Army," 76.6 percent for "Army/SWA," 74 percent for "Army CDR," and 76.7 percent for "Army CDR/SWA."

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"How effective were chemical personnel in Desert Shield/Storm?"

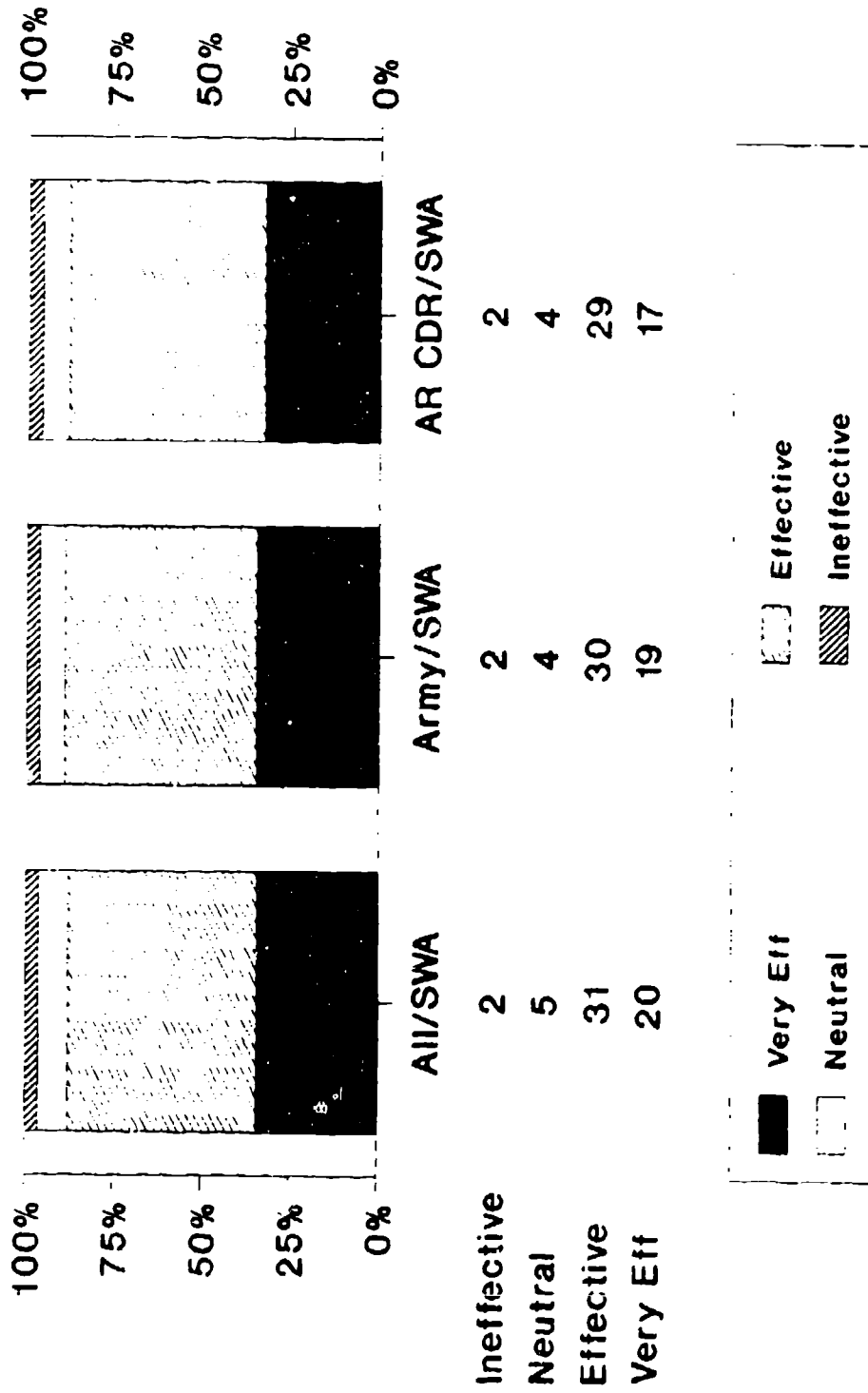
See Figure 7, "Desert Shield/Storm Effectiveness." Figure 7 shows how those respondents who served in the desert rate the Chemical Corps' performance during Operation Desert Shield/Storm. The combined percentages for "effective" and "very effective" are 87.9 percent for "All/SWA," 89 percent for "Army/SWA," and 88.4 percent for "Army CDR/SWA." When the two respondent categories, "Army/SWA" and "Army CDR/SWA," are contrasted against the same categories in Figure 6, it is clear that those who served in SWA are more positive about the Chemical Corps' effectiveness during Desert Storm as compared to its non-Desert Storm effectiveness.

FIGURE
CHEMICAL CORP'S : EFFECTIVENESS



Graph depicts percentage within each respondent category

FIGURE 7.
EFFECTIVENESS DURING DESERT SHIELD/STORM



Graph depicts percentage within each respondent category

Figures 8 and 9 further illustrates the impact of Desert Shield/Storm on respondents. Figure 8 indicates that of the 58 Army respondents who were in SWA, 17 believe that the Chemical Corps was "very effective" in SWA, but only "effective" at other times. A similar situation is depicted by Figure 9, which shows that of the 55 Army commanders who were in SWA, 15 believe that the Chemical Corps was "very effective" in SWA, but only "effective" at other times. The conclusion remains that SWA performance definitely positively impacted respondent impressions of effectiveness.

=====

"At Battalion and Company level, how effective were chemical personnel at performing assigned tasks?"

Chemical personnel were perceived to be effective at their tasks at the battalion and company level. Combining the "very effective" and "effective" labels results in the following percentages: 88.4 for "All," 88.1 for "Army," 89 for "Army/SWA," 88 for "Army CDR," and 88.5 for "Army CDR/SWA," suggesting near unanimity of opinion. See Figure 10, "Effectiveness at Battalion/Company Level." However, when these percentages are compared to those found in Figure 6, "Chemical Corps Effectiveness," unanimity quickly disappears.

Only 74 percent of Army commanders assessed the Corps overall as "effective" or "very effective," as compared to 88 percent for

FIGURE 8. ARMY IN SWA

EFFECTIVENESS VS SWA EFFECTIVENESS

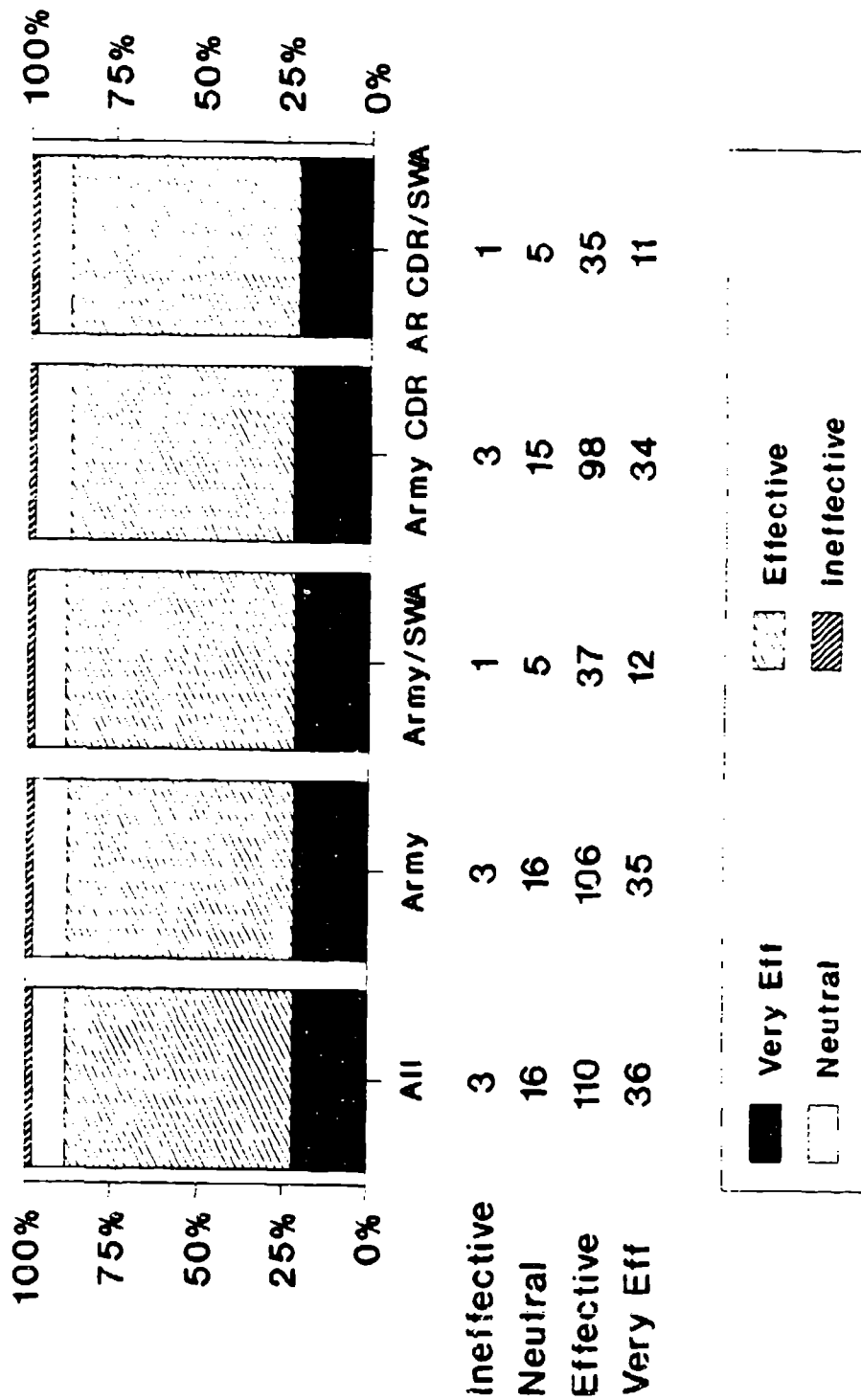
SWA →	V EFFECT	EFFECT	NEUTRAL	INEFFECT		
V EFFECT	2	2			2	58
EFFECT	17	22	2	1	3.4	100
NEUTRAL		7	1			
INEFFECT		2	1	1		
TOTAL	19	33	4	2		
%	32.8	56.9	6.9	3.4		
		89.7				

FIGURE 9. ARMY CDR/SWA

EFFECTIVENESS VS SWA EFFECTIVENESS

SWA →	V EFFECT	EFFECT	NEUTRAL	INEFFECT		
V EFFECT	2	2				55
EFFECT	15	21	2	1		100
NEUTRAL		7	1			
INEFFECT		2	1	1		
TOTAL	17	32	4	2		
%	30.9	58.2	7.3	3.6		
		89.1				

FIGURE 10.
EFFECTIVENESS AT BN/CO LEVEL



Graph depicts percentage within each respondent category

battalion/company level task performance. The assumption could be made that the lieutenants, captains, and relatively junior enlisted personnel assigned at battalion/company level are making a good impression. These are also the officers that battalion level commanders work with - an indication that chemical officers in the field are professional.

=====

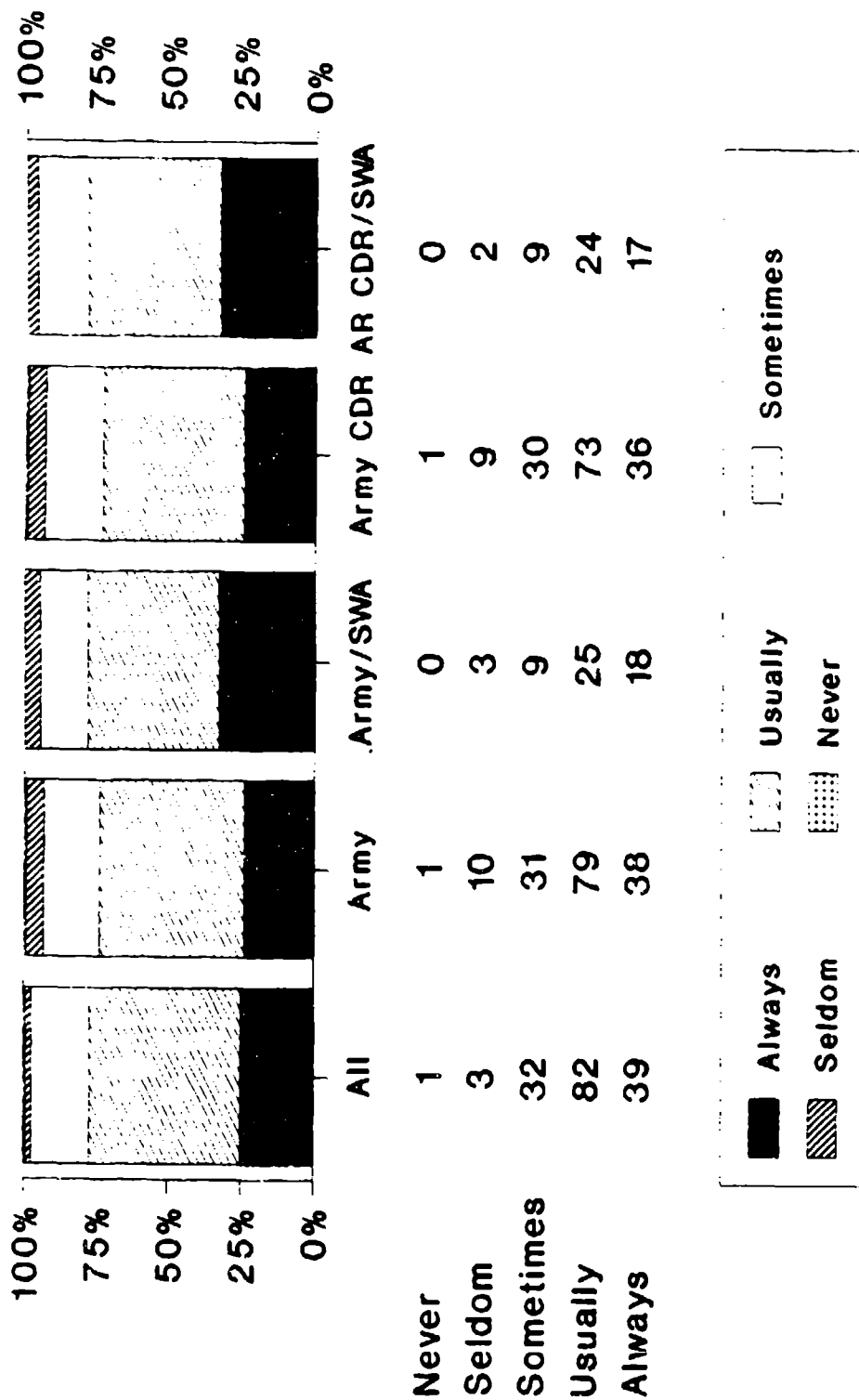
At battalion and company level, to what extent were the tasks assigned to chemical personnel appropriate?"

Army respondents are highly enthusiastic about the appropriateness of tasks assigned to chemical personnel at battalion/company level (Figure 11). Seventy-three percent of Army commanders and 73.6 percent of all Army respondents thought that assigned tasks were "usually" or "always" appropriate.

Seventy-eight percent of the "Army/SWA" and 78.8 percent of the "Army CDR/SWA" respondents also indicated that tasks were appropriate "usually" or "always." However, it is important to note the differences in the "always" category. Thirty-two percent of the "Army/SWA" respondents selected "always" as compared to just 23.8 percent of the "Army." The "never" numbers were too small to influence the graphic display.

=====

FIGURE 11.
WERE BN/CO LEVEL TASKS APPROPRIATE?



Graph depicts percentage within each respondent category

"How should Chemical Corps lieutenants, captains, and NCOs be utilized at division level or below?"

Figure 12 holds little mystery in this set of results. The respondents clearly believe that chemical personnel should be both operational, as well as advisory. The percentages range from 88.7 percent for "All" respondents to 90 percent for both "Army" and "Army CDR." Exactly what the results mean is open to conjecture, but it could suggest that the Chemical Corps needs to reassess how chemical officers/NCOs are doctrinally utilized when assigned to non-chemical company positions. Perhaps the role of the chemical officer/NCO as advisor to the commander needs to be further retrenched in favor of a more active operational role, as in the past, i.e., World War I.

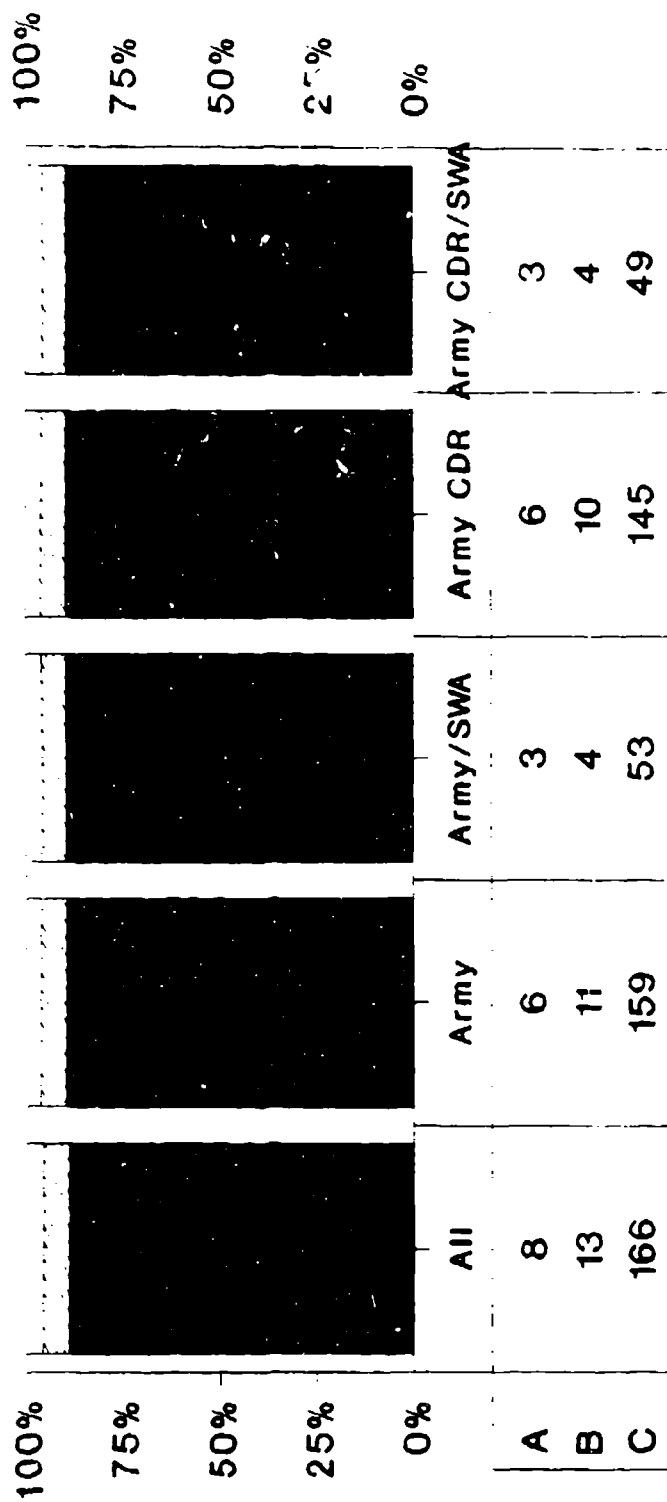
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Section III. NBC Equipment

"Currently fielded NBC equipment satisfactorily meets the needs of today's Army."

Fifty-seven percent of all respondents thought that the thesis statement was false; that is, NBC equipment is not satisfactory. The "Army" and "Army CDR" responses were essentially the same at 58.3 percent and 59.7 percent respectively. Refer to Figure 13 for the graphic display of responses. There was only 1 "strongly agree" opinion and it was summed with the "agree" responses.

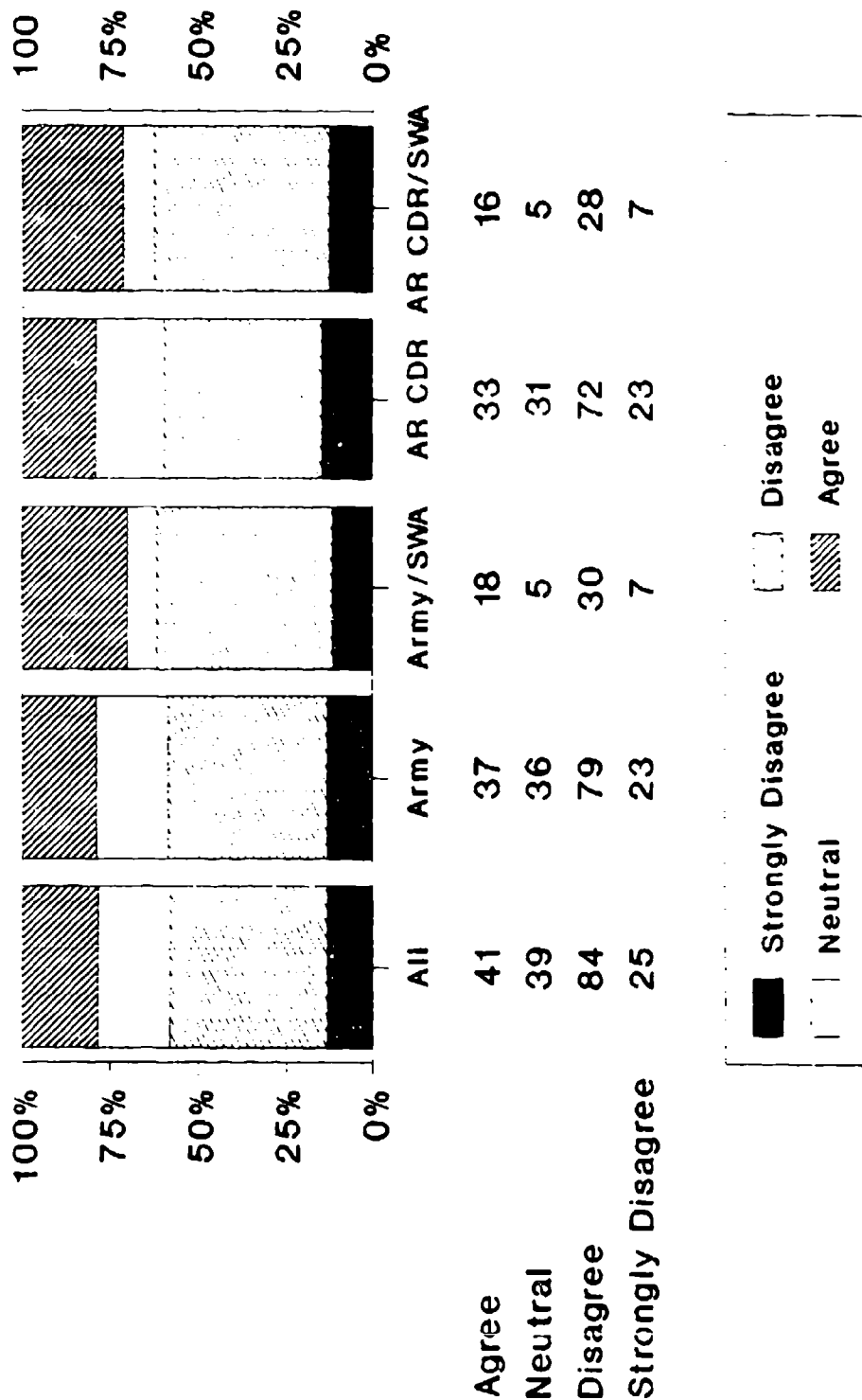
FIGURE 12.
UTILIZATION AT DIVISION LEVEL OR BELOW



A - ADVISORY ROLE TO CDRS/STAFF
 B - OPERATIONAL/SPECIFIC MSN EXECUTION
 C - BOTH A AND B

FIGURE 13.

NBC EQUIPMENT SATISFACTORILY MEETS NEED



Equipment - that which is currently fielded

The percentage of SWA respondents stating that NBC equipment does not meet the needs is not significantly different from non-SWA respondents. Although the SWA respondents had the highest negative percentages, they also had the highest positive or "agree" percentage at 29.3 percent.

The thesis statement also solicited comments and more than half (110) of the respondents provided written opinions. The comments cover the entire gamut, but are generally not complimentary, either as it relates to the type and quality of equipment or to the adequacy of distribution. The "operative" verb in most of the comments centered around the word "need," as in "need a better mask," "need better MOPP gear," "need improvements," "need more quantities," "need better equipment," "need decontamination equipment," "need detection equipment." All comments are contained in Appendix B so that the reader might formulate an independent opinion.

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Section IV. Roles And Missions

"NBC defense, NBC recon, smoke and flame operations, NBC equipment development and procurement, are essential to an effective Army?"

See Figure 14, "NBC Missions Are Essential." There exists almost unanimous concurrence that NBC missions are crucial to the existence of an effective Army. The lowest percentage for the combination of "agree" and "strongly agree" is 96.4 for the "All" category; the "Army/SWA" was highest at 98.3 percent. Though "disagree" and "strongly disagree" were also listed as possible responses, not a single respondent so elected. Only six "Army" and one "Army/SWA" selected the "neutral" label. Respondents apparently have great appreciation for the threat of NBC and the requirement to be prepared for its use.

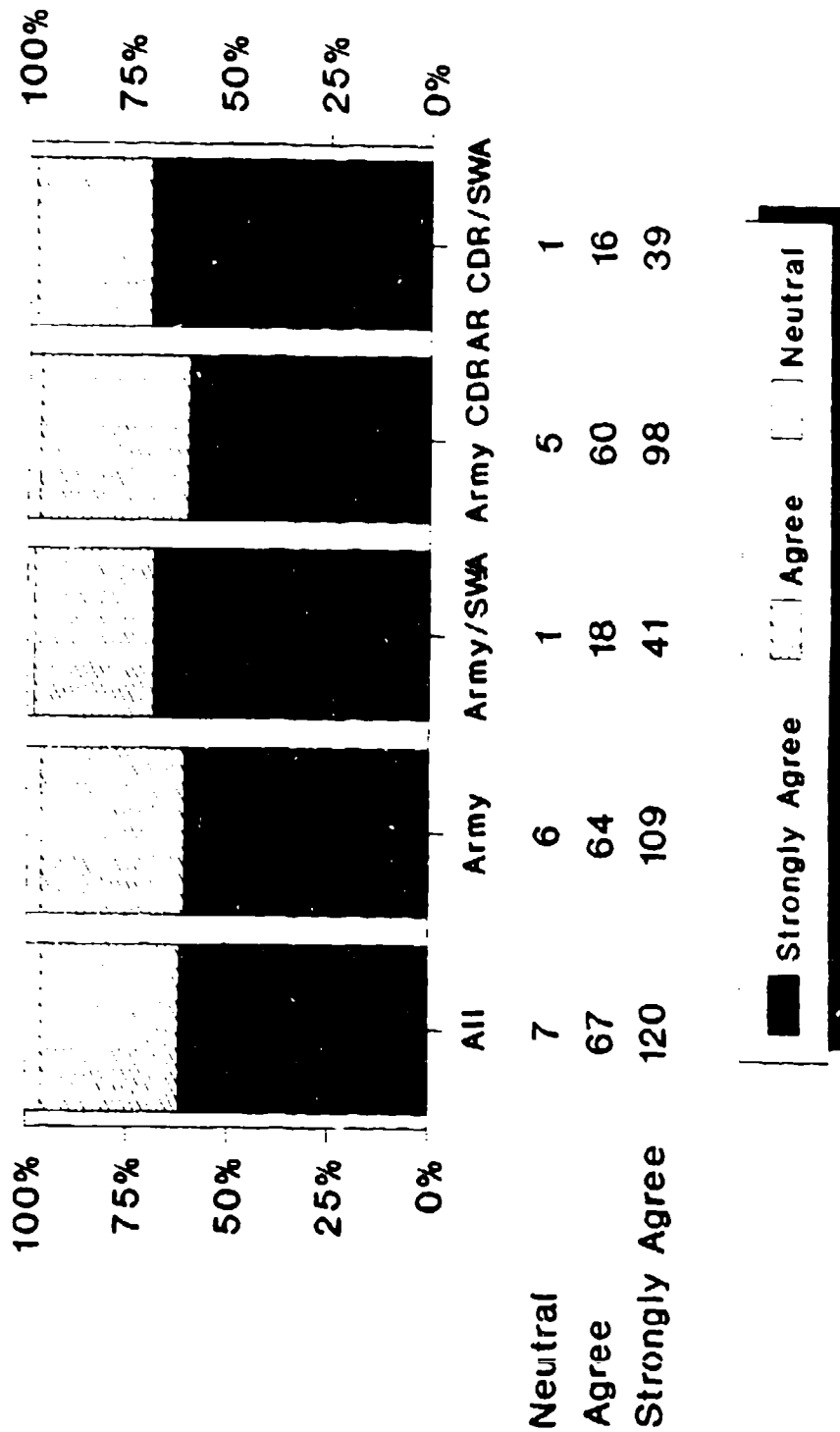
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"If the Chemical Corps was eliminated, all its missions could be performed by others."

See Figure 15 for the graphic depiction. The majority (55.3 percent) either "disagreed" or "strongly disagreed" that others could perform all of the Chemical Corps' missions if the Corps was eliminated. Still, it is interesting to note that 28.2 percent of all Army respondents believe that the missions could be performed

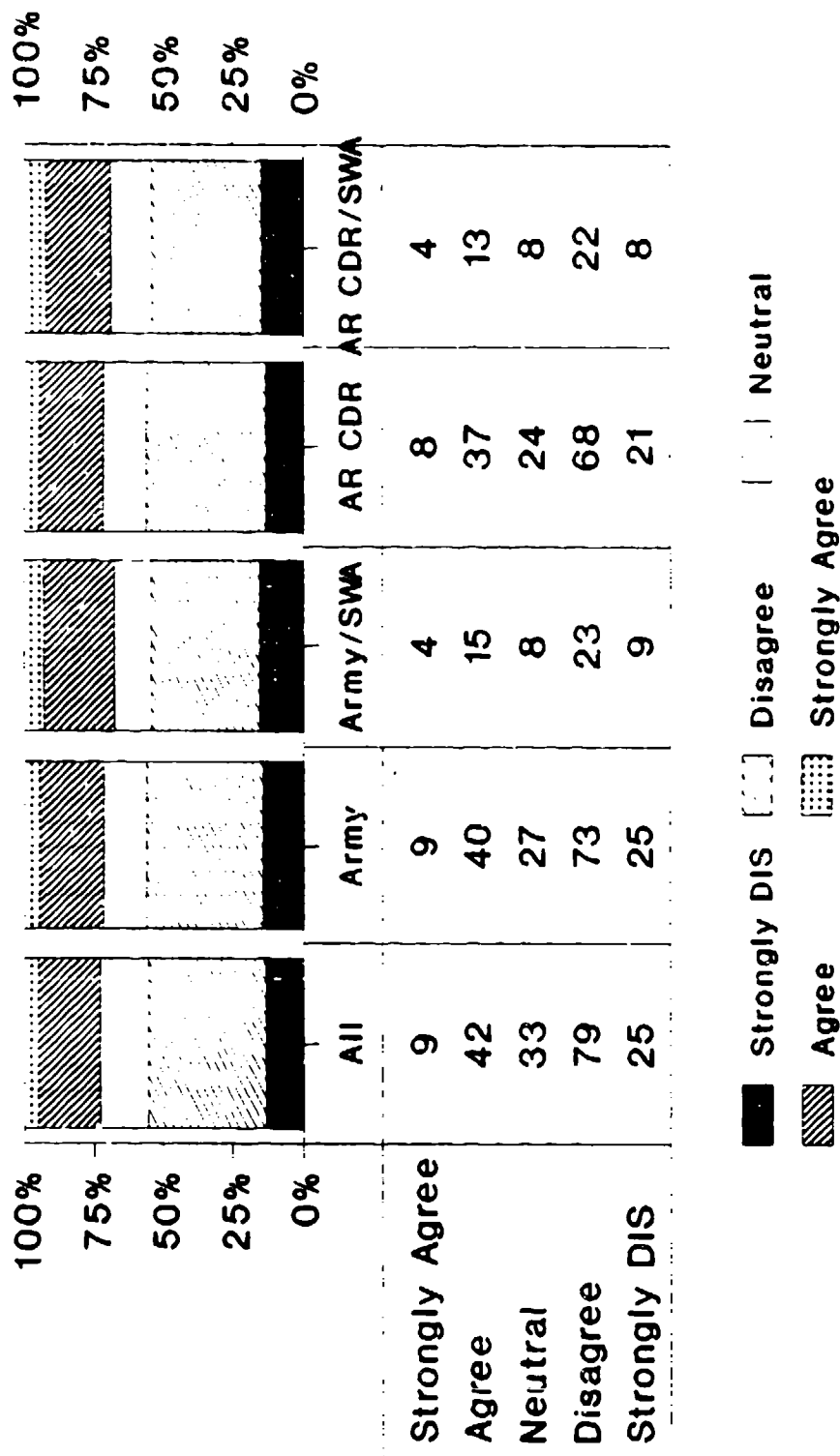
FIGURE 14.

NBC MISSIONS ARE ESSENTIAL



Missions - NBC defense, NBC recon, smoke and flame operations, and NBC equipment development and procurement

FIGURE 15.
MISSIONS PERFORMED BY OTHERS



"Others" should have been defined. It was likely interpreted as "other soldiers" with additional duties

by others. "SWA" respondents were slightly more likely to "agree" or strongly "agree" than non-"SWA" respondents, 32.2 for "Army SWA," and 30.9 for "Army CDR/SWA" versus 28.2 percent for "Army" and 28.5 percent for "Army CDR." This may reflect their experience in SWA where all members needed a working chemical knowledge. Hence, from their perspective they were doing "chemical work" and it there fore follows, others can too.

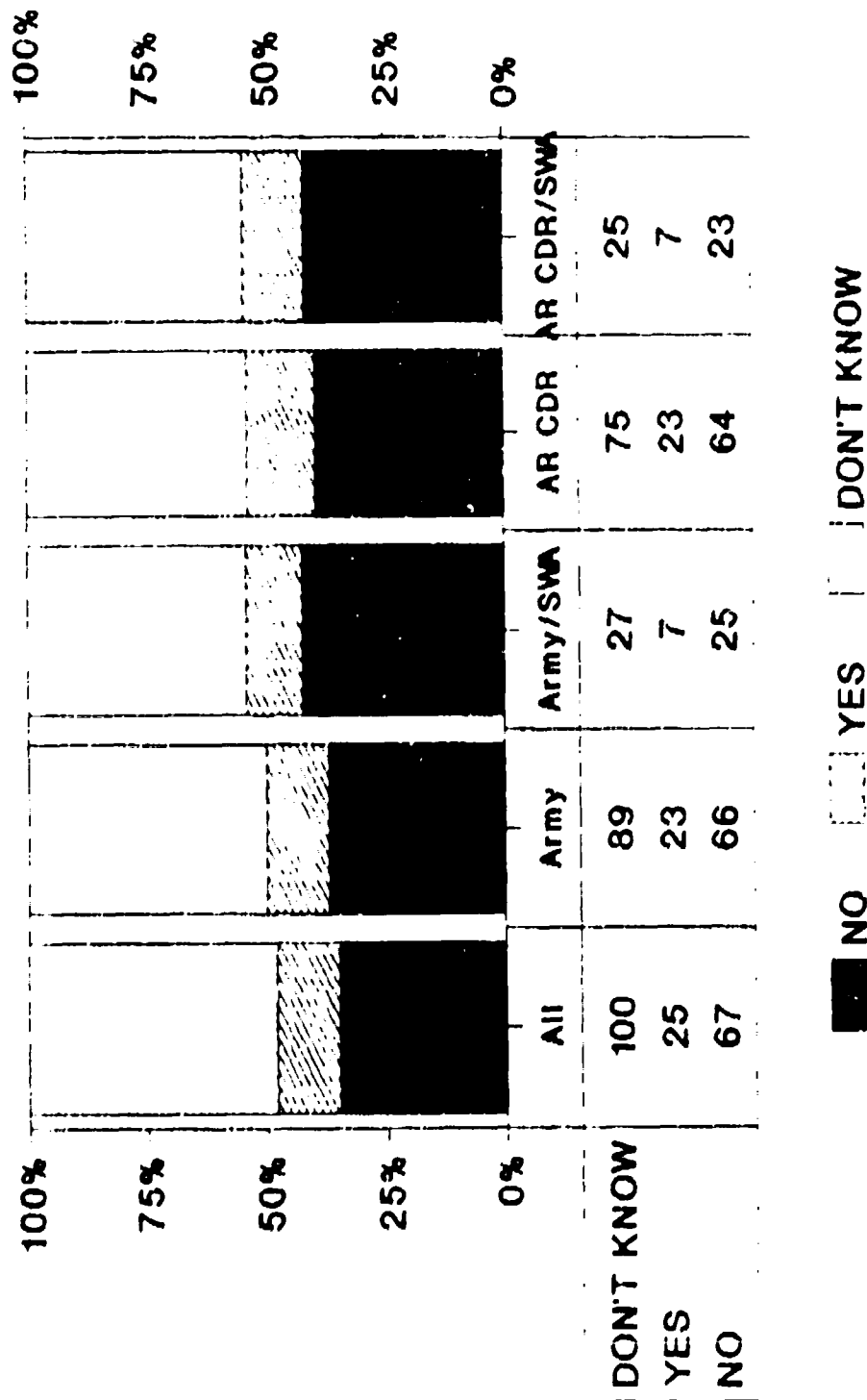
The thesis statement should have addressed the issue of who are the "others" who can perform the Chemical Corps' missions. It is probably fair to assume that respondents considered "others" as either other soldiers with an additional duty, or other branches augmented with soldiers identified by skill identifier as chemical qualified. The former assumption is probably the more likely.

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"Do you think the Chemical Corps should be given additional missions?"

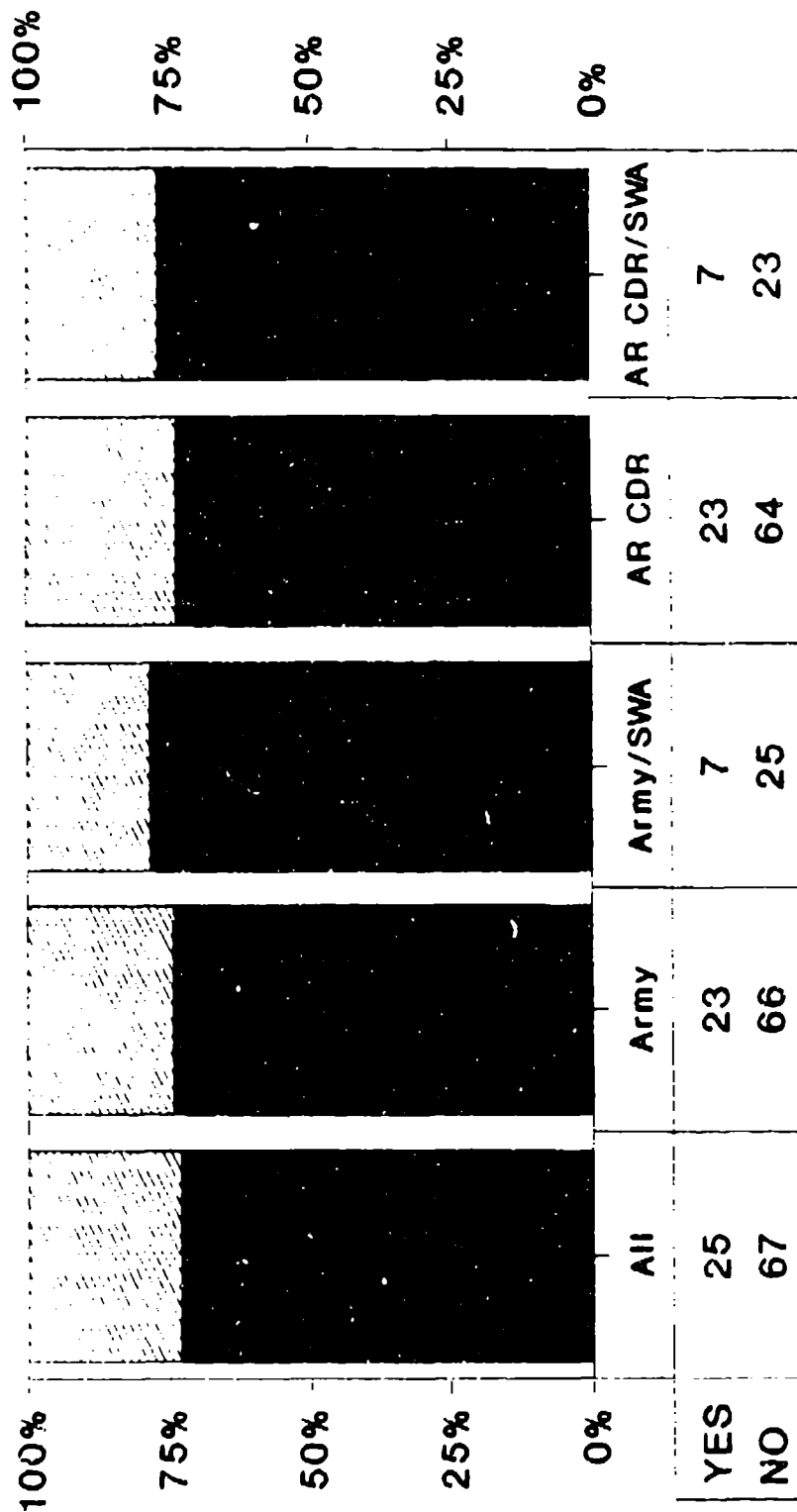
As illustrated in Figure 16, nearly half of all respondents didn't know whether the Chemical Corps should be given additional missions. Of those who expressed an opinion (see Figure 17), over 73 percent believed the Chemical Corps should not be given more missions. Seventy-four percent of Army respondents with an opinion were not in favor of additional missions. A slightly larger percentage (78 percent) of "Army/SWA" respondents with an opinion also answered "No" to the thesis question.

FIGURE 16.
MORE MISSIONS FOR THE CHEMICAL CORPS*



*Should the Chemical Corps be given additional missions

FIGURE 17.
MORE MISSIONS "YES" OR "NO"*



☒ NO
 ☐ YES

*Data shown for those responding yes
or no to the thesis question

The bottom line is that only 13.0 percent of all respondents thought that the Chemical Corps should get additional missions. This question also solicited written comments and Appendix C lists all of the respondent observations. Although the comments do vary, the general theme seems to be that the Chemical Corps has more than enough to do just preparing for and performing its current missions and tasks.

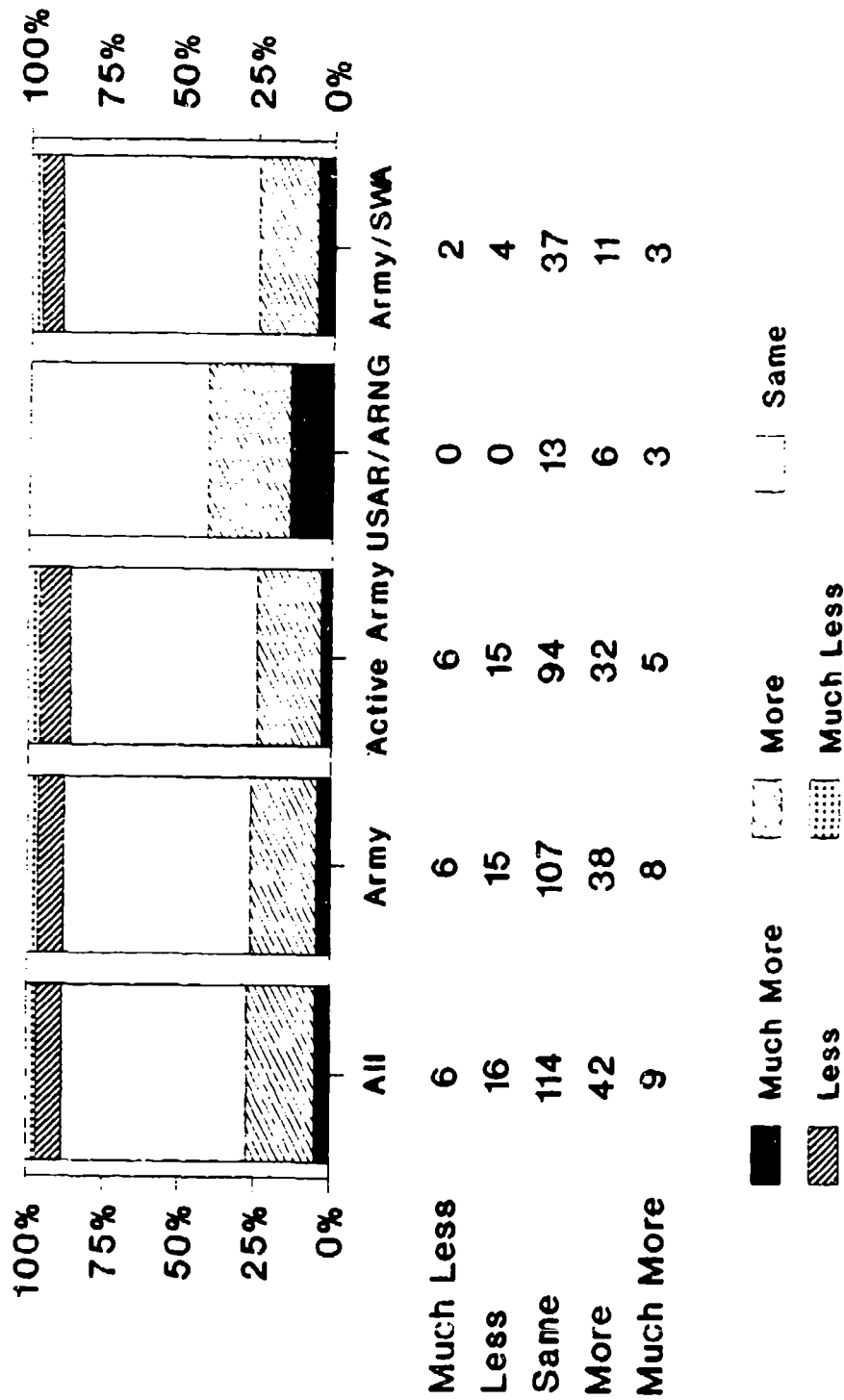
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"Currently, chemical units are in both the Reserves and the Active Army. The Reserves have about 51 percent of unit assets. In your opinion, how much more of the assets should be in the Reserves?"

The general consensus is that 61.5 percent of the Army respondents would favor the current mix, 26.4 would add more and 12.1 percent would reduce the current percentage of chemical units in the Reserves.

See Figure 18 for the graphic array of this data. Respondents were generally of the same opinion regarding the Active versus Reserve mix of chemical units. Those respondents, by category, who felt that the mix should remain the same were all within one percentage point of 61 percent with the exception of the "Army/SWA" at 65 percent. Perhaps SWA experience accounts for the slight percentage elevation.

FIGURE 18.
MORE OR LESS UNITS IN THE RESERVES*



*Should more or less of chemical units
be placed in the Army Reserves

The percentages in each group opting for less assets in the Reserves ranged from 10.5 for "Army/SWA," to 13.8 percent for the "Active Army." Respondents wishing to place "more" or "much more" in the Reserves were distributed from 27.3 percent of "All" to 24.5 percent of the "Army/SWA." The "Army" registered 26.4 percent. The "USAR/ARNG" respondents were of only two inclinations, either the same mix (59 percent) or more assets to the Reserves (41 percent).

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Section V. Future Status

"As the Army downsizes, the Chemical Corps Enlisted branch should be eliminated?" See Figure 19.

"As the Army downsizes, the Chemical Corps Officer branch should be eliminated?" See Figure 20.

"As the Army downsizes, the entire Chemical Corps should be eliminated?" See Figure 21.

Figures 19, 20, and 21 display the data pertaining to the above thesis statements. There was little enthusiasm for eliminating various elements of the Chemical Corps.

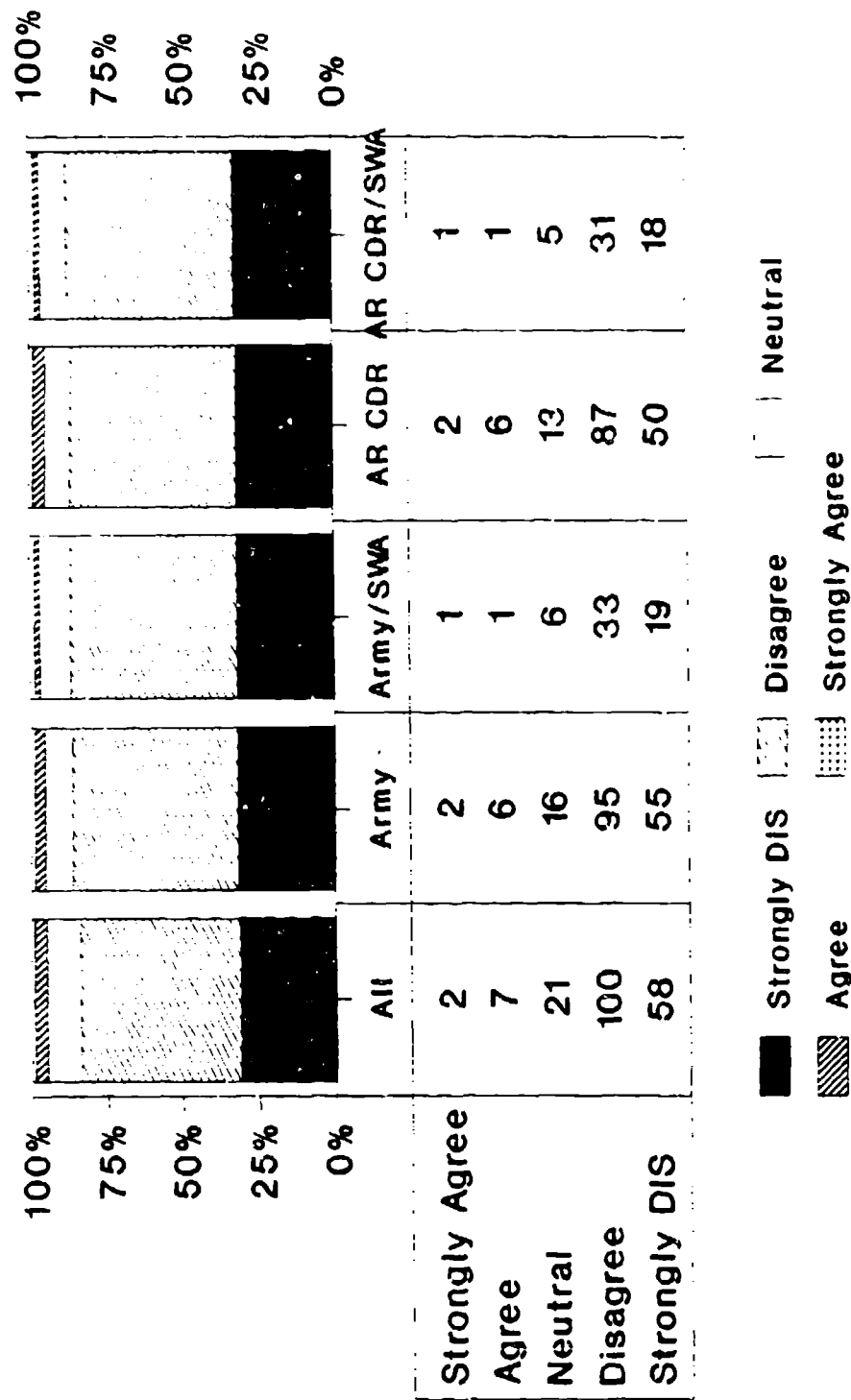
Figure 19 shows that 86.2 percent of the "Army" respondents either "disagree" or "strongly disagree" that elimination of the Enlisted Branch is desirable. Only 4.6 percent of the "Army" "agree" or "strongly agree" to eliminate. "Army/SWA" respondents were least favorable of elimination at 3.4 percent. The "neutral" position for elimination is 9.2 percent for "the Army" with the "Army/SWA" highest at 10 percent.

In Figure 20, 76.4 percent of the "Army" "disagrees" or "strongly disagrees" that the officer branch should be eliminated. The "Army" is "neutral" by a fairly high 14.9 percent. The highest "neutral" percentage is 17.8 for "Army CDR/SWA." Few "Army" respondents (8.7 percent) "agreed" or "strongly agreed" to eliminate the officer branch. "Army CDR/SWA" compiled the highest percentage for elimination at 10.8 percent.

Figure 21 portrays that 83.1 percent of the "Army" "disagrees" or "strongly disagrees" with elimination of the entire Corps. The "neutral" position for eliminating the entire Corps is 9.6 percent for "Army" respondents. The highest category of "neutral" is "Army CDR/SWA" at 14.3 percent. 7.3 percent of "Army" respondents "agreed" or "strongly agreed" to eliminate the entire Corps. The highest percentage in favor of eliminating the Corps is 8 percent, from the "Army/CDR" respondents.

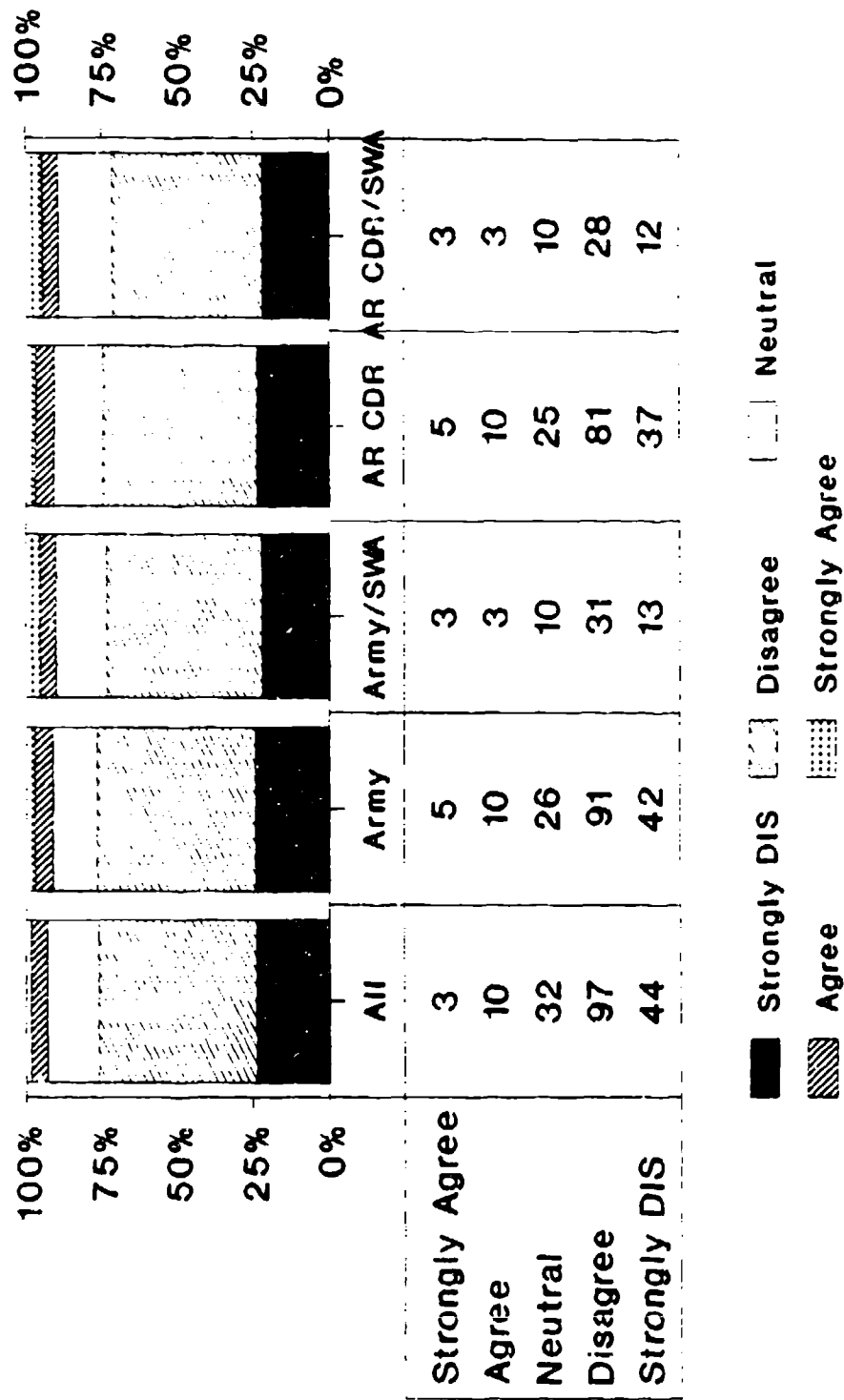
The net result is that most "Army" respondents (83.1 percent) believe that the Chemical Corps should not be eliminated. A higher percentage (86.2) believe that the enlisted branch should not be eliminated and a slightly lesser percent (76.4) believe that the officer branch should not be eliminated. The inference could be

FIGURE 19.
ELIMINATE CHEMICAL CORPS ENLISTED BRANCH



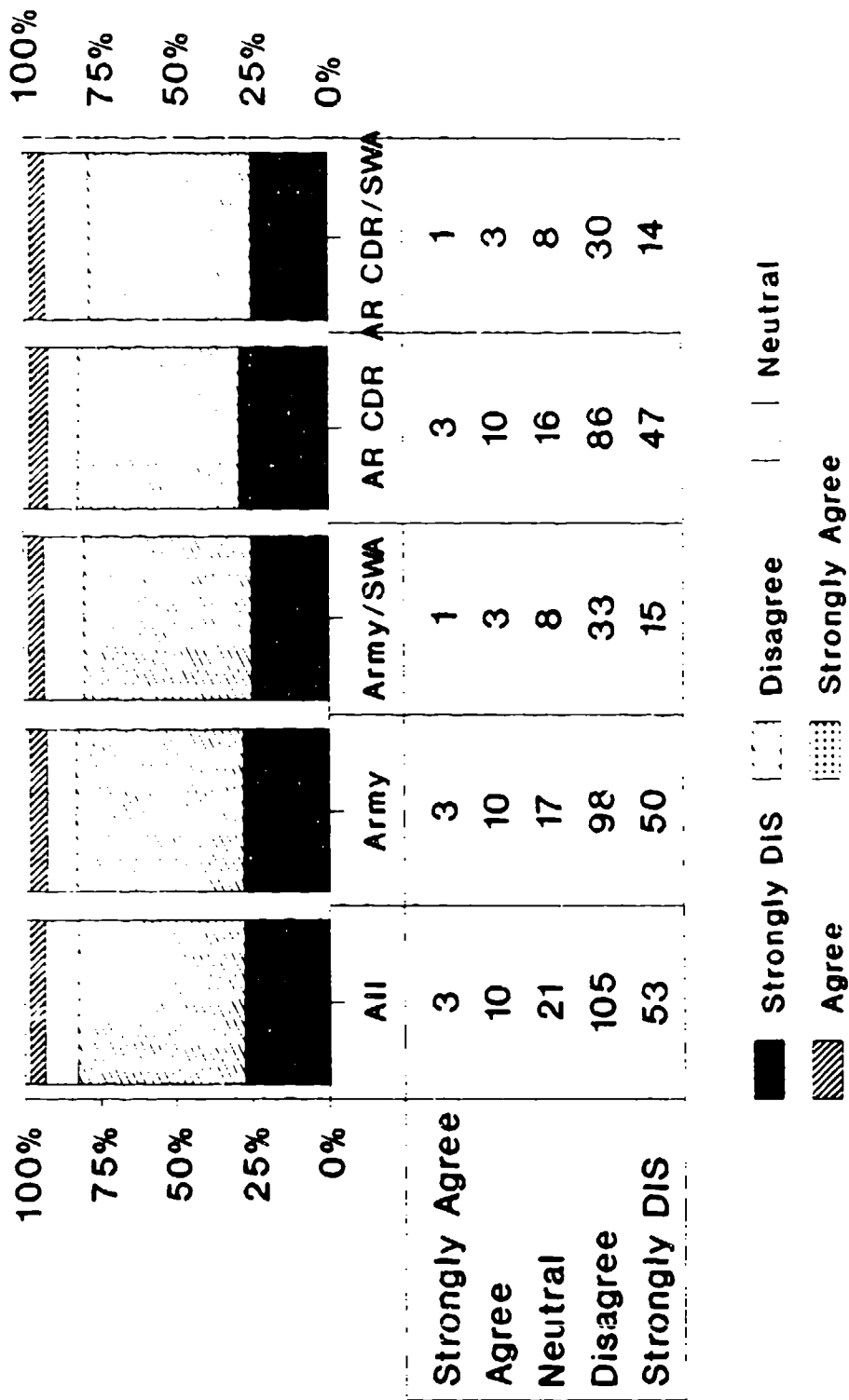
In a downsized Army, the Chemical Corps
Enlisted Branch should be eliminated

FIGURE 20.
ELIMINATE CHEMICAL CORPS OFFICER BRANCH*



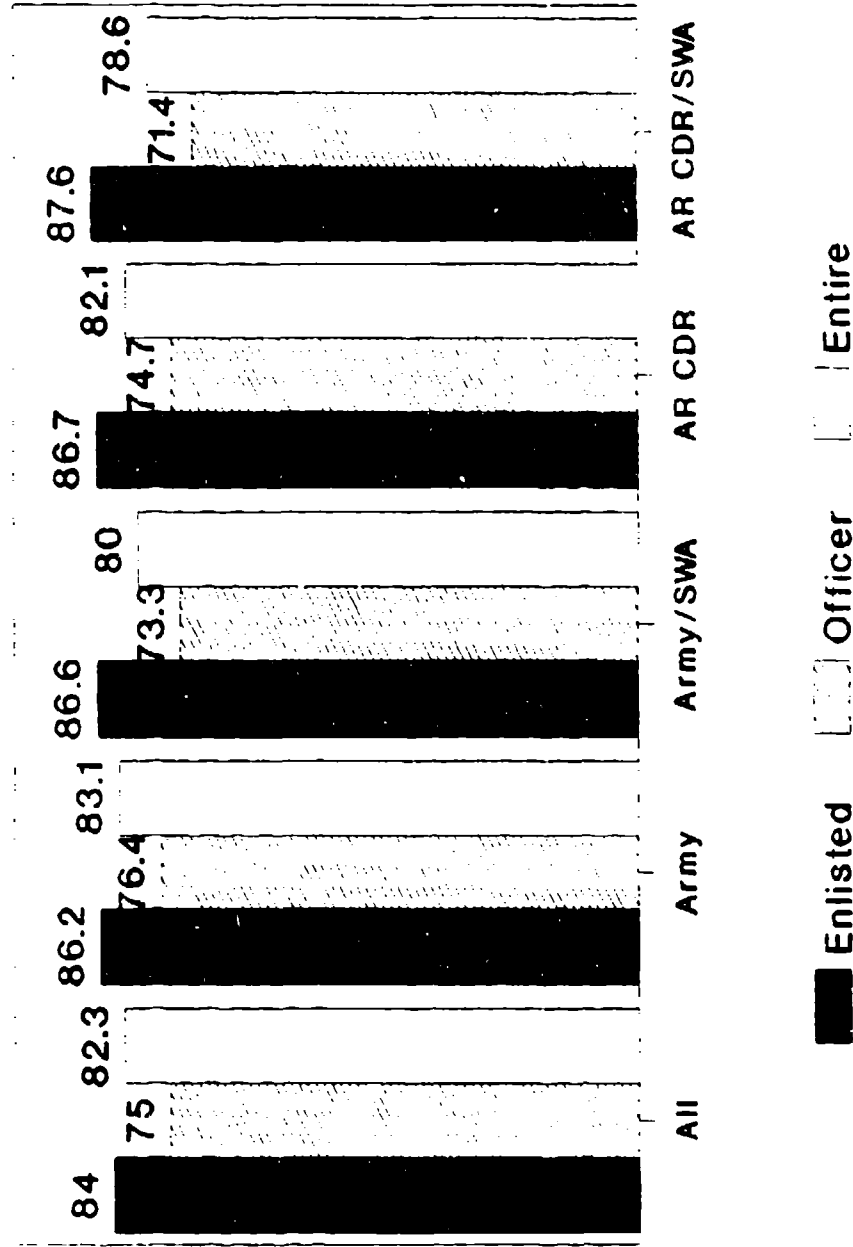
*In a downsized Army, the Chemical Corps Officer Branch should be eliminated

FIGURE 21.
ELIMINATE THE ENTIRE CHEMICAL CORPS*



*As the Army downsizes, the entire Chemical Corps should be eliminated

FIGURE 22.
ELIMINATE CHEMICAL CORPS ELEMENTS*



*Percentage of respondents who disagree or strongly disagree that elimination is desirable. From Figures 17, 18, and 19.

made to keep the entire Corps, but if you must reduce incrementally, the priority for retention is the enlisted branch. See Figure 22 for the data array.

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Section VI. General

The survey document also solicited general comments. Appendix D contains the compilation of respondent general comments. Comments cover the entire spectrum of opinion and provide invaluable insight into how non-chemical officers view the Army Chemical Corps. A recurrent theme of the comments appears to support the notion that the Army needs the Chemical Corps and that the Corps' expertise cannot be replaced or retained without the Corps itself.

+++++

Summary

With the exception of Section I, the term "respondents" as used in this summary refers to Army respondents.

Section I. Credible Need. The vast majority (96.7 percent) of respondents to this survey have served with chemical officers in some capacity and nearly all (97.9 percent) believe very strongly that there is an NBC threat in the world. Almost ninety (89.9) percent of respondents believe that there is a wartime mission for

the Chemical Corps and 58.8 percent perceive a need for a separate and distinct Chemical Corps.

The very high incidence of respondents' association with chemical officers helps to establish the credibility of their perceptions in the survey. The survey data would be less useful if respondents were never positioned to make valid judgements about the Chemical Corps.

The strength of the perceptions about the existence of an NBC threat and a wartime mission also indicates the need for some means to counter the threat and execute the wartime requirements. While this need is implicit in the perceptions, respondents are not as adamant that a separate Chemical Corps is required. However, this does not lessen the credibility of the need.

Section II. Soldier Performance. About three-fourths (75.4 percent) of respondents are positive about the professional qualities of the Chemical Corps, but 67.2 percent perceive that the professional image of the Corps is affected by the continual uncertainty over its existence. The Corps is believed to be an overall effective branch of the Army by 73.9 percent of respondents. However, a much higher percentage (89) of those with SWA experience, believed that Corps personnel were effective at performing assigned tasks during Operation Desert Shield/Storm.

Almost ninety (88.1) percent of respondents believed that battalion/company tasks were performed in an effective manner. However, only 73.6 percent perceived that the battalion/company tasks assigned to chemical personnel were appropriate. Ninety percent of respondents believed that chemical personnel at Army division level and below should be both advisors and operators.

Section III. NBC Equipment. Only 41.7 percent of respondents believe that current NBC equipment is adequate. The respondent comment, "Chemical suit too hot. Mask filter change horrible, better gear available" is fairly typical of statements made by those who provided written responses to the equipment query. Appendix B contains all of the respondent comments on the adequacy of NBC equipment.

Section IV. Roles and Missions. As perceived by 96.6 percent of respondents, the Army's effectiveness is enhanced by performance of the missions assigned to the Chemical Corps. But, 28.2 percent believe that those missions can be performed by other than the Chemical Corps. Perhaps, there is some correlation between this perception and the 29.5 percent of respondents who either were neutral or did not perceive a need for a separate Corps. However, 56.3 percent of respondents do not believe that others can perform the missions of the Chemical Corps.

Few (12.9 percent) respondents believe that the Chemical Corps should be given additional missions. A prevalent theme among those who provided written comment (see Appendix C) on this issue was the notion that the Corps has enough to do now, and that all of its efforts should be directed toward current mission accomplishment.

A majority (61.5 percent) of respondents believe that the Reserve mix of chemical forces should remain the same. However, 26.4 percent would increase the number of chemical units in the Reserves.

Section V. Future. There is little support for elimination of the Chemical Corps. Retention of the entire Corps is favored by

83.1 percent of respondents. Stronger support, 86.2 percent, exists for retaining the enlisted branch. The officer branch received the least support at 76.4 percent. Whether this is simply a priority ranking or a relative reflection of perceived quality is not definable by this survey.

CONCLUSION

The evidence presented in this survey suggests that the Chemical Corps is recognized as an important element in the Army. The Chemical Corps represents and reflects the Army's ability to respond to any of the more likely adversary situations represented by the unsettled world of the 1990's. Most officers of both the Army and other services who responded to this survey believe there is the danger of nuclear, biological, and chemical warfare. Further, they believe that the best way to counter that threat is through the expertise inherent in the Army Chemical Corps. Survey participants view the need to prepare for NBC warfare as so vital that it virtually eliminates consideration to giving the Chemical Corps any unrelated missions.

While the Chemical Corps' professional capability and effectiveness is recognized and appreciated, there is vast frustration concerning the capability, quality, and quantity of NBC equipment that are available to U.S. soldiers. The Corps may be doing a better job with research and development and planned fielding of new equipment than is currently known, but the validity of this premise is not apparent to the officers at the USAWC. To

counteract the perception of equipment inadequacy, the Corps must do a better job of communication not only its achievements, but its intentions as well.

As evidenced by the opinions of officers with South West Asia service, impressions of the Chemical Corps are often enhanced when there is visible demonstration of the Corps' capability. Could this be so because the Corps actually is perceived as less effective during periods of peace or could it be because NBC training is always one of the most expendable training events and hence the Chemical Corps' true capability is seldom on display?

Since it is a certainty that every branch will be downsized, prudent thought must be given to maximizing the scarce manpower resources that will remain after programmed force reductions. Redistribution of chemical units may be necessary to retain a viable pool of NBC expertise. There is a real and perceived need for NBC expertise in every TOE company and battalion in the Army. Placing more chemical units in the Reserves could be the proper mechanism for retaining the capability inherent in chemical units while allowing for the distribution of NBC expertise to all active elements with wartime roles.

Without question, it takes dedicated men and women endowed with professionalism and high morale to sustain the level of mission readiness that is necessary for the Army to fight and win in an NBC environment. To hamper such capability by continual "to be or not to be" discussions about the future of the Chemical Corps is detrimental to readiness and a disservice to the men and women who must serve under the possibility of disestablishment of their

branch. Such debate does little to promote recruitment and retention of the high caliber personnel required for service in the Chemical Corps. The Army must unequivocally state its position on the future of the Chemical Corps and end this debate once and for all.

The variety of opinions compiled by this survey should provide stimulus for both the Army and the Chemical Corps to find common ground for improving general NBC preparedness. The Chemical Corps should reevaluate the role of its personnel assigned to company and battalion level non-chemical units. This review should address both task assignment and doctrinal designation of personnel as advisors, operators or both.

This survey reaffirms the Chemical Corps as a vital and integral part of a prepared and ready Total Army. Improvements may be necessary, as this survey has revealed, to strengthen and enhance the Corps' ability to better achieve the goal of NBC preparedness for the integrated battlefield of the present and future. This survey was undertaken with that intent in mind and the finished product is presented for the same purpose - improved NBC readiness.

ENDNOTES

¹The information contained in this introduction is the author's personal recollection of the events described herein. The United States Army Chemical School's corollary account is found in the reference cited at endnote 2.

²"Chemical Corps and School History," Chemical Officers Professional Development Guide, (Fort McClellan, Alabama: USA Chemical School, 1992), 1-4.

³Norman H. Nie et al., Statistical Package for the Social Sciences, 2nd ed., (New York: McGraw-Hill Book Co., 1970), 181-245.

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Norman H. Nie et al., Statistical Package for the Social Sciences, 2nd ed., (New York: McGraw Hill Book Co., 1970), 675.

APPENDIX A

Appendix A contains the survey instrument: Perceptions About the Army Chemical Corp.


Dear Classmate,

I am a fellow student in the U.S. Army War College and a member of the Army Chemical Corps. Like you, I am required to participate in the Military Studies Program (MSP), which seeks to analyze issues of significant national security and military affairs.

As we face a future of smaller force structure, the Chemical Corps is sure to be scrutinized for future potential and capability. My MSP project has as goals to identify whether there is a requirement for an Army Chemical Corps and what, if any missions would be appropriate for the Corps.

In support of my research efforts, I solicit the benefit of your knowledge and experience, and respectfully request that you complete and return the enclosed questionnaire NLT 16 December, 1991. Your cooperation is greatly appreciated.

Encl as


Samuel E. Sims
1st Lt, CM
USAWC Class 92
Box 192

DATA REQUIRED BY THE PRIVACY ACT

TITLE OF FORM: Perceptions about the Army Chemical Corps

AUTHORITY: 10 USC 4503

PRINCIPAL PURPOSE:

The data collected with the attached form are to be used for research purposes only. When identifiers (name or social security number) are requested they are to be used for administrative and statistical control purposes only. Full confidentiality of the responses will be maintained in the processing of these data.

MANDATORY OR VOLUNTARY DISCLOSURE AND EFFECT ON INDIVIDUAL NOT PROVIDING INFORMATION:

Your participation in this research is strictly voluntary. Individuals are encouraged to provide complete and accurate information in the interests of the research, but there will be no effect on any individuals for not providing all or any part of the information.

Perceptions about the
Army Chemical Corps

The purpose of this questionnaire is to obtain your perceptions about the Army Chemical Corps. Your answers will help the Chemical Corps structure itself for the future and assist in making required adjustments. Your honest opinions are, therefore essential.

Please answer each question by circling the letter or letters which best describe you or your opinions.

=====

1. I am in the:

- a. Regular Army
- b. Army Reserves
- c. Army National Guard
- d. Marine Corps
- e. Coast Guard
- f. Air Force
- e. Navy

2. My branch is:

- a. Combat
- b. Combat Support
- c. Combat Service Support

3. My branch is:

- | | |
|-------|---------------------------|
| a. AR | l. AV |
| b. IN | m. SF |
| c. FA | n. TC |
| d. EN | o. CH |
| e. FI | p. JA |
| f. QM | q. MC |
| g. OD | r. MS |
| h. SC | s. MP |
| i. MI | t. AN |
| j. AD | u. VC |
| k. AG | v. Other: (Specify) _____ |

4. I am a former Battalion Commander or equivalent:

- a. Yes
- b. No

5. How do you view the Chemical Corps as a professional branch of the Army?

- a. Very Positive
- b. Positive
- c. Neutral
- d. Negative
- e. Very Negative

6. Describe your impressions of the Chemical Corps' Effectiveness

- a. Very Effective
- b. Effective
- c. Neutral
- d. Ineffective
- e. Very Ineffective
- f. Don't Know

7. Have you served with chemical officers (COs) as:

- a. Peers
- b. the Superior to a CO
- c. Subordinate to a CO

8. At Battalion and Company level, how effective were Chemical personnel at performing assigned tasks?

- a. Very Effective
- b. Effective
- c. Neutral
- d. Ineffective
- e. Very Ineffective
- f. Don't know, have not worked with chemical personnel.

9. At Battalion and Company level, to what extent were the tasks assigned to chemical personnel appropriate?

- a. Almost Always
- b. Usually
- c. Sometimes
- d. Seldom
- e. Almost Never
- f. Don't know, have not worked with chemical personnel.

10. How should Chemical Corps Lieutenants, Captains, and NCOs be utilized at Division level or below?

- a. Advisory role to Commanders and Staff
- b. Operational-responsible for specific mission execution.
- c. Both a and b.

11. Were you in South West Asia during Desert Shield/Storm?

- a. Yes
- b. No

12. How effective were chemical personnel in Desert Shield/Storm?

- a. Very Effective
- b. Effective
- c. Neutral
- d. Ineffective
- e. Very Ineffective
- f. Don't know, did not work with chemical personnel.
- g. Did not serve in SWA during Desert Shield/Storm

FOR THE FOLLOWING SECTION, PLEASE INDICATE HOW MUCH YOU AGREE OR DISAGREE WITH EACH STATEMENT.

13. A nuclear/biological/and/chemical threat exists in the world

- a. Strongly Agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly Disagree

14. NBC defense, NBC recon, smoke and flame operations, NBC equipment development and procurement, are essential to an effective Army?

- a. Strongly Agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly Disagree

15. Currently fielded NBC equipment satisfactorily meets the needs of today's Army.

- a. Strongly Agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly Disagree

Comments

16. Continual uncertainty over the Chemical Corps status as a permanent branch is detrimental to its professional image among other branches.

- a. Strongly Agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly Disagree

17. The Chemical Corps does NOT have a wartime mission.

- a. Strongly Agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly Disagree

18. If the Chemical Corps was eliminated, all its missions could be performed by others.

- a. Strongly Agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly Disagree

19. The Army needs to have a separate and distinct Chemical Corps to accomplish NBC missions

- a. Strongly Agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly Disagree
- f. No Opinion

20. Currently, chemical units are in both the Reserves and the Active Army. The Reserves have about 51% of unit assets. In your opinion, how much more of the assets should be in the Reserves?

- a. Much More
- b. More
- c. Same As Now
- d. Less
- e. Much Less

21. Do you think the Chemical Corps should be given additional missions?

- a. Yes
- b. No
- c. Don't Know

Please explain why or why not? What additional missions, etc.

22. As the Army downsizes, the entire Chemical Corps should be eliminated?

- a. Strongly Agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly Disagree

23. As the Army downsizes, the Chemical Corps Officer branch should be eliminated?

- a. Strongly Agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly Disagree

24. As the Army downsizes, the Chemical Corps Enlisted branch should be eliminated?

- a. Strongly Agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly Disagree

ADDITIONAL COMMENTS

THANK YOU FOR YOUR TIME AND EFFORT

PLEASE RETURN YOUR COMPLETED SURVEY TO COL MIMS, BOX 192

APPENDIX B

Appendix B is a compilation of respondents written comments to survey question 15 concerning the issue of NBC equipment. Comments are not categorized in any order and are presented as written without editorial change except for the rare instance when an educated guess might have been made to decipher an illegible word or words.

Question 15. "Currently fielded NBC equipment satisfactorily meets the needs of today's Army."

Respondent Comments:

Insufficient quantities. Insufficient research and development effort to keep pace

Need a better mask-now. Need better decontamination equipment at all levels. Need to get CAM and other modern equipment fully fielded.

Not nearly enough NBC suits. We must simplify all equipment. We have not solved and we must, the light forces requirements for NBC.

Too cumbersome, too hot. Have to change too frequently. No satisfactory equipment/means to dispose of contaminated equipment.

Need MOPP gear with greater sustainability. Need more Decontamination equipment.

Too cumbersome. Not designed for high temperatures (individual MOPP gear).

Need more comfortable chemical suits for infantrymen and infantry crewmen.

Decontamination equipment inadequate for unit hasty decontamination.

Don't know about Army, but current Navy equipment meets our needs.

Chemical protective overgarments are too hot and too difficult to get on. The boots are ridiculous and don't stay on. The M17 Mask is painful to wear for extended periods.

Medical units can do little more than protect themselves and some of the patients in a hostile NBC environment. My general plan was to protect long enough to evacuate the area of operations.

MOPP gear quickly produces heat casualties if activity is not limited.

The M-8 alarm stinks! We need a machine that you only need to do 1 or 2 steps..eg, turn it on--when alarm goes off--it tells you what the agent is (with a LCD). Protective mask is still too bulky and claustrophobic.

Protective gear too bulky, too heavy, not state of art.

Protective masks are outdated!

Chemical equipment may possibly meet need, but biological equipment does not.

Off the shelf must be used. Lighter, more efficient systems are available.

Not confident of MOPP gear.

Don't have required usable decontamination equipment. MOPP suits need updating to meet new technology. Detection equipment is not updated or in sufficient quantities.

Need new mask and protective clothing. Better biological detection. Need over-pressure system on all combat vehicles.

Needs to be modernized and must be able to respond to latest threat agents.

Spend money for research and development necessary to train and equip our forces.

Equipment never been field tested. What we considered doctrine, i.e., once you put on chemical suit, it's good for 14 days, was thrown out by necessity. When suits were unavailable, it suddenly became okay to wear them indefinitely.

The U.S. Navy chemical defense capability is very poor.

Need better equipment for nerve and blood agents. Filter systems need to last longer.

Could be better and in different organizations. Should be more in cavalry squadrons.

Decontamination capability a joke. Antiquated. Too slow to not grind operations to a halt.

Decontamination appears (still) to be our weakest area. What equipment units have is not trained on enough.

Need equipment that can decontamination (properly) major pieces of Army equipment, i.e., aircraft, etc.

Poorly rated by international standards.

Need to accelerate production of new mask and MOPP suits that are more soldier acceptable relative to comfort and current technology.

Each company needs decontamination apparatus authorized and issued along with chemical alarms. Also need armored vehicles and metal exterior storage boxes, etc., that are impervious to persistent chemicals.

Where is it? Masks are behind technology. Need screw on canisters for different threats. I've never seen or been trained on alarms.

MOPP gear too cumbersome. Decontamination equipment insufficient though I've never seen the SONATOR.

Really need to develop lighter weight, more durable chemical suit for individual protection.

Chemical suit needs to be lighter and easier to put on. Boots are terrible.

Our equipment is ancient in most respects. We need to get up to date--much better and newer equipment is possible with new technology. Lighter and easier to use equipment is a must.

Get the FOX! Need real decontamination capability for aircraft.

It meets minimum needs only.

MOPP suit cumbersome, difficult to wear/air, bulky, etc. MOPP boots are a real pain to put on properly. Mask--soldier maintenance is a continual battle; can't wear helmet well with it on--chin strap/tie down problem.

We are several iterations (generations) behind in our equipment--just look at the mask!

Is there a better mask on the international market?

Chemical protective overgarment was too hot (brilliant flash of the obvious). Decontamination equipment is difficult to handle and poorly designed. We need more, newer equipment. Better decontamination apparatus for large equipment. Need chemical proof tents. Chemical equipment should be used to deal with hazardous waste, oil spills, etc.

Suits/masks need improvement. U.S. needs FOX vehicle in greater numbers.

Need better detection and decontamination equipment and more of it.

Need new protective mask and chemical protective overgarment.

With the projected improvements in mask, clothing and detection equipment, NBC equipment will satisfactorily meet need.

It does not have priority, i.e., M88 Alarms are hard to get in the Guard. I personally feel we don't field the best equipment available and train enough for chem/bio OPNS/DEF.

Need better and more personal equipment.

Need a quality detector and warning system.

Need a better aviator mask. Need more training with chemical units using higher echelon equipment. Like idea of bag to carry chemical suit on web gear. Need to reduce size of chemical suit.

Personnel decontamination is grossly inadequate, especially regarding casualties. See "Medic on Chemical Battlefield" Infantry 73:p 24.

Continued research and development is necessary. Unfortunately, NBC equipment will be hard to fund because it will be hard to convince people there is still a significant threat.

Too Hot!

Cumbersome, hot, time constrained, unwieldy, hard to manipulate tools, buttons, etc.

Individual NBC protective equipment is inadequate.

But is it state of the art? No, there is better available. Lets get it. (Chemical suits, chemical detectors, warning devices, etc).

Too cumbersome. Personnel lack confidence in chemical suits. Boots are ridiculous. M17-ok. M43-excellent, except eye lenses are too small and don't allow for safe NVG flight (I've done it!).

If they were effective, we wouldn't have had to borrow the FOX from another nation. Chemical protective overgarment is too heavy-Brits have a lighter one.

Today's equipment is not user friendly, particularly MOPP gear. Need to improve the suit, boots and inserts for those who wear glasses.

M88 Alarms need improvement; batteries hard to get in SWA, gave false readings. Protective carriers wore out quickly in the desert. Many of our MOPP suits shed too much charcoal and made soldiers filthy and miserable.

Chemical suit too hot. Mask filter change horrible, better gear available.

I think what has been procured is satisfactory. I don't think we've got enough for everyone.

Concerned about biological protection.

Decontamination equipment should be increased.

Based on Navy equipment, pilots, flight deck personnel equipment unsatisfactory (too hot, can't hear/see well).

I don't think it is state of the art stuff.

In U.S. Navy, NBC systems aboard ships is inadequate.

Agree in general, but like many other weapon systems, there are weaknesses that further modernization will mitigate. For example: Need for canister type masks, problems with currently aging stocks of DS2, need for overpressure systems in all mechanized equipment and attack helicopters, etc.

Need improved monitoring devices. Need more effective and easy to use decontamination equipment.

Constant debate on chemical boots versus rubber boots (chemical boots are a joke). Disagree with mask design. Design and fit of mask carrier on individual (always in way). Maintenance of SONATOR inadequate. Perception is the chemical school designs equipment with little or no human engineering.

We need a better mask with an easier filter exchange system, better recon i.e., (like the German Fuch vehicle that we had on loan in SWA).

Not enough and not state of the art. There is something wrong about an Army soldier relying on a 30 gallon trash can and bristle hair brush to decontaminate.

Still room for improvement and new ideas.

We need a new mask.

Need lighter weight overgarment and mask that is more functional.

Support units are left out in the detection and decontamination arena. Still at the bucket and brush stage. NBC NCO's are just spread too thin and depth of knowledge too shallow. Chemical detection at small unit level is inadequate.

We currently have good NBC equipment-we need better NBC equipment for the future.

Chemical protective overgarments are too bulky. M43 Mask for aviators is not workable--too big. No provision for mask in RAH 66 Commando Helicopter, collective protection (overpressure) by itself is not good answer.

Our protection equipment in the field is obsolete.

As potential adversaries improve their delivery capabilities for NBC, we need to improve our ability to fight through and recover after NBC attack.

Detection and decontamination equipment is too complex for soldiers to use confidently.

Individual NBC defense equipment/doctrine is okay. We need crew protection systems in more vehicles/shelters. We need a good NBC recon vehicle like the Fuchs.

Masks for aviation crews are still unsuitable! Charcoal suits used more for long underwear. Need less cumbersome, more effective equipment.

Current chemical protective suits are too cumbersome and not durable. Stand off chemical/biological detection capability is needed.

Need better NBC recon assets.

We've got some work to do. Many units don't even have the alarms and detectors, however, the actual equipment is effective if fielded.

Needs to be lighter weight and more flexible for the wearer.

I am not current on some of the new developments. Equipment seemed to be okay. Training was sometimes lacking. We always had a shortage of NBC qualified E5s and E6s.

Aviation units woefully lacking equipment for decontamination. Equipment issued for NBC protection degrades mission accomplishment.

Clothing inadequate. Smoke generator capability not adequate. Decontamination equipment not adequate.

Needs modernization. M17 Mask is too old.

Mask, clothing-- not satisfactory.

SONATOR especially unsatisfactory. Protective masks need better communications capability.

Too bulky.

Protective mask and test/monitoring equipment is out of date. Both need to be replaced with improved materiel.

Used the M43 Aviation Mask-- its really tough to fly with it--survival only. Woefully inadequate decontamination equipment in my opinion. The new camouflage chemical overgarments are horrible, I'd almost rather be gassed than get that black s..t everywhere. Yuck!

Where is the new mask? Decontamination system needs to be modernized.

Desert Shield/Storm highlighted the need for the best available NBC equipment-- the FOX recon vehicle is just one example of the detection and protective equipment we have. We need to ensure our entire AC-RC force structure requirements are filled.

Urgent need for fielding new mask.

But only marginally in some areas, i.e., a mobile, NBC secure detection vehicle like the German Fuchs.

Chemical protective overgarment too heavy and bulky. Restrict operations in all but arctic environment. Protective mask filter replacement should be external--otherwise mask is okay. Chemical alarms not dependable nor up to date.

Too little of it in stockpile. Too hot--too cumbersome, antiquated technology.

Musk remove mask to replace filter.

We need the NBC vehicle to monitor and more hasty/deliberate decontamination equipment in brigades and battalions.

During Desert Storm/Shield, fevered attempts made at getting CAMs, shelters, covers, medical patient protective wraps, monitors, decontamination equipment--all either non-available or antiquated.

MOPP ensemble is a joke. Small unit NBC warning system non-existent.

We ought to field a better protective mask (easier to breathe and better vision) to all units. Decontamination techniques seem archaic.

No modernized smoke capability exists. Our decontamination systems are too few and of limited capability.

Need NBC protective mask with external (canister-type) filters. Need improved bootie. Need binary munitions. Need improved ability to net detection devices.

APPENDIX C

Appendix C is a compilation of respondents' written comments to survey question 21 concerning whether or not the Chemical Corps should be given additional missions. Comments are not categorized in any order and are presented as written without editorial change except for the rare instance when an educated guess was made to identify an illegible word or words.

Question 21. Do you think the Chemical Corps should be given additional missions? ..Please explain why or why not? What additional missions, etc.

Respondent Comments:

No, we are not doing a good enough job yet.

No, Chemical Corps is not being utilized appropriately now. Why give them additional missions?

No, given additional equipment to assist them in current mission accomplishment, they will have more than enough to do.

Yes, if you want to survive in a smaller Army-pick up a dual role-like MPs or Engineers- dual train as infantry (light and small units).

Why? I've never heard of any proposals to do so.

Yes, training of troops in chemical matters. Conduct exercises, reportable to higher authority.

Unsure of current missions.

No, need to work on currently assigned missions.

Yes, could work environmental issues.

Yes, make Chemical Corps current missions more public. The employment of CBR defense or offense is so close-held that we often don't appreciate your value. Get a piece of SPACECOM?

Am not familiar with what other missions would be appropriate. One thing is certain, more concentration on currently assigned missions would be possible if equipment were available.

No, there's enough to do in chemical defense.

Yes, there is a definite role at the joint level. I believe that there is a good argument for a separate specialized corps which crosses service boundaries. U.S. Army should set standards in practice and equipment the same as nuclear weapons security.

Unless you fundamentally change the nature of the Chemical Corps, I do not know what other missions you would give it and keep it consistent with today's Chemical Corps.

No, they are specialists in their respective fields. Additional missions would only appear to justify continuance. There is a need to expand role to help in the decontamination of chemically contaminated casualties. The trend is to send contaminated casualties directly to health care facilities, requiring medical personnel to take organic people and decontaminate before treatment. It can be done, but with a corresponding decrease in the ability to provide medical care.

No, let's get very good at a few rather than proliferate jobs. If units aren't going to get M12s, deliberate decontamination capacity needs to be re-looked.

Yes, get real! When you need them, they can't be found. NCOs are good and can be employed effectively. Officers are too narrowly specialized. Better utilized as a secondary for Engineer, Artillery and Ordnance Officers.

Yes, environmental control.

Yes, chemical training/doctrine needs to be better integrated at the National Training Center/Combat Maneuver Training Complex.

Yes, possibly integrate with Medical Corps.

Yes, often chemical personnel are not utilized effectively by assigned unit and appear to others not to have much to do. They should have additional missions in peacetime which will be reduced in wartime. For example, shower and bath operation and/or crew-served weapons operators in combat support and combat service support units.

No, considering the potential seriousness of the NBC problem, I feel they have quite enough to do to handle it properly.

Too early to tell. Chemical Corps may have to pick-up additional missions based on final size and composition of the Army.

There is a need, this position must be thoroughly evaluated in association with a "worst" case threat.

Yes, environmental protection.

No, but Chemical Corps Officers at brigade/battalion level should expect to work in operations as Assistant S-3s, Tactical Operation Center Officers, etc. The degree to which they execute as Chemical Officers will depend on mission and threat.

No, they have enough to do now. Additional duties are routinely provided anyway.

Yes, water production for general consumption, then used when needed for decontamination. Toxic waste clean-up.

Yes, deception operations.

No, can't do those already assigned.

No, too hard to start with.

Normal evolution of the battlefield will cause the Chemical Corps to get additional missions and requirements. The Chemical Corps needs to work harder, be more aggressive in field units.

No, ensuring emphasis in the NBC areas, providing and monitoring the specialized training and advising commanders in these critical areas is key to individual and unit survival.

No, what would we give them.

No, just do the ones they have now, better.

Yes, Third World-low intensity scenarios.

No, if you start to "ad hoc" the Chemical Corps to build a "pork barrel," you increase the risks that there will be a real reason to eliminate or severely cut the Chemical Corps.

No, missions should relate directly to the purpose of the corps--other missions would not be appropriate.

No, they have trouble maintaining the ones assigned them now.

No, we need to redouble our efforts to train just as hard as before. Chemical warfare now, I believe, is much more likely in Third World conflict.

No, In NBC environment such as Gulf, they were unable to meet everyone's needs. For example, they are too few in number to establish and man decontamination sites. This severely stressed medical staffs to provide medical care and do decontamination tasks.

Yes, chemical assets should have secondary missions that can be performed in non NBC environments, i.e., contribute to rear area security. All units in the Army must be able to contribute across the entire spectrum of conflict--we can't afford the luxury of having units for mid/high intensity conflicts only. The Chemical Corps must have secondary missions for lower level threats when the NBC threat doesn't exist.

No, if the Chemical Corps performs currently assigned missions, it will have time to perform little else.

No, they are too small to handle the job they've got.

Yes, you must maximize your support efforts. The more you do, the more your corps will be needed. Specific missions?

At Aviation Battalion level, the chemical personnel have enough to do now!

Yes, need a larger teaching base and more exercise play.

Yes, Non-structural environmental responsibilities (reconnaissance, analysis, prevention of atmospheric, soil, and water contamination)--currently Engineer. Water quality testing and assurance--currently Quartermaster.

No, but they should be able to do the mission they have. The real shortcoming is lack of planning and training for medical treatment of NBC casualties--who's in charge--medical and chemical branches need to complement or combine--we trained our own soldiers what to do with the help of a PA--everybody else--including the division level was lost.

No, If they're limited in capability now, why give them more requirements?

Yes, should have more OPNS/S3 capability to help serve as ASST S3 officers, etc. Young chemical officers I am seeing are good and could extend themselves.

No, but train recon teams in general principles of reconnaissance and read them in better on overall PIR, etc. If they're out there, they can see/detect things besides NBC contamination.

Decontamination of industrial sites might be an example. But, mission focus would have to remain things that could kill a soldier.

I think their plate is full now!

No, needs to be given equipment and personnel to carry out current missions adequately.

No additional missions! Reserves should have all smoke units. The only chemical positions should be in companies, battalions, and brigades (non-chemical units). XVIII Airborne Corps should have chemical units ready to deploy, all others should be in reserves.

Small core of trainers to train officers/NCOs to take messages back to line units.

No, full plate now! My battalion chemical officer and NCO were fully involved in both training and logistics.

No, the Army has not effectively utilized its chemical officers. There is much to be done in the NBC area--a full time job. Chemical officers should be so busy that additional missions would be a hindrance.

No, concentrate on present missions.

No, what other missions, other than the current NBC defense and smoke missions, would a "Chemical" Corps be assigned?

No. I assume by this question, you mean in addition to what they already have as additional missions. Chemical Corps officers need to perform a share of additional duties because units train on NBC only a fraction of their time, however the chemical officer should not be doing additional duties to the exclusion of NBC.

No, theoretically, their mission should keep them busy.
Realistically, though, they are excellent training support since
they have mobility and communication assets!

APPENDIX D

Respondents were asked to make any comments that they wished to make about the Chemical Corps. This was the final survey question and those comments are compiled in this appendix in their entirety. Comments are not categorized in any order and are presented as written without editorial change except for the rare occasion when unable to decipher an illegible word or phrase.

Additional Comments.

Respondent Comments:

Professional development problems with chemical NCOs who move from chemical units to line units--many don't make the transition well and many are not ready to be the "expert in the line unit.

I am in the Marine Corps. Therefore, I am incapable of commenting on many questions. Of note, however, is the Army affixation with branches and corps. If I were Chief of Staff of the Army, I would eliminate all branches. In the Marine Corps, Marines identify themselves personally, emotionally, and vocally as Marines! In the Army, the principal identification is with their branch! The U.S. Army needs an Army of soldiers--many of whom simply have different MOSs.

I don't really know enough about the Army Chemical Corps. The Air Force does not have a separate corps. Its functions are integrated into the wing structure.

It was a big mistake before to try to do away with the Chemical Corps. Keep current positions, as well as decon/recon units. Probably need only a few Reserve smoke units for such things as river crossings. At battalion level, my experience with most chemical NCOs was extremely positive. We need to keep Chemical Corps strength at same levels as before relative to overall size of force as we downsize. We should do away with active duty smoke companies, but keep decon companies (but get better equipment) and increase chemical recon units. Need at least one company per division (make organic to divisional cavalry squadron).

Retain as distinct specialities under Ordnance Branch. Retain chemical units.

Possible downsize option--retain chemical enlisted MOS and make chemical officer as additional skill identifier?

I really don't know much about the areas covered in this survey. In South West Asia, the chemical threat was a potential war stopper. The chemical "experts" in higher headquarters were reportedly 50/50. My chemical NCO who was not competitive as an NCO in garrison knew his stuff, he taught, re-taught, and re-taught. Somehow, the chemical expertise has to be maintained, whether in the Reserves, research and development, or additional duty with school training, is a force structure decision that I don't know enough about to provide an honest opinion.

My experience with Chemical Corps officers has been very positive. In my last unit, where I served as a separate brigade commander, the chemical officer (Major) was so good, we used him as the assistant brigade S3. At battalion level, I had excellent NCOs and well trained enlisted soldiers. We always received "T" ratings on NBC evaluations, in large part due to their efforts.

The Chemical Corps has a mission (peace and war), and therefore, should be a part of the Army inventory. A must branch, but a small branch. Downsizing of Chemical Branch should be in concert with Army downsizing.

It is a mission focused on a unique weapons system incompatible with the other Branch missions. Could Chemical merge with Ordnance if Chemical authorizations drop so low that PERSCOM cannot afford a separate branch?

Regarding force mix-#20-the amount of chemical assets are in my opinion, tied to specific force structure in other branches and components. Approximately 51 percent of combat structure is in National Guard and Army Reserves. More combat service support is in Reserve Component as a percentage. I feel that there may not be enough chemical capability Army-wide. Also, I have real concerns about the Army's unwillingness to adequately equip both active and reserve units with capable equipment (Example, chemical/biological detectors-M8 Alarm is certainly not good enough). Although neutral on branch specific questions, I feel chemical as a specialty is essential.

Chemical Corps is badly needed. More enlisted experts as well as qualified officers are needed at battalion level-even at company/battery level. This needs to be a full time job, not just to get ready for inspections of the NBC Room.

My experience in two divisions has been that we have paid lip service to chemical preparedness. We have gotten better over the years, but primarily, our improvement has been based more on individual efforts at the unit level versus a concerted conscious effort. My experience in Desert Storm was negative with Division Chemical Officer. He gave bad advice to the Commanding General and as a result, caused us to waste one of two chemical protective overgarments. Very little smart effort to help solve the problems and contribute. Thank Heavens, Iraq used no chemicals as I don't think our Division Chemical Officer could have helped us survive within his purview.

I feel it is a universal fact that if constituency for the technical functions is allowed to be submerged, then that technical functions tend to be strongly under-resourced and under-regarded. If there is a valid NBC threat, then the specialized Chemical Branch is most likely to be adequately trained and knowledgeable to meet the threat. Otherwise commanders with a wide span of control and responsibility will not be individually knowledgeable enough to adequately defeat the threat. Not only operational support, but also training, maintenance, and modernization efforts will suffer due to lack of constituent support in the resource apportionment.

Expand the Army's lead in chemical warfare, accept new environmental missions and manage at the DOD/JCS level.

I have always found Chemical Corps officers and NCOs effective, competent and mission capable. They provide expertise in an area that would not be otherwise resourced or trained in until after the first chemical/nuclear casualties.

I had the privilege of having an outstanding Chemical Corps Lieutenant as my Squadron Chemical officer--he did an outstanding job. All chemical officers at battalion level should be dual hatted as chemical and assistant S3s. Also, all Chemical Lieutenants should be branch detailed to combat areas, then move to chemical units. Chemical officers, as junior officers, need seasoning as combat area types and platoon leaders, then can go to be chemical officers for remainder of careers.

Proper mix like every other branch facing downsizing. NBC recon platoons belong in cavalry units, not in division chemical companies. We need to organize like we train to fight. Cavalry squadrons are out front usually. Decon platoons probably belong in chemical companies. Too many chemical officers are forced into or retained in that branch who don't want to belong to it. That's a credibility and morale problem.

I think the Chemical Corps possesses critical expertise that cannot be replaced or retained via the additional duty route. Need to expand Chemical Corps presence in combat, combat support and combat service support units. Need decon units at corps level as a minimum.

Each division/installation should have enough chemical units to permit actual MOPP gear exchange during training.

Major problem with professional image of Chemical Corps is based on general perception of quality of NCOs and officers. The Corps has not recovered from its elimination in the 70's. May be that quality NCOs and officers select other branches to avoid being involved in a possible repeat. As a Division G1, I particularly had a hard time finding quality senior NCOs to fill leadership positions. The senior chemical NCOs were technical guys and were unsuccessful in leadership jobs. Finally had to put an armor NCO in to be the First Sergeant of the chemical company.

Engineer Corps may be able to take the officer mission (survivability).

There ought to be a Chemical Branch. There ought not be a separate Chemical School. It should be collocated with other combat support schools.

I was very fortunate with the quality of my battalion chemical officer during the majority of my command, including the Desert Shield/Storm period. He and all of the chemical soldiers in the battalion had it ready for combat operations. I believe, however, that the quality demonstrated by this officer was more a product of individual abilities, than that of the Chemical Corps's programs.

Having spent a considerable time at FT. McClellan, my impression was that the Chemical Corps has outstanding company grade officers and good NCOs. The field grade officers are another story. May be just the worst ones are assigned there.

If the overhead of a conventional separate branch is un-affordable, then maybe we need to look at detailing folks as chemical officers from other branches. The school house/combat developments mission would also have to be integrated into a larger branch. Perhaps Artillery would be most appropriate from a historical perspective. At two times in our history the Ordnance Corps was a detail branch of the Artillery-i.e., artillery officers wore ordnance brass and did ordnance jobs.

Chemical Corps officers/NCOs play key role in unit's mission. During Desert Storm, their worth went up considerably. Key weakness for combat service support units is being able to communicate information up and down the chain. Enemy threat was also overstated, but helped keep soldiers attention during training.

The Chemical Corps could take more missions and be more important in peacetime by dealing with environmental hazards, environmental protection, etc. They could become a part of the Corps of Engineers, with special emphasis on chemical/environmental issues.

At brigade and battalion level, chemical NCOs are critical to mission service as subject matter experts and trainers. Officers as planners and advisors are critical at brigade, battalion, and division level. You guys are important and mission essential!

Merge Chemical Corps back under Ordnance where it was. Keep as a functional area under Ordnance Branch for both officer and enlisted.

We need dedicated chemical NCOs holding the MOS) at company and battalion level. This should not be an additional duty. We have poor decontamination equipment and procedures. We should learn from the Soviets. NBC reconnaissance capability should return to the individual cavalry squadron. I was unaware that there was a move to eliminate the Chemical Corps--big mistake!

Chemical warfare specialists (officer and enlisted) are vital in today's environment. No matter what service, chemical warfare professionals are required and will be for the foreseeable future.

My chemical officer in South West Asia was the most aggressive officer in the unit. He took charge of NBC and came up with a simple, effective NBC program that was executed when required. He became the Fire Support Officer and coordinated all fires. He actually flew a mission into Iraq and was given a joint award upon our return. If every chemical officer was like this young officer, there would be no doubts about the Chemical Corps. He made you pay attention to NBC.

I have had very effective and proactive Chemical Corps officers and NCOs during my period of battalion command. They argued NBC integration at all times, while making it interesting for the individual soldier.

A briefing to prospective commanding officers at the Navy's Surface Warfare Officers School was 4.0! It was given by a Captain, United States Army, Chemical Corps!

Chemical Corps has a niche in today's world of anyone-any Third World outfit having NBC capability. Could argue a special operations role.

I think we may have to rolled how we organize to conduct the chemical missions. Maybe we don't need division chemical units? Maybe all NBC should be corps assets? The unit-type NBC missions, to include smoke, decon, flame, recon, etc. could be done by the unit, with TOE authorized equipment. Maybe expanding battalion/brigade S3 operations in the NBC area would allow for this structure.

I was in the Army when we did away with the Chemical Corps before. It caused a decrease in emphasis and quality of defense. Don't need to repeat a bad lesson learned. Need to strengthen what we have now. Focus need to be on integration of officer/NCO with units. My chemical officer was my Mortar Platoon Leader during operation Desert Storm. All chemical lieutenants need a platoon-emphasis on leadership versus technical qualification. Technical just a part of leadership. NCO focus on both but more slanted toward technical expertise and advice. Chemical officers and military intelligence officers lose credibility when they tend to exaggerate or create things to emphasize their points, i.e., depleted uranium round is a radiation hazard, T72 tank will stop a 120mm round, etc. Chemical officers need to understand that commanders need accurate assessments, not "sky is falling" or "I can tell the commander something new to impress him" philosophy.

There is a need to continue 54E and officer assignments as before. Structured as before the wall fell.

Got to consider the branch as a whole, and not break up officer versus enlisted. Either they stay together as a branch or eliminate the whole thing.

Need more, not less.

I'm torn between retention and elimination in a downsized Army. I can see advantages and disadvantages of both, but believe the Corps could be eliminated if there was an accompanying changes in mentality to make every soldier an expert in NBC tasks. If this change does not accompany the elimination of the Corps, throughout every aspect of our Army, NBC planning and training will not be stressed. In fact, it will revert back to the deplorable state of the late 60's/early 70's and the Korean experience, i.e., North Korea doesn't have the capability so we went train on the NBC tasks.

Chemical units can be single-mission units, and as such, much of this function can be handled by Reservists. If Chemical Corps were to be eliminated, the functions would still be necessary, as would the schooling. Perhaps designating other branches, officers and enlisted, to receive Chemical Corps training and creating a dual-track career program would prove to be effective.

The reason for ineffectiveness was due to the limited assets that the Chemical Corps had to deploy. A handful of FUCHS/FOX detection vehicles was absurdly small in South West Asia. Chemical Corps requires dedicated air assets similar to military intelligence Quick Fix, to move around battlefield to conduct its mission. The Chemical officer on the division staff is the most maligned, beaten man--he is spread too thin and seemed to wind up working logistical problems involving chemical equipment, similar to G2 wrestling with maps. If the logistic people did their job, then perhaps things would be different. Research and development is more important than ever in these destabilized days, to meet the potential and real threat of dime store bugs and gases.

After what I went through on Desert Shield/Storm--I firmly believe that we need the Chemical Corps!!! LTC Rick Jackson, Division Chemical Officer, 82nd Airborne Division, did a superb job for our division. We need you--so good luck and hang in there!

I believe your Corps has a place. Look at what the Chemical Corps did during Desert Storm. They are the experts that every line commander up to Chief, JCS, looks to for answers on chemical questions and to advise on how best to train and identify the threat.

The main problem of the Chemical Corps is no one wants to face NBC reality. We need better equipment, better training, and methods to instill confidence in our own soldiers on how to fight in a chemical environment. Development and acquisition of chemical and medical equipment for war lags far behind every other branch--thus "it must not be important." Once you train soldiers in proper techniques and proliferate knowledge versus "if contingencies"--NBC will take its rightful place among warfighting training.

It is hard to determine how few personnel can still constitute a separate branch. But the specific missions of NBC should remain with specialist (officer and enlisted), even if brought under another branch for management purposes.

Chemical protection is too important not to have a focal point. NBC NCO is often the weakest position in a company due to turn-over and training. Battalion NCO is key to a good program. Most officers do not know enough to implement and maintain a program. NCO is the key. Most commanders want to push NBC on the shelf until it is too late and the program is broken. The Chemical Corps is a necessary and required focal point.

Keep the chemical programs. I have been in long enough to see programs that have merit, this one does. NBC officers and NCOs have earned their money, time and time again--keep them!

There is a need for the functions of the Chemical Corps. The question is whether a separate branch is needed to perform that mission. Regardless, there still will be a need for adequate expertise in that area to train troops and advise commanders.

We have too often payed lip service to NBC items. Although we all said we need to increase our training, it was always the first to be cancelled when there was a time crunch. If we reduce too much or eliminate, I believe we'll be in serious trouble. Not having served in South West Asia, I was not able to see the increased role and importance the NBC personnel and chemical units played.

As a result of my personal experience at the National Training Center, (NTC), 82-85 and 89-91, I believe that one of our Army's training deficiencies is our failure to address NBC as a separate Battlefield Operating System (BOS). TRADOC Pam 525-5, Airland Operations, dated August 1991, fails to adequately address the importance of the BOS's. Additionally, FM 100-5, Operations, dated 1986, (our capstone manual for warfighting), also fails to address the BOS's. As we train our future leaders and commanders at all levels or echelons, I believe we must simplify and clarify the method of training synchronization. In order to do so, we must train the BOS's and their interrelationship. Our current doctrine addresses seven BOS's; Maneuver, Command and Control, Intelligence, Air Defense, Mobility/Counter mobility, Fire Support, and Combat Service Support. It is my belief that these BOS's must be analyzed, considered, planned for, thought about, etc., during all three major phases of an operation or campaign. Those three phases are: Planning, Preparation, and Execution. If the commander trains his subordinate staff and leaders to analyze all three phases of an operation using the BOS, he/they will be less apt to exclude any aspect of their combat multipliers, and they will be more successful at the art and science of synchronizing the battle. NBC should not be considered as an integrated system. In order for the commander and his staff to give the proper degree of emphasis to a very important combat multiplier, it must be looked at separately as one does Intelligence or Maneuver. The Chemical Branch needs to take an active role in the doctrinal development process IAW the above referenced TRADOC Pam 525-5 or we will end up with a revised FM 100-5 which again excludes the BOS and NBC. I realize this is a very brief and cryptic indictment of our training doctrine and process. However, based on my six years of experience as a leader, trainer, commander at the NTC, I assure you, the way to successfully dominate the battlefield is to synchronize all BOS's by planning for all three phases of the battle. If you exclude NBC, and fail to treat it as a separate BOS, you will reduce your chances for success.

My chemical officer in the unit was absolutely cracker jack, one of the best that I've ever seen. His NCO was very prone to find reasons to do only what he could get away with. The officer kept him and the programs out of trouble. We had an outstanding chemical defense, decontamination program, even before Desert Storm (because we emphasized it). During the Desert, we got really involved in it.

Most chemical officer duties can be handled as extra duties within the unit. The key to our chemical defense is the enlisted chemical soldier. These troops are some of the finest soldiers in any unit! The chemical officers are also top notch. However, they are often under utilized or used for other than chemical jobs.

Probably don't the branch--but do need the functions. Probably could be Quartermaster or Medical Service Corps functions.

The Army must retain a repository of expertise in the NBC field; it should not be solely an additional duty for an officer or NCO.

If we don't dedicate professionals to the chemical business, it will definitely be placed on the back burner.

All Chemical Corps MOSs should be transferred to the Ordnance Corps. The Chemical Corps is too small and specialized to be a Corps.

If the Chemical Corps is eliminated, the NBC functions will become secondary to some other branch and that's exactly how NBC defense, (equipment and training) will be viewed and supported.....secondary! NBC needs an advocate for their absolute vital functions, no one will do it better than the Chemical Branch. We got lucky at Desert Storm, if chemicals had been used, no one would consider eliminating the Chemical Corps!

The U.S. Army needs a NBC capability. NBC training is needed. People and equipment are needed to accomplish training and wartime missions. How it's done is less important to me. If not chemical officers, then at least a functional speciality. At the enlisted level, it appears prudent to maintain the MOS and fill down through battalion level. Good people is the key.

NBC training is commander's responsibility. NBC wartime tasks can be accomplished by non-chemical personnel. NBC defense schooling must be continued. If the Chemical Corps is disbanded, additional personnel slots will be required at battalion/division levels. Elimination of the Chemical Corps officer branch would effectively save officer spaces. Key question is: Will acceptable emphasis be placed on NBC defense issues if the Chemical Corps is eliminated? Commanders and future commanders must be indoctrinated and trained to understand full implications of NBC threat and defense training requirements.