

USAF SECURITY FORCES TRAINING NEEDS

Joseph L. Weeks, USAF Research Laboratory, Mesa, Arizona

Lt Col Jorge S. Garza, USAF, Security Forces Center, San Antonio, Texas

Capt Mark A. Archuleta, USAF, Force Protection Battlelab, San Antonio, Texas

L. Bruce McDonald, McDonald Research Associates, Winter Park, Florida

Security forces ensure USAF combat capability by providing force protection. The Air Force Research Laboratory and McDonald Research Associates have launched a research and development project dedicated to exploring affordable strategies for security forces distributed mission training — known as SecForDMT. The current approach consists of the design, development, and evaluation of distributed interactive simulations. Expert assessments indicate the potential of this technology for support of instructional objectives involving command and control, decisionmaking, and team coordination. To ensure emerging technology supports warfighter needs, technology assessments must be considered in combination with training requirements. The purpose of this paper is to review empirical data that describe training needs of security forces enlisted and officer personnel and to discuss implications for SecForDMT.

ABOUT THE AUTHORS

Joe Weeks serves as Program Manager and Principal Scientist for security forces training initiatives at the Air Force Research Laboratory. His research interests include acquisition of expertise in decisionmaking and effectiveness of simulation training. He holds a PhD in Educational Psychology from the University of Texas.

Lt Col Jorge S. Garza is Chief of the Training and Combat Arms Division at Headquarters Air Force Security Forces Center. He is a career Security Forces Officer with over 19 years of continuous experience in the career field. He holds a Bachelors degree in Biology from Texas A&M University and a Masters degree in International Relations from Webster University.

Capt Mark Archuleta is Chief of the Modeling and Simulation Future Operations Branch at the Force Protection Battlelab. His experience includes survivability modeling, simulation, and analysis—in conjunction with flight-testing—of the B-52, B-1, and B-2 bombers, and the Predator Unmanned Aerial Vehicle. He holds a Bachelor of Science degree in Mathematics from Oklahoma State University.

Bruce McDonald is Principal Scientist at McDonald Research Associates. He has 25 years experience in research and development, analysis, design, and production of simulation and training systems. He holds a PhD in Industrial Engineering from Texas A&M University.

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INTRODUCTION

Security forces (SF) represent one of the largest active duty, career fields in the USAF consisting of 22,510 enlisted personnel and 861 officers (“Air Force Personnel Center; Personnel Statistics”, 2001). SF ensure USAF combat capability through providing the functions of security for resources, installations, weapons systems; force protection; air base defense; military police services; information, personnel, and industrial security; military working dog activities; and combat arms (“Security Forces Officer Specialty, Career Field Education and Training Plan”, 2001).

For combat arms, military working dog, security, and police services, underlying skills are developed by training and daily performance. Air base defense is unique in that it is a conditional function called for in the War Mobilization Plan and therefore is not performed daily. Underlying skills are developed only through intermittent training. Air base defense skills are more subject to decay than those supporting daily functions.

Although all duties performed by SF are critical for ensuring combat capability, air base defense has been the center of attention for defense analysts. Vick (1995) and Shlapak and Vick (1995) emphasize the centrality of aerospace power to national security strategy and the vulnerability of aerospace assets to ground attack. Their reports “Snakes in the Eagle’s Nest” (Vick, 1995) and “Check Six Begins on the Ground” (Shlapak & Vick, 1995) are primary training references for identifying significant events in USAF SF history (“Security Forces Officer Specialty, Career Field Education and Training Plan”, 2001).

Vick (1995) reviews the history of air base defense by focusing on World War II and Viet Nam. He concludes that, “Most large - unit attacks on airfields succeeded because defending ground forces were outnumbered, outgunned, or outclassed shortages in high-quality rear-area security forces and a lack of surveillance assets were the most common weaknesses.” (Vick, 1995, p. xviii).

Shlapak and Vick (1995) describe strategies for responding to the ground threat. They refer to penetrating and standoff attacks. Penetrating attacks consist of small teams breaking through the defensive perimeter to place bombs on aircraft, facilities, and other assets. Standoff attacks consist of firing on aircraft, facilities, and personnel from a distance of several kilometers. They predict increased use of standoff attacks and indicate that “*without a serious effort to improve U.S. abilities to detect and counter standoff attacks, the USAF is likely to lose high-value aircraft or have base operations otherwise disrupted in some future conflict.*” (Shlapak & Vick, 1995, p. xvi). They recommend several strategies for countering this threat:

“Detect and defeat the adversary outside the wire, before it launches the attack. Doing so requires surveillance of the entire area from which attacks could be launched, which could be achieved by implementing options that include.... — improving SP [security police] training—both individual and unit—for off-base operations.” (Shlapak & Vick, 1995, p. xvi).

These authors refer to a war environment that is different from the contingencies USAF SF have encountered recently. In a war environment, SF may have off-base freedom of movement to maintain control. However, recent contingencies have been different. Host nations have performed off-base patrolling to maintain control. In Mogadishu, the U.S. Army, not the Air Force, performed off-base patrols.

¹ The views and conclusions expressed in this paper are those of the authors and do not necessarily represent official policy of the United States Air Force Security Forces Center, the Force Protection Battlelab, the Air Force Research Laboratory, or the United States Air Force.

Nevertheless, current training for SF includes off-base operations. Initial and advance training for individual skills includes patrol operations. SF personnel assigned to unit type codes (i.e., deployable SF positions that vary by function) are required to attend continuation training annually. Collective training takes place once every 3 years at regional training centers (RTCs). At RTCs, SF personnel assigned to different unit type codes are trained with personnel assigned to other occupational specialties. In addition, SF receive training annually at their home base for the 2 intervening years. This training includes air base defense operations and may include patrol operations. Nevertheless, air base defense continues to be identified as an area requiring additional training. Anecdotal reports from ground combat skills instructors indicate that SF simply do not have the opportunity to practice their skills often enough (McDonald & Weeks, 2000). We believe this is especially true for small-unit leader decisionmaking and team coordination skills.

The expectation is air base defense operations will present a complex and dynamic decision environment where mission success will depend on underlying skills being highly refined. Hall, Dwyer, Cannon-Bowers, Salas, and Volpe (1993) provide an excellent description of the warfare environment,

“Tactical decision-making teams in the modern warfare environment are faced with scenarios characterized by rapidly unfolding events, multiple plausible hypotheses, high information ambiguity, severe time pressure, sustained operations, and severe consequences for errors. In order to adapt to these stressors, team members must learn to coordinate their actions so that they can gather, process, integrate and communicate information in a timely and effective manner. Therefore, training interventions should fully exploit instructional designs that will enable teams to maintain performance under stressful conditions.” (Hall, et al., 1993, p.89).

We believe virtual environment technology can provide a useful approach to such training interventions; one that could enhance learning opportunities during the limited field-training

exercises currently conducted. In addition, the combination of simulation training and field exercises could offer a more affordable alternative than simply increasing the frequency of field exercises to meet a training shortfall. However, it is important to determine what evidence exists to indicate such an approach would be effective. Pleban, Eakin, Salter, and Matthews (2001) have conducted rigorous experiments to determine the effectiveness of using a virtual environment to train decisionmaking for dismounted infantry platoon leaders. Their results indicate that “Objective decision-point accuracy improved significantly over missions.” (Pleban, et al., 2001, p. vii) They conclude, “The research showed that real world decision making skills could be trained using virtual environment technologies. To insure maximum benefit, virtual training must be combined with the appropriate field experience and mentoring.” (Pleban, et al., 2001, p. viii). This success in demonstrating the training effectiveness of virtual environment technology is a benchmark reference for research being conducted at the Air Force Research Laboratory (AFRL).

An AFRL project has been initiated to determine strategies for affordable distributed mission training for SF (McDonald & Weeks, 2000; McDonald, Weeks, & Hughes, 2001). The project is known as Security Forces Distributed Mission Training or SecForDMT. The current approach consists of design, development, and evaluation of distributed interactive simulations. Early assessments of this technology indicated great potential for the support of training in decisionmaking and team coordination (McDonald, 2000).

Under the best circumstances, training simulation development is founded upon balanced consideration of technology assessments, current training needs, and emerging training requirements. The purpose of this paper is to review empirical data that describe training needs of SF enlisted and officer personnel, to introduce recently collected information that describes officer training needs, and to discuss implications for SecForDMT.

BACKGROUND

Since 1956, the Air Force has conducted job task surveys to collect occupational information for guiding technical training development (Christal

& Weissmuller, 1988). According to this approach, an inventory of job tasks is developed and used to conduct a survey of job incumbents to determine the distribution and frequency of task performance and to obtain task factor ratings for learning difficulty and recommended training emphasis. The Air Force Occupational Measurement Squadron (AFOMS) and its organizational predecessors have been conducting such surveys since 1967.

In 1997, AFOMS completed such a survey for SF enlisted personnel (“Occupational Survey Report, Security Police”, 1997). The survey included 714 job tasks and was completed by 3,559 enlisted personnel. At the time, the enlisted career field consisted of a SF job, a law enforcement job, and a military working dog job shred. Results from job structure analyses indicated the military working dog job shred included many tasks in common with the law enforcement job; however, there was little overlap between the SF and law enforcement jobs. Personnel assigned to the SF job were responsible for the air base defense function.

For the SF job, task factor ratings were obtained from 61, SF non-commissioned officers (NCOs). These subject matter experts rated the learning difficulty of all 714 tasks. Learning difficulty was defined as the length of time it takes an average individual to learn to perform a task satisfactorily. Table 1 presents the learning difficulty of selected air base defense tasks. Tasks are ranked in descending order based on average learning difficulty. The rank positions of tasks among all 714 tasks are presented in the left column and average ratings are presented in the right column. Tasks rated 6.00 or higher are considered difficult to learn.

Table 1. Learning difficulty of selected air base defense tasks rated by SF experts

Task Rank	Task Description	Average Learning Difficulty
25	Plan military operations on urban terrain (MOUT)	6.75
31	Plan raids or search and clear operations	6.65
36	Plan combat patrols	6.59
39	Lead reconnaissance patrols	6.54

42	Lead combat patrols	6.52
48	Write or brief patrol or operations warning orders	6.45
52	Lead ambush or counter ambush operations	6.42
54	Lead raids or search and clear operations	6.42
58	Plan reconnaissance patrols	6.39
69	Develop or coordinate fire plans with defense forces	6.30

This task subset was selected because it represents operations suggested by Shlapak and Vick (1995) as counters to the stand-off threat. The message from experts is that these air base defense tasks are among the most difficult to learn. They are in the top 10% of all 714 tasks ranked in terms of learning difficulty.

For the law enforcement job, ratings for all 714 tasks were independently obtained from 81 law enforcement NCOs. Table 2 presents learning difficulty ratings for selected tasks. This subset was selected because it presents law enforcement tasks rated highest in learning difficulty. Tasks rated 6.00 or higher are considered difficult to learn.

Table 2. Learning difficulty of selected law enforcement tasks rated by law enforcement experts

Task Rank	Task Description	Average Learning Difficulty
3	Reconstruct traffic accident scenes	7.77
12	Draft traffic scale diagrams	7.22
13	Compute traffic accident vehicle speed estimates	7.15
37	Direct investigation activities	6.54
58	Direct law enforcement flight operations	6.31
60	Direct traffic management or accident investigation operations	6.29

Comparisons of average ratings for air base defense and law enforcement tasks in Tables 1 and 2 indicate law enforcement tasks are rated higher on learning difficulty. However, the current design plan for SecForDMT focuses on

simulation training support for air base defense. This is because air base defense is a conditional function. Skills that underlie law enforcement tasks can be refined through daily performance; this is not the case for air base defense.

The most recent AFOMS survey for SF enlisted personnel was conducted during the first half of 2001. Survey data are currently being analyzed and analyses are being documented (T. D. Guthrie, personal communication, July 12, 2001). The 2001 survey is particularly interesting because it was conducted after the SF career field was administratively restructured. In 1997, the combat arms training and maintenance (CATM) job shred was added to the career field. With the addition of CATM, the career field became more diverse.

The 2001 survey consisted of 955 tasks and 21 duty headings. Task learning difficulty ratings were obtained for 955 tasks from 85 senior NCOs. Table 3 presents the learning difficulty of selected air base defense tasks that could be addressed by training simulations. Tasks are ranked in descending order based on average learning difficulty. The rank positions of selected tasks among all 955 tasks are presented in the left column and average ratings are presented in the right column. Tasks rated 6.00 or higher are considered difficult to learn. Although tasks like “Compute traffic accident vehicle speed estimates” from the law enforcement job and “Design weapon repair fixtures” from the CATM job shred had higher average learning difficulty ratings than the tasks presented in Table 3, air base defense tasks still occupied high rank positions in the overall task ranking.

Table 3. Learning difficulty of selected air base defense tasks obtained during the 2001 enlisted SF survey

Task Rank	Task Description	Average Learning Difficulty
36	Plan raids or search and clear operations	6.59
43	Plan combat patrols	6.49
46	Plan reconnaissance patrols	6.45

50	Plan retrograde operations	6.42
72	Develop or coordinate fire plans with defense forces	6.27
81	Plan built-up area operations	6.24
95	Lead tactical convoys	6.18
96	Plan fields of fire for sector fighting positions	6.18
105	Develop and maintain air base defense (ABD) sector sketches and fields of fire	6.12
124	Analyze terrain	6.07

On most occasions, job task surveys are only administered to enlisted personnel. Surveys have not been routinely administered to large samples of SF officers. A literature review indicated the last AFOMS survey that included SF officers was conducted in 1979 (“Occupational Survey Special Report, Security Police Career Field, Air Base Ground Defense Tactics”, 1979). The 1979 survey was considered a special survey because the objective was to obtain training recommendations for tasks associated with air base defense. Participants used a 10-point rating scale to rate the training emphasis of 192 items; learning difficulty ratings were not collected.

A total of 1,023 individuals, including 450 officers and 573 NCOs, completed the survey. The participant sample represented a significant proportion of the senior leadership of the security police career field at the time. Survey participants represented all major commands; 70% had direct experience in air base defense; and 36% had experience in the Viet Nam conflict under fire. High levels of rater agreement led to the conclusion that there was “a very substantial consensus as to what should be trained in an ABGD [air base ground defense] course.” (“Occupational Survey Special Report, Security Police Career Field, Air Base Ground Defense Tactics”, 1979, p. 9).

The 1979 survey report indicates tasks rated highest in training emphasis were those that involved weapons and their use as part of a team operation. Because positions of flight leader, flight sergeant, and squad leader carry duties and responsibilities beyond those required of fire team members, task training emphasis ratings were independently obtained for these positions.

Table 4 presents the top 5% (10/192) of the squad leader tasks rated highest on training emphasis. Table 5 presents the top 5% rated highest on training emphasis for flight leader and flight sergeant positions. Tasks rated 6.00 or higher are considered difficult to learn.

Table 4. Top ten squad leader tasks on training emphasis

Item Rank	Item Description	Average Training Emphasis
1	Train squad personnel to maintain proficiency	7.46
2	Determine and exercise control of fire and movement tactics	7.36
3	Employ squad weapons	7.35
4	Plan and coordinate squad fighting positions	7.25
5	Apply leadership principles to squad operations	7.23
6	Employ search and clear operations (fighting and defending built-up areas)	7.21
7	Develop and coordinate squad fire plans	7.11
8	Receive and execute fire control orders	7.08
9	Select and employ tactical formations	7.05
10	Knowledge of unconventional enemy-force tactics such as guerilla or subversive tactics	7.02

Table 5. Top ten flight leader and flight sergeant tasks on training emphasis

Item Rank	Item Description	Average Training Emphasis
1	Formulate and coordinate flight fire plan with squad	7.56
2	Apply leadership principles to flight operations	7.56

3	Apply unit motivation techniques	7.38
4	Knowledge of enemy-force special operations tactics, strategies, and vulnerabilities	7.31
5	Plan and coordinate flight defenses with other flights	7.29
6	Position quick reaction forces	7.27
7	Determine and exercise control of fire and maneuver tactics	7.24
8	Train flight personnel to maintain combat readiness	7.24
9	Knowledge of organic weapons characteristics, uses, and limitations, including uses by enemy special operations units	7.16
10	Plan or direct search and clear operations	7.10

In addition to task training emphasis, survey participants recommended frequency of training for individuals occupying air base defense positions. This included training for officer flight leaders and enlisted personnel in positions of flight sergeant, squad leader, and fire team member. Recommended training frequency was no less than monthly.

PROBLEM

Although occupational data for enlisted personnel have been repeatedly collected over the last 5 years, data available to describe officer training needs are more than 20 years old. Information for officers is required to combine with similar information for enlisted personnel to identify current training needs. Such information would help answer important questions including: What are specific task training requirements? Does a gap exist either in terms of training for a particular task or in terms of frequency of training for identified tasks? What are the task training priorities? Which tasks should be supported by SecForDMT? For tasks that should be supported by SecForDMT, are computer models needed in addition to what is included in the original design plan? In view of these considerations, collection of information on current officer training needs was adopted as an important research objective.

METHOD

A collaborative effort was initiated by HQ USAF Security Forces Center (AFSFC), the Force Protection Battlelab, and the Air Force Research Laboratory, Warfighter Training Research Division (AFRL/HEA). The purpose of the collaboration was to design, develop, and administer an occupational survey to obtain information describing the training needs of SF officers.

The SF officer must be trained and ready to lead, manage, and direct personnel executing SF missions in all functional areas. Because of the complexity of the officer career field, development of a comprehensive task list was a critical first step toward obtaining a meaningful indication of training needs. The breadth and detail of the task list would have to provide satisfactory representation of the officer career field but not exceed reasonable survey administration time and thereby compromise data quality. The task list that represented the career field was recommended by experts at the AFSFC (B. Kilgore, personal communication, 21 December, 2001) and at AFOMS (H. Dubois, personal communication, December 20, 2001). Tasks, activities and skills were obtained from the officer career field education and training plan ("SF Officer Specialty, Career Field Education and Training Plan", 2001).

The Career Field Education and Training Plan (CFETP) is a comprehensive education and training document that identifies life-cycle education and training requirements, training support resources, and minimum requirements for SF officers. The purpose of the CFETP is not to provide an exhaustive description of duties and tasks in the career field; rather the purpose is to describe knowledge and performance domains addressed during officer training. It describes behavioral items for which training support is provided. Training support is provided at different levels described as "knowledge" and "performance". The "knowledge" level indicates training support is sufficient for imparting information or facts about a behavioral item. The "performance" level indicates training support is at a level sufficient to train performance of an item. Items extracted from the CFETP for use in the survey were only a subset of all items. Behavioral items at the "knowledge" level were excluded. All

behavioral items at the "performance" level were included for the purposes of obtaining training emphasis ratings. These items consisted of 137 tasks and activities.

Even though the selected list of behavioral items were not completely representative of all career field tasks, it did represent a reasonably comprehensive representation of the career field. Selected items represent management activities, supervisory tasks, command duties, and technical tasks "with" and "without" equipment.

The survey was organized into three major sections including background information, training information, and recommended training emphasis ratings as described below:

1. Background Information – Twenty items included questions to determine organization, position, rank, supervisory responsibilities, duty Air Force specialty, time in the career field, unit type code assignment, experience as a flight commander, and deployment experiences.
2. Training Information – Twenty-five items included questions to determine time since completion of basic or advanced courses in air base defense, time spent in pre-deployment training, recommendations for improving pre-deployment training, and recommendations concerning frequency of training for air base defense.
3. Recommended Training Emphasis Ratings – 137 tasks/activities were rated on the emphasis they should receive during training. The training emphasis rating scale was the 0 to 9-point scale provided below:
 - 0 = "Do not know"
 - 1 = "None or no training emphasis should be given to the item"
 - 2 = "Extremely Low Training Emphasis"
 - 3 = "Very Low Training Emphasis"
 - 4 = "Below Average Training Emphasis"
 - 5 = "Average Training Emphasis"
 - 6 = "Above Average Training Emphasis"
 - 7 = "High Training Emphasis"
 - 8 = "Very High Training Emphasis"
 - 9 = "Extremely High Training Emphasis".

An Internet survey approach was adopted for low costs and quick execution compared to a pencil-and-paper survey (Mitchell & Weissmuller,

1999). HQ USAF/XOF approved the survey on 12 January 2001. The Internet address was distributed by AFSFC through major command contacts and through the AFSFC website. Survey participation was voluntary and anonymous to help ensure collection of quality data. The survey was available on the World Wide Web from 6 February 2001 to 30 April 2001—a total of 84 days.

RESULTS

The total number of survey log-ins was 479 as of April 30th, 2001. A total of 127 log-ins were deleted due to failure to provide responses, no variation in ratings, or a low correlation with the group rating policy. The rater deletion procedure is described by Staley and Weissmuller (1981). Of the remaining participants, the total number varied by survey item. There was an inverse relation between number of participants and survey item number; so, the number of participants decreased as the survey continued to its end. Officer participants represented the following subgroups:

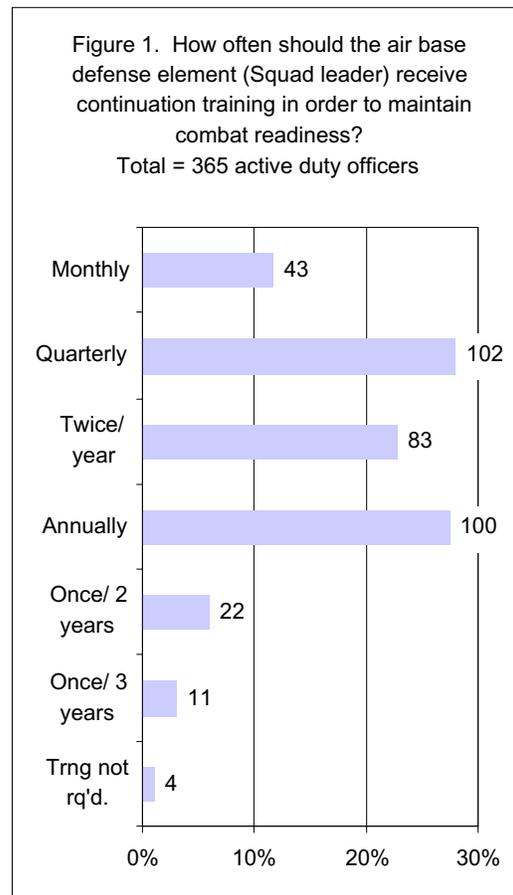
- Active duty officers = 396
- Air Force Reserve (AFRC) officers = 19
- Air National Guard (ANG) officers = 2
- Enlisted personnel = 5

The active duty officer sub-sample represented 46% of the total 861 active duty SF officers (“Air Force Personnel Center; Officer, Personnel Statistics”, 2001). All ranks were represented with 56% of all Captains and 53% of all Majors. All major commands were represented. A broad spectrum of experience was represented with 20% of the participants having more than 16 years in the career field. A total of 37% of the participants were assigned to a unit type code and 41% indicated they had previously deployed. These results indicate that participants represented a significant proportion of active duty officers and those having the experience to offer credible opinions regarding training needs.

Earlier, we asserted air base defense training may not be sufficiently frequent. SF personnel assigned to unit type codes are required to attend annual training. However, ground combat skills instructors reported that personnel do not have an

opportunity to practice their skills often enough (McDonald & Weeks, 2000).

Participants in the officer survey answered a question about the need for air base defense training. The question did not specify whether training should be conducted at either regional training centers or at home base, but did specify continuation training for combat readiness. Survey participants were asked to recommend frequency of continuation training for individuals assigned to various air base defense positions at the flight level including flight leader, flight sergeant, squad leader, and fire team member. Figure 1 is representative of results for all positions. Over 50% of survey participants recommended continuation training for air base defense more frequently than once per year for all positions. The data suggest a training gap exists for air base defense.



If it's decided to increase the frequency of air base defense training, then it would be convenient to have some indication of the air base defense tasks important to emphasize

during training. A ranking of tasks on the basis of training emphasis would provide a useful reference for determining training priorities. The SF officer survey provided such information. A sub-sample of 352 officers provided ratings of officers' tasks in terms of training emphasis. Analyses of inter-rater reliability indicated a highly consistent rater group. Ratings were used to rank tasks from high to low in terms of average training emphasis.

Table 6 presents the top 22 air base defense tasks ranked in terms of average training emphasis rating. The task duty area follows the task statement to provide additional meaning to the task description. The rank position of the task among all 137 tasks is presented in the left column and the average rating is presented in the right column. Tasks rated 6.00 or higher are considered high in training emphasis

Of all officer tasks included in the survey, the top 25 percent (35 tasks out of 137) on training emphasis represented the following duty areas:

- Application of force
- General SF duties
- Air base defense
- Security police operations
- Weapons utilization

More than half (22/35) of the tasks in the top 25% involved air base defense tasks including command and control, conduct of the defense, convoys, unit tactical skills, military operations other than war (MOOTW), and military operations in urban terrain (MOUT). The high occurrence of air base defense tasks in the top 25% of all survey tasks is an independent indication of training needs for air base defense.

Table 6. Top 22 air base defense tasks rated highest in training emphasis by SF officers

Task Rank	Task Description	Average Training Emphasis
3	Apply troop leading procedures; Air Base Defense Tactics, Command and Control	7.87
7	Prepare for combat; Air Base Defense Tactics, Conduct of the defense	7.68

8	Conduct sector/flight command post operations; Air Base Defense Tactics, Command and control	7.66
9	Participate in Military Operations Other Than War problem solving exercise; Air Base Defense	7.63
10	Reorganize defense forces; Air Base Defense, Conduct the defense	7.61
11	Fight the defense; Air Base Defense, Conduct the defense	7.58
14	Plan a tactical convoy; Air Base Defense Tactics, Convoys	7.39
15	Conduct a tactical convoy; Air Base Defense Tactics, Convoys	7.38
17	For MOUT, conduct built-up areas search and clear operations; Air Base Defense Tactics, MOUT	7.34
19	Participate in SF Joint/Combined deployment planning exercise; Air Base Defense	7.33
20	Prepare a situation report; Air Base Defense Tactics, Command and control	7.33
21	Prepare a SPOT Report using Size, Activity, Location, Unit/Uniform, Time and Equipment (SALUTE) format; Air Base Defense Tactics, Command and control	7.30
22	Establish defensive positions; Air Base Defense, Conduct of the defense	7.30
23	Initiate contact/actions on enemy contact from a defensive position; Air Base Defense Tactics, Conduct of the defense	7.29

24	For military operations on urban terrain, utilize four-person technique to enter/clear rooms; Air Base Defense Tactics, MOUT	7.26
25	React to contact; Air Base Defense Tactics, Unit tactical skills	7.25
26	Locate the enemy from a defensive position; Air Base Defense Tactics, Conduct of the defense	7.24
29	Implement procedures to consolidate and reorganize; Air Base Defense, Unit tactical skill	7.17
30	Move to defensive positions; Air Base Defense Tactics, Conduct of the defense	7.17
31	Prepare overlays; Air Base Defense Tactics, Command and control	7.17
32	Implement procedures to break contact; Air Base Defense, Unit tactical skills	7.16
33	Determine grid coordinates of a point on a military map using the military grid reference system; Air Base Defense Tactics, Land navigation	7.12

DISCUSSION

What do we gain from such a survey? The level of analysis is general because it focuses on small unit tasks and operations. We do not get detailed information for training exercise design. For example, we did not seek information on the cues that affect decisionmaking. We did not seek standards for performance or performance metrics. What we get is an opportunity to work with customers so we can develop a clearer understanding of training needs. We collected information that helps us determine if a training gap exists and information on task training priorities. As a result, we obtained an evidentiary basis for training development decisions.

An important limitation of the officer survey is that future training needs were not addressed. For example, the survey did not include tasks involving the employment of advanced non-lethal weapons. Using a separate pencil-and-paper training needs survey consisting of air base defense tasks, the senior author included tasks pertaining to advanced non-lethal weapons and administered the survey to a small sample of SF instructors. They indicated that training for such tasks is not required because they do not currently use such weapons. This finding highlights the challenge of balancing training system design. Simulation training research and development should anticipate future training requirements and balance systems design to reflect both current and future needs.

CONCLUSIONS

The SF officer survey resulted in a valuable empirical basis for determining training needs. The sample of survey participants represented over 45% of active duty officers. Over 50% of these officers suggested a training gap exists. They recommended air base defense training for personnel at the flight level more frequently than once per year and offered specific recommendations about the tasks that should be emphasized during training.

How does the obtained information affect the original SecForDMT design plan? In general, this information supports the focus on decisionmaking and team coordination. Because officer training emphasis ratings were high, SecForDMT should be designed to support officer decisionmaking for command and control, conduct of the defense, convoys, unit tactical skills, command post operations and decisionmaking in support of military operations other than war in a joint environment.

Tasks highly recommended for training that are not currently accommodated by the design plan include those for "Military operations in urban terrain". Revisions of the system design plan would be necessary to address these tasks and additional R&D funding would be required to develop computer models for training simulation support.

Security police and law enforcement officer tasks were rated high in training emphasis. However, training support for these tasks is not in the design plan because skills that underlie

law enforcement and security police operations can be developed and refined through existing training and daily performance. The current approach for SecForDMT is focused on distributed training for air base defense—skills more subject to decay than those supporting daily functions.

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