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THE ARMY-OF-EXCELLENCE DIVISIONAL CAVALRY SQUADRON(US)
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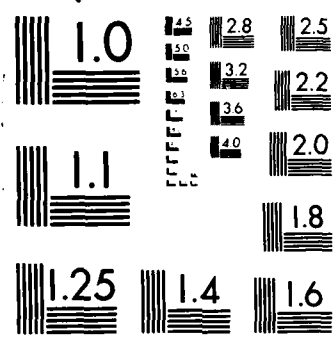
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The Army-of-Excellence
Divisional Cavalry Squadron

by
Major Kenneth J. Quinlan
Aviation

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School of Advanced Military Studies
U.S. Army Command and General Staff College
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The monograph concludes that the overall reconnaissance capability of the AOE air troop has improved, but problems with command and control and a need for independent operation capability points to design flaws in the AOE division cavalry squadron. Finally, recommendations are offered to resolve the identified problem areas.

**The Army-of-Excellence
Divisional Cavalry Squadron**



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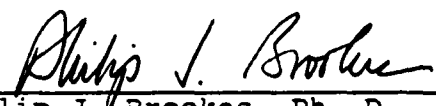
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I. Introduction

"There is typically a battle which precedes the battle--a confrontation of opposing reconnaissance units and the winner of that preliminary battle is most often the victor in the main event." (1)

The "eyes" of the commander, the division cavalry squadron, play a pivotal role in the employment of the Heavy Division. Today as much as ever, the successful performance of the cavalry may be the difference between success or failure for the division. In fact, AirLand Battle doctrine's offensive, initiative-seizing spirit and its acceptance of a nonlinear battlefield have significantly increased the importance of the cavalry. Of particular significance for the cavalry mission will be the effectiveness of the air cavalry, whose mobility and agility offer great potential on the battlefield. (2)

In 1978 the heavy division armored cavalry squadron (Appendix A) was a fighting organization with the mission to perform reconnaissance and security and to engage in offensive, defensive, delaying, and economy of force operations as required. In 1980 the Division 86 Organizational and Operational Concept resulted in a more austere organization (J-series) and reduced the mission to reconnaissance and screening within and to the front and rear of the division.

In 1984 the Army-of-Excellence (AOE) initiative, an effort to "achieve manpower and material savings while retaining the

fighting capability of the force," further transformed the heavy division cavalry squadron. (3) This produced the current J-series AOE division cavalry squadron (Appendix A). Of all the changes made to the heavy division cavalry squadron, none was more drastic than the restructuring of the air cavalry within the squadron.

The purpose of this study is to determine if the air cavalry organization for the Army-of-Excellence Heavy Division Cavalry Squadron is structured in the most effective manner for the execution of the squadron's current doctrinal missions. It is not the intent of this study to question whether the doctrinal missions of the squadron are correct. For the purpose of this investigation, doctrine for the squadron is assumed to be correct.

The plan for accomplishing the purpose of this study is the following. First, AirLand Battle doctrine, the divisional cavalry squadron mission, and the specific role of the squadron's air cavalry will be examined. From this process criteria will be established for the evaluation of the air cavalry organization. After a description of the H and J series divisional cavalry squadrons, the air cavalry organization will be analyzed against the established criteria. Finally, conclusions will be drawn from the analysis and recommendations offered. Doctrinal manuals, studies and reports, the views of experienced cavalry leaders, and test evaluations, together with historical accounts, form the basis for the analysis.

II. Division Cavalry In The AirLand Battle

The criteria to evaluate the air cavalry organization of the cavalry squadron will be derived from the following analysis. First, the essence of AirLand Battle doctrine is examined to determine its impact on the division cavalry squadron mission. Then, the specific cavalry squadron doctrinal missions are examined to reveal the essential requirements for success in combat. Then specific characteristics and capabilities that the squadron air cavalry must have to support the accomplishment of the squadron's missions are identified. This will establish the criteria to be used for evaluation of the air cavalry organization of the AOE division cavalry squadron.

Understanding the thrust of AirLand Battle doctrine is essential to appreciate the demands on the division cavalry squadron. The Heavy Division Cavalry Study, completed by the Armor Center in April 1986 captures the essence of the ALB tenets--agility, initiative, depth, and synchronization.

"First, the force which seizes and sustains the initiative, and exercises it throughout the depth of the battlefield aggressively to defeat the enemy, will win. Second, decisive combat power concentrated at the right time and place will decide the outcome of battle. Maneuver--fast continual, and synchronized with other elements of the combined arms team--is the essence of our doctrine. Our intent is continually to keep the enemy off balance by delivering a series of blows from unexpected directions--the essence of maneuver warfare." (4)

The ALB described has implications for the division cavalry squadron mission. The ALB commander must be concerned with the full depth of his zone of action. The challenge is to fight close, deep, and rear battle operations simultaneously. All three areas must be synchronized so the result is not three separate disjointed engagements, but a coordinated and efficient application of combat power, designed to achieve a single overall objective. This translates into the need to see continuously the whole battlefield to insure timely combat information. In effect, "division cavalry serves as a catalyst on the AirLand Battlefield, to translate the doctrine of AirLand Battle (ALB) tenets into battlefield capabilities." (5)

The recent completion of the Heavy Division Cavalry Study, followed by the Chief of Staff decision brief on 9 September 1986, has resolved for the near term issues bearing on doctrine for the division cavalry squadron. (6) A new doctrinal manual for the division cavalry squadron is in the final draft phases at Fort Knox, the Army Armor Center. In the interim, the current doctrinal missions for the AOE division cavalry squadron are revealed in FM 17-95, Cavalry Operations and are listed below. (7)

- Conduct reconnaissance within and to the front, flanks, and rear of the division.
- Conduct screening operations, and if reinforced with tanks or infantry, guard operations.
- Facilitate division command and control by providing a positive command link between the division commander and subordinate elements.

- Conduct line-of-communications surveillance.
- Assist and control movement of maneuver units and CS and CSS elements within and through the division area.
- Conduct internal surveillance to facilitate RAP (rear area protection) operations. (Plan and conduct these operations independently or as part of a larger force.)
- Position and monitor remote sensors.*
- Conduct NBC reconnaissance.*

*These missions will not be considered because the sensor and NBC elements, which had these mission responsibilities, were removed or not fielded under the AOE initiative.

An examination of the squadron missions indicates some essential requirements for success. First, the squadron must have the capability to provide current combat information (Reconnaissance). Nearly every mission listed requires reconnaissance either directly or indirectly. Secondly, the squadron must have a highly effective system of command and control. The specific mission tasks, the diversity of missions, and the expansive area of operations over which the squadron may operate will demand this capability. Lastly, the diversity of mission profiles and the requirement for speed of execution require organizational flexibility. This organizational flexibility should allow tailoring the squadron task organization to meet the mission requirements without sacrificing the squadron's reconnaissance or command and control capability.

The air cavalry of the squadron conducts reconnaissance and security operations in support of the squadron. "It extends,

by aerial means, the reconnaissance and security capabilities of the squadron. The air cavalry troop enhances the reconnaissance and security capabilities of its parent organization by increasing flexibility, enhancing command and control, and increasing the tempo and the depth of operations." (8) It is clear that the air cavalry organization is intended to enhance the capabilities identified earlier as essential to the squadron.

It is now possible to state the criteria which will serve as the focus of this study. The following questions will form the framework for the analysis of the air cavalry organization within the division cavalry squadron.

(1) Is command and control within the AOE cavalry squadron enhanced by its present air cavalry organization as opposed to the single H-series air troop?

(2) Is there a need for the air cavalry troops to operate independently from the rest of the squadron (flexibility); if so, can they operate in this manner effectively?

(3) Is the present structure of the air cavalry organization within the squadron an improvement in reconnaissance capability as compared with the H-series single air troop?

Before beginning an examination of the above issues it is necessary to be familiar with both the H and J-series division cavalry squadrons.

III. DESCRIPTION OF DIVISION CAVALRY SQUADRONS

The Army-of-Excellence division cavalry squadron will be described in sufficient detail to support the subsequent examination of the air cavalry organization of the squadron. The H-series division armored cavalry squadron will also be described in sufficient detail to support a comparative analysis against the AOE squadron. Finally, what constitutes the air cavalry organization for the subsequent examination will be defined.

The AOE J-series division cavalry squadron is organized with a headquarters and headquarters troop, two ground troops, and two air troops (see appendix B). The squadron is assigned to the division combat aviation brigade (CAB), primarily for aircraft supportability, but is normally tactically employed by the division headquarters. (9)

The headquarters and headquarters troop (HHT) is the largest troop in the squadron and the only one commanded by a major. Its primary function is to provide the necessary combat service support to sustain the combat operations of the squadron's ground and air troops. Within the troop is the aviation unit maintenance (AVUM) platoon, responsible for providing unit level maintenance support for both air troops and the one utility aircraft in the AVUM platoon. Also found in the HHT is the forward arming and refueling point (FARP)

platoon which provides the class III (fuel & oil) and class V (ammunition) for the air cavalry troops.

Each ground troop is commanded by a captain and consists of a headquarters section, maintenance section, mortar section, and three scout platoons. The mortar section consists of three 107mm mortars, each transported by a tracked mortar carrier (M106). The scout platoons each have six cavalry fighting vehicles (CFV) organized into two sections. (10)

Each air troop is commanded by a captain and consists of a headquarters section, aeroscout platoon, and attack helicopter platoon. The aeroscout platoon is commanded by a lieutenant and consists of six OH-58 scout helicopters, five pilots (the sixth pilot is the troop commander), six helicopter mechanics, six enlisted aerial observers, and a platoon sergeant. The attack helicopter platoon is likewise commanded by a lieutenant and consists of four AH-1S attack helicopters, seven pilots (two pilots in each helicopter), four helicopter mechanics and a platoon sergeant.

The H-series division armored cavalry squadron was organized with a headquarters and headquarters troop, three ground troops, and one air troop (see Appendix C). The differences between the H-series and AOE J-series with respect to the HHT and ground troops is not essential for the analysis and will not be detailed here. However, the difference between the H-series and J-series aviation organizations is essential.

The H-series air troop was commanded by a major and

consisted of a headquarters, flight operation section, service platoon, and three maneuver platoons--aeroscout, aeroweapons, and reconnaissance. The flight operations section planned and coordinated combat operations of the troop and was led by a captain. The service platoon, commanded by a captain, performed organizational maintenance on all troop equipment. The service platoon performed the equivalent functions that the AVUM and FARP platoons of the J-Series HHT performs for the AOE cavalry squadron. The aeroscout platoon was led by a captain and consisted of ten OH-58 scout helicopters, a pilot and crew chief for each helicopter, and a platoon sergeant. The aeroweapons platoon (equivalent to the attack helicopter platoon in the AOE air troop) was led by a captain and consisted of nine attack helicopters, seventeen pilots (two pilots in each helicopter), nine helicopter mechanics, and a platoon sergeant. Finally, the reconnaissance platoon was led by a captain and consisted of five utility helicopters, eight pilots, four crew chiefs, four ground reconnaissance squads, and a platoon sergeant.

The background necessary to begin the examination of the air cavalry organization within the AOE cavalry squadron is complete. It remains only to define what the air cavalry organization consists of within the AOE cavalry squadron for the purpose of this study.

The aviation elements within the J-series AOE division cavalry squadron that constitute the focus of this study

include: both air cavalry troops, the AVUM & FARP platoons of HHT, and the flight operations section in the squadron headquarters. This is referred to in this study as the "air cavalry organization."

IV. Analysis of the Air Cavalry Organization

The first question to resolve is whether command and control within the AOE cavalry squadron is enhanced by its air cavalry organization in contrast to the single H-series air troop? To answer this question three areas will be reviewed: the leader-to-led ratios within the AOE squadron, the command and control structure of the squadron and the squadron commander's ability to command the air troops.

"A key force design principle, for the Division 86 Organizational and Operational (O&O) Concept, that guided the design of cavalry units was the increase in the leader-to-led ratio, accomplished by reducing the span of control for the lieutenant." (11) The reduction in the lieutenant's span of control would permit deriving the most from the system capabilities of the sophisticated new equipment (e.g., M1 Abrams tank & M3 cavalry fighting vehicle, OH-58D, and AH-64 helicopters). This was the approach taken for the squadron ground troops. The AOE ground scout platoon leader has thirty personnel and six vehicles, while the H-series platoon leader had forty personnel and eight vehicles. (12) However, this concept was not applied to the design of the AOE air cavalry troops.

Field Circular 1-116, Air Cavalry Troop, states that "the organization of the air cavalry troop--Reduces the leader-to-led ratio, which improves responsiveness and flexibility."

(emphasis added) (13) This raises two issues to investigate. Has the leader-to-led ratio actually been reduced, and if so, was responsiveness and flexibility improved as a result? A contrast of the H-series and AOE air cavalry troop will help to resolve these issues.

The data shown in Table 1 indicates that the leader-to-led ratio, when considered at platoon level, is lower in the AOE aeroscout and aeroweapons platoons than the corresponding H-series platoons. When warrant officers are considered as a part of the leadership pool the ratio is still lower in the aeroscout platoon, while there is no significant difference in the aeroweapons platoons.

The warrant officer is considered in the analysis because of his role in aviation units. (14) He exercises a leadership role in aviation units and is generally more experienced than the aviation lieutenant. (15) When the warrant officer is considered in the leadership role the aeroscout platoon has a reduced leader-to-led ratio, as indicated in Table 1. However, the span of control within the aeroscout platoon has not been affected adversely. This is because the reduction in leadership ratio was caused by the addition of six enlisted aerial observers (EAO) to the platoon, not a reduction in leaders (lieutenant positions lost were filled by warrant officers).

The addition of EAO's has not increased the span of control for the aeroscout platoon leader. The platoon leader has no more than five crews, counting himself, to manage; the sixth crew is the troop commander. This compares quite well to the

Table 1 (Leader-to-led ratio)

-Platoon Level-		
	<u>(Leaders/Total)</u>	
<u>Leaders = officers only</u>	<u>H-series</u>	<u>AOE (J-series)</u>
Aeroscout platoon	5/20 = 25%	1/18 = 6%
Aeroweapons platoon	5/28 = 18%	1/12 = 8%
<u>Leaders = officers & warrant officers</u>		
Aeroscout platoon	9/20 = 45%	5/18 = 28%
Aeroweapons platoon	18/28 = 64%	8/13 = 62%
-Troop Level-		
<u>Leaders = officers & warrant officers</u>		
Combined Sct & Atk Plts	27/48 = 56%	13/31 = 42%
Combined Sct & Atk Plts (EAO's added to H-series)	27/58 = 46%	13/31 = 42%

H-series aeroscout section leader (a lieutenant position), who managed four or five crews. At the platoon level it appears that the leader-to-led ratio has not changed measurably between the AOE and H-series air cavalry troops.

Because of the drastic difference between the AOE and H-series air troops it is not possible to make a valid direct comparison of leader-to-led ratio at the troop level. However, since the AOE troop consists almost entirely of the scout and attack helicopter platoons it is reasonable to compare them as a whole to the combined scout and attack helicopter platoons of

the H-series troop. The results are shown in Table 1 and indicate that the leader-to-led ratio is 14% lower in the AOE troop. However, the addition of the EAO's to the AOE aeroscout platoon must be considered. If EAO's are added proportionally to the H-series aeroscout platoon the results indicate that the AOE troop does not have a significant reduction in leader-to-led ratio (42% as compared to 46%).

FC 1-116 is incorrect--essentially, the leader-to-led ratio has not changed in the AOE air cavalry troop. Possibly the rationale for stating a reduction in leader-to-led ratio was the elimination of the layer of command and control between the squadron and the air cavalry battle captains. The air battle captains are the H-series platoon commanders or their equivalent, the AOE air troop commanders. This issue will be addressed when the squadron command and control structure is analyzed. At this juncture the question of improved responsiveness and flexibility needs to be addressed.

A comparison of the AOE (J-series) troop and the H-series aeroscout/aeroweapon platoons will demonstrate that the AOE troop has not changed responsiveness and flexibility at the troop level. The reason is simple. When deployed the H-series aeroscout and aeroweapons platoons were task organized to form combined teams of scout helicopter crews and attack helicopter crews. The H-series troop task organized the pure aeroscout and aeroweapon platoons by exchanging scout and attack crews to form two combined teams. (16) The two resulting teams normally had four or five scout and three or four attack crews each, and

were led by the respective platoon commanders (aeroscout or aeroweapon), who were captains. When the AOE troop is compared to the task organized H-series aeroscout/aeroweapon platoons the similarity is striking. The AOE troop when deployed consists of five or six scouts crews and three or four attack crews led by the troop commander, a captain. In fact the AOE troop is actually a task organized H-series aeroscout or aeroweapon platoon that has been divorced from the H-series troop organization. In essence, nothing has really changed in the AOE air troop from what existed in an H-series task organized aeroscout or aeroweapon platoon. Therefore, the responsiveness and flexibility within the AOE air troop has no reason to be better or worse than the H-series task organized platoon because they are essentially the same. While there is no evidence to indicate a change in responsiveness or flexibility within the AOE air troop, the air troop level of organization does not tell the whole story. The flaw of the AOE cavalry squadron design is less a function of the air troop and more the result of the squadron command and control structure, which is the next area to be examined.

It is important to understand the genesis of the current AOE cavalry squadron to realize the full impact on the command and control structure of the squadron. As pointed out earlier the Division 86 and AOE initiatives resulted in drastic changes to the cavalry squadron and in particular the air cavalry organization within the squadron. The design of the current AOE (J-series) squadron was largely a process of combining positions

of the H-series air troop with positions in the H-series squadron. This consolidation of air and ground functions eliminated a number of aviation leader positions in the AOE squadron. The AOE cavalry squadron has seven less commissioned officers than the H-series squadron. Of these, six were aviation positions. A summary of the design process follows.

The H-series air troop commander and squadron executive officer (XO) were eliminated and replaced with a J-series squadron XO (also a rated aviator). The H-series air troop operations officer and the squadron assistant S-3 were eliminated and replaced with a J-series flight operations officer located in the squadron S-3 section. The H-series air troop XO and the squadron S-4 position were eliminated and replaced by the J-series squadron S-4, who was also aviation maintenance qualified. A summation of the major changes is reflected in Table 2 on the next page.

The result of the changes described is an H-series air cavalry troop torn apart and meshed together with the squadron ground structure. At issue here is whether this shuffling process has created a more effective command and control structure or something less.

In regards to this issue a former aviation commander stated, "All we did when we formed the J-series Cavalry Squadron was share electrons." (17) This "shared electron" approach exacts a price from the command and control structure of the AOE cavalry squadron. In other words, some leaders at squadron who had only ground duties are now responsible for

Table 2

These H-series Air Troop & H-series Squadron Personnel	=	These J-series Cavalry Squadron Personnel
Air Troop Cdr & Sqdn XO	=	Squadron XO
Air Troop Operations & Sqdn Assistant S-3	=	Squadron Assistant S-3
Air Troop XO & Sqdn S-4	=	Squadron S-4
Aeroweapons Platoon Leader	=	Air Troop Commander
Aeroscout Platoon Leader	=	Air Troop Commander
AVUM Platoon Leader	=	AVUM Platoon Leader
Aeroweapons Platoon	=	$\frac{1}{4}$ to each Air Troop
Aeroscout Platoon	=	$\frac{1}{4}$ to each Air Troop
AVUM Platoon	=	AVUM Platoon in HHT
Aerorecon Platoon	=	Deleted
Headquarters Platoon	=	Deleted

both air and ground duties to compensate for the loss of aviation officers. The consolidation of functions within the AOE cavalry squadron has resulted in a reduction in leader-to-led ratio at the interface between squadron and the air troops. This is where the leader-to-led ratio has been reduced in the squadron and is the major source of problems for the air organization of the AOE squadron. The impact of this design process will be described next.

The designation of the AOE squadron executive officer position as an aviation slot is a compromise arrangement to provide a senior aviator within the squadron. In the H-series

squadron the executive officer position was not designated as an aviator position. The elimination of the H-series air troop commander position created the need for a senior officer within the squadron with aviation expertise. This is because both AOE troop commanders are relatively inexperienced captains who are still learning.

Making the squadron executive officer an aviator is not the solution to the loss of the H-series air troop commander. The executive officer's "primary functions are direction and coordination of the unit staff, and supervision of CSS." (18) The focus of the executive officer's duties will not enable him to compensate for the loss of leadership provided by the H-series air troop commander. The squadron commander must fill this requirement. So why make the executive officer an aviator?

The majority of the squadron staff is focused on ground matters since the larger part of the squadron is ground cavalry. The squadron has forty cavalry fighting vehicles and numerous other combat and support vehicles. Over two thirds of the personnel in the squadron have ground duties. There is a good possibility that as an aviator the executive officer will have little or no ground experience as a cavalry officer. Although the aviation background is useful, the lack of equal familiarity with ground operations is a large handicap for the executive officer to overcome in the performance of his duties. Additionally this lack of ground experience could potentially be a still larger handicap for the executive officer since he is second in command.

While the need for a senior aviator in the squadron is genuine, the designation of the squadron executive officer position for this role may be counterproductive. The meshing of ground and air units at such a low organizational level has created a dilemma. There is no good solution.

Another fallout of the AOE squadron is the increased complexity of coordinating aviation matters within the squadron. In the H-series cavalry squadron all aviation matters were handled within the air troop and squadron had to talk to only one person: the H-series air troop commander. Under the AOE organization this is no longer possible. A minimum of four points of contact are now required to coordinate within the air cavalry organization: HHT commander for AVUM and FARP, both air troop commanders, and the flight operations officer in the squadron S-3 section. The meshing of air and ground organizations at a low level has again created problems. One of the stated improvements of the J-series air cavalry troop, according to Field Circular, 1-116, Air Cavalry Troop, was: "Reduces the number of leader tasks, thereby simplifying operations." (19) Despite this claim the Division Cavalry Squadron Independent Evaluation Report had this to say.

"The duty performance of the Air Troop commanders were degraded due to the requirements placed on these individuals. The O&O concept envisions the Troop commander providing command and control from his aircraft forward in the troop area of operations. With rapidly changing mission requirements, the Troop commander is required to control his troop's aircraft, plan for future missions, and command his troop; while simultaneously flying his aircraft." (20)

The J-series air cavalry troop has not reduced the air troop commander's tasks. As was pointed out earlier the AOE air troop is really just a task organized aeroscout or aeroweapons H-series platoon. Therefore, to say the AOE commander's tasks have been reduced is a specious argument. Of course they have been reduced, because what was a platoon in the H-series is now a troop under the AOE organization. So in effect a troop now has the tasks of a platoon; but nothing has changed except the designation of the unit.

The problem is that the additional tasks that were accomplished by the H-series troop have not gone away with the design of the AOE squadron. These tasks must now be accomplished by the air cavalry organization within the squadron. The air troops still have the same missions, but now they are divorced from the aviation structure that existed in the H-series air troop. The aviation support structure is now welded to the squadron ground organization. The tempo of aviation operations is limited to the flexibility and agility of the ground forces instead of being able to set its own tempo. In the AOE cavalry squadron the air troops are plugged into a ground organization, a position poorly suited to accommodate aviation. Further evidence of this will be given.

An additional factor compounding the problems of command and control are the challenges faced by the ground commander, who must command and control ground and aviation units. Field Circular 71-8 states: "The squadron commander operates from a

M3 CFV positioned forward on terrain best suited to command and control the air and ground cavalry troops and integrate other combat and combat support." (21) However, the findings of the Combat Brigade Air Attack (CBAA) Test suggest a problem with this concept.

"With the Squadron elements deployed over the division's area, the Squadron commander must have an aircraft to command and control his dispersed elements in a timely manner. The commander cannot move from unit to unit by ground and still keep abreast of the changing mission requirements. The O&O concept envisioned the Cavalry Squadron commander receiving an OH-58 aircraft from the General Support Aviation Company to provide C3 for the Squadron. Since the Division G-3 section prioritizes request for aircraft and since there are not enough C3 aircraft in the Division, the Cavalry commander does not receive an aircraft." (22)

The command and control problem faced by the squadron commander, will not be solved by giving him an aircraft. The H-series squadron commander had only one air troop to command and control. He also had an experienced aviation major who commanded the air troop with its own troop operations section. Under this arrangement the squadron commander could clearly concentrate his efforts on the ground troops, while relying on the air troop commander to command and control the air cavalry in support of the squadron mission.

The organization of the cavalry squadron creates a demanding situation for the squadron commander. The squadron commander is expected to be proficient and knowledgeable in employing both air and ground troops. The squadron commander and HHT commander

positions require planning, organization execution, and control of activities that are aviation management intensive according to the CBAA Test findings. The latter went on to state that these officers require the speciality 15 (Aviation) background to efficiently accomplish the Division Cavalry Squadron's mission. (23) The creation of Aviation Branch in April 1983 has further raised the potential for problems in this regard. (24) Few armor officers with aviation background will be available because of aviation branch specialization. With time there will be fewer and then finally no cavalry squadron commanders who will have aviation experience when they take command.

A major justification for the creation of Aviation Branch was the inability of most aviation officers to maintain the proficiency in both their primary branch and their aviation skills. Now we find a situation which will require squadron commanders, possibly with no aviation background, to train and lead subordinate aviation units. FM 17-95 has this say about the squadron commander.

"If a commander is skilled in tactics, most of his unit's missions will be successful, and it will suffer minimum casualties. Commanders who understand the capability of their weapons, employ them properly, and train their soldiers to get the full potential from weapon systems will win, even if outnumbered."
(25)

The point is, the increasing sophistication of both ground and air weapon systems has put an increasing strain on the ability of one man to be proficient in both. Without the advantage of

a H-series senior aviator to lead the air cavalry organization, the squadron commander must shoulder more responsibility for its tactical employment. The ability of the squadron commander to effectively employ the air cavalry organization will certainly be a function of his previous aviation experience. The larger question is still whether the commander without aviation experience can provide the professional development that his air troop commanders need.

The challenge for the AOE cavalry squadron commander to provide the necessary mentorship to the air cavalry troop commanders and ensure their professional development is great. It is a command responsibility to guide, teach and coach, but this requires knowing at least as much as the subordinate. This is an unlikely possibility for future cavalry squadron commanders in regard to their air troop commanders. The squadron commander has the potential to be learning just as much about air troop matters as his air troop commanders are. This points up a distinction that should be made between squadron/troop and division/squadron.

The division does not train the the cavalry squadron, it directs its employment with the expectation that the squadron can accomplish its mission. In turn the squadron directs the employment of its subordinate troops. But the squadron is also charged with the responsibility to train its subordinate units. This is an important distinction. The squadron commander is expected to have the wherewithal to train his subordinate

units. In the formation of the AOE cavalry squadron, the squadron maintains the burden of training air and ground organizations. However the squadron commander no longer has the benefit of an experienced aviation commander to provide the expertise for the proper training of the air troops. The H-series squadron worked well because the air troop was more like a mini-squadron attached to the cavalry squadron than a troop. With the AOE squadron the mission has remained the same, but the wherewithal to accomplish it has not.

The second issue to address: is there a need for the air cavalry troop to operate independently from the rest of the squadron? If so, can they operate in this manner effectively? First, a look at the need to operate independently--does it exist? Then, if required, can the AOE air cavalry troops operate in this manner effectively? Operate independently, as it is used in this study, means to plan, coordinate and execute missions for short duration (several days) without the direct supervision of the cavalry squadron.

An observation of the CBAA test indicated, "The Air Cavalry Troops operated independently or semi-independently generating the need for a small operations section in each air troop."

(26) There are many reasons to expect that the air cavalry troops will be required to operate independently. There is a limited amount of reconnaissance assets and a large demand for their use throughout the division zone of operations. Therefore, the air cavalry will have to operate independently

from the squadron ground elements, on many occasions, to maximize mission resources. The air cavalry troops can relocate rapidly from one part of the battlefield to another, making it likely they will be required to do so without the slower moving ground cavalry. (27) In addition, terrain considerations may dictate that the best use of the air cavalry is in an area that is separate from the ground units. Finally, the light skin air troops must locate their tactical assembly areas farther to the rear to give sufficient standoff from enemy artillery. The squadron is often located close to the forward line of contact because of mission requirements and its armor protection. This fact creates a distance problem with respect to the air troops which complicates coordination and communications between the squadron and the air troops when in the assembly area.

Although there is a need for the air cavalry to operate independently, the design of the squadron is based on the squadron operating as a whole. (28) Because of this fact the AOE air troops lack an organic operations cell and the communications capability necessary to effectively operate independently. An observation from the CBAA Test highlighted the current communications problem.

"With the troops operation throughout the division area, communications were limited between the Air Troops, Squadron TOC, FARPs, and Troop Trains areas. Current radios were not effective over these extended distances and at nap-of-the-earth altitudes."
(29)

The H-series air troop had the capability with the use of the aerorecon platoon to locate radio relay teams as necessary to overcome intervening terrain or long distances, whereas the AOE squadron must find other means to overcome this problem.

The CBAA test findings also indicated a need for an operations section.

"Without an operations section, the Air Cavalry Troops are not capable of staying abreast of the changing battlefield conditions throughout the division area of operations. Since the Cavalry Troops may be used anywhere in the Division AO, they must continually receive and monitor changing battlefield information. The operations section would provide this capability."
(30)

Once again, the H-series air cavalry troop, with its organic operations section, did not experience the problems indicated above. Being free to maneuver with the air cavalry organization, the organic operations section could maintain a continuous interface with squadron operations and the air troops. The AOE squadron flight operations is tied to the ground operations and does not have the capability to operate independently without ad hoc arrangements.

Finally, the most critical concern for consideration of the AOE air troop is its ability to conduct reconnaissance. "The principal mission of the divisional cavalry squadron is reconnaissance." (31). It is, therefore, important to consider what impact the AOE squadron has made on the ability of the division cavalry to perform that reconnaissance. A contrast of the aviation organization within the AOE cavalry squadron against

the H-series air cavalry troop will form the basis for evaluating the AOE air cavalry organization.

The AOE air cavalry organization represents a significant improvement in aerial reconnaissance capability. An increase of two scout helicopters with crews is an increase in air scouts of 20% over the H-series squadron.

The enlisted aerial observer program is a substantial plus for the reconnaissance capability of the AOE air cavalry troops. Fort Rucker is now producing school trained enlisted aerial observers for the field units. (32) Prior to this program the field units received scout crew chiefs who were school trained as mechanics not observers. There are several reasons why this is such a dramatic improvement as compared to the H-series air cavalry troop.

The enlisted aerial observer provides the aeroscout pilot a dedicated crew member, who for the first time can concentrate solely on the reconnaissance mission. In the H-series aeroscout platoon there was no aerial observer. The aircraft mechanic was expected to play dual roles as both mechanic and aerial scout. The result was a disappointing compromise. The aircraft mechanic's first priority was normally the mechanical readiness of the scout helicopter, leaving precious little time to devote to the secondary mission of aerial scout.

The mission requirements of the aerial scout crew are quite arduous. (33) The H-series aerial scout crew was at a serious disadvantage trying to operate in a demanding tactical

environment without the benefit of the enlisted aerial observer. On the other hand, the AOE scout crew has the benefit of an enlisted crew member whose one mission is to train for the aerial scout role. With no aircraft maintenance responsibilities the enlisted aerial observer can totally immerse himself in the mission planning along with the scout pilot. (34) While the addition of the EAO in the AOE air cavalry troop represents a marked improvement in reconnaissance capability there are some negative aspects of the new organization.

The formation of the AOE air cavalry troops resulted in the loss of the 42 man aerorecon platoon. This eliminated the only dedicated foot reconnaissance platoon within the squadron capable of extensive foot reconnaissance. This highly flexible platoon could be rapidly deployed as a platoon or as three or four separate patrols throughout the division's sector, utilizing the platoon's organic utility helicopters. The aerorecon platoon gave the squadron a means of rapidly gaining information through detailed ground reconnaissance, and partly compensated for the air troop's inability to conduct effective night air reconnaissance.

It was the opinion of unit personnel involved in the CBAA Test that each air cavalry troop required an aerorecon platoon to provide the capability of establishing OP's and LP's and conducting other missions for the squadron. (35) Although the AOE squadron no longer has an aerorecon platoon, the heavy

division retains a similar capability because of the long range surveillance detachment which was formed. The 52 man detachment, lead by a captain, is assigned to the division military intelligence unit. This organization has an impressive capability to provide the division with valuable human intelligence. (36)

The command and control difficulties, the need and ability for independent operations, and the reconnaissance capability of the J-series AOE air cavalry organization have been analyzed. The overall reconnaissance capability of the AOE air troop has improved, but problems with command and control and a need for independent operation capability points to design flaws in the AOE division cavalry squadron.

V. Conclusions

Structural problems in the air cavalry organization of the AOE division cavalry squadron prevent achieving the potential capabilities of the air cavalry within the AOE division cavalry squadron. Two major concerns, C2 and capability for independent operations, are hindering the full use of the improved reconnaissance capability of the AOE air troops.

The division cavalry squadron commander is expected to provide guidance, direct, train, and educate his subordinate commanders. It is unreasonable to expect that cavalry squadron commanders without aviation experience can train and employ aviation units to the same degree of tactical and technical proficiency as an aviation commander. Now that aviation is a separate branch there will be a dwindling number of ground officers with aviation experience. As the sophistication of fighting vehicles and helicopters increases, the tactical and technical demands will become even greater for the squadron commander. Requiring the squadron commander to be an aviator is not the solution. This would solve the aviation problem only at the expense of the ground troops. In the H-series squadron the air troop was commanded by an experienced aviation major (normally hand picked) who could more easily provide the guidance and leadership for the inexperienced aviation officers.

Command and control of the air troops in the AOE cavalry

squadron is awkward because of their placement on the battlefield. The missions of the squadron will often require it to be well forward, near the line of contact or the forward edge of the battle area. Unlike the ground troops, the air troops have thin skin vehicles (helicopters) and can not survive the expected enemy artillery fires in the forward areas. The air troops must locate to the rear for protection. This distance increases the difficulty of command, control and communications for the squadron and potentially reduces the agility of the organization.

The squadron must coordinate all aviation activities in the AOE cavalry squadron. A minimum of four points of contact--the HHT troop commander for AVUM and FARP, both air troop commanders, and the squadron flight operations officer--must be consulted. In the H-series squadron there was a need to talk to only one point of contact: the troop commander. The task of command and control of the air troops has been greatly complicated in the AOE cavalry squadron.

The air cavalry troops need to have the flexibility of being able to conduct effective operations independently of the squadron. The reality of the nonlinear AirLand Battle and the demands on scarce reconnaissance assets will certainly stretch the cavalry squadron to the limits of its capability. The flexibility to employ its air cavalry, independent of the squadron, is certain to be a necessity given the diversity of squadron missions.

The design of the AOE cavalry squadron assumed the false premise that the squadron would always operate together. (37) Yet as noted earlier the CBAA test indicated the need, at times, for the air cavalry to operate independently from the squadron. The AOE cavalry squadron is not capable of effectively employing its air cavalry independent from the squadron. The lack of both an operations section and proper communications prevented the air cavalry troops from conducting effective independent operations during the CBAA test. The flexibility and capability of the AOE air cavalry troops is held hostage by the limitations of the ground oriented squadron.

The AOE air cavalry troops provide the cavalry squadron an increased reconnaissance capability over that provided by the H-series troop. The loss of the aerorecon platoon has removed from the air cavalry the ability to conduct detailed ground reconnaissance. However, the addition of the long range surveillance detachment to the heavy division has given the division an overall increase in human intelligence capability that represents a wise trade-off. The increased air reconnaissance capability of the AOE cavalry squadron is significant. (38) The addition of the enlisted aerial observer to the air cavalry troop is a significant enhancement to the combat readiness of the aerial scout crew. Overall the AOE air cavalry troops have an increased potential for conducting reconnaissance as compared to the H-series troop.

The present structure of the air cavalry organization, for

the Army-of-Excellence Heavy Division Cavalry Squadron, is not structured in the most effective manner to take advantage of its increased reconnaissance capability. The problems that exist are largely the result of an attempt to mesh an air organization into a ground organization, without compensating for the differences between the air and ground units at the squadron/troop level. Fortunately, there are solutions to the problem at hand that are both realistic and within the Army's means to institute in the near future.

VI. RECOMMENDATIONS

The reality of today's Army-of-Excellence precludes the easy solutions to correct the shortcomings identified in the AOE division cavalry squadron. A scarcity of resources in both personnel and equipment will not soon go away. Force structure will be scrutinized from every angle to accomplish the most, with the least. It would be easy to recommend a return to the H-series air cavalry troop as a panacea for the shortcomings of the present structure. More force structure is always a tempting solution for shortcomings in design. But a return to the past is not possible, nor is it necessary.

Presented here are two possible solutions to address the air cavalry organizational shortfalls. The attempt is to capitalize on the positive aspects of the present organization, while weeding out as many of the flaws as possible. Both proposed solutions require little or no increase in force structure and could be affected in the near term. Though not analyzed within the scope of this paper, recommendations are offered concerning major equipment changes that would significantly improve the air cavalry's contribution to the squadron mission.

The first alternative to the present air cavalry organization is the following:

- (1) Remove the aviation organization from the AOE J-series Cavalry Squadron and place one air cavalry troop in each of the

attack battalions of the heavy division.

(2) Remove the AVUM platoon from the squadron and equally distribute according to the maintenance allocation criteria to support the above.

(3) Remove the FARP platoon from the squadron and place in the CAB to form a brigade general support FARP, which is critically needed even now.

(4) Place the utility helicopter from the AVUM in the Combat Aviation Company (General Support) as the Aviation Brigade Commander's dedicated aircraft.

(5) Leave the fight operations section in the AOE squadron to coordinate the attack battalions that are supporting the cavalry squadron.

(6) Revert the S-4 and the executive officer of the squadron to a ground MOS.

This organization would see the cavalry squadron still assigned to the combat aviation brigade (CAB); however, the reconnaissance efforts of the cavalry squadron would be augmented by the attack helicopter battalions (Appendix D) instead of the aviation organic to the cavalry squadron. The first advantage is that this provides the cavalry squadron with all of its aviation needs while at the same time relieving it of all the problems of aviation logistics, thus allowing the members of the squadron to pay more attention to the reconnaissance mission. The second advantage is that this now provides two aviation organizations (the attack battalions) to support

the squadron, instead of just one. Both are available and capable of cavalry operations and can be used as reconnaissance and surveillance units while "waiting" for attack missions.

(39) The organization described above would not require additional equipment or personnel in the force structure.

The second alternate organization would require the formation of an air cavalry squadron in addition to the ground cavalry squadron (Appendix D). This organization would be formed by joining both air cavalry troops in their present configurations and placing it under a newly formed squadron headquarters. The creation of a command group and an operations cell would require additional spaces and equipment. This proposed squadron would be commanded by a lieutenant colonel. The other elements of the air cavalry organization, as described in the first alternative, would now come under the newly formed air squadron. The above recommendation would place the air and ground on the same level in the cavalry structure and greatly increase the flexibility of the cavalry organization. The slight additional cost of this proposal should be balanced against the importance of the squadron's mission and the greatly enhanced combat effectiveness.

To fully realize the potential of the air cavalry troop it should be equipped with OH-58D's (AHIP), and AH-64's. (40) The OH-58D and AH-64 both have tremendous night and all weather vision aids, which greatly enhance the ability to acquire targets at increased standoff ranges, and gives the air troop

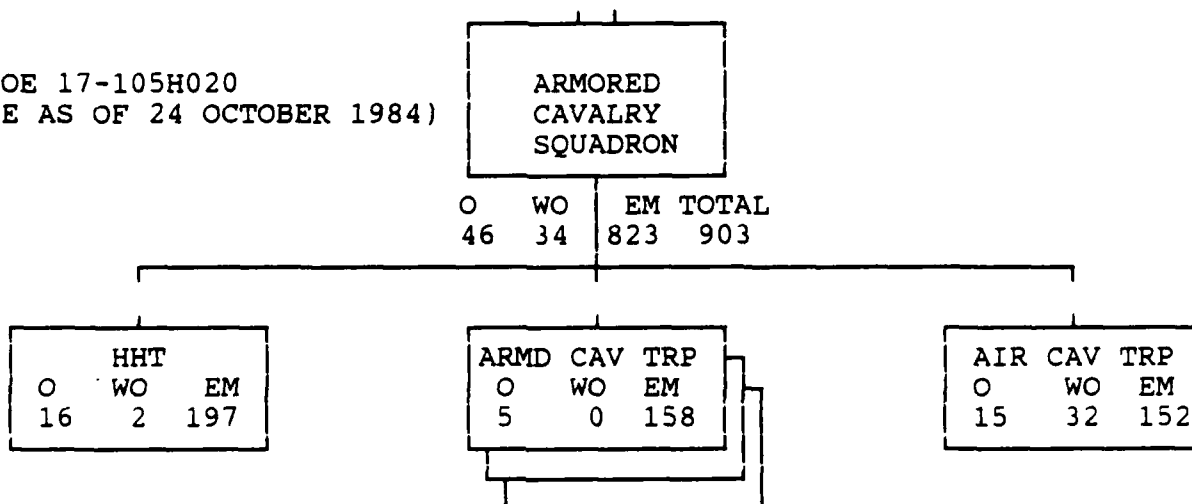
for the first time, a creditable 24 hour, all weather reconnaissance capability.

The importance of the division cavalry squadron, as the eyes of the division commander, highlight the criticality of having the most effective squadron possible. To a larger extent the air cavalry organization of the squadron represents a critical asset which the division can not afford to use at less than its full potential. Whatever the solution, the alternatives posed should be considered against the need to address a serious problem.

Appendix A

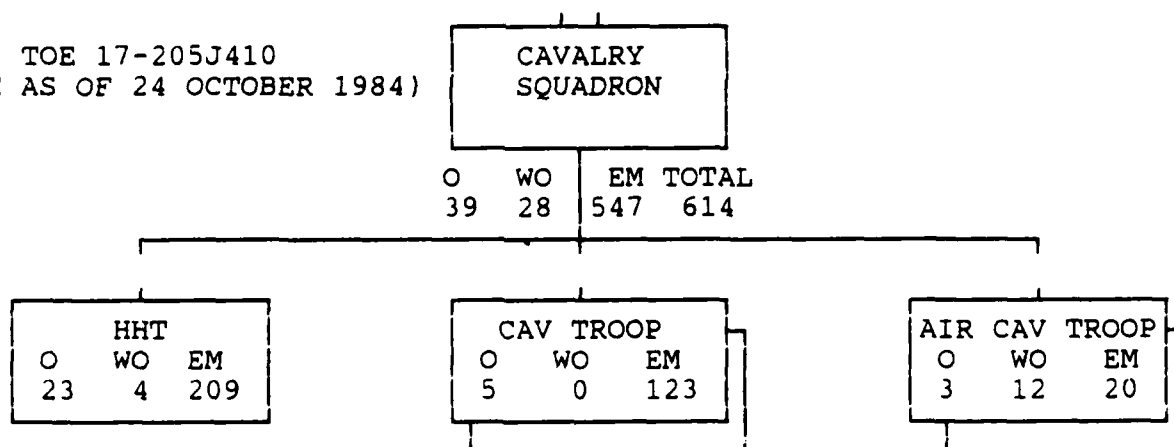
**ARMORED CAVALRY SQUADRON
(HEAVY DIVISION) (H)**

TOE 17-105H020
(TOE AS OF 24 OCTOBER 1984)



**CAVALRY SQUADRON (HVVY DIVISION)
DIVISION 86 (J-SERIES)**

TOE 17-205J410
(TOE AS OF 24 OCTOBER 1984)



Note: Changes made to reflect current force design changes.

Source: Field Manual 17-95, Cavalry Operations, (Washington, DC: 1986), p. 1-14.

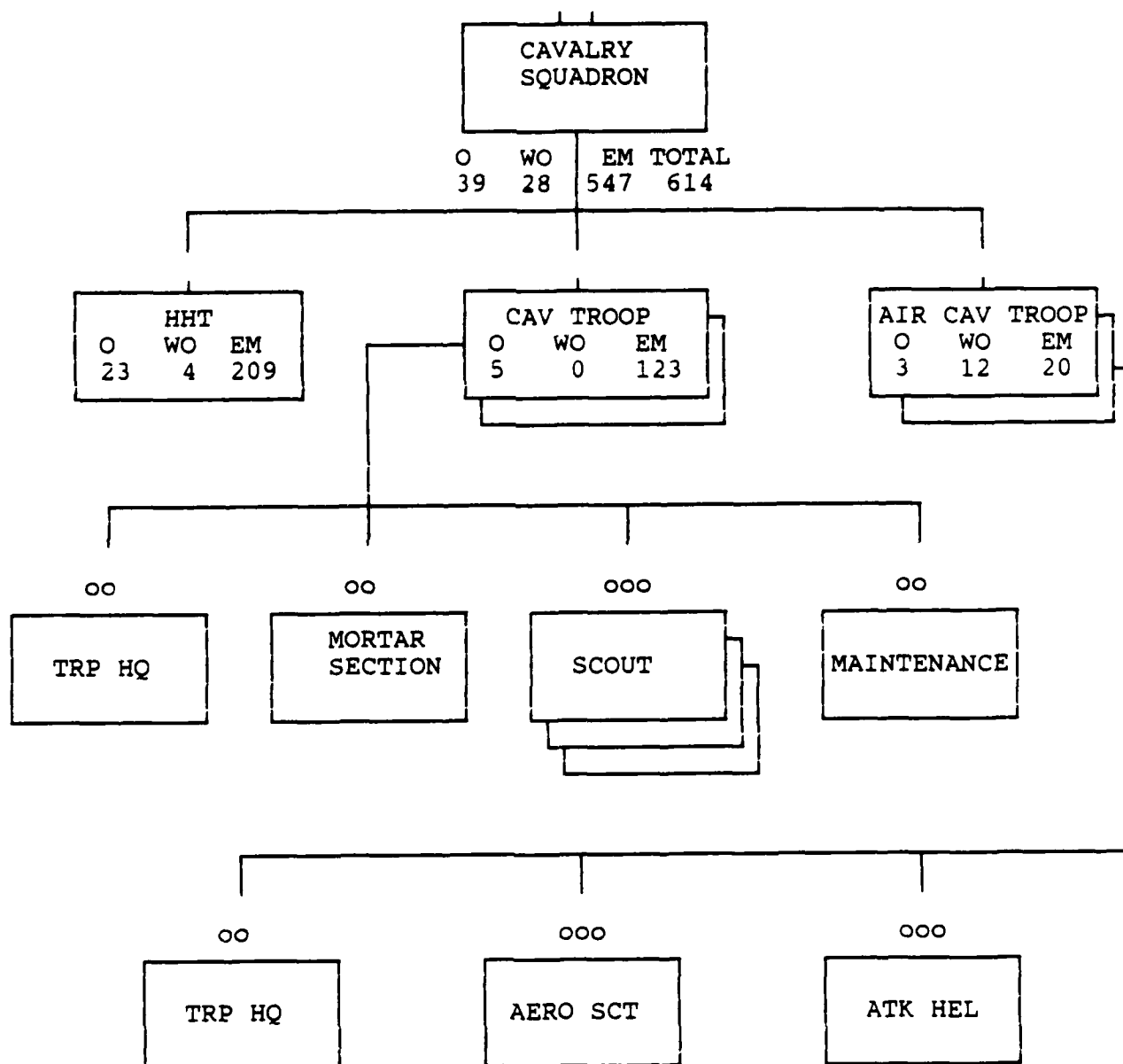
Appendix A (continued)

STRENGTH FIGURES--H&J SERIES

	<u>H-Series</u>	<u>J-Series</u>	<u>Difference</u>
Officers	46	39	-7
Warrant Officers	34	28	-6
Enlisted	823	547	-276
Total	903	614	-289

Appendix B

CAVALRY SQUADRON (AOE)
TOE 17205J410

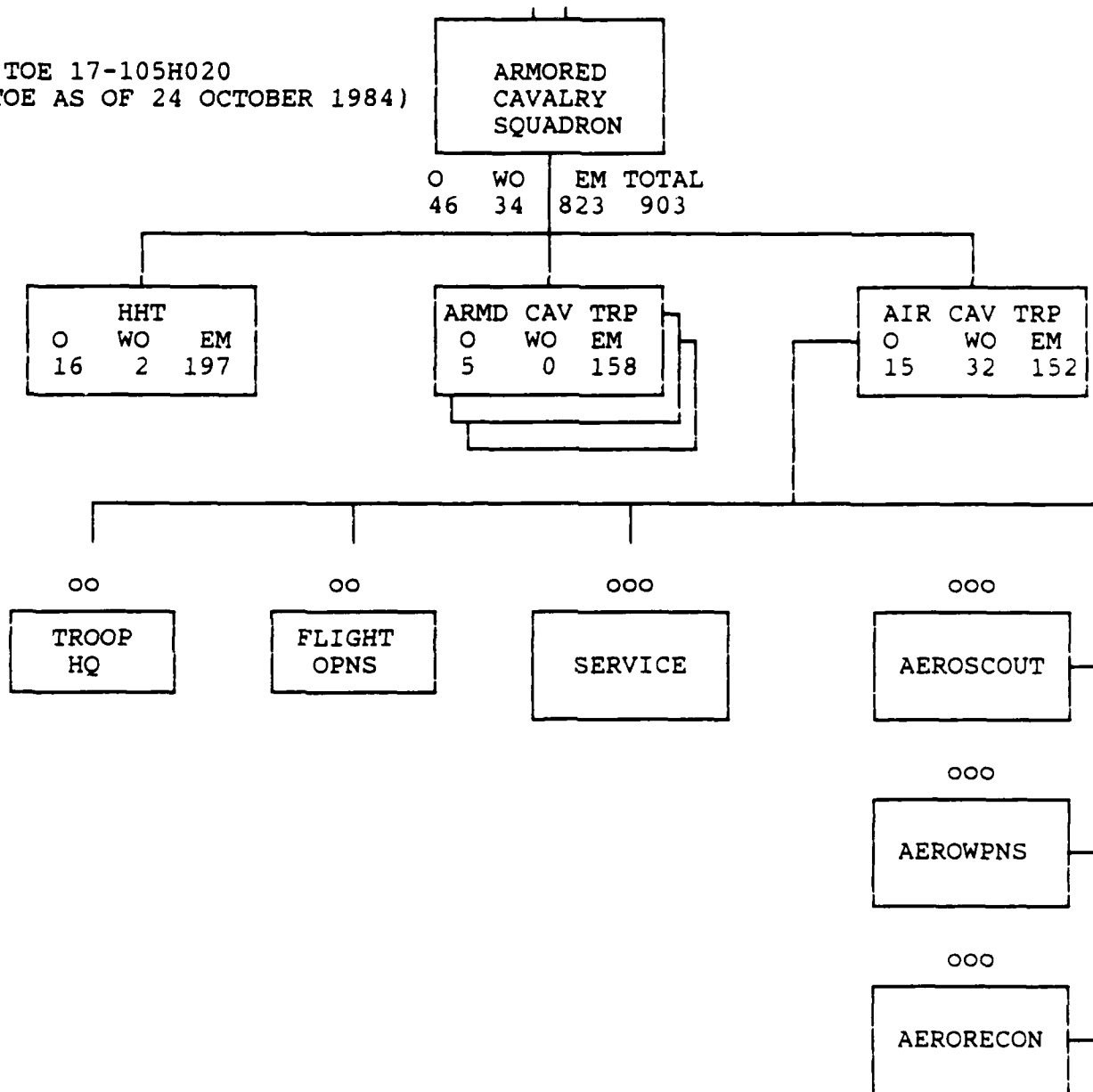


The above table of organization reflects no long range surveillance detachment--Army Message dtd 201736Z Oct 86, announced CSA approval for their assignment to division military intelligence unit.

Appendix C

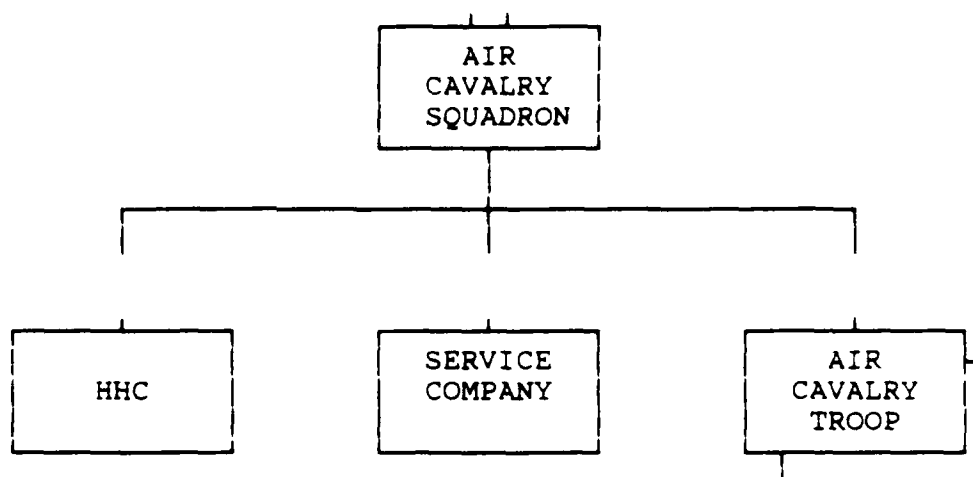
ARMORED CAVALRY SQUADRON
(HEAVY DIVISION) (H)

TOE 17-105H020
(TOE AS OF 24 OCTOBER 1984)

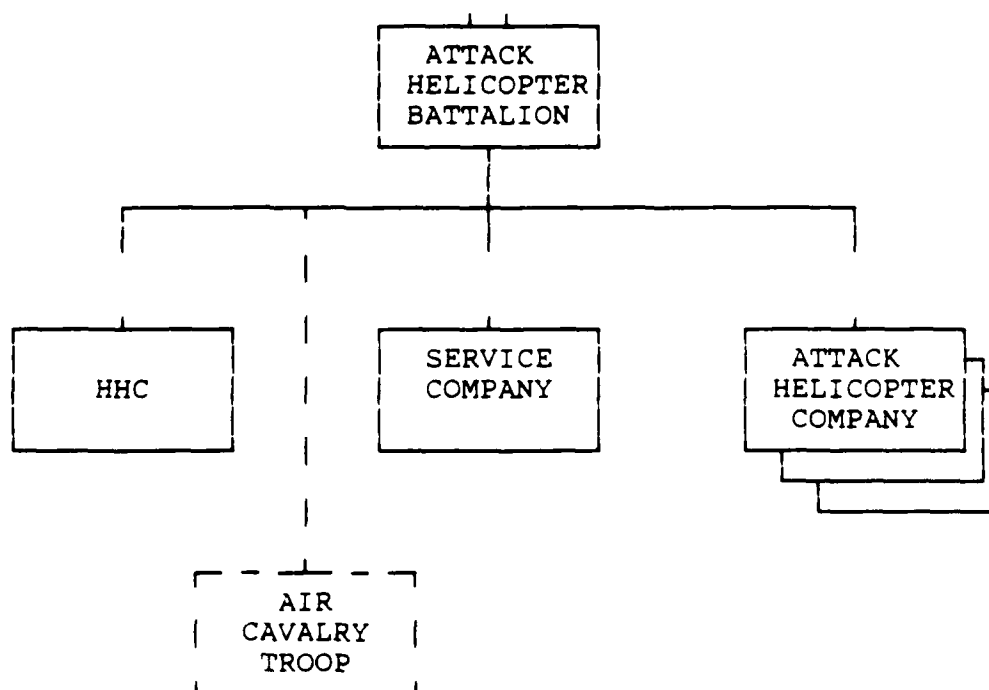


Appendix D

PROPOSED AIR CAVALRY SQUADRON



ATTACK HELICOPTER BATTALION



Endnotes

1. "Heavy Division Cavalry Study," US Army Armor School Fort Knox (25 April 1986), p. 19. Comments of BG Leland, CG NTC.
2. Heihachirou Fujiki, "The Falklands Campaign: The Lessons," Department of the Army, (19 December 1985), p. 10. The British Army used the Gazelle helicopter for reconnaissance in the recent Falklands Conflict. This report characterized the conflict as "a battle of helicopters."
3. Field Circular 100-1, Army-of-Excellence Overview, CACDA, (1 September 1984), p. 3-1.
4. "Heavy Division Cavalry Study," p. 17.
5. Ibid.
6. Army Message dtd 201736Z Oct 86, Subject: CSA-Approved Changes to AOE. The Heavy Division Cavalry Study recommended the AOE Cavalry Squadron table of organization be changed to include three ground troops instead of two and the addition of tanks to the organization. The CSA message stated--"No tanks: if cavalry performs guard mission, task organize with tanks from division. Note: TRADOC will rethink number of ground troops equipped with M-3s (e.g., add a troop or add a platoon per troop)." The delay in a new doctrinal manual for the AOE squadron was in large part due to waiting for the resolution of these issues.
7. Field Manual 17-95, Cavalry Operations, (Washington, DC, 1986), p. 1-19.
8. Field Circular 1-116, Air Cavalry Troop, (Fort Rucker, AL, 1985), p. 1-1. Emphasis added.
9. Army Message dtd 201736Z Oct 86. The initiative to separate the cavalry squadron from the CAB as a separate unit in the division was denied by the Chief of Staff of the Army (CSA).
10. The CFV (M3) is the Army's newest armored personnel carrier designed specially for the cavalry mission. Its main armament is a 25mm Bushmaster chain gun.
11. "Operational and Organizational Concept Division and Corps 86 Cavalry," US Army Armor Center and Fort Knox (10 November 1980), p. 1-1. Emphasis added.
12. Field Manual 17-95, p. 1-17 thru 1-18.

13. Field Circular 1-116, Air Cavalry Troop (Fort Rucker, AL, 1985), p. 1-1.
14. Major Robert S. Christensen & CW3 David L. Day, "The Aviation Warrant Officer and the Aviation Branch," U.S. Army Aviation Digest, (November 1984), p. 39. "The role of the AWO is not declining, but it is changing. AWO's are not merely technicians, but are in fact combat arms officers who must be technically and tactically proficient in order to operate as members of the combined arms team. As the Army adopts the Army-of-Excellence force structure, the Aviation warrant officer will be given even greater responsibility to include serving as section leaders within table of organization and equipment (TOE) units."
15. The warrant officer slots in an aviation unit are grade immaterial, therefore, grades WO1 to CW4 could be found in the air cavalry troop. The commissioned officer on the other hand is assigned by grade and will always be a lieutenant at the platoon level.
16. Field Manual 17-95, p. 8-8 thru 8-11.
17. LTC James Mowery is in the Fellowship Program of the School of Advanced Military Studies. He has considerable command experience, to include recent command at the battalion and brigade level in Europe.
18. Field Manual 17-95, p. 1-30.
19. Field Circular 71-8, AOE Divisional Armored Cavalry Squadron, (Ft Knox, 1984), p. 4-4.
20. "Division Cavalry Squadron Independent Evaluation Report," Volume II, Section 7, (Fort Knox, August 1982), p. XII. The field test was conducted at Ft Lewis to evaluate the operational suitability of the Division Cavalry Squadron in support of the Infantry Division. This report was prepared to assist the decision process regarding the operational suitability and capability of the Division Cavalry Squadron as part of the Cavalry Brigade Air Attack and to determine the adequacy of the organizational structure of Division Cavalry Squadron to accomplish its mission. p. II-7-11.
21. Field Circular 71-8, AOE Divisional Armored Cavalry Squadron, (Ft Knox, 1984), p. 4-4.
22. "Division Cavalry Squadron Independent Evaluation Report," p. II-7-11.
23. "Division Cavalry Squadron Independent Evaluation Report," p. II-7-15

24. "We're a branch!," U.S. Army Aviation Digest, (April 1983), backcover.
25. Field Manual 17-95, p. 1-27.
26. "Division Cavalry Squadron Independent Evaluation Report," p. XII.
27. Field Circular, 1-116, p. 4-2.
28. "Division Cavalry Squadron Independent Evaluation Report," p. E-1, states that--"The cavalry Squadron was designed to operate as a unit...."
29. "Division Cavalry Squadron Independent Evaluation Report," p. II-7-12.
30. Ibid.
31. Field Manual 1-111, Aviation Brigade, (Washington: DC, 1986), p. 1-4.
32. CW4 John R. Dougherty, "Aviation Personnel Notes," U.S. Army Aviation Digest, (December 1985), p. 21. "The Enlisted Aerial Observer Course consists of 219 hours of resident instruction. It includes 45 hours of malpractice and nontactical operations, 11 hours of aeroscout techniques and procedures and 150.5 hours of tactical operations. The course also includes 12.5 hours of training conducted during actual flight operations."
33. CW3 Michael C. Wyman, "Aeroscout Observers Need Better Training," U.S. Army Aviation Digest, (January 1984), p. 34. "Aeroscout crewmembers have an extremely heavy workload."
34. Wyman, "Aeroscout Observers Need Better Training," p. 35. "Only highly qualified crewmembers can possibly achieve maximum aeroscout potential so vital for the success of the AirLand Battle."
35. "Division Cavalry Squadron Independent Evaluation Report," p. II-7-19 to II-7-21. The report concluded, however, that aerorecon platoons were not needed because the increased number of scout crews would compensate for the loss of the aerorecon.
36. Division Intelligence briefing by LTC Patrick Hughes in September 1986 at the School of Advanced Military Studies. LTC Hughes, an intelligence officer, had considerable experience employing the long range surveillance detachment when assigned at Fort Lewis, Wa.
37. Field Manual 1-111, p. 3-5. States that air cavalry can operate independently.

38. Wyman, "Aeroscout Observers Need Better Training," p. 34. "The aeroscouts' vital role in the combined arms team is expanding as planners emphasis AirLand Battle concepts."
39. Field Manual 1-111, Aviation Brigade, (Washington, DC: 1986), p. 1-3.
40. "Heavy Division Cavalry Study," p. 62-63. The opinion survey conducted by the Armor Center for the Heavy Division Cavalry Study indicated the vast majority of division and corps commanders favor putting the AH-64's in the division cavalry.

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