

LOH IN AN ANTIARMOR ROLE
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SUBJECT: LOH in an Antiarmor Role

1. PROBLEM. To determine if a LOH equipped with an armor defeating weapons system is the best aircraft to utilize to give the infantry brigade a rapid response to an armor threat.

2. ASSUMPTIONS.

a. A significant enemy armor threat now exists or will exist on a future battlefield.

b. The future battlefield will be characterized as a mid-intensity environment.

c. It has been determined that there is a need at infantry brigade level for an aerial antiarmor system.

d. A current light observation helicopter will be modified or newly developed with the payload, performance characteristics, guidance, and navigation systems necessary for employment of TOW missiles.

e. Current doctrine for employment of the brigade LOH's will be sufficiently modified to permit them an alternate mission in a mid-intensity environment.

f. The antiarmor system for all aircraft considered will be the TOW system.

3. FACTS BEARING ON THE PROBLEM.

a. The delivery costs for a LOH equipped with a TOW subsystem is estimated to be between \$ 350,000 and \$ 400,000 (5:2).

b. Current cost estimates of a Bell "King" Cobra place delivery price between one and one and a half million dollars (4:1).

c. Estimates are that Lockheed's AH 56-A Cheyenne system equipped with eight to twelve TOW missiles will cost two and a half to four million dollars (1:2).

d. In a mid-intensity conflict in which the enemy possesses a superior armored capability, " The ground combat commander needs a relatively unsophisticated, rugged, inexpensive armor defeating helicopter immediately available to him 24 hours a day " (1:3).

4. DISCUSSION.

a. The current Table of Organization and Equipment for the infantry brigade's organic aviation section calls for only four LOH's. These are to be primarily utilized in a command and control role. This concept is not acceptable for the deployment of brigade based aerial antiarmor support in sufficient density (Annex C).

b. The current Table of Organization and Equipment will have to be modified to expand the number of aircraft, or their organization, at

infantry brigade level. It must provide sufficient density both in delivery systems and missiles available. For LOH's this number should be between nine and twelve (Annex C).

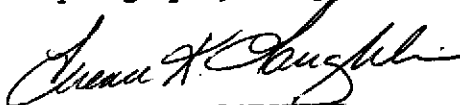
c. The current designs for aerial antiarmor systems could provide sufficient missile carrying capabilities from fewer numbers of aircraft than would be necessary for LOH delivered systems, but only at very prohibitive costs (Annex C).

d. Primary disadvantages are in the area of the sophistication of navigational and target acquisition systems available for the LOH. This is in addition to some necessary performance and payload limitations (Annex C).

e. The increased reconnaissance capabilities as well as increased visual target acquisition capabilities (almost three times as many aircraft) outweigh the disadvantages of less sophisticated avionics (Annex C).

5. CONCLUSION. A LOH equipped with an armor defeating system is the best aircraft to utilize at infantry brigade level, considering cost effectiveness and density, to give the commander a rapid response to an armor threat.

6. ACTION RECOMMENDED. The conclusion in paragraph 5 be approved.



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ANNEXES: A Definitions
B Cost and Performance Characteristics
C Discussion
D Bibliography

CONCURRENCES: (Omitted)
NONCONCURRENCES: (Omitted)
CONSIDERATION OF NONCONCURRENCES: (Omitted)
ANNEXES ADDED: (Omitted)
ACTION BY APPROVING AUTHORITY:

DATE:

Approved (disapproved), including (excluding) exceptions.

Signature

ANNEX A - Definitions

1. Mid-intensity Conflict - " a conflict defined as being non nuclear in nature and involves primarily the pursuit of objectives under definite policy limitations concerning the extent of destructive power that can be employed or the extent of geographical area involved " (1:3).

ANNEX B - Cost and Performance Characteristics (5:2)

Parameters	TOW/LOH	TOW/Cobra	TOW/Cheyenne
Cruise Speed (Max Payload)	105 Knots	136 Knots	#
Max Range	300 NM	190 NM	#
Hover out of ground effect	400 ft	#	#
Payload of TOW's	4	8	8-12
Gross Weight	3200 lbs	9500 lbs	#
Cost	\$350-400,000	\$1-1.5 million	\$2.5-4 million

Data not available

ANNEX C - Discussion

1. " The least expensive helicopter is a LOH with a relatively low per unit cost. Sufficient numbers of these ships could saturate the battlefield forcing an enemy commander to assume an extremely high risk in running his forces through such an armor defeating screen " (1:3).

Current doctrine for the infantry brigade LOH section calls for four LOH's under the direction of the brigade commander and used primarily for command and control purposes. This doctrine must be changed as well as the number of aircraft assigned, in order to provide the brigade commander with the necessary mobility to engage targets in a mid-intensity environment. It is envisioned under the dynamic infantry organization that a company for this particular purpose be organized at brigade level (8:1). Barring this particular development, at least nine to twelve TOW equipped LOH's, each armed with two to four TOW missiles, should be assigned to the brigade aviation section (4:1). This will provide sufficient density for the brigade commander to exercise his options as well as mass his fires at a point and time of his own choosing.

2. It has been determined by the Infantry Team and the Combat Developments Command Infantry Agency that the Bell "King" Cobra and the Lockheed Cheyenne are too expensive to be employed in the brigade aviation section (4:1).

From the data in Annex B, it can be determined that the approximate costs for ten TOW equipped LOH's would be approximately four million dollars. This would provide ten aircraft with a total of 40 missiles. That same four million dollars would provide only three or four "King" Cobras with a total payload of 24 to 32 missiles, or one to two Cheyennes with 8 to 24 total missiles. To provide the brigade commander with a sufficient density of organic aerial antiarmor support would require an expenditure of much more than the four million dollars necessary to provide him with ten LOH's. Because it is envisioned that either the "King" Cobra or Cheyenne will be available in division general support, the costs then become unacceptable at brigade level (6:1).

3. " The Infantry Team concludes that the TOW/LOH has a high probability of being a feasible serial antiarmor system which is worthy of continued development"(5:3).

For approximately the same costs, a greater number of LOH's with approximately the same total volume of missiles can be obtained. However, because of this reduced cost, the sophistication of the navigational and target acquisition systems are limited. This problem can be partially alleviated by the relatively short distances required for movement from brigade rear areas, forward to the FEBA and beyond. This could also be counteracted by the fact that ten aircraft would increase visual acquisition and target detection. It is also possible that interchangeable systems can be developed for the LOH which could alter the number of missiles carried, up to six or as low as two, depending upon alternate weapons systems available and commanders' preferences.

ANNEX D - Bibliography

1. Doctrine Development Literature and Plans, " Initial Draft Proposed Material Need Document for a Light Antiarmor Helicopter," (memorandum for the Commandant USAIS, 21 July 1971)
2. FM 1-40, Attack Helicopter Gunnery. Washington, D.C. : Department of the Army, 20 June 1969
3. FM 7-30, The Infantry Brigades. Washington, D.C.:Department of the Army, 28 March 1969.
4. Guiles, Richard E. DAC, CDC Infantry Agency. Personal Interview. Fort Benning, Georgia: 25 April 1972
5. Infantry Team, " TOW equipped LOH " (position paper, USAIS date unknown.)
6. Robinsen, Charles A. Jr. MAJ, USAIS. Personal Interview. Fort Benning, Georgia 20 March 1972.
7. Seymour, CPT Robert, " Antiarmor Weapons for the Infantry Brigade Aviation Section" (Staff study in the United States Army Infantry School Library, Fort Benning, Georgia: 1971)
8. Talbott, Orwin C. MG, " Dynamic Infantry Organization," (Address to the Chief of Staff's Forum, Fort Sill, Oklahoma March 1972)
9. TO&E 7-42H, Headquarters Company Infantry Division Brigade. Washington, D.C. : Department of the Army, 30 November 1970.