

AD-766 205

EMPLOYMENT OF BICYCLES

Army Concept Team in Vietnam  
APO San Francisco, California 96384

16 August 1965

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ARMY CONCEPT TEAM IN VIETNAM  
APO San Francisco 96243

AD 766205

LETTER REPORT

EMPLOYMENT OF  
BICYCLES

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JRATA (11 Aug 65)

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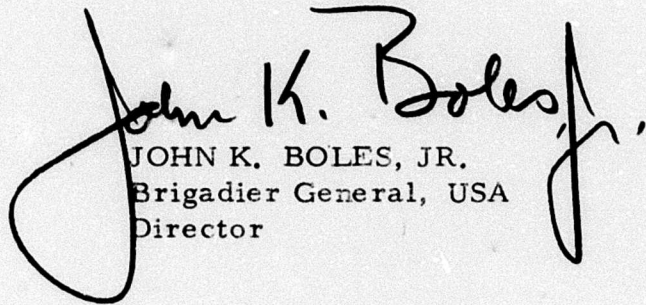
SUBJECT: Letter Report of Evaluation - Employment of Bicycles (JRATA  
Project No. 1B-158.0)

JOINT RESEARCH AND TEST ACTIVITY, APO San Francisco 96309, 16 Aug 65

TO: See Distribution of Basic Letter

1. Transmitted herewith is subject report.

2. I have reviewed this report and concur in the recommendations contained therein. This project was undertaken in response to an operational requirement to improve the mobility of RF/PF. Limited transportation and damaged road nets and bridges have, in many instances, caused considerable delay in reaction forces reaching their objective in time to be effective. Bicycles have been made available to the RF/PF in an effort to reduce reaction time and to improve their mobility. Although bicycles cannot be considered a definitive solution to the transportation problem, they do provide a full time means of transportation where none existed in the past.



JOHN K. BOLES, JR.  
Brigadier General, USA  
Director

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ARMY CONCEPT TEAM IN VIETNAM  
APO San Francisco 96243

ACTIV-GCD

11 August 1965

SUBJECT: Letter Report of Evaluation - Employment of Bicycles (JRATA  
Project Number 1B-158.0)

TO: See Distribution

## 1. AUTHORITY

CINCPAC message DTG 120456Z Sept 64.

## 2. PURPOSE

The purpose is to document the tactics and techniques for employing bicycles as a means for increasing mobility of Regional and Popular Forces in rural areas of the Republic of Vietnam (RVN).

## 3. BACKGROUND

A large part of the RVN consists of undeveloped rural areas with a very limited road net. The principal means of movement in these areas is by foot on paths and by boat on the numerous waterways. Communication is limited to hamlet radios which are issued to the Regional Forces (RF) and Popular Forces (PF), or to courier.

Because of the inaccessibility of much of the rural area, the Viet Cong (VC) have been able to establish safe areas from which they can operate against isolated hamlets or outposts frequently defended by small units of poorly trained PF personnel.

When the VC attack in strength, the RF are normally called to assist the PF. Often by the time the RF receive the order and accomplish their move, the VC have either overrun the hamlet and withdrawn or they have set up an ambush for the RF.

Intelligence and reconnaissance platoons of the PF are used to patrol within their districts and on some occasions to assist local RF and other PF units when under attack or threatened by the VC.

Faster reaction time by the RF and PF permits more timely support of hamlets under attack and under some conditions lessens the opportunity for the VC to establish ambushes. Improved mobility for those PF units having patrol or intelligence gathering missions provides a greater area

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coverage and requires less time to accomplish a given mission.

The Military Assistance Command, Vietnam (MACV) directed the Army Concept Team in Vietnam (ACTIV) to evaluate the employment of bicycles as a means for improving the mobility of RF and PF units. Subsequently the Chief of Ordnance, Army of the Republic of Vietnam (ARVN), procured and distributed 792 bicycles late in 1964.

## 4. DESCRIPTION OF MATERIEL

The bicycles are of a type commonly used in Vietnam. They are marked "Made in France". The fenders are chrome plated and the frames are painted olive green with a small RVN yellow and red band on the frame below the seat. In spite of the color and government marking they look like ordinary bicycles at a distance of 5 to 10 yards. Each bicycle has front and rear fender lights, back fender luggage rack, and friction drive light generators. No tools are issued.

## 5. USING ORGANIZATIONS

In December 1964 and January 1965, 792 bicycles were issued through supply channels of the ARVN to 2 RF companies and 14 PF and RF platoons throughout I, II, and IV Corps areas and the Capital Military District. Two of the units receiving bicycles, a RF company (RF 907 Co) located in Binh Dai District of Kien Hoa Province and a PF platoon in Vinh Xuong District of Khanh Hoa Province, were designated in the evaluation plan as test units. These locations were selected so as to provide an evaluation unit in the Mekong Delta region and one in the northern coastal plain. Supplemental data were obtained from three bicycle-equipped PF platoons in Tu Nghia District of Quang Ngai Province (I Corps), in Ben Tre District of Kien Hoa Province (IV Corps), and in Hoi An District of Quang Nam Province (I Corps).

## 6. DATA COLLECTION AND EVALUATION

Data were obtained by questionnaires filled out by US sub-sector advisors and Vietnamese district chiefs, and through interviews by the ACTIV project officer and US sector advisors with the same personnel. In addition, the ACTIV project officer observed the bicycles in use at the evaluation sites.

## 7. DISCUSSION

Essentially, the bicycles were used as individual transportation. Weapons, including Browning automatic rifles, were carried slung across the rider's back or chest and ammunition was carried in pouches or bandoleers as the soldier normally would carry them when dismounted. In no case were crew-served weapons transported on bicycles, although one bicycle-equipped RF company used rented motorcycle-drawn two-wheeled trailers to haul 60mm mortars, caliber .30 machineguns, and their crews. No attempts

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were made to evacuate casualties by bicycle. Generally, it was felt that no additional attachments or equipment were needed except for small repair items. One advisor suggested that a two-wheeled trailer which would haul either a 60mm mortar or a caliber .30 machinegun might be feasible. None of the units fabricated or attempted to use trailers, baskets, or other carrying attachments on the bicycles.

The addition of bicycles had no impact on the organization of units but brought about a slight change in tactics and techniques of those units that used bicycles operationally. These units were able to patrol a greater area with fewer people because of their improved mobility. In each case the units most actively employing bicycles were PF platoons having intelligence and reconnaissance (I&R) missions. These platoons used the bicycles in clandestine patrols and for rapid movement over multiple routes. On several occasions a special platoon in the Tu Nghia district made clandestine infiltration moves over multiple routes to assemble for dismounted action at a distance from their district headquarters. In these operations, members of the platoon wore civilian clothes and carried only pistols or submachineguns which could be concealed beneath their clothing. In two cases, bicycle-equipped RF platoons were employed as reaction forces but in neither case was there any contact made with the Viet Cong. Several district chiefs made no attempt to mount complete units on bicycles but chose instead to issue the bicycles for use by messengers and for personal use by key RF/PF personnel and medical men. The bicycles proved beneficial in this role also.

In areas having a good network of roads and trails the bicycles were used to advantage. In other areas, such as inundated parts of the delta, they proved of less value. The RF company located in the rice paddy area of Binh Dai made little attempt to employ bicycles operationally, while units in the coastal plain farther north, at Hoi An and Tu Nghia, used them extensively. Previously the latter units had to move on foot, in transportation supplied by the province chief, or in civilian buses or trucks commandeered by the District Chief. With bicycles they could move almost immediately and maintain a rate of march of 6 to 10 kilometers per hour. Canals, ditches, and rivers which were fordable by a man on foot could in most instances be forded by bicycle units. The bicycle mounted PF platoon in Tu Nghia, Quang Ngai Province, regularly forded most of the streams in the district, and on one occasion the bicycle mounted RF platoon at Ben Tre, Kien Hoa Province, forded a chest deep stream while undertaking a reaction operation. In the latter case, the riders crossed on foot holding their bicycles over their heads. This unit moved approximately 12 km to reinforce a threatened town in about one-half the time it would have taken on foot. In some cases a bicycle mounted unit could reach its destination faster than a truck mounted unit because it could bypass blown bridges whereas trucks would have had to take a lengthy detour.

In no case was a bicycle-equipped unit ambushed or fired upon while mounted. It was the opinion of several unit commanders and advisors that an individual would be somewhat more vulnerable to surprise fire when

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mounted but that a bicycle unit moving quietly and swiftly would be more dispersed and less vulnerable than the same unit on foot. When compared with truck or bus movement, bicycles were considered much less vulnerable to mining or ambush.

None of the units organized bicycle maintenance programs or kept maintenance records. The units which actively employed the bicycles issued one to each man and required him to maintain and repair the bicycle and provide replacement parts as needed. However, the district chiefs and advisors contended that pumps, bicycle wrenches, spare tires, and tube patching material should be issued. There was only one reported case of a structural failure of the bicycle.

In general, the commanders and advisors felt that bicycles should be issued with first echelon maintenance equipment. The consensus was that the platoon is the largest unit that can be tactically controlled when mounted, however, bicycles were used in transporting company-sized units. It was felt by the interviewees that bicycles should be issued to select PF platoons, and to all RF companies having mission responsibilities which require movement to locations some distance from their garrison. In all cases the advisors, commanders, and district chiefs stated that the use of bicycles had improved the motivation and had boosted the morale of recipient RF and PF units.

## 8. SUITABILITY

Although not a stated objective of this evaluation, suitability of the issued bicycles is considered herein based on statements made by the director of the Combat Development and Test Center, ARVN, (CDTC-V) and are presented and commented on below.

"In the future, women's style bicycles should be provided." The absence of the horizontal bar or a slanting bar makes mounting and dismounting the bicycles easier, therefore future procurement should consider the slanting bar type bicycle. This action should not, however, apply to bicycles provided to intelligence and reconnaissance units because the vehicle would identify the individual.

"Luggage racks should be mounted on the rear fender, as well as two carrying bags on the sides of the rear wheel." Though no carrying devices, other than the simple fender-mounted luggage rack, were evaluated, the consensus of users was that such additional attachments were undesirable because of added weight and noise. These devices are not considered suitable for issue.

"All parts must be painted; nickelling is not required." This probably is a very good idea in order to make the bikes less conspicuous in the sunlight or moonlight. However, it should be noted that most of the bicycles seen in Vietnam have painted frames and chrome plated handle bars and fenders. The bicycles issued, then, were not unlike the ones

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seen in every populated area. It would be suitable for bicycles procured for use in tactical units to have all metal surfaces painted some non-distinctive color, but bicycles issued to intelligence type units should be the same in appearance as ordinary bicycles used in the area.

"Each bicycle should have a pump." This was substantiated by the evaluation.

"The bicycles should have larger, semi-balloon type tires." The bicycles issued to RF and PF units were issued with the narrow tires. No comments regarding semi-balloon tires were made to the evaluators by users or advisors; therefore, qualitative comment on use of the larger tire is not considered appropriate.

## 9. CONCLUSIONS

It is concluded that:

a. Pumps, bicycle wrenches, spare tires and tube patching material are needed for organizational maintenance in bicycle equipped units. No other additional equipment is required.

b. Bicycles significantly improved the mobility of Regional and Popular Forces operating in the coastal plain and delta areas wherein a reasonably adequate network of roads and trails existed.

c. Bicycles can be incorporated into Regional and Popular Force units without changing the present organization. Some modification of tactics and techniques may be required to capitalize on the improved mobility bicycles afford.

d. Bicycle-mounted units are considered by users to be no more vulnerable to ambush than foot units, and less vulnerable to ambush and mines than truck-mounted units.

e. Regional and Popular Force units are capable of maintaining their bicycles with very little maintenance support.

## 10. RECOMMENDATIONS

It is recommended that:

a. A bicycle maintenance kit, consisting of a tire pump, bicycle combination wrench, and tube patching material, be issued for each bicycle, and that replacement tires be made available for issue through the administrative and logistic companies.



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b. Additional bicycles be procured to equip select PF platoons and RF companies having missions requiring improved mobility means in the coastal plain and delta areas.

- 2 Incl  
1. Responses to  
Questionnaires  
2. Distribution

  
HUGH E. QUIGLEY  
Colonel, Armor  
Chief

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## Consolidation of Significant Responses to Questionnaires, Bicycle Employment Evaluation, 1B-158.0

Q: In your opinion has the bicycle measurably increased the mobility of this unit? In what way?

A: Responses from both US advisors and Vietnamese commanders at the five units investigated were all affirmative. The reasons given were:

"The company can move faster as a unit and it has led to carrying the light machinegun and 60mm mortar on motorcycle trailers". "Bicycles have given the unit continuous mobility and the ability to react faster to a given situation". "Bicycles were used by intelligence agents and PF hamlet officials for travel between hamlets and district headquarters, and to PF locations." "Made liaison fast and in safe condition. Unit moved fast; however, they can't be used in searching or attacking enemy." "Enables PF platoons to make better use of a good network of trails and small roads. Increases speed of movement and permits unit to operate clandestinely."

Q: Do you believe that additional units should be equipped with bicycles? Why?

A: Responses from both the US advisors and the Vietnamese commanders at the five units investigated were all affirmative. The reasons given were:

"Additional RF companies could be assembled faster to meet threats. Though we have a good road net, we have very limited truck transport. Bicycles would be a big advantage. They would permit movement at night, since APC's and helicopters don't operate at night. The use of bicycles would permit RF companies on security missions to keep their means of mobility with them. They add flexibility of employment." "They provide economical movement. Bicycles require less logistical support than motor driven vehicles." "Additional bicycles should be provided intelligence agents and PF squad and platoon leaders." "Troops working in rural areas need a good means of transportation to make communication and liaison easier." "They should be provided for additional units to increase mobility, if a means of repair is furnished also."

Q: What allocation of bicycles do you recommend?

A: Responses to this question varied widely among US advisors and Vietnamese commanders alike, and tended to support the sort of use their unit made of the bicycles. Other US and Vietnamese personnel who observed bicycle units favored issuing bicycles to those units having a need for improved mobility. The allocations recommended by unit advisors and

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unit commanders are:

"Bicycles should be issued to one out of three RF companies."  
"Bicycles should be issued to all mobile and special PF platoons."  
"Bicycles should be issued to each PF platoon leader and squad leader."  
"Bicycles should be issued first to all messengers, intelligence agents, and cadre at all levels." "Bicycles should be issued to all RF companies which have missions requiring them to deploy some distance from their home base. In Kien Hoa this would be about nine companies."

Q: In general, have these troops been more effective since the introduction of bicycles, no apparent difference, or less effective?

A: Three out of five unit responses were unequivocally "more effective." The other two answered as follows:

"Because of the issue of bicycles was so small, only communication and liaison were improved." "No apparent difference."

Q: Do you believe that troops equipped with bicycles are more vulnerable or less vulnerable in cases of ambush than when moving on foot?

A: Here also the unit responses appeared to relate to the way the unit elected to use the bicycles; in no case did bicycle-mounted troops come under hostile attack:

"It is very easy to fall into a VC ambush, so bicycles should be used only when conditions are safe." "Much more vulnerable." "If moving openly as a unit, they would be more vulnerable; but if they wear disguises, move over multiple routes, and employ forward and flank security, they are no more vulnerable." "Less vulnerable." "Not much difference; probably less vulnerable overall because of greater dispersion."

Q: Has the unit's organization changed, or has the unit adopted any new tactics or techniques subsequent to being issued bicycles?

A: The answer from all units was "no".

Q: Did the unit conduct maintenance, what was its nature, and how was it accomplished?

A: The unit responses were sketchy, but the cumulative answer was that the cyclists performed first echelon maintenance, consisting of pumping up the tires, cleaning, tightening, and lubricating about once a week. The more frequently the bicycles were used, the more often it became necessary to service them. No unit had maintenance records, and none provided organized, supervised maintenance periods.