NOTES ON MILITARY OPERATIONS
of
UNITED STATES NAVAL FORCES
in
N I C A R A G U A
JULY 1927 - OCTOBER 1928

with

APPENDIX A - Extracts from Various Operations Reports of Marine Corps Ground Forces -	20 pages
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(Appendices "D", "O", "P" and "Q" accompany the original only)

M. B. REEGHAT
Captain, 9th Infantry.

Managua, Nicaragua,
20 October 1928.

Copy for

Copy No. 10.

Managua, Nicaragua,
October 30, 1928.

Subject: Notes on Military Operations of U.S. Naval Forces in Nicaragua - July 1927 to October 1928.

Through: The Chief, American Electoral Mission in Nicaragua; and the Commanding General, 2d Brigade, U.S.M.C.

To: Chief of Infantry, Washington, D.C.

1. The nomination by President Coolidge of Brigadier General F. R. McCoy, U.S. Army, as his personal representative in carrying out the promise of the United States to supervise the elections in Nicaragua in 1928, and the latter's selection of various officers of the Army as members of his Staff, afforded these officers an opportunity for observing the conduct of military operations of United States Naval forces in this country.

2. Through the interest of General McCoy, the matter was presented to Brigadier General Logan Feland, CG 2d Brig USMC and commanding all Naval Forces in Nicaragua, whose approval and sympathetic reception of the suggestion was the basis for the collection of the data submitted herewith. Every facility was placed at the disposal of Army officers on duty with the Mission to observe operations in the field, to conduct reconnaissances from the air, and to consult operations and intelligence reports in the headquarters of the various units of the command. All Marine Corps officers consulted rendered most generous and cordial aid in this matter, freely giving the results of their own experience in the field, as well as helping in securing data from others. The benefits which will flow from this interchange of ideas and from this close association in the accomplishment of our national mission in Nicaragua, would of themselves justify all efforts expended in gathering and preparing these data.

3. The notes given herein are intended to summarize the experience gained in the field and are limited to those which are considered of general interest and general application. Statistical data, and fuller details on many phases of operations, as well as details of local application, will be found in the various appendices. Attention is particularly invited to "Appendix A" containing full details on all important engagements, and in many cases the complete official report of the commander engaged.

4. The following salient features of the subject should be clearly understood before considering the details which compose it. The theatre of operations is extremely rough; affords little in the way of food or supplies; is far from the supply bases on the Pacific Coast; and is deficient in roads and means of communication. Roughly it is an elongated isosceles triangle, 105 miles along the base and 125 miles on the sides, within which area have taken place practically all of the operations conducted by the Marine Corps, except those relating to the service of supply, evacuation, and hospitalization. (See "Appendix B"). The large units, the brigade and the regiment, have seen no service as tactical units. The battalion has

(Par. 4 continued)

been used on only two occasions, and the company little more, so that contacts with bandits have been made by patrols, which while frequently of the strength of our peace time rifle companies, have not been complete units. Finally, the main difficulties encountered have not been in overcoming combat resistance, but have been in the solution of problems of supply, of communications, and of intelligence, incident to guerrilla operations in a country with which we are not at war, and against un-uniformed elusive native bands in a tropical wilderness of tumbled masses of densely wooded precipitous hills and knife-ridges, whose every trail at every turn they can make an ambush for our forces, or use for withdrawal, to appear again as peaceful peons engaged in their lawful occupations.

5. For convenience in presentation the following classification of data will be followed:

a. MISSION.
b. ORGANIZATION.
c. GROUND FORCES.
d. AIR FORCES.
e. COMMUNICATIONS.
f. TRANSPORTATION AND SUPPLY.
g. PERSONNEL AND MORALE.
h. EQUIPMENT AND WEAPONS.
i. INTELLIGENCE SERVICE.
j. CAMPS AND MARONES.
k. SICKNESS.
l. TERRAIN, CLIMATE, AND FOOD SUPPLIES EXISTENT IN COUNTRY.
m. MISCELLANEOUS DATA ON OUTLAW BANDS, WHICH HAVE CONSTITUTED "THE ENEMY" IN THESE OPERATIONS.

a. MISSION:

With respect to the mission, the time covered in this report may be roughly divided into two periods with a slightly different mission corresponding to each.

The first period, from 1 July 27 to 10 September 28, embraces that time when, generally speaking, the distribution of forces was based solely on the military situation with little or no necessity of considering electoral problems. For this period we may take as the mission of all Marine Corps forces:

"TO MAINTAIN LAW AND ORDER IN NICARAGUA".

In the second period the personnel for the 350 local boards was in place or enroute to their stations and the mission for this period, as given in Brig Memo 24, Hq 2d Brig USMC, 9 October 28 (See "Appendix C") was:

"TO FACILITATE, AND IN EVERY WAY ASSIST, IN MAKING POSSIBLE A FAIR, SUPERVISED ELECTION IN NICARAGUA ON NOVEMBER 4, 1928".

"In the above mission are involved:

(a) The protection of electoral personnel and records.
(b) The maintenance of order.
(c) The protection of the civilian population.
(d) The pursuit and destruction of bandit groups."

(Par. 5 continued)

b. ORGANIZATION:

(1) Regiments, battalions, companies, etc.:

2d Brig USMC (5th Regt
(11th Regt
(Battle Fleet Regt (Provisional)

5th and 11th Regiments have three battalions each, each of three numbered companies and one MG Company (2d Bn of 5th composed of Marine Detachments from ships of the Scouting Fleet).

Battle Fleet Regiment consists of two battalions of four rifle companies each, one from each ship's detachment.

Rifle Companies organized into 2 platoons of 4 squads each.

Armament of 45th Co (a typical Marine Corps Rifle Company):

- 98 Springfield Rifles
- 8 Browning Auto-rifles
- 8 Thompson sub-MGs.
- 8 Rifle Grenade Dischargers
- 4 Browning MGs.
- 1 1-Pdr
- 1 3" Trench Mortar

MG Companies have a provisional organization consisting of one MG Platoon of four guns and one Howitzer Section of 1 1-Pdr and 1 3" TM.

Each rifle squad has two auto weapons, an auto-rifle and a Thompson sub-MG.

In general, peace strength tables of organization of U.S. Army are followed, but with many departures due to special problems and situations. (See "Appendix D", accompanying original only).

(2) Division of National territory into military areas:

Nicaragua is divided into four areas:

Northern Area - Departments of Nueva Segovia, Estelí, Jinotega (part only). This is sub-divided into three military districts.

Eastern Area - Department of Bluefields (includes territorial divisions of Cabo Gracias a Dios, Prinzapolca, Río Grande, Bluefields, Siquia, and San Juan del Norte, all as shown on "HAM" map) - COCO river to BOCAY inclusive.

Western Area - Departments of León, Chinandega. This is sub-divided into two military districts.

Southern Area - Remainder of country. This is sub-divided into three military districts.

(3) Distribution of forces:

5th Regt - Southern Area - Hq at MANAGUA - 136 officers and 2374 men.

11th Regt - Northern Area - Hq at OCOTAL - 75 officers and 1278 men.

Battle Fleet Regt - Western Area - Hq at LEON - 45 officers and 847 men.

Units of both 5th and 11th Regts and some ships' detachments form Major UTLEY'S command as CO Eastern Area with Hq at PUERTO CABEZAS. 54 officers and 775 men.

Detailed distribution of all forces shown in "Appendix B", "Appendix "E" and "Appendix F".

(Par. 5 continued)

g. GROUND FORCES:

(1) Tactical control of whole force and of smaller units:

2d Brig USMC, Brig Gen LOGAN FELAND, reports to Commander Special Service Squadron, Admiral D. F. SELLERS. Latter delegated command of all troops and operations ashore to CO 2d Brig USMC.

Tactical control is exercised by Brig Hq, through Area Hq, thence to smaller units.

Neither the Brigade nor any one of its regiments has ever operated as a tactical unit in Nicaragua.

On only two occasions has a battalion so operated. The first, was the 3d Bn, 5th Regt, under Major OLIVER FLOYD in southern NUEVA SEGOVIA in June 1927. The second was during t e operations against the CHIPOTE area in January 1928, when a provisional battalion under Major A.W. YOUNG was in the field.

While patrols have at times reached the strength of peace time infantry companies, and in some instances have been as strong as 3 officers and 75 men, companies as a rule have not operated as tactical units but have occupied and been responsible for specified areas with a garrison or garrisons in one or more towns forming a pool for patrols.

(2) Composition, strength, and armament of various garrisons, and tactical measures taken for defense:

Defense plans with stations and missions for the entire command exist for each garrison.

While defense plans are well conceived, positions well organized, and personnel well trained in their occupation, there is nothing of unusual value revealed in this phase of operations.

Each garrison of 30 men or more had at least 1 MG, several auto-rifles, several Thompson sub-MGs, hand and rifle grenades, and usually a 3" TM.

The official report of the CO in the OCOTAL fight of 16 July 27 is included in "Appendix G".

The official report of the CO in the TELPANECA fight of 19 Sept 27 is included in "Appendix G".

These two reports cover in detail the only two cases where bandits attacked garrisoned towns or marines in camp.

(3) Composition, strength, armament, and tactics of patrols:

Patrols of Marines, and of Marines and Guardia, are used. Patrols of Guardias alone seldom used.

Patrols frequently contain a few men mounted on ponies or mules, with the remainder on foot.

Strength has varied from one to eigh squads, but few exceed 40 men. Usual officer's patrol with fighting mission consists of one 4-squad platoon. No patrols in NUEVA SEGOVIA less than 1 squad.

Armament: Officers carry Colt .45
Each squad has: 1 Browning Auto-Rifle
1 Thompson sub-MG
Each Cpl carries 3 hand grenades

Any patrol smaller than a Squad always has at least one auto-weapon, either an auto-rifle or a Thompson.

Formation generally in single file on trail with point, main body, and small rear guard. Small march outposts established on the halts.

(Par. 5-g-(3) continued)

Country is so rough and trails so narrow that main body is rarely out of sight and hearing of point, usually about 100 yards back, and the use of flank patrols is extremely difficult.

After Livingston's and Richal's columns were badly shot up in December 1927, the practice grew up of "developing" commanding ground near the trail - likely ambush points - by combing it with short bursts of fire with Auto-rifles and Thompson sub-MGs. For details of Livingston's and Richal's fights see "Appendix A" pages 13 and 15. Every turn of the trail was a possible ambush point. Native guides were used on trails to give directions, but little trust placed in them. On the east coast and up the COCO RIVER patrols were confined to waterways. Flat bottom dug-out canoes, 40' long by 3' to 4' wide were used, one to a squad plus its crew of Indian boatmen. These were impressed at beginning of operations, being paid $1 a day and fed. After Captain EDSON'S COCO RIVER patrol had been operating for some time, these Indian boatmen served willingly and stuck to their boats even when under fire.

Patrols proceeding by water had boats in two columns, one on each side of river, each boat covering the opposite shore. Shore patrols kept abreast or ahead of leading boats whenever possible. In case of attack each boat was immediately pushed in shore by its Indian crew, the Marines jumping on the bank, and leaving the boat to its crew.

For details of Capt EDSON'S contact of 7 Aug 28 on the COCO RIVER see "Appendix A" page 19. This is the best example of river patrol tactics which has occurred here.

(4) Escorts of convoys:

Small trains usually consist of 20 pack animals or 10 bull-carts.

For protection of such trains most effective results obtained by active patrolling along route train was to take.

Bull-cart trains, if left under control of natives, will travel at all hours of day and night. If escort attempts to regulate gait, it either gets nowhere or kills the bulls. No trains were lost in this way.

(5) Tactical use made of animal and motor transportation:

Little use could be made of motor vehicles, due to impassable roads and trails in theatre of operations. Utmost use was made of trucks for transporting men and supplies to motor road-heads.

Planes used to transport men on combat missions whenever landing fields and other conditions made this possible and desirable.

Animals used as mounts and as pack animals, whenever practicable, to increase mobility of patrols. One patrol of about 40, all mounted, was organized and was commanded in the field for nearly eight months by Captain MAURICE HOLMES, USMC. It probably accomplished much though it had no contacts of importance.

There are very few miles of existing road permitting use of motor transportation and this use is almost entirely confined to dry season. For extended military operations existing road net could rapidly be developed by Engineer troops permitting troop movements by motor and motor supply.

(For detailed reports of important actions and patrol contacts see "Appendix A" and "Appendix C").

d. AIR FORCES:

(1) Types of planes used and numbers on hand 25 Oct 28:

(Par. 5-g-(1) continued)

6 - CURTISS OC-2 - "Falcon" - 2 seaters.
5 -VOUGHT - "Corsair" - 2 seaters.
3 - FOKKER - TA - Transport - Capacity 10 passengers or one ton of cargo.
3 - LORENING - OL-8 - Amphibian - 2 seaters.

All machines single motored except FOKKERS which are tri-motored and all were designed for observation or supply.

All motors are air cooled.

All machines were latest models and new when delivered here.

In August there were ten commissioned and some NCO pilots, of whom two of the former had approximately 90 hours in the air for that single month. Major L. M. BOURNE, the CO, had 93 hours and 45 minutes in the air.

(2) Character of missions assigned :

A little of everything except high altitude bombing and aerial combat, with a minimum of photographic missions.

Reconnaissance, contact, attack of ground forces with machine gun fire and bombs, supply, courier, transportation of combat troops, and evacuation of sick and wounded have all been common missions. (See "Appendix N").

During the year ending June 30 the planes carried a total of 900,000 pounds, or 450 tons of freight and 1,300 passengers to hill stations.

In the week ending July 7 a total of 177 hours were spent in the air. There were 126 flights. Of the total time, 40 hours and 20 minutes were in twelve flights by the detachment at PUERTO CABEZAS. On Saturday, July 7, three FOKKER planes transported forty-two men with full packs and 2,500 pounds of equipment from OCOTAL to APALI in 1 hour and 35 minutes. Two days would have been required to hike the distance.

Food, ammunition, water, medicine, and all manner of supplies were successfully dropped by planes. Weight of drop packages was kept down to a maximum of 25 lbs with average well below this figure. Sacks of sawdust, grass wrapping, etc, was resorted to to protect contents.

(3) Experience gained in carrying out such tasks:

Exclusive of skill and untiring service of pilot personnel, the chief factors to which success must be attributed, have been maintenance of material, and fact that all machines and equipment have been latest models and new when delivered in Nicaragua.

Of the two emergency landings resulting in fatalities both occurred in old water cooled machines - "DHs". The first was that of Lieut THOMAS and Sgt DOWDELL whose plane crashed in the hills near QUILALI in October 1927. Both men got away from the wreckage taking the Lewis Gun with them, but were pursued and killed by bandits. The cause of this crash was not determined. The second occurred when Capt BIRD was coming in to make a landing at ESTELI in March 1928. When between 200 and 300 feet from the ground, a vulture struck a wing strut and carried it away. The wing collapsed and the pilot and observer were killed.

(4) Cooperation with ground forces:

The radio has not been generally carried by planes on account of its weight. Communication with ground troops has been almost entirely by Very Pistol, pick-up and drop messages, and panels. (See Par. 9, "Communications" of this report).

(Par. 5-d-(4) continued)

The pick-up has become a common and reliable means of communication from ground to air.

Heavy rain storms some times denied certain areas to planes and prevented contacts with friendly ground troops as well as search for outlaw bands.

Smoke candles used with success to indicate to planes the location of friendly ground troops.

Patrols on trail frequently unable to signal or indicate their presence to searching planes due to dense jungle. This was particularly true in rainy season.

Observation much easier in dry season when leaves are off most trees and underbrush largely burned out.

(5) Armament of planes:

Browning and Lewis guns, both air cooled, and light 20 lb bombs.

Has had great moral effect on bandits and frequently has broken up their attacks and dispersed their concentrations.

(6) Anti-Aircraft fire from ground has been of small volume, and limited to rifle and MG fire. Under date of August 14 N.Y. Times printed report said to have been made by Naval Bureau of Aeronautics that aircraft of 24 Brig in Nicaragua had had eighty four contacts with outlaws during the fiscal year then ended; that planes had been struck fifty nine times by small-arms fire from the ground; and that there had been only one casualty, when Capt PEIRCE an observer was shot through the right foot. (It might be noted that it is not known whether the crash of Lieut THOMAS' plane was caused by enemy fire or was due to other causes).

(7) The part played by the Air Service in operations here has been of the greatest value in the final results obtained. The flying the pilots have done daily has probably been more dangerous than any peace time flying our service pilots have yet been called upon to do. Landing fields are few and widely seperated, the vast expanse of jungle covered mountains makes a crash landing a risk wherein all the chances are against the pilot, and the hostility of the natives renders escape even more uncertain if the crash itself does not kill the occupants of the plane.

The following remarks will give an idea of the importance attached by ground troops to the work of the Air Service:

Extract of Lieut. M. J. GOULD'S report on his patrol in October 1927:

> "Throughout the movements and actions of this patrol in enemy territory the assistance rendered by aviation has been invaluable. The information received from the planes was in every case accurate, useful, and of the greatest importance to the intelligent conduct of this patrol."

Extract from report of observations by Major R.L.CHRISTIAN, Infantry, U.S.A.:

> "From the stand-point of the men on the ground, the liaison maintained by the air force has a tremendous effect on the morale of the entire command. When an outfit is marching along the trail, hot and

(Par. 5-d-(7) continued)

tired, the first plane sighted or the first drop or pick-up message, raises morale 100%. The patrol feels it is "in touch". The planes have endeavored to drop sacks of cigarrettes after every contact, which helps a great deal. A drop from a plane, news or message as to where camp will be made for the night will cause a patrol marching along glum, any old way, to brighten up. Thereafter they will march along cheerfully, through the worst kind of going to their camp site. On days when planes do not pick them up, they want to know "where in hell are the air jockies." If the planes fly around near, probably on some other mission, and do not pick them up, they do not like it. The patrols want the planes. They want to see them and get in touch with them."

For details of work of Air Service see attached report of 1st Lieut PARDON MARTIN, Air Corps USA, Liaison Officer with the Marine Corps Aviation, and marked "Appendix E."

e. COMMUNICATIONS:

(1) Ground forces:

(a) Radio:

Radio has been carried with large columns and has been increasingly used for smaller patrols as necessity of communications became evident.

Extremely rough conditions and transporting sets by pack animals have made maintenance services of technical radio mechanics essential.

(b) Telephone:

Very few native lines. Very poor service. Lines have been used and others laid wherever practicable. For extended operations all lines needed would have to be laid and little or no reliance placed on existing native lines.

(c) Telegraph:

Same as remarks under telephone.

(d) Airplanes:

Drop and pick-up message system has worked well. Chief difficulties are weather and terrain. Ground troops should call for pick-up only when essential as it requires dangerous flying by pilots.

(e) Miscellaneous:

Mounted messengers have been used in a few cases. No use made of heliograph or lantern.

(2) Airplanes:

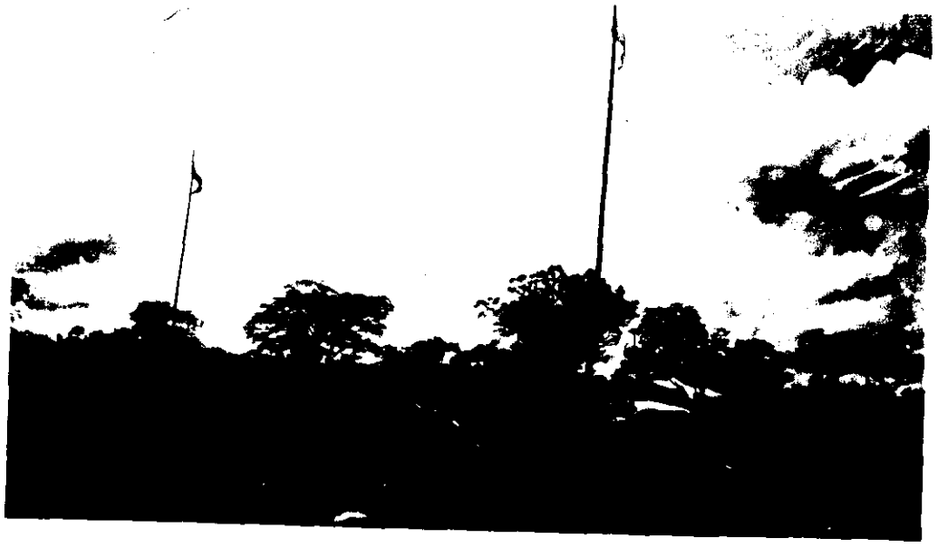
(a) Radio telegraph equipment rarely carried by planes due to its weight.

(b) Panels and drop messages much used for communication both ways between ground and air. (See "Appendix F").

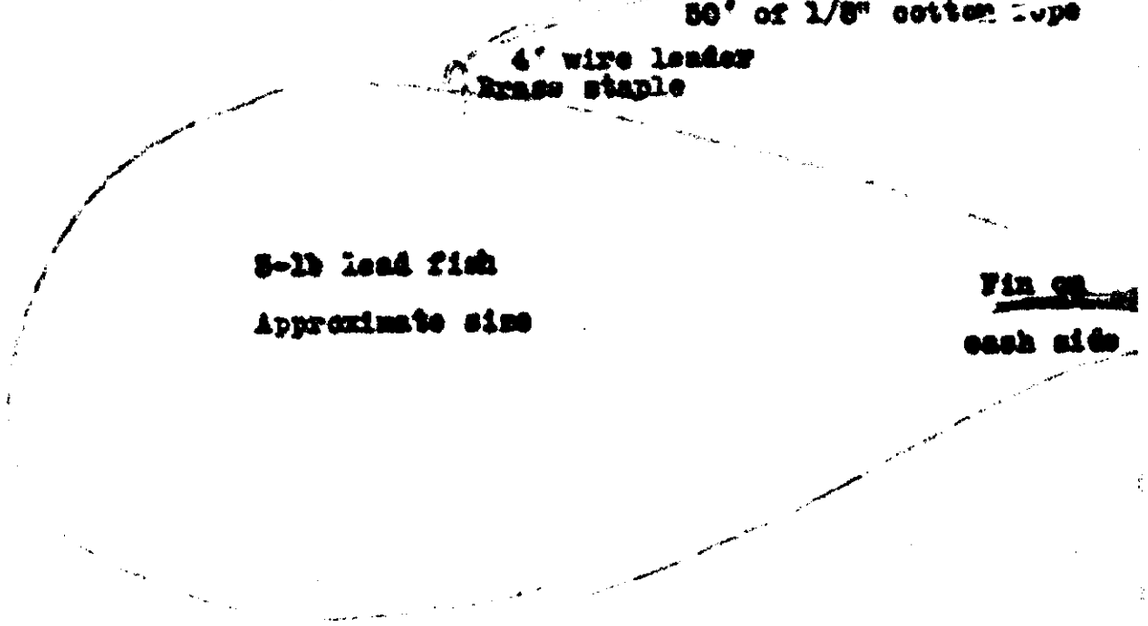
(c) Pick-up system well developed here. A pick-up station is illustrated in accompanying photograph. Two light poles at least 14' high are set up or held up by two men some 50' apart, with a long nail in the top of each. A 100' length of about 1/8" cotton rope is laid across nails like the cross-bar jumping standards. Each end of rope is tied to a light stick about 18" long thus completing a rope circle.

(Par. 5-g-(g)-(g) continued)

Messages are tied to this stick. A small white streamer on the top of each pole indicates the direction of the wind. Plane uses a 50' length of 1/8" cotton line with a 4' wire leader on ground end, and end of wire made fast to about a 3-lb lead fish of shape and size shown below



AIR-LANE PICK-UP STATION at Junction
of WASPOOK and COCO RIVER, NICARAGUA,
24 September 38.



Observer in rear cock-pit stands up and drops lead fish over side, lowering it to proper height to catch rope on top of poles as pilot comes in for pick-up. The entire 100' section of rope with stick and attached message is then picked up by lead weight and pulled in by observer. In selecting position for pick-up station, ground troops must carefully consider terrain, especially trees and hills, and direction

(Par.5-g-(2)-(g) continued)

of wind, so as to make it as easy as possible for plane to make pick-up at elevation of about 25 to 30 feet above top of poles. (See "Appendix J").

(4) Some landing fields were frequently unusable due to heavy rains in rainy season, but most of those in use were all-weather fields.

(3) Motor Vehicles:

Use confined practically to supply. Courier service by motor in cities only. (See Section "f" of this report on "Transportation").

f. TRANSPORTATION:

(1) Rail:

Narrow gauge railway exists from Pacific Coast port of CORINTO via the large cities of LEON and MANAGUA to GRANADA, a total distance of 148 miles. kilometers. tuBd.

A branch, standard gauge road, from PUERTO CABEZAS on the East Coast, 88 kilometers into interior, is only other railroad in the country.

(2) Water:

Transportation on the East Coast is confined entirely to rivers and lagoons. Small coasting craft, barges, and canoes are available there in small numbers. Practically every river has a bar with only about 4' of water on it at its mouth. There is much deeper water inside, sometimes for 50 miles upstream.

(3) Animal:

Bull-carts are the only feasible means of transportation for heavy supplies in most of the country. They are slow and an awful nuisance. They can be used on main trails in dry season. In wet season it is economy of time and men to use pack animals.

The pack-bull has been used with PHILLIPS pony pack and can carry a heavier load, travel over roads impassible for pack mule, and is less difficult to supply with forage. They must however be handled by natives. On bad trails they are faster than either mules or carts. On good trails slower than pack-mules. Native packs have been used almost exclusively for both mules and bulls.

Pack-mules can be and are used between all garrisons. Animals are small native mules, and 150 lbs in addition to weight of the pack is a maximum load, with average around 100 lbs for average trip. Capt. MAURICE HOLMES, USMC, has improvised a very light simple pack utilizing native pads, wooden cross-buck, heavy duck containers, and a simplified system of lashing. Both breast strap and breeching are used. This pack is well adapted to small animals and inexperienced packers.

In time of military operations there would be tremendous difficulty in securing adequate animal transportation. U.S. animals will not stand up unless acclimated. Prussian mules are as effective as bulls on trail, but require to be fed oats which must be shipped in. Native animals will travel on grass and corn.

(4) Motor:

Marines have used various types of heavy and light trucks. Experience has proved that four wheel drive trucks, preferably with compound gears, and high clearance, carrying a useful load of around a ton and a half to two tons, is most suitable for this country. Motor vehicles are used to great advantage in dry season, but are ineffective in wet season, without great labor spent on roads.

(Par. 5-f continued)

(5) Airplanes are quickest and best means of transportation where landing fields exist for both transport and observation planes. (See paragraph g-(2) of this report).

g. PERSONNEL AND MORALE:

(1) Personnel:

The average Marine enlisted man is a wide awake, American-born, adventurous youngster in early twenties. They are adaptable and make fine aggressive soldiers. Usual tour here is 14 to 18 months.

(2) Morale:

Food is good and athletic recreation is provided in all garrisons so morale is good throughout. The more isolated garrisons seem to have the higher morale.

(See notes on effect of friendly airplane contacts on morale of ground patrols on trails, paragraph g-(7) of this report).

h. EQUIPMENT AND WEAPONS:

Due to terrain and climate individual equipment should be kept down to a minimum and made as light as possible. Web equipment as manufactured at R.I.A. has given poor service, going to pieces in two weeks of hard patrol service.

Individual equipment carried on person by foot patrols usually consists of one light pack, mess gear, and arms. When accompanied by pack animals blanket rolls and all packs are carried on animals.

The "Springfield" has proved its superiority in all contacts at all ranges. However in my opinion (Captain T. A. AUSTIN, USA) a lighter arm firing lighter ammunition semi-automatically would be much more useful. A stainless steel barrel for tropical use would be an improvement. Rifles have been well cared for in the field.

Browning Auto-rifle has been a man-killer on the trail but effective when used. It is too heavy, for the average man, but carried on all mounted patrols. A field of fire permitting full use of its fire power is rarely found.

Bayonet is of little or no use. Does not serve as a machete or knife. Seldom carried by patrols.

Browning MG has been little used due to its weight and difficult packing on trails and is generally left in garrison.

Thompson sub-MG is the ideal weapon for bush warfare as ranges are always short. It uses .45 calibre pistol ammunition, and has a tremendous volume of fire; it is very effective at short ranges, an ideal weapon for conditions here. Its chief disadvantage is its rapidity of expenditure of ammunition. Drums holding 50 and 100 shells are used as well as 20-round magazines. One man generally carries two 50-round drums and five 20-round magazines. Marines prefer clips to drums. The gun is carried under the arm, always ready, and it is almost impossible to surprise a Thompson sub-MG man. He always has his gun on his hip, ready to shoot, and can immediately put down a burst of fire while marching. This weapon is very popular with Marines.

Lewis gun used effectively by Guardia who carry them across saddle horn on mounted patrols.

Pistols very effective for police duty in towns and also at times on the trail.

Rifle grenade has been effectively used in nearly all contacts and has proved very valuable.

(Par. 5-h continued)

Hand grenades useful on a number of occasion. New leather carrier improvised locally great improvement over old web type. Its use is limited due to terrain and usual "hit and run" tactics of bandits. Recommended for use by officers and NCOs only.

3" TMs have been used with good effect on one or two occasions but is scarcely worth animals and labor necessary to transport it. It is very popular on strong combat patrols. Was used to advantage in operations against CHIPOTE. A pack has been designed for it carrying tripod on one side, the plate on the other, and the barrel on the cross-tree. Makes a very efficient pack which does not slip, but is very hard on mule. Extra mules required for ammunition.

1-Pdr limited to garrison use. Little or no opportunity arose for use of this weapon, though it did get into action with Capt LIVINGSTON'S column.

Artillery: 4 3"-mountain guns of an experimental design for Naval Landing Force gun and for transportation on pack animals were sent here from Naval Gun Factory at Washington. No combat use has been found for them here.

In early days of operations here, the 1918 rifle ammunition was issued. It proved so defective and gave such serious trouble in the field, that its use was discontinued and the FA 27, 172° grain boat-tail bullet was substituted. This has given uniformly superior service, and is unquestionably the best rifle ammunition ever issued to any of our forces for field use.

Clothing found necessary: Hob-nail shoes, campaign hat, and poncho. Latter is used for making roll and bedding down on the ground. Mosquito bars are generally carried. They can be used on ground or with hammock. Patrols carry hammock inside their rolls. Packs are rarely carried on the person.

Kitchen equipment: Rolling kitchens are of no service due to lack of suitable roads. On the trail a field marching kit is used consisting of square frame with folding legs and grating on top, three iron cooking buckets, and one bake pan. This packs well and handles well, weighing 300 pounds and making one quarter of a load for a bull-cart. Small patrols usually use one 5-gallon oil tin for making coffee and boiling water, one pan, and a steel plate for flapjacks. For filtering mechanical impurities from water, porous stone jars of about 6 gallon capacity can be obtained in the garrisoned towns in the hills. Evaporation on the surface of these jars cools water to a remarkable degree.

i. INTELLIGENCE SERVICE:

Best maps of Nicaragua are "HAM" map, 1924, and "CHRISTIAN BROTHERS" map - both of approximate scale 1:400,000. Both have many inaccuracies and large areas without data. No topographical maps exist. Marines have compiled data and produced blue-print road sketches of many areas.

j. CAMPS AND MARCHES:

Camp sites are always picked at haciendas, where shelter can be found. Marines rarely camp out on a trail.

Water is boiled, or chlorinated, or both. Chlorine tabs and tablets are standard equipment with all patrols. Patrols ordinarily

(Par. 5-j continued)

drink out of any stream they come to and when moving fast take no steps towards sanitation. No tools are carried to construct latrines when camping overnight.

Cooking while on the march is done on native or on improvised stoves. Very little kitchen equipment is carried.

k. SICKNESS:

Venereal disease is prevalent along railroad and in large cities. More syphilis than gonorrhea. Very little venereal disease in hills. Navy and Marines handle venereals differently. Men do all their regular and much extra work, being admitted to hospital only in secondary stages of syphilis.

Tropical diseases:

Malaria is always present.

A great deal of trouble is experienced with tropical ulcers. It is not uncommon to have half the command laid up at a time. These ulcers start with the bite of a tick which being scratched causes an infection. There is also a small flea called the NIGUA which burrows into the skin under the toenail, causing an infection and requiring to be cut out. There is very little typhoid. Diarrhea and dysentery both bacillary and amoebic are very prevalent, particularly at the beginning of the rainy season, but have been practically eliminated by boiling and chlorinating water.

Report by Capt R. W. PEARD, USMC, Comdg 16th Co - CHIPOTE Area - 24 Jan-2 Feb 28:

> "The wood ticks and fleas made operations in this area very unpleasant, and all personnel returned to SAN ALBINO covered with insect bites and infected sores, which caused sleeplessness to such an extent as to materially reduce the combat effectiveness of the command in case serious opposition had been encountered. The officers and men arrived back at SAN ALBINO in a generally worn out and nervous condition from the insect bites which alone forces over half the company to report for sick call daily."

l. TERRAIN, CLIMATE, AND FOOD SUPPLIES IN COUNTRY:

(1) Terrain:

Obstacles - the numerous rivers and creeks become swollen during the rainy season and are very difficult to cross even at regular fords for periods of hours or days, depending upon the size of the stream.

Swampy stretches in some parts are impassible in wet season.

Abrupt rocky hills and knife-ridges scattered in utmost confusion and covered with dense undergrowth are extremely difficult to traverse at any season, and confine practically all travel to rough, narrow trails with steep grades.

Vegetation varies from dense tropical type in the lowland to open pine and oak forest with carpet grass in some sections of the highlands.

Water - plentiful throughout almost all of the country in dry and rainy season for animals and men.

Elevations - vary from 1200 to 4500 feet, and the mountain ranges are scattered about in the greatest confusion making it difficult to determine water sheds or directions.

(Par. 5-1 continued)

(8) Climate:

Climate varies from tropical to sub-tropical and generally is excellent. Blankets always necessary in hill stations at nights and air there is uniformly cool throughout greater part of the day.

In lowlands mean average temperature is about 78°F with extremes of 40° and 95°, in the hills and lowlands respectively.

Rainfall varies from 40" to 80" in western strip where it all falls in the six months mid-May to mid-November, to 90" in Matagalpa strip where it continues to fall into December, and to 150" on east coast where there is a partial dry season in February, March and April only. (See Chart marked "Appendix K").

(9) Food supplies in country:

Native beans, rice, beef, and corn generally available in large quantities throughout country. Coffee available in large quantity.

Chickens, eggs, bananas, oranges, and coconuts obtainable in most places in sufficient quantity for small patrols and garrisons.

m. ENEMY:

"Enemy" is made up of Nicaraguans and Hondurefians, mostly illiterate mestizos, who are in the game for the love of it, and because they have everything to gain and nothing to lose through banditry. Many are desperate characters with a long record of killings in brawls, and fight coolly and courageously. Nearly all are of good physique and capable of prolonged physical hardships and operations on reduced rations. Considering close ranges, element of surprise, enemy superiority in numbers as reported by Marine Commanders in many fights, and large number of fights, the casualties of the Marines have been remarkably light, comparable to those inflicted on our forces in the early days in the Philippines. Such light losses are probably due as much to the notoriously poor marksmanship of the untrained and undisciplined native shot, and the poor condition and inferiority of his armament, as to the skillful use of cover and superior training of the Marines.

Enemy never known to attack detachments in camp or billets on the trail.

In only two cases did he attack garrisoned towns - OCOTAL on 16 July 27 and TELPANECA on 19 Sept 27. In neither case was he successful.

At QUILALI after engagement of 27 Dec 27 in which Captain LIVINGSTON'S and Lieut RICHAL'S columns were both badly shot up and the leaders severely wounded, the bandits had an outpost on a ridge in plain sight of town, but never fired a shot into camp. The bandits could be plainly seen through field glasses.

Enemy usually took a week to prepare an ambush, and the jefe rehearsed it before hand. The same place was used twice if occasion offered.

Frequent use was made of dynamite bombs, the explosive having been looted in raids on mining property. In the OCOTAL fight some bombs contained from 24 to 26 sticks of dynamite. These bombs had little material effect and were apparently used in an effort to terrify Marines, and often to check pursuit.

Enemy made increasingly good use of cover. In early fights he used to expose himself recklessly, but soon corrected this mistake. Fox holes, and stone barricades were cleverly used.

(Par. 5-g continued)

As operations of airplanes became more frequent enemy learned to take cover from aerial observation and in later stages was rarely discovered from the air.

Enemy thoroughly familiar with all trails, water holes, and important terrain features. His mobility much greater than that of the Marines, and his intelligence service superior. He therefore could out-maneuver and dodge, prepare ambuscades and escape with little probability of being seriously punished or destroyed.

Two amnesty proclamations issued by the Nicaraguan Government resulted in the surrender of some 800 former bandits up to 1 Aug 28. The significant fact was that very few surrendered with their arms.

6. In addition to the assistance generously rendered by all Marine Corps officers consulted, the observation of Major H. L. CHRISTIAN, Inf., of Capt. T. A. AUSTIN, Jr., Inf., of 1st Lieut. PARDOE MARTIN, Air Corps, and of 1st Lieut. IRVIN ALEXANDER, 9th Inf., have been freely drawn upon and their written notes appear in full in the appendices to this communication. Similar notes which may be received after the conclusion of this paper will be attached as additional appendices.

M. B. RIDGWAY,
Captain, 9th Infantry.

MBR/alh

Copies to:
#1 - Chief of Infantry - complete with all appendices
#2 - Gen. F. R. McCoy)Less Appendices "D", "O",
#3 - M.I.D.)"P" and "Q".
#4 - Capt Ridgway (less Appendix "D")
#5 - Chief of Infantry)
#6 - CG 2d Brig USMC)
#7 - CO 9th Infantry) Less all appendices
#8 - Maj C.I.Crockett)
#9 - Extra)
#10- Extra)