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TRANSPORTATION
IN A
UNIFIED THEATER OF OPERATIONS

Rhoman E. Clem
Major, TC

Date submitted, 24, May 1949

Transportation in a unified theater of operations, by Maj R. E. Clem. CGSC. 1948-49.

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STUDENT RESEARCH DIRECTIVE FOR SUBJECT NUMBER _____

STUDENT _____

(Name)

(Rank)

(ASN)

FACULTY ADVISOR _____

(Name)

(Room No.)

(Tele. No.)

SUBJECT Transportation in a Unified Theater of Operations.

PURPOSE: To analyze the problems of intra-theater transportation for all component forces in a unified theater of operations with the purpose of recommending an organization, and operational procedures, to effect the most satisfactory solution of these problems.

SCOPE: (Brief outline of subject coverage)

1. Analyze an historical example of the organization employed; the operational procedures, and the controls necessary in the supervision and operation of transportation in a theater of operations on a large land mass.
2. Emphasize the problems created by conflicting demands of various theater Army organizations, as well as theater Navy, Air Force, and Allied force users of transportation. Stress the additional problems created by demands of a campaign in a unified theater in the future.
3. Prepare a recommendation as to the organization to be established for planning, supervision, and control of transportation; with particular emphasis on the assignment of responsibility for transportation, the command level at which the theater transportation staff will function, and the degree of participation of the various component forces in this staff.
4. Prepare a recommendation as to any new operational procedure for control of operations which should be instituted in a unified theater.

NOTE TO STUDENTS:

1. The scope suggested above is intended as a guide only and is not to be construed as a limitation on the students perusal of the subject. The student is encouraged to modify the above scope as he may find necessary to outline and define the specific problem he visualizes and proposes to develop in his research study.

(over)

2. The references below are furnished to give the student enough material with which to begin his research. It is anticipated that the student will make use of other available sources in order to give adequate scope to his subject, and to include latest developments pertaining to the subject.

REFERENCES:

MN-1004.2.....Com Z Activities in Spt of ETO.
S-12780.....Military transportation in theater of operations.
12949.122.....Operation, organization, supply and services of the Transportation Corps in the ETO.
R-6477.....Report on Highway Operation NATOUSA.
R-6664.....Procedures for planning, reception, and movement of supplies, equipment, and personnel in ETO.

COORDINATION: (Confer with the authors of these subjects for pertinent information and coordination)

4-7 Movement Control in a Unified Theater of Operations.
4-6 Integration of Transportation Means in a Theater of Operations.

REMARKS:

COMMAND AND GENERAL STAFF COLLEGE

FT. LEAVENWORTH, KANSAS

Logistics Specialized Course
Regular Class 1948-1949

TRANSPORTATION IN A UNIFIED THEATER OF OPERATIONS

Rhoman E. Clem
Major, TC

Date Submitted: 24 May 1949

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COMMAND AND GENERAL STAFF COLLEGE
Department of Logistics
Fort Leavenworth, Kansas

24 May 1949

File No. 4-5

SUBJECT: Transportation in a Unified Theater of Operations.

TO: Director, Department of Logistics, C & GSC

1. PROBLEM. -- To establish an organization and operational procedures for intra-theater transportation in a unified theater of operations.

2. ASSUMPTIONS. -- a. That the theater of operations is on a large land mass such as Eurasia, Africa, or the Americas.

b. That the present policies for operational responsibilities of transportation remain unchanged.

3. FACTS BEARING ON THE PROBLEM. -- a. The organization of transportation within the theater is functional.

b. The operation of all non-tactical transportation in the theater of operations except pipelines and air transport is controlled by the Theater Transportation Officer.

c. All intra-theater movement planning including pipelines and air transport is centralized in the Theater Transportation Officer.

4. DISCUSSION. -- a. Examination of the German and British organizations and procedures are not applicable to this problem due to staff organization and procedures, equipment, and resources peculiar to their respective countries.

b. The operations in the Mediterranean Theater of Operations definitely pointed out deficiencies of decentralized control, complex and ponderous staff organization, and the absence of delineated responsibilities.

c. The operations in the European Theater of Operations suffered from the same deficiencies stated for the Mediterranean Theater of Operations, but during the later stages of the war overcame those to a large degree. The centralized planning function

was seriously impaired due to the existence of several headquarters whose duties and functions were not clearly delineated.

d. It is imperative for the Theater Commander to definitely establish the transportation responsibilities to each of the Services,--namely, Air, Navy, and Army. Advance planning, coordination, and cooperation is essential. The surrender of all non-tactical transportation to the control of the theater commander is an absolute requisite to successful integration of the various means of transportation.

e. The organization recommended does not violate appreciably any of the organizational principles as prescribed for the organization of the Army.

5. CONCLUSIONS. -- That the transportation be organized to:

- a. centralize control of all nontactical transportation;
- b. centralize planning on the highest level practicable;
- c. allocate transportation on a basis of need to the Army, Navy, and Air Force;
- d. integrate all means of transportation, particularly the inter-sectional services.

6. ACTION RECOMMENDED. -- a. That the organization as shown on Chart A (Annex 4) be retained without modification.

b. That this study be approved and forwarded to the Director of Logistics, GSUSA, for consideration. (Annexes 1 & 2)

Rhoman E. Clem
RHOMAN E. CLEM
Major, TC

ANNEXES:

- 1. Draft Memorandum to the Commandant, C&GSC
- 2. Draft Letter of transmittal to Director of Logistics, GSUSA
- 3. Transportation in a Unified Theater of Operations
- 4. Chart A

Concurrence. -- Omitted.

Nonconcurrences. -- Omitted.

Consideration of nonconcurrences. -- Omitted.

Annexes added. -- Omitted.

APPROVED:

_____ May 1949

F. A. HENNING,
Colonel, FA
Director

COMMAND AND GENERAL STAFF COLLEGE
FORT LEAVENWORTH, KANSAS

SUBJECT: Transportation in a Unified Theater of Operations

(IDENTIFY THIS MEMORANDUM SLIP WITH PAPERS TO WHICH ATTACHED.)

Annex 1

TO	SUBJECT MATTER	FROM DATE AND INITIAL
<p>Commandant CAGSC</p>	<p>1. I concur in the recommendation of the attached research study.</p> <p>2. Request that this study be transmitted to the Director of Logistics, GSUSA, by means of a letter (Annex 2) which has been prepared for your signature.</p>	<p>F. A. HENNING Colonel, FA Director Dept of Logistics</p>

COMMAND AND GENERAL STAFF COLLEGE

FORT LEAVENWORTH, KANSAS

SUBJECT: Transportation in a Unified Theater of Operations.

TO: The Director,
Logistics Division, GSUSA
The Pentagon
Washington 25, D. C.

1. The attached staff study, Transportation in a Unified Theater of Operations, is transmitted to you for consideration and appropriate action.

2. The research study was prepared by a student in this College and concurred in by the Director, Department of Logistics. The recommendations made for retaining the present organization appear to have considerable merit.

M. S. EDDY
Lt General, USA
Commandant

Annex 2

Annex 2

TRANSPORTATION IN A UNIFIED THEATER OF OPERATIONS

It is imperative that this study be limited to a large land mass, such as Eurasia, Africa, or the Americas, because of the various and sundry problems that would arise to affect the organization and functions of a transportation system. This is evidenced by varying factors influencing the transportation problems of the European Theater of Operations and the operations in the Pacific in World War II.

It is also necessary to delineate the responsibilities for operation of the several means of transportation. The Transportation Corps is responsible for operation of the Highway Transport Service, the Military Railway Service, the Inland Waterway Service, and all ports including their affiliated staging areas. The Engineers are responsible for the operation of pipelines. The Air Force is responsible for air transport.

The organization of transportation in a unified theater is forced to be of the functional type because of its very nature. From a logical standpoint it would be exceedingly difficult to visualize a commodity type organization for transportation. The integration of all means of transportation through the various echelons of command preclude other forms of organization other than functional.

Due to the constant shortage of transportation in any operation, it is necessary to utilize all means of transportation to the maximum. It is immediately evident that maximum utilization can be accomplished through centralized control. In this way the requirements for transportation can be balanced effectively against the means available. The logical agency to accomplish this mission is the Theater Transportation Office. To decentralize control of transportation to the several echelons of command would tend to cause confusion, delays, and the stalemating of the various means of transportation. This fact was verified by operations during the last war, particularly in the European Theater of Operations.¹

Annex 3

The Military Railway Service and the Highway Transport Service assume paramount importance for operations on a large land mass as they afford the principal means of transportation of men, equipment, and supplies. The magnitude of these two means of transportation is too great for any of the other services to control. Inland waterways, pipelines, and air transport are used to alleviate the burden on these two principal means. Another point of interest is that the highway and rail means are normally available, whereas inland waterways, pipelines, and air transport are usually happy expedients.

The control of transportation does not prohibit decentralized operations. It is not only wise but necessary for the Theater Transportation Officer to decentralize operations whenever possible. The operation of all transportation within a particular region under one command is the responsibility of that command. The Theater Transportation Officer controls this by allocating the means to accomplish the mission. However, rail, water, and highway intersectional services remain under operational control of the Theater Transportation Officer. Pipelines and air transport, due to operational peculiarities, are operated by the Corps of Engineers and the Air Force, respectively.²

Movement planning of all means of transportation, including pipelines and air transport, is centralized in the Theater Transportation Officer. The lack of proper planning was responsible for many failures in the field of transportation during the last war. To utilize all means of transportation to its maximum extent, it is essential to have a well coordinated plan. The importance of centralizing this planning then becomes immediately apparent. Centralized movement planning was used in the European Theater of Operations with success. The Transportation Officer in the Southern France Operation did not have the authority to weld together all forms of transportation to accomplish the job because the Military Railway Service was a separate command. The

Director General of the Military Railway Service was responsible to the Commanding General, Southern Lines of Communication. This lack of centralized planning entailed commensurate difficulties as pointed out by the General Board's Report on the European Theater of Operations.³

The outstanding feature of Germany's transportation system was its dependence on railroads and to a lesser extent on inland waterways. Field Marshal Von Molke (1836) was quick to realize the potential influence of railroads on military science. Prussian military observers in the Crimean War (1854-1856) noted that the Russians were unable to counteract French and British troop and supply movements by sea due to the lack of railroads into the Crimea. Again in the American Civil War (1862-1865) Prussian observers reported that Grant clearly demonstrated how railroads could be used and even constructed for troop and supply movement. Consequently, the military influence on the German railroad system was tremendous.

The lack of petroleum and rubber prevented any great use of motor transport. It was not until 1933 that the Autobahn system of highways was started in Germany. This system was primarily for the military, as rationed gasoline curtailed its use by civilians.

The above facts lead to a highly centralized control of all forms of transportation. The German High Command even controlled the rail system in Italy during the last war. The air transport remained under the Air Force but was dependent upon numerous government agencies for allocation of the necessary supplies for operation.

It is the opinion of the writer that the German organization for the control of transportation is not applicable due to their lack of sufficient motor transport.⁴

The British system is much more flexible. They have sufficient petroleum and rubber to utilize highway transport. However, the

principal difference between the British and United States systems is staff organization. The movement control of all transportation is centralized in "Q" Movements, which is established on General Staff level. The "Q" Movements staff effect control through Movement Control Officers stationed throughout the theater of operations. These officers perform practically the same function as the United States Traffic Regulating Groups. The "Q" Movements staff has no command function but is a coordinating agency. The command functions follow the regular command channels, with the Royal Army Service Corps as the operator for motor transport and the Royal Engineers as operators of other means of transportation except air. The build-up phase in the United Kingdom during World War II demonstrated the feasibility of cooperation between British and United States transportation systems. The Army employed their Traffic Regulating Groups to correspond with the British Movement Control Officers.⁵

In the Mediterranean Theater of Operations the British Task Force advancing east toward Tunisia was forced to halt because of the lack of rail and highway transportation. This fact allowed the Axis forces time for a build-up in eastern Algeria and Tunisia, forcing the Allies to a costly land campaign. At the time of the invasion of North Africa there was not a uniform organization for Chief of Transportation in a Theater of Operations. Each of the several headquarters in the Mediterranean Theater of Operations, namely, AFHQ, NATOUSA, and SOS, NATOUSA, had transportation organizations. Also, the several base sections had comparable transportation organizations. There were too many organizations, none of which had delineated responsibilities. Confusion and inefficiency was the result. This fact was readily realized and solved to a great degree by appointing a single individual as Chief of Transportation to act in AFHQ, NATOUSA, and SOS, NATOUSA.⁶

The European Theater of Operations suffered from staff organi-

zational difficulties. The Supreme Headquarters Allied Expeditionary Forces had a combined staff of American and British officers. The European Theater of Operations, United States Army, was composed of the United States Naval Forces in France, United States Army Forces in Europe, Communications Zone, First Airborne Army, and the Strategic Air Forces. The Strategic Air Forces reverted to the control of the Joint Chiefs of Staff upon the launching of the Overlord Operation.⁷ The Supreme Commander also served as Theater Commander. The supply and service agencies of the Army, Navy, and Air Force were never clearly defined. There was little integration of the Army and Navy service activities. The Air Force to a great degree had their own service organization. An effort was made to unify the supply and service organizations of the three principal arms through the Communications Zone by designating the Commanding General, Communications Zone, as Deputy Theater Commander. The General and Special Staff of the Theater served for the Communications Zone.

Considerable confusion existed in the command responsibilities of the subordinate commands of the Communications Zone. The Communications Zone was organized into a number of geographic sections, which expanded as the armies advanced eastward in Europe. Section commanders in their enthusiasm to accomplish their separate missions often relegated intersectional activities to a place of secondary importance. The decentralization of movement planning and movement control of intersectional operations to the Section Commanders was never very satisfactory. The White Ball Operation, a long distance express truck route from the ports of LeHavre and Rouen to depots in Rheims and Soissons, demonstrated these particular difficulties.³ Channel Base Section was responsible for movement control of this operation. They diverted trucks assigned for the White Ball Operation to accomplish local missions. Coordination and planning were poor in that depots were not aware of movements; consequently, labor was not always

available at unloading points. The White Ball Operation should have been coordinated and planned at the Communications Zone level to insure proper execution.

The handicaps of unsuitable organization were overcome to a certain extent in the European Theater of Operations. The Chief of Transportation, Army Service Forces, conducted a survey of the transportation problems of the several theaters.⁸ In regard to transportation, the fundamental problem encountered in most theaters arose from the fact that base section commanders had complete control of certain transportation activities, making coordination on a theater-wide basis difficult. The essence of good transportation service is integration, and control cannot be spread over a number of geographical units without endangering smooth and efficient operation.

The results of the survey of the Chief of Transportation, Army Service Forces, prompted the drafting of a manual for the military transportation service in the theater of operations known as FM 55-6. This manual establishes the Theater Chief of Transportation as a Chief of Service, in which capacity he would be a special staff officer for transportation in the theater, concerned with policy and planning. He also would be the traffic manager for the theater and the chief operating officer of the military transportation service. His jurisdiction would include the Military Railway Service, Highway Transport Service, Inland Waterway Service, Intratheater Shipping Service, ports, staging areas, and depots for Transportation Corps supplies. He would have operational control over all nontactical transportation except that by air and pipeline, in which cases he would have movement control over nontactical intratheater traffic.

Throughout the study of this subject, the author discovered the major difficulties in efficient transportation operations were due to the lack of proper planning. The planning procedure finally adopted in the European Theater of Operations proved workable.

The Communications Zone G-4 would obtain and consolidate the basic data. The Chiefs of Technical Services concerned would examine their respective requirements and submit the desired destinations for the movements. The G-4 would consolidate these requirements with those of the Navy and Air Force and submit the movement requirements to the Chief of Transportation. The Chief of Transportation would prepare the movement program based upon allocation of transportation and movement plans. The G-4 would then issue the movement program. The success of this procedure is based upon centralized planning and movement control responsibilities vested in the Chief of Transportation.⁹

With proper integration the principle of operational control over nontactical transportation centralized under the Theater Chief of Transportation is sound. An examination of movement control over nontactical transportation in which the Theater Chief of Transportation does not have operational control is a logical sequence. Airlift is expected to become increasingly more important as a means of transportation in any future war. Various technical and operational advances already afford planes capable of larger loads, greater speeds, and operation under more severe weather conditions. The recent "Operation Vittles" or "Berlin Airlift" clearly demonstrated the capabilities of air transportation. However, an important feature was the ability of the Transportation Corps to provide the proper cargo at the designated plane on a minute to minute schedule at the loading fields, and the removal and distribution of the cargo from the planes at the unloading fields. The operation was complicated by uncertain flying weather, balancing of loads to fit the characteristics of planes, and the various agencies involved in supplying and receiving the cargo carried.

The author had the opportunity to consult Lt. Col. W. A. Kuhn, a member of the board of officers sent to Europe to study "Operation Vittles." Several pertinent deficiencies were pointed out

in his report. The Army failed to definitely centralize movement control in the Chief of Transportation. The method adopted was to decentralize the control to the Chief of Transportation's representatives at the several airfields. These officers, known as Transportation Corps Airlift Field Operations Officers,¹⁰ were in no position to plan for the overall airlift necessary for a smooth operation. Again these officers were made responsible for the army operation of their particular fields, but did not have the commensurate authority over operating personnel assigned to them. The truck units assigned to the several fields were from the local regional command. Reports of delinquency on the part of truck operators had to be routed through the local command to the unit commander for necessary disciplinary action. This proved unsatisfactory.

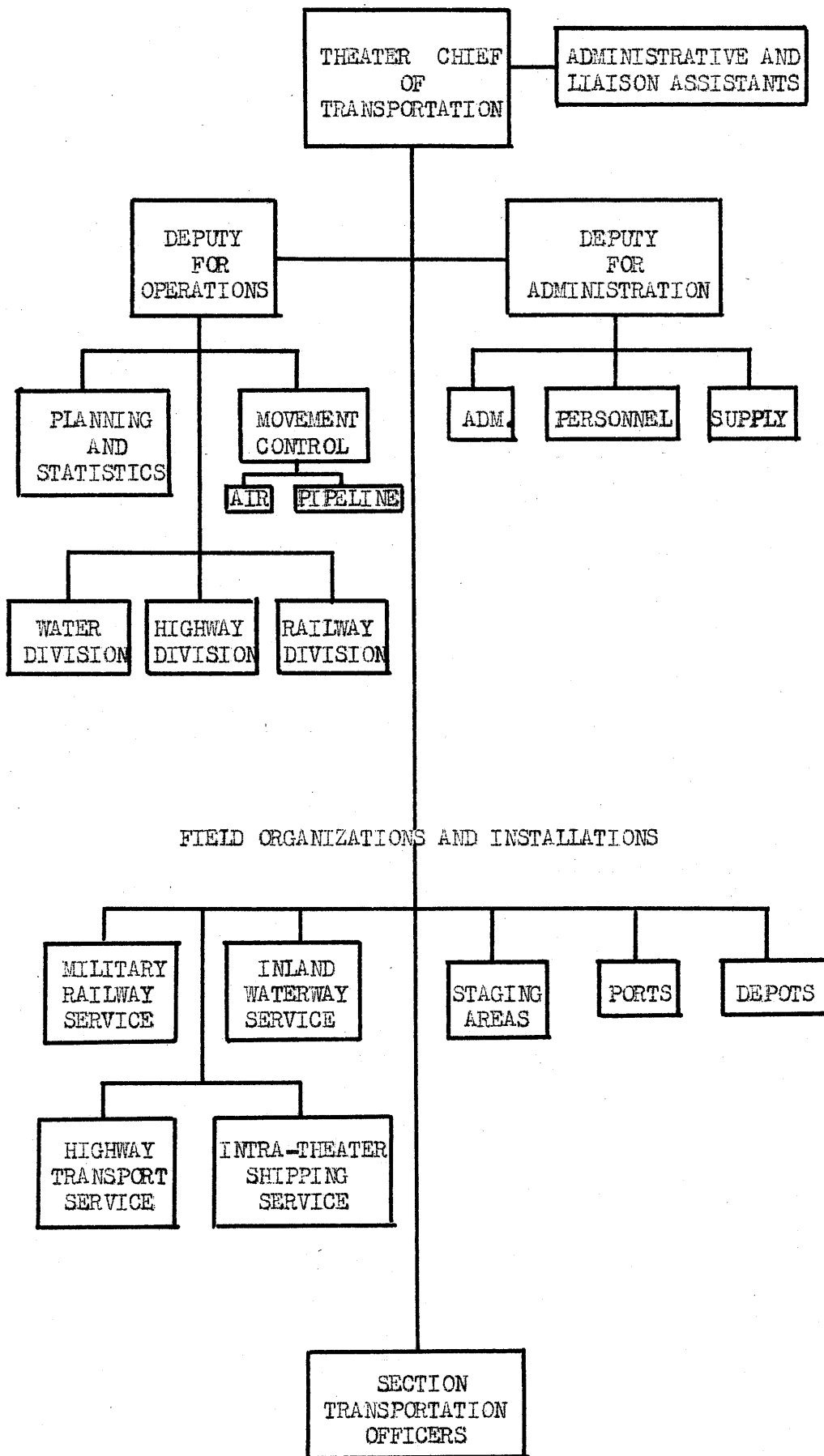
The Board's report recommended a separate command to handle the Army's part in the airlift. This command would be self-sufficient in operating and maintenance personnel. It is the opinion of the author that this will not completely solve the problem. In the event the airlift is continued in operation after the land blockade is lifted, movement control will still have to be centralized to fully utilize all means of transportation in an efficient operation. In that the Theater Chief of Transportation has operational control over truck units in the theater, he could delegate to the Transportation Corps Airlift Field Operations Officer the authority necessary for successful operation at each of the several airfields.

A study of the principles of staff organization for the Army as prescribed in FM 101-5 states that "Within a staff, no member is responsible to more than one immediate superior." The recommended organization for transportation in a unified theater calls for the Chief of Transportation to act on the Joint Staff, the Theater Staff, the Army Staff, and the Communications Zone Staff. Experience has proved that the Chief of Transportation acting in

this dual capacity is a sound and practical solution. Multiple staffs tend to duplicate effort and add confusion to the operation.¹¹ However, it is often necessary for the Chief of Transportation to have a responsible deputy at each staff level, capable of acting for him in his absence.

This study has discussed the pertinent problems confronted in organizing the transportation system in the European Theater of Operations during World War II. The organization as depicted by the chart in Annex 4 meets the requirements to solve these problems. This chart is taken from FM 55-6 and is the organization recommended as a guide by the Department of the Army. The author believes this organization to be sound.

EXAMPLE OF AN OFFICE OF THE THEATER CHIEF OF TRANSPORTATION



Annex 4

CHART A

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