200. Before leaving the subject of supply and maintenance, there are two matters which deserve notice.

The first is the projected reorganization of mechanical transport in the Royal Indian Army Service Corps. At present, there are no less than eight types of M.T. units—an organization which is both wasteful in manpower, and insufficiently flexible, as well as possessing other disadvantages. My recommendation to General Headquarters, India, that the existing eight types should be reduced to three, has been accepted, and the new reorganization is being adopted.

The second point of interest affects the Veterinary Service. In order that animals with Special Force should not betray the position of our troops in operations behind the enemy's lines, a muting operation was performed. This has achieved its object and there has been no loss of efficiency.

The Engineering Effort.

201. I have already described (with one exception—the Ledo Road) development of the railways, roads and pipelines and I have also mentioned airfield construction. The latter, however, merits more detailed description. I propose, too, to touch on bridging, which is so important in this Theatre, and, also, to discuss briefly the general problem of rapid road construction across mountain barriers or through thick jungle tracts, for on its solution the success of future operations will largely depend.

202. *The Ledo Road.* This road, which, in conjunction with air supply, is the line of communication of General Stilwell's Chinese-American forces operating in Northern Burma, has not been described because it does not form part of Fourteenth Army's northern line of communication. It is, of course, entirely under American control and, begun by British, is being built by American engineers.

It is now "all-weather two-way" to just north of Shaduzup and the intention is to complete it through to Myitkyina in another three months. Roadhead and railhead are to be at Namti, six miles north-east of Mogaung.

203. *Airfields.* Airfield construction in the area under my control can be divided into three categories: construction in the Fourteenth Army area; construction in North-East Assam for the United States Army Air Force, which is primarily in connection with the airlift to China; and construction in Ceylon.

There were eighteen main airfields in the Fourteenth Army area last November. Since that date, three more large fields have been begun and the others have been made up to an all-weather standard.

For future operations, as outlined by the Chiefs of Staff at the end of March, it became necessary to build airfields adequate to allow additional transport to operate during the monsoon. In consultation with Air Command, South-East Asia, it was decided to increase the capacity of fifteen of the existing twenty-one airfields and to raise the standard to admit of their use by Dakotas and certain types of bombers.

204. On the 1st April 1944, the responsibility for the completion and upkeep of the American airfields in North-East Assam was transferred from General Headquarters, India, to 11 Army Group. There are eleven main airfields in this area, all of which have now been completed to all-weather standard, with the exception of two which have been allotted a low priority by the Commanding General, United States Air Forces, China-Burma-India Theatre.

205. Airfields in Ceylon are built by the Air Ministry Works Department, but they remain the responsibility of the Chief Engineer, Ceylon Army Command. There are nine main airfields on the island, work on the improvement and extension of which continues.

206. It would have been quite impossible to attain the target dates fixed for the completion of this large-scale expansion by using normal materials such as concrete. Use has, therefore, been made of the new (and hitherto untried) bitumenized hessian ("Bithess") process for the provision of all-weather standings and runways. This material prevents water penetrating the ground which accordingly retains its full bearing capacity in wet weather. The experiment has already proved a success and may be of great value in future operations in a Theatre where monsoon rainfall is so heavy.

The magnitude of the engineering effort involved in airfield construction may be judged from the fact that, for the American airfields in North-East Assam alone, some 16,000 British military officers and men and 45,000 civil labour under British military supervision, are employed.

207. *River Crossings.* (*a*) The problem in this Theatre is complicated by the width of obstacles (the Chindwin and Myittha Rivers at Kalewa are some 330 yards and 200 yards across respectively in the dry season); the speed of current; the great seasonal variation in water levels; and the presence of floating debris. Wide rivers can, of course, only be bridged quickly by using floating equipment, as the construction of piers is a major engineering task, but the factors mentioned above. especially fast currents, render the anchoring of floating bridges precarious.

To overcome these difficulties, a bridge (known as the Falls bridge) has recently been designed and satisfactorily tested. It is composed of steel pontoons—widely spaced to admit of the passage of debris—with a Bailey superstructure, and with a large gantry at each end to control the landing bay during the marked variations which occur in water level.

Other measures, which are under investigation, include a proposal that only assault equipment should be carried in divisions, bridging companies to be Army or Corps Troops. Experiments are also being undertaken to produce a standard type of vehicle capable of carrying all bridging loads.

(*b*) The alternative method of crossing rivers by ferry assumes a special significance in this Theatre owing, not only to the width of gaps, but to the fact that the water level is liable to such sudden changes.

Ferrying is largely resorted to on the lines of communication, especially on the Brahmaputra.