

timber rafts of various kinds and boats. Arrangements to be adopted at the shore ends: 1. When the water level does not alter or varies but little; 2. When there is a considerable variation of level. Flying bridges, their requirements and construction.

Miscellaneous.—Rough bridges made of trees; passing weights across wide openings by means of shears; various arrangements.

ROADS.—Object, requirements, method of construction of ordinary (Military) when over marshes and corduroy roads, road engines, repairing roads.

RAILWAYS.—Sketch of the use of railways in war. Object of constructing military railways in time of war. Requirements, considerations as to; selection of route, gauge, engines and rolling stock of military railways.* Adaptation of existing stations to military purposes. Carriage of troops.

French Railway.—Object, requirements, considerations as to section of route, gauge, engines and rolling stock. Works required and how executed (bridging mentioned only.)

DEMOLITION.

Object. Description of methods generally adopted. 1. By hand. 2. By use of explosives. 3. By fire.

ROADS.—Vulnerable points: bridges, cuttings, embankments. Demolition of each.

RAILWAYS.—Vulnerable points: bridges, cuttings, tunnels, embankments, permanent way, engines and rolling stock. Hasty demolition by cavalry and deliberate demolition of each.

CANALS.—Vulnerable points: locks, cuttings and embankments. Demolition of each.

RESTORATION.

Object. General considerations.

ROADS.—Repairing bridges or replacing the original structure by a temporary one. Repairing cuttings and embankments, or other works undertaken to replace them if not repairable in time.

RAILWAYS.—General considerations only.

COMMUNICATIONS FOR THE TRANSMISSION OF MESSAGES.

CONSTRUCTION.

Object and general description of this class of communication.

SIGNALLING.—Object. Alphabet. Code. Cypher. Means of signalling: flags, lamps, shutters, heliograph. Selection and arrangement of signal stations and method of working them.

TELEGRAPHS.—Object. Short sketch of method of working without introducing technical matters. Combination of cavalry scouts, signalling, and telegraphy for the service of an army.

DEMOLITION.

TELEGRAPHS.—Breaking the circuit. Tapping the circuit.

RESTORATION.

TELEGRAPHS.—Same as making.]

* The laying and construction of line are not considered, being part of the Civil Engineering Course.