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MEDIUM GIRDER BRIDGE

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PREFACE

This publication contains amendments to Technical Manuals (TMs) *5-5420-272-72, Operator and Organizational Maintenance Manual for Medium Girder Bridge (MGB) and 5-5420-272-72-7, Operator and Organization/ Maintenance Manual Link Reinforcement Set for the Medium Girder Bridge (MGB).*These TMs are being updated to correspond with information contained in this field manual. This publication describes design, recon reports, safety rules; and building, boom, and delaunch tables for the MGB.

The Bridging Branch, Department of Military Engineering, US Army Engineer School, has developed this design package with significant Input from Fairey Engineering, Ltd., The Royal School of Military Engineering (United Kingdom) and countless Engineer Officer Basic/Advanced Noncommissioned officer Course students attending resident instruction at Fort Belvoir.

The purpose of this publication is to standardize procedures and make the design process easy to understand. (Abbreviations for MGB design are included In the glossary.) No longer will engineers have to count boxes and squares on scaled paper to employ the MGB.

The proponent of this publication Is the US Army Engineer School, Submit changes for improving this publication on DA Form 2028 (Recommended Changes to Publications and Blank Forms), and forward it to Commandant, US Army Engineer School, ATTN: ATSE-Z-BTD-P, Fort Belvoir, VA 22060-5291.

Unless otherwise stated, whenever the masculine gender is used, both men and women are included.

Chapter 1

Medium Girder Bridge Components

The medium girder bridge (MGB) is lightweight, hand-built, bridging equipment, it can be built in various configurations to provide a full range of bridging capability for use both in the forward battle area and in the communications zone. Speed of erection by few soldiers is its major characteristic.

The MGB parts are fabricated from a specially developed zinc, magnesium, and aluminum alloy (DGFVE 232A). This enables a lightweight, high strength bridge to be built. All except three parts weigh under 200 kg. Most parts can be handled easily by four soldiers. The three heavier parts, used in limited quantities. are six-man loads.

The MGB is a two-girder, deck bridge. The two longitudinal girders, with deck units between, provide a 4.0m wide roadway. Girders of top panels can form a shallow, single-story configuration. This type of bridge is used for short spans that will carry light loads. A heavier double-story configuration using top panels and triangular bottom panels is used for heavy loads or longer spans. Single-story bridges can be constructed by 9 to 17 soldiers. The normal building party for double-story bridges is 25 soldiers.

The bridge can be supported on unprepared and uneven ground without grillages. It is constructed on one roller beam for single-story construction; two roller beams, 4.6m apart, for double-story construction; and on three roller beams when constructing a double-story bridge over 12 bays long. The ends of the roller beams are supported on base plates and each can be adjusted in height. No leveling or other preparation of the ground is required. Single-span bridges are launched using a centrally mounted launching nose (Figure 1).

A third configuration using the link reinforcement set (LRS) is constructed when a long, high class type of bridge is required. The LRS deepens the girder and transfers the load throughout the length of the bridge. This type of

Figure 1. **Launching nose configuration**