

SECTION 6

PONTOON RAFT FERRYING CALCULATION

0601. **Introduction.** Calculation of pontoon, raft ferrying is an important task necessitate for a successful ferrying, of which the data to be attained are driftage, time needed for raft's road trip, number of pontoon rafts that can be handled by a couple of landing stages and time needed for ferrying all loads.

0602. **Aim.** To impart knowledge on pontoon raft ferrying calculation.

0603. **Calculation of Driftage.**

- a. Driftage, $L = \frac{B}{V} \times V$
Where:
L= Max driftage(m)
B= River width (m)
V= Speed of pontoon raft (m/sec)
v= Stream speed (m/sec)

0604. **Time Needed for Raft's Road Trip.**

- a. $T = \frac{2(B+L)}{V \times 60} + e$

Where :

T = Time needed for raft's road trip(min), total time of raft going to and coming back from the far shore.

V = Rafts speed m/sec.

e = Time for loading, unloading, approach and depart (min), usually it is 12-15 min for artillery, 7-10 min for track and wheel vehicle, 5-7 min for cavalry, 2-4 min for Infantry.

0605. **Number of Pontoon Rafts that can be Handled by a Couple of Landing Stage.**

a.
$$N = \frac{T}{e} \times 1.5$$

Where:

N= the number of pontoon rafts that can be handled by a couple of landing stages.

0606. **Time Needed for Ferrying All Loads.**

a.
$$\text{Total} = \frac{M}{M.N} \cdot T$$

Where:

T - The time needed for ferrying all loads (min).

M- Total number of loads.

N- Number of loads carried by a raft.

The mentioned above N is for a couple of landing stages. It should be 2N for two or three couples of landing stages.

It can be calculated separately if the numbers of loads carried by each raft are not the same.

0607. **Summary.**

a. We learned the following things:

- (1) Calculation of driftage.
- (2) Calculation of time needed for a single road trip of raft.
- (3) Calculation of number of pontoon rafts that can be handled by a couple of landing stage.
- (4) Calculation of time needed for ferrying all loads.

0608-0700 Reserved.