CHAPTER ONE

GENERAL DESCRIPTION OF THE TANK AND ITS CHARACTERISTICS

GENERAL DESCRIPTION OF THE TANK

Medium tank T-55 (Figures 1, 2 and 3) is a combat track-laying vehicle with heavy armament, reliable armor protection and high maneuverability.

The tank is armed with a 100-mm gun and two 7.62-mm SGMT machine guns. The tank is equipped with means designed to protect the crew and the equipment within the tank against the effects of a shockwave in the event of a nuclear explosion as well as for protecting the crew against radioactive dust when the tank moves through a radioactively contaminated area. The tank also has equipment for crossing water obstacles on the bottom (OPVT).

Special T-55 tanks are equipped with parts to which may be attached flotation devices for crossing water obstacles by floating. Some tanks have parts for the attachment of a mine-clearing blade or roller.

The tank crew consists of four men.

The basic parts of the tank are: armored hull and turret, armament, power plant, transmission, running gear, electrical equipment, communications equipment, observation instruments, a system for protection against atomic attack, a smoke release system and fire extinguishing equipment. The tank also carries a set of spare parts, tools and accessories (ZIP).

The hull of the tank is divided into three compartments: driving compartment, fighting compartment and engine compartment.

The driving compartment (Figure 4) is located at the left in the front part of the tank hull. The compartment contains the driver's seat and, in front of this to the left and right on the floor of the tank hull -- levers for controlling the planetary turning mechanisms and an accelerator. In front of the driver's seat on the upper sloping plate of the front part of the hull are the KRP-1 relay box of the system for protection against atomic attacks, pedals for controlling the main clutch and brakes, the heading indicator with converter, the fan control box (KVV-5) and the automatic controls for the fire extinguishing system. A spare head for the night sight and a box for electric lamps are attached to the lower sloping plate.

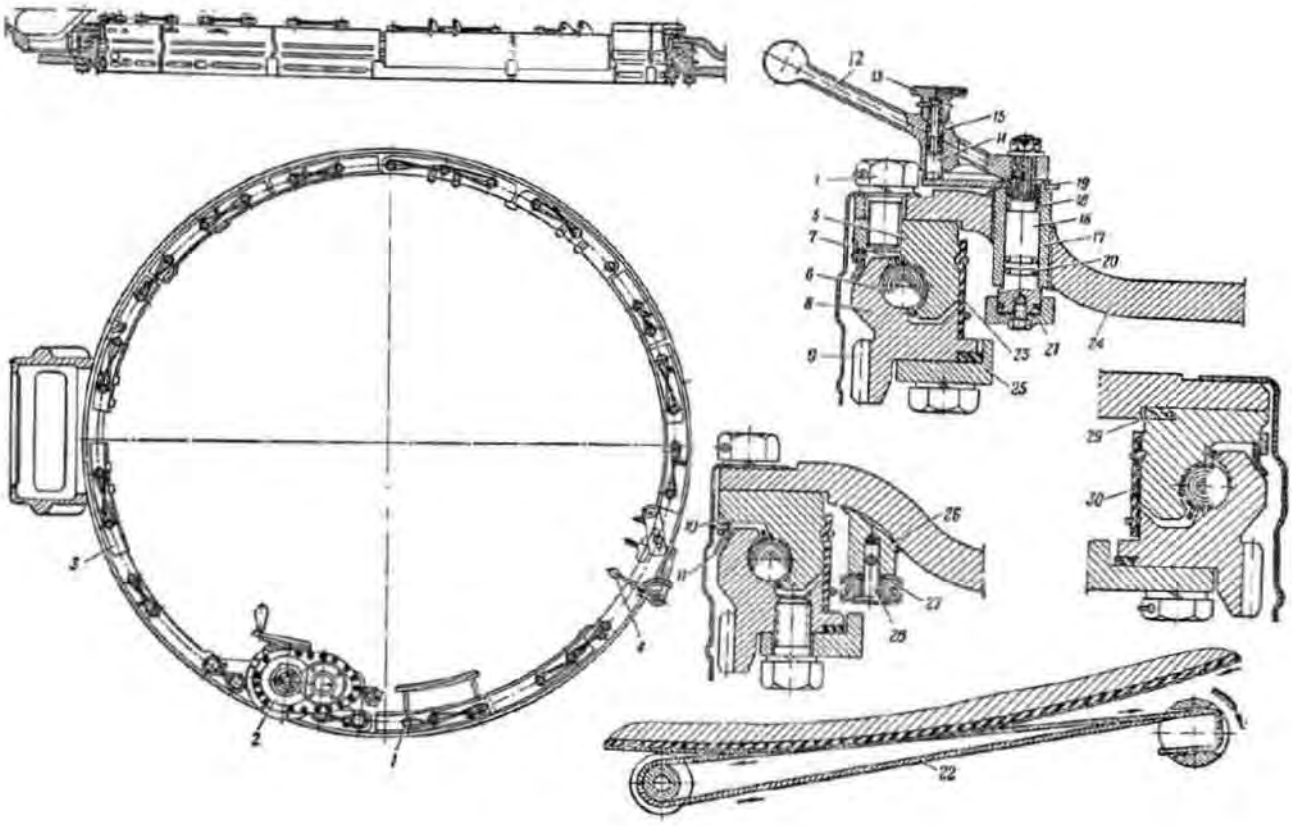

Figure 18. Ball Bearing Support of Turret.

1. Turret ring attachment bolt
2. Turret traversing mechanism
3. Guard
4. Lever with catch for tightening turret ring
5. Upper race ring
6. Ball
7. Cage
8. Lower race ring
9. Geared rim
10. Ring
11. Felt band
12. Handle
13. Catch button
14. Catch
15. Catch spring
16. Pin
17. Bracket
18. Bushing
19. Sector gear
20. Ring
21. Pulley
22. Cable
23. Rubber sealing band
24. Bottom turret plate
25. Turret support plate
26. Bracket
27. Pulley
28. Pin
29. Rubber sealing ring
30. Cloth sealing ring

The hydropneumatic system consists of the hydropneumatic section (booster, pressure regulator, electric button, electropneumatic valve, and air lines) and the mechanical section.

Introduction of the hydropneumatic system has required a number of modifications in the design of the pedal suspension of the mechanical control linkage. The new pedal assembly (Figure 188,b) consists of stop-brake pedal shaft 26 in its brackets, two tubes 3 installed on shaft 26 over needle bearings 28. To the right-hand tube 3 are welded main-clutch release pedal 14 and the lever with adjustment bolt 31. To this lever are fastened release spring 32 and another lever to which is secured lug 41 for actuating electric button 40.

To the shank lever of pedal 14 are welded two lug braces, to which latch 37 is connected by means of a hingepin. The latch has a cylindrical cutout into which are installed coil spring 46 with ball 47. The lower lug brace has two sockets into which the ball can drop, fixing the position of the latch; the upper lug brace has two process-access drillholes.

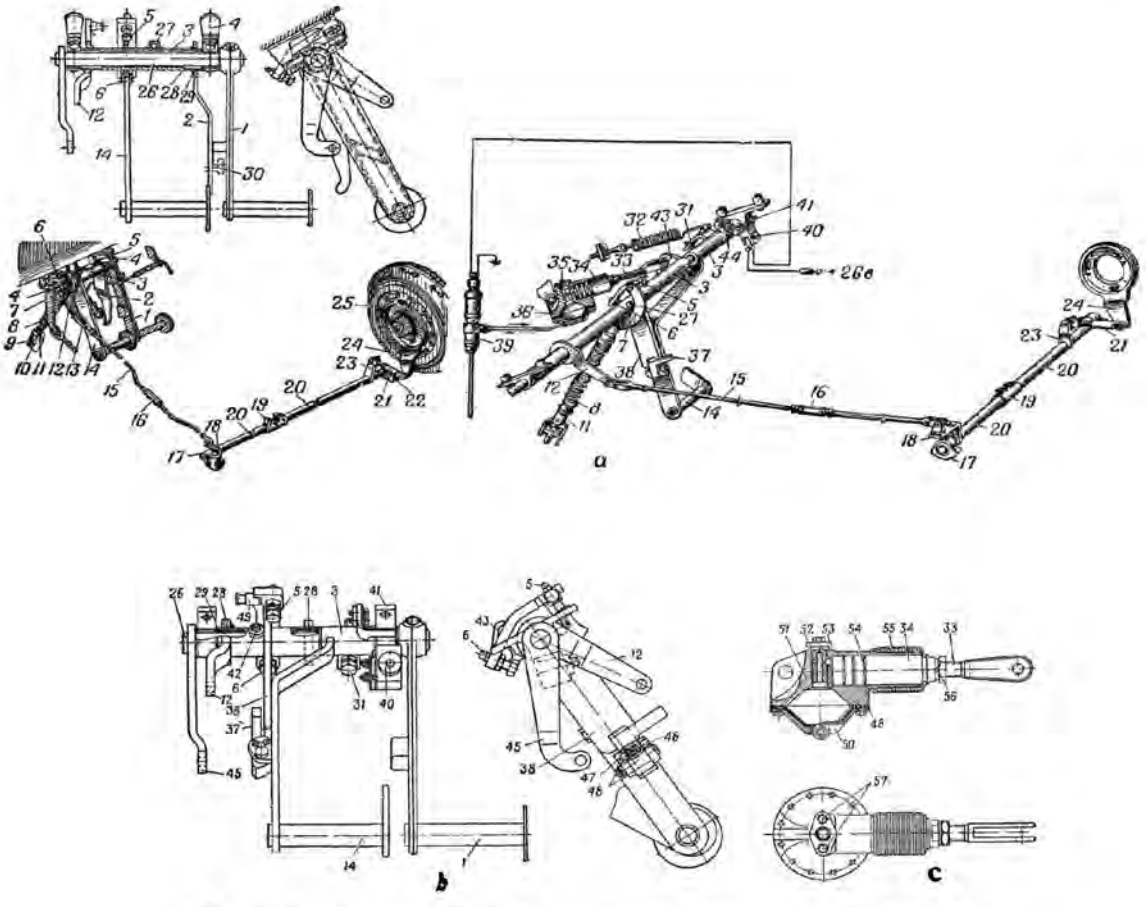

Figure 188. Main Clutch Control Linkage

a. Hydropneumatic Booster System b. Clutch Suspension Assembly
c. Booster Assembly
See following page for key to above illustration)

POSSIBLE FAULTS IN THE ELECTRICAL EQUIPMENT

Fault	Cause	Remedy
Storage Batteries		
Rapid discharge	The generator is not charging the batteries	Check the voltammeter for the presence of charging current; find the cause for the absence of charging current and repair it Send the battery to the shop for repairs or charging
When the starter is engaged, the voltammeter reads less than 17 volts, the starter does not turn over energetically	1. Oxidation or dirt at the wire or battery terminals or loose battery or starter connections 2. Overly discharged batteries	1. Disconnect the wires from the batteries, clean the wire and battery terminals, then reconnect them securely and apply technical petroleum jelly to the terminals 2. Remove the batteries and send them to the station for charging
The voltammeter shows voltage (greater than zero) when the battery switch is off, the engine not working, and the voltammeter button is pressed	Current leakage caused by faulty neutralization of the electrolyte on battery surfaces or by seepage through cracks in the walls	Clean the battery surfaces, repair the cracks on the surface of the mastic, observe the electrolyte level, and in case of seepage send the battery to repairs
Charging Circuit		
The voltammeter shows no charging current or voltage	1. Bad connection in the charging circuit; blown 200-amp fuse	1. When the meter button is pressed there is no reading of battery voltage; replace the bad fuse
	2. Bad connection in the generator-regulator relay circuit or in the battery-regulator relay circuit	2. Check the wires for good connections and remedy the discovered faults