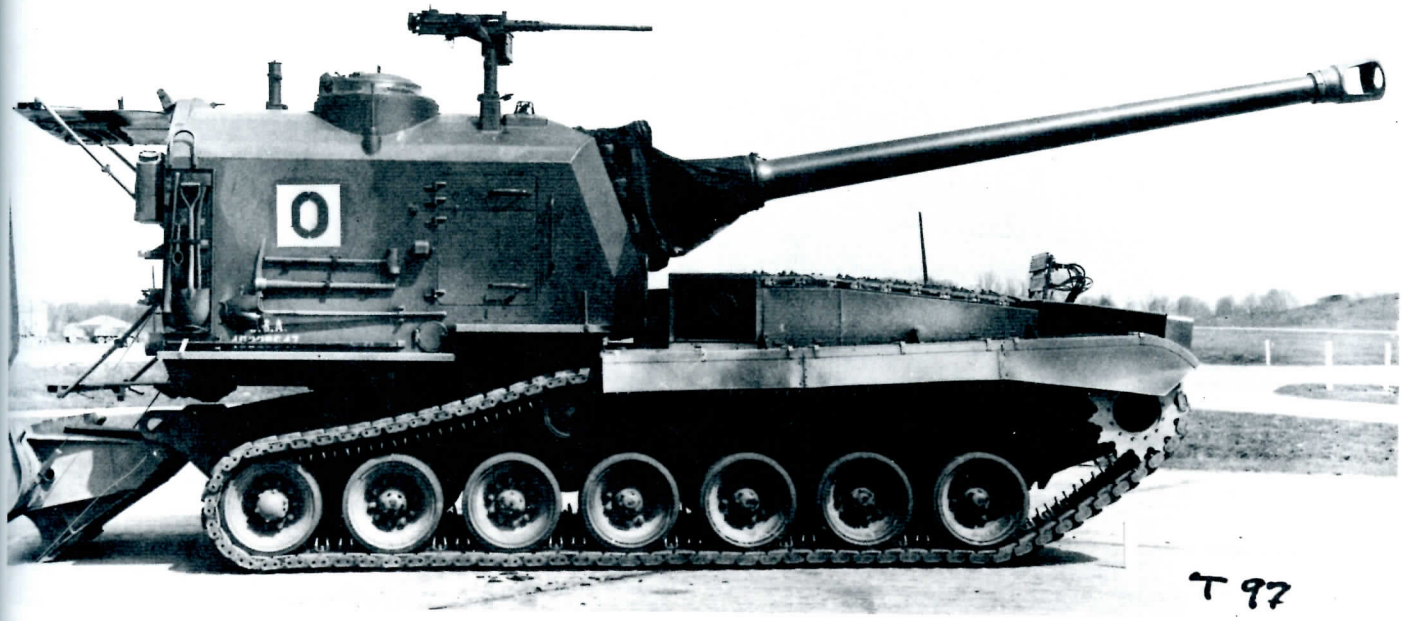


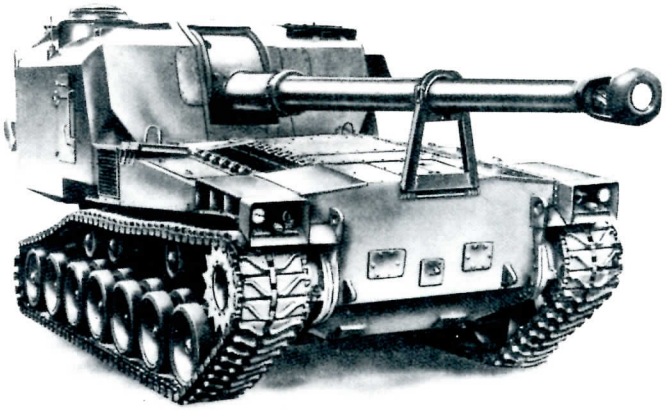
The pilot 155mm self-propelled gun T97 is shown in the two photographs on this page. The early 155mm gun T80 is fitted with a muzzle brake.

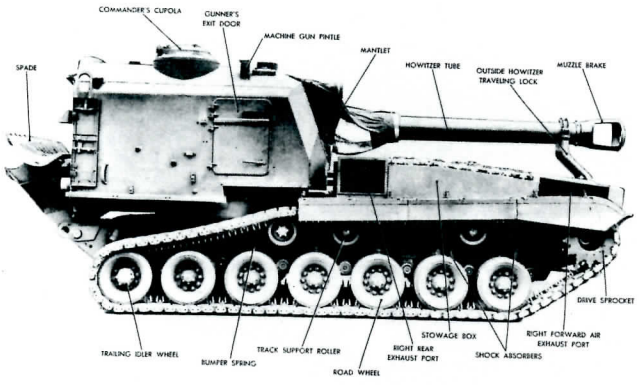
SELF-PROPELLED ARTILLERY

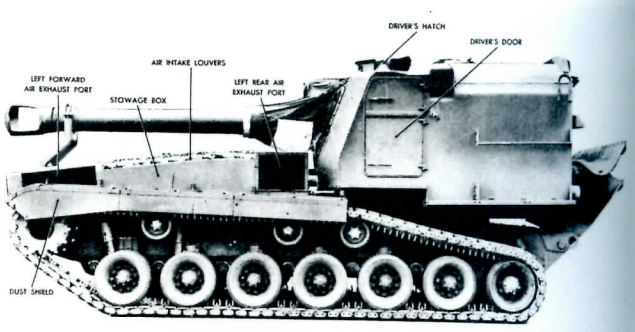
Both the original Equipment Review Board in mid-1945 and the later Stilwell Board recommended the further development of self-propelled artillery. During World War II wide use was made of various tank chassis to provide the basis for artillery motor carriages. Although many of these were highly successful, it was noted that the use of a tank chassis frequently resulted in greater weight than necessary for self-propelled guns and howitzers. An objective of the postwar development program was to minimize this weight penalty, but still retain as many common components as possible between the various vehicles to simplify the logistics problem. The light tank chassis provided a suitable basis for weapons such as the 155mm howitzer or smaller, but it was inadequate for heavier pieces such as the 155mm gun.

A meeting between the Ordnance Research and Development Division and the Army Ground Forces at Detroit Arsenal in July 1946 produced tentative military characteristics for a new 155mm gun motor carriage. This design was intended to use as many power train and running gear components from the medium tank as possible. Studies at Detroit indicated that it was feasible to mount either the 155mm gun or the 8 inch howitzer on the new chassis using the same mount. This, of course, had already been done on the 155mm gun motor carriage M40 and the 8 inch howitzer motor carriage M43.

Reflecting the limited funds available during the postwar period, the development work was contracted out a piece at a time. Pacific Car & Foundry Company of Renton, Washington received a fixed price contract on 9 April 1948 to complete the design and build a full scale wooden mock-up of the proposed vehicle. This was followed on 13 April 1950 by another contract to construct a prototype armed with the 155mm gun. A supplemental agreement on 11 April 1951 covered the manufacture of an additional prototype armed with the 8 inch howitzer. These vehicles were originally designated as the 155mm gun motor carriage T97 and the 8 inch howitzer motor carriage T108. The lightweight







The pilot 8 inch self-propelled howitzer T108 appears above. Like the 155mm gun T80, the early 8 inch howitzer T89 is equipped with a muzzle brake on the pilot vehicle.

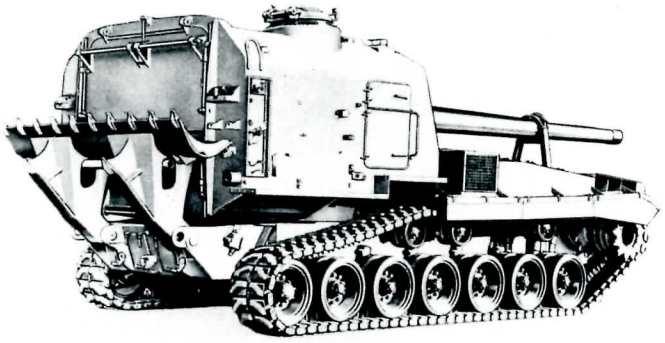
weapons developed for the vehicles were the 155mm gun T80 and the 8 inch howitzer T89. They were interchangeable in the mount T58. In this vehicle, the engine and transmission were in the front of the hull driving the sprockets at the front of each track. This arrangement left the rear of the chassis free for mounting the turret carrying the cannon. The turret was operated by hydraulic power and was limited to a total traverse of 60 degrees, 30 degrees to the right or left of center. Elevation ranged from +65 to −5 degrees with both weapons. A crew of six manned the vehicle with the driver in the left front of the turret.

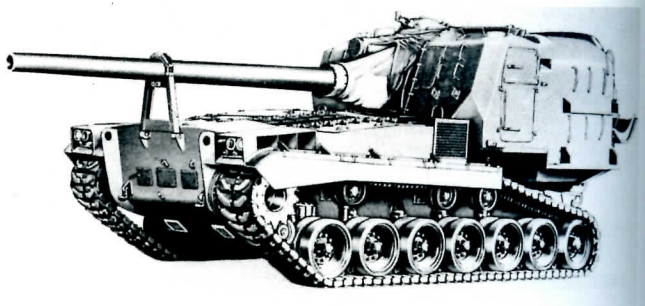
The first pilot T97 was delivered in April 1952 followed by the T108 in July. Both weapons were fitted with muzzle brakes, but this feature was dropped for the production models. A so-called "ultimate" fire control system was installed in the first pilot. However, further study selected a simplified system for the second pilot and for the production vehicles. The initial production contract called for 30 T97s and 70 T108s and the first delivery was made in August 1952. However, production orders for both vehicles were increased and they continued to come off the line until April 1955. Like the tank program, the rush to produce these vehicles resulted in a long list of required modifications after they were tested by the user. To make these changes, a modification program was set up at Pacific Car & Foundry on 1 July 1955 and the work was completed on 30 November 1956.

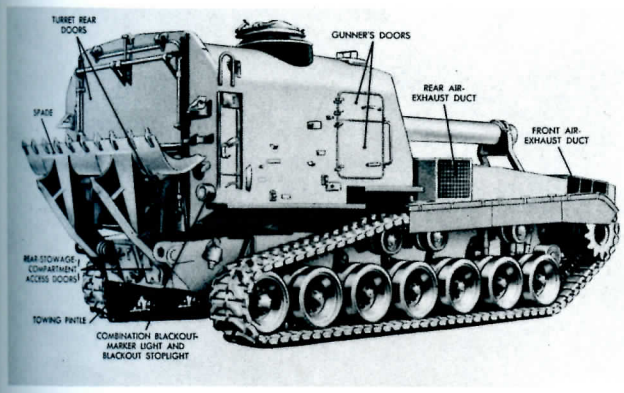
The two vehicles were standardized as the 155mm self-propelled gun M53 and the 8 inch self-propelled howitzer M55. The lightweight cannon were standardized as the 155mm gun M46 and the 8 inch howitzer M47, both in the mount M86. The stowage racks for the two sizes of ammunition were removable and interchangeable. When fitted for the 155mm gun, 20 complete rounds were carried. This was reduced to 10 complete rounds with the 8 inch howitzer. In early 1956, the Army started a program to convert all of its M53s to the M55 configuration dropping the 155mm gun. The Marine Corps, however, retained the M53 in service.

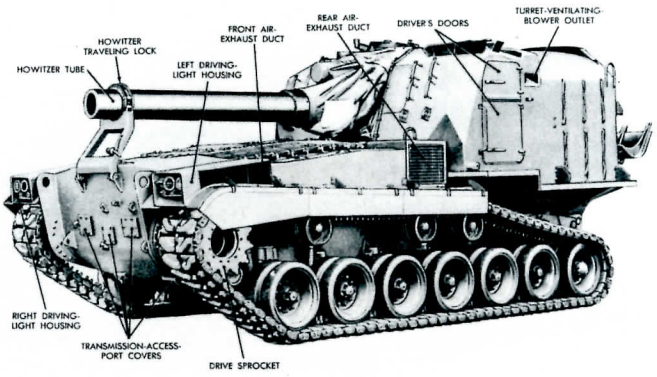
The development and production of the M53 and M55 paralleled rapid changes in the medium tank program. Since maximum interchangeability of parts was desirable, numerous changes were required during this period. However, the running gear based on the road wheels and the 23 inch wide

The production model 155mm self-propelled gun M53 is shown below. The transmission access port covers on the front armor plate differ from those on the early vehicles. Compare with the M55 on the opposite page.





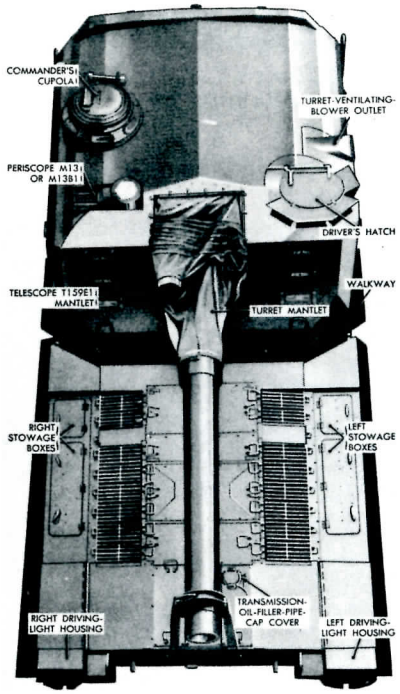




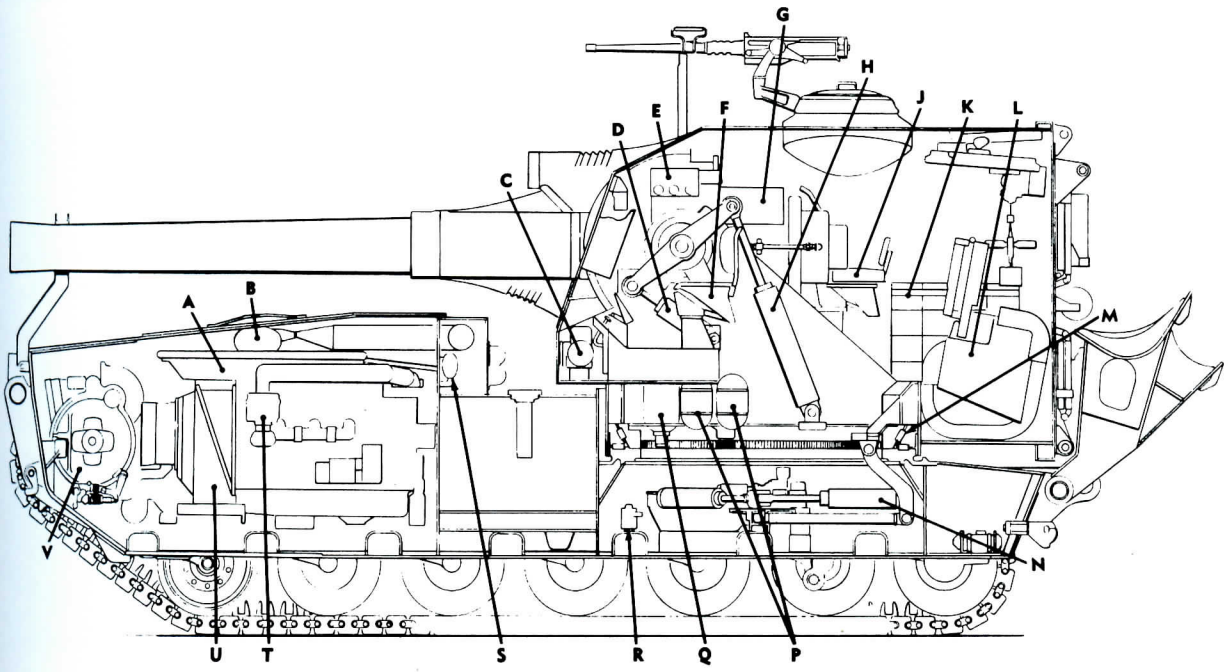
The muzzle brake has been eliminated on the 8 inch self-propelled howitzer M55 (T108) above, but this early vehicle retains the transmission access port configuration of the pilot. Later production vehicles had the same arrangement as the M53 on the previous page.

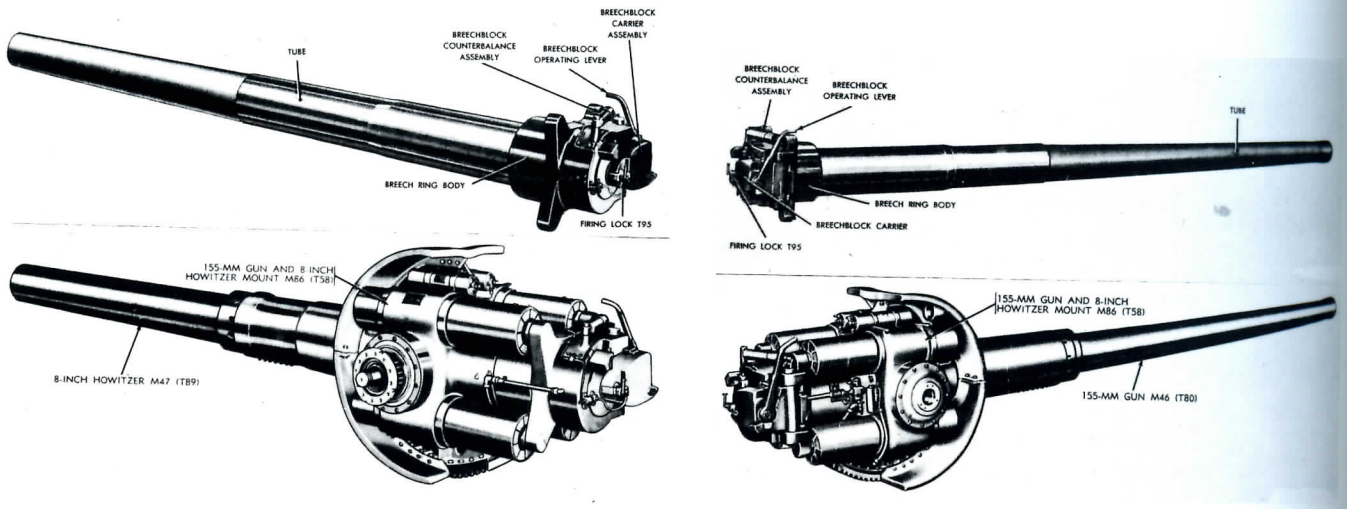
tracks of the M46 and M47 tanks was retained throughout the production run. The early vehicles were powered by the AV-1790-5B engine with the CD-850-4 transmission. Later in production, these were replaced by the AV-1790-7B and the CD-850-4B. Likewise, the M47 wobble stick steering was superseded in later vehicles by the steering wheel of the M48. Two vehicles were fitted with the unit cooled fuel injection engine and designated as the 8 inch self-propelled howitzer M55E1. Other experimental installations continued throughout the service life of these vehicles.

A top view of the early 8 inch self-propelled howitzer M55 (T108) is at the right. Except for the cannon and the traveling lock, the M53 (T97) was identical. A sectional drawing of the 8 inch self-propelled howitzer M55 (T108) appears below.

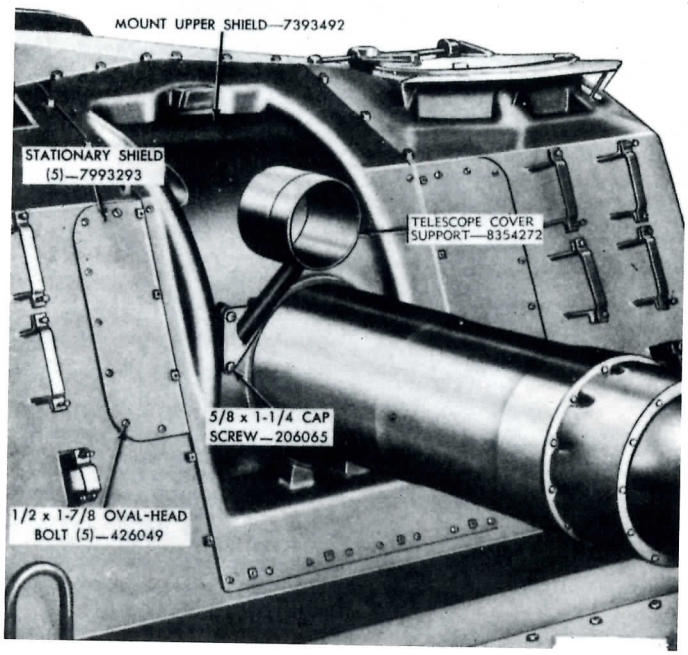


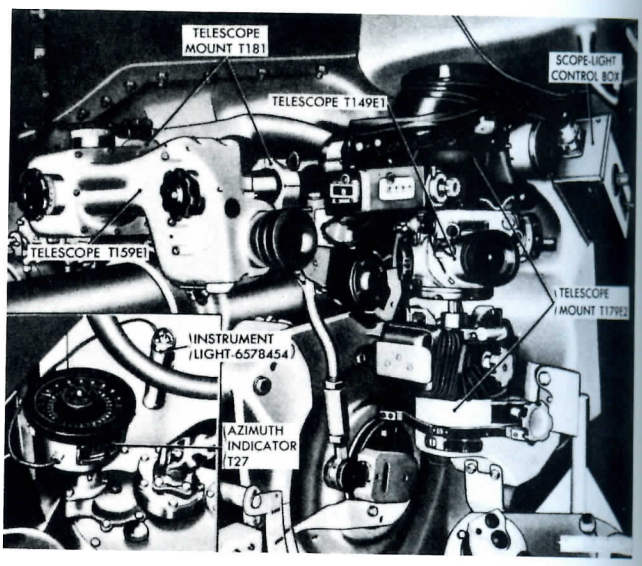
A—Engine
B—Muffler
C—Personnel heater
D—Equilibrator vertical-adjusting cylinder
E—Main instrument panel
F—Driver's seat
G—Recoil cylinders
H—Vertical equilibrator cylinder
J—Commander's seat
K—Projectile stowage rack
L—Projectile rammer and spade hoist
M—Turret bearing
N—Horizontal equilibrator cylinders
P—Equilibrator gas bottles
Q—Equilibrator accumulator bottle
R—Bilge pump
S—Auxiliary engine muffler
T—Carburetor
U—oil cooler
V—Transmission

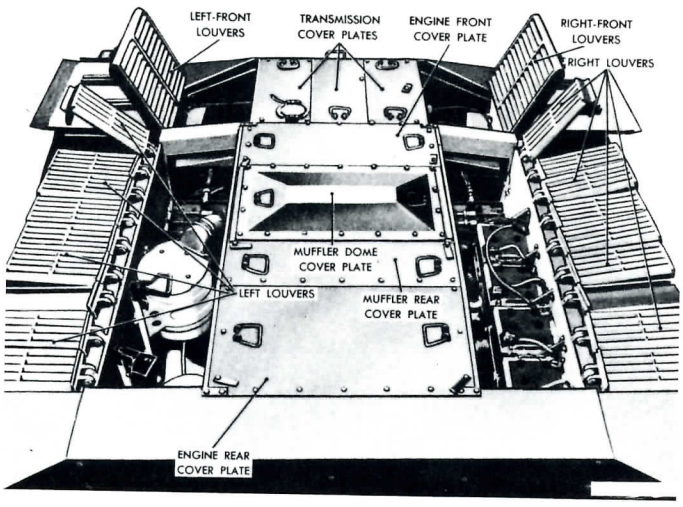


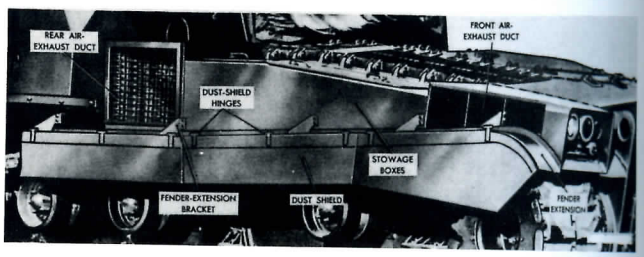


Above, the 8 inch howitzer M47 (left) and the 155mm gun M46 (right) are shown separately and installed in the mount M86. Below, the details of the shield and turret front can be seen at the left and the sighting and fire control instruments are at the right.

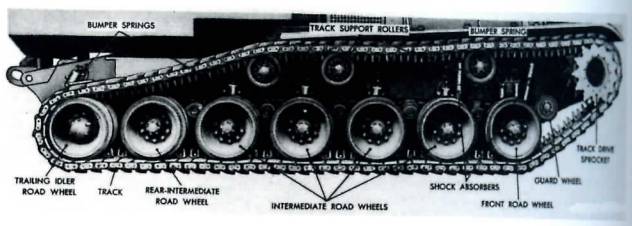








Details of the right front fender and the suspension system are shown above and below respectively. At the left is the engine deck with all of the louvered grills open.



Above, a 155mm self-propelled gun M53 is operating with the 2nd Marine Division near Vieques, Puerto Rico during 1953. Below, a Marine Corps 8 inch self-propelled howitzer M55 is photographed at Camp Lejeune, North Carolina in 1961. Note that both of these vehicles have the late configuration for the transmission access port covers.