Tactical Redstone Employment

Captain George M. Rodgers
Tactics/Combined Arms Department

. . . . Five, four, three, two, one, A, B, C, D, E . . . . a blinding flash, a mighty roar, a cloud of dust, and the largest and longest range tactical operational field artillery guided missile in the Army—the Redstone—is on its way. The Redstone provides the Army with a missile that supplements and extends the firepower of artillery cannon and missiles, provides long-range fire support for ground forces, and compensates for the expanding dimensions of the battle area.

The Redstone was named for its place of development—Redstone Arsenal, Huntsville, Alabama. The United States' first successful developmental firing of an inertially guided Redstone ballistic missile was accomplished in December 1955. In December 1956, the Redstone was the first operational prototype, long-range ballistic missile to be fired in the western hemisphere, to a range of over 400 nautical miles. In January 1958, when the first United States satellite, Explorer I, was placed into orbit by a Jupiter C missile, a Redstone missile was used for the first stage of the Jupiter C missile system. A Redstone missile was also used in the Jupiter C missile system which placed Explorer IV into orbit. The Redstone was first successfully fired by troops in May and June of 1958. These historic firing tests were accomplished in May by Battery A of the 40th Field Artillery Missile Group, Redstone, at Cape Canaveral, Florida, and in June by Battery B, 40th Field Artillery Missile Group, Redstone, at White Sands, New Mexico.

The first Redstone unit to be organized was the 217th Field Artillery Missile Battalion, Redstone, which was activated in April 1956 at Redstone Arsenal. The battalion was composed of a headquarters and service battery, two firing batteries, and a medical section. Ordnance and engineer support was furnished by a separate ordnance company, Redstone, and a separate engineer company, Redstone. However, certain weaknesses were found in testing this battalion, and the unit was reorganized in September 1957 as the 40th Field Artillery Missile Group, Heavy, Redstone.

REDSTONE GROUP REORGANIZED IN MARCH 1958

The Redstone group, heavy, was composed of a group headquarters and headquarters battery, a field artillery missile battalion, Redstone, an

ordnance company, Redstone, and an engineer company, Redstone. Field experience indicated that the field artillery missile battalion headquarters and service battery, Redstone, was not necessary for effective employment of the group, heavy; thus, the unit was reorganized in March 1958 as the 40th Field Artillery Missile Group, Redstone. This field artillery missile group, Redstone, is typical of the present-day organization. It consists of a headquarters and headquarters battery, two missile batteries, an engineer company, Redstone, and an ordnance company, Redstone (fig 35).

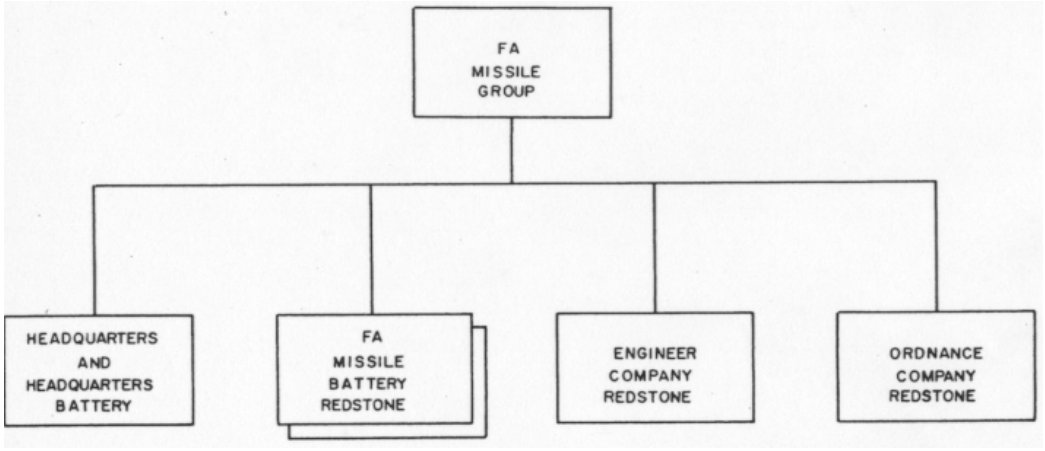

Figure 35. The present-day organization of the field artillery missile group, Redstone.

The Army has three Redstone groups. The 40th Field Artillery Missile Group, Redstone, and the 46th Field Artillery Missile Group, Redstone, which was activated in October 1957 at Fort Sill, Oklahoma, have taken their place at the forefront of the armed might of the North Atlantic Treaty Organization (NATO) in Europe. The 209th Field Artillery Missile Group, Redstone, which was activated in September 1958 at Fort Sill, is the third group. Its mission is to support the US Army Artillery and Missile Center, the US Army Artillery and Missile School, and to provide equipment support for Advanced Individual Training for the 1st Field Artillery Missile Brigade.

Figure 36 lists the characteristics of the Redstone missile system. These characteristics influenced the organization of the present-day Redstone group.

The mission of the field artillery missile group, Redstone, is to provide nuclear missile fires in general support of the field army; one Redstone group is normally assigned per field army. The supported or higher headquarters commander and his staff must be familiar with several considerations to accomplish this mission.

COORDINATION OF FIRE SUPPORT

The coordination of fire support of the Redstone group must be considered. Under the concept of the field army tactical operations center

(FATOC), coordination of the fires of the Redstone group is accomplished by the fire support element (FSE) of the field army tactical operations center. The fires of the group are planned, coordinated, and integrated with other fires in accordance with principles for the employment of fire support in FM 6-20. Another factor that must be considered is the detailed analysis of potential nuclear targets to determine their suitability for attack. This is done in the FSE after a target area has been evaluated by the commander and the G3. The commander's guidance is given to the FSE; then the target analyst performs the detailed analysis and makes a recommendation to the commander on the method of attack, yield, height of burst, and expected condition of the target area after attack.

Length	21.1 meters (69 ft, 4 in)
Diameter	1.8 meters (70 in)
Loaded weight	61,700 pounds
Empty weight	16,300 pounds
Range (maximum)	330 kilometers (200 statute miles)
Propellants:	
—Oxidizer	Liquid oxygen, 25,000 pounds
—Fuel	75 percent alcohol plus 25 percent water, 19,000 pounds
—Steam source	Hydrogen peroxide, 854 pounds
Thrust	78,000 pounds for 96 to 121 seconds
Guidance	Inertial
Warhead	Nuclear, 7,900 pounds total nose section weight
Mobility	100 percent

Figure 36. Characteristics of the Redstone missile system.

The supported or higher headquarters is responsible for the surveillance of fire, which is accomplished through the field army tactical operations center. The surveillance of fire of the Redstone group may be performed by Army aviation through the Army aviation element, by the tactical air support element, by artillery controlled equipment and personnel through the FSE, or by other means available to the commander through the G2 or G3 element.

The next consideration is, what targets are available for the Redstone? The Redstone can be used against troop concentrations, such as general reserve units; command installations, corps or higher; missile firing positions; air fields; communication centers; logistic centers; and critical terrain defiles. After a target has been selected, the supported or higher headquarters commander and his staff must consider the mobility and transportability of the Redstone group to move it to a position where the mission can be accomplished. The Redstone group is 100 percent mobile with its organic vehicles; it is air transportable in current aircraft of the United States Air Force (C-124's and C-133's), with the exception of the liquid oxygen generating plants, whose space requirements

and excessive weight prevent air travel. The Redstone can be moved at road speeds comparable to heavy cannon artillery. For deception purposes, movement will be conducted during darkness or under conditions of reduced visibility by multiple routes or by infiltration.

The Redstone is considered invulnerable to known electronic countermeasures.

How is the Redstone group tactically employed? First, you must understand the relationship between the Army artillery officer and the Redstone group. The fires of the Redstone group are controlled by the artillery officer; this control includes the selection of a general position area for the group. A preliminary map and aerial reconnaissance of the possible position areas should be made by the artillery officer or his representative before a general area is assigned to the Redstone group. The artillery officer will notify the group commander of his selection of position area. The group commander will then make a thorough map reconnaissance of the designated area followed by an air reconnaissance. Aircraft requested for the reconnaissance by the group commander must come from the Army air section, since aircraft are not authorized by the Redstone group's tables of organization and equipment. Then, a more detailed reconnaissance is made. The reconnaissance of a Redstone group position area is time consuming because of the large area required for the entire group—an area 13 to 16 kilometers in diameter. During his reconnaissance, the group commander may select the position areas for the elements within the group, placing them in what is known as a "Maltese cross" formation (fig 37).

The Redstone group commander uses this formation for simplification of command, administration, communication, survey, and local security problems. A major advantage of the Maltese cross formation is the time saved in resupplying the missile batteries with missiles, fuel, and components.

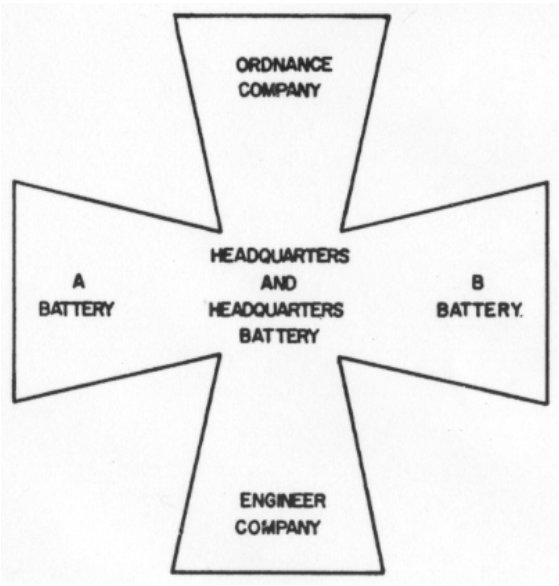

Figure 37. A diagram of the "Maltese cross" formation.

When selecting position areas for the company- or battery-size units, the group commander must ask himself several questions. Is the terrain firm enough to support the missile when it is fully serviced and ready for firing? Are there good access roads and communication routes leading into and out of the area? Are natural cover and concealment used to their best advantages? After he has answered these questions, the commander must consider security,

since the personnel and equipment organic to the group are not adequate for ground and air defense of the Redstone group. Security is a major factor that the Army commander and artillery officer must also consider in selecting the Redstone group position areas. The position areas should be located, when possible, in an existing air defense framework. Because the nuclear capability of the Redstone missile makes each position area of the Redstone group a high priority target for attack, additional personnel and equipment may be required for position area defense.

The most effective way for an enemy to counteract the effectiveness of missile fire is to prevent a unit from firing its missiles; therefore, it can be expected that the enemy will focus his countermissile intelligence efforts on locating the Redstone group position areas. It can also be expected that the enemy will attack the position area with every means at his disposal. The group commander must insure that all active and passive security measures are fully implemented, so that the Redstone group can accomplish its mission. The principle of tactical mobility must be practiced, since this principle is the key to successful employment of missiles. Keep this in mind; *fixed missile sites are dead sites*. The commander must make a continuous reconnaissance and study of the situation, and have several firing positions preselected and prepared to minimize the time required when a mission is assigned.

The Redstone system is an extremely hard-hitting, reliable system which is immediately responsive to the requirements of the Army commander. By applying the principles of tactical employment, the mission of the Redstone group can be and will be accomplished. The Redstone can influence the actions on the battlefield to a depth and degree never before possible.

WHEN IS A METER A METER?

The conversion of maps and linear measurements to the metric system has made quite an impact on the field artillery. It has altered particularly the tools and thinking in fire direction techniques.

Do you really know what constitutes "one meter?"

By an Act of Congress, the meter is the base of American linear measurement, as well as in countries using the metric system, and in all scientific laboratories in the world. Since 1889, the world standard meter has been a platinum-iridium bar kept in France. In the past, meter bars were sent to France for calibration against the standard. However, despite the extreme care taken in calibration, some of the secondary standards were often of different length than others. But now, these annoying errors have been overcome.

The international meter is now the length of 1,650,763.70 wave lengths of the orange-red line of light emitted by krypton 86. The new standard replaces the platinum-iridium bar in France. It is immediately accessible anywhere and should simplify scientific work.