General Background

1. Soviet military doctrine divides missile weapons into strategic and tactical (operativnyye) categories. Tactical missiles comprise the shorter range missiles such as the R-2 and R-11, and the free rockets and atomic cannon which make up Heavy Rocket Artillery (Tyasheleys reaktivnye artilleriya).
Strategic missiles are those missiles with a range greater than 1,000 kilometers, although missiles of shorter range may be employed for strategic purposes in certain operational situations.

2. These categories of weapons are under the control of two separate commands, the strategic missiles under Marshal of the Soviet Union Kirill S. Moskalenko, who is Commander-in-Chief of Missile Troops (Glavkom armii raketykh voisk), and tactical missiles under Chief Marshal of Artillery Sergey S. Varentsov, who is Commander of Missile Troops and Artillery of the Ground Troops (Komanduyushchiy raketykh voiskami i artileriyyu sovputnykh voysk). This division of responsibility has led to conflicts over allocation of funds and resources.

3. Since early 1961 it has been rumored at responsible levels of the General Staff that the two missile commands would be combined under Varentsov, who would run the new command, consisting of twelve directorates, from Moskalenko's present headquarters at Perkhushkovo (N 53-39, E 37-09). This is a new cantonment which occupies the former buildings of the Higher Academic Courses for Refresher Political Instruction of Senior Officers. The fenced restricted area includes the nearby lake, where it is forbidden to fish or swim.

4. The position of Deputy to the Minister of Defense for New Weapons (novaya tehnika), which has been vacant since Marshal of the Soviet Union Mitrofan I. Medelin's death, was not transferred to Moskalenko because the latter is physically incapacitated, and would not be given to Varentsov as head of the combined command unless he had proven himself in the new job.

Command Responsibilities

5. The strategic command at Perkhushkovo controls all strategic missiles and the launching of earth satellites. It was
established to centralize control, to separate the strategic and ground forces weapons programs, and to insure that Neklein, Moskalenko's predecessor, would have no interference in his program, which was allotted billions of rubles, as well as plants and scientists.

6. Until early 1961, Varentsov had the title of Commander of Artillery of the Ground Troops, which comprised conventional artillery, guided missiles, and free rockets, and in early 1961 the Missile Troops were officially added to his title. Varentsov's tactical missile headquarters are now in the same block as the Preobrasenskii Engineering-Artillery Academy, but are expected to move to the premises of the Chief Artillery Directorate (Glavnoye Artilleryskye Upravleniya - GAU) on Trunzamokyaya naberezhnaya, if the tactical and strategic missile commands are not combined.

7. Moskalenko is subordinate to the Chief of the General Staff, through him to the Minister of Defense, and upward to Commander-in-Chief Khruschev and the Presidium. Varentsov is subordinate to Commander-in-Chief of Ground Troops, Marshal of the Soviet Union Vasily I. Chuykov and to the Chief of the General Staff.

8. Varentsov's Missile Troops are divided into brigades which are made up of battalions (division), which are in turn composed of batteries (batareya). These troops may be allocated by brigade or battalion to divisions and armies of a front: Missile brigades are part of the Reserve of the Supreme High Command (Reserv voiskhozya glavnokomandovaniya -- RVKH), and their chain of command is army, front, and RVKH Command (VOK).

9. At present these missiles are armed with conventional warheads, but nuclear warheads are readily available. The order to launch a missile armed with a nuclear warhead is issued by the army commander, after general authority, to use nuclear weapons has been given by the Central Committee of the GRU. Missiles with conventional warheads are launched against targets no closer than two kilometers to friendly troops. The safety factor for nuclear warheads depends on many things, and amounts to, tens of kilometers; tables have been prepared for determining this.
The Chief Artillery Directorate

10. The Chief of the Chief Artillery Directorate (GAI) is Col. Gen. Zhdanov, who is the "soul and heart of missile artillery and the remnants of classical artillery". Under Zhdanov are concentrated the supervision of electronic, technical production, production in all missile plants, and storage depots. This is the center for the planning and direction of the technical military machine.

11. GAI serves both Noseklenko and Yaroslavov. Each of these missile commanders would prefer to have GAI subordinate to himself, and there have been discussions of merging GAI with Yaroslavov's command, but it would then be necessary to create a new GAI for Noseklenko, and new technical supply departments, such as for electronic equipment, would have to be formed. GAI has directorates for each complex of artillery equipment, such as electronics, explosives, etc. The plants producing this equipment are all civilian, but Zhdanov is the overall coordinator of such production, and the focus of rivalry between the two commanders, who demand as much technical equipment as possible and complain that insufficient funds are allotted them.

Research and Development

12. There is no unified scientific research center for the Soviet missile program; the research structure is as follows:

a. GAI

Over-all coordination and supervision of missile research and development is exercised by the Military Scientific Council of the Chief Artillery Directorate (Academy of Military Science pr GAI) under Zhdanov. This is the main spring of the missile program. GAI also has four large Research Scientific Research Institutes: Incorporating scientists from research institutions, universities, and schools, which cooperate with the various research institutes, and GAI is supported by the Army for all types of missile and rocket research, testing, and development. The military is the largest supporter of the scientific research program, and GAI is the center for this work.
the adequate training of electronic personnel.

b. The Dzerzhinsk Academy

This academy is the brain of missile technology. Major generals of the engineers and technical services are concentrated here; faculty heads are usually major generals, and two of them are leading theoreticians and designers. The academy has a scientific council headed by the Chief of the Academy, Col. Gen. of Artillery Georgiy V. Klintsov, and composed of professors and specialists in military and missile-related fields, such as optics, electronics, equipment, guidance, supply, etc. Klintsov's deputy is Lt. Gen. Tret'yakov.

Scientific Research Institutes

Scientific research institutes work on specialized subjects such as fuels, electronics, etc. One of those is located on the grounds of the Dzerzhinsk Academy, but is under a separate head. It works on theoretical designs originated at GAI and translates them into blueprints which are sent to plants for production of prototypes. Another scientific research institute is located on the other side of Sokolniki, in the area of Bogorodskoye. A research center under Makalenko's control is located at Elkhovo (not located).

c. Engineering-Artillery Schools

The engineering-artillery schools, which train junior officers, NCO's, and enlisted men now have scientific research departments. All personnel of missile forces are encouraged to generate ideas on missile technology to be forwarded to the Dzerzhinsk Academy, GAI, and the scientific research institutes for analysis, development, and final disposition.

d. The Central Artillery Design Bureau

This bureau, under Makalenko, performs all calculations and computations related to missiles. It is located on Novoshekovskoe shore, opposite the Vagankovskoye Cemetery.
13. Missile production is only indirectly under the control of GAU and, ultimately, Moskalenko and Varentsov. The Director of a plant producing missiles has to account for plans published by Moskalenko or Varentsov, but neither of them, nor the Ministry of Defense itself, can order a plant director to take any action whatsoever without first contacting the responsible authority in the GPU Central Committee. The Ministry is the customer and the plant is the supplier, and any complaint must be made to the Minister of Defense, and by him to Khrushchev or a deputy, in most cases, Brezhnev, who is responsible for many defense enterprises.

14. The Ministry of Medium Machine Building has nothing to do with missile production, but concerns itself entirely with nuclear weapons production.

Test Ranges

15. The main tactical missile test range (poligon) is located at Kapustin Yar, near Stalingrad, and is controlled by Varentsov. Combat exercises have also taken place from the Orenburg Military District, near Khitrov, into Kazakhstan, and from Shkodra, Yapra [not located] in Evro Oblast into Poland. Sources believe the strategic missile test range is in the Oranburg region.

16. On 17 May 1961 a group of Soviet and Satellite officers were killed when the Mi-4 helicopter of the Krasnograd Military District Commander, Col. Gen. Rodionov, crashed as it was delivering them to the Shkodra range to observe firings which began 10 days earlier. High command-staff exercises which were held in the General Staff in Moscow. The senior Soviet officers killed were Kolpakov, the Chief of the Operations Directorate of the Krasnograd Military District; and Karamov, a senior officer of the Operations Directorate of the Central Military District, who died in Moscow, following a ceremony at the Government House of Receptions which was attended by Khrushchev.
Storage

17. The NKU is responsible for storing and stockpiling missiles, warheads, and their charges, including nuclear charges. This responsibility includes custody, technical supervision, maintenance, radiation control, etc. The missiles and warheads are stored separately, and are only brought together when they are to be used. The transport and maintenance of nuclear warheads can be carried out only on instructions from the Central Committee of the CPSU.

18. Insufficient funds have been allotted for construction of depots for storage of missiles, so that other facilities have been taken over for this purpose. In the GSPU, missiles are stored in temporary structures near the warhead storage points, or are in canvas shelters.

19. The guarding of nuclear weapons and weapons materials is performed by a KGB component known by the initials OSOG (Divisions osobogo naznacheniya).

Training

20. Officer training is carried out at the Military Engineering Artillery Academy 1 in Dzerzhinsky, which is controlled by NKVD. This is the blacksmith shop where missile casings are forged. Last year about 2,300 of which 400-500 graduate yearly. There are two courses at the academy, a nine to twelve month course which concentrates on tactical missiles and free rockets, with a general lecture on strategic missiles, and a five and one-half year course which goes into much greater detail on all types of missiles. The proportion of the students in the short course go on to the long course. Students in the long course complete their training on strategic missiles at test sites and assembly/checkout facilities. A small number of Navy and Air Force officers attend the short course, but it is not known if any attend the long course. Civilian engineers from the Bauman Institute are accepted into the Dzerzhinsky Academy and the Signals Academy for training. Bauman Institute has two secret technical facilities which are controlled by a general of technical troops.

21. The Artillery Command Academy in Leningrad, subordinate to V. K. Kutiev, gives a course which is less detailed, and concentrates
more on the tactical-technical aspects of missiles, their military employment, and launching techniques. There is some overlap between the two academies, as a proportion of the students in strategic missile training at the Dzerzhinskiy Academy go to the tactical forces, and some of those in tactical training at the Command Academy go to the strategic forces.

22. Specialist training for junior officers, NCO's, and enlisted men is carried out at military engineering-artillery schools (veneno-inkhenernyye artillericheskiye uchilishcha) which are located at Riga, Kiev, Moscow, Stavropol, Tomsk, Ussus, Tula, Ryazan, and elsewhere. Intermediate education is required of personnel who are to form service crews and launch teams.

23. Satellite officers who were being trained to handle the missiles now being provided them by the USSR formerly studied at the Dzerzhinskiy Academy, but they have all been removed from that academy and are now trained elsewhere, such as at Voronezh.

Forces in Being

24. There are four tactical missile brigades in the USSR, probably two in Poland, and perhaps 50 in the entire USSR proper, with about 15 of them in the western USSR.

Insignia

25. There is no special insignia for missile forces. The standard artillery uniform and insignia are worn, and auxiliary troops such as signals, chemical, engineers, etc., retain the insignia of their respective arms. Most officer students at the Dzerzhinskiy Academy wear artillery insignia, but officers of other arms may wear their original insignia for a time before changing over, as in the case of officer students from a jet fighter division in the Moscow area which had been disbanded.

26. A dispute is going on among the missile troops because they feel that they should have some special insignia which identifies them as the elite of the Soviet Armed Forces. Higher-ranking officers oppose any distinguishing insignia on uniforms, on the grounds that it would be bad security.
Site Construction

27. Construction of launching sites is the responsibility of the Chief Engineering Directorate, headed by Col. Gen. of Engineering Troops Vorobyev. He controls the Military Engineering Academy in Moscow, an unidentified scientific research institute, and training areas (poligon) outside Moscow. The Academy prepares cadres for all forms of military engineering, such as earthwork defenses, mining, mine-clearing, roadbuilding, etc., but the largest department is concerned with training specialists to construct everything required by the missile complex, such as missile bases, shelters, protective areas at launch sites, etc. Some of the engineers from this academy attend courses at the Baikonursk Academy.

Geodetic Data

28. First order survey data are in part the responsibility of the Ministry of Geology and Mineral Conservation in Moscow. The Academy of Geodesy and Cartography, headed by A. N. Berenov, provides the cadres for all forms of military engineering, such as earthwork defenses, mining, mine-clearing, roadbuilding, etc., but the largest department is concerned with training specialists to construct everything required by the missile complex, such as missile bases, shelters, protective areas at launch sites, etc. Some of the engineers from this academy attend courses at the Baikonursk Academy. The Academy of Geodesy and Cartography of the ministry is under the supervision of the KGB, and is in a KGB building at the corner of ulitsa Dezerzhinskogo and Pushechnaya peresokh, opposite the main KGB building. The entrance, seventh floor, about 10 – 15 meters from the entrance to the groundroom.

29. About ten years ago the Soviet KGB adopted a unified system of determination of topographic coordinates. This system is based on the Krasovskiy ellipsoid, the Soviet originator of which recently died. The old system had many errors. For example, in transferring from the old system to the very precise Krasovskiy system, it was found that there were errors in some triangulation points up to 80 meters.