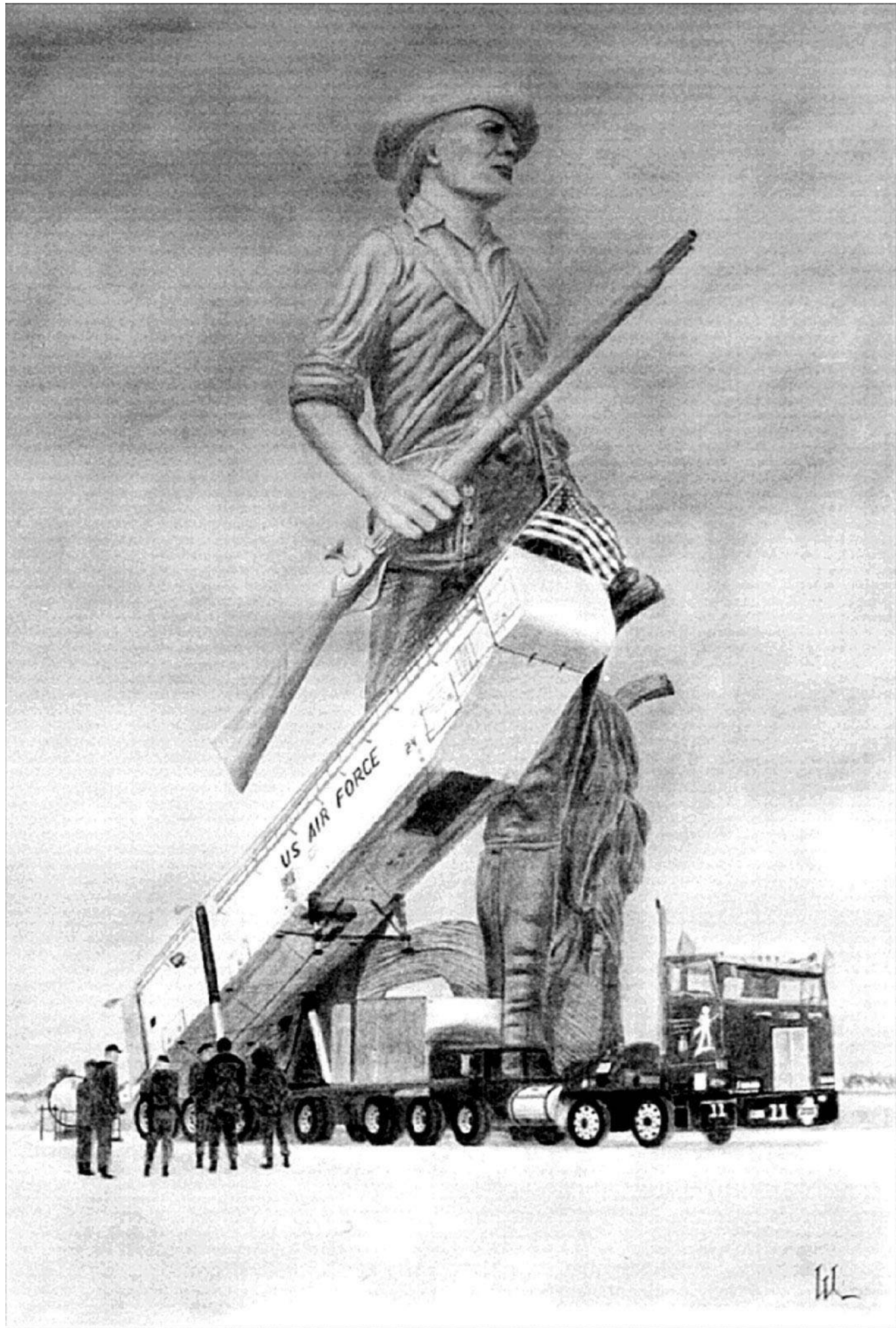


Minuteman Missile Junior Ranger Program 12 & Up

National Park Service
U.S. Department of the Interior

Minuteman Missile
National Historic Site
Southwestern South Dakota





Welcome Junior Rangers to Minuteman Missile National Historic Site!

Minuteman Missile is part of the national park system. Minuteman Missile is the only national park unit that tells the story of **the Cold War**.

The Park:

- Minuteman Missile National Historic Site is made up of two areas, Launch Control Facility Delta-01 and Launch Facility Delta-09.
- Beneath the Launch Control Facility is an underground Launch Control Center. This is where Air Force officers, known as missileers, could launch Minuteman missiles if the United States was attacked by the Soviet Union with nuclear weapons.
- Launch Facility Delta-09 is a missile silo with a Minuteman II missile on display.



Launch Control Center Delta-01



Launch Facility Delta-09

What you need to know:

- The **Cold War** lasted from 1945-1989. During that time there was a long and troubled conflict between the **United States and the Soviet Union**.
- This war led to a huge weapons buildup on both sides. These weapons included nuclear missiles, such as the Minuteman.
- The first Minutemen were deployed in 1962. Within five years a total of 1,000 were online.
- Minuteman missiles were operational across the Great Plains region.
- United States policy was to only use Minuteman missiles if the Soviet Union first attacked with their own nuclear weapons.



United States

versus



Soviet Union

Your mission: This Junior Ranger program is made up of four missions.

Mission 1. Countdown: Blast Door Art

Mission 2. To the Sites: Mapping

Mission 3. Ready for Launch: Secret Codes

Mission 4. Launch in Process: Civil Defense

Mission 5. Missile Away: Putting it all Together

Choose any **three** of the above missions to complete the program. Once you have completed the program give it to the ranger so they can grade your work.

Mission 1 - Countdown: Blast Door Art

The 150 Minuteman missiles in South Dakota made up the 44th Missile Wing. The Air Force personnel who worked with these missiles took great pride in protecting the United States. Missileers developed artwork to paint down in the Launch Control Center in order to display their sense of mission. The blast door shown below symbolizes how the missile personnel felt about the strength of the Minuteman system and the Air Force.

Your mission: Study the blast door below, then design, draw and color your own blast door in the space provided.



Mission 2: Word Search

During the **Cold War** between the U.S. and former Soviet Union, the U.S. maintained up to 1,000 Minuteman II missiles in 7 Midwestern states as a deterrent force to attack from the Soviet Union. Awaiting **launch** orders from the President of the United States, in response to a Soviet first-strike nuclear attack, Minuteman was on alert and ready to go 24 hours a day, 7 days a week, for almost 30 years on the plains of **South Dakota**. The Minuteman II **missile** system played a major role in deterring, or preventing, World War III in that both sides understood the power of nuclear weapons and their use would have resulted in the mutually assured destruction (MAD) of each. During the height of the Cold War, there were 15 underground launch control centers and 150 missile silos here in South Dakota ready to respond at a moments notice. Each **silo** contained one missile, capable of reaching its target in 30 minutes or less. Atop each Minuteman II missile was a 1.2 **megaton** nuclear **warhead**, equal to 60% of all the munitions used in World War II.

The major effects of a nuclear explosion are heat, blast, and **radiation**. During the 1950's and early 1960's as tensions between both countries increased, the U.S. Federal Civil Defense Administration issued plans for building fallout shelters and guides for surviving in a contaminated environment.

The Minuteman II missile stood alert as a silent sentinel during the Cold War - preserving the peace, deterring war, and ensuring that a **nuclear** war would not be fought.

h a s n n o a o i o m
t l r o c a a u s l e
l l m i s s i l e o g
s o u t h d a k o t a
h t d a e h r a w r t
l t w i d h s t a d o
r a w d l o c e r o n
k d i a r a l n s a m
m k i r i c a i u r m
s u n s u a t o s a i
e t k n c e a a o k l

Mission 3 – Ready For Launch: Secret Codes

Many of the Air Force personnel that worked in the missile field gained entry to launch control centers and silos by authenticating secret codes. Top secret codes were also used for security and would be used to perform missile launches.

The phonetic alphabet was used by Air Force personnel when authenticating these codes. The phonetic alphabet assigns code words to the letters of the alphabet. By pronouncing the letters as words, voice messages by radio or telephone are easier to understand. Study the phonetic alphabet below as you prepare to decode a message.

| | | | |
|----------|------------------------------|----------|-------------------------------|
| A | Alfa (AL fah) | N | November (no VEM ber) |
| B | Bravo (BRAH VOH) | O | Oscar (OSS cah) |
| C | Charlie (CHAR lee) | P | Papa (pah PAH) |
| D | Delta (DELL tah) | Q | Quebec (keh BECK) |
| E | Echo (ECK oh) | R | Romeo (ROW me oh) |
| F | Foxtrot (FOKS trot) | S | Sierra (see AIR rah) |
| G | Golf (GOLF) | T | Tango (TANG go) |
| H | Hotel (hoh TELL) | U | Uniform (YOU nee form) |
| I | India (IN dee ah) | V | Victor (VIK tah) |
| J | Juliett (JEW lee ETT) | W | Whiskey (WISS key) |
| K | Kilo (KEY loh) | X | X Ray (ECKS RAY) |
| L | Lima (LEE mah) | Y | Yankee (YANG key) |
| M | Mike (MIKE) | Z | Zulu (ZOO loo) |

Your mission: assign each letter of the phonetic alphabet a number in ascending order. For example: Alpha will be 0, Bravo 1, Charlie 2, all the way to Zulu, which will be 25.

Below you will find a series of coded messages which must be decoded to answer the questions which follow them.

1. Message: Bravo – Foxtrot - Alpha

Question: Number of Minuteman Missiles in South Dakota during the Cold War?

2. Message: Lima - Tango – Golf - Bravo

Question: The groundbreaking to build Minuteman Missile silos across Western South Dakota occurred on September _____ of _____.

3. Message: Tango – Juliet - Bravo

Question: The year Minuteman Missiles were taken off alert in South Dakota

4. Message: Echo –Foxtrot - Alpha

Question: Number of Minuteman Missiles still operational in the United States?

Mission 4 – Launch in Process: Civil Defense

As the Cold War progressed, the fear of a nuclear attack from the Soviet Union also increased. Regular people were looking for a way to protect their families from a nuclear attack. During the early 1960s, America's backyards became spots for swing sets, barbecues and bomb shelters. This was known as Civilian Defense and is best represented by bomb shelters and "duck and cover drills". There were many different kinds of bomb shelters built in the United States and it was estimated that in 1960 there were just over 1,500 bomb shelters across the country. A mere five years later that figure increased to over 200,000.

A shelter was typically an underground room that needed to contain enough supplies for a family to live for two weeks without ever leaving. Essential daily supplies were stored as well as sanitary and medical items. The bomb shelter became a constant reminder that the frontlines of the Cold War were everywhere. In the picture below, you can see an example of family in a bomb shelter filled with supplies.



Your Mission: What 3-4 items would you take into a bomb shelter and why.

Mission 5 –Missile Away: Putting It All Together

Study the following parts that make up a Minuteman Missile, and then turn to the next page to find out **Your Next Mission!**



A. Second Stage Motor - this goes in the middle of the missile and provides it further boost after the first stage has burnt out



B. Missile Guidance – this tells the missile where to go, it is just beneath the nosecone.



C. Nosecone - this contains the warhead, it is at the top of the missile



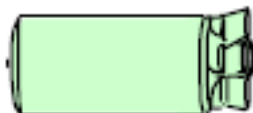
D. Interstage - this piece goes between the first and second stages



E. Skirt – the covers the first stage rocket's nozzle and tail at the bottom of the missile



F. First Stage Motor – this stage launches the missile out of the silo and into the air, it is the lowest stage on the missile



G. 3rd Stage Motor - this gives the missile its final boost, it is located above the second stage



H. Interstage 2 – this piece goes between the second and third stages

Activity continues on next page

Putting together a Minuteman missile is tough stuff. The missile is made up of thousands of individual parts. These parts must fit together perfectly so the missile will work. If even one part is in the wrong place the missile will not launch.

Your mission: Fortunately there are only eight Minuteman missile parts on the previous page. See if you can put all these parts in the correct working order, from top to bottom.

Write your answers below, starting from the top and working your way down.

_____ (Top piece)

_____ (Bottom Piece)



Congratulations! You have now completed the Minuteman Missile Junior Ranger program. To make sure you receive an official Junior Ranger certificate and patch, write your name and address in the spaces provided below.

Name: _____

Address: _____

Our Mailing Address: Minuteman Missile National Historic Site
24545 Cottonwood Road
Philip, SD 57567