COMMERCE CITY, COLORADO

ROCKY MOUNTAIN ARSENAL

OF

HISTORY

FILE CORY

Commerce City, Colorado
Information Center
Rocky Mountain Arsenal
During the period of this production, the Arsenal employed the same intermediate and toxic products, and 155,000 tons of incendiary munitions. During World War II, the Arsenal manufactured 87,000 tons of chemical munitions.

Construction began in June 1942. The site selected for construction was the ideal for this purpose. With the soil characteristics being ideal for construction, the site was an ideal climate to facilitate the progress of outdoor work. A major transportation hub, Denver was an excellent labor market, located sufficiently far from the coastal areas, and had an ideal location, making it an ideal site for such a facility. The plant site board selected Denver as the ideal site as soon as possible. The plant site board directed the memorandum to the plant site board of the War Production Board, that a site be selected for a production facility constructed to support world-wide operations. Based on these urgent requirements, Under Secretary of War, Robert R. Patterson, went for incendiary munitions to support world-wide operations. Based for chemical and incendiary munitions, as well as an immediate urgent requirement, in 1942 the armed forces of the United States had a critical need of chemical and incendiary munitions.
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<tbody>
<tr>
<td>3,360</td>
<td>White phosphorous cups</td>
</tr>
<tr>
<td>350</td>
<td>Shells, 4.2” cm, Anti-tank and Water-proof</td>
</tr>
<tr>
<td>296</td>
<td>Igniter, AN-M9</td>
</tr>
<tr>
<td>1,022</td>
<td>Cluster, Incendiary, AN-M13</td>
</tr>
<tr>
<td>1,022</td>
<td>Cluster, Incendiary, AN-M12</td>
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<tr>
<td>1,082</td>
<td>Cluster, 500 lb., AN-M29</td>
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<tr>
<td>2,625</td>
<td>Bomb, Incendiary, M99, Decoctioning, B-47</td>
</tr>
<tr>
<td>2,988</td>
<td>Cluster, Ammable, 500 lb., Incendiary, E48</td>
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### 2. CONVENTIONAL MUNITIONS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<tbody>
<tr>
<td>960</td>
<td>Tetryl-Chlorite</td>
</tr>
<tr>
<td>858</td>
<td>sulfur-chlorite</td>
</tr>
<tr>
<td>536</td>
<td>Arsenic Chloride</td>
</tr>
<tr>
<td>3,106</td>
<td>Lewisite (L)</td>
</tr>
<tr>
<td>316</td>
<td>Distilled Mustard (HD)</td>
</tr>
<tr>
<td>7</td>
<td>Lewisitvin Mustard (H)</td>
</tr>
<tr>
<td>63</td>
<td>Chlorine</td>
</tr>
</tbody>
</table>

### 1. DETERRENTS

The actual items produced during this period is as follows:

An average of 3,000 civilians and military personnel, a breakout of...
An event occurred due to a change in the Department of Defense policy. After the Korean emergency, significant changes in mission assignment, the stocks of nerve agent G6 were manufactured, the free world and it was in this plant that all of the current plant. This facility represents the only nerve agent G6 manufacturing plant in the United States and is over 300 million tons. The replacement cost of the Arsenals plants is over 40 million dollars. The estimated cure of a capital investment of about 40 million dollars. The estimated cure of a new toxic agent, nerve agent G6, this second large construction a structured and placed into operation for the manufacture and filling of the beginning of the Korean emergency, a major new facility was commissioned. With the supply requirements of the Army, Navy and Air Force, with the Korean emergency to produce incendiary and chemical munitions to Rocky Mountain Arsenal was reactivated just after the beginning of the event of a national emergency. Negotiated with commercial manufacturing contain a facilities recapture engagement in the manufacture of various commercial pesticides. All leases were leased to private industry for the production of commercial products.

Rocky Mountain Arsenal began to take shape, portions of the Arsenal with the closing of hostilities in 1945, the Arsenal was placed in a standby status. It was following this date that the current complex of
During the period 1959 through 1962, Rocky Mountain Arsenal was assigned the responsibility for production of a biological anti-crop agent which causes wheat rust; and in conjunction with the Air Force, developed, engineered, and built a facility for the blending of rocket fuels. The hydrazine plant, a liquid mixing facility, performs the vital task of mixing hydrazine and unsymmetrical dimethylhydrazine.

The hydrazine plant, a liquid mixing facility, performs the vital task of mixing hydrazine and unsymmetrical dimethylhydrazine. The development of an improved MA-4 white phosphorous grenade filling method of demilitarizing mustard filled munitions by burning, the development of a much improved rocket as a chemical munition, the development of a multi-purpose filling line, the standardization of the M56 circular multi-purpose filling line, the training of personnel, and improved methods for filling filling by welded closure methods and a considerable effort in the production engineering area to support the industry for the production of chemical, incendiary and smoke munitions, and to provide testing services and technical assistance to levels, and to produce testing services and technical assistance to levels, and to provide testing services and technical assistance to levels.

Rocky Mountain Arsenal was assigned the additional mission of supporting government-owned and operated arsenals, began to primarily concentrate on pilot production, pre-production, and limited production runs.
(UDMH) to produce Aerozine-50, a hypergolic rocket fuel. Aerozine-50, mixed at Rocky Mountain Arsenal, has been used successfully in the Titan Missile Program to fuel both the Lunar Lander and the Command Module during the recent moon exploration shots.

During the period 1965 through 1969, the Arsenal's operations were primarily in support of Southeast Asia (SEA) requirements. The first SEA project was the emptying of M78 and M79 Cyanogen Chloride (CK) and Phosgene (CG) bombs for shipment to a commercial manufacturer for final modification and ultimate filling with high explosives. Other projects, in support of SEA, included the manufacture of M34 White Phosphorous (WP) Grenades and 105mm White Phosphorous (WP) Shells, the production of the Sandwich Button Bomb (SBB) and the Micro Gravel Mine and the renovation of CNU-80 munition shipping containers for the Air Force.

In 1968 an Ad Hoc Committee of the US Army Materiel Command staff made a decision that all excess and obsolete chemical stocks stored at Rocky Mountain Arsenal be disposed of by dump at sea. This plan was called Operation Chase, was to commence in April 1969 and was to have been completed in August of that year. Public and Congressional concern over the safety of Operation Chase resulted in the cancellation of this plan.
committee to review disposal procedures at Rocky Mountain Arsenal.

US Army Munitions Command (now Armaments Command) convened a special

After publication of the NAS study, the Commanding General of the

team, a scrubber system should be used to minimize pollutants.

pollution is not a problem. Should air pollution be a potential prob-

tion at these locations where it is now being stored. When local air

tion recommended that bulk munitions be disposed of properly in a

type of operation and facilities that would be satisfactory with modifi-

based upon the fact that the arsenal has personnel experienced in this

Arsenal and the GG agent chemically neutralized. This conclusion was

NAS concluded that the M4 clusters should be disassembled at the

Specifically with regard to the material at Rocky Mountain Arsenal,

utilized.

recommended that whenever possible remote control operations should be

NAS method of operation and make the disposal operations more costly. NAS

well as the citizens of the surrounding communities even though this

set the example by minimizing the risk to all operating personnel as

NAS recommended that the Army

and to make recommendations as to how the Army could accomplish this

vote a special committee to review disposal methods for chemical agents

As a result of the cancellation of Operation Chaser, the Department
In addition to the chemical disposal program, the US Army was

in the history of the United States Army.

Arsenal is the largest single undertake of this nature ever conducted
should be noted that the disposal of chemical agents at Rocky Mountain

It challenged in any objective evaluation of the proposed program.

event that the procedures, facilities, and concepts of operation are
old and sufficient hard data developed so as to be incontrovertible in the

Finally, all aspects of the operation had to be justifiable from a

Basic guiding principles established by the MUCOM committee:

The Commanding General of US Army Munitions Command established a

Special Group called Task Force Eagle to develop detailed plans for the

Special Operation conducted at Rocky Mountain Arsenal, the dis-

posal of the TX Antitank Agent stored at Rocky Mountain Arsenal, the dis-

First demilitarization conducted at Rocky Mountain Arsenal. This policy change led to the

In addition to the chemical disposal program, the US Army was
On 4 October 1973, Secretary of the Army Howard H. Callaway, announced that the portions of the national deterrence stockpile of chemical agents and munitions stored at Rocky Mountain Arsenal need to be dismantled. This was the largest single undertaking to date of dismantling chemical weapons. On 1 October 1973, the demilitarization of 21,115 M34 cluster bombs containing 4.2 million pounds of agent GB and 900,000 pounds of agent VX was completed. This program was expected to save the Army and the Arsenal $1.79 billion dollars.

In March 1974, the second major undertaking that was completed was the incineration of over 500,000 containers of chemical weapons. The first of the major chemical demilitarization programs to be undertaken at Rocky Mountain Arsenal was the disposal of the obsolete biological agent at Rocky Mountain Arsenal. The disposal of this agent is being completed in mid-February 1973. Due to the early completion of this program, the Army realized a savings of $300,000 dollars.
This time frame, there have only been 2 temporary disabilities injuries during Touch and Move operations that span a period of 36 years. During each incident, corrective action was taken to ensure that the safety record associated with manufacture of safety program in areas and facilities at Rocky Mountain, and the adequacy of an agent-handling, experienced 

At Rocky Mountain, accidental safety has been and continues to be a top priority. The Wurtemburg and the Weyerhaeuser was completed in 1976. Before and construction of facilities to demilitarize the Honest John on 10 March 1975 and was completed in November of the same year. This was for the December agent 44 stored in 2,422 ton containers. This operation got underway made and operations began to destroy the 4,106,000 pounds of chemi

Following the completion of the underground storage program, plans were made to complete ahead of schedule at a savings of 44.800 dollars. This was completed in late November of the same year. This demilitarization program was successful in August of the same year. The first program to get underway was the 22017:

Tanks. This program was started in September 1974 and was successfully completed in 1976. 000 pounds of agent 46 stored in underground storage tons or nerve agent 42. The first program to get underway was the disposal of more than 2,000

 heads. In this program the Army planned to dispose of more than 2,000

ground storage tanks, 000 pounds of agent 46 was contained in large underground long term necessary. This supply of agent 46 was contained in large under-

By the Office of the Secretary of Defense that those stocks were no longer be retained. The Department of the Army was formally advised.
The safety record is unmatched by any other military force agent; and considering its toxicity as well as the toxicity of other mists in 1943, it is reputed to be the most insidious chemical weapon. Mustard was the first agent manufactured and processed into munitions. and munitions has been in progress since 1973 without a serious incident. Program involving the demilitarization of obsolete and excess agents disabling injury caused by GD occurred in January 1963. On-going has ever been reported for a disability due to GD. The last temporary to the present, there have only been six temporary disabling injuries. Since 1953, a safety attitude that assumes the status of greatness. Since 1953 with the multiplicity of operations in which it was handled, indicate substances synthesized by man. Its toxic characteristics, altogether organic phosphorus compound, is recognized as one of the most toxic diverse operators with nerve agent GD. This agent, which is an A major part of this creditable record involved a 22-year span of the agent or munitions process. expanded by personnel whose work effort involved direct contact with the period. To the present, approximately 8,100,000 man-hours were little information there is available, it is estimated that during the lead a work procedure when handling Phosgene (CG) in 1963. From what and one fatality. The one fatality involved an individual who Vito
Early Fiscal Year 1973.

Structures will be accomplished. This major program commenced in the operational phase, where actual decontamination of soil, water, and air will be initiated. Phase two encompasses design engineering and construction of infrastructure. Phase three is the testing and demonstration of the technologies which will be used. Standards will be developed and the study of the effects on the environment will continue.

This program will consist of three distinct parts: identification, decontamination. The plan will include clean up at all contaminated industrial waste areas to include industrial waste ponds. Phase one of the program will be conducted at the arsenals in three phases covering a period of approximately 17 years. This program will be the contamination control program. This program will be the major undertakings at Rocky Mountain Arsenal in the future.

Without a significant incident, agent. This program was completed three months ahead of schedule and disposal of approximately 3,900 one ton containers filled with mustard gas was completed in January 1974. The most recent mustard program was completed by a mustard exposure. The most significant exposure was a Mustard exposure sustained by a Mustard exposure. Only one person was retired for a 30 years of handling this agent. Only three temporary disabling injuries in installations on private industry engaged in mustard operations.
The facilities of Rocky Mountain Arsenal provide a diversified industrial capacity and materials. Of 575,000 and locally procures some 22,100,000 worth of equipment. Rocky Mountain Arsenal, has an annual payroll of 125 contract employees. Stearns-Roger Corporation, a local engineering firm, employs 59,000,000. In addition, this company employs 350 personnel and uses.

has an annual payroll of 513,000,000 and makes local purchases of

and makes local purchases of 527,000. A private tenant at the Arsenal includes construction and equipment purchases. Other Federal Government and local purchases made by the Arsenal amount to 55,000,000. This figure includes construction, and the amount of local and civilian payrolls of the Arsenal is 80,000,000 and purchase of the various agencies located at the Arsenal follows.

The military and civilian payroll of the Arsenal is $4,000,000 and the amount of local.

jobs. In addition, 700 military reserves train at the Arsenal throughout.

rounding communities is 54,000,000 and provides 500 citizens with

permanently. The total economic impact that the Arsenal has on the surf-

Today Rocky Mountain Arsenal employs 354 civilians and 50 military
Plant is capable of handling all foreseeable demands. The sewage disposal pumps are capable of pumping 3,000,000 gallons per day. The sewage is then treated in natural lakes, supplemented with an irrigation canal and stored in three reservoirs for emergency use. Irrigation water is primarily drawn from the South Platte River, and the installation has a million gallon water system for both potable and industrial use. The water system reduces the cost of utilities to the arsenal.

Results in reducing the cost of utilities to the public service company. The present generating plant is producing electric power at a dump rate which results in extra quantities required through purchase from the public service company. At present, the generating plant is producing electric power to handle any additional quantities required through purchase from the public service company. Normal needs with a transmission system of sufficient capacity is equal to normal needs, and the electrical capacity is both for the government and leased. The electrical capacity is equal to any foreseeable needs. The installation has its own electrical and steam generating plant.

Protective equipment produced, have been equipped with the latest safety, ventilation, and automatic control and because of the nature of the products assembly plants have been designed to reflect some of the latest tech-
US Air Force and NASA since 1961. Mountain Arsenal has blended 50,000,000 pounds of this fuel for the Rocky hypersonic (ignite upon contact with each other) and eliminating the liquid fuel, along with an oxidizer (nitrogen tetraoxide) areSpace Programs. Mountain Arsenal, has been used successfully in the Titan and Apollo
vehicles. Aerograde 50, mixed for the US Air Force and NASA at Rocky
aerograde 50 rocket fuel, which provided the power thrust for the lunar
mixing hydrazine and unsymmetrical dimethylhydrazine (UDMH) to produce
the request of the United States Air Force, performs the Titan task of
the hydrazine plant, a liquid blending facility built in 1969 at

HYDRAZINE BLENDING FACILITY

The large quantities of all types of munitions-
standardization of new munitions, the filling lines have also been
able to produce all planned mobilization requirements. With the
portable the latest technical improvements. The plant is presently cap-
turing plants; after the initial run, was completely revised to incor-
were constructed at a cost of approximately $40,000,000. The manufac-
tures specific significance and interest among the production facil-


Campfire Girls' permanent summer camp at Redstone, Colorado.

Improvement project conducted by volunteers from the Arsenal at the Arsenal.

A Community Relations Program conducted by the Arsenal was a road

catalogue of different species of birds.

Arsenal and through this study, the Society was able to identify and

Program. The Audubon Society did a large scale bird study at the

Arsenal. These groups have been active in the Arsenal Wildlife

Management.

The Audubon Society have done animal studies at the Arsenal. Both of

the wildlife tours conducted for school children, the Sierra Club and

have been given tours of the wildlife areas. Many of these child-

Throughout the year various school groups, including retarded

ate.

Facilities and some of the troop barracks that are not currently in

Scouting groups from across the nation use the Arsenal Camping

Interested groups.

school children, the Sierra Club and the Audubon Society, and other

involved large numbers of Boy Scouts, Club Scouts, Camp Fire Girls,

active and aggressive Community Relations Program. This Program

Throughout its history Rocky Mountain Arsenal has conducted an

COMMUNITY RELATIONS
major ones being deer, coyotes, fox, badgers, raccoons, phoebeants, and deer.

The animals that reside at the Arsenal are many and varied. The golden eagles, raccoons, fox, hawks of various types, great horned owls,
some of the animals released at the Arsenal in recent years include
security programs at the Arsenal, these animals are well protected.
Arsenal, natural food for these animals is plentiful, and due to
for this, the animals have some 18,000 acres of natural habitat at the
Arsenal by the Colorado Division of Wildlife. There are several reasons
Many animals that have been injured are released at Rocky Mountain

The Wildlife Management Program conducts by Rocky Mountain Arsenal

The various events held throughout the state.

The Arsenal provided a 18 member Colorado Honor Guard for
Army Bicentennial, the National Bicentennial, and the Colorado State
part in various parades held in surrounding communities. During the
Throughout the year the military members of the Arsenal partici-
Outdoor storage space: 12,800,000 square feet
Warehouse space: 63,000 square feet
Miles of improved roads on post: 72
Miles of railroads on post: 33
Number of structures on post: 102
Number of buildings on post: 134

Statistical Data

League which tries to find suitable homes for them.
These domestic animals are captured and turned over to the dump proceeds to kill animals in order to survive. Most of these animals revert to their wild state and proceed to kill animals in the households on the post. The only significant problem that the arsenal has had in the area of wildlife has been with domestic animals. In recent years area health.

These health studies that were conducted have indicated that the rest of these health checks made by the arsenal staff biologists. All of the on-going programs being conducted at the arsenal is the prairie dogs, doves, chukars, geese, ducks, rabbits, both cotton tail and jack, and...
Construction cost: $105,000,000
175 psi - 450,000 pounds per hour
Steam: Capacity: 400 psi - 230,000 pounds per hour
Rocky Mountain Arsenal - 8,500 KVA

Electricity: Capacity: Public Service Company - 40,000 KVA

Sewage: Capacity for population of 6,000
560,000 gallons (1ake)

Process - 3 wells, acre rights and storage for
Water supply: Portable - 33" main (Denver)