DEFENSE ATOMIC SUPPORT AGENCY

NUCLEAR TEST SUMMARY TRINITY-HARDTACK

15 AUGUST 1962

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UNANNOUNCED

NUCLEAR TEST SUMMARY

TRINITY-HARDTACK [redacted]

15 August 1962

This document amplifies and supersedes the information contained in the NUCLEAR TEST SUMMARY - TRINITY-HARDTACK (U), SWP/59-1, 1 May 1959, FC/05590803. The superseded document will be destroyed in accordance with applicable regulations.

Transportation of this document by commercial aircraft is prohibited except when aircraft is under military control.

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THIS PUBLICATION CONTAINS 274 PAGES

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FOREWORD

This report amplifies and supersedes the information contained in the 1959 report, Nuclear Test Summary, SWP 59-1.

DASA 1320 contains information concerning U. S. nuclear tests and test devices and is intended for the use of agencies concerned with nuclear weapons research and development. It is considered sensitive and access to it should be on a need-to-know basis. It should be referenced only to those on the distribution list.

ROBERT H. BOOTH
Major General, USA
Chief, DASA

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• One point safety experiment

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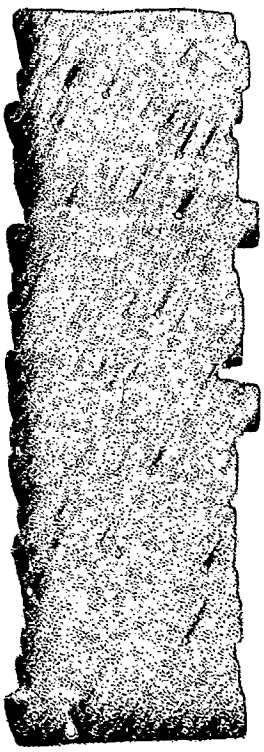
	HOOD		89	126
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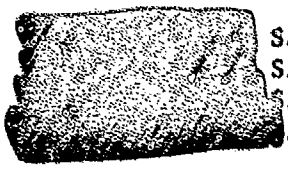
	PASCAL C		S.E. 11*	149
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* One point safety experiment

* One point safety experiment

* One point safety experiment

SECTION I

SUMMARY OF NUCLEAR TEST OPERATIONS

1-1. INTRODUCTION.

1-1.1 This section summarizes the objectives and results of the twenty operations conducted by the United States through 1958 involving the detonation of nuclear devices. The following paragraphs state the primary purpose of each operation and show the evolution of nuclear weapons through the successive test series. Each operation was a complex group of experiments all of which contributed to the attainment of an operation's objectives; however, not all of these experiments are mentioned in this section. The evolution of nuclear systems is depicted schematically in Section II where certain test events have been chosen as being representative of important milestones in the evolution of nuclear weapon developments.

1-2. TRINITY.

1-2.1 The intensive theoretical and experimental research activities of the Manhattan Project had indicated that the implosion principle of achieving a supercritical mass was feasible. By the end of 1944 an implosion system had been developed to the point where a full scale proof-test was desired. Such a device was detonated on a tower on the Alamogordo Bombing Range (Trinity Site) on July 16, 1945. Diagnostic and effects measurements were made.

1-3. WORLD WAR II OPERATIONAL DETONATIONS.

1-3.1 While the primary purpose for these detonations was not testing, the two nuclear detonations over Japan provided data and are included in this test summary to complete the listing of U. S. nuclear detonations.

1-3.2 HIROSHIMA, JAPAN. A gun assembled atomic bomb (LITTLE BOY) was detonated over Hiroshima, Japan, on 5 August 1945. While this detonation was primarily an operational employment of a nuclear weapon, it was also a proof test of the gun assembly principle. Post detonation observations made by U. S. and Japanese scientists provided much of the early knowledge of the effects of an atomic bomb.

1 3.3 NAGASAKI, JAPAN. An implosion-type atomic bomb designated the Mk 3A (FATMAN) was detonated over this city on 9 August 1945. This was a weaponized version of the device tested at the Trinity test. Effects data were obtained from post shot observations.

1-4. OPERATION CROSSROADS.

1-4.1 Three tests were planned for the summer of 1946 to obtain data on the effectiveness of a nuclear detonation against naval vessels. Data on the effects of an air burst and a shallow underwater detonation were obtained; however, the third shot, a deep underwater detonation, was cancelled due to the extensive damage to the target ships caused by the shallow underwater burst.

1-5. OPERATION SANDSTONE.

1-5.1 A test series consisting of four devices was planned for two purposes; [redacted] The success of the first three events proved both [redacted] As a result, the fourth shot was determined to be unnecessary and was cancelled.

1-6. OPERATION RANGER.

1-6.1 The purpose of this test series was to resolve questions concerning the theory of implosion bombs. The two principle questions studied were: [redacted] The tests were designed to answer these questions [redacted] By taking advantage of the different methods [redacted] separation of the effects in question could be made.

1-6.2 The successful detonation of the five devices in this test series proved [redacted] Some additional experiments were performed to study weapons effects, since the height of burst and yields were in a measure appropriate to tactical uses of small atomic weapons.

1-6.3 An additional result of the RANGER test series was to show the feasibility of conducting nuclear tests inside the continental limits of the United States.

1-7. OPERATION GREENHOUSE.

1-7.1 This was a series of four tests. [redacted]

1-7.2 [redacted] The ITEM device provided data on the use of DT reactions as a source of neutrons to enhance the yield of fission weapons (boosting).

1-8. OPERATION BUSTER-JANGLE

1-8.1 Operation BUSTER consisted of five nuclear detonations and one HE shot at the Nevada Proving Grounds during the fall of 1951.

The two JANGLE events were DOD sponsored effects tests. Effects data were obtained from the surface and shallow underground bursts of Operation JANGLE.

1-9. OPERATION TUMBLER-SNAPPER.

1-9.1 The TUMBLER-SNAPPER operation consisted of eight tests. The first three bombs were detonated at the request of the services.

1-9.2

1-9.3

1-10. OPERATION IVY.

1-10.1 [redacted] Thus, the IVY MIKE device was detonated to prove that radiation energy from a fission bomb would sufficiently compress a large mass of deuterium to sustain a thermonuclear burn. Numerous experiments were carried out to obtain data on the device's performance. This included the "Krause-Ogle" box, an 8 ft by 8 ft rubber lined, plywood box, about 9,000 ft long containing some 20,000 bottles of helium which acted as a "radiation pipe" to conduct neutrons and gamma radiation nearly unattenuated out to experiments located away from the expected fireball zone.

1-10.2 The second event of Operation IVY was [redacted] a high yield fission bomb.

1-11. OPERATION UPSHOT-KNOTHOLE.

1-11.1 During Operation UPSHOT-KNOTHOLE, 11 nuclear devices were fired to continue investigations in three general fields: (1) improvement of fission bombs, (2) determination of weapons effects, and (3) improvement of design of thermonuclear weapons.

1-11.2 [redacted]

1-11.3 UCRL (LRL) sponsored two devices in this operation with the objective of obtaining information [redacted]

1-11.4 Two effects shots were fired at Frenchman Flat. The ENCORE event, [redacted] at approximately 2625 ft above ground level, served as a source of blast, thermal radiation, etc., for a large number of effects measurements made by various agencies. The second effects test was a Mk 9 device fired from an atomic artillery piece. The main purpose

was to test the artillery-fired atomic projectile; however, many of the effects experiments performed during the ZUCCHINI event were repeated. Also, this test was the first opportunity for the laboratories to make diagnostic measurements

1-11.5 LASL sponsored three shots

1-12. OPERATION CASTLE.

1-12.1 The objectives of Operation CASTLE were threefold: (1) to fire some seven experimental devices, (2) to obtain that diagnostic information on these devices necessary to evaluate their performance in case of either success or failure; and (3) to obtain effects information for megaton-region devices.

1-12.2 At the beginning of the operation, the intention was to fire five devices designed by LASL: and two UCRL (LRL) devices. During the operation, observations were made which allowed cancellation of devices and the removal some from the schedule.

the third shot fired, combined with the success of the diagnostic measurements recorded with the shot, led to a belief that the shot would not be a valid experiment; therefore, the shot was cancelled.

1-12.3 The success of this operation proved that the design features of the devices tested were satisfactory. CASTLE also proved the feasibility of numerous techniques of instrumentation. Further, the technique of using barges as zero points from which to detonate the devices was shown to be both practical and essential to the CASTLE type operation as it allowed greater flexibility in the operation.

1-13. OPERATION TEAPOT.

1-13.1 In this operation, fourteen devices were fired to obtain information in three general categories: (1) to show the feasibility of new ideas applied to weapon design, (2) to continue the investigation of the effects of a nuclear detonation, and (3) to continue the development of research and diagnostic techniques.

1-13.2

1-13.3

1-13.4 Both civilian-and military-effects experiments were conducted on most of the TEAPOT detonations. The civilian-effects tests covered biological studies, blast measurements, radiation measurements, flying debris damage, civil-type structures and utilities studies, radiation defense training and instrument evaluation, and the effects on foodstuffs. DOD sponsored experiments conducted in conjunction with the developmental tests covered basic blast measurements over various surfaces (water, asphalt, and compacted sand), basic nuclear radiation measurements, effects on military structures and aircraft, evaluation of military instruments and basic thermal measurements. In addition, two tests were conducted for the express purpose of obtaining effects data. [redacted] was detonated at 36,000 feet to obtain data applicable to the employment of nuclear warheads in air-to-air missiles. A follow-on to the JANGLE subsurface burst was conducted as the ESS event. This event also utilized [redacted] to obtain an approximate 1 KT detonation at a depth of 67 feet underground.

1-13.5 In Operation TEAPOT, as in previous test series, a great amount of effort was put into instrument and technique development. The range of experiments in new techniques and instruments extended from the testing of simple burst-position locators, to the complicated measurement of a ten million degree temperature by direct observation. In the one case the instruments had an obvious use. In the other, the new technique could be applied to the diagnosis of future weapon design and in research. The range of experiments in research was equally wide and included investigations in nuclear and thermal radiation, biomedicine, structural design, radiation and shock hydrodynamics, the properties of materials at high temperature and many other fields.

1-14. OPERATION WIGWAM.

1-14.1 At the same time that Operation TEAPOT was being conducted at Nevada Test Site, Operation WIGWAM, consisting of the detonation of a 32 KT device at a depth of 2,000 ft in 16,000 ft of water, was conducted in the Pacific Ocean southwest of San Diego, California. The objectives of this operation were to determine: (1) the lethal range of a deeply detonated nuclear weapon for a typical well designed submarine, (2) the pressure-time field in water and in air resulting from such an explosion, (3) the safe range for a surface ship, (4) the fallout and contamination problems, and (5) the characteristics of any additional phenomena that might occur from such an event. Data were obtained which provided a better understanding of the phenomena of a deep underwater burst and gave partial answers to all of the primary objectives.

1-15. PROJECT 56.

1-15.1 In 1955 it became apparent that relatively large numbers of completely assembled

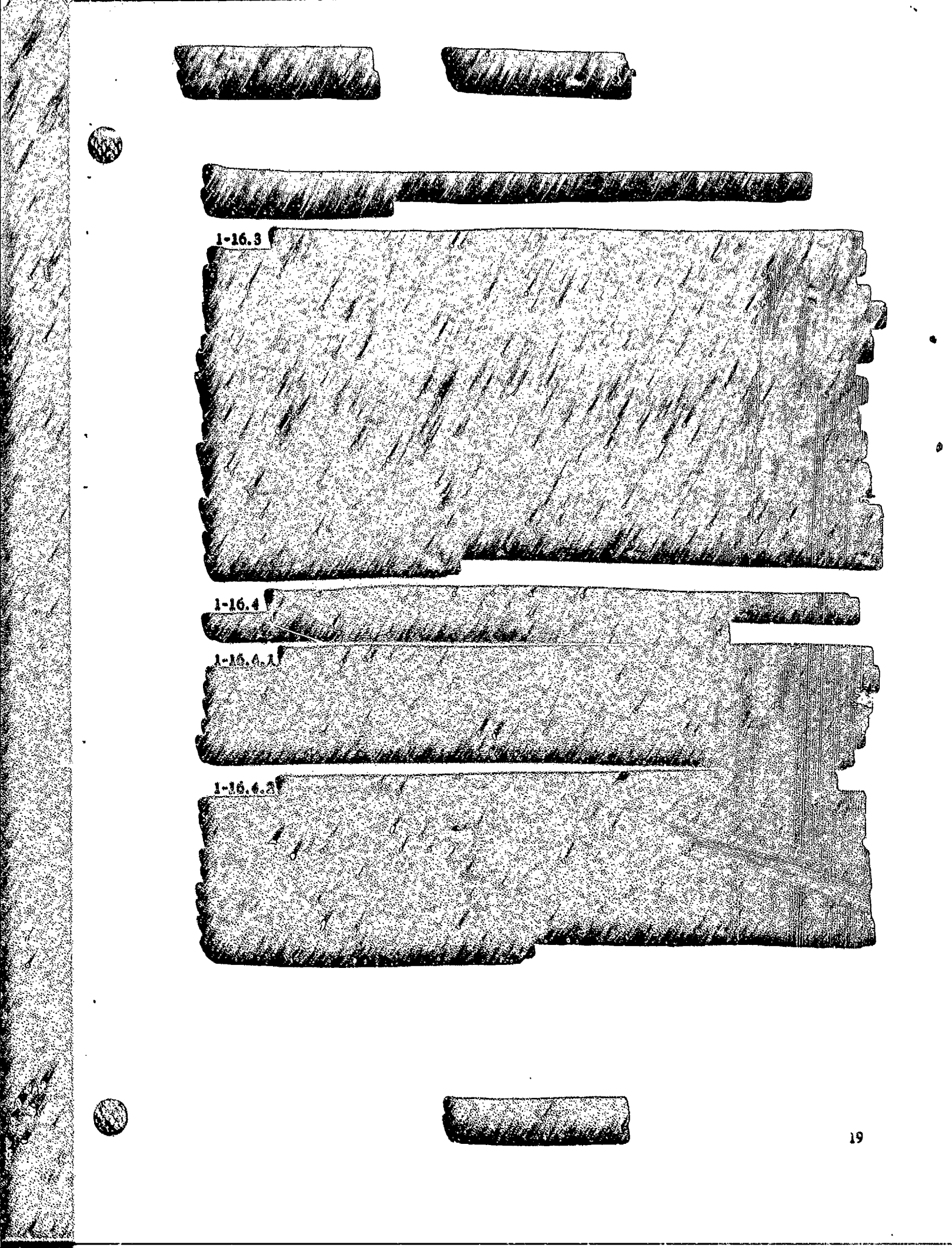
devices would be handled, transported, and stored and/or developed in locations which may be near centers of population. It was generally agreed that a device must be considered unsafe if a nuclear reaction in excess of a few pounds of HE equivalent should result from an accidentally induced detonation. It was further realized that actual (one-point) tests were necessary before the laboratory could certify that a nuclear system was one-point safe. Thus, the principal objective of the one-point detonation test (of PROJECT 56 and those to follow) was to determine the nuclear safety for the completely assembled devices as well as for models of a design similar to those which were tested. In order to make the safety tests of these devices under the most severe conditions, the following criteria were fulfilled: (1) a strong source of neutrons was provided, (2) the HE was positively detonated by means of a standard detonator, and (3) the active components of each of the devices were dimensionally increased to the extent that would ensure that war reserve weapons would not contain more active material than the test devices contain.

1-15.2 The decision was made to test one of each of four models;

1-16. OPERATION REDWING.

1-16.1 In Operation REDWING ten devices designed by LASL were fired. Some of these were proof tests of devices suitable as weapons for the stockpile, while others were experimental devices of a forward-locking nature which could be weaponized if their performance proved satisfactory. On each of these shots diagnostic experiments were made. In addition, many experiments were undertaken to obtain more precise understanding of the factors and physical processes which underlie nuclear weapon design and the effects that they produce.

1-16.2 In this connection


1-16.3
1-16.4
1-16.4.1
1-16.4.2

1-17. OPERATION PLUMBBOB.

1-17.1 Test Group 57. Although originally planned as a separate operation, it became apparent that PROJECT 57 would overlap the preparation for Operation PLUMBBOB; therefore, it was renamed Test Group 57 and made a formal part of PLUMBBOB. [redacted] device was one-point detonated for the purpose of studying the plutonium hazards from accidents. [redacted] The objectives were to estimate the immediate and long term distribution of plutonium and gain an understanding of how this distribution comes about, to conduct a biomedical evaluation of plutonium-laden environments, to investigate relevant methods of decontamination and to evaluate alpha field survey instruments and monitoring procedures.

1-17.1.1 The results show that field survey methods can be relied upon to delineate the areas contaminated by an accident, and that decontamination can be carried out successfully. Through analyses of collecting pans, the areas covered by significant levels of contamination were determined. These particular contours were only valid for the particular wind structure at the time of the shot; however, from these data, a basic fallout model was derived which permits extrapolation to other wind conditions. Air samplers indicated that high airborne concentrations of respirable plutonium were carried far downwind. However, the amount of plutonium picked up by animals exposed to the fallout did not seem excessive.

1-17.2 Operation PLUMBBOB had as its general purpose the testing of weapon models in various stages of development, and the conduct of experiments to increase knowledge of bomb design and performance. Several specific objectives can be distinguished, and although some of the test shots were aimed at several of them, most of the shots had a single objective.

1-17.2.1 One of the objectives was the proof testing of new weapon models whose designs have become relatively firm. Models of similar, although not necessarily identical, design had been tested in earlier operations. Examples in this category are [redacted] Usually in conjunction with these proof tests, large scale effects tests and other experiments were performed. These effects experiments were planned around the fairly certain expected yield of the bomb model used.

1-17.2.2 A second objective was safety testing. Models were detonated at one point and the nuclear performance was noted. Amounts of fissionable material in the models were varied greatly to bracket the maximum amount the system could contain and still be safe when detonated at one point. The designs tested were those for the [redacted]

1-17.2.3 A third objective was exploratory testing of models to clear up certain principles of designs. Relation of yield (or other criterion of performance) to a design parameter [redacted] was investigated over a wide range so that the optimum point could be found. The models used were usually not the contemplated final design. This was the objective for the [redacted] tests.

1-17.2.4 A fourth objective was the experimental determination of fundamental matters of

design interest which could be achieved only by exploding a device.

1-17.2.5 In many shots for which the primary objective was proof test or design parameter test, it was possible to do additional experimental work. Work was done on the

and on other subjects of design interest.

1-17.3 UCRL (LRL) detonated thirteen devices during Operation PLUMBBOB. Specific results included:

1-17.3.1 In addition to the nuclear weapon design concepts, one test, the RAINIER event, was devoted to investigating underground testing techniques and the containment of nuclear detonations.

1-18. PROJECT 58.

1-18.1 PROJECT 58 was a series of four one-point detonation tests to determine one-point safety of which were to be used in the HARDTACK series.

1-19. OPERATION HARDTACK PHASE I.

1-19.1 Phase I of Operation HARDTACK was conducted at the Pacific Proving Ground in the spring of 1958. It consisted of 34 shots, 29 of which were sponsored by the AEC laboratories Five events were DOD sponsored events to obtain nuclear burst

phenomena at high altitudes and underwater. The general objectives of the laboratories were to

1-19.2 In this series, LASL sponsored 15 devices

A one-point safety test was conducted in the SCAEVOLA event.

1-19.3 (UCRL) LRL sponsored 14 devices

Other weapons design data were obtained from specific tests.

1-19.4 The DOD high altitude shots were possibly the most important experiments conducted during HARDTACK. Three events (YUCCA, ORANGE, and TEAK) were fired at altitudes of 86,000, 141,000 and 252,000 feet, respectively. No previous shots had been made at these altitudes.

Most of the objectives were obtained, although the need for further investigations was evident. WAHOO and UMBRELLA provided additional data on the effects of nuclear detonations underwater at depths of 500 and 150 ft. respectively.

1-19.5 Operation HARDTACK was the most extensive test operation ever engaged in by the DOD. In general, the operation was successful, although there were some individual objectives which were not achieved. Knowledge of the effects of underwater and very low yield surface and near surface shots were vastly increased.

1-20. ARGUS EXPERIMENTS.

1-20.1 The ARGUS experiments, conducted by the Defense Atomic Support Agency (then the Armed Forces Weapons Project) in August and September 1958 under the overall management of the Advanced Research Projects Agency,

The experiments involved the detonation of three nuclear warheads

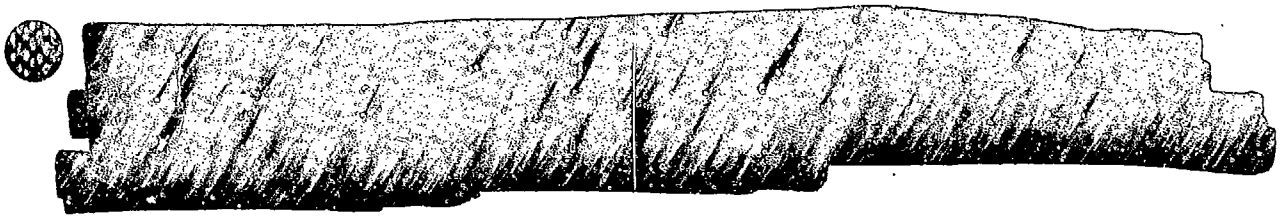
at altitudes of 85 to 400 nautical miles above the South Atlantic Ocean in the vicinity of latitudes 38 to 50 degrees south, longitudes 8 to 13 degrees west.

1-20.2 The objectives of the ARGUS experiments were achieved. Nuclear detonations were accomplished at altitudes [redacted] The sounding rockets obtained data [redacted] Stations of the ground instrumentation program generally obtained the data for which they were designed. From the results of the ARGUS experiments, the military implications and applications of nuclear detonations in the exosphere could be re-evaluated.

1-21. OPERATION HARDTACK PHASE II.

1-21.1 With the increasing prospects of a test moratorium being imposed, the laboratories conducted a rapid series of testing of small yield devices. LASL's objectives in this test series were [redacted]

1-21.2 UCRL (LRL) objectives were to test [redacted]



SECTION II

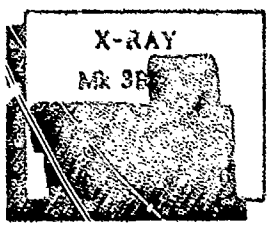
EVOLUTION OF NUCLEAR SYSTEMS DEVELOPMENT

2-1. INTRODUCTION.

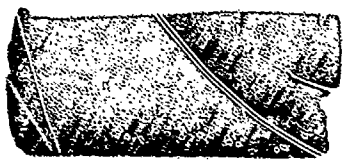
The two charts on the following pages depict the evolution of [redacted] nuclear systems development as a result of nuclear testing during the period 1945 - 1958. Code names for test series are shown in the year in which they were conducted. Although all tests have contributed to the design of developed systems, only the most significant have been selected as milestones in the evolution. Direct relationship is shown by a solid line whereas an indirect application of a principle is indicated by a dashed line. Standard weapon system nomenclature is used throughout to designate systems; i.e.:

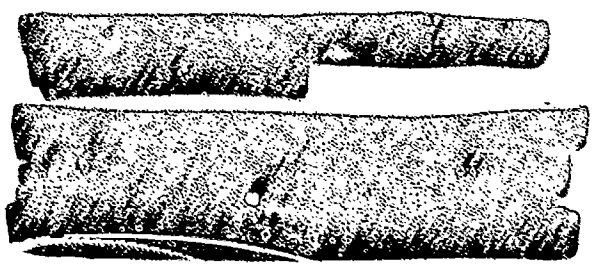
TX-	Bomb weapon system in development.
XW-	Warhead weapon system in development.
Mk	Bomb or warhead system in stockpile.
Y1	Yield version of a specific system.
-X1	Major modification during development.

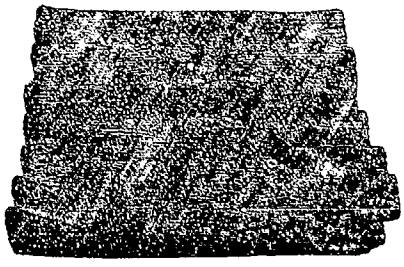
The following key of chart symbols is to be used in conjunction with the charts:



Rectangles are used to denote test shots. The first line (i.e., X-RAY) contains the code name for the shot and the second line (i.e., Mk 3B[redacted]) is the name of the device tested and in applicable cases the capsule designation. The last two lines give an indication of the significant principle tested. More detail on the purpose of a particular test shot is given in Section III of this test summary.





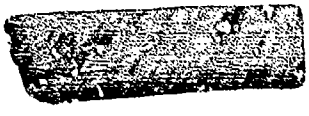


Hatched symbols denote systems that are no longer under development or weapons which have been retired from the stockpile.

Nuclear system symbols are located on the charts according to these criteria:

For systems that have been stockpiled (Mk): The year in which the earliest model of the system became operationally available.

For systems in development (TX- or XW-): The year in which it is expected that a future system will become operationally available or the year in which an obsolete system was cancelled prior to entry into stockpile.



1945	1948	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
TRINITY	SANDSTONE	RANGER GREENHOUSE	TUMBLER SNAPPER	UPSHOT KNOTHOLE		TEAPOT	REDWING	PLUMBBOB	HARDTACK					

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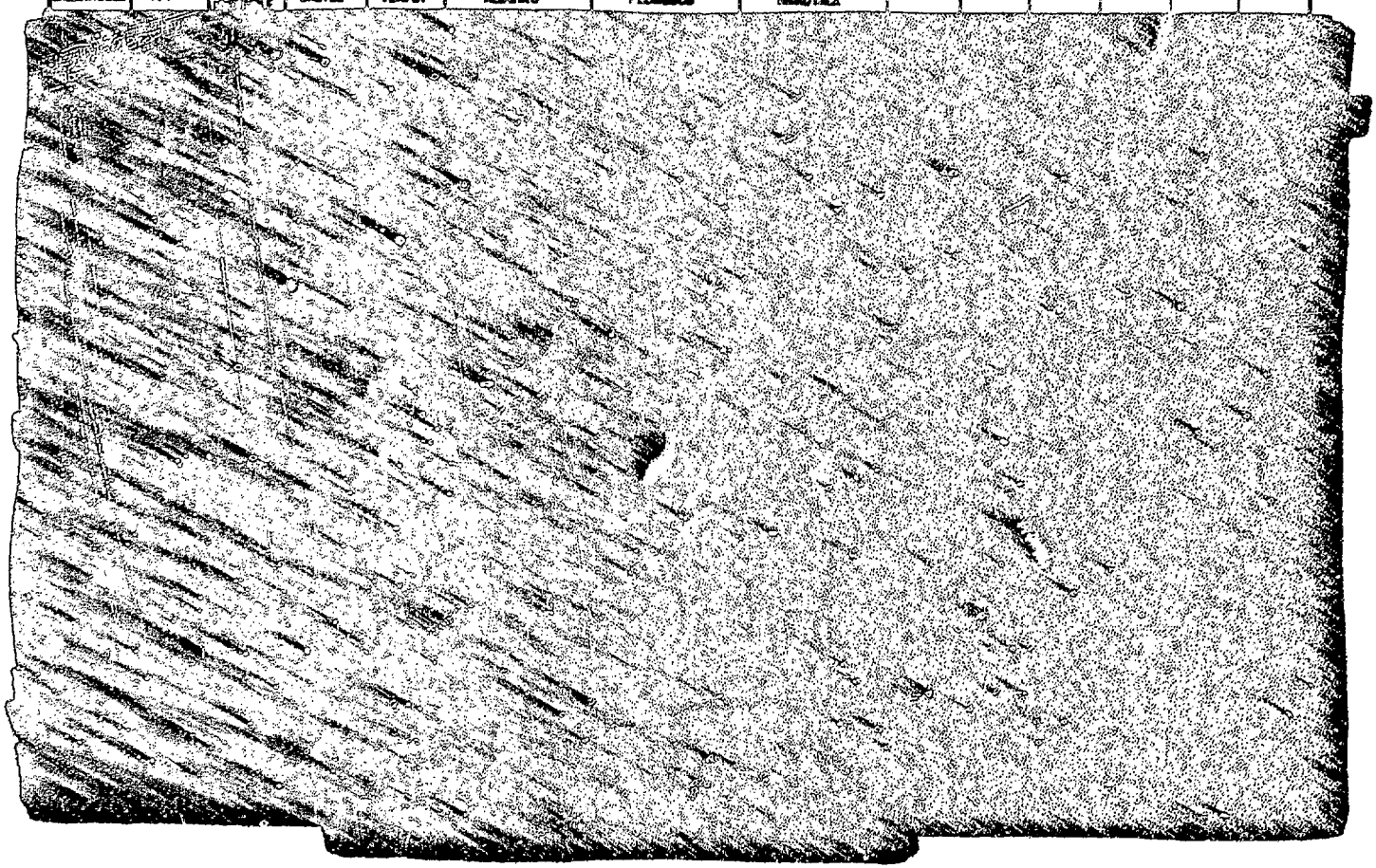
1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
GREENHOUSE	IVY	UPSHOT-KNOTHOLE	CASTLE	TEAPOT	REDWING	PLUMBBOB	HARDTACK						



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SECTION III

DATA ON INDIVIDUAL EVENTS

3-1. INTRODUCTION.

This section contains data on each nuclear device which has been detonated by the United States through the HARDTACK test series ending 30 October 1958. The data contained herein have been obtained informally from numerous sources and represent the best information available.

3-1.1 In the preparation of this section, certain conventionalisms were used to simplify the format. These are explained below.

3-1.1.1 Except where otherwise indicated, all plutonium is in the delta phase allotrope. Delta phase plutonium contains approximately one percent by weight of gallium to stabilize the plutonium in the delta allotrope at normal temperatures.

3-1.1.2 The oralloy, unless otherwise noted, is a nominal 93.5% enrichment in the isotope U-235.

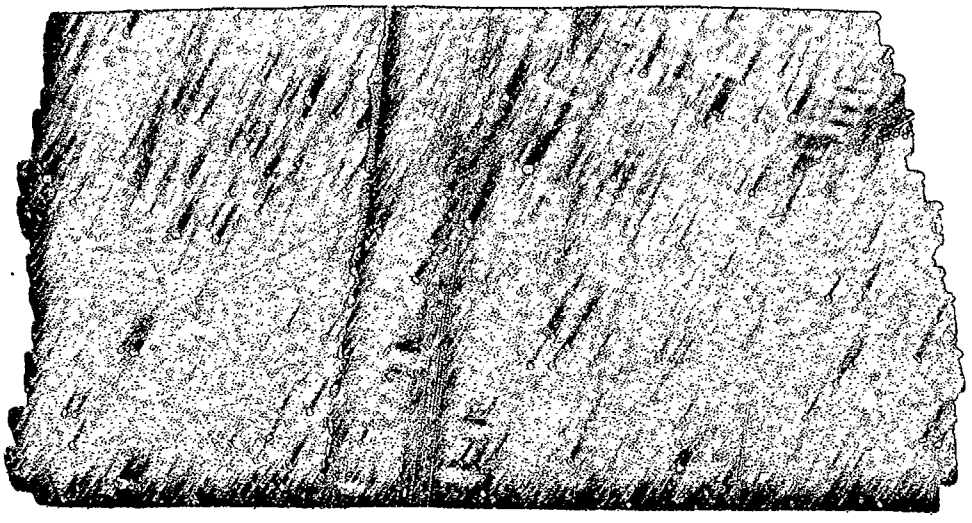
3-1.1.3 The lithium contained in Li^6D, Li^6H, etc., unless otherwise noted, is a nominal 95% enrichment in the isotope Li-6. The isotopic content of the natural lithium (Li^n) is about 7% Li-6.

3-1.1.4 [redacted]

3-1.1.5 [redacted]

SPONSOR: LASL
1229Z 16 Jul 1945
Trinity Site, Alamagordo Bomb Range, N. Mex.
Tower - height 100 ft.

SHOT NUMBER: 1
Trinity Shot
Implosion Device
Model 1561



H.E.:
Model 1561 design
Composition B and Baratol

DIMENSIONS: (Nuclear System)
Max. Dia. ~ 56 in.
Length ~ 66 in.
Weight ~ 7,600 lbs

YIELD:
Achieved 23 ± 3 KT

INITIATION: Urchin

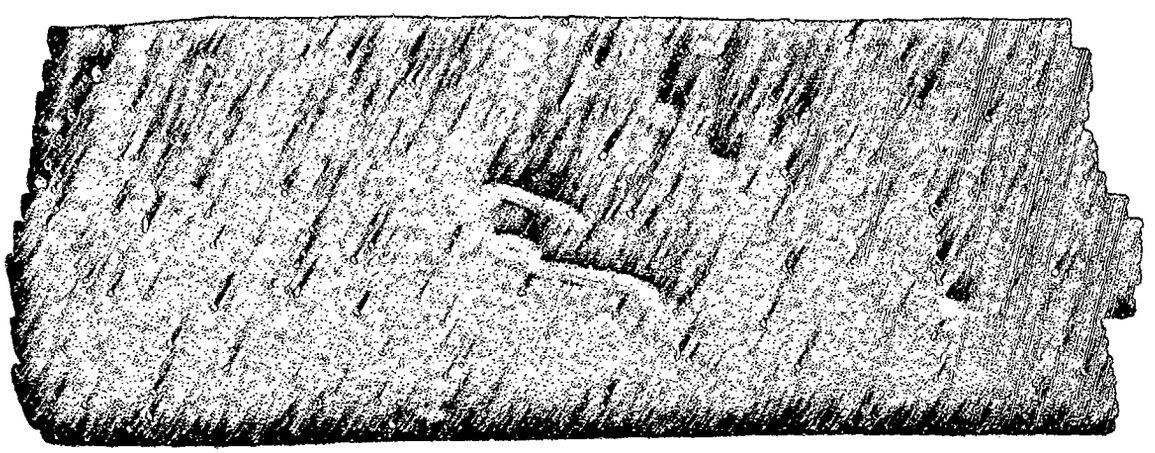
TOTAL DEVICE WEIGHT: ~ 10,000 lbs.

REMARKS: This was a proof test of the implosion principle for achieving a critical assembly.

SIGNIFICANCE: The implosion principle proved to be feasible. The 1561 HE system was weaponized for the NAGASAKI and CROSSROADS shots. Measurements were made of the blast and radiation effects.

SPONSOR: DA
2315Z 5 Aug 1945
Hiroshima, Japan
Air Drop - HOB ~ 1850 ft.

SHOT NUMBER 2
WW II Operational Drop
LITTLE BOY



H.E.:
Black powder, propellant

DIMENSIONS:
Max. Dia. 28 in.
Length 120 in.
Weight ~ 7,300 lbs (Nuclear System)

YIELD:

Achieved 13 KT

INITIATION: 4 Abner-Like

TOTAL DEVICE WEIGHT: 8900 lbs

REMARKS: This was the first detonation of a gun-type system and the first application of an atomic bomb in warfare.

SIGNIFICANCE: The gun-type principle of achieving criticality was proven; however, with a less efficient use of active material. About 60% of the target city was destroyed.

SPONSOR: DA
0153Z 9 Aug 1945
Nagasaki, Japan
Air Drop, HOB ~1850 ft.

SHOT NUMBER 3
WW II Operational Drop
FAT MAN

Deleted

Deleted

H.E.:
Model 1561 design
Composition B and Baratol

DIMENSIONS:
Max. Dia. 60.25 in.
Length 128 in.
Weight ~ 7,600 lbs (Nuclear System)

YIELD:
Achieved: ~23 ± KT

INITIATION: Urchin

TOTAL DEVICE WEIGHT: 10,300 lbs

REMARKS: This was the first combat use of an implosion-type weapon.

SIGNIFICANCE: Roughly 44% of Nagasaki was destroyed.

[redacted] [redacted]

SPONSOR: DOD
2201Z 30 Jun 1946
Bikini Atoll
Air Drop - HOB 520 ft.

SHOT NUMBER 4
CROSSROADS ABLE
[redacted]

Deleted

H.E.:
Model 1561 design
Composition B and Baratol
[redacted]

Deleted

DIMENSIONS:
[redacted]
Max. Dia. 60.25 in.
Length 128 in.
Weight ~ 7,600 lbs (Nuclear System)

YIELD:
[redacted]
Achieved: 23 ± 3 KT

INITIATION: Urchin

TOTAL DEVICE WEIGHT: ~ 10,300 lbs

REMARKS: This was a test to determine the effectiveness of an air burst of a nuclear weapon against naval vessels.

SIGNIFICANCE: Much effects data were obtained.

[redacted]

[redacted] [redacted]

SPONSOR: DOD
2135Z 24 Jul 1946
Bikini Atoll
Underwater depth 90 ft.

SHOT NUMBER 5
CROSSROADS BAKER
[redacted]

Deleted

H.E.:
Model 1561 design
Composition B and Baratol
[redacted]

Deleted

DIMENSIONS:
Nuclear System
[redacted]
Max. Dia. 56 in.
Length 66 in.
Weight ~ 7,600 lbs

YIELD:
[redacted]
Achieved: ~23 ± 3 KT

INITIATION: Urchin

TOTAL DEVICE WEIGHT: ~ 10,000 lbs

REMARKS: This was a test of the effects of a shallow underwater burst on naval vessels.

SIGNIFICANCE: Much effects data were obtained. The shot was so destructive that the scheduled deep underwater shot was cancelled.

[redacted]

[redacted] [redacted]

SPONSOR: LASL
1817Z 14 Apr 1948
Engebi (Janet) Eniwetok Atoll
Tower - height 200 ft.

SHOT NUMBER: 6
SANDSTONE X-ray
[redacted]

Deleted

H.E.:
[redacted]
Composition B and Baratol
[redacted]

Deleted

DIMENSIONS:
[redacted]
Max. Dia. 60.25 in.
Length 128 in.
Weight ~ 7,600 lbs (Nuclear System)

YIELD:
[redacted]
Achieved: 36 ± 4 KT

INITIATION: Urchin

TOTAL DEVICE WEIGHT: ~10,500 lbs

REMARKS:
[redacted]

SIGNIFICANCE: The shot was considered successful; [redacted] The success of this and the following two shots caused the cancellation of a fourth shot which was planned [redacted]

[redacted]

[redacted] [redacted]

SPONSOR: LASL
1809Z 30 Apr 1948
Aoman (Sally) Eniwetok
Tower - height 200 ft.

SHOT NUMBER: 7
SANDSTONE YOKE
[redacted]

Deleted

H.E.: [redacted]
Composition B and Baratol
[redacted]

Deleted

YIELD:
[redacted]
Achieved: 49 ± 5 KT

DIMENSIONS: [redacted]
Max. Dia. 60.25 in.
Length ~128 in.
Weight ~7,600 lbs (Nuclear System)

INITIATION: Urchin

TOTAL DEVICE WEIGHT: ~10,500 lbs

Deleted

[redacted]

[redacted]

SPONSOR: LASL
1804Z 14 May 1948
Runit (Yvonne) Eniwetok
Tower shot height 200 ft.

SHOT NUMBER: 8
SANDSTONE ZEBRA
[redacted]

Deleted

H.E.:
[redacted]
Composition B and Baratol
[redacted]

Deleted

DIMENSIONS:
[redacted]
Max. Dia. 60.25 in.
Length ~128 in.
Weight ~7,600 lbs (Nuclear System)

YIELD:
[redacted]
Achieved 16 ± 2 KT

INITIATION: Urchin

TOTAL DEVICE WEIGHT: ~10,500 lbs

REMARKS: This was a test of [redacted]

SIGNIFICANCE: The test proved the effectiveness [redacted]

[redacted]

SPONSOR: LASL
1345Z 27 Jan 1951
Frenchman Flat, Nevada Test Site
Air Drop - HOB 1,060 ft.

SHOT NUMBER: 9
RANGER ABLE

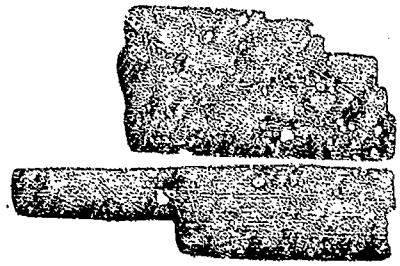
Deleted

H.E.:
Composition B and Baratol

Deleted

DIMENSIONS:

Max. Dia.	60 in.
Length	128 in.
Weight	~7,100 lbs.



TOTAL DEVICE WEIGHT: ~10,800 lbs

REMARKS:

SIGNIFICANCE: The successful operation of the device

[redacted] [redacted]

SPONSOR: LASL
1352Z 28 Jan 1951
Frenchman Flat, Nevada Test Site
Air Drop HOB 1,080 ft.

SHOT NUMBER: 10
RANGER BAKER I
[redacted]

Deleted

H.E.:
[redacted]
Composition B and Baratol
[redacted]

DIMENSIONS:
[redacted]
Max. Dia. 60 in.
Length 128 in.
Weight ~ 7,100 lbs (Nuclear System)

TOTAL DEVICE WEIGHT: ~10,800 lbs

Deleted

YIELD:
[redacted]
Achieved: 7.4 ± 1 KT

INITIATION: Tom

Deleted

SIGNIFICANCE: The yield was sufficiently close to the calculated value to indicate that the device performed about as expected. The Tom initiator operated satisfactorily.

[redacted]

[redacted] [redacted]

SPONSOR: LASL
1347 Z 1 Feb 1951
Frenchman Flat, Nevada Test Site
Air Drop HOB 1,080 ft.

SHOT NUMBER: 11
RANGER EASY
[redacted]

Deleted

H.E.:
[redacted]
Composition B and Baratol
[redacted]

Deleted

DIMENSIONS:
[redacted]
Max. Dia. 60 in.
Length 138 in.
Weight ~ 7,200 lbs (Nuclear System)

YIELD:
[redacted]
Achieved: 1 ± 0.1 KT

INITIATION: Tom

TOTAL DEVICE WEIGHT: ~10,800 lbs

[redacted]

SIGNIFICANCE: Data were obtained to add to the store of basic knowledge required for the effective design of nuclear weapons.

[redacted]

[redacted]

[redacted]

SPONSOR: LASL
1349Z 2 Feb 1951
Frenchman Flat, Nevada Test Site
Air Drop HOB 1,100 ft.

SHOT NUMBER: 12
RANGER BAKER II

[redacted]

Deleted

H.E.:

[redacted]

Composition B and Baratol

[redacted]

DIMENSIONS:

[redacted]

Max. Dia. 60 in.
Length 128 in.
Weight: ~ 7,100 lbs (Nuclear System)

Total Device Weight: ~10,800 lbs

Deleted

YIELD:

[redacted]

Achieved: 7.7 ± 1 KT

INITIATION: Tom

Deleted

[redacted]

[redacted]

SPONSOR: LASL
1347Z 6 Feb 1951
Frenchman Flat, Nevada Test Site
Air Drop HOB 1,435 ft.

SHOT NUMBER: 13
RANGER FOX

Deleted

H.E.:
Composition B and Baratol

Deleted

DIMENSIONS:
Max. Dia. 60 in.
Length 128 in.
Weight ~ 7,100 lbs

YIELD:
Achieved: 22 ± 2 KT

INITIATION: Tom

TOTAL DEVICE WEIGHT: ~10,800 lbs

[redacted] [redacted]

SPONSOR: LASL
1834Z 7 April 1951
Runit (Yvonne) Eniwetok
Tower - height 300 ft.

SHOT NUMBER: 14
GREENHOUSE DOG
[redacted]

Deleted

H.E.: [redacted]
Composition B and Baratol
[redacted]

Deleted

DIMENSIONS: [redacted]
Max. Dia. 60 in.
Length -
Weight ~ 7,100 lbs

YIELD: [redacted]

INITIATION: Tom

TOTAL DEVICE WEIGHT: ~10,000 lbs

[redacted]

SIGNIFICANCE: The test was successful, much design data were obtained.

[redacted]

[redacted] [redacted]

SPONSOR: LASL
1827Z 20 Apr 51
Engebi (Janet) Eniwetok
Tower - height 300 ft.

SHOT NUMBER: 15
GREENHOUSE EASY
[redacted]

Deleted

U.S. [redacted]
Combination II and Fakarofi

Deleted

DIMENSIONS:
[redacted]
Max. Dia. ~40 in.
Length ~ 50 in.
Weight ~ 2450 lbs (Nuclear System)

YIELD:
[redacted]
Achieved: 46 ± 3 KT

INITIATION: Urchin

TOTAL DEVICE WEIGHT: ~2700 lbs

REMARKS: [redacted] Effects tests were also conducted.

SIGNIFICANCE: The test was successful, proving the feasibility of reducing the size of weapons.

[redacted]

[redacted] [redacted]

SPONSOR: LASL
2130Z 8 May 1951
Tower - height 200 ft.

SHOT NUMBER: 16
GREENHOUSE GEORGE
[redacted]

Deleted

Deleted

H.E.:
[redacted]
Composition B and Baratol
[redacted]

Deleted

Deleted

Deleted

[redacted]

[redacted] [redacted]

SPONSOR: LASL
18172 24 May 1951
Engebi (Janet) Eniwetok
Tower - height 200 ft.

SHOT NUMBER: 17
GREENHOUSE ITEM
[redacted]

Deleted

Deleted

H.E.:

[redacted]
- Composition B and Baratol

Deleted

Deleted

Deleted

REMARKS: This was a test to determine the feasibility of using gas boosting as a means of obtaining higher yields.

SIGNIFICANCE: The device operated satisfactorily with a yield about twice the estimate unboosted yield.

[redacted]

[redacted] [redacted]

SPONSOR: LASL
1400Z 22 Oct 1951
Yucca Flat, Area 7, Nevada Test Site
Tower - height 100 ft.

SHOT NUMBER: 18
BUSTER ABLE
[redacted]

Deleted

H.E.:
[redacted]
Composition B and Baratol
[redacted]

Deleted

DIMENSIONS:
[redacted]
Max. Dia. 60 in.
Length -
Weight ~ 7,100 lbs

Deleted

TOTAL DEVICE WEIGHT: ~ 10,000 lbs

Deleted

[redacted]

[redacted] [redacted]

SPONSOR: LASL
1520Z 28 Oct 1951
Yucca Flat, Area 7, Nevada Test Site
Air Drop - HOB 1,118 ft.

SHOT NUMBER: 19
BUSTER BAKER
[redacted]

Deleted

H.E.:
[redacted]
Composition B and Paxolol
[redacted]

Deleted

DIMENSIONS:
[redacted]

Max. Dia.	60 in.
Length	128 in.
Weight	~ 7,100 lbs.

YIELD:
[redacted]
Achieved: 3.5 ± 0.3 KT

INITIATION: Tom

TOTAL DEVICE WEIGHT: 10,600 lbs

[redacted]

[redacted]

[redacted] [redacted]

SPONSOR: LASL
1500 Z 30 Oct 1951
Yucca Flat, Area 7, Nevada Test Site
Air Drop - HOB 1,132 ft.

SHOT NUMBER: 20
BUSTER CHARLIE
[redacted]

Deleted

H.E.:
[redacted]
Composition B and Baratol
[redacted]

Deleted

DIMENSIONS:

[redacted]
Max. Dia. 60 in.
Length 128 in.
Weight ~ 7,100 lbs.

YIELD:
[redacted]
Achieved: 16.0 ± 1 KT

INITIATION: Tom

TOTAL DEVICE WEIGHT: 10,800 lbs

[redacted]

[redacted]

[redacted]

[redacted] [redacted]

SPONSOR: LASL
1530 Z 1 Nov 1951
Yucca Flat, Area 7, Nevada Test Site
Air Drop - HOB 1,417 ft.

SHOT NUMBER: 21
BUSTER DOG
[redacted]

Deleted

H.E.:
[redacted]
Composition B and Boratol
[redacted]

Deleted

DIMENSIONS:
[redacted]
Max. Dia. 60 in.
Length 126 in.
Weight ~ 7,100 lbs

YIELD:
[redacted]
Achieved: 21 ± 1.5 KT

INITIATION: Tom

TOTAL DEVICE WEIGHT: ~10,800 lbs

[redacted]

[redacted]

[redacted] [redacted]

SPONSOR: LASL
1630Z 5 Nov 1951
Yucca Flat, Area 7, Nevada Test Site
Air Drop - HOB 1,314 ft.

SHOT NUMBER: 22
BUSTER EASY
[redacted]

Deleted

H.E.: [redacted]
Cyclotol 75/25, Composition B and Baratol
[redacted]

Deleted

DIMENSIONS: [redacted]
Max. Dia. 30 in.
Length ~183 in.
Weight ~800 lbs (Nuclear System)

YIELD: [redacted]
Achieved: 31.0 ± 2 KT

INITIATION: Tom

TOTAL DEVICE WEIGHT: ~1,800 lbs

[redacted]

SIGNIFICANCE: The test was successful, [redacted]

[redacted]

[redacted] [redacted]

SPONSOR: DOD
1700Z 19 Nov 1951
Yucca Flats, Nevada Test Site
Surface Burst - on 3-1/2 ft. platform

SHOT NUMBER: 23
[redacted]

Deleted

H.E.: [redacted]
Composition B and Baratol
[redacted]

Deleted

DIMENSIONS: [redacted]
Max. Dia. 60 in.
Length ~90 in.
Weight ~7,100 lbs

YIELD: [redacted]
Achieved: 1.2 KT
[redacted]

TOTAL DEVICE WEIGHT: ~10,000 lbs

REMARKS: This was a DOD sponsored test to determine the effects of a surface burst. A [redacted]

SIGNIFICANCE: Data were obtained to add to the store of weapon effects knowledge.

[redacted]

SPONSOR: DOD
2000Z 29 Nov 1951
Yucca Flat, Area 10, Nevada Test Site
Underground Burst - depth 17 ft.

SHOT NUMBER: 24
JANGLE UNCLE

Deleted

H.E.:
Composition B and Baratol

Deleted

DIMENSIONS:
Max. Dia. 60 in.
Length ~ 90 in.
Weight ~ 7,100 lbs

YIELD:
Achieved: 1.2 KT

TOTAL DEVICE WEIGHT: ~ 10,000 lbs

REMARKS: This was a DOD sponsored test to determine the effects of a shallow underground burst.

SIGNIFICANCE: Weapons effects data were obtained.

[redacted] [redacted]

SPONSOR: DOD/LASL
1700Z 1 Apr 1952
Frenchman Flat, Nevada Test Site
Air Drop - HOB 793 ft.

SHOT NUMBER: 25
TUMBLER I
[redacted]

Deleted

H.E.: [redacted]
Composition B and Baratol
[redacted]

Deleted

DIMENSIONS: [redacted]
Max. Dia. 60 in.
Length 128 in.
Weight ~ 7,000 lbs (Nuclear System)

YIELD: [redacted]
Achieved: 1.05 ± 0.1 KT
[redacted]

TOTAL DEVICE WEIGHT: ~10,800 lbs

REMARKS: This was one of a series of tests requested by the DOD to study the effects of terrain on blast phenomena. This bomb was detonated over a hard dry surface. [redacted]

SIGNIFICANCE: Effects data were obtained. In addition, data pertaining to weapon characteristics were obtained by the laboratories.

[redacted]

[redacted]

SPONSOR: DOD/LASL
1730Z 15 Apr 52
Yucca Flat, Area 7, Nevada Test Site
Air Drop - HOB 1109 ft.

SHOT NUMBER: 26
TUMBLER II
[redacted]

Deleted

H.E.:
[redacted]
Composition B and Baratol
[redacted]

Deleted

DIMENSIONS:
[redacted]
Max. Dia. 60 in.
Length 128 in.
Weight ~ 7,000 lbs (Nuclear System)

YIELD:
[redacted]
Achieved: 1.17 ± 0.1 KT

[redacted]

TOTAL DEVICE WEIGHT: ~10,500 lbs

REMARKS: This was the second of a series of tests requested by the DOD to determine the effect of terrain on blast phenomena. This shot was fired over the rough dusty surface used during BUSTER JANGLE. [redacted]

SIGNIFICANCE: Effects and diagnostic data were obtained. By comparison of TUMBLER I and TUMBLER II it was concluded that weapons effects are only slightly dependent on the terrain over which the weapons are detonated.

[redacted]

SPONSOR: DOD/LASL
1730Z 22 Apr 52
Yucca Flat, Area 7, Nevada Test Site
Air Drop - HOB 3447 ft.

SHOT NUMBER: 27
TUMBLER III

Deleted

H.E.:
Comp.B and Baratol

Deleted

DIMENSION:
Max. Dia. 60 in.
Length 128 in.
Weight ~7,100 lbs (Nuclear System)

YIELD:
Achieved: 30 ± 2 KT

INITIATION: Tom

TOTAL DEVICE WEIGHT: 10,440 lbs

REMARKS: This was the third of a series of tests requested by the DOD to determine the effect of terrain on blast phenomena. This shot was fired over the rough dusty surface used during BUSTER JANGLE.

SIGNIFICANCE: Effects data were obtained

SPONSOR: LASL/DOD
1630Z 1 May 52
Yucca Flat, Area 7, Nevada Test Site
Air Drop - HOB 1040 ft.

SHOT NUMBER: 28
TUMBLER IV/SNAPPER 1

Deleted

H.E.:
Cyclotol, Composition B and Cyclotol 75/25

Deleted

DIMENSIONS:
Max. Dia. 30 in.
Length ~ 183 in.
Weight ~ 800 lbs (Nuclear System)

YIELD:
Achieved: 18.5 ± 1 KT

INITIATION: Tom

TOTAL DEVICE WEIGHT: 1770 lbs

REMARKS: This shot was requested by LASL

Deleted

Deleted

[redacted] [redacted]

SPONSOR: LASL
1215Z 7 May 1952
Yucca Flat, Area 1, Nevada Test Site
Tower shot - height 300 ft.

SHOT NUMBER: 29
SNAPPER [redacted]

Deleted

Deleted

H.E.: [redacted]
Composition B, Cyclotol 75/25 and Baratol

DIMENSIONS: [redacted]
Max. Dia.: 25 in.
Weight ~ 550 lbs

YIELD: [redacted]
Achieved: 12.5 ± 1 KT

INITIATION: Tom

TOTAL DEVICE WEIGHT: 625 lbs

[redacted]

[redacted]

[redacted] [redacted]

SPONSOR: LASL
1200 Z 25 May 1952
Yucca Flat, Area 4, Nevada Test Site
Tower shot - height 300 ft.

SHOT NUMBER: 30
SNAPPER [redacted]

Deleted

H.E.: [redacted]
Composition B and Baratol
[redacted]

DIMENSIONS: (Nuclear System) [redacted]
Max. Dia. ~40 in.
Length ~50 in.
Weight ~2,450 lbs

Deleted

YIELD: [redacted]
Achieved: 11.5 ± 1 KT

INITIATION: Tom

TOTAL DEVICE WEIGHT: 2700 lbs

[redacted]

[redacted]

SPONSOR: LASL
1155Z 1 Jun 1952
Yucca Flat, Area 3, Nevada Test Site
Tower Shot - height 300 ft.

SHOT NUMBER: 31
SNAPPER:

Deleted

Deleted

H.E.:
Composition B and Baratol

DIMENSIONS (Nuclear System)
Max. Dia. ~ 40 in.
Length ~ 50 in.
Weight ~ 2,450 lbs

YIELD:
Achieved: 15.8 ± 1.5 KT

TOTAL DEVICE WEIGHT: ~ 2,700 lbs

Deleted

SPONSOR: LASL
11352 5 jun 1952
Yucca Flat, Area 2, Nevada Test Site
Tower Shot - height 300 ft.

SHOT NUMBER: 32
SNAPPER [redacted]

Deleted

Deleted

H.E.: [redacted]
Composition B, Cyclotol 75/25

DIMENSIONS: [redacted]
Dia. [redacted] in.
Weight ~ 470 lbs (Nuclear System)

YIELD: [redacted]
Achieved: 13.9 KT

INITIATION: Tom

TOTAL DEVICE WEIGHT: ~500 lbs

Deleted

[redacted] [redacted]

SPONSOR: LASL
1915Z 31 Oct 1952
Elugelap (Flora) Eniwetok Atoll
Surface Shot - height 20 ft.

SHOT NUMBER: 33
IVY MIKE
[redacted]

Deleted

H.E.:
[redacted]
Comp. Alfrol B and Boracitol
[redacted]

Deleted

DIMENSIONS:
[redacted]
Max. Dia. 80 in.
Length 244 in.

YIELD:
[redacted]
Achieved: 10.4 ± 0.5 MT
[redacted]

INITIATION: Urchin

TOTAL DEVICE WEIGHT: ~ 164,000 lbs

REMARKS: This was a shot to test, by actual detonation, the theory of design for a thermonuclear reaction on a large scale.

SIGNIFICANCE: The device performed successfully and the data gained were applied to the designing and testing of thermonuclear weapons.

[redacted]

SPONSOR: LASL
2330Z 15 Nov 1952
Runit Island (Yvonne) Eniwetok
Air Drop HOB 1480 ft.

SHOT NUMBER: 34
IVY KING

Deleted

H.E.:
Composition B and Baratol

Deleted

DIMENSIONS:
Max. Dia. 60 in.
Length 128 in.

YIELD:
Achieved: 540 ± 25 KT

INITIATION: Tom

TOTAL DEVICE WEIGHT: ~ 8,600 lbs

SPONSOR: LASL
1320Z 17 Mar 1953
Yucca Flat, Area 3, Nevada Test Site
Tower Shot - height 300 ft.

SHOT NUMBER: 35
UPSHOT-KNOTHOLE ANNIE

Deleted

Deleted

H.E.:
Composition B and Baratol

DIMENSIONS: (Nuclear System)
Max. Dia. 40 in.
Length ~ 50 in.
Weight ~ 2,450 lbs

YIELD:
Achieved: 17.1 KT

TOTAL DEVICE WEIGHT: 2,700 lbs

Deleted

[redacted] [redacted]

SPONSOR: LASL
1310Z 24 Mar 53
Yucca Flat, Area 3, Nevada Test Site
Tower Shot - height 300 ft.

SHOT NUMBER: 36
UPSHOT-KNOTHOLE NANCY
[redacted]

Deleted

H.E.: [redacted]
Cyclotol 80/20 and Boracitol
[redacted]

Deleted

DIMENSIONS: [redacted]
Max. Dia. 35.4 in.
Length 122 in.

YIELD: [redacted]
Achieved: 24 + 1 KT
[redacted]

INITIATION: Tom

TOTAL WEIGHT: ~11,000 lbs

Deleted

Deleted

[redacted]

[redacted]

[redacted]

SPONSOR: UCRL (LRL)
1300Z 31 Mar 1953
Yucca Flat, Area 5, Nevada Test Site
Tower shot - height 300 ft.

SHOT NUMBER: 37
UPSHOT-KNOTHOLE RUTH
[redacted]

Deleted

Deleted

H.E.:
[redacted]
Composition B and Baratol
[redacted]

DIMENSIONS:
[redacted]
Max. Dia. 56 in.
Length 66 in.
Weight ~ 6750 lbs

YIELD:
[redacted]
Achieved: 0.20 ± 0.01 KT

TOTAL DEVICE WEIGHT: ~ 7,400 lbs

[redacted]

Deleted

[redacted]

[redacted]

SPONSOR: LASL
1530Z 6 Apr 1953
Yucca Flat, Area 7, Nevada Test Site
Air Drop - HOB 6,020 ft.

SHOT NUMBER: 38
UPSHOT-KNOTHOLE DIXIE
[redacted]

Deleted

Deleted

H.E.:
[redacted]
Composition B and Baratol
[redacted]

DIMENSIONS:
[redacted]
Max. Dia. 60 in.
Length 128 in.
Weight ~ 2400 lbs (Nuclear System)

YIELD:
[redacted]
Achieved: 10.5 ± 1 KT

TOTAL DEVICE WEIGHT: 3,260 lbs

Deleted

Deleted

[redacted]

[redacted]

[redacted]

SPONSOR: UCRL (LRL)
1245Z 11 Apr 1953
Yucca Flat, Area 4, Nevada Test Site
Tower shot - Height, 100 ft.

SHOT NUMBER: 39
UPSHOT-KNOTHOLE RAY

[redacted]

Deleted

Deleted

H.E.:
[redacted]
Composition B and Baratol
[redacted]

DIMENSIONS:
[redacted]
Max. Dia. 56 in.
Weight ~ 6750 lbs.

YIELD:
[redacted]
Achieved: 0.21 ± 0.01 KT
[redacted]

TOTAL DEVICE WEIGHT: 7,400 lbs

[redacted]

SIGNIFICANCE: Predicted and measured yields were in general agreement.

[redacted]

[redacted]

SPONSOR: LASL
1235Z 18 Apr 1953
Yucca Flat, Area 2, Nevada Test Site
Tower shot - Height 300 ft.

SHOT NUMBER: 40
UPSHOT-KNOTHOLE BADGER
[redacted]

Deleted

Deleted

H.E.:
[redacted]
Composition B and Baratol
[redacted]

DIMENSIONS:
[redacted]
Max. Dia. 56 in.
Weight ~ 6750 lbs

YIELD:
[redacted]
Achieved: 23 ± 2 KT

INITIATION: Tom

TOTAL DEVICE WEIGHT: 7,400 lbs

Deleted

[redacted]

[redacted]

[redacted]

SPONSOR: LASL
1230Z 25 Apr 1953
Yucca Flat, Area 1, Nevada Test Site
Tower Shot - Height 300 ft.

SHOT NUMBER: 41
UPSHOT-KNOTHOLE SIMON

[redacted]

Deleted

Deleted

H.E.:
[redacted]
Cyclotol and Boracitol
[redacted]

DIMENSIONS:
[redacted]
Max. Dia. 35.4 in.
Length
215 in. total length

YIELD:
[redacted]
Achieved: 45 ± 1 KT

INITIATION: Tom

TOTAL DEVICE WEIGHT: ~11,000 lbs

Deleted

[redacted]

[redacted]

SPONSOR: LASL/DOD
1530Z 8 May 1953
Frenchman Flat, Nevada Test Site
Air Drop - HOB 2425 ft.

SHOT NUMBER: 42
UPSHOT-KNOTHOLE ENCORE
[redacted]

Deleted

H.E.:
[redacted]
Composition B and Baratol
[redacted]

Deleted

DIMENSIONS:
[redacted]
Max. Dia. 60 in.
Length 128 in.
Weight ~ 7000 lbs

YIELD:
[redacted]
Achieved: 26 ± 2 KT

[redacted]

TOTAL DEVICE WEIGHT: 8,330 lbs

REMARKS: The purpose of this shot was to [redacted] of specific interest to the DOD. A [redacted]

SIGNIFICANCE: [redacted] data were obtained.

[redacted]

[redacted]

[redacted]

SPONSOR: LASL
1205Z 19 May 1953
Yucca Flat,Area 3, Nevada Test Site
Tower Shot - Height 300 ft.

SHOT NUMBER: 43
UPSHOT-KNOTHOLE HARRY
[redacted]

Deleted

H.E.:
[redacted]
Composition B and Baratol
[redacted]

Deleted

DIMENSIONS:
[redacted]
Max. Dia. 56 in.
Length 66 in.
Weight ~ 7000 lbs

YIELD:
[redacted]
Achieved: 32.3 KT

INITIATION: [redacted]

TOTAL DEVICE WEIGHT: 8,000 lbs

Deleted

Deleted

[redacted]

SPONSOR: LASL
1330Z 25 May 1953
Frenchman Flat, Nevada Test Site
Air Burst - HOB 524 ft.

SHOT NUMBER: 44
UPSHOT-KNOTHOLE GRABLE
Mk 9

Deleted

H.E.: Deleted propellant

DIMENSIONS:
Max. Dia. 11.01 in.
Length 54.8 in.
Weight ~602 lbs

YIELD: Deleted
Achieved: 15 ± 1 KT

INITIATION: 2 Squibs

REMARKS: This was a proof test of the Mk 9 gun assembled artillery fired atomic projectile. It also was the first opportunity for the laboratories to make measurements of alpha and yield on an actual detonation of a gun type weapon.

SIGNIFICANCE: The device operated successfully, resulting in the stockpiling of the Mk 9. Effects and diagnostic data were also obtained.

SPONSOR: LASL
1115Z 4 Jun 1953
Yucca Flat, Area 7, Nevada Test Site
Air Drop - HOB 1334 ft.

SHOT NUMBER: 45
UPSHOT-KNOTHOLE CLIMAX

Deleted

H.E.:
Composition B, Baratol and Cyclotol 75/25

DIMENSIONS:
Max. Dia. 30.5 in.
Length 183 in.
Weight ~ 900 lbs (Nuclear System)

Deleted

YIELD:
Achieved: 60 ± 3 KT

TOTAL DEVICE WEIGHT: 1840 lbs

Deleted

SIGNIFICANCE: The device functioned satisfactorily, providing the required data.

Deleted

SPONSOR: LASL
1845Z 28 Feb 1954
Namu (Charlie) Bikini
Surface (Cab) Shot

SHOT NUMBER: 46
CASTLE BRAVO

Deleted

H.E.:
Composition B, Boracitol and Cyclotol 75/25

Deleted

DIMENSIONS:
Max. Dia. 53.9 in.
Length 179.5 in.

YIELD:
Achieved: 15 + 0.7 MT

INITIATION:

TOTAL DEVICE WEIGHT: 23,500 lbs

SIGNIFICANCE: This test was extremely successful;

Deleted

SPONSOR: LASL
1830Z 26 Mar 1954
Nanu (Charlie) Bikini
Surface (Barge) Shot

SHOT NUMBER: 47
CASTLE ROMEO

Deleted

H.E.:
Composition B, Pentaerythritol and Cyclotol 75/25

Deleted

DIMENSIONS:
Max. Dia. 61.4 in.
Length 224.9 in.

YIELD:
Achieved: 11 + 0.5 MT

INITIATION:

TOTAL DEVICE WEIGHT: 39,600 lbs

Deleted

SIGNIFICANCE: The success of this shot

Deleted

SPONSOR: UCRL (LRL)
1820Z 6 Apr 1954
Eninman (Tare) Bikini Atoll
Surface Shot

SHOT NUMBER: 48
CASTLE KOON

Deleted

Deleted

H.E.:
Borazitol and Cyclotol

DIMENSIONS:

Max. Dia.	56.4 in.
Length	115.9 in.
Weight	23,000 lbs

YIELD:
Achieved: 150 + 10 KT

INITIATION:

Deleted

Deleted

SPONSOR: LASL
1810 Z 25 Apr 1954
6900 ft. south of Yurochi (Dog) Bikini Atoll
Surface (Barge) Shot

SHOT NUMBER: 10
CASTLE UNION

Deleted

H.E.:
Boracitol, Composition B and Cyclotol 75/25

Deleted

DIMENSIONS:
Max. Dia. 61.4 in.
Length 135 in. (nuclear system)
151 in. overall

YIELD:
Achieved: 7 ± 0.3 MT

INITIATION:

TOTAL DEVICE WEIGHT: 27,700 lbs

Deleted

Deleted

[redacted] [redacted]

SPONSOR: LASL
1810Z 4 May 1954
6900 ft. south of Yurochi (Dog) Bikini Atoll
Surface (Barge) Shot

SHOT NUMBER: 50
CASTLE YANKEE
[redacted]

Deleted

H.E.:
[redacted]
Tritonal, Composition B, and Cyclotol 75/25

Deleted

DIMENSIONS:
[redacted]
Max. Dia. 61 in.
Length 225 in.

YIELD:
[redacted]
Achieved: 13.5 ± 1 MT
[redacted]

INITIATION: [redacted]

TOTAL DEVICE WEIGHT: 39,600 lbs

Deleted

Deleted

[redacted]

[redacted] [redacted]

SPONSOR: LASL
1820Z 13 May 1954
Mike Crater off Teituripucchi (Gene) Eniwetok Atoll
Surface (Barge) Shot

SHOT NUMBER: 51
CASTLE NECTAR
[redacted]

Deleted

H.E.:
[redacted]
Boracitol and Cyclotol
[redacted]

Deleted

DIMENSIONS:
[redacted]
Max. Dia. 34 in.
Length 110 in.

YIELD:
[redacted]
Achieved: 1.7 ± 0.3 MT
[redacted]

INITIATION: [redacted]

TOTAL DEVICE WEIGHT: 6,520 lbs

Deleted

SIGNIFICANCE: The device performed about as expected, proving that thermonuclear weapons in this weight range were feasible.

[redacted]

[redacted] [redacted]

SPONSOR: LASL
2000Z 18 Feb 1955
Yucca Flat, Area 7, Nevada Test Site
Air Drop HOB 762 ft.

SHOT NUMBER: 52
TEAPOT WASP
[redacted]

Deleted

H.E.:
[redacted]
Borcitol, Composition B and Cyclotol 75/25
[redacted]

Deleted

DIMENSIONS:
[redacted]
Max Dia. 22 in.
Weight ~ 120 lbs (Nuclear System)

YIELD:
[redacted]
Achieved: 1.2 ± 0.06 KT

INITIATION: [redacted]

TOTAL DEVICE WEIGHT: 1,500 lbs

Deleted

Deleted

[redacted]

[redacted] [redacted]

SPONSOR: LASL
1345Z 22 Feb 1955
Yucca Flat, Area 3, Nevada Test Site
Tower Shot - Height 300 ft.

SHOT NUMBER: 53
TEAPOT MOTH
[redacted]

Deleted

Deleted

H.E.:
[redacted]
Composition B, Baratol and Cyclotol 75/25
[redacted]

DIMENSIONS:
[redacted]
Max. Dia. ~ 23 in.
Weight ~ 375 lbs (Nuclear System)

YIELD:
[redacted]
Achieved: 2.4 ± 0.2 KT

INITIATION: ENS

TOTAL DEVICE WEIGHT: ~ 445 lbs

Deleted

Deleted

[redacted]

[redacted] [redacted]

SPONSOR: UCRL (LRL)
1330Z 1 Mar 1955
Yucca Flat, Area 9, Nevada Test Site
Tower Shot - Height 300 ft.

SHOT NUMBER: 54
TEAPOT TESLA
[redacted]

Deleted

Deleted

H.E.:
[redacted]
Cyclotol 75/25
[redacted]

DIMENSIONS:
Max. Dia. 10 in.
Length 39.5 in.
Weight ~ 785 lbs

YIELD:
[redacted]
Achieved: 5.8 ± 0.3 KT

INITIATION: Zippers

Deleted

SIGNIFICANCE: The device functioned well.

Deleted

[redacted]

[redacted] [redacted]

SPONSOR: UCRL (LRL)
1320Z 7 Mar 1955
Yucca Flat, Area 2, Nevada Test Site
Tower Shot Height 500 ft.

SHOT NUMBER: 55
TEAPOT TURK
[redacted]

Deleted

Deleted

H.E.: [redacted]
Boracitol, Composition B and Cyclotol
[redacted]

DIMENSIONS: [redacted]

Max. Dia.	30.5 in.
Length	61.3 in.
Weight	2525 lbs

YIELD: [redacted]
Achieved: 44 ± 2 KT

INITIATION: [redacted]

Deleted

SIGNIFICANCE: The device operated satisfactorily

Deleted

[redacted]

SPONSOR: LASL
1320Z 12 Mar 1955
Yucca Flat, Area 3A, Nevada Test Site
Tower Shot Height 300 ft.

SHOT NUMBER: 56
TEAPOT HORNET

Deleted

H.E.:
Baratol, Composition B and Cyclotol 75/25

Deleted

DIMENSIONS:
Max. Dia. ~23 in.
Weight ~460 lbs (Nuclear System)

YIELD:
Achieved: 3.6 ± 0.24 KT

INITIATION: Zipper

TOTAL DEVICE WEIGHT: ~500 lbs

Deleted

SIGNIFICANCE: The device operated successfully

Deleted

[redacted] [redacted]

SPONSOR: LASL
1305Z 22 Mar 1955
Yucca Flat, Area 7, Nevada Test Site
Tower Shot Height 500 ft.

SHOT NUMBER: 57
TEAPOT BEE
[redacted]

Deleted

Deleted

H.E.:
[redacted]
Pentolite, Composition B, Cyclotol 75/25
[redacted]

DIMENSIONS:
[redacted]
Max. Dia. ~ 17 in.
Weight: ~ 130 lbs

YIELD:
[redacted]
Achieved: 8 ± 0.4 KT

INITIATION: [redacted]

Deleted

SIGNIFICANCE: The device operated properly

Deleted

[redacted]

SPONSOR: DOD/LASL
2030Z 23 Mar 1955
Yucca Flat, Area 10, Nevada Test Site
Underground Depth 67 ft.

SHOT NUMBER: 58
TEAPOT ESS

Deleted

H.E.:
Pentaerythritol and Composition B

Deleted

DIMENSIONS:
Max. Dia. 60 in.
Length ~ 80 in.
Weight ~ 7,000 lbs (Nuclear System)

YIELD:
Estimated
Achieved: 1.3 ± 0.2 KT

INITIATION: Tom

TOTAL DEVICE WEIGHT: ~8,000 lbs

REMARKS: This was a test to obtain additional information on cratering as related to TNT-nuclear scaling and on the radiological fallout pattern resulting from a deep underground burst. The detonation was made at nearly the same zero point as that used for the JANGLE-UNCLE shot (Shot 24). The device was emplaced in a hole 10 feet diameter and 70 feet deep lined with corrugated steel pipe. The hole was back filled with dirt and sandbags prior to detonation.

SIGNIFICANCE: The crater was 294 feet in diameter and 100 feet deep. Other data were obtained, and the effects on structures and underground utilities were observed. The yield was not measured.

[redacted] [redacted]

SPONSOR: LASL
1255Z 29 Mar 1955
Yucca Flat, Area 4, Nevada Test Site
Tower Shot - Height 500 ft.

SHOT NUMBER: 59
TEAPOT APPLE I
[redacted]

Deleted

H.E.: [redacted]
Tetryl, Composition B, Cyclotol 75/25
[redacted]

Deleted

DIMENSIONS: [redacted]

Max. Dia.	29.5 in.
Length	74.6 in.
Weight	2300 lbs

YIELD: [redacted]
Achieved: 14.2 ± 0.7 KT

INITIATION: [redacted]

Deleted

Deleted

[redacted]

SHOT NUMBER: 60
TEAPOT WASP PRIME

SPONSOR: LASL
1800Z 29 Mar 1955
Yucca Flat, Area 7, Nevada Test Site
Air Drop - HOB 740 ft.

Deleted

Deleted

H.E. [redacted]
Cyclotol, Composition B and Cyclotol 75/25
[redacted]

DIMENSIONS: [redacted]
Max. Dia. 22 in.
Weight ~ 125 lbs (Nuclear System)

YIELD: [redacted]
Achieved: 3.2 ± 0.3 KT

INITIATION: [redacted]

TOTAL DEVICE WEIGHT: ~1500 lbs

Deleted

SIGNIFICANCE: The device performed about as expected, Deleted

SPONSOR: DOD
1800Z 6 Apr 1955
Yucca Flat, Area 5, Nevada Test Site
Air Drop - HOB 36,620 ft. (MSL)

SHOT NUMBER: 61
TEAPOT HIGH ALTITUDE (HA)

Deleted

H.E.:
Boosting, Composition B and Cyclotol 75/25

Deleted

DIMENSIONS:
Max. Dia. ~ 17 in.
Weight ~ 125 lbs (Nuclear System)

YIELD:
Achieved: 3.1 ± 0.3 KT

INITIATION:

TOTAL DEVICE WEIGHT: 1085 lbs

REMARKS: This was a DOD sponsored effects test to study basic effects phenomena as a function of air density in the region from 1,000 to 40,000 ft. The three effects of primary interest in the HA test were blast, thermal and radiation (gamma and neutron).

SIGNIFICANCE: Data were obtained on the partition of energy among nuclear radiation, thermal, and blast at high altitude.

[redacted]

SPONSOR: UCRL (LRL)
1230Z 9 Apr 1955
Yucca Flat, Area 9c, Nevada Test Site
Tower Shot - Height 300 ft.

SHOT NUMBER: 62
TRAPOT POST
[redacted]

Deleted

H.E.: [redacted]
Cyclotol 75/25
[redacted]

Deleted

DIMENSIONS: [redacted]

Length	34.2 in.
Weight	322 lbs

YIELD: [redacted]
Achieved: 1.45 ± 0.07 KT

INITIATION: ENS

REMARKS: [redacted]

SIGNIFICANCE: The success of this device established the feasibility of such a design.

[redacted]

SPONSOR: LASL/DOD
1915Z 15 Apr 1955
Frenchman Flat, Nevada Test Site
Tower shot Height 400 ft.

SHOT NUMBER: 63
TRAPOT MET

Deleted

H.E.:
Baratol, Composition B and Cyclotol 75/25

Deleted

DIMENSIONS:
Max. Dia.: 30 in.
Weight ~ 800 lbs

YIELD:
Achieved: 22.5 ± 1.5 KT

INITIATION: Tom

REMARKS: This was a military effects test
The principle effects experiments consisted of basic blast data and lethal thermal and blast volume for aircraft. The blast data measurements were made over water, asphalt and compacted desert sand surfaces for the purpose of better understanding phenomena involving the precursor and the blast wave.

SIGNIFICANCE: Most of the desired effects data were obtained.

[redacted] [redacted]

SPONSOR: LASL
1210Z 5 May 1955
Yucca Flat, Area 1, Nevada Test Site
Tower Shot - Height 500 ft.

SHOT NUMBER: 64
TEAPOT APPLE II
[redacted]

Deleted

[redacted]
Explosive: Composition B, and Cyclotol 75/25
[redacted]

Deleted

DIMENSIONS:
[redacted]

Max. Dia.	29.5 in.
Length	74.6 in.
Weight	2300 lbs

YIELD:
[redacted]
Achieved: 29 ± 1.5 KT

INITIATION: [redacted]

Deleted

Deleted

[redacted]

SPONSOR: DOD
2000Z 14 May 1955
Open seas 400 mi. S.W. of San Diego, Calif.
Underwater Shot - Depth 2000 ft.

SHOT NUMBER: 65
WIGWAM

Deleted

H.E.:

Baratol, Composition B and Cyclotol 75/25

Deleted

DIMENSIONS:

Max. Dia.	40 in. (Pressure Vessel)
Length	82 in. " "
Weight	1060 lbs (Nuclear Device)

YIELD:
Achieved: 32 ± 3 KT

INITIATION:

TOTAL DEVICE WEIGHT: 8250 lbs

REMARKS: This was a DOD sponsored test to determine the effects of an atomic detonation deep underwater. Although this shot was fired during the TEAPOT operation, it was conducted as a separate operation.

SIGNIFICANCE: The data obtained helped to define the effects phenomena associated with a deep underwater burst.

SPONSOR: LASL
1200Z 15 May 1955
Yucca Flat, Area 7-1, Nevada Test Site
Tower Shot - Height 500 ft.

SHOT NUMBER: 66
TEAPOT ZUCCHINI

Deleted

H.E.:
Baratol, Composition B and Cyclotol 75/25

Deleted

DIMENSIONS:

Max. Dia.	40 in.
Length	80.5 in.
Weight	2925 lbs

YIELD:
Achieved: 38 ± 1.5 kT

INITIATION: Deleted

Deleted

Deleted

[redacted] [redacted]

SPONSOR: LASL
2210Z 1 Nov 1955
Area 11, Nevada Test Site
Surface Shot

SAFETY EXPERIMENT: 1
Project 56
[redacted]

Deleted

H.E.: [redacted]
Borecited, Composition B and Cyclotol 75/25
[redacted]

Deleted

DIMENSIONS: [redacted]
Max. Dia. 27.1 in.
Weight 600 lbs

YIELD:
Predicted: None
Achieved: None

INITIATION: 3 Zippers

REMARKS: This was the first test of a full scale completely assembled device to verify the nuclear safeness in the event of an accidental one-point detonation.

Deleted

SIGNIFICANCE: The diagnostic measurements showed that no nuclear reaction occurred

Deleted

Deleted

[redacted]

[redacted]

SPONSOR: LASL
2115Z 3 Nov 1955
Area 11B, Nevada Test Site
Surface Shot

SAFETY EXPERIMENT: 2
Project 56
[redacted]

Deleted

H.E.:
[redacted]
Composition B and Cyclotol 75/25
[redacted]

Deleted

DIMENSIONS:
[redacted]

Max. Dia.	17.4 in.
Length	26.6 in (as fired)
Weight	218 lbs

YIELD:
Predicted: None
Achieved: None

INITIATION: 3 Zippers [redacted]

REMARKS: This was a test to determine the one-point safeness

Deleted

SIGNIFICANCE: The diagnostic measurements showed that no nuclear reaction occurred.

Deleted

[redacted]

[redacted]

[redacted]

SPONSOR: LASL
19552 5 Nov 1955
Area 11C, Nevada Test Site
Surface Shot

SAFETY EXPERIMENT: 3
Project 56

[redacted]

Deleted

H.E.: [redacted] Deleted
Composition B and Cyclotol 75/25

[redacted]

DIMENSIONS: [redacted] Deleted

Max. Dia. 16.8 in.
Weight 143 lbs

INITIATION: 3 Zippers

TOTAL DEVICE WEIGHT:. 275 lbs

REMARKS: This was a test to determine the one-point safeness [redacted] Deleted Close-in plutonium contamination studies were made by Sandia Corporation.

SIGNIFICANCE:

Deleted

[redacted]

SPONSOR: LASL
2130Z 18 Jan 1956
Area 11D, Nevada Test Site
Surface Shot

SAFETY EXPERIMENT: 4
Project 56

Deleted

H.E.:
Composition B and Cyclotol 75/25

Deleted

DIMENSIONS:

Max. Dia. 16.8 in.
Weight 143 lbs

Deleted

INITIATION: 6 Zippers

TOTAL DEVICE WEIGHT: 275 lbs

REMARKS: This was a one-point safety test using more instrumentation

Deleted

Deleted

SIGNIFICANCE:

The results of this test in conjunction with those from safety experiment makes it possible to gauge the behavior of the production Deleted From these tests the conclusion is that the production model is safe.

[redacted]

[redacted]

SPONSOR: LASL
1825Z 4 May 1956
Runit (Yvonne), Eniwetok Atoll
Surface Shot

SHOT NUMBER: 67
REDWING LACROSSE

[redacted]

Deleted

H.E.:
[redacted]
Baratol, Composition B and Cyclotol 75/25

Deleted

[redacted]

DIMENSIONS:
[redacted]
Max. Dia. 34.5 in.
Length ≈ 100 in.
Weight 583 lbs [redacted]

YIELD:
[redacted]
Achieved: 39.5 ± 3 KT

INITIATION: 2 Zippers

TOTAL DEVICE WEIGHT: 8,386 lbs

Deleted

SIGNIFICANCE: The success of this shot assured the availability

Deleted

[redacted]

SPONSOR: LASL
1751Z 20 May 1956
Namu (Charlie) Bikini Atoll
Air Drop - HOB 4320 ft.

SHOT NUMBER: 68
REDWING CHEROKEE

Deleted

H.E.: Deleted
Pentolite, Composition B and Cyclotol 75/25

DIMENSIONS: Deleted

Max. Dia.	34.5 in.
Length	136 in.
Weight	0867 lbs

INITIATION: Deleted

REMARKS: Deleted

SIGNIFICANCE: The weapon performed about as expected.

Deleted

SPONSOR: UCRL (LRL)
1756Z 27 May 1956
Eninman (Tare) Bikini Atoll
Surface Shot

SHOT NUMBER: 69
REDWING ZUNI

Deleted

Deleted

H.E.:

Explosive Composition Baud Cyclotol 75/25

DIMENSIONS:

Max. Dia. 39.0 in.
Length 135.5 in.
Weight 12,158 lbs

YIELD:
Achieved: 3.36 ± 0.17 MT

INITIATION: Deleted

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

[redacted] [redacted]

SPONSOR: UCRL (LRL)
1956Z 27 May 1956
Aomom (Sally) Eniwetok Atoll
Tower Shot - Height 200 ft.

SHOT NUMBER: 70
REDWING YUMA
[redacted]

Deleted

Deleted

H.E.: [redacted]
Octol 76/24
[redacted]

Deleted

DIMENSIONS: [redacted]

Length	24.5 in.
Weight	96 lbs

INITIATION: E.N.S.

REMARKS: Deleted

SIGNIFICANCE:

Deleted

[redacted]

SPONSOR: LASL
1815Z 30 May 1956
Runit (Yvonne) Eniwetok Atoll
Tower Shot - Height 300 ft.

SHOT NUMBER: 71
REDWING ERIE

Deleted

H.E.:
Composition B and Cyclotol 75/25

Deleted

DIMENSIONS:

Deleted

Max. Dia. 20 in.
Length ~ 55 in.
Weight 142.6 lbs

INITIATION: 4 Zippers

TOTAL DEVICE WEIGHT: 2106 lbs

REMARKS:

Deleted

SIGNIFICANCE: Deleted performed satisfactorily.

SPONSOR: LASL
0055Z 6 Jun 1956
Bogan (Irene) Eniwetok Atoll
Surface Shot

SHOT NUMBER: 72
REDWING SEMINOLE

Deleted

H.E.:
Composition B and Cyclotol 75/25

Deleted

DIMENSIONS:
Max. Dia. 20 in.
Length ~ 55 in.
Weight 143.5 lbs

YIELD:
Achieved: 13.7 ± 1.5 KT

INITIATION: 4 Zippers

TOTAL DEVICE WEIGHT: 1832 lbs

REMARKS: Deleted

SIGNIFICANCE: Deleted

[redacted] [redacted]

SPONSOR: LASL
1826Z 11 Jun 1956
Off Yurochi (Dog) Bikini Atoll
Barge Shot

SHOT NUMBER: 73
REDWING FLATHEAD
[redacted]

Deleted

H.E.:
[redacted]
Composition B and Cyclotol 75/25
[redacted]

Deleted

DIMENSIONS:
[redacted]

Deleted

Max. Dia.	20 in.
Length	~ 55 in.
Weight	1374 lbs

INITIATION: 4 Zippers

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

[redacted]

SPONSOR: LASL
1826Z 11 Jun 1956
Runit (Yvonne) Eniwetok Atoll
Tower Shot - Height 200 ft.

SHOT NUMBER: 74
REDWING BLACKFOOT

Deleted

H.E.
[redacted] and 9404

Deleted

Deleted

DIMENSIONS:
Max. Dia. 11.5 in.
Length 23 in.
Weight 62.7 lbs (less x-unit and gas bottle)

INITIATION: 4 Zippers

TOTAL DEVICE WEIGHT: 130 lbs

REMARKS:
Deleted

SIGNIFICANCE: The test was successful, Deleted

[redacted]

SPONSOR: UCRL (LRL)
2326Z 13 jun 1956
Aomon (Selly) Eniwetok Atoll
Tower Shot - Height 300 ft.

SHOT NUMBER: 75
REDWING KICKAPOO
[redacted]

Deleted

H.E.:
[redacted]
Cyclotol 75/25 and P-080
[redacted]

Deleted

DIMENSIONS:

Max. Dia.	8 in.
Length	28 in.
Weight	225 lbs

Deleted

INITIATION: 2 Zippers

REMARKS:

Deleted

SIGNIFICANCE: This test was successful

Deleted

[redacted]

[redacted] [redacted]

SPONSOR: LASL
0114Z 16 Jun 1956
Runit (Yvonne) Eniwetok Atoll
Air Drop - HOB 680 ft.

SHOT NUMBER: 76
REDWING OSAGE
[redacted]

Deleted

H.E.:
[redacted]
Composition B and Cyclotol 75/25

Deleted

[redacted]

DIMENSIONS:
[redacted]

Deleted

Max. Dia. 17.4 in.
Length 25.7 in.
Weight 174.6 lbs

INITIATION:

Deleted

TOTAL DEVICE WEIGHT: 3150 lbs

REMARKS:

Deleted

SIGNIFICANCE: The test was successful,

Deleted

[redacted]

SPONSOR: UCRL (LRL)
2156Z 21 Jun 1956
Rujoru (Pearl) Eniwetok Atoll
Tower Shot - Height 200 ft.

SHOT NUMBER: 77
REDWING INCA

Deleted

H.E.:
Composition B and Cyclotol 75/25

Deleted

DIMENSIONS:

Max. Dia.	11.6 in.
Length	22.6 in.
Weight	105 lbs

Deleted

INITIATION: B.N.S.

REMARKS:

Deleted

SIGNIFICANCE: The device operated successfully.

[redacted] [redacted]

SPONSOR: LASL
1806Z 25 Jun 1956
Off Yurochi (Dog) Bikini Atoll
Barge Shot

SHOT NUMBER: 78
REDWING DAKOTA
[redacted]

Deleted

H.E.:
[redacted]
Composition B and Cyclotol 75/25
[redacted]

Deleted

DIMENSIONS:
[redacted]

Max. Dia.	20 in.
Length	58 in.
Weight	1797 lbs

Deleted

INITIATION: 4 Zippers

REMARKS:

Deleted

SIGNIFICANCE: The device operated satisfactorily,

Deleted

[redacted]

SPONSOR: UCRL (LRL)
1806Z 2 Jul 1956
Eberiru (Ruby) Eniwetok Atoll
Tower Shot - Height 300 ft.

SHOT NUMBER: 79
REDWING MOHAWK

Deleted

H.E.:
Composition B and Cyclotol

Deleted

DIMENSIONS:

Max. Dia.	15 in.
Length	46.2 in.
Weight	1116 lbs

Deleted

INITIATION: E.N.S.

REMARKS:

Deleted

SIGNIFICANCE: The test was successful,

Deleted

[redacted] [redacted]

SPONSOR: UCRL (LRL)
1806Z 8 Jul 1956
Elugelap (Flora, Mike Crater) Eniwetok Atoll
Barge Shot

SHOT NUMBER: 80
REDWING APACHE
[redacted]

Deleted

H.E.:
[redacted]
Explosive, Composition B and Cyclotol 75/25
[redacted]

Deleted

DIMENSIONS:
[redacted]

Max. Dia.	30.2 in.
Length	69.8 in.
Weight	2,941 lbs

Deleted

INITIATION: E.N.S.

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

[redacted]

SPONSOR: LASL
1756Z 10 Jul 1956
Off Yurochi (Dog) Bikini Atoll
Barge Shot

SHOT NUMBER: 81
REDWING NAVAHO

Deleted

H.E.:
Boracitol, Composition B and Cyclotol 75/25

Deleted

DIMENSIONS:

Deleted

Max. Dia.	55.2 in.
Length	149.6 in.

INITIATION: Deleted

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

[redacted] [redacted]

SPONSOR: UCRL (LRL)
1746Z 20 Jul 56
Between Yurochi (Dog) and Namu (Charlie),
Bikini Atoll
Barge Shot

SHOT NUMBER: 82
REDWING TEWA
[redacted]

Deleted

H.E.:
[redacted]
Boracitol, Composition B and
Cyclotol 75/25
[redacted]

Deleted

DIMENSIONS:
[redacted]

Max. Dia.	39.0 in.
Length	135.5 in.
Weight	15,735 lbs

YIELD:
[redacted]
Achieved: 4.6 ± 0.2 MT

INITIATION:

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

[redacted]

SPONSOR: LASL
1816Z 21 Jul 1956
Elugelap (Mike Crater) Eniwetok Atoll
Barge Shot

SHOT NUMBER: 83
REDWING HURON

Deleted

H.E.:
PBX 9401 and 9404

Deleted

DIMENSIONS:

Max. Dia.	15.3 in.
Length	43.1 in.
Weight	793 lbs

Deleted

INITIATION: 4 E.N.S.

REMARKS:

Deleted

SIGNIFICANCE: The device functioned as expected.

Deleted

SPONSOR: LASL/DOD
1427Z 27 Apr 1957
Area 13, Nevada Test Site
Surface Shot

SAFETY EXPERIMENT: 5
Project TG-57

Deleted

H.E.:
Composition B and Cyclotol 75/25

Deleted

DIMENSIONS:

Max. Dia.	17.4 in.
Length	26.7 in.
Weight	218 lbs

YIELD:
Predicted: None
Achieved: None

INITIATION: None

REMARKS: This was a test to determine the extent of plutonium contamination and the attendant hazards from a one point detonation

Deleted

SIGNIFICANCE: The plutonium contamination was found to be more extensive than expected, but the hazards appear to be less serious than expected. of the Pu could be accounted for in the crater and local ground contamination.

SPONSOR: LASL
1155Z 28 May 1957
Yucca Flat, Area 7C, Nevada Test Site
Tower Shot - height 500 ft.

SHOT NUMBER: 84
PLUMBBOB BOLTZMANN

Deleted

H.E.:
Cyclotol 75/25 and Composition B

Deleted

DIMENSIONS:

Max. Dia.	18 in.
Length	31.6 in.
Weight	144.6 lbs (Nuclear System)

YIELD:
Achieved: 11.5 ± 0.8 KT

INITIATION: Zipper

TOTAL DEVICE WEIGHT: 295 lbs

REMARKS:

Deleted

SIGNIFICANCE: The device performed successfully.

Deleted

[redacted] [redacted]

SPONSOR: LASL
1155Z 2 June 1957
Yucca Flat, Area 3, Nevada Test Site
Tower Shot - Height 300 ft.

SHOT NUMBER: 85
PLUMBBOB FRANKLIN
[redacted]

Deleted

H. E.:
[redacted]
PBX 9401 and 9404
[redacted]

Deleted

DIMENSIONS:
[redacted]

Max. Dia.	20.82 in.
Length	38.4 in.
Weight	303.8 lbs (Nuclear System)

YIELD:
[redacted]
Achieved: 0.140 ± 0.007 KT

INITIATION: Zipper

TOTAL DEVICE WEIGHT: 448 lbs

REMARKS: Deleted

SIGNIFICANCE:

Deleted

[redacted]

[redacted] [redacted]

SPONSOR: UCRL (LRL)
1145Z 5 June 1957
Yucca Flat, Area B-9a, Nevada Test Site
Balloon Shot - Height 500 ft.

SHOT NUMBER: 86
PLUMBBOB LASSEN
[redacted]

Deleted

H.E.:
[redacted]
PBX-9406
[redacted]

Deleted

DIMENSIONS:
[redacted]

Max. Dia.	11.7 in.
Length	14.3 in.
Weight	155 lbs

YIELD:
[redacted]
Achieved: 0.47 ± 0.02 tons

INITIATION: E.N.S.

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

[redacted]

[redacted] [redacted]

SPONSOR: UCRL (LRL)
1145Z 18 June 1957
Yucca Flat, Area B-9a, Nevada Test Site
Balloon Shot - Height 500 ft.

SHOT NUMBER: 87
PLUMBBOB WILSON
[redacted]

Deleted

H.E.: [redacted]
PBX 9404
[redacted]

Deleted

DIMENSIONS: [redacted]

Max. Dia.	11.6 in.
Length	21.1 in.
Weight	107 lbs

YIELD: [redacted]
Achieved: 10.3 ± 0.5 KT

INITIATION: ENS

REMARKS: Deleted

SIGNIFICANCE: The device performed satisfactorily.

[redacted]

[redacted] [redacted]

SPONSOR: LASL
1330Z 24 June 1957
Frenchman Flat, Nevada Test Site
Balloon Shot - Height 700 ft.

SHOT NUMBER: 88
PLUMBBOB PRISCILLA
[redacted]

Deleted

H.E.: [redacted]
Boracitol, Cyclotol 75/25 and Composition B
[redacted]

Deleted

DIMENSIONS: [redacted] (Nuclear System)

Max. Dia.	27.1 in.
Length	27.1 in.
Weight	542 lbs

YIELD: [redacted]
Achieved: 36.6 ± 1.6 KT

INITIATION: [redacted]

TOTAL DEVICE WEIGHT: 581.4 lbs

REMARKS:

Deleted

DOD sponsored effects tests were also conducted.

SIGNIFICANCE: The device performed satisfactorily.

Deleted

[redacted]

[redacted]

SPONSOR: LASL
1730Z 1 July 1957
Area S-3h Nevada Test Site
Surface Shot

[redacted]

SAFETY EXPERIMENT 6
PLUMBBOB COULOMB A

[redacted]

Deleted

H.E.:

[redacted]

Boracitol, Composition B and Cyclotol 75/25

Deleted

DIMENSIONS:

[redacted]

Max. Dia.	28 in.
Length	39 in.
Weight	706 lbs (Nuclear System)

Deleted

TOTAL DEVICE WEIGHT: 782.6 lbs

INITIATION: ENS

REMARKS: This was a test to determine the one-point safety

Deleted

SIGNIFICANCE: There was no observable nuclear explosion

Deleted

[redacted]

[redacted] [redacted]

SPONSOR: UCRL (LRL)
1140Z 5 July 1957
Yucca Flat, Area B-9a, Nevada Test Site
Balloon Shot, Height 1500 ft.

SHOT NUMBER: 89
PLUMBBOB HOOD
[redacted]

Deleted

H.E.:
[redacted]
PBX 9404
[redacted]

Deleted

DIMENSIONS:
Max. Dia. 12.1 in.
Length 42.2 in.

YIELD:
[redacted]
Achieved: 71 ± 2 KT

INITIATION: E.N.S.

TOTAL DEVICE WEIGHT: 393 lbs

REMARKS:

Deleted

SIGNIFICANCE: The device operated successfully

Deleted

[redacted]

SPONSOR: UCRL (LRL)
1130Z 15 July 1957
Area 26, Area 2, Nevada Test Site
Tower Shot - Height 500 ft.

SHOT NUMBER: 90
PLUMBBOB DIABLO

Deleted

Deleted

H.E.:

PBX 9404 Deleted

Deleted

Deleted

DIMENSIONS:

Max. Dia.	16.2 in.
Length	68.4 in.

YIELD:

Deleted
Achieved: 17 + 1 KT

INITIATION: ENS Deleted

TOTAL DEVICE WEIGHT: 1352 lbs.

REMARKS:

Deleted

SIGNIFICANCE: The test was successful.

Deleted

SPONSOR: DOD
1400Z 19 July 1957
Yucca Flat, Area 9, Nevada Test Site
Air Burst - HOB 20,000 ft.

SHOT NUMBER: 91
PLUMBBOB JOHN

Deleted

Deleted

H.E.:

Deleted
Cyclotol 75/25 and Composition B

Deleted

Deleted

DIMENSIONS:

Deleted

Max. Dia.	17.35 in.
Length	25.74 in.
Weight	221 lbs

YIELD:

Deleted
Achieved: 1.7 ± 0.1 KT

INITIATION:

Deleted

REMARKS: This was a DOD sponsored test to obtain high altitude effects data. An F-89 aircraft was used to fire Deleted air-to-air missile Deleted Of particular concern was the radiation dosage which the crew in the delivery aircraft would receive.

SIGNIFICANCE: The device performed as expected. The aircraft crew received a dose of about 4 rem. Several men standing on ground zero were unharmed. The test showed the feasibility of using a nuclear warhead in an air-to-air missile.

SPONSOR: LASL
1150Z 24 July 1957
Yucca Flat, Area 4, Nevada Test Site
Tower Shot - Height 500 ft.

SHOT NUMBER: 92
PLUMBBOB KEPLER

Deleted

Deleted

H.E.:
Deleted
PBX 9401 & 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	28.5 in.
Length	44 in.
Weight	64.4 lbs Deleted

YIELD:
Deleted
Achieved: 10.3 ± 0.5 KT

INITIATION: E.N.S.

TOTAL DEVICE WEIGHT: 1517 lbs.

REMARKS:

Deleted

SIGNIFICANCE: The diagnostic data obtained contributed considerable knowledge to the field
Deleted

SPONSOR: UCRL (LRL)
1330Z 25 July 1957
Yucca Flat, Area B-9a, Nevada Test Site
Balloon Shot - Height 500 ft.

SHOT NUMBER: 93
PLUMBBOB OWENS
Deleted

Deleted

H.E.:
Deleted
PBX 9406

Deleted
DIMENSIONS:

Max. Dia.	11.5 in.
Length	12.65 in.
Weight	39.5 lbs

TOTAL DEVICE WEIGHT: 85 lbs

Deleted

YIELD:
Deleted
Achieved: 9.7 ± 0.5 KT

INITIATION: 2 Zippers

REMARKS:

Deleted

SIGNIFICANCE: The test was very successful,

Deleted

SPONSOR: LASL
0800Z 26 July 1957
Yucca Flat, Area U-3a, Nevada Test Site
Underground (hole) Shot - Depth 500 ft.

SAFETY EXPERIMENT: 7
PLUMBBOB PASCAL A

Deleted

Deleted

H.E.:
Deleted
PBX 9401 & 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	11.75 in.
Length	15 in.
Weight	64.6 lbs (Nuclear System)

Deleted

INITIATION: Zippers

REMARKS: This was the first of two PASCAL shots

Deleted

SIGNIFICANCE:

Deleted

SPONSOR: LASL
1225Z 7 August 1957
Yucca Flat, Area B-7b, Nevada Test Site
Balloon Shot, Height 1500 ft.

SHOT NUMBER: 94
PLUMBBOB STOKES
Deleted

Deleted

H.E.:
Deleted
PBX 9404 & 9010
Deleted

Deleted

DIMENSIONS:
Deleted

Max. Dia.	22 in.
Length	45.8 in.
Weight	317 lbs. (as fired)

YIELD:
Deleted
Achieved: 19 ± 1 KT

INITIATION: Deleted

TOTAL DEVICE WEIGHT: 448 lbs.

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

SPONSOR: UCRL (LRL)
0100Z 10 August 1957
Area 12, Nevada Test Site
Tunnel Shot - Depth 128 ft.

SAFETY EXPERIMENT: S
PLUMBBOB SATURN
Deleted

Deleted

H.E.:
Deleted
PBX 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	11.6 in.
Length	21.1 in.
Weight	108 lbs.

YIELD:
Predicted: 0 - 100 lbs
Achieved: 0

INITIATION: Zippers

REMARKS: This was a test to determine the one-point safety
Deleted

SIGNIFICANCE: Deleted system was one-point safe
Deleted

SPONSOR: UCRL (LRL)
1200Z 18 August 1957
Yucca Flat, Area 2, Nevada Test Site
Tower Shot - Height 500 ft.

SHOT NUMBER: 95
PLUMBBOB SHASTA
Deleted

Deleted

H.E.:
Deleted
PBX 9404
Deleted

Deleted

DIMENSIONS:
Max. Dia. 15.9 in.
Length 69.2 in.

YIELD:
Deleted
Achieved: 16.5 ± 1.0 KT

Deleted

TOTAL DEVICE WEIGHT: 1435 lbs

INITIATION: E.N.S.

REMARKS:

Deleted

SIGNIFICANCE: The device operated satisfactorily.

Deleted

SPONSOR: LASL
1230Z 23 August 1957
Yucca Flat, Area 7 , Nevada Test Site
Balloon Shot - Height 1500 ft.

SHOT NUMBER: 96
PLUMBBOB DOPPLER

Deleted

Deleted

H.E.: Deleted

Cyclotol 75/25, Composition B

Deleted

Deleted

DIMENSIONS:

HE O.D.	
Max. Dia.	17 in.
Length	26 in.
Weight	144.6 lbs (Nuclear System)

YIELD:
Deleted
Achieved: 10.7 ± 0.8 KT

INITIATION:
Deleted

TOTAL DEVICE WEIGHT: 275 lbs

REMARKS: Deleted

SIGNIFICANCE: The device performed satisfactorily;

Deleted

SPONSOR: LASL
2235Z 27 August 1957
Yucca Flat, Area 3d, Nevada Test Site
Underground (Well) shot - Depth 500 ft.

SAFETY EXPERIMENT: 9
PLUMBBOB PASCAL B

Deleted

Deleted

H.E.: Deleted

Deleted

PBX 9401 and 9404

Deleted

DIMENSIONS:

Deleted

Max. Dia.	11.75 in.
Length	15 in.

INITIATION: Zipper

TOTAL DEVICE WEIGHT: 64.6 lbs

REMARKS:

The purpose of the test was to determine the extent of safety Deleted

Deleted

SIGNIFICANCE:

Deleted

SPONSOR: LASL
1240Z 30 August 1957
Yucca Flat, Area 7b, Nevada Test Site
Balloon Shot - Height 750 ft.

SHOT NUMBER: 97
PLUMBBOB FRANKLIN PRIME
Deleted

Deleted

H.E.: Deleted

PBX 9404 & 9010

Deleted

DIMENSIONS:

Deleted

Max. Dia.	21 in.
Length	45.8 in.
Weight	304 lbs.

Deleted

YIELD:
Deleted
Achieved: 9.7 ± 0.3 KT

INITIATION: E.N.S.

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

[redacted] [redacted]

SPONSOR: UCRL (LRL)
1230Z 31 August 1957
Yucca Flat, Area 2, Nevada Test Site
Tower Shot - Height 700 ft.

SHOT NUMBER: 98
PLUMBBOB SMOKY
Deleted

Deleted

H.E.:
Deleted
Boracitol & Cyclotol

Deleted

Deleted

DIMENSIONS:

Max. Dia. Deleted in.
Length 126.2 in.

YIELD:
Deleted
Achieved: 44 ± 1 KT

INITIATION: E.N.S. Deleted

TOTAL DEVICE WEIGHT: 9408 lbs

REMARKS:

SIGNIFICANCE: Deleted

Deleted

[redacted]

SPONSOR: LASL
1240Z 2 Sept 1957
Yucca Flat, Area 1, Nevada Test Site
Tower Shot - Height 500 ft.

SHOT NUMBER: 99
PLUMBBOB GALILEO
Deleted

Deleted

H.E.:
Deleted
PBX 9401 & 9404
Deleted

Deleted

DIMENSIONS:
Max. Dia. . . . 12.4 in.
Length 60 in.

YIELD:
Deleted
Achieved: 11.5 ± 1 KT
Deleted

INITIATION: E.N.S.

TOTAL DEVICE WEIGHT: 848 lbs.

REMARKS:
Deleted

SIGNIFICANCE: The data obtained were valuable

Deleted

SPONSOR: UCRL (LRL)
1245Z 6 Sept 1957
Yucca Flat, Area 9, Nevada Test Site
Balloon Shot, Height 500 ft.

SHOT NUMBER: 100
PLUMBBOB WHEELER

Deleted

Deleted

H.E.:

PBX 9404 Deleted

Deleted

Deleted

DIMENSIONS:

Max. Dia.	11.8 in.
Length	14.1 in.

YIELD:

Achieved: Deleted ± 0.01 KT

INITIATION: Zipper

TOTAL DEVICE WEIGHT: 158 lbs

REMARKS:

Deleted

SIGNIFICANCE: The device operated approximately as predicted.

SPONSOR: LASL
2005Z 6 Sep 1957
Yucca Flat, Area 3, Nevada Test Site
Surface Shot

SAFETY EXPERIMENT-10
PLUMBBOB COULOMB B
Deleted

Deleted

H.E.:
Deleted
Boracitol & Cyclotol

Deleted

Deleted

DIMENSIONS:

Deleted

Max. Dia.	28 in.
Length	39 in.
Weight	706 lbs (Nuclear System)

YIELD:
Deleted
Achieved: 310 ± 30 Tons

INITIATION: Zippers

TOTAL DEVICE WEIGHT: 738 lbs.

REMARKS: This was a one-point safety test

Deleted

SIGNIFICANCE: The device was not one-point safe as fired. As a result of these tests, it is possible to determine the maximum Deleted system can contain and still be safe in a one-point detonation.

SPONSOR: LASL
1300Z 8 Sept 1957
Yucca Flat, Area 7b, Nevada Test Site
Balloon Shot - Height 750 ft.

SHOT NUMBER: 101
PLUMBBOB LAPLACE

Deleted

Deleted

H.E.:

Deleted

Deleted

DIMENSIONS:

Max. Dia.	18 in.
Length	30 in.

YIELD:

Deleted

Achieved: 1.22 ± 0.05 KT

INITIATION: Squab

TOTAL DEVICE WEIGHT: 503 lbs.

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

SPONSOR: LASL
1645Z 14 Sept 1957
Yucca Flat, Area 3, Nevada Test Site
Tower Shot - Height 500 ft.

SHOT NUMBER: 102
PLUMBBOB FIZEAU

Deleted

Deleted

H.E.:
Deleted
Cyclotol & Boracitol

Deleted

Deleted

DIMENSIONS:

Deleted

Max. Dia.	16 in.
Length	31.75 in.

YIELD:
Deleted
Achieved: 11.4 ± 0.6 KT

INITIATION: Zipper Deleted

TOTAL DEVICE WEIGHT: 131.3 lbs

REMARKS:

Deleted

SIGNIFICANCE: The device functioned as expected, Deleted

[redacted] [redacted]

SPONSOR: LASL
1250Z 16 Sept 1957
(Area 7) Nevada Test Site
Balloon Shot - Height 1500 ft.

SHOT NUMBER: 103
PLUMBBOB NEWTON
Deleted

Deleted

H.E.:
Deleted
PBX 9401 & 9404
Deleted

Deleted

DIMENSIONS:
Max. Dia. 28 in.
Length 39 in.

YIELD:
Deleted
Achieved: 11.8 ± 0.6 KT

INITIATION: E.N.S.

TOTAL DEVICE WEIGHT: 1346 lbs.

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

[redacted]

[redacted] [redacted]

SPONSOR: UCRL (LRL)
1700Z 19 Sept 1957
Area 12, Nevada Test Site
Tunnel Shot - Depth 899 ft.

SHOT NUMBER: 104
PLUMBBOB RAINIER

Deleted

Deleted

H.E.: Deleted
Composition B and Cyclotol 75/25
Deleted

Deleted

DIMENSIONS:

Deleted

Max. Dia.	17.4 in.
Length	25.7 in.

YIELD:

Deleted

Achieved: 1.7 ± 0.1 KT

INITIATION: Deleted

TOTAL DEVICE WEIGHT: 218 lbs

REMARKS: This was a test to study the effects of a deep underground burst and to gain information on the possibility of conducting future test operations underground.

SIGNIFICANCE: The shot was fired satisfactorily and the burst was completely contained except for minor surface disturbances at the time of the burst.

[redacted]

SPONSOR: UCRL (LRL)
1230Z 23 Sept 1957
Yucca Flat, Area 2, Nevada Test Site
Tower Shot - Height 500 ft.

SHOT NUMBER: 105
PLUMBBOB WHITNEY
Deleted

Deleted

H.E.:
Deleted
PBX 9404
Deleted

Deleted

DIMENSIONS:
Max. Dia. 30.2 in.
Length 60.9 in.

YIELD:
Deleted
Achieved: 18.5 ± 0.9 KT

INITIATION: E.N.S.

TOTAL DEVICE WEIGHT: 7059 lbs

REMARKS:
Deleted

SIGNIFICANCE: The device performed satisfactorily Deleted

SPONSOR: UCRL (LRL)
1300Z 28 Sept 1957
Yucca Flat, Area 9, Nevada Test Site
Balloon Shot - Height 1500 ft.

SHOT NUMBER: 106
PLUMBBOB CHARLESTON
Deleted

Deleted

H.E.:
Deleted
PBX 9404
Deleted

Deleted

DIMENSIONS:
Max. Dia. 22.4 in.
Length 46.6 in.

YIELD:
Deleted
Achieved: 11.4 ± 0.5 KT

INITIATION: E.N.S.

TOTAL DEVICE WEIGHT: 1225 lbs.

REMARKS: Deleted

SIGNIFICANCE: Deleted

SPONSOR: UCRL (LRL)
1000Z 7 October 1957
Yucca Flat, Area 9, Nevada Test Site
Balloon Shot - Height 500 ft.

SHOT NUMBER: 107
PLUMEBOB MORGAN
Deleted

Deleted

H.E.:
PBX 9404 Deleted
Deleted

Deleted

DIMENSIONS: Deleted

Max. Dia.	11.6 in.
Length	21.1 in.
Weight	107 lbs.

YIELD:
Deleted
Achieved: 8.0 ± 0.4 KT

INITIATION: Deleted

REMARKS: Deleted

SIGNIFICANCE: The device operated satisfactorily Deleted

SPONSOR: LASL
2015Z 6 Dec 1957
Yucca Flat, Area 3, Nevada Test Site
Underground (hole) Shot, Depth: 250 ft.

SAFETY EXPERIMENT: 11
Project 58 PASCAL C
Deleted

Deleted

H.E.:
Deleted
PBX 9010 and 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	13 in.
Length	17.3 in.
Weight	92.9 lbs

Deleted

INITIATION: Zippers

REMARKS: This was a test to determine the one-point safety Deleted

SIGNIFICANCE: Deleted

SPONSOR: LASL
2000Z 9 Dec 1957
Yucca Flat, Area 3, Nevada Test Site
Surface Shot

SAFETY EXPERIMENT: 12
Project 58 COULOMB C
Deleted

Deleted

H.E.: Deleted
PBX 9010 and 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	22.2 in.
Length	22.2 in.
Weight	383 lbs

YIELD:
Deleted
Achieved: 300 ± 1 Ton

INITIATION: Zippers

REMARKS: This was a test to determine the one-point safety Deleted Some nuclear yield was expected since this was purposely made to be an overtest of the design.

SIGNIFICANCE: Data was obtained to determine Deleted a one-point safe Deleted

[redacted] [redacted]

SPONSOR: UCRL (LRL)
0100Z 23 Feb 1958
Tunnel U12d, Nevada Test Site
Underground (Tunnel) Shot, Depth: 100 ft.

SAFETY EXPERIMENT: 13
Project 58 VENUS

Deleted

Deleted

H.E.:
Deleted
FBX 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	12.8 in.
Length	14.7 in.
Weight	114 lbs

Deleted

INITIATION: EBS

REMARKS: This was a test to determine the one-point safety Deleted

SIGNIFICANCE: This design, as tested, proved to be one-point safe Deleted

[redacted]

[redacted] [redacted]

SPONSOR: DOD
0240Z 28 Apr 1958
60 miles west of Bikini Atoll
Balloon Shot - Height: 86,000 ft.

SHOT NUMBER: 108
HARDTACK YUCCA
Deleted

Deleted

H.E.: Deleted

Composition B and Cyclotol 75/25
Deleted

Deleted

DIMENSIONS: Deleted

Max. Dia.	17.4 in.
Length	25.7 in.
Weight	218 lbs

Deleted

INITIATION: Deleted

TOTAL PAYLOAD WEIGHT: 762 lbs

REMARKS: This was a test to study high altitude effects
Deleted

SIGNIFICANCE: Much of the desired data were not obtained due to failure of the canister instrumentation. Aircraft instrumentation operated satisfactorily to obtain thermal, fireball, and infrared data.

[redacted]

SPONSOR: LASL
1815Z 5 May 1958
Runit (Yvonne) Eniwetok Atoll
Surface Shot

SHOT NUMBER: 109
HARDTACK CACTUS
Deleted

Deleted

H.E.:
Deleted
PBX 9010 and 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	18 in.
Length	69 in.
Weight	110.3 lbs

Deleted

YIELD:
Deleted
Achieved: 18.0 ± 1.8 KT
Deleted

INITIATION: E.N.S.

TOTAL DEVICE WEIGHT: 1432 lbs

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

[redacted] [redacted]

SPONSOR: LRL (UCRL)
1750Z 11 May 1958
Namu (Charlie) Bikini Atoll
Barge Shot - Height: 10 ft.

SHOT NUMBER: 110
HARDTACK FIR
Deleted

Deleted

H.E.:

PBX 9404 Deleted

Deleted

Deleted

DIMENSIONS:

Max. Dia.	34.3 in.
Length	66.6 in.
Weight	2971 lbs

Deleted

INITIATION: E.N.S.

REMARKS: Deleted

SIGNIFICANCE: The device operated as expected. Deleted

[redacted]

SPONSOR: LASL
1815Z 11 May 1958
Runit (Yvonne) Eniwetok Atoll
Barge Shot - Height 10 ft.

SHOT NUMBER: 111
HARDTACK BUTTERNUT
Deleted

Deleted

Deleted

H.E.:
Deleted
PBX 9404 and 9010
Deleted

DIMENSIONS:

Deleted

Deleted

Max. Dia.	37 in.
Length	94 in.
Weight	347.2 lbs

Deleted

INITIATION: Zipper

TOTAL DEVICE WEIGHT: 6185 lbs

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

[redacted] [redacted]

SPONSOR: LASL
1830Z 12 May 1958
Teiteiripucchi (Gene) Eniwetok Atoll
Surface Shot

SHOT NUMBER: 112
HARDTACK KOA
Deleted

Deleted

H.E.:
Deleted
PBX 9010 and 9404
Deleted

DIMENSIONS:

Max. Dia.	27 in.
Length	45 in.
Weight	1532 lbs

Deleted

YIELD:
Deleted
Achieved: 1300 ± 80 KT

Deleted

INITIATION: Zipper

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

[redacted]

SPONSOR: DOD
0130Z 16 May 1958
8500 ft. S.W. Pokon (Irwin) Eniwetok Atoll
Underwater Shot - Depth: 500 ft.

SHOT NUMBER: 113
HARDTACK WAHOO
Deleted

Deleted

H.E.:
Deleted
Deleted
Baratol, Composition B and Cyclotol 75/25
Deleted

DIMENSIONS:
Deleted
Deleted

Max. Dia.	30.0 in.
Length	54.0 in. (includes IFI)
Weight	950 lbs

INITIATION: Deleted

TOTAL DEVICE WEIGHT: 6000 lbs

REMARKS: This was a test to study the effects of a deep underwater burst. Deleted was contained in a WIGWAM-type pressure vessel suspended from a barge. The water depth at the shot location was about 3300 ft.

SIGNIFICANCE: Data were obtained to define more clearly the effects of an underwater nuclear burst.

[redacted] [redacted]

SPONSOR: LASL
1830Z 20 May 1958
Runit (Yvonne) Eniwetok Atoll
Barge Shot - Height: 13 ft.

SHOT NUMBER: 114
HARDTACK HOLLY
Deleted

Deleted

H.E.: Deleted Deleted
Boracitol, Composition B, and Cyclotol 75/25
Deleted

DIMENSIONS:

Deleted

Max. Dia.	28 in.
Length	39.1 in.

INITIATION: Deleted

TOTAL DEVICE WEIGHT: 945 lbs

REMARKS: Deleted Deleted

SIGNIFICANCE: Deleted

[redacted]

[redacted] [redacted]

SPONSOR: UCRL (LRL)
2120Z 21 May 1958
Eninman (Tare) Bikini Atoll
Barge Shot - Height 10 ft.

SHOT NUMBER: 115
HARDTACK NUTMEG
Deleted

Deleted

H.E.:
Deleted
PBX 9404

Deleted

Deleted

DIMENSIONS:

Max. Dia.	17.9 in.
Length	34.5 in.
Weight	611 lbs

Deleted

INITIATION: Zipper

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

[redacted]

SPONSOR: LASL
0200Z 26 May 1958
Engebi (Janet) Eniwetok Atoll
Barge Shot - Height 10 ft.

SHOT NUMBER: 116
HARDTACK YELLOWWOOD
Deleted

Deleted

H.E.: Deleted

Deleted

PBX 9010 and 9404

Deleted

DIMENSIONS:
Max. Dia. 37 in.
Length 100.5 in.

Deleted

INITIATION: Zipper

TOTAL DEVICE WEIGHT: 5885 lbs

REMARKS: Deleted

SIGNIFICANCE:

Deleted

SPONSOR: LASL
1800Z 26 May 1958
Runit (Yvonne) Eniwetok Atoll
Barge Shot - Height: 13 ft.

SHOT NUMBER: 117
HARDTACK MAGNOLIA
Deleted

Deleted

H.E.:
Deleted
Boracitol, Composition B, and Cyclotol

Deleted

Deleted

DIMENSIONS:

Max. Dia.	28 in.
Length	28 in.
Weight	712 lbs

Deleted

INITIATION: Zipper

REMARKS: Deleted

SIGNIFICANCE: The device functioned as predicted.

SPONSOR: LASL
0215Z 30 May 1958
Engebi (Janet) Eniwetok Atoll
Barge Shot - Height 9 ft

SHOT NUMBER: 118
HARDTACK TOBACCO
Deleted

Deleted

H.E.:
Deleted
PBX 9401 and 9404
Deleted

Deleted

DIMENSIONS
Max. Dia. 12.3 in.
Length 35.8 in.
Weight 59.3 lbs Deleted

Deleted

INITIATION: Zipper

TOTAL DEVICE WEIGHT: 346 lbs

REMARKS: Deleted

SIGNIFICANCE: Deleted

SPONSOR: LRL
0300Z 31 May 1958
Namu (Charlie) Bikini Atoll
Barge Shot - Height 10 ft.

SHOT NUMBER: 119
HARDTACK SYCAMORE
Deleted

Deleted

H.E.:
Deleted
Composition B and Cyclotol 75/25
Deleted

Deleted

DIMENSIONS:
Max. Dia. 500 in.
Length 112.6 in.

Deleted

TOTAL DEVICE WEIGHT: 9723 lbs

INITIATION: 2 Zippers Deleted

REMARKS:
Deleted

SIGNIFICANCE:

Deleted

SPONSOR: LASL
1845Z 2 June 1958
Runit (Yvonne) Eniwetok Atoll
Barge Shot - Height: 15 ft.

SHOT NUMBER: 120
HARDTACK ROSE
Deleted

Deleted

H.E.:
Deleted
Composition B and Cyclotol 75/25
Deleted
Deleted

DIMENSIONS:

Max. Dia.	20 in.
Length	49 in.
Weight	146 lbs

Deleted
Deleted

INITIATION: Zippers

TOTAL DEVICE WEIGHT: 1476 lbs

REMARKS: Deleted

SIGNIFICANCE: Deleted

SPONSOR: DOD
2315Z 9 June 1958
Mui (Henry) Eniwetok Atoll
Underwater Shot - Depth: 150 ft.

SHOT NUMBER: 121
HARDTACK UMBRELLA
Deleted

Deleted

H.E.: Deleted

Baratol, Composition B and Cyclotol 75/25 Deleted

Deleted

DIMENSIONS:

Deleted

Max. Dia.	30.0 in.	Deleted
Length	54.0 in.	Deleted
Weight	825 lbs (Nuclear System)	INITIATION: Deleted

TOTAL DEVICE WEIGHT: ~7000 lbs

REMARKS: This was a test to determine the effects of a burst at medium depth on the bottom.

SIGNIFICANCE: Some data were obtained to provide information on the reflection of shock waves from the bottom.

SPONSOR: UCRL (LRL)
1730Z 10 June 1958
Ronurikku (Fox) Bikini Atoll
Barge Shot - Height 10 ft.

SHOT NUMBER: 122
HARDTACK MAPLE
Deleted

Deleted

H.E.: Deleted
PBX 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	14.0 in.
Length	36.3 in.
Weight	346 lbs (Nuclear System)

Deleted

TOTAL DEVICE WEIGHT: 380 lbs

INITIATION: Zipper

REMARKS: Deleted

SIGNIFICANCE: The device worked well,

Deleted

SPONSOR: UCRL (LRL)
1730Z 14 June 1958
Namu (Charlie) Bikini Atoll
Barge Shot, Height - 10 ft.

SHOT NUMBER: 123
HARDTACK ASPEN
Deleted

Deleted

H.E.:
Deleted
PBX 9404

Deleted

Deleted

DIMENSIONS:

Max. Dia.	18.0 in.
Length	34.1 in.
Weight	601 lbs

Deleted

INITIATION: E.N.S.

REMARKS:

Deleted

SIGNIFICANCE: The device operated satisfactorily.

SPONSOR: LASL
1830Z 14 June 1958
Engebi (Janet) Eniwetok Atoll
Barge Shot

SHOT NUMBER: 124
HARDTACK WALNUT
Deleted

Deleted

H.E.:
Deleted
Composition B and Cyclotol 75/25
Deleted

Deleted

DIMENSIONS:
Max. Dia. 20 in.
Length 46.5 in.

Deleted

INITIATION: Deleted

TOTAL DEVICE WEIGHT: 1683 lbs

REMARKS:
Deleted

SIGNIFICANCE: As a result of the success of this shot, Deleted .

SPONSOR: LASL
0300Z 18 June 1958
Runit (Yvonne) Eniwetok Atoll
Barge Shot - Height: 8 ft.

SHOT NUMBER: 125
HARDTACK LINDEN
Deleted

Deleted

H.E.:
Deleted
PBX 9010 and 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	15.3 in.
Length	17.7 in.
Weight	86.9 lbs

Deleted

INITIATION: Zipper

REMARKS:

Deleted

SIGNIFICANCE: The device performed as expected.

SPONSOR: UCRL (LRL)
1730Z 27 June 1958
Romurikku (Fox) Bikini Atoli
Barge Shot - Height: 10 ft.

SHOT NUMBER: 126
HARDTACK REDWOOD
Deleted

Deleted

H.E.:
Deleted
PBX 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	18.0 in.
Length	34.1 in.
Weight	587 lbs

Deleted

INITIATION: Zippers

TOTAL DEVICE WEIGHT: 654 lbs

REMARKS:

Deleted

SIGNIFICANCE: The device operated satisfactorily.

SPONSOR: LASL
1830Z 27 June 1958
Engebi (Janet) Eniwetok Atoll
Barge Shot - Height: 9 ft.

SHOT NUMBER: 127
HARDTACK ELDER
Deleted

Deleted

H.E.:
Deleted
PBX 9010 and 9404
Deleted

Deleted

DIMENSIONS:
Max. Dia. 18 in.
Length 69 in.

Deleted

INITIATION: Zipper

TOTAL DEVICE WEIGHT: 1625 lbs

REMARKS:
Deleted

SIGNIFICANCE: The device operated satisfactorily

Deleted

SPONSOR: LASL
1930Z 28 June 1958
Bogallua (Alice) Eniwetok Atoll
Barge Shot - Height: 6.3 ft.

SHOT NUMBER: 128
HARDTACK OAK
Deleted

Deleted

H.E.:

PBX 9010 and 9404 Deleted

Deleted

Deleted

DIMENSIONS:

Max. Dia.	37 in.
Length	100.5 in.
Weight	346 lbs

Deleted

YIELD: Deleted

Achieved: 9.0 ± 0.65 MT

Deleted

INITIATION: Zipper

TOTAL DEVICE WEIGHT: 6113 lbs

REMARKS:

Deleted

SIGNIFICANCE: The success of this shot showed :

Deleted

SPONSOR: UCRL (LRL)
0000Z 29 June 1958
Eninman (Tare) Bikini Atoll
Barge Shot - Height: 10 ft.

SHOT NUMBER: 129
HARDTACK HICKORY

Deleted

Deleted

H.E.:

PBX 9404 Deleted

Deleted

Deleted

DIMENSIONS:

Max. D...	14.0 in
Length	16.5 in.

Deleted

Deleted

INITIATION: E.N.S. and JONAH

TOTAL DEVICE WEIGHT: 128 lbs

REMARKS:

Deleted

SIGNIFICANCE: The device operated satisfactorily.

Deleted

SPONSOR: LASL
1830Z 1 July 1958
Kunit (Yvonne) Eniwetok Atoll
Barge Shot - Height 6.5 ft.

SHOT NUMBER: 130
HARDTACK SEQUOIA
Deleted

Deleted

H.E.: Deleted

PBX 9010 and 9404

Deleted

Deleted

DIMENSIONS:

Max. Dia.	11.3 in.
Length	15 in.

Deleted

INITIATION: Zipper

TOTAL DEVICE WEIGHT: 65.5 lbs

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

SPONSOR: UCRL (LRL)
1730Z 2 July 1958
Namu (Charlie) Bikini Atoll
Barge Shot - Height: 11 ft.

SHOT NUMBER: 131
HARDTACK CEDAR
Deleted

Deleted

H.E.: Deleted Deleted
Composition B and Cyclotol 75/25

Deleted

DIMENSIONS:
Max. Dia. 17.9 in.
Length 71.9 in.

Deleted

TOTAL DEVICE WEIGHT: 2470 lbs

INITIATION: Zipper

REMARKS:

Deleted

SIGNIFICANCE: The device operated satisfactorily to provide data useful

Deleted

SPONSOR: UCRL (LRL)
1830Z 5 July 1958
Engebi (Janet) Eniwetok Atoll
Barge Shot - Height: 10 ft.

SHOT NUMBER: 132
HARDTACK DOGWOOD
Deleted

Deleted

H.E.: Deleted

PBX 9404
Deleted

Deleted

DIMENSIONS:
Max. Dia. 18.1 in.
Length 34.1 in.

Deleted

INITIATION: Zipper

TOTAL DEVICE WEIGHT: 579.0 lbs

REMARKS:

Deleted

SIGNIFICANCE: The device operated satisfactorily.

Deleted

SPONSOR: UCRL (LRL)
0330Z 12 July 1958
Namu (Charlie) Bikini Atoll
Barge Shot - Height: 10 ft.

SHOT NUMBER: 133
HARDTACK POPLAR

Deleted

Deleted

H.E.:

Deleted

PBX 9010 and 9404

Deleted

Deleted

DIMENSIONS:

Max. Dia. 48.2 in.
Length 122.1 in.

Deleted

INITIATION: Zipper

TOTAL DEVICE WEIGHT: 9316 lbs

REMARKS:

Deleted

SIGNIFICANCE: The device performed well

Deleted

SPONSOR: LASL
0400Z 14 Jul 1958
Runit (Yvonne) Eniwetok Atoll
Surface Shot - Height: [illegible] ft.

SAFETY EXPERIMENT: 15
HARDTACK SCAEVOLA
Deleted

Deleted

H.E.: Deleted

Deleted

Boracitol, Composition B and Cyclotol 75/25

Deleted

DIMENSIONS:

Max. Dia.	16 in.
Length	31.5 in.
Weight	206.8 lbs

YIELD:
Predicted: 0
Achieved: 0

INITIATION: Zippers

REMARKS: This was a test to determine the one-point safety Deleted

SIGNIFICANCE: Deleted as fired, was one-point safe.

SPONSOR: LASL
2300Z 17 July 1958
Runit (Yvonne) Eniwetok Atoll
Barge Shot - Height 6.5 ft.

SHOT NUMBER: 134
HARDTACK PISONIA
Deleted

Deleted

H.E.:
Deleted
PBX 9010 and ^404
Deleted

Deleted

DIMENSIONS:
Max. Dia. 12.8 in.
Length 36.3 in.

Deleted

INITIATION: Zipper

TOTAL DEVICE WEIGHT: 376 lbs

REMARKS:

Deleted

SIGNIFICANCE: The device operated satisfactorily to show the feasibility

Deleted

SPONSOR: UCRL (LRL)
0420Z 22 July 1958
Eninman (Tare) Bikini Atoll
Barge Shot - Height: 10 ft.

SHOT NUMBER: 135
HARDTACK JUNIPER
Deleted

Deleted

H.E.:
Deleted
PBX 9404
Deleted

Deleted

DIMENSIONS:
Max. Dia. 14.4 in.
Length 15.3 in.

Deleted

INITIATION: Zipper

TOTAL DEVICE WEIGHT: 167.5 lbs

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

SPONSOR: UCRL (LRL)
20302 22 July 1958
Engebi (Janet) Eniwetok Atoll
Barge Shot - Height: 10 ft.

SHOT NUMBER: 136
HARDTACK OLIVE

Deleted

Deleted

H.E.:
Deleted
PBX 9404 and 9010

Deleted

Deleted

Deleted

DIMENSIONS:
Max. Dia. 12.6 in.
Length 32.0 in.

Deleted

INITIATION: Zipper

TOTAL DEVICE WEIGHT: 218.7 lbs

REMARKS:

Deleted

SIGNIFICANCE: The device performed very well showing the feasibility Deleted

[redacted] [redacted]

SPONSOR: UCRL (LRL)
2030Z 26 July 1958
Engebi (Janet) Eniwetok Atoll
Barge Shot - Height: 10 ft.

SHOT NUMBER: 137
HARDTACK PINE

Deleted

Deleted

H.E.: Deleted
Composition B and Cyclotol 75/25

Deleted

Deleted

DIMENSIONS:
Max. Dia. 50.0 in.
Length 112.6 in.

Deleted

INITIATION: Zippers

TOTAL DEVICE WEIGHT: 8752 lbs

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

[redacted]

SPONSOR: DOD
1050Z 1 August 1958
Off Johnston Island
Missile shot - Height: 252,000 ft.

SHOT NUMBER: 138
HARDTACK TEAK
Deleted

Deleted

H.E.:
Deleted
Boracitol, Composition B and Cyclotol 75/25
Deleted

Deleted

DIMENSIONS:
Max. Dia. 34.5 in.
Length 105.7 in.

Deleted

INITIATION:

TOTAL DEVICE WEIGHT: 6230 lbs

REMARKS: This was a test to study the effects of a nuclear detonation at very high altitude. A
was carried aloft on a REDSTONE missile.
Deleted

SIGNIFICANCE: Data were obtained to help define the effects at high altitude. Mal-programming of the missile guidance system caused a 7 mile error in the point of burst. As a result some camera coverage was lost.

SPONSOR: UCRL (LRL)
0215Z 6 August 1958
Runit (Yvonne) Eniwetok Atoll
Surface Shot

SHOT NUMBER: 139
HARDTACK QUINCE

Deleted

Deleted

H.E.:

Deleted

PBX 9404 Deleted

Deleted

DIMENSIONS:

Max. Dia.	10.5 in.
Length	11.5 in.
Weight	Deleted

Deleted

INITIATION: Zipper

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

SPONSOR: DOD
1030Z 12 August 1958
Off Johnston Island
Missile shot - Height: 114,000 ft.

SHOT NUMBER: 140
HARDTACK ORANGE
Deleted

Deleted

H.E.: Deleted
Boracitol, Composition B and Cyclotol 75/25
Deleted

Deleted

DIMENSIONS:
Max. Dia. 34.5 in.
Length 105.7 in.

Deleted

Deleted

TOTAL DEVICE WEIGHT: 6230 lbs

REMARKS: This was a second test to study the effects of nuclear detonations at high altitude.

SIGNIFICANCE: Some data were obtained, however, clouds obscured the detonation phenomena from some of the ground based cameras.

SPONSOR: UCRL (LRL)
0400Z 18 Aug 1958
Runit (Yvonne) Eniwetok Atoll
Surface shot

SHOT NUMBER: 141
HARDTACK FIG
Deleted

Deleted

H.E.:
Deleted
PBX 9404
Deleted

Deleted

DIMENSIONS:
Max. Dia. 10.8 in.
Length 11.5 in.
Weight: Deleted

Deleted

INITIATION: Zipper

REMARKS:

Deleted

SIGNIFICANCE: The device performed as expected, proving the feasibility Deleted

SPONSOR: DOD
27 Aug - 1 Sep 1958
South Atlantic Ocean
High Altitude Shots

SHOT NUMBERS: 142, 143, 144
Project ARGUS
Deleted

Deleted

H.E.:
Deleted
Composition B and Cyclotol 75/25
Deleted

Deleted

DIMENSIONS:
Deleted

Max. Dia.	17.4 in.
Length	25.8 in.
Weight	218 lbs

Deleted

INITIATION: Deleted

REMARKS: The purpose of the ARGUS test was to explore

Deleted

The devices were carried aloft by (X-17a) three stage, solid fueled rockets. Data on the individual shots are:

142	27 Aug 1958	0228Z	161 ± 30 Km	(87 ± 16 n. mi.)
143	30 Aug 1958	0318Z	293 ± 15 Km	(158 ± 8 n. mi)
144	6 Sep 1958	2213Z	750 ± 10 Km	(405 ± 5 n. mi)

SIGNIFICANCE: Good definitive data were obtained

Sounding rockets obtained data
Deleted
The stations of the ground instrument program generally obtained the data for which they were designed. An enormous amount of geophysical data on the earth's atmosphere, radiation background values and magnetic field are contained in the results of the test.

SPONSOR: LASL
2000Z 12 Sep 1958
Yucca Flat, Area 3Q, Nevada Test Site
Underground (hole) Shot - Depth 480 ft.

SAFETY EXPERIMENT: 16
HARDTACK OTERO

Deleted

Deleted

H.E.: Deleted

Deleted

PBX 9010 and 9404

Deleted

DIMENSIONS:

Max. Dia.	11.3 in.
Length	15 in.
Weight	66.9 lbs

YIELD:
Deleted
Achieved: 40 ± 10 tons

INITIATION: Zippers

REMARKS: This was a one-point test

Deleted

SIGNIFICANCE: This design was not one-point safe, as tested,

Deleted

SPONSOR: LASL
1930Z 17 Sep 1958
Yucca Flat, Area 3, Nevada Test Site
Underground (hole) Shot - Depth 456 ft.

SAFETY EXPERIMENT: 17
HARDTACK BERNALILLO
Deleted

Deleted

H.E.:
Deleted
PBX 9404 and 9010
Deleted

Deleted

DIMENSIONS.

Max. Dia.	11.3 in.
Length	15 in.
Weight	65.5 lbs

YIELD:
Deleted
Achieved: 19 ± 4 tons

INITIATION: Zippers

REMARKS: This was a one-point test

Deleted

SIGNIFICANCE: Deleted proved unsafe, Deleted

SPONSOR: LASL
1400Z 19 Sep 1958
Yucca Flat, Area 7, Nevada Test Site
Balloon Shot - Height 500 ft.

SHOT NUMBER: 145
HARDTACK EDDY
Deleted

Deleted

H.E.:
Deleted
Composition B and Cyclotol 75/25
Deleted

Deleted

DIMENSIONS.

Deleted
Max. Dia. 17.4 in.
Weight 146 lbs

YIELD:
Deleted
Achieved: 80 ± 2 tons

INITIATION: Deleted

REMARKS:
Deleted

SIGNIFICANCE: The device performed as expected,

Deleted

SPONSOR: LASL
1900Z 21 Sep 1958
Yucca Flat, Area 3, Nevada Test Site
Underground (hole) - Depth 484 ft.

SAFETY EXPERIMENT: 18
HARDTACK LUNA
Deleted

Deleted

H.E.:
Deleted
PBX 9404 and 9010
Deleted

Deleted

DIMENSIONS:

Max. Dia.	11.6 in.
Length	15 in.
Weight	56.7 lbs

YIELD:
Deleted
Achieved: 1.5 ± 0.1 tons

INITIATION: Zippers

REMARKS: This was a one-point test to determine the safety Deleted

SIGNIFICANCE: The device operated about as expected.

SPONSOR: UCRL (LRL)
2200Z 23 Sep 1958
Tunnel U 12f.01, Nevada Test Site
Underground (tunnel) shot - Depth 183 ft.

SAFETY EXPERIMENT: 19
HARDTACK MERCURY
Deleted

Deleted

H.E.:
Deleted
PIX 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	14.4 in.
Length	15.3 in.
Weight	126.7 lbs

Deleted

INITIATION: 4 Zippers

REMARKS: This was a test to determine the one-point safety Deleted

SIGNIFICANCE: This design was one-point safe. Deleted

SPONSOR: LASL
2000Z 26 Sep 1958
Yucca Flat, Area 3, Nevada Test Site
Underground (hole)Shot - Depth 484 ft.

SAFETY EXPERIMENT: 20
HARDTACK VALENCIA
Deleted

Deleted

H.E.:
Deleted
PBX 9010 and 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	13.2 in.
Length	17.3 in.
Weight	86 lbs

YIELD:
Deleted
Achieved: 2.4 ± 0.4 tons

INITIATION: Zippers

REMARKS:

Deleted

SIGNIFICANCE: Some yield was observed; however, when all factors are considered, it is believed that the Deleted device is one-point safe.

SPONSOR: UCRL (LRL)
0000Z 28 Sep 1958
Tunnel U 12f.02, Nevada Test Site
Underground (tunnel) Shot - Depth 140 ft.

SAFETY EXPERIMENT: 21
HARDTACK MARS
Deleted

Deleted

H.E.:

PBX 9404 Deleted

Deleted

DIMENSIONS: Deleted

Length 21.1 in.
Weight 110.7 lbs

YIELD: Deleted
Achieved: 13.5 ± 2.8 tons

INITIATION: Zippers

REMARKS: This was a test to determine the one-point safety Deleted

SIGNIFICANCE: Deleted

SPONSOR: LASL
1405Z 29 Sep 1958
Yucca Flat, Area 7, Nevada Test Site
Balloon Shot - Height 1500 ft.

SHOT NUMBER: 146
HARDTACK MORA
Deleted

Deleted

H.E.:
Deleted
PBX 9404 and 9010
Deleted

Deleted

DIMENSIONS:

Max. Dia.	11.3 in.
Length	15 in.
Weight	57 lbs

YIELD:
Deleted
Achieved: 2.0 ± 0.1 KT

INITIATION: Zippers

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

SPONSOR: LASL
1410Z 5 Oct 1958
Yucca Flat, Area 7, Nevada Test Site
Balloon Shot - Height 337 ft.

SAFETY EXPERIMENT: 22
HARDTACK HIDALGO
Deleted

Deleted

H.E.:
Deleted
FEX 9010 and 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	22.2 in.
Weight	372 lbs

YIELD:
Deleted
Achieved: 78.5 ± 2.4 tons

INITIATION: Zippers

REMARKS: This was a test to determine the one-point safety Deleted

SIGNIFICANCE: Deleted

SPONSOR: LASL
1615Z 5 Oct 1958
Yucca Flat, Area 3, Nevada Test Site
Underground (hole) Shot - Depth 350 ft.

SAFETY EXPERIMENT: 23
HARDTACK COLFAX
Deleted

Deleted

H.E.: Deleted
PBX 9010 and 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	11.3 in.
Length	15 in.
Weight	64.2 lbs

YIELD:
Deleted
Achieved: 5.5 ± 0.8 tons

INITIATION: Zippers

REMARKS: This was a test to determine the one-point safety
Deleted

SIGNIFICANCE:

Deleted

SPONSOR: UCRL (LRL)
2200Z 8 Oct 1958
Tunnel U 12b.02, Nevada Test Site
Underground (tunnel) Shot - Depth 407 ft.

SHOT NUMBER: 147
HARDTACK TAMALPAIS
Deleted

Deleted

H.E.:
Deleted
PBX 9404
Deleted

Deleted

DIMENSIONS:

Deleted

Length	21.1 in.
Weight	110.7 lbs

YIELD:
Deleted
Achieved: 77 ± 10 tons

INITIATION: Zipper

REMARKS:
Deleted

SIGNIFICANCE:
Deleted

SPONSOR: LASL
1430Z 10 Oct 1958
Yucca Flat, Area 7, Nevada Test Site
Tower Shot - Height 100 ft.

SHOT NUMBER: 148
HARDTACK QUAY
Deleted

Deleted

H.E.:
Deleted
PBX 9010 and 9404
Deleted

DIMENSIONS:

Max. Dia.	15.3 in.
Length	17.7 in.
Weight	93 lbs

YIELD:
Deleted
Achieved: 84 ± 6 tons

INITIATION: Zippers Deleted

REMARKS:

Deleted

SIGNIFICANCE: The device performed about as expected to show the feasibility Deleted

SPONSOR: LASL
1320Z 13 Oct 1958
Yucca Flat, Area 7, Nevada Test Site
Balloon Shot - Height 1500 ft.

SHOT NUMBER: 149
HARDTACK LEA
Deleted

Deleted

H.E.: Deleted

PBX 9010 and 9404

Deleted

DIMENSIONS:

Max. Dia.	11.7 in.
Length	15 in.
Weight	63 lbs

Deleted

YIELD:
Deleted
Achieved: 1.5 ± 0.2 KT

INITIATION: Zippers

REMARKS: Deleted

SIGNIFICANCE: Deleted

SPONSOR: UCRL (LRL).
1800Z 14 Oct 1958
Tunnel U 12c.03, Nevada Test Site
Underground (tunnel) Shot - Depth 110 ft.

SAFETY EXPERIMENT: 24
HARDTACK NEPTUNE
Deleted

Deleted

H.E.:
Deleted
PBX 9404

Deleted
DIMENSIONS:

Max. Dia.	14.0 in.
Length	16.6 in.
Weight	128 lbs.

Deleted

YIELD:
Deleted
Achieved: 115 ± 15 tons

INITIATION: Zippers (four)

REMARKS: This was a test to determine the one-point safety of the Deleted
Deleted

SIGNIFICANCE: Deleted

SPONSOR: UCRL (LRL)
1600Z 15 Oct 1958
Frenchman Flat, Site F1, Nevada Test Site
Tower Shot - Height 50 ft.

SHOT NUMBER: 150
HARDTACK HAMILTON
Deleted

Deleted

H.E.:
Deleted
PBX N-2
Deleted

Deleted

DIMENSIONS:

Max. Dia.	11.0 in.
Length	12.0 in.
Weight	35 lbs

YIELD:
Deleted
Achieved: 1.17 ± 0.06 tons

INITIATION: Zipper

REMARKS:

Deleted

SIGNIFICANCE: Deleted

SPONSOR: UCRL (LRL)
0600Z 16 Oct 1958
Tunnel U 12e.02, Nevada Test Site
Underground (tunnel) Shot - Depth 932 ft.

SHOT NUMBER: 151
HARDTACK LOGAN
Deleted

Deleted

H.E.:
PBX 9404 Deleted
Deleted

Deleted

DIMENSIONS:

Max. Dia.	11.2 in.
Length	11.5 in.
Weight	63 lbs

YIELD:
Deleted
Achieved: 5.0 $^{+0.2}_{-0.4}$ KT

INITIATION: Zipper

REMARKS:

Deleted

SIGNIFICANCE: The device performed about as expected Deleted effects data were obtained.
Deleted

SPONSOR: LASL
1420Z 16 Oct 1958
Yucca Flat, Area 7, Nevada Test Site
Balloon Shot - Height 450 ft.

SHOT NUMBER: 152
HARDTACK DONA ANA

Deleted

Deleted

H.E.:
Deleted
PBX 9010 and 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	11.3 in.
Length	15 in.
Weight	56.5 lbs

YIELD:
Deleted
Achieved: 36 ± 10 tons

INITIATION: Zippers Deleted

REMARKS:

Deleted

SIGNIFICANCE: The device performed as expected.

SPONSOR: UCRL (LRL)
2300Z 17 Oct 1958
Yucca Flat, Area 9, Nevada Test Site
Surface Shot

SAFETY EXPERIMENT: 25
HARDTACK VESTA
Deleted

Deleted

H.E.:
Deleted
PBX 9404

Deleted

Deleted

DIMENSIONS:

Max. Dia.	12.7 in.
Length	18.9 in.
Weight	116.7 lbs

YIELD:
Deleted
Achieved: 24 ± 2 ton

INITIATION: Zipper (four)

REMARKS: This was a test to determine the one-point safety Deleted

SIGNIFICANCE: Deleted

SPONSOR: LASL
1425Z 18 Oct 1958
Yucca Flat, Area 3, Nevada Test Site
Tower Shot - Height 72.5 ft.

SHOT NUMBER: 153
HARDTACK RIO ARRIBA
Deleted

Deleted

H.E.:
Deleted
Baratol, Composition B and Cyclotol 75/25
Deleted

Deleted

DIMENSIONS:
Deleted

Max. Dia. 27.5 in.
Weight ~825 lbs

YIELD:
Deleted
Achieved: 92 ± 4 tons

INITIATION:
Deleted

REMARKS:
Deleted

SIGNIFICANCE: The device performed as expected,
Deleted

SPONSOR: LASL
1430Z 20 Oct 1958
Yucca Flat, Area 3, Nevada Test Site
Underground (hole) shot - Depth 250 ft.

SAFETY EXPERIMENT: 26
HARDTACK SAN JUAN
Deleted

Deleted

H.E.:
Deleted
PBX 9010 and 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	13.2 in.
Length	17.3 in.
Weight	38.9 lbs

INITIATION: Zippera

REMARKS: This was a test to determine the one-point safety Deleted
Deleted

SIGNIFICANCE: The device proved to be one-point safe.

SPONSOR: LASL
1330Z 22 Oct 1958
Yucca Flat, Area 7, Nevada Test Site
Balloon Shot - Height 1450 ft.

SHOT NUMBER: 154
HARDTACK SOCORRO
Deleted

Deleted

Deleted

H.E.: Deleted

PBX 9010 and 9404
Deleted

DIMENSIONS:

Max. Dia.	11.7 in.
Length	15 in.
Weight	58.1 lbs

YIELD:
Deleted
Achieved: 6.2 ± 0.6 KT

INITIATION: Zippers

REMARKS:

Deleted

SIGNIFICANCE:

Deleted

SPONSOR: UCRL (LRL)
1650Z 22 Oct 1958
Yucca Flat, Area 9, Nevada Test Site
Balloon Shot - Height 1500 ft.

SHOT NUMBER: 155
HARDTACK WRANGELL
Deleted

Deleted

H.E.: Deleted
PBX 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	12.7 in.
Length	21.9 in.
Weight	123.6 lbs

YIELD:
Achieved: 115 ± 10 tons

INITIATION: Zipper

REMARKS: Deleted

SIGNIFICANCE: Deleted

SPONSOR: UCRL (LRL)
2030Z 22 Oct 1958
Yucca Flat, Area 2, Nevada Test Site
Tower Shot - Height 25 ft.

SAFETY EXPERIMENT: 27
HARDTACK OBERON
Deleted

Deleted

H.E.:
Deleted
PBX 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	12.7 in.
Length	14.5 in.
Weight	111.2 lbs

Deleted

INITIATION: Zipper

REMARKS: This was a test to determine the one-point safety Deleted

SIGNIFICANCE: The device, as tested, was one-point safe.

Deleted

Deleted

SPONSOR: UCRL (LRL)
2340Z 22 Oct 1958
Yucca Flat, Area 9a, Nevada Test Site
Balloon Shot - Height 500 ft.

SHOT NUMBER: 156
HARDTACK RUSHMORE
Deleted

Deleted

H.E.:
Deleted
PBX 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	14.3 in.
Length	15.6 in.
Weight	124.6 lbs

YIELD:
Achieved 188 ± 20 tons

INITIATION: Zipper

REMARKS:
Deleted

SIGNIFICANCE:

Deleted

SPONSOR: LASL
1500Z 24 Oct 1958
Yucca Flat, Area 3, Nevada Test Site
Tower Shot - Height 72.5 ft.

SAFETY EXPERIMENT: 28
HARDTACK CATRON
Deleted

Deleted

H.E.:
Deleted
PBX 9010 and 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	11.3 in.
Length	15 in.
Weight	58.9 lbs

YIELD:
Deleted
Achieved: 21 ± 2 tons

INITIATION: Zippers

REMARKS: This was a test to determine the one point safety
Deleted

SIGNIFICANCE:
Deleted

SPONSOR: UCRL (LRL)
1601Z 24 Oct 1958
Yucca Flat, Area 9f, Nevada Test Site
Surface (igloo) Shot

SAFETY EXPERIMENT: 29
HARDTACK JUNO
Deleted

Deleted

H.E.:

PBX 9404
Deleted
DIMENSIONS:
Max. Dia. 11.2 in.
Length 11.5 in.
Weight 58 lbs

Deleted

YIELD:
Deleted
Achieved: 1.74 ± 0.09 tons

INITIATION: Zippers

REMARKS: This was a one-point safety test of the Deleted

SIGNIFICANCE: The data obtained helped to determine the active material contents for a one-point safe Deleted

[redacted] [redacted]

SPONSOR: UCRL (LRL)
0400Z 26 Oct 1958
Yucca Flat, Area 2, Nevada Test Site
Tower Shot - Height 25 ft.

SAFETY EXPERIMENT: 30
HARDTACK CERES
Deleted

Deleted

H.E.:

Deleted
PBX 9404

Deleted

DIMENSIONS:

Deleted

Length	21.1 in.
Weight	110.7 lbs

YIELD:

Deleted
Achieved: 0.67 ± 0.06 tons

INITIATION: Zippers

REMARKS: This was a test to determine the one-point safety of the

Deleted

SIGNIFICANCE:

Deleted

[redacted]

SPONSOR: UCRL (LRL)
1020Z 26 Oct 1958
Frenchman Flat, Nevada Test Site
Balloon Shot - Height 1500 ft.

SHOT NUMBER: 157
HARDTACK SANFORD
Deleted

Deleted

H.E.:
Deleted
PBX 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	12.7 in.
Length	14.5 in.
Weight	111.2 lbs

YIELD:
Deleted
Achieved: 4.9 ± 0.3 KT

INITIATION: Zipper

REMARKS:
Deleted

SIGNIFICANCE: The device performed about as expected.

SPONSOR: LASL
1600Z 26 Oct 1958
Yucca Flat, Area 7, Nevada Test Site
Balloon Shot - Height 1500 ft.

SHOT NUMBER: 158
HARDTACK DEBACA
Deleted

Deleted

H.E.:
Deleted
PBX 9010 and 9404
Deleted

DIMENSIONS:

Max. Dia.	11.3 in.
Length	15 in.
Weight	66 lbs

Deleted

YIELD:
Deleted
Achieved: 2.5 ± 0.2 KT

INITIATION: Zipper

REMARKS: Deleted

SIGNIFICANCE: Deleted

SPONSOR: LASL
1430Z 27 Oct 1958
Yucca Flat, Area 3, Nevada Test Site
Tower Shot - Height 52.5 ft.

SAFETY EXPERIMENT: 31
HARDTACK CHAVES
Deleted

Deleted

H.E.:
Deleted
PBX 9010 and 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	11.3 in.
Length	15 in.
Weight	57.5 lbs

YIELD:
Deleted
Achieved: 1270 ± 90 lbs

INITIATION: Zippers

REMARKS: This was a test to determine one-point safety
Deleted

SIGNIFICANCE:
Deleted

[redacted] [redacted]

SPONSOR: UCRL (LASL)
0000Z 29 Oct 1958
Tunnel U 12b.04, Nevada Test Site
Underground (tunnel) Shot - Depth 852 ft.

SHOT NUMBER: 159
HARDTACK EVANS
Deleted

Deleted

H.E.:

PBX 9404 Deleted

Deleted

Deleted

DIMENSIONS:

Max. Dia.	18 in.
Length	44 in.
Weight	734 lbs

Deleted

INITIATION: Zipper

REMARKS: Deleted

SIGNIFICANCE: Deleted

[redacted]

SPONSOR: UCRL (LRL)
11207 29 Oct 1958
Yucca Flat, Area 9, Nevada Test Site
Tower Shot, Height 50 ft.

SHOT NUMBER: 160
HARDTACK MAZAMA
Deleted

Deleted

H.E.:
Deleted
Boracitol, Composition B and PBX 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	29.0 in.
Length	-
Weight	590 lbs

Deleted

INITIATION: Zipper

REMARKS:
Deleted

SIGNIFICANCE:
Deleted

SPONSOR: UCRL (LRL)
1445Z 29 Oct 1958
Yucca Flat, Area 3, Nevada Test Site
Tower Shot - Height 25 ft.

SHOT NUMBER: 161
HARDTACK HUMBOLDT
Deleted

Deleted

H.E.:
Deleted
PBX 9404

Deleted
DIMENSIONS:
Max. Dia. 11.0 in.
Length 12.0 in.
Weight 35 lbs

Deleted

YIELD:
Deleted
Achieved: 7.8 ± 0.5 tons

INITIATION: Zipper

REMARKS: Deleted

SIGNIFICANCE: Deleted

SPONSOR: LASL
0300Z 30 Oct 1958
Yucca Flat, Area 7, Nevada Test Site
Balloon Shot - Height 1500 ft.

SHOT NUMBER: 162
HARDTACK SANTE FE

Deleted

Deleted

H.E.:
Deleted
PBX 9010 and 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	11.3 in.
Length	15 in.
Weight	57.3 lbs

YIELD:
Deleted
Achieved: 1.25 ± 2 KT

INITIATION: Zipper

REMARKS:

Deleted

SIGNIFICANCE: Deleted

SPONSOR: UCRL (LRL)
1100Z 30 Oct 1958
Yucca Flat, Area 9g, Nevada Test Site
Surface Igloo

SAFETY EXPERIMENT:32
HARDTACK GANYMEDE
Deleted

Deleted

H.E.: Deleted

Deleted

PBX 9404
Deleted

DIMENSIONS:

Max. Dia.	11.6 in.
Length	21.1 in.
Weight	109 lbs

Deleted

INITIATION: Zippers

REMARKS: This was a test to determine the one-point safety Deleted

SIGNIFICANCE: The device, as tested, was one-point safe.

SPONSOR: UCRL (LRL)
1500Z 30 Oct 1958
Tunnel U 12e.05, Nevada Test Site
Underground (tunnel) Shot - Depth 987 ft.

SHOT NUMBER: 163
HARDTACK BLANCA
Deleted

Deleted

H.E.:
:BX 9404 Deleted
Deleted

Deleted

n)

DIMENSIONS:

Max. Dia.	18.0 in.
Length	45.5 in.
Weight	717.6 lbs

YIELD:
Deleted
Achieved: 19.2 ± 1.5 KT
Deleted

INITIATION: Zippers

REMARKS:
Deleted

SIGNIFICANCE: The primary operated as expected.

SPONSOR: UCRL (LRL)
2034Z 30 Oct 1958
Yucca Flat, Area 8c, Nevada Test Site
Tower Shot - Height 25 ft.

SAFETY EXPERIMENT: 33
HARDTACK TITANIA
Deleted

Deleted

H.E.:
Deleted
PBX 9404
Deleted

Deleted

DIMENSIONS:

Max. Dia.	14.0 in.
Length	16.6 in.
Weight	128 lbs

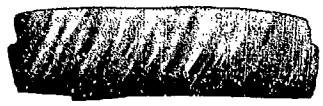
YIELD:
Deleted
Achieved: 0.15 ± 0.01 ton

INTIATION: Zippers

REMARKS: This was a test to determine the one-point safety of a Deleted

SIGNIFICANCE: This device, Deleted was one-point safe, meeting the DOD requirements for nuclear safety

Deleted



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APPENDIX A

TIMES AND LOCATIONS OF EVENTS

SHOT NUMBER	OPERATION EVENT	DEVICE	DATE (Z) [1]	TIME (Z) [1]	BURST HEIGHT (ft) [2]	NAME	LOCATION LATITUDE	LONGITUDE
1	Trinity	Model 1561(Mk 3A)	16 Jul 45	1229:15	100 T	Trinity Site	33°40'31" N	106°28'29" W
2	Hiroshima	LITTLE BOY	5 Aug 45	2315:	1850 A	Hiroshima, Japan	-	-
3	Nagasaki	Mk 3A	9 Aug 45	0158:	1850 A	Nagasaki, Japan	-	-
4	CROSSROADS ABLE	[redacted]	30 Jun 46	2201:	520 A	Bikini	11° N	165° E
5	BAKER	[redacted]	24 Jul 46	2135:	-90 UW	Bikini	11° N	165° E
6	SANDSTONE X-RAY	[redacted]	14 Apr 48	1816:59	200 T	Eniwetok	11°40' N	162°14' E
7	YOKE	[redacted]	30 Apr 48	1808:59	200 T	Eniwetok	11°37' N	162°19' E
8	ZEBRA	[redacted]	14 May 48	1804:00	200 T	Eniwetok	11°33' N	162°21' E
9	RANGER ABLE	[redacted]	27 Jan 51	1344:51.0	1060 A	Nevada	36°48' N	115°57' W
10	BAKER I	[redacted]	28 Jan 51	1352:04.5	1080 A	Nevada	36°48' N	115°57' W

SHOT NUMBER	OPERATION EVENT	DEVICE	DATE (Z) [1/]	TIME (Z) [1/]	BURST HEIGHT(ft) [2/]	NAME	LOCATION LATITUDE	LONGITUDE
11	EASY		1 Feb 51	1346:39.5	1080 A	Nevada	36°48' N	115°57' W
12	BAKER II		2 Feb 51	1348:48.0	1100 A	Nevada	36°48' N	115°57' W
13	FOX		6 Feb 51	1346:55.0	1435 A	Nevada	36°48' N	115°57' W
14	GREENHOUSE DOG		7 Apr 51	1833:57.80	300 T	Eniwetok	11°33'21" N	162°21'16" E
15	EASY		20 Apr 51	1827:00.10	300 T	Eniwetok	11°40'08" N	162°14'25" E
16	GEORGE		8 May 51	2130:00.70	200 T	Eniwetok	11°37'37" N	162°18'53" E
17	ITEM		24 May 51	1816:59.30	200 T	Eniwetok	11°40'23" N	162°14'55" E
18	BUSTER-JANGLE ABLE		22 Oct 51	1400:	100 T	Nevada	37°05'02" N	116°01'26" W
19	BAKER		28 Oct 51	1520:08.85	1118 A	Nevada	37°05'06" N	116°01'12" W
20	CHARLIE		30 Oct 51	1500:29.77	1132 A	Nevada	37°05'06" N	116°01'13" W
21	DOG		1 Nov 51	1530:01.56	1417 A	Nevada	37°05'05" N	116°01'11" W
22	EASY		5 Nov 51	1629:58.18	1314 A	Nevada	37°05'31" N	116°01'28" W

SHOT NUMBER	OPERATION EVENT	DEVICE	1/ DATE (Z)	1/ TIME (Z)	BURST 2/ HEIGHT(ft)	NAME	LOCATION LATITUDE	LONGITUDE
23	SUGAR		19 Nov 51	1659:59.82	3.5 S	Nevada	37°07'54"N	116°02'19" W
24	UNCLE		29 Nov 51	1959:59.82	-17 UG	Nevada	37°10'11"N	116°02'33"W
	TUMBLER-SNAPPER							
25	TUMBLER I		1 Apr 52	1700:07.50	793 A	Nevada	36°47'54"N	115°56'08" W
26	TUMBLER II		15 Apr 52	1729:57.05	1109 A	Nevada	37°05'03"N	116°01'10" W
27	TUMBLER III		22 Apr 52	1730:10.02	3447 A	Nevada	37°05'04"N	116°01'13" W
28	TUMBLER IV		1 May 52	1629:59.10	1040 A	Nevada	37°05'03"N	116°01'13" W
29			7 May 52	1214:59.25	300 T	Nevada	37°03'11"N	116°06'20" W
30			25 May 52	1159:59.60	300 T	Nevada	37°05'44"N	116°06'20" W
31			1 Jun 52	1154:59.80	300 T	Nevada	37°02'53"N	116°01'16" W
32			5 Jun 52	1155:00.30	300 T	Nevada	37°08'19"N	116°07'04" W
	IVY							
33	MIKE		31 Oct 52	1914:59.4	S	Eniwetok	11°14'14"N	162°11'47" E
34	KING		16 Nov 52	2330:	1480 A	Eniwetok	11°33'44"N	162°21'09" E

SHOT NUMBER	OPERATION EVENT	DEVICE	1/ DATE (Z)	1/ TIME (Z)	BURST 2/ HEIGHT(ft)	LOCATION NAME	LATITUDE	LONGITUDE
	UPSHOT-KNOTHOLE							
35	ANNIE		17 Mar 53	1320:00.33	300 T	Nevada	37°02'52"N	116°01'16" W
36	NANCY		24 Mar 53	1310:00.09	300 T	Nevada	37°05'44"N	116°06'10" W
37	RUTH		31 Mar 53	1259:59.99	300 T	Nevada	37°04'58"N	116°01'26" W
38	DIXIE		6 Apr 53	1529:38.41	6020 A	Nevada	37°05'05"N	116°01'05" W
39	RAY		11 Apr 53	1244:59.78	100 T	Nevada	37°05'56"N	116°05'33" W
40	BADGER		18 Apr 53	1234:59.96	300 T	Nevada	37°08'18"N	116°07'04" W
41	SIMON		25 Apr 53	1229:59.76	300 T	Nevada	37°03'11"N	116°06'10" W
42	ENCORE		8 May 53	1529:55.36	2425 A	Nevada	36°30'00"N	115°55'44" W
43	HARRY		19 May 53	1204:59.53	300 T	Nevada	37°02'25"N	116°01'31" W
44	GRABLE		25 May 53	1530:00.33	524 G	Nevada	36°47'35"N	115°54'53" W
45	CLIMAX		4 Jun 53	1114:56.68	1334 A	Nevada	37°05'15"N	116°01'06" W

SHOT NUMBER	OPERATION EVENT	DEVICE	DATE (Z) [1/]	TIME (Z) [1/]	BURST HEIGHT (ft) [2/]	NAME	LOCATION LATITUDE	LONGITUDE
46	CASTLE BRAVO		28 Feb 54	1844:59.97	S	Bikini	11°41'27"N	165°16'25"E
47	ROMEO		26 Mar 54	1830:00.37	SB	Bikini	11°41'27"N	165°16'23"E
48	KOON		6 Apr 54	1820:00.40	S	Bikini	11°29'48"N	165°22'03"E
49	UNION		25 Apr 54	1810:00.68	SB	Bikini	11°39'59"N	165°23'14"E
50	YANKEE		4 May 54	1810:00.14	SB	Bikini	11°39'56"N	165°23'13"E
51	NECTAR		13 May 54	1820:00.38	SB	Enlwetok	11°40'14"N	162°11'47"E
52	TEAPOT WASP		18 Feb 55	1959:59.17	762 A	Nevada	37°05'12"N	116°01'19"W
53	MOTH		22 Feb 55	1345:00.03	300 T	Nevada	37°02'52"N	116°01'16"W
54	TESLA		1 Mar 55	1330:00.28	300 T	Nevada	37°07'32"N	116°02'51"W
55	TURK		7 Mar 55	1319:59.21	500 T	Nevada	37°08'18"N	116°07'03"W

SHOT NUMBER	OPERATION EVENT	DEVICE	DATE (Z) 1/	TIME (Z) 1/	BURST HEIGHT(ft) 2/	NAME	LOCATION LATITUDE	LONGITUDE
56	HORNET	[redacted]	12 Mar 55	1319:59.81	300 T	Nevada	37°02'25"N	116°01'31"W
57	BEE	[redacted]	22 Mar 55	1304:59.84	500 T	Nevada	37°05'41"N	116°01'26"W
58	ESS	[redacted]	23 Mar 55	2030:00.01	-67 UG	Nevada	37°10'06"N	116°02'38"W
59	APPLE I	[redacted]	29 Mar 55	1255:00.09	500 T	Nevada	37°05'44"N	116°06'10"W
60	WASP PRIME	[redacted]	29 Mar 55	1759:54.83	740 A	Nevada	37°05'12"N	116°03'28"W
61	HIGH ALTITUDE	[redacted]	6 Apr 55	1800:04.10	36,620 A	Nevada	37°01'43"N	116°03'28"W
62	POST	[redacted]	9 Apr 55	1230:00.19	300 T	Nevada	37°07'20"N	116°02'04"W
63	MET	[redacted]	15 Apr 55	1915:00.33	400 T	Nevada	36°47'53"N	115°55'44"W
64	APPLE II	[redacted]	5 May 55	1210:00.02	500 T	Nevada	36°03'11"N	116°06'09"W
65	WIGWAM	[redacted]	14 May 55	1959:59.89	-2000 UW	Pacific Ocean	28°44' N	126°16' W
66	ZUCCHINI	[redacted]	15 May 55	1159:58.89	500 T	Nevada	37°05'41"N	116°01'26"W

SHOT NUMBER	OPERATION EVENT	DEVICE	DATE(Z) 1/	TIME (Z) 1/	BURST HEIGHT(ft) 2/	NAME	LOCATION LATITUDE	LOCATION LONGITUDE
S.E.1	PROJECT 56		1 Nov 55	2210:	S	Nevada	36°59' N	115°58' W
S.E.2	PROJECT 56		3 Nov 55	2115:	S	Nevada	36°59' N	115°58' W
S.E. 3	PROJECT 56		5 Nov 55	1955:	S	Nevada	36°59' N	115°58' W
S.E. 4	PROJECT 56		18 Jan 56	2130:	S	Nevada	36°59' N	115°58 W
67	REDWING LACROSSE		4 May 56	1825:29.88	S	Eniwetok	11°33'28" N	162°21'18" E
68	CHEROKEE		20 May 56	1750:38.67	4320 A	Bikini	11°40'06" N	165°23'39" E
69	ZUNI		27 May 56	1756:00.30	S	Bikini	11°29'48" N	165°22'09" E
70	YUMA		27 May 56	1956:00.87	200 T	Eniwetok	11°37'24" N	162°19'13" E
71	ERIE		30 May 56	1815:29.30	300 T	Eniwetok	11°32'40" N	162°21'52" E
72	SEMINOLE		6 Jun 56	0055:30.0	S	Eniwetok	11°40'35" N	162°13'02" E
73	FLATHEAD		11 Jun 56	1826:00.13	SB	Bikini	11°36'00" N	165°27'05" E
74	BLACKFOOT		11 Jun 56	1826:00.26	200 T	Eniwetok	11°33'04" N	162°21'31" E

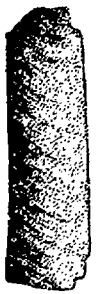
SHOT NUMBER	OPERATION EVENT	DEVICE	DATE 1/ (Z)	TIME 1/ (Z)	BURST HEIGHT 2/ (ft)	LOCATION NAME	LATITUDE	LONGITUDE
75	KICKAPOO		13 Jun 56	2326:00.55	300 T	Eniwetok	11°37'41" N	162°19'32" E
76	OSAGE		16 Jun 56	0113:53.07	680 A	Eniwetok	11°32'48" N	162°21'39" E
77	INCA		21 Jun 56	2156:00.24	200 T	Eniwetok	11°37'53" N	162°18'04" E
78	DAKOTA		25 Jun 56	1806:00.25	SB	Bikini	11°36'10" N	165°27'05" E
79	MOHAWK		2 Jul 56	1806:00.36	300 T	Eniwetok	11°37'39" N	162°18'49" E
80	APACHE		8 Jul 56	1806:00.23	SB	Eniwetok	11°40'17" N	162°12'01" E
81	NAVAHO		10 Jul 56	1756:00.0	SB	Bikini	11°39'48" N	165°23'14" E
82	TEWA		20 Jul 56	1746:00.02	SB	Bikini	11°40'26" N	165°20'22" E
83	HURON		21 Jul 56	1816:00.06	SB	Eniwetok	11°40'19" N	162°22'09" E
S.E.5	PROJECT 57		27 Apr 57	1427:	S	Nevada	Area 13	
84	PLUMBBOB BOLTZMAN		28 May 57	1155:00.16	500 T	Nevada	37°05'41" N	116°01'25" W
85	FRANKLIN		2 Jun 57	1154:59.94	300 T	Nevada	37°02'52" N	116°01'16" W

SHOT NUMBER	OPERATION EVENT	DEVICE	DATE 1/ (Z)	TIME 1/ (Z)	BURST HEIGHT(ft) 2/	NAME	LOCATION LATITUDE	LOCATION LONGITUDE
86	LASSEN		5 Jun 57	1145:00.0	500 B	Nevada	37°08'05"N	116°02'27"W
87	WILJON		18 Jun 57	1145:00.28	500 B	Nevada	37°08'05"N	116°02'27"W
88	PRISCILLA		24 Jun 57	1330:00.12	700 B	Nevada	37°47'53"N	115°55'44"W
S.E.6	COULOMB A		1 Jul 57	1730:08	S	Nevada	37°02' N	116°01' W
89	HOOD		5 Jul 57	1140:00.06	1500 B	Nevada	37°08'05"N	116°02'27"W
90	DIABLO		15 Jul 57	1130:00.06	500 T	Nevada	37°09'01"N	116°06'31"W
91	JOHN		19 Jul 57	1400:04.6	20,000 R	Nevada	37°09'38"N	116°03'11"W
92	KEPLER		24 Jul 57	1149:59.92	500 T	Nevada	37°05' N	116°06' W
93	OWENS		25 Jul 57	1329:59.69	500 B	Nevada	37°08'05"N	116°02'27"W
S.E.7	PASCAL A		26 Jul 57	0759:57.0	-500 UG	Nevada	37°02' N	116°01' W
94	STOKES		7 Aug 57	1225:00.17	1500 B	Nevada	37°05'12"N	116°01'25"W

SHOT NUMBER	OPERATION EVENT	DEVICE	DATE (Z) 1/	TIME (Z) 1/	BURST HEIGHT(ft) 2/	NAME	LOCATION LATITUDE	LONGITUDE
S.E. 8	SATURN		10 Aug 57	0059:55.1	-128 UG	Nevada	37°11'38" N	116°02'00" W
95	SHASTA		18 Aug 57	1159:59.98	500 T	Nevada	37°07'41" N	116°06'23" W
96	DOPPLER		23 Aug 57	1230:00.09	1500 B	Nevada	37°05'12" N	116°01'25" W
S.E. 9	PASCAL B		27 Aug 57	2235:00.00	-500 UG	Nevada	37°02' N	116°01' W
97	FRANKLIN PRIME		30 Aug 57	1239:59.85	750 B	Nevada	37°05'12" N	116°01'25" W
98	SMOKY		31 Aug 57	1229:59.98	700 T	Nevada	37°11'14" N	116°04'04" W
99	GALILEO		2 Sep 57	1240:00.03	500 T	Nevada	37°03'11" N	116°06'09" W
100	WHEELER		6 Sep 57	1244:59.98	500 B	Nevada	37°08'05" N	116°02'27" W
S.E. 10	COULOMB B		6 Sep 57	2005:00.63	S	Nevada	37°02' N	116°01' W
101	LAPLACE		8 Sep 57	1259:59.79	750 B	Nevada	37°05'12" N	116°01'25" W
102	FIZEAU		14 Sep 57	1644:59.84	500 T	Nevada	37°02'01" N	116°01'53" W

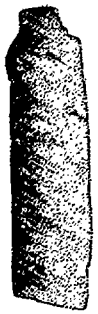
SHOT NUMBER	OPERATION EVENT	DEVICE	1/ DATE (Z)	1/ TIME (Z)	BURST 2/ HEIGHT(ft)	NAME	LOCATION LATITUDE	LOCATION LONGITUDE
103	NEWTON		16 Sep 57	1249:59.86	1500 B	Nevada	37°05'12"N	116°01'25"W
104	RAINIER		19 Sep 57	1659:59.45	-899 UG 3/ (-790)	Nevada	37°11'45"N	116°12'11"W
105	WHITNEY		23 Sep 57	1229:00.80	500 T	Nevada	37°08'18"N	116°07'03"W
106	CHARLESTON		28 Sep 57	1259:59.94	1500 B	Nevada	37°08'05"N	116°02'27"W
107	MORGAN		7 Oct 57	1300:00.05	500 B	Nevada	37°08'05"N	116°02'27"W
S.E. 11	PROJECT 58 PASCAL C		6 Dec 57	2015:	-250 UG	Nevada	37°02' N	116°01' W
S.E. 12	COULOMB C		9 Dec 57	2000:	S	Nevada	37°02' N	116°01' W
S.E. 13	VENUS		23 Feb 58	0100:	-100 UG	Nevada	37°11'37"N	116°11'58"W
S.E. 14	URANUS		14 Mar 58	2200:	-114 UG	Nevada	37°11'05"N	116°02'00"W
108	HARDTACK I YUCCA		28 Apr 58	0240:00.26	86,000 B	Bikini	12°37'00"N	163°01'30"E

SHOT NUMBER	OPERATION EVENT	DEVICE	1/ DATE (Z)	1/ TIME (Z)	BURST 2/ HEIGHT(ft)	LOCATION NAME	LATITUDE	LONGITUDE
109	CACTUS		5 May 58	1815:00.14	S	Eniwetok	11°33'23"N	162°21'15"E
110	FIR		11 May 58	1750:00.15	SB	Bikini	11°41'27"N	165°16'25"E
111	BUTTERNUT		11 May 58	1815:00.11	SB	Eniwetok	11°32'28"N	162°21'02"E
112	KOA		12 May 58	1830:00.15	S	Eniwetok	11°40'30"N	162°12'20"E
113	WAHOO		16 May 58	0130:00.5	-500 UW	Eniwetok	11°20'41"N	162°10'44"E
114	HOLLY		20 May 58	1830:00.15	SB	Eniwetok	11°32'38"N	162°21'22"E
115	NUTMEG		21 May 58	2120:00.15	SB	Bikini	11°29'46"N	165°22'15"E
116	YELLOWWOOD		26 May 58	0200:00.13	SB	Eniwetok	11°39'37"N	162°13'31"E
117	MAGNOLIA		26 May 58	1800:00.11	SB	Eniwetok	11°32'34"N	162°21'14"E
118	TOBACCO		30 May 58	0215:00.15	SB	Eniwetok	11°39'48"N	162°13'48"E
119	SYCAMORE		31 May 58	0300:00.15	SB	Bikini	11°41'27"N	165°16'25"E



SHOT NUMBER	OPERATION EVENT	DEVICE	1/ DATE (Z)	1/ TIME (Z)	BURST HEIGHT 2/ (ft)	NAME	LOCATION LATITUDE	LONGITUDE
120	ROSE		2 Jun 58	1845:00.11	SB	Eniwetok	11°32'28"N	162°21'06"E
121	UMBRELLA		9 Jun 58	2315:00.24	-150 UW	Eniwetok	11°22'51"N	162°13'09"E
122	MAPLE		10 Jun 58	1730:00.14	SB	Bikini	11°41'14"N	165°24'54"E
123	ASPEN		14 Jun 58	1730:00.14	SB	Bikini	11°41'27"N	165°16'24"E
124	WALNUT		14 Jun 58	1830:00.14	SB	Eniwetok	11°39'37"N	162°13'31"E
125	LINDEN		18 Jun 58	0300:00.12	SB	Eniwetok	11°32'39"N	162°21'23"E
126	REDWOOD		27 Jun 58	1730:00.14	SB	Bikini	11°41'14"N	165°24'54"E
127	ELDER		27 Jun 58	1830:00.13	SB	Eniwetok	11°39'48"N	162°13'48"E
128	OAK		28 Jun 58	1930:00.15	SB	Eniwetok	11°36'28"N	162°06'28"E
129	HICKORY		29 Jun 58	0000:00.15	SB	Bikini	11°29'46"N	165°22'15"E
130	SEQUOIA		1 Jul 58	1830:00.13	SB	Eniwetok	11°32'39"N	162°21'23"E

SHOT NUMBER	OPERATION EVENT	DEVICE	DATE 1/ (Z)	TIME 1/ (Z)	BURST HEIGHT 2/ (ft)		NAME	LOCATION LATITUDE	LOCATION LONGITUDE
131	CEDAR		2 Jul 58	1730:00.14		SB	Bikini	11°41'27"N	165°16'25"E
132	DOGWOOD		5 Jul 58	1830:00.24		SB	Eniwetok	11°39'48"N	162°13'48"E
133	POPLAR		12 Jul 58	0330:00.14		SB	Bikini	11°41'17"N	165°15'52"E
S.E.15	SCAEVOLA		14 Jul 58	0400:00.13		S	Eniwetok	11°32'39"N	162°21'23"E
134	PISONIA		17 Jul 58	2300:00.12		SB	Eniwetok	11°32' N	162°21' E
135	JUNIPER		22 Jul 58	0420:00.14		SB	Bikini	11°29'46"N	165°22'15"E
136	OLIVE		22 Jul 58	2030:00.22		SB	Eniwetok	11°39'48"N	162°13'48"E
137	PINE		26 Jul 58	2030:00.23		SB	Eniwetok	11°39'22"N	162°13'11"E
138	TEAK		1 Aug 58	1050.05.60	252,000	R	Pacific Ocean	16°44'38"N	169°32'00"W
139	QUINCE		6 Aug 58	0215:00.18		S	Eniwetok	11°32'59"N	162°21'34"E
140	ORANGE		12 Aug 58	1030:08.61	141,000	R	Pacific Ocean	16°21'30"N	169°32'08"W



SHOT NUMBER	OPERATION EVENT	DEVICE	DATE 1/ (Z)	TIME 1/ (Z)	BURST HEIGHT 2/ (ft)	LOCATION NAME	LATITUDE	LONGITUDE
141	PIG		18 Aug 58	0400:00.25	S	Eniwetok	11°32'59"N	162°21'34"E
142	PROJECT ARGUS ARGUS I		27 Aug 58	0227:52.55	87 n.mi.R	South Atlantic	38°48' S	11°55' W
143	ARGUS II		30 Aug 58	0317:33.79	158 n.mi.R	South Atlantic	49°23' S	08°43' W
144	ARGUS III		6 Sep 58	2212:33.35	405 n.mi.R	South Atlantic	49°30' S	10°24' W
S.E.16	HARDTACK II OTERO		12 Sep 58	2000:00.2	-480 UG	Nevada	37°02'60"N	116°01'55"W
S.E.17	BERNALILLO		17 Sep 58	1930:00.2	-456 UG	Nevada	37°02'58"N	116°01'59"W
145	EDDY		19 Sep 58	1400:00.2	500 B	Nevada	37°05'12"N	116°01'25"W
S.E.18	LUNA		21 Sep 58	1900:00.2	-484 UG	Nevada	37°02'57"N	116°02'01"W
S.E.19	MERCURY		23 Sep 58	2200:00.15	-183 UG	Nevada	37°11'37"N	116°12'03"W
S.E.20	VALENCIA		26 Sep 58	2000:00.2	-484 UG	Nevada	37°02'59"N	116°01'47"W
S.E.21	MARS		28 Sep 58	0000:00.15	-140 UG	Nevada	37°11'35"N	116°12'02"W

SHOT NUMBER	OPERATION EVENT	DEVICE	DATE 1/ (Z)	TIME 1/ (Z)	BURST HEIGHT(ft) 2/	NAME	LOCATION LATITUDE	LONGITUDE
146	MORA		29 Sep 58	1405:00.08	1500 B	Nevada	37°05'12"N	116°01'25"W
S.E.22	HIDALGO		5 Oct 58	1410:00.14	337 B	Nevada	37°05'12"N	116°01'25"W
S.E.23	COLFAX		5 Oct 58	1615:00.2	-356 UG	Nevada	37°02'56"N	116°02'03"W
147	TAMALPAIS		8 Oct 58	2200:00.13	-407 UG 3/ (-330)	Nevada	37°11'43"N	116°12'02"W
148	QUAY		10 Oct 58	1430:00.1	100 T	Nevada	37°05'41"N	116°01'25"W
149	LEA		13 Oct 58	1320:00.14	1500 B	Nevada	37°05'12"N	116°01'25"W
S.E.24	NEPTUNE		14 Oct 58	1800:00.15	-110 UG 3/ (-98.5)	Nevada	37°11'38"N	116°11'59"W
150	HAMILTON		15 Oct 58	1600:00.15	50 T	Nevada	36°48'08"N	115°55'56"W
151	LOGAN		16 Oct 58	0600:00.14	-932 UG 3/ (-830)	Nevada	37°11'03"N	116°12'04"W
152	DONA ANA		16 Oct 58	1420:00.14	450 B	Nevada	37°05'12"N	116°01'25"W
S.E.25	VESTA		17 Oct 58	2300:00.15	S	Nevada	37°07'21"N	116°02'05"W

SHOT NUMBER	OPERATION EVENT	DEVICE	1/ DATE (Z)	1/ TIME (Z)	BURST 2/ HEIGHT(ft)	NAME	LOCATION LATITUDE	LONGITUDE
153	RIO ARRIBA	[redacted]	18 Oct 58	1425:00.12	72.5 T	Nevada	37°02'28"N	116°01'33"W
S.E.26	SAN JUAN	[redacted]	20 Oct 58	1430:00.15	-250 UG	Nevada	37°02' N	116°01' W
154	SOCORRO	[redacted]	22 Oct 58	1330:00.15	1450 B	Nevada	37°05'12"N	116°01'25"W
155	WRANGELL	[redacted]	22 Oct 58	1650:00.12	1500 B	Nevada	36°47'53"N	115°55'44"W
S.E.27	OBERON	[redacted]	22 Oct 58	2030:00.15	25 T	Nevada	37°10'58"N	116°04'06"W
156	RUSHMORE	[redacted]	22 Oct 58	2340:00.13	500 B	Nevada	37°08'05"N	116°02'27"W
S.E.28	CATRON	[redacted]	24 Oct 58	1500:00.16	72.5 T	Nevada	37°02'35"N	116°01'37"W
S.E.29	JUNO	[redacted]	24 Oct 58	1601:00.15	S	Nevada	37°07'24"N	116°02'16"W
S.E.30	CERES	[redacted]	26 Oct 58	0400:00.15	25 T	Nevada	37°10'53"N	116°04'07"W
157	SANFORD	[redacted]	26 Oct 58	1020:00.13	1500 B	Nevada	37°47'53"N	115°55'44"W
158	DEBACA	[redacted]	26 Oct 58	1600:00.14	1500 B	Nevada	37°05'12"N	116°01'25"W
S.E.31	CHAVES	[redacted]	27 Oct 58	1430:00.15	52.5 T	Nevada	37°02'41"N	116°01'47"W

SHOT NUMBER	OPERATION EVENT	DEVICE	DATE (Z) 1/	TIME (Z) 1/	BURST HEIGHT (ft) 2/	NAME	LOCATION LATITUDE	LONGITUDE
159	EVANS		29 Oct 58	0000:00.15	-852 UG 3/ (-248)	Nevada	37°11'41"N	116°12'17"W
160	MAZAMA		29 Oct 58	1120:00.15	50 T	Nevada	37°07'36"N	116°02'28"W
161	HUMBOLDT		29 Oct 58	1445:00.11	25 T	Nevada	37°02'52"N	116°01'29"W
162	SANTA FE		30 Oct 58	0300:00.15	1300 B	Nevada	37°05'12"N	116°01'25"W
S.E. 32	GANYMEDE		30 Oct 58	1100:00.15	S	Nevada	37°07'32"N	116°02'49"W
163	BLANCA		30 Oct 58	1500:00.15	-987 UG 3/ (-835)	Nevada	37°11'09"N	116°12'07"W
S.E. 33	TITANIA		30 Oct 58	2034:00.15	25 T	Nevada	37°10'38"N	116°04'09"W

FOOTNOTES

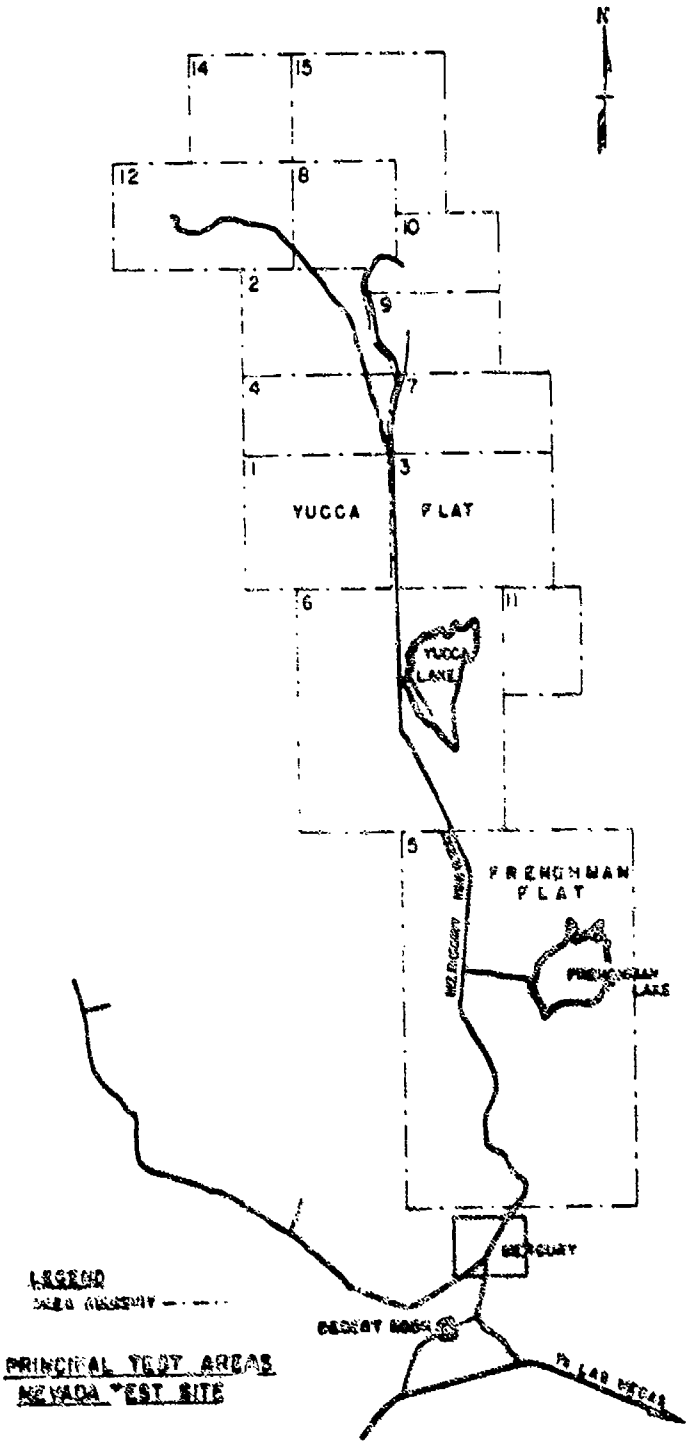
1/ Times given are G.C.T.

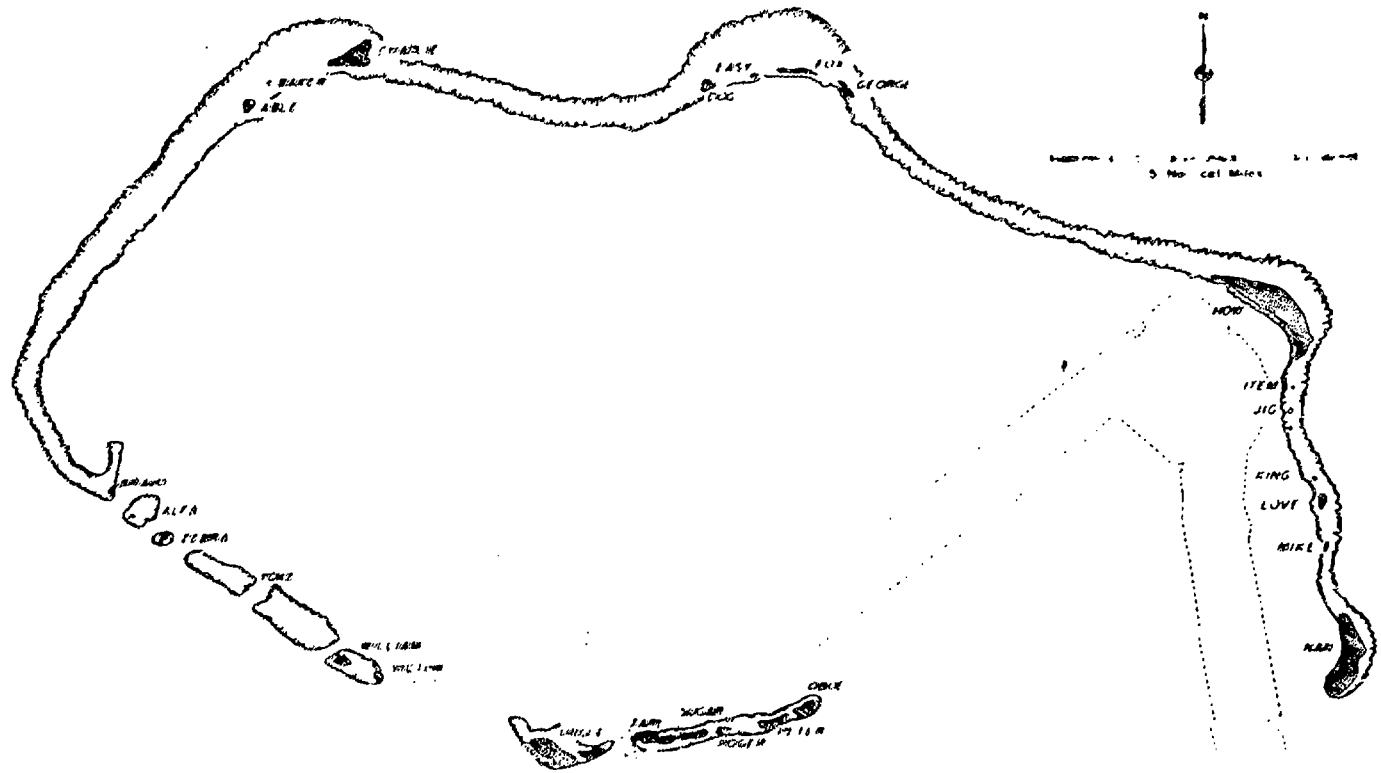
2/ Burst height is given in feet from ground surface. The letter suffix denotes the type of burst: A - device dropped from an aircraft; B - device suspended from balloon; G - device fired from gun (atomic cannon); R - device borne aloft by rocket; S - device detonated on surface; SB - device detonated on surface from a barge; T - device detonated on tower; UG - device detonated underground; UW - device detonated underwater.

3/ Tunnel shots. The distance given is the vertical distance to the surface. The figure given in parenthesis is the distance to the nearest surface.

APPENDIX B

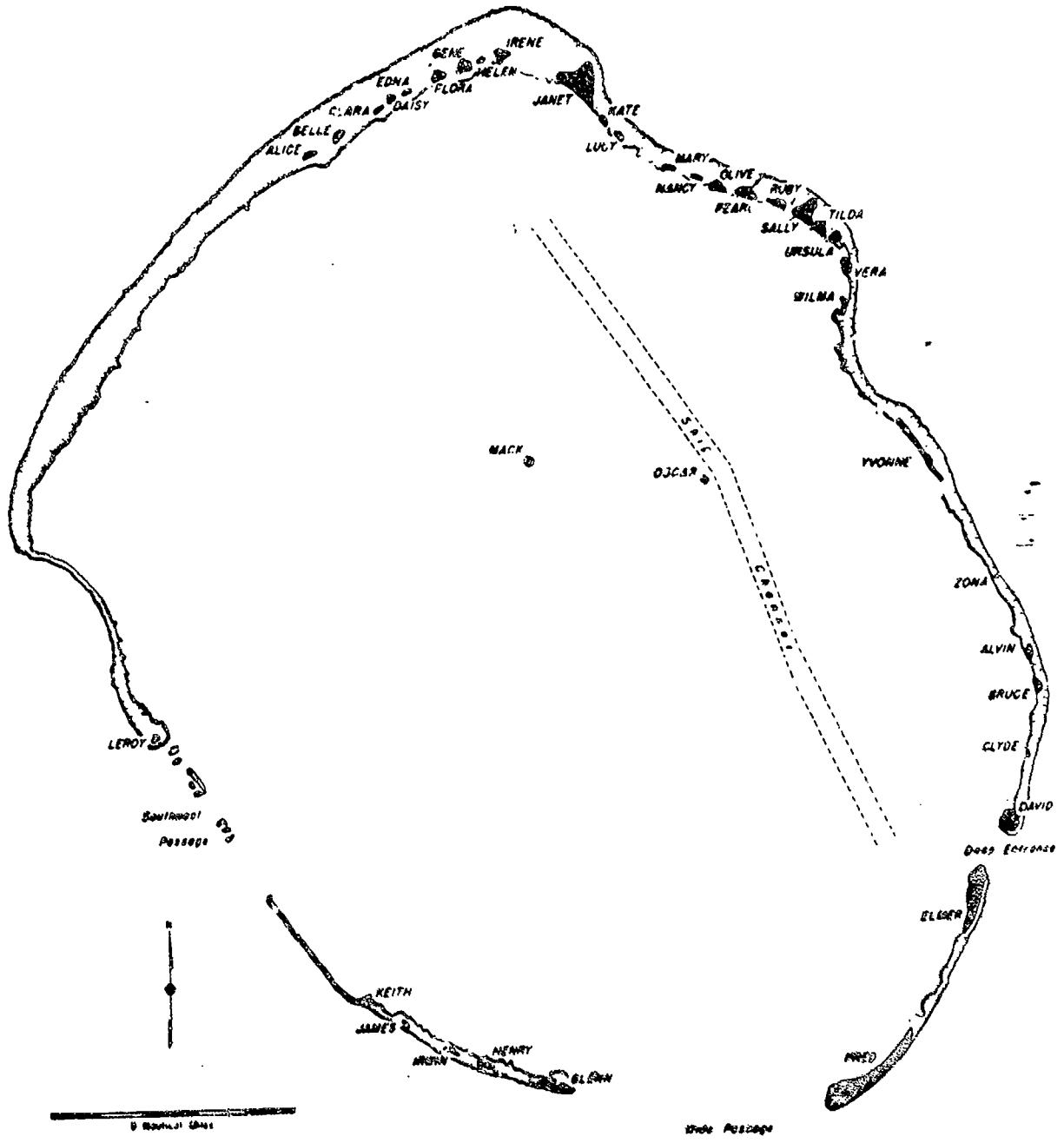
SKETCHES OF TEST AREAS





BIKINI ATOLL

PACIFIC PROVING GROUND



ENIWETOK ATOLL
PACIFIC PROVING GROUND

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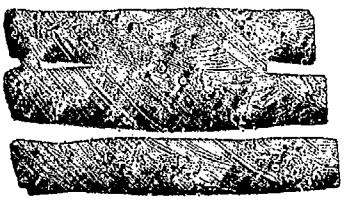
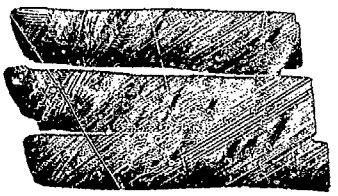
APPENDIX C

INDEX TO INDIVIDUAL EVENTS


SUBJECT	EVENT NO./PAGE NO.
	
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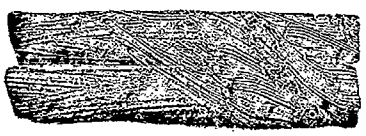
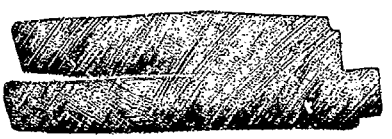
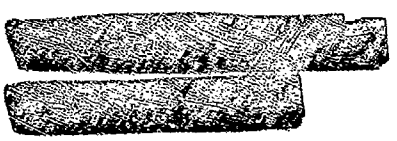
BERNALILLO, HARDTACK	S.E.17/P. 190
BLACKFOOT, REDWING	74/P. 109
BLANCA, HARDTACK	163/P. 224
BOLTZMAN, PLUMBBOB	84/P. 120
	
BRAVO, CASTLE	46/P. 77
	
BUTTERNUT, HARDTACK	111/P. 156
	
CACTUS, HARDTACK	109/P. 154
	
CATRON, HARDTACK	S.E.28/P. 213
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SUBJECT	EVENT NO./PAGE NO.
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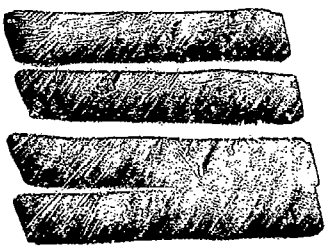
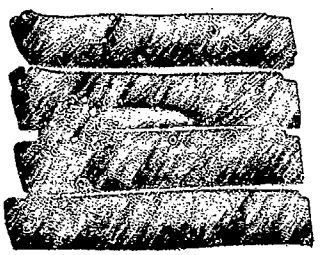
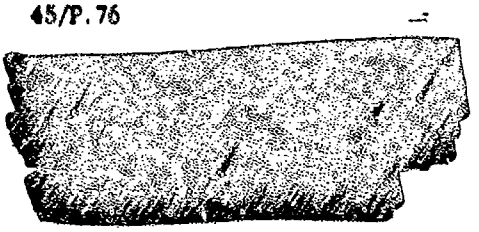
CHARLESTON, PLUMBBOB	106/P. 147
CHAVES, HARDTACK	S.E. 31/P. 218
CHEROKEE, REDWING	68/P. 103

CLIMAX, UPSHOT-KNOTHOLE	45/P. 76


COLFAX, HARDTACK	S.E. 23/P. 198
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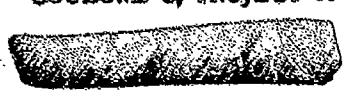
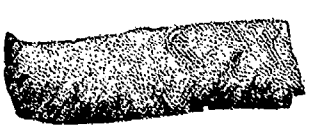
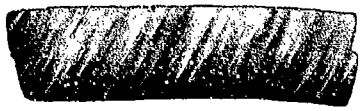
COULOMB B, PLUMBBOB	S.E. 10/P. 141
COULOMB C, PROJECT 58	S.E. 12/P. 150




DAKOTA, REDWING	76/P. 113
DEBACA, HARDTACK	153/P. 217






SUBJECT	EVENT NO. / PAGE NO.
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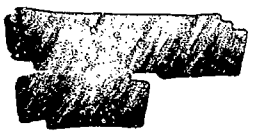
GANYMEDE, HARDTACK	S. E. 32/P. 223
GEORGE, GREENHOUSE	16/P. 47
GRABLE, UPSHOT-KNOTHOLE	44/P. 75







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HARRY, UPSHOT-KNOTHOLE	43/P.74
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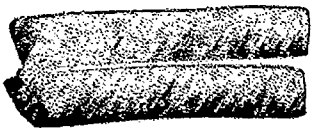
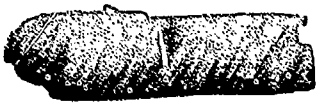
HORNET, TEAPOT	56/P.87
HUMBOLDT, HARDTACK	161/P.221
HURON, REDWING	83/P.118
	
INCA, REDWING	77/P.112
ITEM, GREENHOUSE	17/P.48
	
JOHN, PLUMBBOB	91/P.128




SUBJECT	EVENT NO./PAGE NO.
	
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LASSEN, PLUMBBOB	86/P.122
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	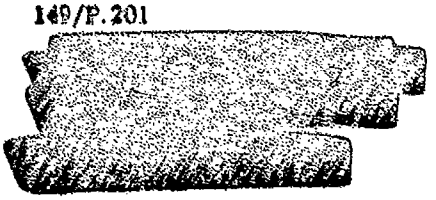
	
LINDEN, HARDTACK	126/F.171; S.E. 30/P.194
	

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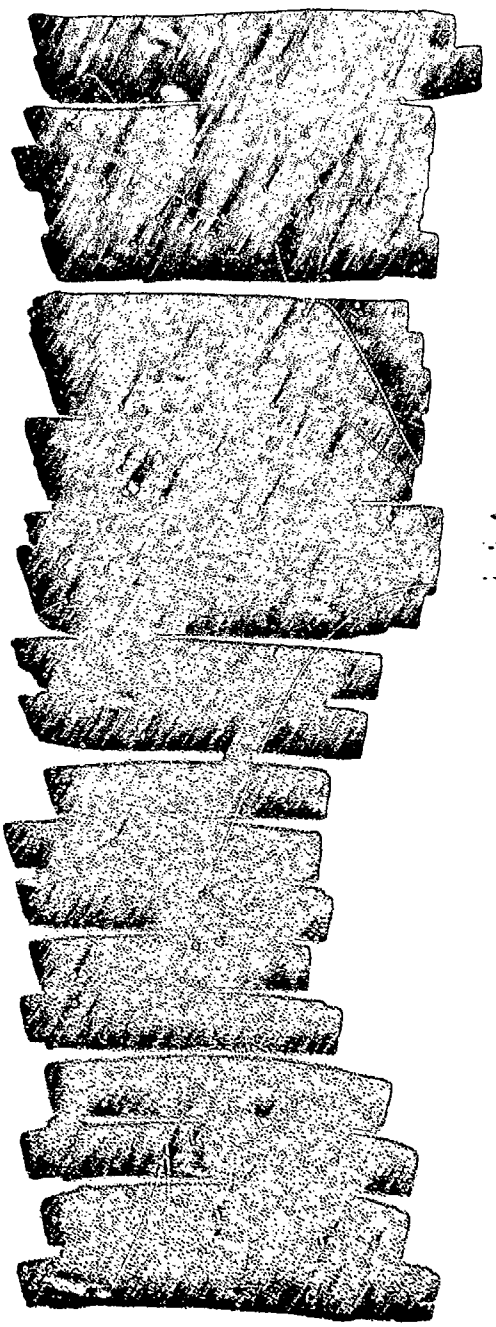



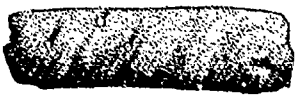

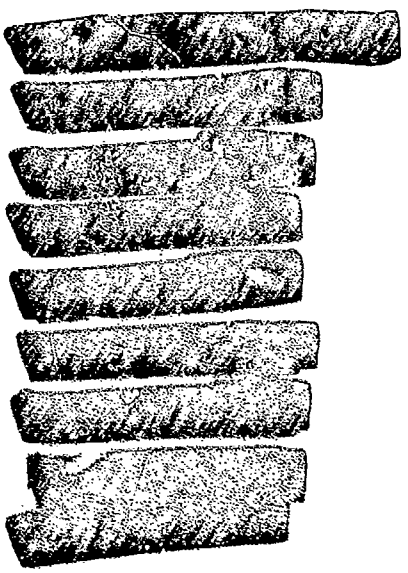

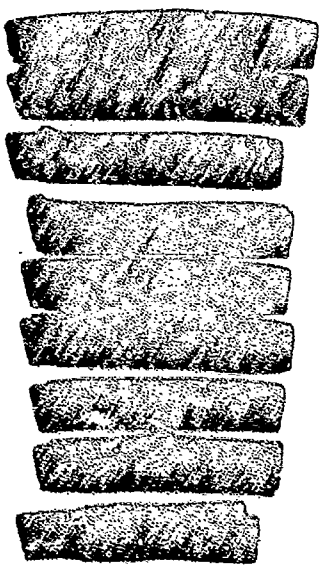

SUBJECT	EVENT NO./ PAGE NO.
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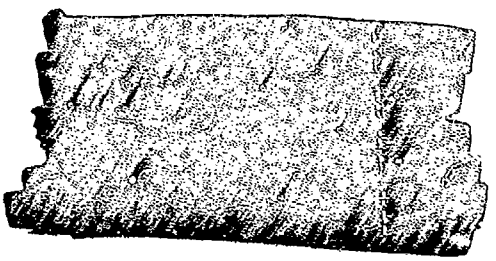

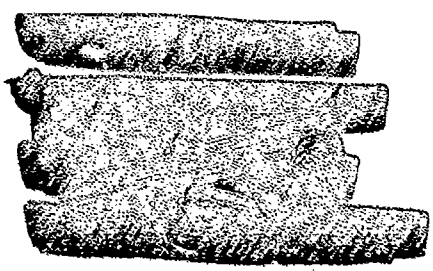

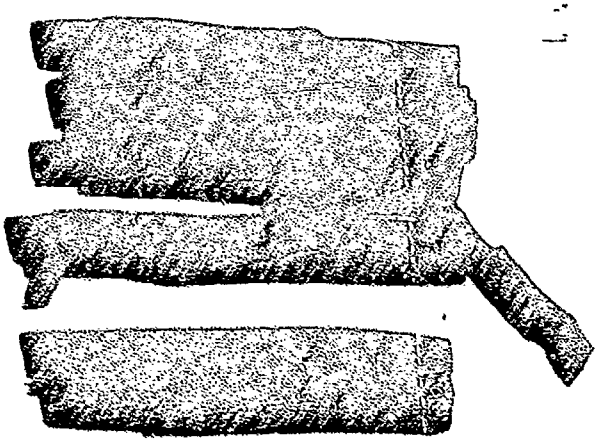

QUAY, HARDTACK

QUINCE, HARDTACK

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RAINIER, PLUMBBOB

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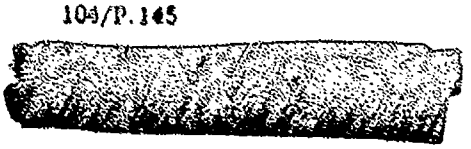

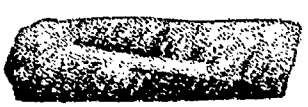

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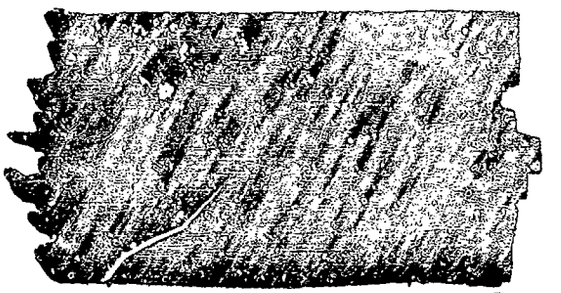

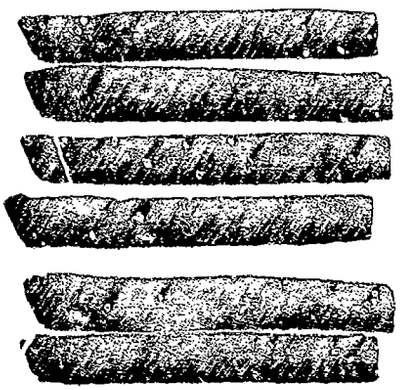

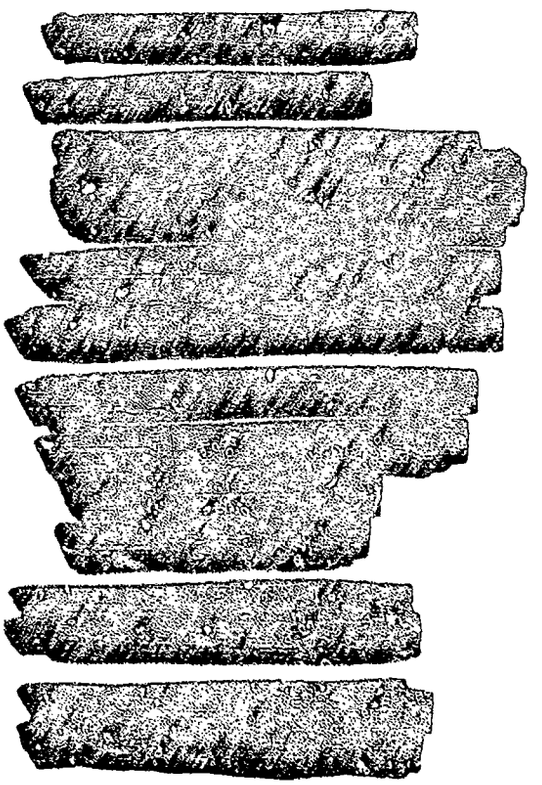

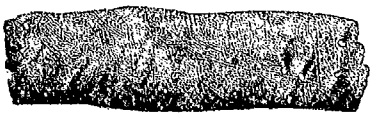

SUBJECT	EVENT NO. / PAGE NO.
	
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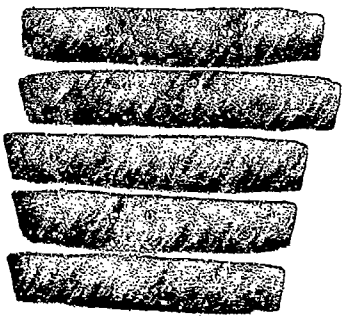
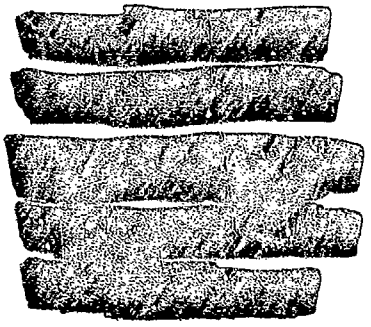
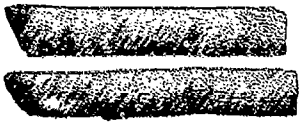
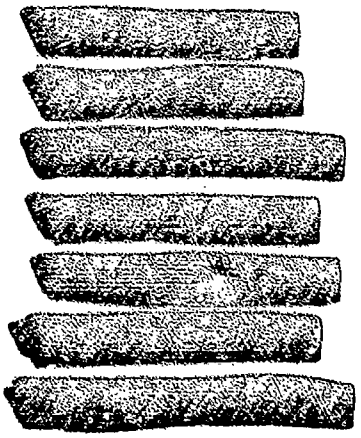
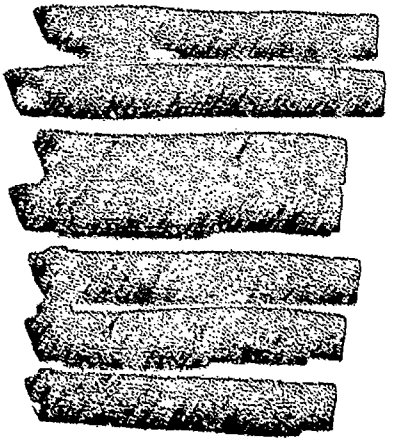
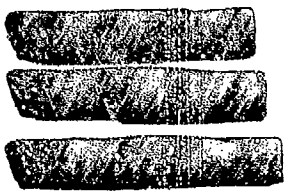
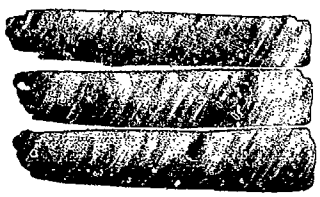
	
STOKES, PLUMBBOB	94/P. 132
SUGAR, JANGLE	23/P. 54
	75/P. 110
	77/P. 112; 79/P. 114; 87/P. 123; 89/P. 126; 90/P. 127; 95/P. 134; 105/P. 146; 106/P. 147; 107/P. 146, 110/P. 155; S. E. 32/P. 223
	


SUBJECT	EVENT NO./PAGE NO.
 SYCAMORE, HARDTACK	 119/P.164
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TESLA, TEAPOT	54/P.85
TEWA, REDWING	82/P.117
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 TITANIA, HARDTACK	 S.E.33/P.225
TOBACCO, HARDTACK	118/P.163
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	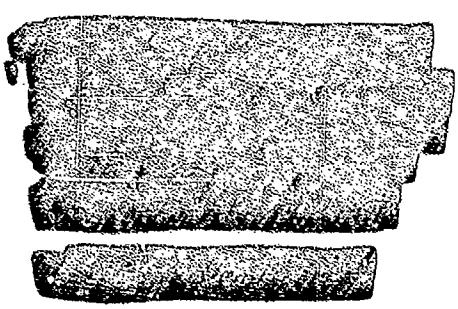
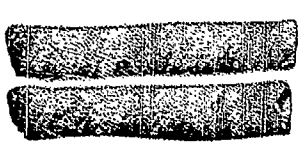 TUMBLER I	25/P.56
TUMBLER II	26/P.57
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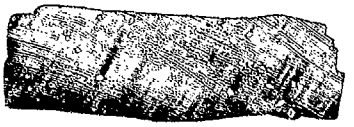
TX-21 (Clean)	
TX-28	
TX-28C	
TX-28C	
TX-28S	
TX-28S (Mockup)	
TX-43	
TX-46	
TX-46 (Clean)	

SUBJECT	EVENT NO./ PAGE NO.
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UNCLE, JANGLE	24/P. 55
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URANUS, PROJECT 58	S.E. 14/P.152
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WASP, TEAPOT	52/P. 83
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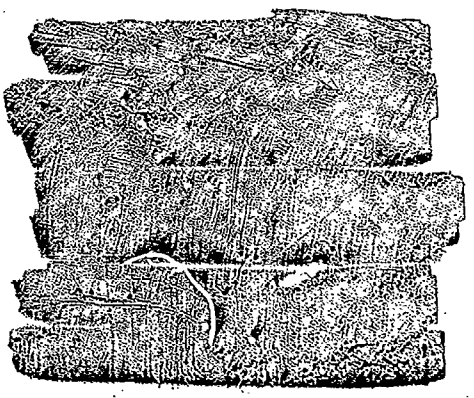





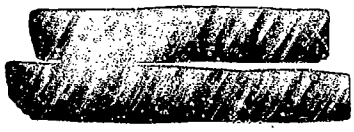
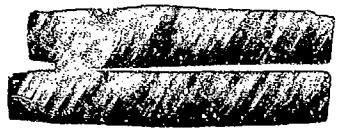
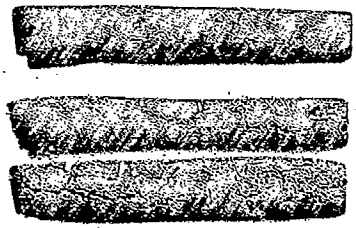
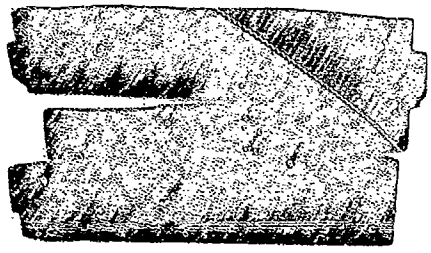


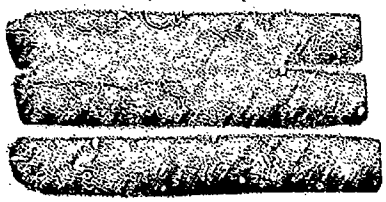
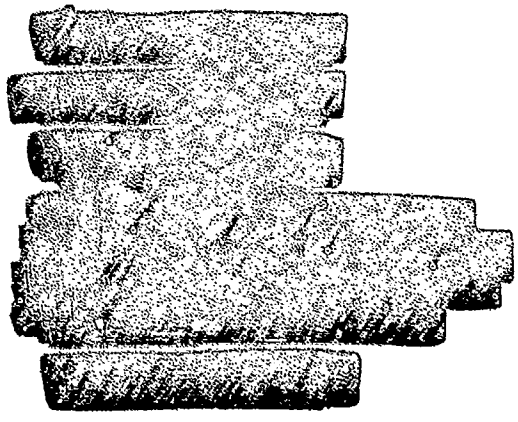

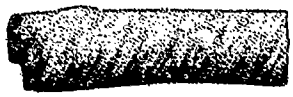

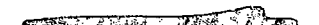


SUBJECT	EVENT NO. / PAGE NO.
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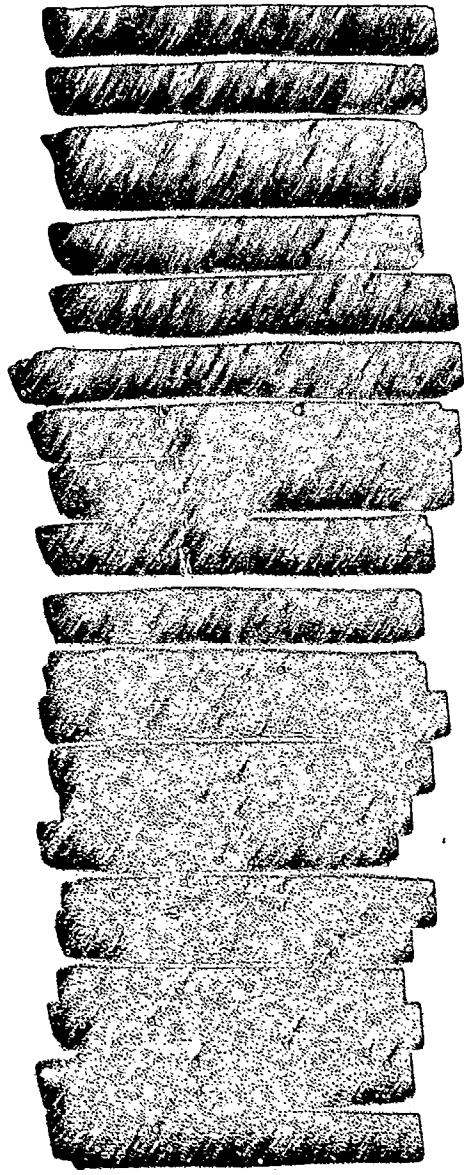
XW-35 (M-1)	
XW-35 (M-2)	
XW-35-X1	
XW-42	
XW-45-X1	
XW-47	
XW-47 Primary	
XW-48	
XW-49	
XW-50	



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