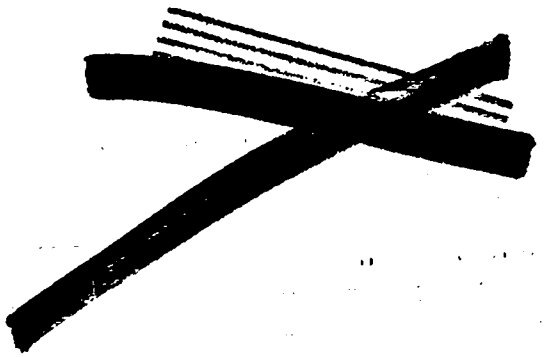

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Weapon Data

LAMS-688

Series A

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5 February 1948

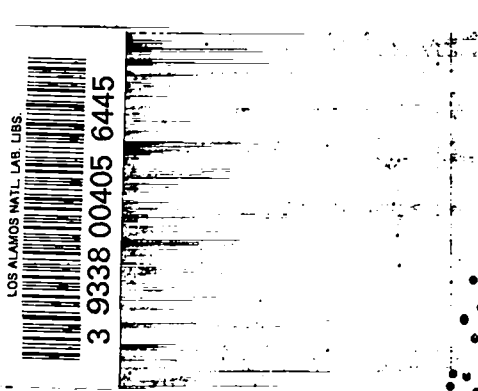
This document contains 6 pages.

STATUS REPORT ON LOS ALAMOS TECH SERIES

Report Written By:

R. R. Davis

Note: This report contains weapon data.



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Status Report on Los Alamos Tech Series

This memorandum is intended as a report to the various divisions of the laboratory summarizing the present condition of the Los Alamos Technical Series. For the information of those who were not in some manner involved in the early planning of this work, a brief history of the Technical Series is presented in the following, together with descriptive paragraphs and vital statistics for each of the several volumes which are now available for distribution and for those which are forthcoming.

1. The Origin and Subsequent History of the Los Alamos Technical Series.

In conformity with the documentation activities of other installations connected with the Manhattan Project, a series of discussions was initiated during the summer of 1945 by several members of the Los Alamos laboratory relative to the writing and issuing of a comprehensive survey of the wartime accomplishments of the laboratory. A list of seventeen volume titles was compiled which distributed the subject matter as evenly as was thought to be practicable. Originally, it was contemplated that the work should be patterned after the Handbuch der Physik and for a time the title, The Los Alamos Handbook, was in fact used; however, it was felt that the word "handbook" was misleading and it was therefore abandoned in favor of "encyclopedia", which was intended to describe the comprehensive nature of the work. Finally, because "encyclopedia" incorrectly implied an alphabetical arrangement of material, it was agreed that the compilation should be known as The Los Alamos Technical Series.

In the original listing of volumes for the "Handbook", one volume was considered sufficient to contain all engineering information, including a section on fusing. It was later decided to split the volume into two sections one dealing with the fusing program, the other with the general engineering and delivery program, and to issue each as a separate volume. This raised the total number of volumes to eighteen. It again became seventeen upon a decision to eliminate the volume dealing with miscellaneous chemistry (which had by this time been designated as Volume IX) and to distribute its material among various other volumes. Since this occurred after the writing program was well under way, no attempt was made to revise the outline other than to delete all references to Volume IX.

During the early period, moreover, the original ordering of volume titles underwent considerable juggling, and in late August of 1945 a final sequence was adopted which, in retrospect, might seem peculiar to anyone unfamiliar with opinions commonly held by laboratory personnel at that time. The reasons for such concern with the order in which volumes were to appear

had to do with a prevalent notion that it would prove possible simply to obtain security releases for a large number of volumes and have them published by a commercial publishing house. A programmatic history of the laboratory was to be written by S.K. Allison, and while it was not anticipated that this work might be declassified, it was recognized that it rightly should precede the other volumes as an introduction to the whole; it therefor was given the volume number "0". Volumes I through XIII were considered possibly or even probably declassifiable, and therefore were listed in the order it was imagined they might be released for publication. The last four volumes were felt to be in a more doubtful category, and since it seemed that they might never be released, they were given the numbers XXI through XXIV. A blank space of seven numbers, XIV through XX, was left to provide space for any additional volumes which might be contemplated.

During the months which followed, it became increasingly apparent that early estimates of the quantity of material which might be published were considerably in error since only a small portion of the total Series could be released under the officially approved declassification policy. In addition to an evident miscalculation on the part of the Series planners, this was a result of the quite general feeling of individual authors and editors that the writing of a complete and detailed survey of the laboratory's work was of paramount importance, that questions concerning eventual declassification and publication necessarily were matters of secondary consideration. Consequently, as the writing program progressed, the Series assumed more and more the character of a highly classified compilation of working handbooks.

As matters now stand, ten of the seventeen volumes of the Series have been issued, and of these only one (Volume I) has been prepared in such a manner that it has seemed hopeful, without major revision, to submit it for declassification. Of the seven unissued volumes, only one (Volume II) seems promising as a possibly declassifiable report, although in this case it is probable that considerable revision will be necessary.

2. Descriptive Survey of Volumes Issued as of December 31, 1947

Volume 0, "Relation Between the Various Activities of the Laboratory"
Written by S.K. Allison, 119 pages.

Chapter 1 through 4 LA-1006

(A general survey of the work of the Los Alamos Laboratory during the war years, with particular emphasis upon the problem of the critical mass and of the efficiency. In addition to a discussion of the gun and implosion type bombs, the volume contains a section dealing with other methods of attaining the explosive release of nuclear energy.)

Volume I, "Experimental Techniques",
Edited by D.K. Froman, 1318 pages.

Chapter 1	through 3	LA-1001
Chapter 4	through 7	LA-1002
Chapter 8	through 12	LA-1003
Chapter 13	through 16	LA-1004
Chapter 17	through 19	LA-1030
Chapter 19	through 20	LA-1031
Chapter 21	through 24	LA-1032

(A description of the experimental physics equipment used by the Los Alamos Laboratory. The volume has three parts: The first dealing with electronics; the second with ionization chambers and counters; and the third with miscellaneous techniques used in obtaining physical measurements.)

Volume III, "Nuclear Physics"
Edited by R. R. Wilson, 445 pages.

Chapter	1	through 3	LA-1009
Chapter	4	through 6	LA-1010
Chapter	7	through 9	LA-1011

(A comprehensive report of nuclear physics measurements made by the Los Alamos Laboratory, together with theoretical evaluations of results and a detailed discussion of the fission process.)

Volume V, "Critical Assemblies"
Edited by O. R. Frisch, 373 pages.

Chapter	1	through 3	LA-1033
Chapter	4		LA-1034
Chapter	5	through 7	LA-1035
Chapter	8	through 10	LA-1036

(A report of critical mass experiments made at Los Alamos with uranium-235 and plutonium assemblies for various tampers. A theoretical discussion is included.

Volume VI, "Efficiency"
Edited by V. F. Weisskopf, 364 pages.

Chapter	1	through 4	LA-1028
Chapter	5	through 6	LA-1029

(A theoretical method for calculating the energy release of a nuclear explosion.

Volume VII, "Blast Wave"
Edited by Hans A. Bethe, 797 pages.

Chapter	1	through 4	LA-1020
er	5	through 10	LA-1021
er	11	through 14	LA-1022
er	15	through 19	LA-1023

(A study of blast wave p on, both from a theoretical and an experimental point of view. Particul mphasis is placed upon the behavior of the blast wave in large explosions, and an effort has been made to interpret blast data from studies made at Trinity, Hiroshima and Nagasaki.)

Volume VIII, "Chemistry of Uranium and Plutonium"
Edited by Joseph Kennedy, 579 pages.

Chapter	1	through 4	LA-1016
Chapter	5	through 7	LA-1017
Chapter	8	through 9	LA-1018

of uranium and plutonium, together with a discussion of the preparation of their various compounds and of the analytical methods used in their study.)

Volume XXI, "The Gun"
Edited by F. Birch, 410 pages.

Chapter 1	through 7		LA-1007
Appendix			LA-1008

(A survey of the experimental gun program from the early tests to the development of the Hiroshima bomb. This volume includes design specifications and a discussion of the interior ballistics of the gun.)

Volume XXII, "Fuzes"
Edited by K. B. Brode, 174 pages.

Chapter 1 through 8 app. LA-1006

(A study of work done by the Los Alamos Laboratory in designing detonating fuze assemblies for the implosion and gun type bombs.)

Volume XIV, "Trinity"
Edited by K. T. Bainbridge, 1525 pages.

Chapter	1	through	11	LA-1012
Appendix	1	through	19	LA-1013
Appendix	20			LA-1014
Appendix	21	through	30	LA-1015
Appendix	31	through	40	LA-1019
Appendix	41	through	48	LA-1024
Appendix	49			LA-1025
Appendix	50	through	54	LA-1026
Appendix	55	through	71	LA-1027

(A complete report on the 100 Ton TNT calibration and rehearsal shot and the July 16, 1945 Atomic bomb test at the Alamogordo Air Base. The volume includes both experimental and theoretical discussions of the various phases of the test. A large appendix contains all pertinent Trinity memoranda and all LA and LAMS reports concerning the Trinity explosion.)

3. Descriptive Survey of Unissued Volumes

Volume II, "Numerical Methods"
Edited by Eldred C. Nelson

(A survey of the methods used in performing numerical calculations of various types of equations by hand computation and with the use of International Business Machines.)

Volume IV, "Neutron Diffusion Theory"
Edited by George Placzek

(The theory of diffusion with and without a change in velocity, including a discussion of statistical fluctuations.)

Volume X, "Metallurgy"
Edited by Cyril S. Smith.

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(A report on the metallurgy of uranium, plutonium and all other metals fabricated by the CMR Division.)

Volume XI, "Explosives"
Edited by G. B. Kistiakowsky

(A survey of the experimental work done by the Los Alamos Laboratory on the behavior of explosives and on the techniques of explosive casting.)

Volume XII, "Implosion"
Edited by R. F. Bacher

(A report on the experimental implosion program from the early tests to the development of the Trinity bomb. The volume covers work done on polonium, radio-barium and radio-lanthanum.)

Volume XIII, "Theory of Implosion"
Edited by R. E. Peierls

(A theoretical survey of the implosion process. The volume contains discussions of shock hydrodynamics, equations of state and various implosion designs.)

Volume XXIII, "Engineering and Delivery"
Edited by N. F. Ramsey

(The history of Project "A" together with a discussion of engineering problems encountered in the delivery program. Particular attention has been given to the mechanical design and assembly of the Model 1561 implosion bomb.)

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