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LASL Reports Related to the Effects of  
Atmospheric Nuclear Detonation,  
With Emphasis on High Altitude Events:

by the Staff

LOS ALAMOS NATIONAL LABORATORY



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By Markus Lujan (C-14) 10-31-95

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LASL Reports Related to the Effects of  
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A Title Listing

Compiled by

John W. Kodis

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## INTRODUCTION

This bibliography is a selected title listing of Los Alamos Scientific Laboratory reports (including EG&G and NRL reports on AEC-sponsored work directed by the LASL and LASL contributions to DASA publications.) A few of the recent reports review work supported jointly by the AEC and DASA or ARPA. Reports dealing exclusively with airdrop or other weapon design and development programs have not been included. Reports from underground tests are included if these are related to the effects of high altitude nuclear detonations.

The entries have been arranged by subject matter as per the outline below and by date of publication. Report listings applicable to more than one subject are either repeated or otherwise cross referenced.

The main source of references was LA-3511-MS, a title listing prepared by R. Virginia Winsor from the Los Alamos Reports Catalog. Herman Hoerlin assisted in the selection of references ultimately included.

## PHENOMENOLOGY AND EFFECTS OF ATMOSPHERIC NUCLEAR BURSTS

- I. WEAPON OUTPUTS AND ENERGY DEPOSITION IN THE ATMOSPHERE
  - A. Summaries of Source Characteristics of Atmospheric Nuclear Events
  - B. Prompt Radiation Output and Deposition in the Atmosphere
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    2. Neutron
    3. X-Ray
  - C. Delayed Gammas and Betas from Fission and Deposition in the Atmosphere
  - D. Transport of X Rays, Gammas, and Neutrons in Air and Related Atmospheric Properties
- II. PHYSICS OF INTERACTION OF NUCLEAR DETONATIONS WITH THE ATMOSPHERE
  - A. Collisionless (Nonhydrodynamic) Debris-Air Interactions
  - B. Hydrodynamics and Thermal Radiation Transport
  - C. Magnetohydrodynamics
  - D. Atomic and Molecular Physics and Chemistry
- III. ANALYSIS OF HIGH ALTITUDE BURSTS AND INTERPRETATION OF RELATED OPTICAL DATA
  - A. Starfish
  - B. Checkmate
  - C. Kingfish
  - D. Bluegill
  - E. Tightrope
  - F. Dominic High-Altitude Events (Fishbowl), General
  - G. Teak and Orange
  - H. ABM Detonations
  - I. Miscellaneous
    1. Nonnuclear Experiments
    2. Other
- IV. IONIZATION AND RADAR DEGRADATION
- V. VULNERABILITY AND HARDENING
  - A. X-Ray
  - B. Neutron and Other
- VI. ELECTROMAGNETIC EFFECTS, DETECTION OF DETONATIONS, AND WEAPON DIAGNOSTICS
  - A. Electromagnetic Signals
  - B. Optical Emission
    1. Air Fluorescence
    2. Optical Power-Time
  - C. Satellite Systems and Test Data
  - D. Bomb Debris Chemistry
- VII. EYEBURN
- VIII. INSTRUMENTATION AND DATA REDUCTION METHODS FOR HIGH ALTITUDE NUCLEAR TESTS
- IX. MISCELLANEOUS

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I. WEAPON OUTPUTS AND ENERGY DEPOSITION IN  
THE ATMOSPHERE

A. SUMMARIES OF SOURCE CHARACTERISTICS OF  
ATMOSPHERIC NUCLEAR EVENTS

- LA-3931-MS Secret RD Sigma 1  
OUTPUTS OF NUCLEAR WEAPONS  
Conrad L. Longmire. June 1968  
(also published in DASA-1826,  
p. 5-18, October 1966)
- LA-3180-MS Secret RD Sigma 1  
CALCULATED SOURCE CHARACTERISTICS OF  
DOMINIC HIGH ALTITUDE EVENTS BASED  
ON A SPHERICAL MODEL  
Elbert W. Bennett. May 1963
- LAMS-2749 Secret RD Sigma 1  
CALCULATIONS OF THE EARLY PHASES OF  
THE STARFISH, BLUEGILL, AND URRACA  
EXPLOSIONS  
Robert D. Cowan, Richard L. Garwin,  
Roger B. Lazarus, Conrad L. Long-  
mire, and Albert G. Petschek.  
September 1962

B. PROMPT RADIATION OUTPUT AND DEPOSITION  
IN THE ATMOSPHERE

(See Section VI. B. 1, AIR FLUORESCENCE,  
for other papers applicable to energy  
deposition)

1. Gamma Radiation

- LA-3944 Unclassified  
SCATTERING OF GAMMA RAYS IN AN EXPO-  
NENTIAL ATMOSPHERE  
E. D. Cashwell, Conrad L. Longmire,  
and J. R. Neergaard.  
June 1968
- LA-3113-MS Secret RD Sigma 3  
GAMMA RAYS FROM ATOMIC BOMBS  
John Malik. May 1964
- LAMS-3044 Secret RD Sigma 1  
GAMMA RAY SOURCE TIME DEPENDENCE  
John Malik. September 1963
- T-1304 Secret RD  
Letter to Distr. (C. R. Mehl, Sandia),  
Subj: PROMPT NEUTRON AND GAMMA RAY  
EMISSION IN THE XW-49  
W. B. Goad. January 1962
- LA-2507 Unclassified  
GAMMA-RAY MEASUREMENTS IN AND ABOVE  
THE ATMOSPHERE  
John A. Northrop. December 1960
- LAMS-2577 Secret RD US/UK Atomic  
Sigma 1  
TEN TO 1000 MICROSECOND GAMMA RAY  
DOSE RATE DATA  
John Malik. October 1960

LA-1620 Secret RD Sigma 1  
SUMMARY OF INFORMATION ON GAMMA RADI-  
ATION FROM ATOMIC WEAPONS  
J. S. Malik. January 1954

2. Neutron

- LA-3688 Secret RD Sigma 3  
NEUTRON OUTPUTS FROM SELECTED LASL  
NUCLEAR DEVICES  
Wendell A. Biggers and K. C. Kohr.  
July 1967
- LA-DC-6170 Unclassified  
TIME-OF-FLIGHT MEASUREMENTS MADE WITH  
NEUTRONS FROM NUCLEAR EXPLOSIONS IN  
SPACE  
S. J. Bame. January 1964
- LA-DC-5456 Unclassified  
NEUTRON FLUX AND ENERGY SPECTRUM  
ABOVE THE ATMOSPHERE  
S. J. Bame, J. P. Conner et al.  
1963
- P-4-80 Secret RD  
LASL MEASUREMENTS OF NEUTRON SPECTRA  
FROM THE FISHBOWL EVENTS  
S. J. Bame et al. March 1963
- LA-2390, Supplement Unclassified  
SPACE, ENERGY, AND TIME DISTRIBUTION  
OF NEUTRONS AT THE GROUND-AIR INTER-  
FACE, CALCULATED BY MONTE CARLO NHM  
W. A. Biggers, et al. March 1962
- LA-2390 Unclassified  
SPACE, ENERGY, AND TIME DISTRIBUTION  
OF NEUTRONS AT THE GROUND-AIR INTER-  
FACE, CALCULATED BY MONTE CARLO NHM  
W. A. Biggers, et al. March 1962
- T-1304 Secret RD  
Letter to Distr. (C. R. Mehl, Sandia),  
Subj: PROMPT NEUTRON AND GAMMA RAY  
EMISSION IN THE XW-49  
W. B. Goad. January 1962
- LAMS-2121 Secret RD Sigma 1  
A SUMMARY OF CERTAIN MONTE CARLO CAL-  
CULATIONS RUN ON MANIAC I  
Edmund D. Cashwell, et al.  
April 1957
3. X-Ray
- T-2: 69-52 Secret RD Sigma 1  
OUTPUT OF THE PRETZEL DEVICE  
G. R. Spillman, et al.  
September 1969
- LA-4026-MS Secret RD Sigma 1  
OUTPUT FROM THE HIBALL CODE  
G. R. Spillman. July 1969
- LA-4025-MS Unclassified  
INPUT FOR THE HIBALL CODE  
G. R. Spillman. November 1968



T-1605 Secret RD Sigma 1  
OBSERVED UMBER X-RAY SPECTRUM  
C. C. Longmire. August 1967

LA-3480-MS Secret RD Sigma 1  
TIME-DEPENDENT CALCULATIONS OF SPEC-  
TRUM EMITTED  
Cecil C. Davis, Jr. July 1967

T-1509 Secret RD  
FINAL CALCULATED SPECTRUM FOR SCREAMER  
C. L. Longmire. April 1965

LA-3187-MS Secret RD Sigma 3  
BLUEGILL X-RAY ENERGY DEPOSITION CAL-  
CULATIONS  
E. W. Bennett. April 1962

C. DELAYED GAMMAS AND BETAS FROM FISSION  
AND DEPOSITION IN THE ATMOSPHERE

LA-2811, Addendum II Unclassified  
RE-EVALUATION OF OPTIMAL PARAMETERS  
FOR POST-FISSION BETA DECAY  
James J. Griffin. April 1964

LA-2811, Addendum Unclassified  
OTHER DETAILS OF POST-FISSION BETA  
DECAY  
James J. Griffin. October 1963

LA-2811 Unclassified  
BETA DECAYS AND DELAYED GAMMAS FROM  
FISSION FRAGMENTS  
James J. Griffin. December 1962

LAMS-3059 Unclassified  
ENERGY DEPOSITION IN THE ATMOSPHERE  
BY DELAYED GAMMAS FROM FISSION  
Elbert W. Bennett. March 1964

LA-3179-MS Secret RD Sigma 3  
ENERGY DEPOSITION BY DELAYED GAMMA  
RAYS FROM BLUEGILL  
Elbert W. Bennett. September 1963

LAMS-2642 Unclassified  
ENERGY AND TIME DEPENDENCE OF DELAYED  
GAMMA FROM FISSION  
Leon B. Engle and Philip C. Fisher.  
January 1962

D. TRANSPORT OF X RAYS, GAMMAS AND NEUTRONS  
IN AIR AND RELATED ATMOSPHERIC PROPERTIES

(See VI. B., OPTICAL EMISSION, below,  
for additional papers on optical emis-  
sion following interaction of weapon  
outputs with the atmosphere)

LA-3816 Unclassified  
X-RAY SCATTERING FACTORS COMPUTED  
FROM NUMERICAL HARTREE-FOCK WAVE  
FUNCTIONS  
D. T. Cromer and J. B. Mann.  
March 1968

LA-3810 Unclassified  
EFFECT OF BASIC NEUTRON REACTION CROSS  
SECTIONS OF NITROGEN (n,n'), (n<sup>2</sup>n),  
(n,γ), (n,p) and (n,α) ON HIGH ENERGY  
NEUTRON PENETRATION IN AIR  
G. E. Hansen and H. A. Sandmeier.  
December 1967

LADC-8109 Unclassified  
MULTITABLE TREATMENTS OF ANISOTROPIC  
SCATTERING IN Sn MULTIGROUP TRANSPORT  
CALCULATIONS  
G. I. Bell, et al. 1967

LA-3415 Unclassified  
COMPUTATION OF FAST NEUTRON PENETRA-  
TION IN AIR BY THE "Sn-METHOD" WITH  
SPECIAL EMPHASIS ON THE USE OF "MUL-  
TITABLE-MULTIGROUP CROSS SECTION SETS"  
H. A. Sandmeier, et al. August 1965

LADC-6488 Unclassified  
NEUTRON PENETRATION FACTORS OBTAINED  
BY ADJOINT TRANSPORT CALCULATIONS  
H. A. Sandmeier and G. E. Hansen.  
July 1965

LA-3349-MS Unclassified  
DIFFUSION OF NEUTRONS FROM A POINT  
SOURCE IN AN EXPONENTIAL ATMOSPHERE  
Marshall Rosenbluth. June 1956

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II. PHYSICS OF INTERACTION OF NUCLEAR  
DETONATIONS WITH THE ATMOSPHERE

A. COLLISIONLESS (NONHYDRODYNAMIC) DEBRIS-  
AIR INTERACTIONS

DASA 2455, Vol 1, 2, 3, Secret RD  
PROCEEDINGS OF THE HIGH ALTITUDE  
NUCLEAR EFFECTS SYMPOSIUM,  
Sandia Base, N. M. (Expected publi-  
cation date: May 1970)

LASL Papers:

J-10 1909 Secret RD  
CURRENT HIGH ALTITUDE DEBRIS-AIR  
COUPLING MECHANISMS  
C. R. Shonk and D. W. Forslund.  
December 1969

J-10 1913 Secret RD  
LARGE SCALE NUMERICAL SIMULATION  
OF HIGH ALTITUDE NUCLEAR BURSTS AT  
EARLY TIME  
R. Morse and C. Shonk.  
December 1969

J-10 1914 Confidential FRD  
THE SIMULATION OF BINARY COLLISION  
PROCESSES IN PLASMAS  
T. A. Oliphant and C. W. Nielson.  
December 1969

J-10 1904 Secret RD  
THE DEBRIS LOSS CONE  
John Zinn. December 1969

Phys. Rev. Letters, Vol 23, p. 1087  
 Unclassified  
 ONE, TWO, AND THREE DIMENSIONAL NUMERICAL SIMULATION OF TWO-BEAM PLASMAS  
 C. W. Nielson and R. L. Morse.  
 November 1969

Physics of Fluids, Vol 12 Unclassified  
 (Also in LA-3990 Unclassified)

LASL Papers:  
 p. 2418 NUMERICAL SIMULATION OF WARM TWO BEAM PLASMA  
 C. W. Nielson and  
 R. L. Morse. August 1969

p. 1708 NUMERICAL SIMULATION OF AXI-SYMMETRIC, COLLISIONLESS, FINITE BETA PLASMA  
 D. O. Dickman, R. L. Morse,  
 and C. W. Nielson.  
 August 1969

LA-4130 Secret RD Sigma 3  
 DEBRIS-AIR COUPLING IN HIGH ALTITUDE NUCLEAR EXPLOSIONS  
 D. S. DeYoung, H. W. Hoerlin,  
 C. L. Longmire, D. S. Sappenfield,  
 C. R. Shonk, and John Zinn.  
 April 1969

LA-3990 Unclassified  
 PROCEEDINGS OF THE APS TOPICAL CONFERENCE ON NUMERICAL SIMULATION OF PLASMA, September 18-20, 1968  
 Edited by R. L. Morse

LASL Paper:  
 C-3 TWO-DIMENSIONAL SIMULATION OF SHOCK WAVES IN COLLISIONLESS PLASMAS  
 C. R. Shonk and R. L. Morse.  
 September 1968

RAND RM-3386-PR (AD-296, 597)  
 Unclassified  
 NOTES ON DEBRIS-AIR MAGNETIC INTERACTION  
 C. L. Longmire. January 1963

B. HYDRODYNAMICS AND THERMAL RADIATION TRANSPORT

J-10 1903 Confidential FRD  
 A CALCULATION OF THE KINGFISH FIREBALL  
 D. S. Sappenfield and F. E. Fajen.  
 December 1969 (Will also be published in DASA 2455, PROCEEDINGS OF THE HIGH ALTITUDE NUCLEAR EFFECTS SYMPOSIUM, Sandia Base, N. M. Expected publication date: May 1970)

LA-4189-MS Unclassified  
 A TWO-DIMENSIONAL HYDRODYNAMIC MODEL FOR AN EXPLOSION IN A NONUNIFORM ATMOSPHERE  
 Dale S. Sappenfield.  
 September 1969

DASA 2145-I (p. 305-337) (J-10 1536)  
 Secret RD  
 CALCULATIONS OF NUCLEAR WEAPON PHENOMENOLOGY FOR BURST ALTITUDES BETWEEN 100 AND 200 KM  
 Dale Sappenfield. June 1968

LA-3531-MS Confidential RD Sigma 3  
 FIREBALL SPIKES  
 J. S. Malik. July 1966

LA-3239-MS Secret RD Sigma 1  
 FIREBALL BEHAVIOR IN BLUEGILL AND A HYPOTHETICAL 100-MEGATON EXPLOSION AT BLUEGILL ALTITUDE  
 John Zinn. January 1965

JMDR-65-2, Vol II, Number 3 Secret RD  
 RADIATION TRANSPORT AND HYDRODYNAMIC COMPUTATION OF FIREBALL GROWTH IN BLUEGILL  
 J. Zinn and F. E. Fajen.  
 Winter 1964

LAMS-3095 Secret RD Sigma 3  
 RADIATION TRANSPORT IN BLUEGILL  
 John Zinn. June 1964

LA-3064 Unclassified  
 THEORY OF THE FIREBALL  
 H. A. Bethe. February 1964

LAMS-2791 Secret RD Sigma 1  
 ASYMMETRICAL NUCLEAR EXPLOSIONS AT HIGH ALTITUDES  
 F. H. Harlow and Billy D. Meixner.  
 January 1963

LAMS-2770 Unclassified  
 RISE THROUGH THE ATMOSPHERE OF A HOT BUBBLE  
 F. H. Harlow and Billy D. Meixner.  
 October 1962

LAMS-2567 Unclassified  
 PARTICLE-AND-FORCE COMPUTING METHOD FOR FLUID DYNAMICS  
 F. H. Harlow and Billy D. Meixner.  
 June 1961

LAMS-2453 Secret RD Sigma 1  
 TEAK FIREBALL FORMATION, RADIATIVE GROWTH AND BRIGHTNESS HISTORY  
 Andrew Skumanich. August 1960

LA-2412 Unclassified  
 DYNAMICS OF COMPRESSIBLE FLUIDS  
 Francis H. Hansen. April 1960

LA-2164 Secret RD Sigma 3  
 SOME PHENOMENA IN HIGH-ALTITUDE EXPLOSIONS  
 Hans A. Bethe. November 1957

LADC-2593 Unclassified  
 HYDRODYNAMIC PROBLEMS INVOLVING LARGE FLUID DISTORTIONS  
 F. H. Harlow. 1957



C. MAGNETOHYDRODYNAMICS

LA-3784 Secret RD Sigma 3  
SOME THEORETICAL ASPECTS OF THE STARFISH EXPLOSION  
John Zinn, Fredric E. Fajen, LASL,  
and John K. Buckner, EG&G.  
December 1967

DASIAC Review 67-2, DASA-1985, (p. 107)  
Secret RD  
MULTIDIRECTIONAL SPHERICAL MAGNETO-  
HYDRODYNAMIC COMPUTATIONS OF THE  
STARFISH AND NIKE ZEUS EXPANSION  
John Zinn and John K. Buckner.  
June 1967

Published in PROCEEDINGS OF THE ADVANCED  
STUDY INSTITUTE--RADIATION TRAPPED IN  
THE EARTH'S MAGNETIC FIELD--Bergen,  
Norway, August 1965. D. Reidel Pub. Co.  
(p. 671-92), 1966; DASIAC Review 66-2  
(DASA 1793), (p. 78-9), June 1966; and  
LADC 7177 Unclassified  
MOTION OF BOMB DEBRIS FOLLOWING THE  
STARFISH TEST  
J. Zinn, H. W. Hoerlin, and  
A. G. Petschek.

D. ATOMIC AND MOLECULAR PHYSICS AND CHEMISTRY

LA-4248 Unclassified  
FLUORESCENCE EFFICIENCIES AND COLLISIONAL DEACTIVATION RATES FOR N<sub>2</sub><sup>+</sup> AND N<sub>2</sub><sup>+</sup> BANDS, EXCITED FROM DEPOSITION OF SOFT X RAYS  
K. B. Mitchell. November 1969

LA-4303 Confidential FRD Sigma 3  
RADIATION FROM A RECOMBINING OXYGEN PLASMA  
Dale Sappenfield. December 1969

LA-4314 Unclassified  
FLUORESCENCE EFFICIENCIES OF NITROGEN EXCITED BY 1- TO 5-MeV POSITIVE IONS  
J. L. Dunn and R. F. Holland.  
December 1969

LA-4044-MS Confidential DI Sigma 3 gp 1  
ESTIMATES OF NITROGEN FLUORESCENCE EFFICIENCY FOR EXCITATION BY DEBRIS IONS  
William B. Maier II and  
R. F. Holland. January 1969

LADC-9468 Unclassified  
EXCITATION OF NITROGEN BY ELECTRONS: THE LYMAN-BIRGE-HOPFIELD SYSTEM OF N<sub>2</sub>  
Redus F. Holland. March 1968

LA-3793-MS Unclassified  
NEW MEASUREMENTS OF THE FLUORESCENCE EFFICIENCY OF AIR UNDER ELECTRON BOMBARDMENT  
Paul L. Hartman. January 1968

LA-3783 Unclassified  
CROSS SECTIONS FOR ELECTRON EXCITATION OF THE 3914-A (0,0) BAND OF THE N<sub>2</sub><sup>+</sup> FIRST NEGATIVE SYSTEM  
Redus F. Holland. December 1967

LADC-8331 Unclassified  
CONTRIBUTION OF INVERSE NEUTRAL BREMSSTRAHLUNG TO THE ABSORPTION COEFFICIENT OF HEATED AIR  
R. C. Mjolsness. 1967

LA-3591 Secret RD Sigma 3  
IONIZATION AND EXCITATION IN CHECKMATE  
Hans A. Bethe. September 1966

EGG-B-3725A (EGG-1183-435) Unclassified  
AN EXTINCTION COEFFICIENT MATRIX FOR ATMOSPHERIC TRANSMISSION IN THE 0.32 to 0.70 μ WAVELENGTH RANGE  
R. J. Ouellette. February 1968

DASA-1825 (p. 7-29) (DASIAC NWER 66-3)  
Secret RD  
ELECTRON-ION RECOMBINATION COMPARISON OF THEORY WITH LATE-TIME KINGFISH AND CHECKMATE OBSERVATIONS  
D. S. Sappenfield. August 1966

LADC-6494 Unclassified  
COMPARISON OF TWO METHODS OF OPACITY CALCULATIONS USED IN AIR  
J. S. Stewart, Jr. September 1964

LA-3147-MS Unclassified  
MEASUREMENTS OF THE ABSOLUTE FLUORESCENCE EFFICIENCY OF AIR UNDER ELECTRON BOMBARDMENT  
Paul L. Hartman. January 1964

LADC-5643 Unclassified  
EXCITATION OF FIRST NEGATIVE EMISSION IN THE BOMBARDMENT OF NITROGEN BY MOLECULAR NITROGEN IONS  
John P. Doering and Redus F. Holland.  
1963

LADC-5160 Unclassified  
MEASUREMENTS OF THE FLUORESCENT EFFICIENCY OF AIR UNDER ELECTRON BOMBARDMENT  
Paul L. Hartman and H. W. Hoerlin.  
1962

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III. ANALYSIS OF HIGH ALTITUDE BURSTS AND INTERPRETATION OF RELATED OPTICAL DATA

A. STARFISH

J-10-1910 Confidential DI gp 1  
EXPERIMENTAL DATA AND THEORY, THE CHALLENGE OF STARFISH AURORAL PHENOMENA  
Herman W. Hoerlin. December 1969

J-10-1904 Secret RD  
THE DEBRIS LOSS CONE  
John Zinn. December 1969



EGG ET-7145 Confidential FRD  
SPACE DISTRIBUTION OF ENERGY DEPOSITION IN THE STARFISH LATE BETA PATCH  
John K. Buckner. December 1969

EGG ET-7148 Confidential FRD  
RADIOMETRIC ANALYSIS OF THE STARFISH DEBRIS-AIR-SHOCK THROUGH 350 MSEC  
John K. Buckner. December 1969

(The above four reports were given at the DASA HIGH ALTITUDE NUCLEAR EFFECTS SYMPOSIUM, Sandia Base, N. M. and will appear in the Proceedings, DASA 2455. Expected publication date: May 1970)

EGG B-3999 (EGG-1183-495) Secret RD  
Sigma 3

STARFISH BURST AREA TOTAL DEBRIS-AIR POWER HISTORY FROM 0 TO 350 MILLI-SECONDS  
J. Epstein, J. Holzer, L. Isaacson, J. Malone, E. P. Marram, W. Schlueter. June 1969

EGG B-3961 (EGG-1183-483) Secret RD  
Sigma 3

RADIOMETRIC ANALYSIS OF THE STARFISH NORTH CONJUGATE REGION  
L. H. Leonard, J. K. Buckner. May 1969

LA-4043-MS Secret RD Sigma 3  
STARFISH NORTHERN CONJUGATE ANALYSIS  
Herman Hoerlin, LASL, and John K. Buckner, EG&G. December 1968

LA-3943-MS Secret RD Sigma 3  
DOMINIC SPECTROSCOPY BY LASL: STARFISH  
Dale S. Sappenfield, H. Milton Peek, and Herman Hoerlin. June 1968

EGG B-3713 (EGG-1183-426) Secret RD  
Sigma 3  
GEOMETRIC MODEL OF STARFISH NORTH CONJUGATE REGION AT EARLY TIMES  
L. H. Leonard. May 1968

LA-3865 Confidential RD Sigma 3  
MAPMAG--PROJECTION OF GEOMAGNETIC FIELD LINES ONTO A FILM PLANE WITH APPLICATION TO THE STARFISH PROBLEM  
Gayle M. Connor. April 1968

LA-3784 Secret RD Sigma 3  
SOME THEORETICAL ASPECTS OF THE STARFISH EXPLOSION  
John Zinn, Fredric E. Fajen, LASL, and John K. Buckner, EG&G. December 1967

DASIAC Review 67-2, DASA-1985, (p. 107)  
Secret RD  
MULTIDIRECTIONAL SPHERICAL MAGNETO-HYDRODYNAMIC COMPUTATIONS OF THE STARFISH AND NIKE ZEUS EXPANSION  
John Zinn and John K. Buckner. June 1967

Published in PROCEEDINGS OF THE ADVANCED STUDY INSTITUTE--RADIATION TRAPPED IN THE EARTH'S MAGNETIC FIELD--Bergen, Norway, August 1965. D. Reidel Pub. Co. (p. 671-92), 1966; DASIAC Review 66-2 (DASA 1793), (p. 78-9), June 1966; and LADC-7177. Unclassified  
MOTION OF BOMB DEBRIS FOLLOWING THE STARFISH TEST  
J. Zinn, H. W. Hoerlin and A. G. Petschek.

LAMS-2891 Secret RD Sigma 3  
LASL PAPERS PRESENTED AT DASA SYMPOSIUM ON OPTICAL MEASUREMENTS. OPERATION DOMINIC - FISHBOWL. March 1963

Individual papers are:

p. 5-21 EARLY STARFISH EXPANSION, BRIGHTNESS AND MOTION OF DEBRIS FROM JOHNSTON ISLAND. HIGH-SPEED PHOTOGRAPHY AND SPECTROSCOPY  
Sidney N. Stone and Robert D. Cowan.

p. 22-64 PHOTOGRAPHIC OBSERVATIONS ON DEBRIS MOTIONS IN STARFISH  
John Zinn.

p. 65-74 STARFISH EVENT. THE NORTHERN MAGNETIC PANCAKE  
Herman Hoerlin.

p. 75-82 X-RAY EXCITED AIR FLUORESCENCE ON STARFISH  
Elbert W. Bennett.

EGG ET-2257 Secret RD  
STARFISH PRIME: EARLY BRIGHTNESS AND VELOCITIES FROM EGG/LASL MAUI PHOTOGRAPHS  
D. J. Barnes. March 1963

DASA-1327 (DASA-DC-SR-4) Secret DI  
SYMPOSIUM PROCEEDINGS--THE ARTIFICIAL RADIATION BELT

LASL Paper:

p. 193-211 OPTICAL CHARACTERISTICS OF STARFISH PHENOMENOLOGY  
Herman W. Hoerlin. October 1962

DASA-1337 Secret RD  
SYMPOSIUM PROCEEDINGS--LONG-DURATION DEBRIS HISTORY AND IONOSPHERIC EFFECTS RESULTING FROM STARFISH

LASL Paper:

p. 293-311 OPTICAL OBSERVATIONS  
Herman W. Hoerlin. September 1962

JO-600 Secret RD Sigma 3  
"QUICK LOOK" AT THE TECHNICAL RESULTS OF STARFISH PRIME  
William E. Ogle. August 1962

JI-02 Secret  
 STARFISH TU 8.1.1, LASL, PRELIMINARY  
 FIELD REPORT, STATUS AS OF H+5 DAYS  
 Herman W. Hoerlin. July 1962

B. CHECKMATE

EGG ET-7146 Confidential FRD  
 A FIRST LOOK AT EGG-LASL DATA ON  
 CHECKMATE STRIATIONS  
 M. P. Shuler, Jr. December 1969

EGG ET-7147 Secret RD  
 CHECKMATE EARLY TIME DIMENSIONS  
 M. P. Shuler, Jr. December 1969

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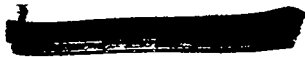
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