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Report 1166

FOG FOAM STUDIES

Project 8-76-01-001 (9)

2 April 1950

(Revised 1 March 1951)

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ENGINEER RESEARCH AND DEVELOPMENT LABORATORIES

APPENDIX

Report 1166

FOG FOAM STUDIES

Project 8-76-01-001 (9)

2 April 1950

(Revised 1 March 1951)

Submitted to

Navy Department Bureau of Aeronautics

Through

THE CHIEF OF ENGINEERS, U. S. Army

by

The Commanding Officer  
Engineer Research and Development Laboratories

Prepared by

R. C. Navarin  
J. E. Malcolm

Petroleum Distribution Branch  
Engineer Research and Development Laboratories  
Fort Belvoir, Virginia

APPENDIX IIA

## AUTHORITY

<u>Item</u>	<u>Page</u>
Letter from the Chief of Engineers to the Engineer Research and Development Laboratories, File ENGNC (3 Jan 49) Dated 3 January 1949, Subject: Test of Fog Foam for Airplane Crash Fire Fighting (Project 8-76-01-001, Authorized Investigations, Fire Fighting)	A-3
Interdepartmental Government Order from the Bureau of Aeronautics, Department of the Navy to the Corps of Engineers, Department of the Army (2 Dec 48), Dated 2 December 1948, Subject: ORDER NAer 00806, APPROP'N 1791502.003, Aviation Navy 1949, Acct. 39831, Bureau Control No. 61000, Program 361A	A-5
Letter from Department of the Navy, Bureau of Aeronautics, Washington, D. C. to the Engineer Research and Development Laboratories, File 45576 Aer-SE-31 (15 June 49) Dated 15 June 1949, Subject: Fogfoam for Fire Extinguishment - Evaluation of	A-6
Letter from Department of the Navy, Bureau of Aeronautics, Washington D. C. to the Engineer Research and Development Laboratories, File 50213 Aer-SE-31, NAER-00806 (30 June 49) Dated 30 June 1949, Subject: Test of Fog Foam for Airplane Crash Fire Fighting (Project 8-76-01-001, Authorized Investigations, Fire Fighting)	A-7
Letter from Department of the Navy, Bureau of Aeronautics, Washington, D. C. to the Engineer Research and Development Laboratories, File 95468 Aer-SE-31 (22 Sep 49) Dated 22 September 1949, Subject: Fog Foam for Fire Extinguishment - Evaluation of	A-8
Letter from Department of the Navy, Bureau of Aeronautics, Washington, D. C. to the Engineer Research and Development Laboratories, File 214956 Aer-SE-31 (2 Dec 49) Dated 2 December 1949, Subject: Fog Foam for Fire Extinguishment - Evaluation of	A-9

DEPARTMENT OF THE ARMY  
Office of the Chief of Engineers  
Washington

ENGNC

3 January 1949

SUBJECT: Test of Fog Foam for Airplane Crash Fire Fighting (Project No. 8-76-01-001. Authorized Investigations, Fire Fighting)

TO: The Commanding Officer  
Engineer Research & Development Laboratories  
Fort Belvoir, Virginia

1. References:

a. Letter from this office to the Engineer Research & Development Laboratories, subject as above, dated 15 July 1948, inclosing letter from the Bureau of Aeronautics requesting the establishment of a test program of fog foam, and indorsement thereon.

b. Letter from this office to the Bureau of Aeronautics, Department of the Navy, subject, "Fog Foam Tests for Airplane Crash Fire Fighting," dated 25 August 1948, approving the request for the establishment of a fog foam testing program at the Engineer Research & Development Laboratories. A copy of this letter was forwarded to the Engineer Research & Development Laboratories.

c. Inclosed Interdepartmental Government Order from the Bureau of Aeronautics, Department of the Navy to the Corps of Engineers, dated 2 December 1948, authorizing the transfer of funds for the conduct of fog foam tests at the Engineer Research & Development Laboratories.

2. The Engineer Research & Development Laboratories is requested to conduct the tests in question in accordance with the requirements as outlined in the inclosed Department of the Navy Order. It is further requested that the Engineer Research & Development Laboratories arrange for the transfer of funds involved by submitting an executed Form 1080 to the Department of the Navy.

3. Direct contact between the Engineer Research & Development Laboratories and the Bureau of Aeronautics, Department of the Navy, is authorized in carrying out this test program.

BY ORDER OF THE CHIEF OF ENGINEERS:

H. J. WOODBURY  
Colonel, Corps of Engineers  
Chief, Engr. Res & Dev Div  
Military Operations

NAVY DEPARTMENT  
BUREAU OF AERONAUTICS  
Washington, D. C.

2 Dec 1948

TO: Office of Corps of Engineers  
Department of the Army  
Washington, D. C.

Refer to:  
ORDER: NAer 00806

APPROP'N 1791502.003  
Aviation Navy 1949  
Acct. 39831  
Bureau Control No. 61000  
Program 361A

This order is being issued to provide for transfer of funds for the following as a charge to the appropriation indicated above:

Item	Description	Estimated Amount
1	Engineering, labor, equipment and materials necessary to determine the effect of hydraulic pressure on the fire extinguishing characteristics of fog foam, including the evaluation of fog-foam nozzles and the development of standards of performance, and to furnish report thereon	\$38,000.00

The above tests are to be conducted at the Engineer Research and Development Laboratories at Fort Belvoir, Virginia.

Equipment required for the tests, such as fog-foam nozzles will be furnished from the Engineer Research and Development Laboratories, Naval Research Laboratory, and the procurement from other sources. All equipment purchased under this order shall become the property of the Bureau of Aeronautics upon completion of tests.

SPECIFICATIONS

The nozzles shall be tested over a pressure range of 100 to 800 psi and final evaluation tests shall include extinguishment of gasoline spill fires.

The test program hereunder shall be accomplished within 150 days after date of this order, and the report delivered to the Bureau of Aeronautics, Shore Establishments Division, Navy Department, Washington, D. C., Attention: SE-31.

Delivery shall be considered complete at such time as the report is approved by the Bureau of Aeronautics.

It is requested that all reports, invoices, public vouchers, and other correspondence be marked with the following:

NAer Order 00806  
Appropriation 1791502.003  
Aviation Navy 1949  
Account 39831  
Bureau Control No. 61000  
Program 361A

If Funds are Required in Advance

Funds will be advanced under Section 601 of the Economy Act (47 Stat. 427, approved 30 June 1932) upon receipt of Standard Form 1080 to cover the estimated cost of this order, subject to final accounting on basis of costs incurred.

If Funds Are Not Required In Advance

At time of shipment of material or performance of services forward Standard Form 1080 to the consignee to be certified and otherwise completed, and transmitted to the Bureau of Supplies and Accounts for payment and/or final accounting.

Contracting Officer  
Bureau of Aeronautics  
Navy Department

A-6

DEPARTMENT OF THE NAVY  
Bureau of Aeronautics  
Washington, D. C.

File:  
Aer-SE-31  
45576  
15 June 1949

FROM: Chief, Bureau of Aeronautics  
TO: Commanding Officer, Engineer Research and  
Development Laboratory, Ft. Belvoir, Virginia  
SUBJECT: Fogfoam for Fire Extinguishment - Evaluation of.  
REFERENCE: (a) BuAer Procurement Directive EN11-7200-PW-49;  
NAer Order 00806  
(b) Visit of BuAer representative (A. W. Krulee)  
to Engineer Board Research Laboratory on  
8 June 1949.

1. The Engineer Board Research Laboratory is conducting an investigation of the effect of hydraulic pressure on fogfoam under reference (a) and, on the occasion of reference (b) advised that foam proportioning equipment being used in the work does not span completely the range of flows of nozzles under test.

2. It will be satisfactory to the Bureau of Aeronautics if pre-mixed foam solutions are used, either exclusively, or to fill gaps in proportioner capacities. It is anticipated that premixed solutions, if thoroughly agitated before use, will not separate on standing; neither will precipitation occur to any appreciable degree.

CC:  
Office of Chief of Engineers  
Dept of Army

L. C. Davies  
By Direction



DEPARTMENT OF THE NAVY  
Bureau of Aeronautics  
Washington, D. C.

File:  
Aer-SE-31  
NAER-00806  
50213  
30 June 1949

FROM: Chief, Bureau of Aeronautics  
TO: Commanding Officer, Engineer Research and Development  
Laboratories, Fort Belvoir, Virginia

SUBJECT: Test of Fog Foam for Airplane Crash Fire Fighting  
(Project 8-76-01-001, Authorized Investigations, Fire  
Fighting)

REFERENCE: (a) Engineer Research and Development Laboratories,  
Fort Belvoir ltr TECRD T3P, 400.1 (8-76-01-001)  
of 21 June 1949  
(b) Interdepartmental Government Order NAER-00806,  
dtd 2 Dec 1948

1. By reference (a), the Bureau of Aeronautics was requested to extend the completion date of work being done by the Engineer Research and Development Laboratories under reference (b) until 30 November 1949.

2. The requested extension is hereby approved.

L. A. Per  
By Direction

CC:  
Office of Chief of Engineers  
Dept of Army

A-8

DEPARTMENT OF THE NAVY  
Bureau of Aeronautics  
Washington, D. C.

File: Aer-SE-31  
95468  
22 September 1949

FROM: Chief, Bureau of Aeronautics  
TO: Commanding Officer, Engineer Research and Development  
Laboratories, Fort Belvoir, Virginia.

Subject: Fog Foam for Fire Extinguishment - Evaluation of.

Reference: (a) BuAer Procurement Directive EN11-7200-PW-49: NAer  
Order 00806  
(b) Visit of BuAer Representative (A. W. Krulac) to  
Engineer Research and Development Laboratories on  
14 Sep 49.

1. The Engineer Research and Development Laboratories is conducting an investigation of the effect of hydraulic pressures on fog foam in accordance with reference (a) and, on the occasion of reference (b), presented data on tests of various fog foam nozzles which indicated that there was a rapid falling off of performance with increases of pressures above 200 pounds per square inch.

2. The description of work under reference (a) calls for evaluation at pressures up to 800 pounds per square inch; however, in view of the above information, it is satisfactory to the Bureau of Aeronautics to reduce the maximum test pressure to 600 pounds per square inch.

M. T. MARTIN  
By Direction

CC:  
Chief Engineers, Dept of Army

DEPARTMENT OF THE NAVY  
Bureau of Aeronautics  
Washington 25, D. C.

Aer-SE-31  
214956  
2 Dec 1949

From: Chief, Bureau of Aeronautics  
TO: Commanding Officer, Engineer Research and Development  
Laboratories, Fort Belvoir, Virginia

SUBJECT: Fog Foam for fire extinguishment; evaluation of

Ref: (a) BUAER Procurement Directive EN11-7200PW-49; NAER  
Order 00806  
(b) BUAER ltr Aer-SE-31, NAER-00806, Ser 95468 of 22 Sep  
49 to ERDL Fort Belvoir, Virginia

1. The Engineer Research and Development Laboratories, Fort Belvoir is conducting an investigation into the effect of hydraulic pressure on the fire extinguishing effectiveness of fog foam under authority of reference (a). The original requirement for a maximum pressure of 800 pounds per square inch was reduced to 600 reference (b).

2. It has since been determined that conclusive trends were obtained at pressures of 500 pounds per square inch and below. Accordingly, the maximum pressure requirement is hereby further reduced to 500 pounds per square inch.

3. It is understood that tests have been completed and the report is being compiled. It is requested that the report exclude all references to individual manufacturers of the nozzles used in the investigation; this information should be included in an appendix which is easily removed from the body of the report as it is anticipated that requests for the basic information will be received from non-military organizations.

R. W. D. WOODS  
By Direction

Copy to:  
ChEngineers, Dept of Army

APPENDIX IIB

PHOTOGRAPHS AND NOMENCLATURE OF NOZZLES TESTED

## Items Tested -

The water fog nozzles for these tests were chosen as representative of types currently in use including some experimental models. The nozzles have been numbered and identified by their specific design and pattern in preference to the manufacturer's nomenclature. This has been done at the request of the authority for this investigation. A complete list of the nozzles tested and the manufacturing source follows. The number and the identity of each nozzle preceding the standard commercial nomenclature corresponds to the nozzle nomenclature used throughout this report. See Figs. 52, 53, and 54.

- Nozzle No. 1 -  $2\frac{1}{2}$ -inch external impinging jet;  $2\frac{1}{2}$ " Fog-nozl Fogtip Type 4 NAP, Fognozl International Inc., Los Angeles, California.
- Nozzle No. 2 -  $2\frac{1}{2}$ -inch external impinging jet with fan-shaped diffuser;  $2\frac{1}{2}$ " Fogtip Type 3A. Source same as No. 1.
- Nozzle No. 3 -  $2\frac{1}{2}$ -inch internal impinging jet;  $2\frac{1}{2}$ " Rockwood Water Fog Nozzle Type N-23, Rockwood Mfg. Co., Worcester, Mass.
- Nozzle No. 4a -  $2\frac{1}{2}$ -inch internal impinging jet with screen;  $2\frac{1}{2}$ " Rockwood, Type FFF Fog and Fog Foam Nozzle with Screen and Tip A. Source same as No. 3.
- Nozzle No. 4b -  $2\frac{1}{2}$ -inch internal impinging jet with stream shaper; same as 4a with shaper added (screen removed).
- Nozzle No. 4c -  $2\frac{1}{2}$ -inch internal impinging jet with screen;  $2\frac{1}{2}$ " Rockwood, Type FFF Fog and Fog Foam Nozzle with Screen and Tip B. Source same as No. 3.
- Nozzle No. 4d -  $2\frac{1}{2}$ -inch internal impinging jet with stream shaper; same as 4c with shaper added (screen removed).
- Nozzle No. 5a -  $2\frac{1}{2}$ -inch centrifugal with  $\frac{1}{2}$ -inch orifice;  $2\frac{1}{2}$ " Baker Atomic Wonder Water Fog Nozzle, Baby V-1, with  $\frac{1}{2}$ " Orifice, J. M. Baker Pattern Company, Inc., Providence, R. I.
- Nozzle No. 5b -  $2\frac{1}{2}$ -inch centrifugal with 23/32-inch orifice;  $2\frac{1}{2}$ " Baker Atomic Wonder Water Fog Nozzle, Baby V-1, with 23/32" orifice. Source same as No. 5a.

- Nozzle No. 6a -  $2\frac{1}{2}$ -inch centrifugal with 1-inch orifice;  $2\frac{1}{2}$ " Baker Atomic Wonder Water Fog Nozzle, Medium V-2, with 1" orifice. Same source as 5a.
- Nozzle No. 6b -  $2\frac{1}{2}$ -inch centrifugal with  $1\frac{1}{4}$ -inch orifice;  $2\frac{1}{2}$ " Baker Atomic Wonder Water Fog Nozzle, Medium V-2, with  $1\frac{1}{4}$ " orifice. Source same as 5a.
- Nozzle No. 7a -  $2\frac{1}{2}$ -inch centrifugal with  $1\frac{1}{2}$ -inch orifice;  $2\frac{1}{2}$ " Baker Atomic Wonder Water Fog Nozzle, Giant V-3 with  $1\frac{1}{2}$ " orifice. Source same as 5a.
- Nozzle No. 7b -  $2\frac{1}{2}$ -inch centrifugal with  $1\frac{3}{4}$ -inch orifice;  $2\frac{1}{2}$ " Baker Atomic Wonder Water Fog Nozzle, Giant V-3 with  $1\frac{3}{4}$ " orifice. Source same as 5a.
- Nozzle No. 8 -  $2\frac{1}{2}$ -inch German adjustable hollow cone;  $2\frac{1}{2}$ " Alco Duse Adjustable Nozzle. Source -- German captured equipment.
- Nozzle No. 9 -  $1\frac{1}{2}$ -inch external impinging jet;  $1\frac{1}{2}$ " Type 4-FO Fognoz1. Source same as No. 1.
- Nozzle No. 10a -  $1\frac{1}{2}$ -inch internal impinging jet with screen;  $1\frac{1}{2}$ " Rockwood Fog Foam Hand Line with Tip 196. Source same as No. 3.
- Nozzle No. 10b -  $1\frac{1}{2}$ -inch internal impinging jet with screen;  $1\frac{1}{2}$ " Rockwood Fog Foam Hand Line with Foam Baffle Tip 221. Source same as No. 3.
- Nozzle No. 10c -  $1\frac{1}{2}$ -inch internal impinging jet with screen;  $2\frac{1}{2}$ " Rockwood Fog Foam Hand Line with Tip 257. Source same as No. 3.
- Nozzle No. 11a -  $1\frac{1}{2}$ -inch internal impinging jet with screen, bumper type; Rockwood Bumper Type Nozzles (3 in set) with Tip 281. Source same as No. 3.
- Nozzle No. 11b -  $1\frac{1}{2}$ -inch internal impinging jet with screen, bumper type; Rockwood Bumper Type Nozzles (3 in set) with Tip 316. Source same as No. 3.
- Nozzle No. 12 -  $1\frac{1}{2}$ -inch straight stream aspirating foam nozzle with fan-shaped diffuser; 120-gpm Hi-Pressure Foam Nozzle, National Foam Systems, Inc., Philadelphia, Pa.

- Nozzle No. 13 -  $2\frac{1}{2}$ -inch straight stream aspirating foam nozzle with fan-shaped diffuser; 325-gpm Hi-Pressure Foam Nozzle. Source same as No. 12.
- Nozzle No. 14 -  $2\frac{1}{2}$ -inch external impinging jet;  $2\frac{1}{2}$ " Fognozl Fogtip 6-FOA-500. Source same as No. 1.
- Nozzle No. 15 -  $2\frac{1}{2}$ -inch adjustable hollow cone;  $2\frac{1}{2}$ " Alfco Spray Nozzle, Model 10E, American LaFrance Foamite Corp., Elmira, New York.
- Nozzle No. 16 -  $2\frac{1}{2}$ -inch adjustable hollow cone with aspirator;  $2\frac{1}{2}$ " American LaFrance Experimental Fog Nozzle. Source same as No. 15.
- Nozzle No. 17 -  $1\frac{1}{2}$ -inch adjustable hollow cone;  $1\frac{1}{2}$ " Elkhart Mystery Nozzle No. L-200, Elkhart Brass Mfg. Co., Elkhart, Indiana..
- Nozzle No. 18 -  $2\frac{1}{2}$ -inch adjustable hollow cone;  $2\frac{1}{2}$ " Elkhart Mystery Nozzle No. 200. Source same as No. 17.
- Nozzle No. 19 -  $2\frac{1}{2}$ -inch fan-shaped external impinging with diffusing orifices;  $2\frac{1}{2}$ " Paradise Nozzle, Paradise Mfg. Co., Indianapolis, Indiana.
- Nozzle No. 20 -  $2\frac{1}{2}$ -inch internal impinging jet;  $2\frac{1}{2}$ " Rockwood Water Fog Nozzle, Type "B". Source same as No. 3.

B-6



Fig. 52.

184-3-710



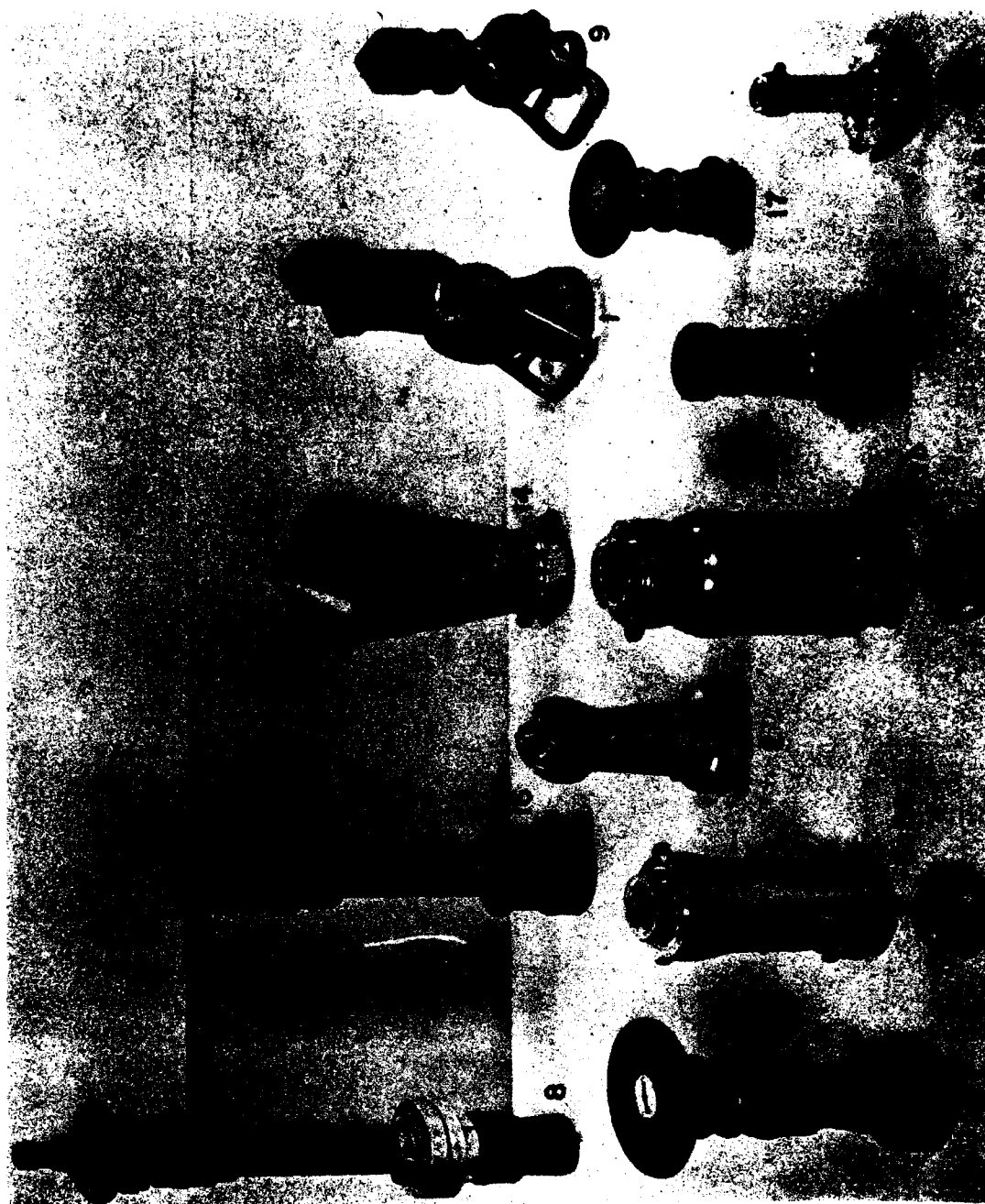


Fig. 53.

184-3-707

B-8

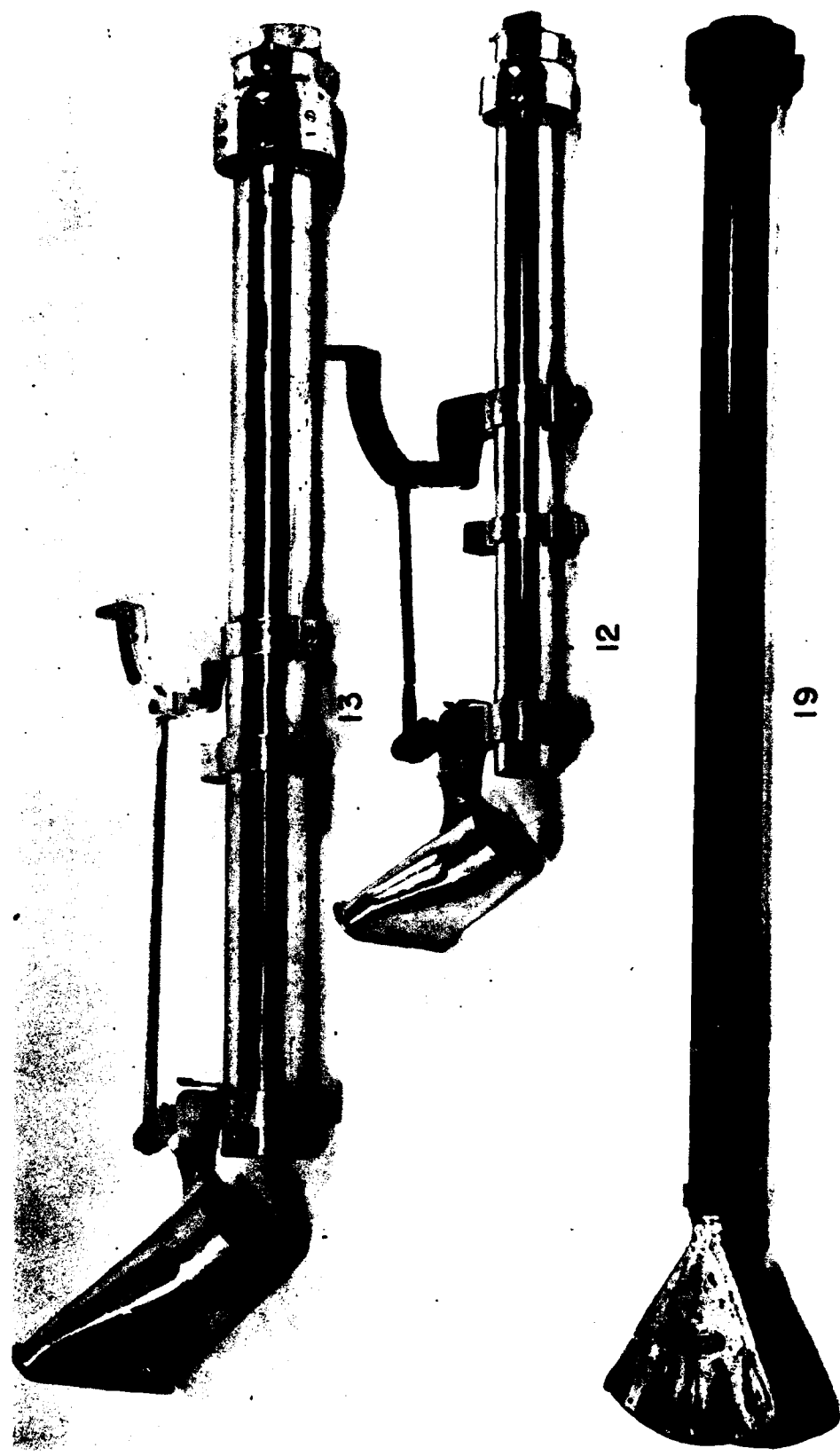


Fig. 54.

184-3-708

APPENDIX IIC

APPROVAL OF

Report 1166

FOG FOAM STUDIES

2 April 1950

and

DISTRIBUTION

ADDRESS REPLY TO:  
CHIEF OF ENGINEERS  
U. S. ARMY  
WASHINGTON, D. C.

DEPARTMENT OF THE ARMY  
OFFICE OF THE CHIEF OF ENGINEERS  
WASHINGTON

REFER TO FILE NO. ENGNC

3 January 1949

SUBJECT: Test of Fog Foam for Airplane Crash Fire Fighting  
(Project No. 8-76-01-001, Authorized Investigations, Fire  
Fighting)

TO: The Commanding Officer  
Engineer Research & Development Laboratories  
Fort Belvoir, Virginia

1. References:

a. Letter from this office to the Engineer Research & Development Laboratories, subject as above, dated 15 July 1948, inclosing letter from the Bureau of Aeronautics requesting the establishment of a test program of fog foam, and indorsement thereon.

b. Letter from this office to the Bureau of Aeronautics, Department of the Navy, subject, "Fog Foam Tests for Airplane Crash Fire Fighting", dated 25 August 1948, approving the request for the establishment of a fog foam testing program at the Engineer Research & Development Laboratories. A copy of this letter was forwarded to the Engineer Research & Development Laboratories.

c. Inclosed Interdepartmental Government Order from the Bureau of Aeronautics, Department of the Navy to the Corps of Engineers, dated 2 December 1948, authorizing the transfer of funds for the conduct of fog foam tests at the Engineer Research & Development Laboratories.


2. The Engineer Research & Development Laboratories is requested to conduct the tests in question in accordance with the requirements as outlined in the inclosed Department of the Navy Order. It is further requested that the Engineer Research & Development Laboratories arrange for the transfer of funds involved by submitting an executed Form 1080 to the Department of the Navy.

3. Direct contact between the Engineer Research & Development Laboratories and the Bureau of Aeronautics, Department of the Navy, is authorized in carrying out this test program.

BY ORDER OF THE CHIEF OF ENGINEERS:

1 Incl

BuAer Order  
NAer 00806

  
H. J. WOODBURY  
Colonel, Corps of Engineers  
Chief, Engr Research & Development Div  
Military Operations

C-4

SUBJECT: Test of Fog Foam for Airplane Crash Fire Fighting (Project No. 8-76-01-001, Authorized Investigations, Fire Fighting)

ENGNC (3 Jan 49)

3rd Ind.

Office of the Chief of Engineers, Washington 25, D. C. 21 June 1950


TO: The Commanding General, The Engineer Center, Fort Belvoir, Virginia

1. The recommendation contained in paragraph 21 of the report is approved by the Office of the Chief of Engineers.

2. The proposed distribution list for the subject report, a copy of which is inclosed, submitted with the 1st indorsement is also approved.

BY ORDER OF THE CHIEF OF ENGINEERS:

- 1 Incl.
2. Proposed distr. list.  
(4 copies w/d)
3. w/d

  
D. G. HAMMOND  
Lt. Colonel, Corps of Engineers  
Chief, Engr. Research & Develop. Div.  
Military Operations

TECAG 400.1

~~4th~~ Ind

Hq, The Engr Cen & Ft Belvoir, Ft Belvoir, Va. 23 JUN 1950

TO: CO, E.R.D.L., Ft Belvoir, Va.

*1 incl*  
*R/C*

TECRD ASI

400.1 (8-76-01-001)

1st Ind

SUBJECT: Transmittal of Report 1166, Fog Foam Studies

Engineer Research and Development Laboratories, The Engineer Center and  
Fort Belvoir, Fort Belvoir, Virginia 14 JUN 1950

THRU: Commanding General, The Engineer Center and Fort Belvoir, Fort  
Belvoir, Virginia

TO: Chief of Engineers, Department of the Army, Washington 25, D. C.  
ATTENTION: Chief, Engineer Research and Development Division

1. In response to the directive contained in the basic communication transmitted herewith is Report 1166, "Fog Foam Studies," dated 2 April 1950, which was prepared by the Technical Staff of the Engineer Research and Development Laboratories. This report covers tests conducted by ERDL as requested by the Department of the Navy.

2. The report concludes that:

a. The fire extinguishing effectiveness of fog foam nozzles is indicated by the following standards:

(1) Foam yield percent.

(2) Rate of application.

(3) Water content of foam (6 to 9 expansion) output in gallons per minute.

b. The test procedure set forth in the screening tests (par. 18 of the report) is a satisfactory means of evaluating the fire fighting effectiveness of fog foam nozzles.

c. On the basis of the foam used and the nozzles employed, the most effective nozzle pressure was between 200 and 300 psi.

d. The aspirating type nozzles produced higher foam yields than the non-aspirating type.

3. The report recommends that the standards of performance and the test procedures presented in this report in pars. 17 and 18 of subject report, be adopted by the Department of National Defense for use in the design of fog foam nozzles and in their evaluation for fire fighting.

4. The report with its conclusions and recommendations is approved.

C-6

TEORD ASI

400.1 (8-76-01-001)

Subject: Transmittal of Report 1166, Fog Foam Studies

1st Ind

5. This completes the work authorized by the basic communication.

Incls

1. w/d

Added 2 Incls

2. Proposed distr list - 1  
(in quint)

3. Rpt 1166 (in quad)

*O. B. Beasley*  
O. B. BEASLEY  
Colonel, CE  
Commanding

TECAG 400.1.

*2nd* Ind

Hq, The Engr Cen & Ft Belvoir, Ft Belvoir, Va. 14 JUN 1950

TO: C of Engrs, DA, Washington 25, D. C.

*2 Incls*  
✓

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Special Form

Department of Navy

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TITLE: Fog Foam Studies - and Appendixes A-H AD-A281160 - App-1 AD-A281164 - App-2						ATI- 82 059
AUTHOR(S) : Navarin, R. C.; Malcolm, J. E. ORIG. AGENCY : U. S. Army Corps of Engineers, Engineer Research and Development* PUBLISHED BY : (Same) for Bureau of Aeronautics, Washington, D. C.						REVISION (None) ORIG. AGENCY NO. ii66 PUBLISHING AGENCY NO. (Same)
DATE April'50	U.S. CLASS Unclass.	COUNTRY U.S.	LANGUAGE English	PAGES 128	ILLUSTRATIONS photos, tables, diagrs, graphs	
ABSTRACT: Tests were performed to determine the effect of hydraulic pressure on the fire extinguishing characteristics of fog foam. Moreover, standards of performance for fog foam nozzles were established experimentally. Fire tests were made with several nozzles having various percent foam yields and nozzle pressures. The nozzles which produced the highest foam yields and had the most effective nozzle pressures for use in fire fighting were ascertained in screening tests by means of a special test procedure. On the basis of the foam used and the nozzle employed, the most effective nozzle pressure was between 200 and 300 psi. Aspirating type nozzles produced higher foam yields than did the nonaspirating type. * Labs., Fort Belvoir, Va.						
DISTRIBUTION: Copies obtainable from CADO.						
DIVISION: Flight Safety and Rescue (15) SECTION: Aircraft Fires (3)				SUBJECT HEADINGS: Fire extinguishing agents, Chemical Fire extinguishing equipment		
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