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A COMPARISON TEST OF UNITED KINGDOM AND UNITED
STATES AMMUNITION FOR LIGHTWEIGHT WEAPONS
NINTH REPORT OF PROJECT TS2-2015
VOLUME II
APPENDICES P - W

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APPENDIX P

Penetration Firing Data

(167 sheets)

MAR 19 1974

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APPENDIX P

PENETRATION FIRING DATA

Date: 20 Feb 1950 Time Started: 1345 Time Finished: 1420
Weapon, Type: U. S. T-25 Weapon No.: 10 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 21°F
Density: 1.112 Wind: NW 25 mph Weather: Clear Range: 25 Yards
Target Type: 1" Pine Boards
Test Ammunition: Cartridge. Caliber .30, Ball, T-104

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	48-1/2	Lodged in 49th board.
2	48-1/4	Fell to ground after penetrating 1/4" on 49th board.
3	48-1/8	Fell to ground after penetrating 1/8" on 49th board.
4	50-3/4	Lodged in 51st board.
5	49-3/4	Lodged in 50th board.
6	48-1/2	Lodged in 49th board.
7	34-1/4	Fell to ground after denting 35th board.
8	48	Point protruding 1/2" beyond back of board.
9	48-1/2	Fell to ground after denting 49th board.
10	48-3/4	Fell to ground after denting 49th board.

Note: No bullet deformity.
Average 47.25

APPENDIX P

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PENETRATION FIRING DATA

Date: 20 Feb 1950 Time Started: 1030 Time Finished: 1340
Weapon, Type: U. S. T-25 Weapon No.: 10 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 21°F
Density: 1.112 Wind: NW 25 mph Weather: Clear Range: 25 Yards
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .30, AF, T-93.

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	13-1/2	Yaw begun on 6th board.
2	14-1/2	Yaw begun on 6th board.
3	45-1/2	Did not yaw.
4	50	Did not yaw. Only 50 boards in target.
5	50	Did not yaw. Only 50 boards in target.
6	49	1/2" Protrusion beyond rear of board.
7	49-1/2	Lodged in 50th board.
8	49-1/2	Lodged in 50th board.
9	14-1/2	Yaw begun on 5th board. May have been caused by proximity to other hole.
10	30-1/4	Slight dent in 31st board only.

Note: Jacket did not strip from core.
Average 37

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APPENDIX P

PENETRATION FIRING DATA

Date: 30 Feb 1950

Time Started:

Time Finished:

Weapon, Type: T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 21°F

Density: 1.112

Wind: 25 mph

Weather: Clear

Range: 75 Yards

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .30, API, T-101.

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	16-1/4	Lodged base first in 17th board.
2	18-3/4	Lodged base first in 19th board.
3	18-3/4	Core lodged sideways in 18th board.
4	19-3/4	Lodged base first in 20th board.
5	19-1/2	Lodged 20th board sideways and bounced out.
6	18-1/2	Lodged base first in 20th board.
7	15-3/4	Lodged in 14th board.
8	14-3/4	Lodged in 14th board base first.
9	14-3/4	Lodged in 15th board base first.
10	14-3/4	Lodged in 15th board base first.

All rounds functioned about 14th and 15th board.
Average: 17.25

APPENDIX P

PENETRATION FIRING DATA

Date: 20 Feb 1950 Time Started: 1345 Time Finished: 1400
Weapon, Type: U.K. EM2 Weapon No.: 3 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 21.0°
Density: 1.112 Wind: NW 25 mph Weather: Clear Range: 25 Yards
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .280, Ball

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	39	Point protruding 1/4" beyond rear of 39th board.
2	39-1/2	Lodged in 39th board.
3	39	Point barely broke rear of 39th board.
4	39-1/4	Fell to ground after denting 40th board.
5	40	Point protruding 1/2" beyond rear of 40th board.
6	37	Point protruding 3/4" beyond rear of 37th board.
7	39	Point protruding 3/4" beyond rear of 39th board.
8	39-1/2	Lodged in 40th board.
9	41	Point protruding 1" beyond 41st board.
10	42	Lodged in 42nd board. Point just broke back of board.

Note: Jacket did not strip from core.
Average: 39.50

APPENDIX P

PENETRATION FIRING DATA

Date: 20 Feb 1950 Time Started: 1030 Time Finished: 1340
Weapon, Type: C.K. M2 Weapon No.: 3 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 21°F
Density: 1.112 Wind: NW 25 mph Weather: Clear Range: 25 Yards
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .280, AP

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	34	Point protruding 1/4" beyond 34th board.
2	37	Point protruding 1" beyond 37th board.
3	38-1/2	Lodged in 40th board.
4	38	Point protruding 1/8" beyond 38th board.
5	37-1/2	Lodged in 38th board.
6	37	No mark on 38th board.
7	37	Lodged in board.
8	37-1/2	Lodged in 38th board.
9	38-1/2	Lodged in 39th board.
10	40-1/2	Fell to ground, after penetrating 1/2" on 41st board.

Note: Jacket did not strip from core.
Average: 37.50

APPENDIX P

PENETRATION FIRING DATA

Date: 20 Feb 1950 Time Started: 0940 Time Finished: 1020
 Weapon, Type: M2 Weapon No.: 3 Previous Rounds: 0
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 21°F
 Density: 1.112 Wind: NW 25 mph Weather: Clear Range: 25 Yards
 Target Type: 1" Pine Boards
 Test Ammunition: Cartridge, Caliber .250 AFI

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	38	PP 3/4". Lodged in 38th board.
2	37-3/4	Lodged in 38th board.
3	38	Small mark on 39th board.
4	40-1/2	Lodged in 41st board.
5	40-1/4	Lodged in 41st board.
6	41	PP 1/4". Lodged in 41st board.
7	43	PP 1/8". Lodged in 43rd board.
8	39-3/4	Lodged in 40th board.
9	39-1/2	Lodged in 40th board.
10	40	PP 1/8". Lodged in 40th board.

Note: PP = Point protruding behind board.
 Average: 39.75

APPENDIX P

PENETRATION FIRING

Date: 21 February 1950

Time Started: 1030

Time Finished: 1200

Weapon, Type: U.S. T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 24.3°F

Density: 1.106

Wind: ESE 8 mph

Weather: Scattered clouds Range: 100 Yards

Target Type: 1" Pine Boards

Test Ammunition: Ctg. Cal. .30 Ball, T-104

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	40-3/4	Lodged in 41st board.
2	43	Point protruding 1/4" beyond back of board.
3	42-3/4	Lodged in 43rd board.
4	42-1/2	Lodged in 45th board.
5	43-1/4	Bullet fell to ground when board was removed.
6	43	Point barely protruding beyond rear of 43rd board.
7	44-1/2	Bullet fell to ground when board was removed.
8	43	Point protruding 1/2" beyond back of board.
9	42-1/2	Bullet fell to ground when board was moved.
10	44-1/2	Lodged in 45th board.

AVERAGE: 43

APPENDIX P

PENETRATION FIRING DATA

Date: 20 February 1950

Time Started: 1430

Time Finished: 1545

Weapon, Type: U.S. T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 21°F

Density: 1.112

Wind: NW 25 mph

Weather: Clear

Range: 100 Yards

Target Type: 1" Pine Boards

Test Ammunition: Ctg. Cal. .30 T-93 AP

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	42	Point protruding 1/4" beyond back of 42nd board.
2	42	Point barely through back of board.
3	48-3/4	Fell to ground after penetrating 3/4" on 49th board.
4	43	Point protruding 1/8" beyond rear of board.
5	41-1/2	Fell to ground after penetrating 1/2" on 42nd board.
6	42-3/4	Lodged in 43rd board.
7	42	Bullet protruding almost entire length beyond 42nd board.
8	42	Bullet protruding 1/8" beyond back of board.
9	41-3/4	Lodged in 42nd board.
10	40	Slight indent in 41st board.

AVERAGE: 42.50

APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950

Time Started:

Time Finished:

Weapon, Type: T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 100 Yards

Target Type: 1" Pine Boards

Test Ammunition: Ctg. Cal. .30, API, T-101

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	52	Point protruding 1". Lodged in 52nd board.
2	52-1/4	Lodged in 52nd board.
3	52-1/4	Lodged in 52nd board.
4	41	Point protruding 1/8". Lodged in 41st board.
5	25	Core lodged in 25th board. Functioned on 14th board.
6	20	Core lodged in 25th board base first. Functioned on 15th board.
7	21	Core lodged in 21st board. Functioned on 15th board.
8	23	Core lodged in 23rd board. Functioned on 16th board.
9	26	Core lodged in 26th board. Functioned on 20th board.
10	20	Core lodged in 20th board base first. Functioned on 14th board.

AVERAGE: 33.25

APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950 Time Started: 1030 Time Finished: 1200
Weapon, Type: U.K. EM2 Weapon No.: 3 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 24.3°F
Density: 1.106 Wind: ESE 8 mph Weather: Scattered clouds Range: 100 Yards
Target Type: 1" Pine boards
Test Ammunition: Ctg. Cal. .280 Ball

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	34	Point protruding 1/2" beyond back of board.
2	33	Point protruding 1/8" beyond back of board.
3	36	Slight indent on 37 board (approximately 1/8").
4	34-1/2	Fell to ground when board removed.
5	33	Point barely protruding.
6	32-1/2	Lodged in 33rd board.
7	32-1/4	Bullet fell to ground when board moved.
8	32-1/4	Bullet fell to ground when board moved.
9	32-1/4	Bullet fell to ground when board moved.
10	35	Point protruding 1/16" beyond back of board.

AVERAGE: 33.50

APPENDIX P

PENETRATION FIRE TEST

Date: 21 February 1950

Time Started: 1430

Time Finished: 1545

Weapon, Type: U.M. EM2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 21°F

Density: 1.112

Wind: NW 25 mph

Weather: Clear

Range: 100 Yards

Target Type: 1" Pine Boards

Test Ammunition: Ctg, Cal., .280 AP

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS (Clearance - 156)</u>
1	30-1/2	Lodged in 31st board.
2	31-1/2	Lodged in 32nd board.
3	34-1/2	Lodged in 35th board.
4	36	Small mark on 37th board. Bullet fell to ground.
5	33-1/4	Fell to ground when board was moved.
6	33-1/4	Fell to ground when board was moved.
7	16	Lodged in 16th board base first.
8	32-1/2	Lodged in 33rd board.
9	31-3/4	Lodged in 32nd board.
10	33	Point protruding 1/8" beyond back of board.

AVERAGE: 31.25

APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950

Time Started:

Time Finished:

Weapon, Type: M2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 100 Yards

Target Type: 1" Pine Boards

Test Ammunition: Ctg. Cal. .280. API

<u>HTT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS - (Clearance - 156)</u>
1	37	Point protruding 1/2". Lodged in 37th board.
2	35-1/4	Lodged in 36th board.
3	34	Point protruding 1/8". Lodged in 34th board.
4	33-3/4	Lodged in 34th board.
5	34-3/4	Lodged in 35th board.
6	37	Point protruding 1/2". Lodged in 37th board.
7	36-1/4	Lodged in 37th board.
8	33	Point protruding 1/4". Lodged in 33rd board.
9	35-1/4	Lodged in 34th board.
10	33-3/4	Lodged in 34th board.

AVERAGE: 34.75

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APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950 Time Started: 1445 Time Finished: 1535
Weapon, Type: U. S. T25 Weapon No.: 10 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 24.3°F
Density: 1.106 Wind: ESE, 8 mph Weather: Clear Range: 300 yd
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .30, Ball, T104

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	31	PP 1/16".
2	30	PP 1/8".
3	30-1/2	Lodged in 31st board.
4	30-1/2	Lodged in 31st board.
5	31-1/8	Lodged in 32nd board.
6	30-3/4	Lodged in 32nd board.
7	30-1/2	Fell to ground.
8	31-3/4	Fell to ground.
9	31-1/4	Fell to ground.
10	30-3/4	Lodged in 31st board.

Average 30.75

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950 Time Started: 1300 Time Finished: 1445
Weapon, Type: T25, U. S. Weapon No.: 10 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 24.3°F
Density: 1.106 Wind: ESE, 8 mph Weather: Clear Range: 300 yd
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .30, AP, T93

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	30-3/4	Lodged in 31st board.
2	31-1/4	Lodged in 32nd board.
3	30-1/4	Fell to ground.
4	30-1/2	Lodged in 31st board.
5	31	Point barely through board.
6	31	Point protruding 1/8" beyond back of board.
7	30-1/2	Lodged in 31st board.
8	31	PP 1/2".
9	31	PP 1/2".
10	31-1/4	Fell to ground.

Note: PP - Point protruding beyond back
of board.

Average 30.75

APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950

Time Started:

Time Finished:

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Clear

Range: 300 yd

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .30, API, T101

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	35-1/4	Lodged in 36th board.
2	35-1/4	Lodged in 36th board.
3	36	PP 1/8". Lodged in 36th board.
4	35	PP 1/4". Lodged in 35th board.
5	35	PP barely. Lodged in 35th board.
6	33-1/4	Lodged in 34th board.
7	34	PP 1/4". Lodged in 34th board.
8	33	P. barely. Lodged in 33rd board.
9	37	PP 1/8". Lodged in 37th board.
10	35	PP 1/8". Lodged in 35th board.

Note: PP - Point protruding beyond back of board.

Average 34.75

APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950 Time Started: 1445 Time Finished: 1535
Weapon, Type: UK EM2 Weapon No.: 3 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 24.3°F
Density: 1.106 Wind: ESE, 8 mph Weather: Clear Range: 300 yd
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .280, Ball

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	24-1/4	Fell to ground.
2	24	PP 1/4".
3	24-3/4	Lodged in 24th board.
4	24-1/2	Lodged in 24th board.
5	24-1/2	Lodged in 24th board.
6	26	PP 1/16".
7	27	PP 1/2".
8	26	PP barely.
9	27-1/2	Lodged in 26th board.
10	27	PP 1/8".

Average 25.50

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950 Time Started: 1300 Time Finished: 1445
Weapon, Type: UK E 2 Weapon No.: 3 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 24.3°F
Density: 1.105 Wind: ESE, 8 mph Weather: Clear Range: 300 yd
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .200, AP

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	23-1/2	Lodged in 24th board.
2	24-1/2	Lodged in 25th board.
3	24-3/4	Lodged in 26th board.
4	21-3/4	Lodged in 22nd board.
5	23	Point protruding 1/8" beyond back of board.
6	21-3/4	Lodged in 22nd board.
7	21	PP 1".
8	20-1/2	Lodged in 21st board.
9	23-1/2	Lodged in 24th board.
10	22-1/4	Fell to ground.

Average 22.75

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950 Time Started: Time Finished:
Weapon, Type: M2 Weapon No.: 3 Previous Rounds: 87
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Clear Range: 300 yd
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .280, API

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	25	PP barely. Lodged in 23rd board. No function.
2	23-1/4	Lodged in 24th board. No function.
3	22	PP 1/8". Lodged in 22nd board. No function.
4	22	PP 1/4". Lodged in 22nd board. No function.
5	22-1/2	Lodged in 23rd board. No function.
6	22-1/4	Lodged in 23rd board. No function.
7	23-3/4	Lodged in 24th board. No function.
8	24-1/2	Lodged in 25th board. No function.
9	22	PP 1/2". Lodged in 22nd board. No function.
10	23	PP 1-1/8". Lodged in 23rd board. No function.

Average 22.75

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 23 February 1950 Time Started: 1120 Time Finished: 1410
Weapon, Type: U. S. 125 Weapon No.: 10 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 36°F
Density: 1.055 Wind: W.W, 27 mph Weather: Range: 600 yd
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .30, Ball, T104

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	16-1/2	Lodged in 17th board.
2	15-1/4	Lodged in 16th board.
3	15	FP 3/4".
4	17	FP 1".
5	16-1/2	Lodged in 17th board.
6	16	FP barely.
7	16-1/4	Lodged in 17th board.
8	15-3/4	Lodged in 16th board.
9	15-3/4	Lodged in 16th board.
10	16	FP 1".
11	16-1/4	Lodged in 17th board.

Average 16

FP - Point protruding.

APPENDIX P

PENETRATION FIRING TEST

Date: 23 February 1950 Time Started: 1020 Time Finished: 1120
Weapon, Type: U. S. T25 Weapon No.: 10 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 36°F
Density: 1.055 Wind: WNW, 27 mph Weather: Overcast Range: 600 yd
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .30, AP, T93

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	16	PP 1/2" on 16th board.
2	16	PP barely.
3	16	PP 1/4".
4	16	PP 1/16".
5	15-1/4	Lodged in 16th board.
6	18	PP 1/16".
7	15-1/2	Lodged in 16th board.
8	15-1/4	Lodged in 16th board.
9	15-3/4	Lodged in 16th board.
10	15-3/4	Lodged in 16th board.
		Average 16

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 23 February 1950 Time Started: 1135 Time Finished:
Weapon, Type: T25 Weapon No.: 10 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Overcast Range: 600 yd
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .30, ATI, T1C1

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	18	PP barely. Lodged in 18th board.
2	18	PP 1/8". Lodged in 18th board.
3	18	PP 1/4". Lodged in 18th board.
4	17-1/4	Lodged in 18th board.
5	18	PP 1/2". Lodged in 18th board.
6	18	PP 3/4". Lodged in 18th board.
7	18-1/4	Lodged in 19th board.
8	18-1/4	Lodged in 19th board.
9	18-1/4	Lodged in 19th board.
10	19-1/4	Lodged in 20th board.

Average 18.25

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 25 February 1950 Time Started: 1120 Time Finished: 1110
Weapon, Type: UK EM2 Weapon No.: 3 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 36°F
Density: 1.055 Wind: VNW, 27 mph Weather: Range: 600 yd
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .280, Ball

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	12-1/2	Lodged in 13th board.
2	14-1/2	Lodged in 15th board.
3	14-1/4	Lodged in 15th board.
4	14-1/4	Lodged in 15th board.
5	14	PP 1/4".
6	15-1/4	Lodged in 16th board.
7	14-3/4	Lodged in 16th board.
8	14	PP barely.
9	13	PP 3/4".
10	16	PP 1/2".
		Average 14.25

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 23 February 1950 Time Started: 1020 Time Finished: 1120
Weapon, Type: UK EC2 Weapon No.: 3 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 36°F
Density: 1.055 Wind: WSM, 27 mph Weather: Overcast Range: 600 yd
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .280, AP

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	12	PP 1/4" on 12th board.
2	15	No mark on 16th board.
3	12	Slight break on back of 12th board.
4	11-1/2	Lodged in 12th board.
5	11-3/4	Lodged in 12th board.
6	11	PP 1/4".
7	11-1/2	Lodged in 12th board.
8	12	PP 1/4".
9	10-1/2	Lodged in 11th board.
10	11	PP 1/4".
11	11-1/2	Lodged in 12th board.

Average 11.75

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 23 February 1950 Time Started: 1105 Time Finished: 1150
Weapon, Type: M2 Weapon No.: 3 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Overcast Range: 600 yd
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .280, API

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	11	PP 1/4". Lodged in 11th board.
2	11-1/2	Lodged in 12th board.
3	11-1/4	Lodged in 12th board.
4	10-3/4	Lodged in 11th board.
5	10-1/4	Lodged in 11th board.
6	11	PP 1/4". Lodged in 11th board.
7	11	PP 3/4". Lodged in 11th board.
8	11-3/4	Lodged in 11th board.
9	10-1/4	Lodged in 11th board.
10	9	PP barely. Lodged in 9th board.

Average 10.75

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 28 Feb 1950

Time Started: 1025

Time Finished: 1030

Weapon, Type: M1A1 CAR4 (V.C.)

Weapon No.: 839852

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 20.39F

Density: 1.222

Wind: NW 24 mph

Weather: Clear

Range: 500 yards

Target Type: 1" Pine Board

Test Ammunition: Cartridge Caliber .30 Ball, T-204

<u>Hit No.</u>	<u>NO. OF FRAMES PENETRATED</u>	<u>REMARKS</u>
1	9	IF 1/2"
2	C-3/4	Lodged in 9th board.
3	C-3/4	Lodged in 9th board.
4	C-1/2	Lodged in 9th board.
5	C-1/2	Lodged in 9th board.
6	C-3/4	Lodged in 9th board.
7	C-3/4	Lodged in 9th board.
8	8	IF 1/2"
9	8	IF 1/2"
10	8	IF 1/2"

IF - Point protruding behind board.
Average: 8.50

APPENDIX P

PENETRATION FIRING DATA

Date: 20 Feb 1950 Time Started: 1005 Time Finished: 1025
Weapon, Type: M1 1919A4 (13) Weapon No.: 839252 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 22.9°F
Density: 1.012 Wind: NW 24 mph Weather: Clear Range: 300 Yards
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .30, AF, G-66

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	9-1/4	Lodged in 10th board.
2	8-1/2	
3	8	Slight indent in 9th board.
4	8-3/4	Lodged in 9th board.
5	8-1/2	Lodged in 9th board.
6	8-3/4	Lodged in 9th board.
7	8	FP 1/8".
8	8	FP 1/8".
9	8	FP barely.
10	8	FP 1/2"

FP - Point protruding behind board.
Average: 8.50

APPENDIX P

PENETRATION FIRING DATA

Date: 20 Feb 1950 Time Started: Time Finished:
 Weapon, Type: M16 (7.62) Weapon No.: 739252 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 50°F
 Density: 1.034 Wind: NW 7 mph Weather: Rain Range: 300 yards
 Target Type: 1" Pine Boards
 Test Ammunition: Cartridge, 0.45 in. .38 S&W - F-121

<u>TEST NO.</u>	<u>NO. OF ROUNDS PENETRATED</u>	<u>REMARKS</u>
1	10-3/4	Lodged in 11th board. No function.
2	10-1/4	Lodged in 11th board.
3	10-1/2	Lodged in 11th board.
4	10-3/4	Lodged in 11th board.
5	11-1/4	Lodged in 12th board.
6	11-1/4	Lodged in 12th board.
7	11-1/4	Lodged in 12th board.
8	11-1/2	Lodged in 12th board.
9	12-1/4	Lodged in 12th board.
10	11-3/4	Lodged in 12th board.

Average 11.25

APPENDIX P

PENETRATION FIREWORK TEST

Date: 27 Oct 1960 Time Started: 0955 Time Finished: 1005
 Weapon, Type: M3 120mm (Canadian) Weapon No.: 01 4433 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 27.3°C
 Density: 1.032 Wind: 24 mph Weather: Clear Range: 500 Yards
 Target Type: 120mm board
 Test Ammunition: Cartridge, Caliber .600, Ball

HIT NO.	NO. OF ROUNDS PENETRATED	REMARKS
1	6-1/2	Lodged in 10th board.
2	9	FP 1"
3	9	FP 1/2"
4	6-1/2	Lodged in 9th board.
5	8	FP 1-1/4". Slight dent in 9th board.
6	6-1/2	Lodged in 9th board.
7	6-1/4	Lodged in 9th board.
8	6-1/4	Lodged in 9th board.
9	9	FP 1/4"
10	6-1/4	Lodged in 9th board.

FP - Point protruding behind board.
 Average 7.75

APPENDIX P

PENETRATION FIRING DATA

Date: 27 Feb 1950 Time Started: 0930 Time Finished: 0950
 Weapon, Type: M19 1015M4 (Canadian) Weapon No.: 004433 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 65.3°F
 Density: 1.000 Winds: NW 24 mph Weather: Clear Range: 700 Yards
 Target Type: 1" Pine Boards
 Test Ammunition: Cartridge, 3-1/2" .005 AF

HIT NO.	NO. OF PENCILS PENETRATED	REMARKS
1	7-1/2	Lodged in 8th board.
2	7-3/4	Lodged in 8th board.
3	8	1/2"
4	8	1/16"
5	8	1/8"
6	8	1/4"
7	8	1/2"
8	8	1/4"
9	7-1/2	Lodged in 1st board.
10	7	1/8"

15 - Total penetration - 1st board.
 Average: 7.75

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APPENDIX P

PENETRATION FIRING DATA

Date: Feb 11/50 Time Started: Time Finished:
 Weapon, Type: M3 12.7mm (Canadian) Weapon No.: 4-23 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
 Density: Wind: Weather: Rain Range: 100 Yards
 Target Type: Ballistic Targets
 Test Ammunition: Cartridge, Ballistic .303, 171

NO. OF ROUNDS	REMARKS
1	171/50. Hit in 10th board. No
2	171/50. Hit in 10th board. No
3	171/50. Hit in 10th board. No
4	171/50. Hit in 10th board. No
5	171/50. Hit in 10th board. No
6	171/50. Hit in 10th board. No
7	171/50. Hit in 10th board. No
8	171/50. Hit in 10th board. No
9	171/50. Hit in 10th board. No
10	171/50. Hit in 10th board. No
11	171/50. Hit in 10th board. No
12	171/50. Hit in 10th board. No
13	171/50. Hit in 10th board. No
14	171/50. Hit in 10th board. No
15	171/50. Hit in 10th board. No
16	171/50. Hit in 10th board. No
17	171/50. Hit in 10th board. No
18	171/50. Hit in 10th board. No
19	171/50. Hit in 10th board. No
20	171/50. Hit in 10th board. No
21	171/50. Hit in 10th board. No
22	171/50. Hit in 10th board. No
23	171/50. Hit in 10th board. No
24	171/50. Hit in 10th board. No
25	171/50. Hit in 10th board. No
26	171/50. Hit in 10th board. No
27	171/50. Hit in 10th board. No
28	171/50. Hit in 10th board. No
29	171/50. Hit in 10th board. No
30	171/50. Hit in 10th board. No
31	171/50. Hit in 10th board. No
32	171/50. Hit in 10th board. No
33	171/50. Hit in 10th board. No
34	171/50. Hit in 10th board. No
35	171/50. Hit in 10th board. No
36	171/50. Hit in 10th board. No
37	171/50. Hit in 10th board. No
38	171/50. Hit in 10th board. No
39	171/50. Hit in 10th board. No
40	171/50. Hit in 10th board. No
41	171/50. Hit in 10th board. No
42	171/50. Hit in 10th board. No
43	171/50. Hit in 10th board. No
44	171/50. Hit in 10th board. No
45	171/50. Hit in 10th board. No
46	171/50. Hit in 10th board. No
47	171/50. Hit in 10th board. No
48	171/50. Hit in 10th board. No
49	171/50. Hit in 10th board. No
50	171/50. Hit in 10th board. No

17 - Point, extended behind 10th board.
 171/50. Hit in 10th board.

APPENDIX P

PENETRATION FIRING DATA

Date: 27 Nov 1950 Time Started: 1300 Time Finished:
 Weapon, Type: M1 1919A4 (1.3) Weapon No.: 339252 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 88.3°F
 Density: 1.082 Wind: NW 24 mph Weather: Clear Range: 1000 Yards
 Target Type: Ballistic Boards
 Test Ammunition: Cartridges, Caliber .30 Ball, M-104

<u>NO. OF</u>	<u>NO. OF</u>	<u>REMARKS</u>
<u>BOARDS</u>	<u>BOARDS</u>	
1	6	Slight crack on back of board.
2	6	PF 1/8"
3	6	PF 1"
4	6	PF 1/4"
5	6	PF 1/2"
6	6	PF 1/2"
7	5-3/4	Locked in 4th board.
8	5-3/4	Locked in 4th board.
9	5-3/4	Locked in 4th board.
10	6	PF 1/4"

PF- Point protruding behind board.
 Average: 6

APPENDIX P

PENETRATION FIRING DATA

Date: 24 Feb 1968 Time Started: 1145 Time Finished: 1150
 Weapon, Type: M16 (U.S.) Weapon No.: 530252 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 85.8°F
 Density: 1.012 Wind: 110 24 mph Weather: Clear Range: 1100 Yards
 Target Type: 1" Pine Boards
 Test Ammunition: M16, 5.56 mm, M16, 5.56

<u>TR NO.</u>	<u>NO. OF ROUNDS PENETRATED</u>	<u>REMARKS</u>
1	1	FP 1/2"
2	1	FP 1/2"
3	1	FP 1/2"
4	1	Indented in 4th board.
5	1	Indented in 5th board.
6	1	Indented in 6th board.
7	1	Indented in 7th board.
8	1	Indented in 8th board.
9	1	Indented in 9th board.
10	1	Indented in 10th board.
11	1	FP barely.

FP - Point protruding behind board.
 Average: 6

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APPENDIX P

PENETRATION FIRING DATA

Date: 17 Oct 1950 Time Started: Time Finished:
 Weapon, Type: M3 81MM4 (U.S.) Weapon No.: 320355 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
 Density: Wind: Weather: Rain Range: 1000 Yards
 Target Type: 1st Line Tanks
 Test Ammunition: Canister, 81mm .30, API, T-101.

REC NO.	NO. OF ROUNDS FIRED	REMARKS
1	0-1/4	Loaded in 9th board. No function.
2	0-1/4	Loaded in 9th board. No function.
3	0-1/4	Loaded in 9th board. No function.
4	0-1/4	Loaded in 9th board. No function.
5	0-1/4	Loaded in 9th board. No function.
6	0-1/4	Loaded in 9th board. No function.
7	0-1/4	Loaded in 9th board. No function.
8	0-1/4	Loaded in 9th board. No function.
9	0-1/4	Loaded in 9th board. No function.
10	0-1/4	Loaded in 9th board. No function.

Average: 0.5

RP = Point protruding behind board.

APPENDIX P

PENETRATION FIRING DATA

Date: 27 Dec 1955 Time Started: 1135 Time Finished: 1140
 Weapon, Type: M1 81mm A (Canadian) Weapon No.: 4433 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 27.38F
 Density: 1.002 Wind: 135 24 mph Weather: Clear Range: 1000 Yards
 Target Type: 15' line boards
 Test Ammunition: Canister, Caliber .000 1-211

<u>TEST NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	4-5/4	Loaded in 7th board.
2	6	PP 1/2".
3	6	PP 1/2".
4	4-5/4	Loaded in 6th board.
5	6	Loaded in 6th board.
6	4-5/4	Loaded in 6th board.
7	6	PP 1/2".
8	6	PP 1/2".
9	6	PP 1/2".
10	6	PP 1/2".

PP - Point protruding behind board.
 Average: 6

APPENDIX P

PENETRATION FIRING DATA

Date: 27 Feb 1960 Time Started: 1110 Time Finished: 1130
 Weapon, Type: M16 (400 ft) Weapon No.: 4499 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 22.3°F
 Density: 1.012 Wind: 11.74 mph Weather: Clear Range: 1000 Yards
 Target Type: 10 ft x 10 ft
 Test Ammunition: Cartridge, 30.06 mm

<u>HT NO.</u>	<u>NO. OF ROUNDS</u>	<u>REMARKS</u>
1	5-3/4"	Lodged in 6th board.
2	5-3/4"	Lodged in 6th board.
3	5-3/4"	Lodged in 6th board.
4	5	5-3/4"
5	5	5-3/4"
6	4-3/4"	Lodged in 5th board.
7	4-3/4"	Lodged in 5th board.
8	4-3/4"	Lodged in 5th board.
9	4-3/4"	Lodged in 5th board.
10	5	5-1/4"

RE - Point protruding behind board.
 Remarks: 5

APPENDIX P

PENETRATION FIRING DATA

Date: 27 Feb 1950 Time Started: Time Finished:
 Weapon, Type: M16 101.6 (Canadian) Weapon No.: CM 4433 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
 Density: Wind: Weather: Rain Range: 1000 Yards
 Target Type: 101.6 Board
 Test Ammunition: Cartridge, Caliber .001, API

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	9-1/2	Lodged in 9th board.
2	8	It barely lodged in 8th board.
3	7-1/2	
4	7-1/2	It barely lodged in 7th board.
5	6-1/2	It barely lodged in 6th board.
6	6-1/2	It barely lodged in 6th board.
7	6-1/2	It barely lodged in 6th board.
8	6-1/2	It barely lodged in 6th board.
9	6-1/2	It barely lodged in 6th board.
10	6-1/2	It barely lodged in 6th board.

AP - Board penetrated 101.6 board.
 Remarks: 101.6

APPENDIX P

PENETRATION FIRING DATA

Date: 20 February 1950 Time Started: 1445 Time Finished: 1530
Weapon, Type: M1919A1, U.S. Weapon No.: 639252 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 74.3°F
Density: 1.079 Wind: S, 11 mph Weather: Clear Range: 1200 yd
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .30, Ball, T-104

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	4-1/4	Lodged in 5th board.
2	4	PP Barely
3	4	PP Barely
4	4	PP Barely
5	4	PP 1/4"
6	3-3/4	Lodged in 4th board.
7	3-1/2	Lodged in 4th board.
8	3-3/4	Lodged in 4th board.
9	4	PP 1/8
10	3-3/4	Lodged in 4th board.

Average 3.72

PP= Point Protruding

APPENDIX P

PENETRATION FIRING DATA

Date: 20 February 1950 Time Started: 1405 Time Finished: 1440
 Weapon, Type: M3 1919A1, U.S. Weapon No.: 639252 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
 Density: Wind: Weather: Range: 1200 yd
 Target Type: 1" Pine Boards
 Test Ammunition: Cartridge, Caliber .30, AP, T-93.

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	4	PP 1/8"
2	5	PP 1/8"
3	4	PP 1/4"
4	3-3/4	Lodged in 4th board.
5	3-3/4	Lodged in 4th board.
6	3-3/4	Lodged in 4th board.
7	4	PP 1/8"
8	3-3/4	Lodged in 4th board.
9	4	PP Barely
10	4	PP 1/4"
		Average 4

PP - Point protruding.

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APPENDIX P

PENETRATION FIRING DATA

Date: 26 February 1950 Time Started: Time Finished:
Weapon, Type: M1 1917A1, U.S. Weapon No.: 839252 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 49°F
Density: 1.032 Wind: SE, 4 mph Weather: Clear Range: 1200 yd
Target Type: 1" Pine Board
Test Ammunition: Cartridge, Caliber .30, API, T-101

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	6-1/4	Lodged in 7th board. No function.
2	6-3/4	
3	6-1/4	
4	5-1/2	Lodged in 6th board.
5	6-1/2	Lodged in 7th board.
6	5-3/4	
7	7	PP 1"
8	5-3/4	Lodged in 6th board.
9	7-1/4	Lodged in 8th board.
10	7-1/4	Lodged in 8th board.
		Average 6.5

PP = Point Protruding

APPENDIX P

PENETRATION FIRING DATA

Date: 28 February 1950 Time Started: 1345 Time Finished: 1400
Weapon, Type: B-1915AL Canadian Weapon No.: CW 1433 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Range: 1200 yd
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .280, Ball

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	5-1/2	Lodged in 6th board.
2	5-1/2	Lodged in 6th board.
3	5	PP 1/8"
4	5	PP Barely
5	4-1/2	Lodged in 5th board.
6	4-3/4	Lodged in 5th board.
7	4-3/4	Lodged in 5th board.
8	4-1/2	Lodged in 5th board.
9	4-1/2	Lodged in 5th board.
10	4	Lodged in 4th board.

Average 4.75

PP = Point Protruding

APPENDIX P

PENETRATION FIRE

Date: 28 February 1950 Time Started: 0930 Time Finished: 1340
 Weapon, Type: M1 1919A1, Canadian Weapon No.: 074433 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
 Density: Wind: Weather: Range: 1200 yd
 Target Type: 1" Pine Boards
 Test Ammunition: Cartridge, Caliber .250, AP

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	3	PP 3/4"
2	3	PP 1"
3	3	PP 1 1/2"
4	3	PP 1 3/4"
5	3-1/4	Lodged in 4th board.
6	3-3/4	Lodged in 4th board.
7	3-1/2	Lodged in 4th board.
8	3-1/2	Lodged in 4th board.
9	3-3/4	Lodged in 4th board.
10	3-1/4	Lodged in 4th board.
		Average 3.25

PP - Point Protruding

APPENDIX P

PENETRATION FIRING DATA

Date: 28 February 1950

Time Started:

Time Finished:

Weapon, Type: BSG 1919A1, Canadian

Weapon No.: 01 1433

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1200 yd

Target Type: 1" Pine boards

Test Ammunition: Cartridge, Caliber .280, A.I.

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	4-3/4	Lodged in 5th board. No function.
2	5-1/2	Lodged in 6th board.
3	4-3/4	Lodged in 6th board.
4	5-1/4	Lodged in 6th board.
5	4-3/8	Lodged in 5th board.
6	4-1/4	Lodged in 5th board.
7	5-1/2	Lodged in 6th board.
8	5-1/2	Lodged in 6th board.
9	5-1/2	Lodged in 6th board.
10	5-1/4	Lodged in 6th board.

Average 5.00

APPENDIX P

PENETRATION FIRING DATA

Date: 1 March 1950 Time Started: Time Finished:
Weapon, Type: BMG 1919A4 (U.S.) Weapon No.: 839252 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 50.5°F
Density: 1.024 Wind: WNW, 25 mph Weather: Overcast Range: 1600 yd
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .30, Ball, 1104

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	1-3/4	Lodged in 2nd board.
2	1-3/4	Lodged in 2nd board.
3	1-3/4	Lodged in 2nd board.
4	2	PP 1/16".
5	3	PP 1/2".
6	3	PP 1/16".
7	3	PP 1/16".
8	2-1/2	Lodged in 3rd board.
9	3	PP 1".
10	3-1/4	Lodged in 4th board.

Average 2.50

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 1 March 1950 Time Started: Time Finished:
Weapon, Type: M3 1919A4 (U.S.) Weapon No.: 839252 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Overcast Range: 1600 yd
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .30, AP, T93

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	3	PP 1/4".
2	3	PP 1/4".
3	3	PP barely.
4	3	PP barely.
5	3	PP barely.
6	3	PP barely.
7	3	PP barely.
8	3	PP barely.
9	2	PP barely.
10	3	PP 1/2".

Average 3.00

PP - Point protruding.

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APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950

Time Started:

Time Finished:

Weapon, Type: M1 1919A4 (U.S.)

Weapon No.: 839252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Clear

Range: 1600 Yd

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .30, API, T101

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	3-3/4	Lodged in 4th board. No function.
2	3-1/2	Lodged in 4th board.
3	4-1/4	Lodged in 5th board.
4	4	PP 1/4".
5	3-3/4	Lodged in 4th board.
6	3-1/2	Lodged in 4th board.
7	3-1/4	Lodged in 4th board.
8	3-1/4	Lodged in 4th board.
9	3-3/4	Lodged in 4th board.
10	3-3/4	Lodged in 4th board.

Average 3.75

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 1 March 1950 Time Started: Time Finished:
 Weapon, Type: FMG 1919A1 (Canadian) Weapon No.: OW 4433 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
 Density: Wind: Weather: Overcast Range: 1600 Yd
 Target Type: 1" Pine Boards
 Test Ammunition: Cartridge, Caliber .280, Ball

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	3	PP 1/2".
2	3	PP 1/4".
3	3	PP 1/8".
4	3	PP 1/4".
5	2-1/2	Lodged in 3rd board.
6	2-3/4	Lodged in 3rd board.
7	3-1/4	Lodged in 4th board.
8	3	PP 1/4".
9	3	PP 1/8".
10	3	PP 1/2".

Average 3

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 1 March 1950 Time Started: Time Finished:
Weapon, Type: BCG 1919A1 (Canadian) Weapon No.: CW 4433 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Overcast Range: 1600 Yd
Target Type: 1" Pine Boards
Test Ammunition: Cartridge, Caliber .280, AP

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	3-1/4	Lodged in 4th board.
2	2	PP 3/4". Lodged in 2nd board.
3	3-1/2	Lodged in 4th board.
4	3	PP 1/2". Lodged in 3rd board.
5	3	PP 3/4". Lodged in 3rd board.
6	3	PP 1/2". Lodged in 3rd board.
7	3	PP 3/4". Lodged in 3rd board.
8	2-3/4	Lodged in 3rd board.
9	3-3/4	Lodged in 4th board.
10	3-1/4	Lodged in 4th board.

Average 3.00

PP - Point protruding.

CONFIDENTIAL
APPENDIX P

PENETRATION FIRING DATA

Date: 28 March 1950 Time Started: Time Finished:
Weapon, Type: M3 191.4 (Canadian) Weapon No.: CW 433 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Clear Range: 1600 Yd
Target Type: 1" mine, ards
Test Ammunition: Cartridge, Caliber .280, API

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	3	PP 1/8" on 3rd board. No function.
2	2-1/4	Lodged in 3rd board.
3	2-1/4	Lodged in 3rd board.
4	2-1/2	Lodged in 3rd board.
5	2-3/4	Lodged in 3rd board.
6	3-1/4	Lodged in 3rd board.
7	3-1/2	Lodged in 4th board.
8	3-1/2	Lodged in 4th board.
9	3-3/4	Lodged in 4th board.
10	2-3/4	Lodged in 3rd board.

Average 2.0

PP - Point of Penetration

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950

Time Started:

Time Finished:

Weapon, Type: M1 1919A4 (U.S.)

Weapon No.:

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 45°F

Density: 1.100

Wind: HNW 22 mph

Weather: Clear

Range: 2000 Yards

Target Type: 1" Pine Boards

Test Ammunition: Ctg. Cal. .30. Ball T93

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	1	Point protruding 3/4"
2	1	Slight indent on 2nd board.
3	1	Slight indent on 2nd board.
4	1-3/4	Lodged in 2nd board.
5	1-3/4	Lodged in 2nd board.
6	1-1/2	Lodged in 2nd board.
7	1	Point protruding 3/4".
8	1-1/2	Lodged in 2nd board.
9	1	Point protruding 1/2"
10	1-1/4"	Lodged in 2nd board.

AVERAGE: 1.25

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950 Time Started: Time Finished:
Weapon, Type: EMG 1919A4 (U.S.) Weapon No.: Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 45°F
Density: 1.057 Wind: NNE 22 mph Weather: Clear Range: 2,000 Yards
Target Type: 1" Pine Boards
Test Ammunition: Ctg. Cal. .30 AP, T93

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	1-1/4	
2	1	1/8" indent in 2nd board.
3	1-1/4	Lodged in 2nd board.
4	1	Slight indent in 2nd board.
5	1-1/2	Lodged in 2nd board.
6	1-1/4	Lodged in 2nd board.
7	1	Slight mark on 2nd board.
8	1	Point protruding 2/4".
9	1	1/4" indent in 2nd board. Bullet did not stick.
10	1-1/2	Lodged in 2nd board.

AVERAGE: 1.25

APPENDIX P

PENETRATION FIRING DATA

Date: 24 March 1950 Time Started: Time Finished:
Weapon, Type: M1919A4 (M.S.) Weapon No.: 839252 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 53°F
Density: 1.024 Wind: WNW 23 mph Weather: Clear Range: 2,000 Yards
Target Type: 1" Pine Boards
Test Ammunition: Ctg. Cal. .30, API, T-101

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	1-3/4	Lodged in 2nd board. No function.
2	1-1/2	Lodged in 2nd board. No function.
3	1-3/4	Lodged in 2nd board. No function.
4	1-1/2	Lodged in 2nd board. No function.
5	1-3/4	Lodged in 2nd board. No function.
6	1-1/2	Lodged in 2nd board. No function.
7	1-1/4	Lodged in 2nd board. No function.
8	1-1/2	Lodged in 2nd board. No function.
9	1-3/4	Lodged in 2nd board. No function.
10	1-3/4	Lodged in 2nd board. No function.

AVERAGE: 1.60

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950 Time Started: Time Finished:
Weapon, Type: EMG 1919A4 (Canadian) Weapon No.: OW 4433 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 45°F
Density: 1.100 Wind: MNW 22 mph Weather: Clear Range: 2,000 Yards
Target Type: 1" Pine Boards
Test Ammunition: Ctg. Cal. .280. Ball

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	1-3/4	Lodged in 2nd board.
2	1-1/2	Lodged in 2nd board.
3	1-3/4	Lodged in 2nd board.
4	1-3/4	Lodged in 2nd board.
5	1-3/4	Lodged in 2nd board.
6	1-3/4	Lodged in 2nd board.
7	1-1/2	Lodged in 2nd board.
8	1-3/4	Lodged in 2nd board.
9	1-3/4	Lodged in 2nd board.
10	1-3/4	Lodged in 2nd board.

AVERAGE: 1.75

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950

Time Started:

Time Finished:

Weapon, Type: M3 1919A4 (Canadian) Weapon No.: OW 4433

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 45°F

Density: 1.100

Wind: NNW 22 mph

Weather: Clear

Range: 2000 Yards

Target Type: 1" Pine Boards

Test Ammunition: Ctg. Cal. .280 AP

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	1-3/4	Lodged in 2nd board.
2	1-3/4	Lodged in 2nd board.
3	1-3/4	Lodged in 2nd board.
4	1-3/4	Lodged in 2nd board.
5	1-1/2	Lodged in 2nd board.
6	1-3/4	Lodged in 2nd board.
7	1-1/2	Lodged in 2nd board.
8	1-3/4	Lodged in 2nd board.
9	1-1/2	Lodged in 2nd board.
10	1-3/4	Lodged in 2nd board.

AVERAGE: 1.68

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950 Time Started: Time Finished:
Weapon, Type: BMG 1919A4 (Canadian) Weapon No.: OW 4433 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Range: 2,000 Yards
Target Type: 1" Pine Boards
Test Ammunition: Ctg, Cal. .280 API

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	1	Point protruding 1". Lodged in 1st board. No function.
2	1	Point protruding 1". Lodged in 1st board. No function.
3	3/4	Did not remain in board.
4	3/4	Did not remain in board.
5	3/4	Did not remain in board.
6	3/4	Did not remain in board.
7	1-1/4	Lodged in 2nd board.
8	1-1/4	Lodged in 2nd board.
9	1-1/2	Lodged in 2nd board.
10	1/2	Did not remain in board.

AVERAGE - .95

APPENDIX 1

PENETRATION FIRING DATA

Date: 2 March 1950 Time Started: 1240 Time Finished: 1245
Weapon, Type: U. S. T25 Weapon No.: 10 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 24.5°F
Density: 1.093 Wind: NW, 28 mph Weather: Clear Range: 25 Yd
Target Type: 10 Gauge Mild Steel Plate
Test Ammunition: Cartridge, Caliber .30, Ball, T104

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	3	Penetrated 3rd plate on 75° to 100° yaw.
2	3	Hit 4th plate tail first. Small bulges on 4th plate.
3	3	Hit 4th plate tail first. Small bulges on 4th plate.
4	3	Hit 4th plate tail first. Small bulges on 4th plate.
5	3	Hit 4th plate tail first. Small bulges on 4th plate.
6	3	MB on 4th plate.
7	3	MB on 4th plate.
8	3	SB on 4th plate.
9	3	SB on 4th plate.
10	3	SB on 4th plate.

All jackets stripped.

Average 3.

APPENDIX P

PENETRATION FIRING DATA

Date: 2 March 1950 Time Started: 1345 Time Finished: 1410
 Weapon, Type: U. S. T25 Weapon No.: 10 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 24.5°F
 Density: 1.095 Wind: NW, 28 mph Weather: Clear Range: 25 Yd
 Target Type: 10 Gauge Mild Steel Plate
 Test Ammunition: Cartridge, Caliber .30, Ar, T93

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	4	Core lodged in 4th plate, PP 1/4".
2	4	Splatter and small bulge on 5th plate. Core shattered on 4th plate.
3	4	Splatter and small bulge on 4th plate. Core shattered on 3rd plate.
4	4	Splatter and small bulge on 4th plate. Core shattered on 3rd plate.
5	3	Splatter and small bulge on 4th plate. Core shattered on 3rd plate.
6	3	Splatter and small bulge on 4th plate. Core shattered on 3rd plate.
7	3	Splatter and small bulge on 4th plate. Core shattered on 3rd plate.
8	3	Splatter and small bulge on 4th plate. Core shattered on 3rd plate.
9	3	Splatter and small bulge on 4th plate. Core shattered on 3rd plate.
10	3	Splatter and small bulge on 4th plate. Core shattered on 3rd plate. Small to medium bulges on 4th and 5th plates. All jackets stripped.

Average

PENETRATION FIRING DATA

Date: 2 March 1950 Time Started: 1420 Time Finished: 1455
 Weapon, Type: U. S. T25 Weapon No.: 10 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 24.5°F
 Density: 1.095 Wind: NW, 28 mph Weather: Clear Range: 25 Yd
 Target Type: 10 Gauge Mild Steel Plate
 Test Ammunition: Cartridge, Caliber .30, API, T101

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	5	Medium bulge on 6th plate. Functioned on 2nd plate.
2	5	Core broke on 3rd plate. 1/2 of core penetrated to slight mark on 6th plate. Functioned on 2nd plate.
3	7	Small pin mark on 8th plate. Functioned on 2nd plate.
4	6	Rear of core embedded in 6th plate. Small bulge on 7th plate. Functioned on 2nd plate.
5	4	Rear of core embedded in 5th plate. Medium bulge on 5th plate. Functioned on 2nd plate.
6	5	Small bulge on 6th plate. Functioned on 2nd plate.
7	4	Small bulge on 5th plate. Functioned on 2nd plate.
8	5	Medium bulge on 6th plate. Functioned on 2nd plate.
9	7	Core lodged in 7th plate. Point protruding 1/2". Functioned on 2nd plate.
10	7	Very small bulge on 5th plate. Functioned on 2nd plate.

Average 5.5 plates

~~CONFIDENTIAL~~
~~SECRET~~ APPENDIX P

PENETRATION FIRING DATA

Date: 2 March 1950 Time Started: 1250 Time Finished: 1310
Weapon, Type: UK E12 Weapon No.: 3 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 24.5°F
Density: 1.093 Wind: NW, 28 mph Weather: Clear Range: 25 Yd
Target Type: 10 Gauge Mild Steel Plate
Test Ammunition: Cartridge, Caliber .280, Ball

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	3	Medium bulge.
2	2	Core completely shattered. Medium to large bulges.
3	2	Showed partial punching. 2 cracks.
4	2	Showed partial punching. 2 cracks.
5	2	Showed partial punching. 2 cracks.
6	2	2 cracks.
7	2	2 cracks.
8	2	Medium bulge.
9	2	Medium bulge.
10	2	Medium bulge.

All jackets stripped.

Average 2.1

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~~SECRET~~
~~CONFIDENTIAL~~
~~SECRET~~

APPENDIX P

PENETRATION FIRING DATA

Date: 2 March 1950 Time Started: 1320 Time Finished: 1340
 Weapon, Type: UK BM2 Weapon No.: 3 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 24.5°F
 Density: 1.035 Wind: NE, 28 mph Weather: Clear Range: 25 Yd
 Target Type: 10 Gauge Mild Steel Plate
 Test Ammunition: Cartridge, Caliber .260, AP

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	3	Core shattered on 3rd plate. Entry hole shows yaw.
2	3	Core shattered on 3rd plate. Some spattering on 2nd plate.
3	3	Core shattered on 3rd plate. Bulges - small to medium on 4th plate.
4	3	
5	3	
6	3	
7	3	
8	3	
9	3	
10	3	

All jackets stripped.

Average 3

APPENDIX P

PENETRATION FIRING DATA

Date: 2 March 1950 Time Started: 1345 Time Finished: 1415
 Weapon, Type: UK F42 Weapon No.: 3 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 56°F
 Density: 1.110 Wind: SSW, 25 mph Weather: Cloudy, misting Range: 25 Yd
 Target Type: 10 Gauge Mild Steel Plate
 Test Ammunition: Cartridge, Caliber .280, API

TEST NO.	NO. OF PLATES PENETRATED	REMARKS
1	4	Small scratches on 5th plate. Functioned on 1st plate.
2	4	Small scratches on 5th plate. Functioned on 1st plate.
3	4	Small bulge on 5th plate. Functioned on 1st plate.
4	5	Small bulge on 6th plate. Functioned on 1st plate.
5	5	Small bulge on 6th plate. Functioned on 1st plate.
6	4	Core lodged in 5th plate. Pin hole through 5th plate. Functioned on 1st plate.
7	4	Medium bulge on 5th plate. Functioned on 1st plate.
8	3	Small bulge on 4th plate. Functioned on 1st plate.
9	5	Small bulge on 6th plate. Functioned on 1st plate.
10	3	Small bulge on 4th plate. Functioned on 1st plate.

Average 4.1

APPENDIX

PENETRATION FIRING DATA

Date: 3 March 1950

Time Started:

Time Finished:

Weapon, Type: U.S., T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 28°F

Density: 1.100

Wind: N, 23 mph

Weather: Clear

Range: 100 yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .30, Ball, T-101

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	Small dents on face of 5th plate.
2	1	Small dents on face of 5th plate.
3	3	Medium bulge.
4	3	Circumference crack 50%.
5	3	Circumference crack 50%.
6	3	Circumference crack 50%.
7	3	Large bulge.
8	3	Large bulge.
9	3	Medium bulge.
10	3	Medium bulge.
		Average 3.2

APPENDIX

PENETRATION FIRING DATA

Date: 3 March 1950

Time Started:

Time Finished:

Weapon, Type: U.S., M-2

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 28°

Density: 1.100

Wind: N, 25 mph

Weather: Clear

Range: 100 yd

Target Type: 10 Gauge Mill Steel Plate

Test Ammunition: Cartridge, Collier .20, AP, 1-95.

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	5	Medium bulge on 5th plate.
2	5	Medium bulge on 6th plate.
3	5	Medium bulge on 6th plate.
4	5	Medium bulge on 6th plate.
5	5	Core in plate. Point protruding 1/4".
6	4	Small bulge on 5th plate.
7	4	Small bulge on 5th plate.
8	4	Small bulge on 5th plate.
9	6	Core in plate. Point protruding 1/8".
10	6	Small bulge on 7th plate.

Average 4.9

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APPENDIX P

PENETRATION FIRING DATA

Date: 3 March 1950

Time Started: 1045

Time Finished: 1135

Weapon, Type: U.S., T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 25°F

Density: 1.100

Wind: W, 23 mph

Weather: Clear

Range: 100 yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .30, API, T-101

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	4	Medium bulge on 5th plate. Functioned on 3rd plate.
2	5	Core lodged in 6th plate. Functioned on 2nd plate.
3	6	No mark on 7th plate. Functioned on 2nd plate.
4	4	Small bulge on 5th plate. Functioned on 2nd plate.
5	4	Medium bulge on 5th plate. Functioned on 2nd plate.
6	5	Core lodged in 6th plate. Functioned on 2nd plate.
7	5	Core lodged in 6th plate. Functioned on 2nd plate.
8	4	Medium bulge on 5th plate. Functioned on 2nd plate, core broke.
9	5	Small bulge on 5th plate. Functioned on 2nd plate.
10	4	Medium bulge on 5th plate. Functioned on 2nd plate, core broke.

Average 4.6

APPENDIX P

PENETRATION FIRING DATA

Date: 3 March 1950

Time Started:

Time Finished:

Weapon, Type: U.K., EM2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 88°

Density: 1.100

Wind: W, 23 mph

Weather: Clear

Range: 100 yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .280, Ball

<u>WILL NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	2	Large bulge.
2	2	Large bulge, circumference crack. Point of core mushrooming.
3	2	Large bulge, circumference crack.
4	2	Large bulge, punching started.
5	2	Large bulge.
6	2	Medium bulge.
7	2	Medium bulge.
8	2	Medium bulge.
9	2	Medium bulge.
10	2	Medium bulge.
		Average 2

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Time Finished:

Previous Rounds:

Daily Temperature at 1200 Hours: 28°F

Range: 100 yd

Test Ammunition: Cartridges, Caliber .280 AP

Average 3.4



~~CONFIDENTIAL~~

APPENDIX P

PENETRATION FIRING DATA

Date: 3 March 1950 Time Started: 1045 Time Finished: 1135
 Weapon, Type: U.K., SM2 Weapon No.: 3 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 28°F
 Density: 1.100 Winds: W, 23 mph Weather: Clear Range: 100 yd
 Target Type: 10 Gauge Mild Steel Plate
 To + Ammunition: Cartridge, Caliber .280, API.

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	4	Core lodged in 5th plate. Functioned on 1st plate.
2	4	Core lodged in 5th plate. Functioned on 1st plate.
3	4	Core lodged in 5th plate. Functioned on 1st plate.
4	4	Small bulge on 5th plate. Functioned on 1st plate.
5	4	Medium bulge on 5th plate. Functioned on 1st plate.
6	4	Medium bulge on 5th plate. Functioned on 1st plate.
7	4	Medium bulge on 5th plate. Functioned on 1st plate.
8	4	Medium bulge on 5th plate. Functioned on 1st plate.
9	4	Medium bulge on 5th plate. Functioned on 1st plate.
10	4	Core lodged in 5th plate. Functioned on 1st plate.

Average 4

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950

Time Started: 1425

Time Finished: 1450

Weapon, Type: U.S. T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 29.7°F

Density: 1.083

Wind: WNW 33

Weather: Clear

Range: 300 Yards

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Ctg. Cal. .30. Ball. T-104

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	3	Small mark on face of 4th plate. No bulge.
2	2	LB on 3rd plate.
3	3	SB on 4th plate.
4	3	SB on 4th plate.
5	2	LB on 3rd plate.
6	3	SB on 4th plate.
7	2	LB on 3rd plate.
8	3	SB on 4th plate.
9	3	SB on 4th plate.
10	3	SB on 4th plate.

AVERAGE - 2.7

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APPENDIX

PENETRATION FIRING DATA

Date: 6 March 1950 Time Started: 1315 Time Finished: 1410
Weapon, Type: U.S. T-25 Weapon No.: 10 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 29.7°F
Density: 1.083 Wind: WNW 33 mph Weather: Clear Range: 300 Yards
Target Type: 10 Gauge Mild Steel Plate
Test Ammunition: Ctg, Cal. .30, AP. T-93

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	4	SB on 5th plate.
2	3	SB on 4th plate; core broke.
3	3	Core lodged in 4th plate; point protruding 1/4".
4	3	SB on 4th plate; core broke.
5	3	SB on 4th plate; core broke.
6	3	Core lodged in 4th plate; point protruding 1/4".
7	3	Core lodged in 4th plate; point protruding 1/4".
8	3	SB on 4th plate; core broke.
9	3	SB on 4th plate.
10	3	Core broke; point penetrating completely on 4th plate. Point fell from plate.

AVERAGE: 3.1

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950

Time Started: 1455

Time Finished: 1530

Weapon, Type: U.S. T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 29.7°F

Density: 1.033

Wind: WNW 33 mph

Weather: Clear

Range: 300 Yards

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Ctg. Cal. .30, API, T-101

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	4	SB on 5th plate. Functioned on 2nd plate.
2	3	Core lodged in 4th plate; point protruding 3/4". Functioned on 2nd plate.
3	4	No mark on 5th plate; Functioned on 2nd plate.
4	4	Core lodged in 5th plate. Did not penetrate. Functioned on 2nd plate.
5	4	Core lodged in 5th plate. Did not penetrate. Functioned on 2nd plate.
6	4	SE on 5th plate. Functioned on 2nd plate.
7	3	Point protruding. Core fell from 4th plate. Functioned on 2nd plate.
8	2	LB on 3rd plate. Functioned on 2nd plate.
9	3	Point protruding on 4th plate. Core did not remain in 4th plate. Functioned on 2nd plate.
10	3	Point protruding on 4th plate. Core did not remain in 4th plate. Functioned on 2nd plate.

AVERAGE: 3.4

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950

Time Started: 1425

Time Finished: 1450

Weapon, Type: U.K. EM 2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 29.7°F

Density: 1.083

Wind: WNW 33 mph

Weather: Clear

Range: 300 Yards

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Ctg. Cal. .280. Ball.

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	LB circumference crack 1/2
2	1	LB " " 1/4
3	1	LB " " 1/2
4	1	LB " " 1/2
5	1	LB " " No
6	1	LB " " 1/2
7	1	LB " " 1/4
8	1	LB " " 1/4
9	1	LB " " 1/2
10	1	LB " " 1/4

AVERAGE: 1

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950 Time Started: 1315 Time Finished: 1410
Weapon, Type: U.K. EM2 Weapon No.: 3 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 29.7°F
Density: 1.083 Wind: WNW 33 mph Weather: Clear Range: 300 Yards
Target Type: 10 Gauge Mild Steel Plate
Test Ammunition: Ctg, Cal. .280, AP

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	3	SB on 4th plate.
2	2	Core lodged in 3rd plate; point protruding 1/4"
3	2	Core lodged in 3rd plate; point protruding 1/4"
4	2	SB on 3rd plate.
5	2	Core lodged in 3rd plate; point protruding 1/4"
6	2	Core lodged in 3rd plate; point protruding 1/4"
7	2	Core lodged in 3rd plate; point protruding 1/4"
8	2	Core lodged in 3rd plate; point protruding 1/4"
9	2	Core lodged in 3rd plate; point protruding 1/4"
10	3	SB on 4th plate.

AVERAGE: 2.2

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950 Time Started: 1455 Time Finished: 1530
 Weapon, Type: U.K. EM2 Weapon No.: 3 Previous Rounds: 190
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 29.7°F
 Density: 1.083 Wind: WNW 33 mph Weather: Clear Range: 300 Yards
 Target Type: 10 Gauge Mild Steel Plate
 Test Ammunition: Ctg. Cal. .280, API

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	2	Core lodged in 3rd plate. Point protruding 1/4". Functioned on 1st plate.
2	2	Core lodged in 3rd plate. Point protruding 1/4". Functioned on 1st plate.
3	2	Core lodged in 3rd plate. Point protruding 1/4". Functioned on 1st plate.
4	3	SB on 4th plate. Functioned on 1st plate.
5	3	SB on 4th plate. Functioned on 1st plate.
6	2	Core lodged in 3rd plate. Point protruding 1/8". Functioned on 1st plate.
7	2	Core lodged in 3rd plate. Point protruding 1". Functioned on 1st plate.
8	2	Core lodged in 3rd plate. Point protruding 1". Functioned on 1st plate.
9	2	Core lodged in 3rd plate. Point protruding 1/8". Functioned on 1st plate.
10	3	Small nick in face of 4th plate. Functioned on 1st plate.

AVERAGE:

APPENDIX P

PENETRATION FIRING DATA

Date: 13 March 1950 Time Started: 1430 Time Finished: 1500
 Weapon, Type: T25 Weapon No.: 10 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 40°F
 Density: 1.048 Wind: N, 10 mph Weather: Rain Range: 600 Yd
 Target Type: 10 Gauge Mild Steel Plate
 Test Ammunition: Cartridge, Caliber .50, Ball, T104

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	2	SB on 3rd plate.
2	1	Core lodged in 2nd plate. PP 1/2".
3	1	Core lodged in 2nd plate. PP 1/3".
4	1	Punching started on 2nd plate.
5	1	Punching almost complete on 2nd plate.
6	1	Core lodged in 2nd plate. PP 1/4".
7	2	SB on 3rd plate.
8	2	SB on 3rd plate.
9	2	Slight scratches on 3rd plate.
10	2	Slight scratches on 3rd plate.

Average 1.5

IP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 13 March 1950 Time Started: 1330 Time Finished: 1355
Weapon, Type: T25 Weapon No.: 10 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 40°F
Density: 1.048 Wind: N, 10 mph Weather: Rain Range: 600 Yd
Target Type: 10 Gauge Mild Steel Plate
Test Ammunition: Cartridge, Caliber .30, AP, T93

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	Core lodged in 2nd plate. PP 3/4".
2	2	SB on 3rd plate. Jacket lodged in 1st plate.
3	2	SB on 3rd plate.
4	2	Slight mark on face of 3rd plate.
5	2	Slight mark on face of 3rd plate.
6	2	SB on 3rd plate. Jacket lodged in 1st plate.
7	2	SB on 3rd plate.
8	2	Slight mark on face of 3rd plate.
9	2	SB on 3rd plate.
10	2	SB on 3rd plate. Jacket lodged in 1st plate.

Average 1.9

• PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 13 March 1950 Time Started: 1045 Time Finished: 1130
Weapon, Type: 125 Weapon No.: 10 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 40°F
Density: 1.048 Wind: N, 10 mph Weather: Rain Range: 600 Yd
Target Type: 10 Gauge Mild Steel Plate
Test Ammunition: Cartridge, Caliber .30, API, T101

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	2	SB on 3rd plate. Functioned on 1st plate.
2	2	SB on 3rd plate. Functioned on 1st plate.
3	2	Slight mark on face of 3rd plate. Functioned on 1st plate.
4	2	Slight mark on face of 3rd plate. Functioned on 1st plate.
5	2	Slight mark on face of 3rd plate. Functioned on 1st plate.
6	2	Slight mark on face of 3rd plate. Functioned on 1st plate.
7	2	Slight mark on face of 3rd plate. Functioned on 1st plate.
8	2	Slight mark on face of 3rd plate. Functioned on 1st plate.
9	2	Slight mark on face of 3rd plate. Functioned on 1st plate.
10	1	Core lodged 1/2 way through 2nd plate. Functioned on 1st plate.

Average 1.9

APPENDIX P

PENETRATION FIRING DATA

Date: 15 March 1950

Time Started: 1400

Time Finished: 1425

Weapon, Type: M2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 40°F

Density: 1.048

Wind: W, 10 mph

Weather: Rain

Range: 600 Yd

Target Type: 10 Gauge, Mild Steel Plate

Test Ammunition: Cartridge, Caliber .200, Ball

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	Medium bulge on 2nd plate.
2	1	SB on 2nd plate.
3	1	SB on 2nd plate.
4	1	SB on 2nd plate.
5	1	SB on 2nd plate.
6	1	SB on 2nd plate.
7	1	SB on 2nd plate.
8	1	SB on 2nd plate.
9	1	SB on 2nd plate.
10	1	SB on 2nd plate.

Average 1

APPENDIX P

PENETRATION FIRING DATA

Date: 13 March 1950 Time Started: 1300 Time Finished: 1325
Weapon, Type: BM2 Weapon No.: 3 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 40°F
Density: 1.048 Wind: N, 10 mph Weather: Rain Range: 600 Yd
Target Type: 10 Gauge Mild Steel Plate
Test Ammunition: Cartridge, Caliber .280, AP.

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	LB on 2nd plate.
2	1	Core lodged in 2nd plate. FP 1/8".
3	1	Core lodged in 2nd plate. FP 1/4".
4	1	Core lodged in 2nd plate. FP 1/4".
5	1	Core lodged in 2nd plate. FP 1/8".
6	1	Core lodged in 2nd plate. FP 1/8".
7	1	Core lodged in 2nd plate. FP 1/8".
8	1	Core lodged in 2nd plate. FP 1/8".
9	1	Core lodged in 2nd plate. FP 1/8".
10	1	Core lodged in 2nd plate. FP 1/8".

Average 1

FP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 13 March 1950

Time Started: 1015

Time Finished: 1016

Weapon, Type: M2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 40°F

Density: 1.043

Wind: N, 10 mph

Weather: Rain

Range: 600 Yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .200, API

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	SB on 2nd plate. Functioned on 1st plate.
2	1	SB on 2nd plate. Functioned on 1st plate.
3	1	SB on 2nd plate. Functioned on 1st plate.
4	1	SB on 2nd plate. Functioned on 1st plate.
5	1	SB on 2nd plate. Functioned on 1st plate.
6	1	SB on 2nd plate. Functioned on 1st plate.
7	1	SB on 2nd plate. Functioned on 1st plate.
8	1	SB on 2nd plate. Functioned on 1st plate.
9	1	SB on 2nd plate. Functioned on 1st plate.
10	1	SB on 2nd plate. Functioned on 1st plate.

Average 1

APPENDIX P

PENETRATION FIRING DATA

Date: 11 March 1970 Time Started: Time Finished:
Weapon, type: SIG 1915A1 (U.S.) Weapon No.: 839252 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 71°F
Density: 1.065 Wind: WSW, 19 mph Weather: Clear Range: 200 Yd
Target Type: 10 Gauge Mild Steel Plate
Test Ammunition: Cartridge, Caliber .30, Ball, T104

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	Medium bulge on 2nd plate.
2	1	Medium bulge on 2nd plate.
3	1	Medium bulge on 2nd plate.
4	1	Medium bulge on 2nd plate.
5	1	Medium bulge on 2nd plate.
6	1	Medium bulge on 2nd plate.
7	1	Medium bulge on 2nd plate.
8	1	Medium bulge on 2nd plate.
9	1	Medium bulge on 2nd plate.
10	1	Medium bulge on 2nd plate.

Average 1

APPENDIX P

PENETRATION FIRING DATA

Date: 14 March 1950 Time Started: Time Finished:
Weapon, Type: M1 1919A1 (U.S.) Weapon No.: 839252 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Range: 800 Yards
Target Type: 10 Gauge Mild Steel Plate
Test Ammunition: Cartridge, Caliber .30, AP, T95

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	Medium bulge on 2nd plate.
2	1	Medium bulge on 2nd plate.
3	1	Medium bulge on 2nd plate.
4	1	Medium bulge on 2nd plate.
5	1	Medium bulge on 2nd plate.
6	1	Medium bulge on 2nd plate.
7	1	Medium bulge on 2nd plate.
8	1	Medium bulge on 2nd plate.
9	1	Medium bulge on 2nd plate.
10	1	Medium bulge on 2nd plate.

Average 1

APPENDIX P

PENETRATION FIRING DATA

Date: 14 March 1950 Time Started: Time Finished:
Weapon, Type: BMG 1919A1 (U.S.) Weapon No.: 839252 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Range: 800 Yd
Target Type: 10 Gauge Mild Steel Plate
Test Ammunition: Cartridge, Caliber .30, API, T101

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	Core lodged in 2nd plate. PP barely. Functioned on 1st plate.
2	1	Core lodged in 2nd plate. PP barely. Functioned on 1st plate.
3	1	Pinhole through 2nd plate. Functioned on 1st plate.
4	1	Pinhole through 2nd plate. Functioned on 1st plate.
5	1	Pinhole through 2nd plate. Functioned on 1st plate.
6	1	Pinhole through 2nd plate. Functioned on 1st plate.
7	1	Pinhole through 2nd plate. Functioned on 1st plate.
8	1	Pinhole through 2nd plate. Functioned on 1st plate.
9	1	Pinhole through 2nd plate. Functioned on 1st plate.
10	1	Pinhole through 2nd plate. Functioned on 1st plate.

FP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 14 March 1950 Time Started: 0915 Time Finished: 0950
Weapon, Type: BNG 1919-4 (Candaian) Weapon No.: OW 4433 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Range: 800 Yd
Target Type: 10 Gauge Mild Steel Plate
Test Ammunition: Cartridge, Caliber .280 Ball

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	Very small bulge on 2nd plate.
2	1	Very small bulge on 2nd plate.
3	1	Very small bulge on 2nd plate.
4	1	Very small bulge on 2nd plate.
5	1	Very small bulge on 2nd plate.
6	1	Very small bulge on 2nd plate.
7	1	Very small bulge on 2nd plate.
8	1	Very small bulge on 2nd plate.
9	1	Very small bulge on 2nd plate.
10	1	Very small bulge on 2nd plate.

Average 1

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~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

APPENDIX P

PENETRATION FIRING DATA

Date: 14 March 1950 Time Started: Time Finished:
Weapon, Type: B.C. 1919A1 (Canadian) Weapon No.: OW 4433 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Range: 600 Yd
Target Type: 10 Gauge Mild Steel Plate
Test Ammunition: Cartridge, Caliber .250, AP

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	SB on 2nd plate.
2	1	SB on 2nd plate.
3	1	SB on 2nd plate.
4	1	SB on 2nd plate.
5	1	SB on 2nd plate.
6	1	SB on 2nd plate.
7	1	SB on 2nd plate.
8	1	SB on 2nd plate.
9	1	SB on 2nd plate.
10	1	SB on 2nd plate.

Average 1

APPENDIX P

PENETRATION FIRING DATA

Date: 17 March 1950 Time Started: Time Finished:
Weapon, Type: BNC 1919A4 (Canadian) Weapon No.: OW 4433 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Range: 800 Yd
Target Type: 10 Gauge Mild Steel Plate
Test Ammunition: Cartridge, Caliber .280, API

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	SB on 2nd plate.
2	1	SB on 2nd plate.
3	1	SB on 2nd plate.
4	1	SB on 2nd plate.
5	1	SB on 2nd plate.
6	1	SB on 2nd plate.
7	0	Core lodged in 1st plate. Base flush with face of plate.
8	0	Core lodged in 1st plate. Base flush with face of plate.
9	0	Core lodged in 1st plate. Base flush with face of plate.
10	0	Core lodged in 1st plate. Base flush with face of plate.

Average 0.60

~~CONFIDENTIAL~~

APPENDIX P

PENETRATION FIRING DATA

Date: 15 March 1960

Time Started: ~~1200~~

Weapon, Type: M16 1919A1, 100.

Weapon No.: 832252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 40°F

Density: 1.065

Wind: 1, 21 mph

Weather: Clear

Range: 1000 yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .50, Ball, T-104

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	Small mark on face on 2nd plate.
2	0	Fairly large hole in plate. Jacket partially stripped.
3	0	Bullets bounced back and lying on ground in front of plate
4	0	
5	0	
6	0	
7	0	
8	0	
9	0	
10	0	

Average 0.10

APPENDIX P

PENETRATION FIRING DATA

Date: 15 March 1950

Time Started:

Time Finished:

Weapon, Type: BLG 1919A4, U.S.

Weapon No.: 839252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1000 yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .30, AF, T-93.

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	1	
2	0	Slight mark on face of 2nd plate.
3	0	Core lodged in 1st plate. Point protruding 1/16".
4	0	Core lodged in 1st plate. Point protruding 1/16".
5	0	Large hole in 1st plate. Core partially stripped.
6	0	Bullet bounced back and on ground in front of target.
7	0	
8	0	
9	0	
10	0	

Average C.10

APPENDIX P

PENETRATION FIRING DATA

Date: 15 March 1950

Time Started:

Time Finished:

Weapon, Type: BMG 1919A1, U.S.

Weapon No.: 839252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1000 yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .30, API, T-101

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
2	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
3	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
4	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
5	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
6	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
7	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
8	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
9	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
10	1	Functioned on 1st plate. Slight indent mark on 2nd plate.

Average 1.00

APPENDIX P

PENETRATION FIRING

Date: 15 March 1950

Time Started:

Time Finished:

Weapon, Type: BMG 1919A1, Canadian

Weapon No.: 04 2233

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1000 yd

Target Type: 30 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .250, Ball

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	0	LB on 1st plate with some cracking on rear of plate.
2	0	LB on 1st plate with some cracking on rear of plate.
3	0	LB on 1st plate with some cracking on rear of plate.
4	0	LB on 1st plate with some cracking on rear of plate.
5	0	LB on 1st plate with some cracking on rear of plate.
6	0	LB on 1st plate with some cracking on rear of plate.
7	0	LB on 1st plate with some cracking on rear of plate.
8	0	LB on 1st plate with some cracking on rear of plate.
9	0	LB on 1st plate with some cracking on rear of plate.
10	0	LB on 1st plate with some cracking on rear of plate.

Average: 0

APPENDIX P

PENETRATION FIRING DATA

Date: 15 March 1950

Time Started:

Time Finished:

Weapon, Type: M1919A1, Canadian

Weapon No.: 07 1133

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1000 yd

Target Type: 15 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .260, AP.

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	0	Hole in 1st plate but jacket only partially stripping from core. Bullets on ground in front of target. No marks on 2nd plate.
2	0	
3	0	
4	0	
5	0	
6	0	
7	0	
8	0	
9	0	
10	0	

Average: 0

APPENDIX P

PENETRATION TEST

Date: 15 March 1950

Time Started: [REDACTED]

Time Finished: [REDACTED]

Weapon, Type: BMG, 1919A1, Canadian

Weapon No.: 06 4433

Previous Rounds: [REDACTED]

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: [REDACTED]

Density: [REDACTED]

Wind: [REDACTED]

Weather: [REDACTED]

Range: 100 yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .280, API.

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	O	All rounds penetrated on hit to a. Small pin- hole through 1st plate. Core bounced back- did not re-embed in plate.
2	O	
3	O	
4	O	
5	O	
6	O	
7	O	
8	O	
9	O	
10	O	
Average C		

APPENDIX P

PENETRATION FIRING DATA

Date: 15 March 1950

Time Started: [REDACTED]

Finished: [REDACTED]

Weapon, Type: BMD 1919A1, U.S.

Weapon No.: 89252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1200 yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .30, API, T-101.

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	0	Core lodged in 1st plate. Bullet penetrating 1/16". Penetration on 1st plate. All points penetrated but bullets bounced back to ground in front of target
2	0	
3	0	
4	0	
5	0	
6	0	
7	0	
8	0	
9	0	
10	0	

Average 0

Notes: Only API, Caliber .30 fired at this range.

APPENDIX P

PENETRATION FIRING DATA

Date: 16 March 1950 Time Started: 12:00 PM Time Finished: 1400
 Weapon, Type: T-25 Weapon No.: 10 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 50°
 Density: 1.040 Wind: 20 mph Weather: Clear Range: 600 Yards
 Target Type: Helmets and Body Armor
 Test Ammunition: Cartridges, Ball, .01, Ball, 9-104

SHOT NO.	HEAD	NECK	THORAX	ARM
1	Yes	Yes	Front and rear.	Front only.
2	Yes	Yes	Front and rear.	Front only. In center of
3	Yes	Yes	Front and rear.	Front only. In center of
4	Yes	Yes	Front and rear.	Front only. In center of
5	Yes	Yes	Front and rear.	Front only. In center of
6	Yes	Yes	Front and rear.	Front only.
7	Yes	Yes	Front and rear.	Front only.
8	Yes	Yes	Front and rear.	Front only.
9	Yes	Yes	Front and rear.	Front only.
10	Yes	Yes	Front and rear.	Front only.

Note: 10-11 fired at the target.

APPENDIX P

PENETRATION FIRING TESTS

Date: 14 March 1950

Time Started: 1450

Time Finished: 1535

Weapon, Type: T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Clear

Range: 600 Yards

Target Type: Helmets and Body Armor

Test Ammunition: Cartridge, Caliber .30, M1, T-101

RND NO.	PENETRATION		HELMET	BODY ARMOR
	FRONT	REAR		
1	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.
2	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.
3	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.
4	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.
5	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor. Set fire to rear of armor.
6	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.
7	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.
8	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.
9	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.
10	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.

APPENDIX P

PENETRATION FIRING DATA

Date: 14 March 1950 Time Started: [REDACTED] Finished: 1335
 Weapon, Type: M2 Weapon No.: 3 Previous Rounds: 237
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
 Density: Wind: Weather: Clear Range: 600 Yards
 Target Type: Helvets and Body Armor
 Test Ammunition: Lot 100, 300, 100, 100

Round	Penetration	Direction	Remarks
1	100	100	front and rear
2	100	100	front and rear
3	100	100	front and rear
4	100	100	front and rear
5	100	100	front and rear
6	100	100	front and rear
7	100	100	front and rear
8	100	100	front and rear
9	100	100	front and rear
10	100	100	front and rear

Note: 1000 fired at this range.

[REDACTED]

APPENDIX P

PENETRATION FILING DATA

Date: 16 March 1950 Time Started: 1405 Time Finished: 1445
 Weapon, Type: EM2 Weapon: [REDACTED] Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
 Density: Wind: Weather: Clear Range: 400 Yards
 Target Type: [REDACTED]
 Test Ammunition: Cartridge, Caliber .300, AFI

TEST NO.	PENETRATION		HIT OR	EFFECT
	FRONT	REAR		
1	Yes	Yes	Front and Rear.	Front only.
3	Yes	Yes	Functioned on front.	Functioned in armor.
4	Yes	Yes	Front and Rear.	Front only.
5	Yes	Yes	Functioned on front.	Functioned in armor.
6	Yes	Yes	Front and Rear.	Front only.
7	Yes	Yes	Functioned on front.	Functioned in armor.
8	Yes	Yes	Front and Rear.	Front only.
9	Yes	No	Functioned on front.	Functioned in armor.
10	Yes	No	Front only.	Front only.

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APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950 Time Started: [REDACTED] Finished: [REDACTED]
 Weapon, Type: M1919A4 (US) Weapon No. [REDACTED] Previous Rounds: [REDACTED]
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 44°F
 Density: 1.028 Wind: 1-23 mph Weather: Misty Range: 600 Yards
 Target Type: Helmet and Body Armor
 Test Ammunition: Cartridge, Caliber .30, Full, T-104

HIT NO.	PENETRATION		BODY ARMOR	REMARKS
	HELMET	ARMOR		
1	Yes	Yes	Some plate shattering.	Target hit.
2	Yes	Yes	Some plate shattering.	
3	Yes	Yes	Some plate shattering.	
4		Yes	Some plate shattering.	
5		Yes	Some plate shattering.	
6		Yes	Some plate shattering.	
7		Yes	Some plate shattering.	
8		Yes	Some plate shattering.	
9		Yes	Some plate shattering.	
10				

Note: In as much as Full ammunition
 penetrated helmet at 600 yards,
 rounds fired at this range.

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950 Time Started: Time Finished:
 Weapon, Type: BMG 1919A4 (U.S.) Weapon No.: 839252 Previous Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
 Density: Wind: Weather: Range: 800 Yards
 Target Type: Helmets and Body Armor
 Test Ammunition: Cartridge, Caliber .30 AP, T-93

MIL NO.-	PENETRATION		BODY ARMOR	HELMET
	HELMET	ARMOR		
1	Yes	Yes	Clear hole in plate.	Front and Back.
2	Yes	Yes		Front and Back.
3		Yes		Front and Back.
4		Yes		Front and Back.
5		Yes	Plate shattered.	
6		Yes	Plate shattered.	
7		Yes	Plate shattered.	
8		Yes	Plate shattered.	
9		Yes	Plate shattered.	
10		Yes	Clear hole in plate.	

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950 Time Started: [REDACTED] Time Finished: [REDACTED]
Weapon, Type: M16 1919A4 (U.S.) Weapon No.: [REDACTED] Previous Rounds: [REDACTED]
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: [REDACTED]
Density: [REDACTED] Wind: [REDACTED] Weather: [REDACTED] Range: 800 Yards
Target Type: Helmet and Body armor
Test Ammunition: Cartridge, Caliber .30, AMI, T-101

TEST NO.	PENETRATION		BODY ARMOR	HELMET
	FRONT	BACK		
1	Yes	Yes	Clean hole in plate	Front and Back.
2	Yes	Yes	Clean hole in plate	Front and Back.
3	Yes	Yes	Clean hole in plate	Front and Back.
4	Yes	Yes	Clean hole in plate	Front and Back.
5	Yes	Yes	Clean hole in plate	Front and Back.
6	Yes	Yes	Clean hole in plate	Front and Back.
7	Yes	Yes	Plate shattering	Front and Back.
8	Yes	Yes	Plate shattering	Front and Back.
9		Yes	Plate shattering	
10		Yes	Plate shattering	

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950

Time Started:

Time Finished:

Weapon, Type: M16 1910A4 (Canadian) Weapon No.: CW 4433

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 900 Yards

Target Type: Helrets and Body Armor

Test Ammunition: Cartridge, Caliber .300, Ball

HIT NO.	PENETRATION		BODY ARMOR	HELMET
	HELMET	HELMET		
1	Yes	No	Lodged in plate.	Front and Back.
2	Yes	No	Lodged in plate	Front and Back.
3	Yes	Yes	Clean hole in plate	Front and Back.
4		Yes	Clean hole in plate	
5		Yes	Clean hole in plate	
6		Yes	Clean hole in plate	
7		Yes	Clean hole in plate	
8		Yes	Clean hole in plate	
9		No	Plate shattered	
10		Yes	Lodged in rear nylon. Broke corner out of plate.	

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APPENDIX P

PENETRATION FIRING DATA

Date: 20 March 1950 Time Started: Time Finished:

Weapon, Type: M1 1918A4 (Canadian) Weapon No.: OW 4433 Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:

Density: Wind: Weather: Range: 500 Yards

Target Type: Helicopter Landing Area

Test Ammunition: Cartridge, Caliber .500, AF

RND NO.	PENETRATION		REMARKS	HEAVY
	FRONT	BACK		
1	Yes	Yes	Clean hole in plate	Front only.
2	Yes	Yes	Clean hole in plate	Front only.
3	Yes	Yes	Clean hole in plate	Front and Back.
4		Yes	Clean hole in plate	
5		No	Thru plate - Core lodged in rear section.	
6		No	Thru plate - Core lodged in rear section.	
7		Yes	Clean hole in plate.	
8		Yes	Clean hole in plate.	
9		Yes	Clean hole in plate.	
10		Yes	Clean hole in plate.	

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950

Time Started: ~~09:00~~

~~09:00~~ Time Finished: ~~09:00~~

Weapon, Type: M16 1919A4 (Canadian)

Weapon No.: OW 4433

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 300 Yards

Target Type: Helicopters and Body Armor

Test Ammunition: Cartridge, Caliber .303 API.

RIT NO.	PENETRATION		BODY ARMOR	HELMET
	HEAD	NECK		
1	Yes	Yes	Ricochet w/ thru plate.	Front only.
2	Yes	Yes	Penetrated large piece of bottom plate.	Front only.
3	Yes	No	Cartridge lodged in armor. 1st	
4		Yes	hardly thru armor.	
5		No	Close hit in armor.	
6		No	Lodged in rear nylon.	
7		No	Lodged in rear nylon.	
8		No	Thru plate - lodged in rear nylon.	
9		Yes	Thru plate - lodged in rear nylon.	
10		No	Complete	
		No	Thru plate - lodged in rear nylon.	

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950 Time Started: Time Finished:
 Weapon, Type: BMG 1919A4 (U.S.) Weapon No.: Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 44°F
 Density: 1.028 Wind: W 23 mph Weather: Misty Range: 1,000 Yards
 Target Type: Helmets and Body Armor
 Test Ammunition: Ctg, Cal. .30, Ball, T-104

HIT NO.	PENETRATION		HELMETS		REMAINS BODY ARMOR	
	HELMETS	BODY ARMOR				
1	Yes	Yes	Small hole in plate; front and back			
2	Yes	Yes	"	"	"	only.
3		Yes	"	"	"	"
4		Yes	"	"	"	"
5		Yes	"	"	"	"
6		Yes	"	"	"	"
7		No	Plate bent.			
8		No	"	"		
9		No	"	"		
10		No	"	"		

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APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950 Time Started: ~~XXXXXXXXXXXX~~
Weapon, Type: M1919A4 (U.S.) Weapon No.: 839252 Previous Rounds: ~~XXXXXXXXXXXX~~
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: ~~XXXXXXXXXXXX~~
Density: Wind: Weather: Range: 1,000 Yards
Target Type: Helmets and Body Armor
Test Ammunition: Ctg, Cal. .30, AP, T-93

HIT NO.	PENETRATION		REMARKS
	HELMETS	BODY ARMOR	
1		Yes	Small hole in plate.
2		Yes	" " " "
3		Yes	" " " "
4		Yes	" " " "
5		Yes	" " " "
6		Yes	" " " "
7		No	Plate bent.
8		No	" "
9		No	" "
10		No	" "

NOTE: In an effort to conserve test ammunition and inasmuch as Ball ammunition penetrated the helmets at this range, no attempt was made to continue firing until helmet hits were obtained.

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950 Time Started: [REDACTED] Time Finished: [REDACTED]
 Weapon, Type: M1 1919A4 (U.S.) Weapon No. 839252 Previous Rounds: [REDACTED]
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: [REDACTED]
 Density: [REDACTED] Wind: [REDACTED] Weather: [REDACTED] Range: 1,000 Yards
 Target Type: Helmets and Body Armor
 Test Ammunition: Ctg, Cal. .30, API, T-101

HIT NO.	PENETRATION		HELMETS	REMARKS	BODY ARMOR
	HELMETS	BODY ARMOR			
1	Yes	Yes	Clean hole in plate; front and back		
2	Yes	Yes	"	"	"
3	Yes	Yes	"	"	"
4	Yes	Yes	"	"	"
5	Yes	Yes	"	"	only
6	Yes	Yes	"	"	"
7	Yes	Yes	"	"	"
8		No	Plates bent.		
9		No	"	"	
10		No	"	"	

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950

Time Started: [REDACTED]

Time Finished: [REDACTED]

Weapon, Type: EMU 1919A4 (Canadian)

Weapon [REDACTED] Rounds: [REDACTED]

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: [REDACTED]

Density: [REDACTED] Wind: [REDACTED]

Weather: [REDACTED]

Range: 1,000 Yards

Target Type: Helmets and Body Armor

Test Ammunition: Ctg. Cal. .280. Ball

<u>HIT NO.</u>	<u>PENETRATION</u>		<u>REMARKS</u>
	<u>HELMETS</u>	<u>BODY ARMOR</u>	
1	Yes	Yes	Plate shattered a small amount; front only.
2	Yes	Yes	Plate shattered a small amount; front and back.
3		Yes	Plate shattered a small amount.
4		Yes	Plate shattered a small amount.
5		No	Plate broken.
6		No	Plate bent.
7		No	Plate bent.
8		Yes	Some plate shattering.
9		Yes	Some plate shattering.
10		Yes	Some plate shattering.

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950

Time Started: [REDACTED]

Weapon, Type: BM3 1919A4 (Canadian) Weapon No.: CW 4433 Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1,000 Yards

Target Type: Helmets and Body Armor

Test Ammunition: Ctg. Cal. .280, AP

HIT NO.	PENETRATION		BODY ARMOR	REMARKS	HELMET
	HELMETS	BODY ARMOR			
1	Yes	Yes		Some shattering at plate; front only.	
2	Yes	Yes	" "	" "	
3	Yes	Yes	" "	" "	
4		Yes	" "	" "	
5		No		Plate bent.	
6		No	" "		
7		No	" "		
8		No	" "		
9		No			
10		Yes			

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950 Time Started: Time Finished:
Weapon, Type: BMG 1919A4 (Canadian) Weapon No.: Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Range: 1,000 Yards
Target Type: Helmets and Body Armor
Test Ammunition: Ctg. Cal. .280, API

<u>HIT NO.</u>	<u>PENETRATION</u>		<u>REMARKS</u>	<u>HELMETS</u>
	<u>HELMETS</u>	<u>BODY ARMOR</u>		
1	Yes	No	Plate broken; front only.	
2	Yes	No	Plate bent; front only.	
3		No	" "	
4		No	" "	
5		No	" "	
6		No	" "	
7		No	" "	
8		No	" "	
9		No	" "	
10		No	" "	

APPENDIX P

PENETRATION FIRING DATA

Date: 27 March 1950

Time Started: [REDACTED]

Time Ended: [REDACTED]

Weapon, Type: M16 191A4 (U.S.)

Weapon No.: 839252

Previous Rounds: [REDACTED]

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 46°F

Density: 1.031

Wind: SE 4mph

Weather: Clear

Range: 1200 Yards

Target Type: Helmet and Body Armor

Test Ammunition: Cartridge, Caliber .30, Ball, T-104

HIT NO.	PENETRATION		BODY ARMOR	HITTING
	HELMET	BODY ARMOR		
1	Yes	No	Plate Cracked	Front only.
2	Yes	No	Plate Cracked	Front and Back
3	Yes	No	Plate Cracked	Front and Back
4		No	Plate Cracked	
5		No	Large bulge	
6		No	Large bulge	
7		No	Plate cracked	
8		No	Plate cracked	
9		No	Plate cracked	
10		No	Plate cracked	

APPENDIX P

PENETRATION FIRING DATA - TEST 123

Date: 27 March 1950 Time Started: [REDACTED] Time Finished: [REDACTED]
 Weapon, Type: M16 1918 A (U.S.) Weapon No.: [REDACTED] Previous Rounds: [REDACTED]
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: [REDACTED]
 Density: [REDACTED] Wind: [REDACTED] Weather: [REDACTED] Range: 1200 Yards
 Target Type: Helmets and Body Armor
 Test Ammunition: Cartridge, 30.06, T-93

TEST NO.	HELMET	BODY ARMOR	REMARKS
1	Yes	Plate Cracked	Front only.
2	Yes	Plate Cracked	Front only.
3	Yes	Plate Cracked	Front only.
4	Yes	Plate Cracked	Front only.
5	Yes	Plate Cracked	Front only.
6	Yes	Plate Cracked	Front only.
7	Yes	Plate Cracked	Front only.
8	Yes	Plate Cracked	Front only.
9	Yes	Plate Cracked	Front only.
10	Yes	Plate Cracked	Front only.

APPENDIX P

PENETRATION FIRING DATA

Date: 21 Feb 1950 Time Started: [REDACTED] Time Finished: [REDACTED]
 Weapon, Type: M1 Garand (T.O.) Weapon No.: [REDACTED] Previous Rounds: [REDACTED]
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: [REDACTED]
 Density: [REDACTED] Wind: [REDACTED] Weather: [REDACTED] Range: 1000 Yards
 Target Type: [REDACTED]
 Test Ammunition: Cartridge, Ball, .30, M1, T-111

Hit No.	Penetration	Remarks	Notes
1	Yes	lodged in rear of head.	Front and back
2	No	lodged in rear of head.	Front and back
3	No	lodged in plate.	Front only
4	No	lodged in plate.	Front only
5	No	lodged in plate.	Front only
6	No	lodged in plate.	Front only
7	No	lodged in plate.	Front only
8	No	lodged in plate.	Front only
9	No	lodged in plate.	Front only
10	No	lodged in plate.	Front only

APPENDIX P

PENETRATION FIRING DATA

Date: 20 March 1950

Time Started:

Time Finished:

Weapon, Type: M16 (Canadian) Weapon No.: 1493

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density: Wind:

Weather:

Range: 1000 Yards

Target Type: Human and Dog

Test Ammunition: American, Caliber .270, Ball

RND NO.	PENETRATION		RND NO.	RND NO.	RND NO.
	PLATE	HELMET			
1	Yes	No			
2	Yes	No			
3	Yes	No			
4	Yes	No			
5	Yes	No			
6	Yes	No			
7	Yes	No			
8	Yes	No			
9	Yes	No			
10	Yes	Yes			

Core lodged in plate.
Plate penetrated
Plate penetrated
Plate bent
Core lodged in plate.
Plate broken
Plate bent
Small clean hole
Core lodged in plate.
Small clean hole.

Front only.
Front only.
Front only.
Front only.
Front only.

APPENDIX P

PENETRATION FIRING DATA

Date: 27 March 1950

Time Started:

Weapon, Type: B. G. M29A4 (Canadian)

Weapon No. 4433

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1200 Yards

Target Type: Helrets and Body Armor

Test Ammunition: Cartridges, Caliber .270, AP

HIT NO.	PENETRATION		BODY ARMOR	HELMET
	HELMET	PLATE ARMOR		
1	Yes	No	No Bulge	Front only.
2	Yes	No	No Bulge	
3		No	Plate cracked	
4		No	Plate cracked	
5		No	Plate cracked	
6		No	Plate cracked	
7		No	Plate cracked	
8		No	Plate cracked	
9		No	Plate cracked	
10		No	Plate cracked	

APPENDIX P

PENETRATION FIRING DATA

Date: 27 March 1950 Time Started: Time Finished:
 Weapon, Type: M3 1919A4 (Canadian) Weapon No. [REDACTED] Rounds:
 Ammunition Temperature: Ambient Day Temperature at 1200 Hours:
 Density: Wind: Weather: Range: 1200 Yards
 Target Type: [REDACTED]
 Test Ammunition: [REDACTED], Caliber .303 WIN

HIT NO.	PENETRATION		REMARKS	PENET
	Front	Side		
1	No	No	Impact 100 yds - 300 yds correct	30 on plate.
2	No	No		30 on plate.
3	No	No		30 on plate.
4		No		30 on plate.
5		No		30 on plate.
6		No		30 on plate.
7		No		30 on plate.
8		No		30 on plate.
9		No		No hole
10		No		No hole

APPENDIX P

PENETRATION FIRING DATA

Date: 13 April 1950

Time Started: 0930

Time Finished: 1010

Weapon, Type: BMS 1810A4 (US)

Weapon: [REDACTED] Previous Rounds: [REDACTED]

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 41°F

Density: 1.043

Wind: FW 23 mph

Weather: Broken clouds Range: 1400 Yards

Target Type: Helmets

Test Ammunition: Cartridge, Caliber .50, Ball, T-104

VIT NO.

PENETRATED

REMARKS

1	No	
2	No	
3	No	Medium Bulge 1/2"
4	No	Helmet cracked 3/8"
5	No	Helmet cracked
6	No	Medium Bulge
7	No	Helmet cracked
8	No	Large Bulge
9	No	Helmet cracked 3/8"
10	No	Helmet cracked 1/4"
	No	Medium Bulge
	No	Medium Bulge

APPENDIX P

FLAMETHROWER FIRING DATA

Date: 12 April 1950 Time Started: Time Finished:
Weapon, Type: T-9 181744 (U.S.) Weapon: Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Range: 1400 Yards
Target Type: Helmet
Test Ammunition: Cartridge, 81mm .30, M1, T-92

<u>HEAT NO.</u>	<u>POWER TRD</u>	<u>RE MARKS</u>
1	No	Helmet cracked
2	No	IE
3	No	Helmet cracked
4	Yes	Small hole. front only.
5	No	Helmet cracked
6	Yes	Small hole with crack. front only.
7	No	Helmet cracked
8	No	Small hole. front only.
9	Yes	Small hole. front only.
10	No	Helmet cracked.

APPENDIX P

PENETRATION FIRING DATA

Date: 12 April 1950

Time Started: [REDACTED]

Time Finished: [REDACTED]

Weapon, Type: M16 1919A4 (U.S.)

Weapon Model: [REDACTED] Rounds: [REDACTED]

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: [REDACTED]

Density: [REDACTED]

Wind: [REDACTED]

Weather: Clear

Range: 1400 Yards

Target Type: [REDACTED]

Test Ammunition: Cartridge, Caliber .30, M1, C-201.

<u>TEST NO.</u>	<u>FUNCTIONED</u>	<u>REMARKS</u>	<u>REMARKS</u>
1	Yes	Front only.	Functioned.
2	Yes	Front only.	Functioned.
3	Yes	Front only.	Functioned.
4	Yes	Front only.	Functioned.
5	Yes	Front only.	Functioned.
6	Yes	Front only.	Functioned.
7	Yes	Front only.	Functioned.
8	Yes	Front only.	Functioned.
9	Yes	Front only.	Functioned.
10	Yes	Front only.	Functioned.

APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950 Time Started: 1110 Time Finished: 1135
Weapon, Type: M16 1010A4 (Canadian) Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Clear Range: 1400 Yards
Target Type: Humans
Test Ammunition: Cartridge, Caliber .280, Ball

<u>TEST NO.</u>	<u>RESULT</u>	<u>REMARKS</u>
1	No	Ball - no point hole with star cracks.
2	No	Ball - no point hole with star cracks.
3	No	Ball - no point hole with star cracks.
4	No	Medium bulge
5	No	Medium bulge
6	No	Medium bulge
7	No	Small bulge
8	No	Small bulge
9	No	Small bulge
10	No	Small bulge

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APPENDIX F

PENETRATION FIRING DATA

Date: 22 April 1950 Time Started: Time Finished: 1105

Weapon, Type: F3 M114 (Canadian) Weapon No.: 4433 Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:

Density: Wind: Weather: Range: 2400 Yards

Target Type: 100 yds

Test Ammunition: Cartridge, Baller .30, M1

<u>HIT NO.</u>	<u>PENETRATED</u>	<u>REMARKS</u>
1	No	Large crack with bulge.
2	No	Large crack with bulge.
3	No	Medium bulge
4	No	Medium bulge
5	No	Medium bulge
6	No	Large crack with bulge.
7	No	Large crack with bulge.
8	No	Medium bulge
9	No	No
10	No	SP

APPENDIX P

PENETRATION FIRING DATA

Date: 13 April 1950 Time Started: 1000 Time Finished: 1035
 Weapon, Type: M6 1016A4 (Canadian) Weapon No.: [REDACTED] Previous Rounds: [REDACTED]
 Ammunition Temperature: Ambient [REDACTED] Temperature at 1200 Hours:
 Density: Wind: Weather: Range: 1400 Yards
 Target Type: [REDACTED]
 Test Ammunition: [REDACTED]

<u>HIT NO.</u>	<u>INTERVAL</u>	<u>REMARKS</u>	<u>REMARKS</u>
1	No	Small crack with bulge.	Functioned.
2	No	Small bulge.	Functioned.
3	No	Small crack with bulge.	Functioned.
4	No	Small crack with bulge.	Functioned.
5	No	Small bulge.	Functioned.
6	No	Small bulge.	Functioned.
7	No	Small bulge.	Functioned.
8	No	Small bulge.	Functioned.
9	No	Small bulge.	Functioned.
10	No	Small bulge.	Functioned.

APPENDIX P

PENETRATION FIRING DATA

Date: 29 March 1960

Time Started: [REDACTED]

Weapon, Type: BLD 1910A1, U.S.

Weapon No.: 639252

Previous Rounds: [REDACTED]

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 50°F

Density: 1.007

Wind: NW, 7 mph

Weather: Rain

Range: 1600 yd

Target Type: Helicopt

Test Ammunition: Cartridge, Caliber .30, Ball, T-101

HIT NO.	PENETRATED HELICOPT	REMARKS
1	No	Large Crack.
2	No	Skidded off. Medium bulge. Fair hit.
3	No	Skidded off. Medium bulge. Fair hit.
4	No	Skidded off. Medium bulge. Fair hit.
5	No	Skidded off. Medium bulge. Fair hit.
6	No	Skidded off. Medium bulge. Fair hit.
7	No	Skidded off. Medium bulge. Fair hit.
8	No	Skidded off. Medium bulge. Fair hit.
9	No	Skidded off. Medium bulge. Fair hit.
10	No	Skidded off. Medium bulge. Fair hit.

APPENDIX P

PENETRATION FIRING DATA

Date: 29 March 1960

Time Started: [REDACTED]

Time Finished: [REDACTED]

Weapon, Type: M1, 1918AL, U.S.

Weapon No.: 838952

Previous Rounds: [REDACTED]

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: [REDACTED]

Density: [REDACTED]

Wind: [REDACTED]

Weather: Rain

Range: 1600 yd

Target Type: Mol. [REDACTED]

Test Ammunition: Cartridge, Caliber .30, AP, T-93.

<u>HIT NO.</u>	<u>PENETRATED TARGET</u>	<u>REMARKS</u>
1	No	Skipped off. Medium bulge. Fair hit.
2	No	Skipped off. Medium bulge. Fair hit.
3	No	Skipped off. Medium bulge. Fair hit.
4	No	Skipped off. Medium bulge. Fair hit.
5	No	Skipped off. Medium bulge. Fair hit.
6	No	Skipped off. Medium bulge. Fair hit.
7	No	Skipped off. Medium bulge. Fair hit.
8	No	Skipped off. Medium bulge. Fair hit.
9	No	Skipped off. Medium bulge. Fair hit.
10	No	Skipped off. Medium bulge. Fair hit.

APPENDIX P

PENETRATION FIRING DATA

Date: 29 March 1950

Time Started: ~~10:00 AM~~

~~Time Finished: 11:00 AM~~

Weapon, Type: M1919A4, U.S.

Weapon No.: 839252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Clear

Range: 1400 yd

Target Type: Helmets

Test Ammunition: Cartridges, Caliber .30, API, M-101

<u>HIT NO.</u>	<u>PENETRATED HELMET</u>	<u>REMARKS</u>
1	Yes	Front only.
2	Yes	Front only.
3	No	SB
4	No	SB
5	No	SB
6	Yes	Front only.
7	Yes	
8	No	Crack 1/4" long on front
9	No	Crack 1/4" long on front
10	No	

~~CONFIDENTIAL~~

APPENDIX P

PENETRATION FIRING DATA

Date: 28 March 1950

Time Started: [REDACTED]

Time Finished: [REDACTED]

Weapon, Type: M16 1919A1, Canadian

Weapon No. [REDACTED]

Previous Rounds: [REDACTED]

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: [REDACTED]

Density: [REDACTED]

Wind: [REDACTED]

Weather: Overcast

Range: 1500 yd

Target Type: Pellets

Test Ammunition: Cartridge, Caliber .200, Ball

<u>FIR NO.</u>	<u>PENETRATED HELMET</u>	<u>REMARKS</u>
1	No	Skipped off. SB. Fair Hit.
2	No	Skipped off.
3	No	Skipped off.
4	No	Skipped off.
5	No	Skipped off.
6	No	Skipped off.
7	No	Skipped off.
8	No	Good center hit. Medium bulge.
9	No	Good center hit. Medium bulge.
10	No	Good center hit. Medium bulge.

APPENDIX P

PENETRATION FIRING DATA

Date: 29 March 1950

Time Started:

Time Finished:

Weapon, Type: BWC 1919A4,

Weapon No.:

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Clear

Range: 1600 yd

Target Type: Helmets

Test Ammunition: Cartridge, Caliber .280, AP

<u>HIT NO.</u>	<u>PENETRATED HELMET</u>	<u>REMARKS</u>
1	No	Perfect center hit. SB only.
2	No	
3	No	Small crack.
4	No	Small crack.
5	No	Small crack.
6	No	Small crack.
7	No	Small crack.
8	No	Perfect center hit. SE only.
9	Yes	
10	No	SB

APPENDIX P

PENETRATION FIRING DATA

Date: 29 March 1950 Time Started: [REDACTED] Finished: [REDACTED]

Weapon, Type: M1919A1, Canadian Weapon No.: [REDACTED] Previous Rounds: [REDACTED]

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: [REDACTED]

Density: [REDACTED] Wind: [REDACTED] Weather: [REDACTED] Range: 1600 yd

Target Type: Helmets.

Test Ammunition: Cartridge, Caliber .280, API.

<u>HIT NO.</u>	<u>PENETRATED HELMET</u>	<u>REMARKS</u>
1	No	Medium bulge on front.
2	No	Medium bulge on front.
3	No	Medium bulge on front.
4	No	Medium bulge on front.
5	No	Medium bulge on front.
6	No	Medium bulge on front. Perfect front center.
7	No	Medium bulge on front. No function.
8	No	Medium bulge on front.
9	No	SB on front.
10	No	SB on front.

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950

Time Started:

Time Finished:

Weapon, Type: T25

Weapon No.

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 47°F

Density: 1.040

Wind: NW, 16 mph

Weather: Cloudy

Range: 25 Yd

Target Type: Brick Wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .30, Ball, T104

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	3"	To base of core.
2	5-1/2"	Hit mortar on back row of bricks.
3	4-3/4"	To base of core.
4	4-1/2"	To base of core.
5	4-1/4"	To base of core.

Average: 4.40".

5 rounds required for complete penetration.

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950
Weapon, Type: T25
Ammunition Temperature: Ambient
Density: Wind:
Target Type: Brick Wall, 8-1/2" Thick
Test Ammunition: Cartridge, Caliber .50, AP, T93
Time Started: [REDACTED]
Weapon No. [REDACTED] Finished: [REDACTED]
Previous Rounds: [REDACTED]
Daily Temperature at 1200 Hours: [REDACTED]
Weather: [REDACTED]
Range: 25 Yd

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	4-3/4"	To base of core.
2	4-1/2"	To base of core.
3	4-1/2"	To base of core.
4	4-1/2"	To base of core.
5	5-1/4"	To base of core.

7 rounds required for complete penetration.
Average: 4.85".

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950 Time Started: [REDACTED] Finished: [REDACTED]
Weapon, Type: T25 Weapon No.: 10 Previous Rounds: [REDACTED]
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: [REDACTED]
Density: [REDACTED] Wind: [REDACTED] Weather: [REDACTED] Range: 25 Yd
Target Type: Brick Wall, 8-1/2" Thick
Test Ammunition: Cartridge, Caliber .30, API, T93

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	5"	To base of core. Functioned.
2	4-1/4"	To base of core. Functioned.
3	4-3/4"	To base of core. Functioned.
4	6-1/4"	To base of core. Functioned.
5	4-1/4"	To base of core.

6 rounds required for complete penetration.

Average: 4.90".

~~CONFIDENTIAL~~

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950

Time Started: [REDACTED] Finished: [REDACTED]

Weapon, Type: BM2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 25 Yd

Target Type: Brick wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .230, Ball

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	4-5/8"	Near mortar line.
2	2-5/4"	Near mortar line.
3	3"	Near mortar line.
4	2-5/8"	Near mortar line.
5	3"	Center of brick.

Average: 3.40".

6 rounds required for complete penetration.

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950 Time Started: Time Finished:
Weapon, Type: M2 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 47°F
Density: 1.040 Wind: NW, 16 mph Weather: Cloudy Range: 25 Yd
Target Type: Brick Wall, 8-1/2" Thick
Test Ammunition: Cartridge, Caliber .260, AP

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	2-7/8"	Top edge of brick.
2	3-1/4"	Top edge of brick.
3	3-1/8"	Top edge of brick.
4	2-1/2"	Bottom edge of brick.
5	3"	Bottom edge of brick.

9 rounds required for complete penetration.
Average: 2.95".

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950

Time Started: [REDACTED]

Time Finished: [REDACTED]

Weapon, Type: M1 # 2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 25 Yd

Target Type: Brick wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .280, API

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	2-3/4"	Center of brick. Functioned.
2	2-7/8"	Center of brick. Functioned.
3	2-1/2"	Center of brick. Functioned.
4	3-1/2"	Center of brick. Functioned.
5	2-5/4"	Center of brick. Functioned.

Average: 2.875".

14 rounds required for complete penetration.

APPENDIX P

PENETRATION FIRING DATA

Date: 6 April 1950

Time Started: [REDACTED]

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 41°F

Density: 1.061

Wind: NNW, 23 mph

Weather: Broken clouds

Range: 100 Yd

Target Type: Brick Wall, 8-1/2" thick

Test Ammunition: Cartridge, Caliber .30, Ball, 1104

HIT NO.

DEPTH OF PENETRATION

REMARKS

1
2
3
4
5

3"
3-1/4"
4-3/4"
4-3/4"
4-3/4"

To base of core.
To base of core.
To base of core.
To base of core.
To base of core.

10 rounds required for complete penetration.

Average: 4.10".

APPENDIX P

PENETRATION FIRING DATA

Date: 6 April 1950

Time Started: [REDACTED]

ended: [REDACTED]

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 100 Yd

Target Type: Brick wall, 8-1/2" thick

Test Ammunition: Cartridge, Caliber .50, AP, T93

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	4-1/4"	To base of core.
2	3-1/2"	To base of core.
3	3"	To base of core.
4	4"	To base of core.
5	3-1/4"	To base of core.

11. rounds required for complete penetration.

Average: 3.00".

APPENDIX P

PENETRATION FIRING DATA

Date: 6 April 1950

Time Started:

Time Finished:

Weapon, Type: M5

Weapon:

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 100 Yd

Target Type: Brick Wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .30, API, T101

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	4-1/4"	To base of core. Functioned.
2	4"	To base of core. Functioned.
3	4-1/4"	To base of core. Functioned.
4	5-1/4"	To base of core. Functioned.
5	4"	To base of core. Functioned.

12 rounds required for complete penetration.

Average: 4.35".

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950

Time Started: [REDACTED]

Finished: [REDACTED]

Weapon, Type: EM2

Weapon No. 1 [REDACTED]

Previous Rounds: [REDACTED]

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: [REDACTED]

Density: [REDACTED]

Wind: [REDACTED]

Weather: [REDACTED]

Range: 100 Yd

Target Type: Brick Wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .280, Ball

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	4-1/2"	To base of core.
2	3-1/2"	To base of core.
3	5-1/2"	To base of core.
4	3"	To base of core.
5	4-1/2"	To base of core.

14 rounds required for complete penetration.

Average: 4.15".

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950

Time Started:

Time Finished:

Weapon, Type: EA2

Weapon: ~~EA2~~ Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 47°F

Density: 1.040

Wind: NW, 16 mph

Weather: Cloudy

Range: 100 Yd

Target Type: Brick Wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .280, AP

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	3-1/4"	To base of core.
2	5-1/4"	To base of core.
3	3-1/2"	To base of core.
4	3-3/4"	To base of core.
5	4-1/4"	To base of core.

32 rounds required for complete penetration.

Average: 4.00".

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950

Time Started:

Time Finished:

Weapon, Type: EM2

Weapon No.: [REDACTED] Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 100 Yd

Target Type: Brick Wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .280, API

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	2-1/2"	To base of core. Functioned.
2	3-1/4"	To base of core. Functioned.
3	2-3/4"	To base of core. Functioned.
4	2-1/4"	To base of core. Functioned.
5	3-1/4"	To base of core. Functioned.

34 rounds required for complete penetration.

Average: 2.80".

[REDACTED]

[REDACTED]

[REDACTED]

APPENDIX P

PENETRATION FIRING DATA

Date: 6 April 1950

Time Started: [REDACTED] Finished: [REDACTED]

Weapon, Type: T35

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 41°F

Density: 1.061

Wind: NNW, 23 mph

Weather: Broken Clouds

Range: 300 Yd

Target Type: Brick Wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .30, Ball, T104

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	4-3/4"	To base of core.
2	3-1/4"	To base of core.
3	2-1/4"	To base of core.
4	2"	To base of core.
5	3-3/4"	To base of core.
		Average: 2.80".

APPENDIX P

PENETRATION FIRING DATA

Date: 6 April 1950

Time Started:

Time Finished:

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 300 Yd

Target Type: Orion Ball, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .50, M2, 193

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	2-1/2"	To base of core.
2	3-1/4"	To base of core.
3	2-1/2"	To base of core.
4	2-1/2"	To base of core.
5	3"	To base of core.
Average: 2.75".		

APPENDIX P

PENETRATION FIRING DATA

Date: 6 April 1958 Time Started: [REDACTED] Finished: [REDACTED]
Weapon, Type: M35 Weapon No.: 10 Previous Rounds: [REDACTED]
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: [REDACTED]
Density: [REDACTED] Wind: [REDACTED] Weather: [REDACTED] Range: 300 Yd
Target Type: Brick Wall
Test Ammunition: Cartridge, Caliber .30, API, T101

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	2-1/4"	To base of core. Functioned.
2	2-1/2"	To base of core. Functioned.
3	2-1/2"	To base of core. Functioned.
4	2-1/2"	To base of core. Functioned.
5	3"	To base of core. Functioned.
		Average: 3.00"

APPENDIX F

PENETRATION FIRING DATA

Date: 6 April 1950 Time Started: [REDACTED] Finished: [REDACTED]
Weapon, Type: M1 [REDACTED] Previous Rounds: [REDACTED]
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: [REDACTED]
Density: [REDACTED] Wind: [REDACTED] Weather: [REDACTED] Range: 300 Yd
Target Type: Brick Wall, 3-5/2" Thick
Test Ammunition: Cartridge, Caliber .250, Ball

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	2-1/4"	To base of core.
2	2-1/4"	To base of core.
3	2-1/4"	To base of core.
4	2-1/4"	To base of core.
5	2-3/4"	To base of core.
		Average: 2.35".

APPENDIX F

PENETRATION FIRING DATA

Date: 6 April 1950 Time Started: Time Finished:
Weapon, Type: M2 Weapon No.:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Range: 300 Yd
Target Type: Brick Wall, 8-1/2" Thick
Post Ammunition: Cartridge, Caliber .280, AP

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	1-1/4"	To base of core.
2	1-1/2"	To base of core.
3	1-1/2"	To base of core.
4	1-1/2"	To base of core.
5	1-1/2"	To base of core.
		Average: 1.40"

APPENDIX P

PENETRATION FIRING DATA

Date: 6 April 1950

Time Started:

Time Finished:

Weapon, Type: M2

Weapon No. [REDACTED]

Rounds: [REDACTED]

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: [REDACTED]

Density:

Wind:

Weather:

Range: 300 Yd

Target Type: Brick Wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .280, API

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	1"	To base of core. Functioned.
2	1"	To base of core. Functioned.
3	1-1/8"	To base of core. Functioned.
4	1"	To base of core. Functioned.
5	1"	To base of core. Functioned.

Average: 1.015"

APPENDIX P

PENETRATION FIRING DATA

Date: 7 April 1950 Time Started: Time Finished:
Weapon, Type: T25 Weapon No.: [REDACTED] Shots Fired: [REDACTED]
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 46°F
Density: 1.057 Wind: N, 23 mph Weather: Clear Range: 100 Yd
Target Type: 1-1/2" Armor Plate at Normal
Test Ammunition: Cartridge, Caliber .30, Ball, T104

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	5/32"	Core did not remain in plate. Diameter of crater 5/8".
2	1/4"	Core did not remain in plate.
3	1/4"	Core did not remain in plate.
4	5/16"	Core did not remain in plate.
5	1/4"	Core did not remain in plate.
6	5/32"	Core did not remain in plate.
7	1/4"	Core did not remain in plate.
8	1/4"	Core did not remain in plate.
9	1/4"	Core did not remain in plate.
10	1/4"	Core did not remain in plate.

Opt. Average: .237"

APPENDIX P

PENETRATION FIRING DATA

Date: 7 April 1950 Time Started: Time Finished:
Weapon, Type: T25 Weapon No.: 10 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Clear Range: 100 Yd
Target Type: 1-1/2" Armor Plate at Normal
Test Ammunition: Cartridge, Caliber .50, AP, T93

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	9/16"	Core did not remain in plate. Diameter of crater 1/2".
2	5/8"	Core did not remain in plate.
3	5/8"	Core did not remain in plate.
4	5/8"	Core did not remain in plate.
5	9/16"	Core did not remain in plate.
6	19/32"	Core did not remain in plate.
7	5/8"	Core did not remain in plate.
8	9/16"	Core did not remain in plate.
9	19/32"	Core did not remain in plate.
10	19/32"	Core did not remain in plate.

Depth, Average: .590".

APPENDIX P

PENETRATION FIRING DATA

Date: 7 April 1950 Time Started: Time Finished:
Weapon, Type: T25 Weapon No.: 10 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature: 20.00 Hours:
Density: Wind: Weak Clear Range: 100 Yd
Target Type: 1-1/2" Armor Plate at Normal
Test Ammunition: Cartridge, Caliber .50, API, T101

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	9/16"	Core did not remain in plate. Functioned.
2	9/16"	Core did not remain in plate. Functioned.
3	9/16"	Core did not remain in plate. Functioned.
4	9/16"	Core did not remain in plate. Functioned.
5	9/16"	Core did not remain in plate. Functioned.
6	17/32"	Core did not remain in plate. Functioned.
7	17/32"	Core did not remain in plate. Functioned.
8	17/32"	Core did not remain in plate. Functioned.
9	17/32"	Core did not remain in plate. Functioned.
10	9/16"	Core did not remain in plate. Functioned.

Depth, Average: .550".

Average Diameter of Crater: 1/4".

APPENDIX P

PENETRATION FIRING DATA

Date: 7 April 1950

Time Started:

Time Finished:

Weapon, Type: M2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Time of Day: 1200 hours

Density:

Wind:

Weather: Clear

Range: 100 Yd

Target Type: 1-1/2" Armor Plate at Normal

Test Ammunition: Cartridge, Caliber .200, Ball

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	1/32"	Core did not remain in plate. Average Diameter of Crater: 5/8".
2	1/32"	Core did not remain in plate.
3	1/32"	Core did not remain in plate.
4	3/8"	Core did not remain in plate.
5	3/8"	Core did not remain in plate.
6	3/8"	Core did not remain in plate.
7	1/32"	Core did not remain in plate.
8	1/32"	Core did not remain in plate.
9	3/8"	Core did not remain in plate.
10	3/8"	Core did not remain in plate.

Depth, Average: .009".

APPENDIX P

PENETRATION FIRING DATA

Date: 7 April 1950 Time Started: Time Finished:
Weapon, Type: M2 Weapon No.: 3 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature: 1200 Hours:
Density: Wind: Weather: Clear Range: 100 Yd
Target Type: 1-1/2" Armor Plate at Normal
Test Ammunition: Cartridge, Caliber .280, AP

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	3/8"	Core did not remain in place. Diameter of Crater: 1/4".
2	3/8"	Core did not remain in place.
3	3/8"	Core did not remain in place.
4	3/8"	Core did not remain in place.
5	3/8"	Core did not remain in place.
6	3/8"	Core did not remain in place.
7	3/8"	Core did not remain in place.
8	3/8"	Core did not remain in place.
9	3/8"	Core did not remain in place.
10	3/8"	Core did not remain in place.

Depth, Average: .375".

APPENDIX P

PENETRATION FIRING DATA

Date: 7 April 1950

Time Started:

Time Finished:

Weapon, Type: EM2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1800 Hours:

Density:

Wind:

Weather: Clear

Range: 100 Yd

Target Type: 1-1/2" Armor Plate at Normal

Test Ammunition: Cartridge, Caliber .280, API

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	3/8"	Core did not remain in plate. Functioned.
2	3/8"	Core did not remain in plate. Functioned.
3	7/16"	Core did not remain in plate. Functioned.
4	3/8"	Core did not remain in plate. Functioned.
5	7/16"	Core did not remain in plate. Functioned.
6	7/16"	Core did not remain in plate. Functioned.
7	3/8"	Core did not remain in plate. Functioned.
8	3/8"	Core did not remain in plate. Functioned.
9	3/8"	Core did not remain in plate. Functioned.
10	3/3"	Core did not remain in plate. Functioned.

Depth, Average: .393".

APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950 Time Started: 1325 Time Finished: 1340
Weapon, Type: T35 Weapon No.: 10 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 44°F
Density: 1.061 Wind: SEB, 10 mph Weather: Overcast Range: 100 Yd
Target Type: 1-1/2" Armor Plate at 20°
Test Ammunition: Cartridge, Caliber .30, Ball, T104

<u>RIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	3/16"	Core did not remain in plate.
2	3/16"	Core did not remain in plate.
3	7/32"	Core did not remain in plate.
4	1/8"	Core did not remain in plate.
5	1/8"	Core did not remain in plate.
6	7/32"	Core did not remain in plate.
7	1/8"	Core did not remain in plate.
8	1/8"	Core did not remain in plate.
9	3/16"	Core did not remain in plate.
10	5/32"	Core did not remain in plate.

Depth, Average: .165".

Crater Size: 1/2"x5/8".

APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950 Time Started: 1240 Time Finished: 1300
Weapon, Type: M2 Weapon No.: 10 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Clear Range: 100 Yd
Target Type: 1-1/2" Armor Plate at 20°
Test Ammunition: Cartridge, Caliber .30, AP, T93

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1		Core did not remain in plate. Crater size 1/2"x 7/16".
2	5/8"	Core did not remain in plate.
3	19/32"	Core did not remain in plate.
4	19/32"	Core did not remain in plate.
5	5/8"	Core did not remain in plate.
6	5/8"	Core did not remain in plate.
7	5/8"	Core did not remain in plate.
8	5/8"	Core did not remain in plate.
9	5/8"	Core did not remain in plate.
10	5/8"	Core did not remain in plate.

Depth, Average: .556".

APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950

Time Started: 1305

Time Finished: 1320

Weapon, Type: P25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

~~Daily Temperature at 1200 Hours:~~

Density:

Wind:

~~Weather:~~ Overcast

Range: 100 Yd

Target Type: 1-1/2" Armor Plate at 20°

Test Ammunition: Cartridge, Caliber .30, API, T101

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	9/16"	Core did not remain in plate. Functioned.
2	9/16"	Core did not remain in plate. Functioned.
3	1/2"	Core did not remain in plate. Functioned.
4	1/2"	Core did not remain in plate. Functioned.
5	9/16"	Core did not remain in plate. Functioned.
6	9/16"	Core did not remain in plate. Functioned.
7	9/16"	Core did not remain in plate. Functioned.
8	9/16"	Core did not remain in plate. Functioned.
9	9/16"	Core did not remain in plate. Functioned.
10	1/2"	Core did not remain in plate. Functioned.

Depth, Average: .543".

Crater Size: 3/8"x5/8".

APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950 Time Started: 1105 Time Finished: 1120
Weapon, Type: M1C Weapon No.: 3 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:
Density: Wind: Weather: Clear Range: 100 Yd
Target Type: 1-1/2" Armor Plate at 20°
Test Ammunition: Cartridge, Caliber .280, Ball

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	1/64"	Core did not remain in plate.
2	1/32"	Core did not remain in plate.
3	3/64"	Core did not remain in plate.
4	1/32"	Core did not remain in plate.
5	1/64"	Core did not remain in plate.
6	1/32"	Core did not remain in plate.
7	1/32"	Core did not remain in plate.
8	1/64"	Core did not remain in plate.
9	1/32"	Core did not remain in plate.
10	1/32"	Core did not remain in plate.

Depth, Average: .025".

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APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950 Time Started: 1000 Time Finished: 1035
Weapon, Type: M2 Weapon No.: 3 Previous Rounds:
Ammunition Temperature: Ambient Daily ~~Temperature~~ 44°F
Density: 1.061 Wind: SSE, 10 mph Weather: Overcast Range: 100 Yd
Target Type: 1-1/2" Armor Plate at 20°
Test Ammunition: Cartridge, Caliber .280, AP

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	3/8"	Core did not remain in plate. Crater Size: 1/4"x5/16".
2	15/32"	Core did not remain in plate.
3	3/8"	Core did not remain in plate.
4	3/8"	Core did not remain in plate.
5	15/32"	Core did not remain in plate.
6	3/8"	Core did not remain in plate.
7	15/32"	Core did not remain in plate.
8	3/8"	Core did not remain in plate.
9	3/8"	Core did not remain in plate.
10	13/32"	Core did not remain in plate.

Total of 13 rounds fired. Eight cores remained lodged in plate. Bases broke off making measurements impossible.

Depth, Average: .387".

~~CONFIDENTIAL~~

APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1980 Time Started: 1040 Time Finished: 1100
Weapon Type: M16 Weapon No.: 3 Previous Rounds:
Ammunition Temperature: Ambient Hours:
Density: Wind: Weather: Clear Range: 100 Yd
Target Type: 1-1/2" Armor Plate at 20°
Test Condition: Cartridge, Caliber .223, API

<u>HIT NO.</u>	<u>DEPTH OF PENETRATION</u>	<u>REMARKS</u>
1	3/8"	Core did not remain in plate. Functioned.
2	15/32"	Core did not remain in plate. Functioned.
3	3/8"	Core did not remain in plate. Functioned.
4	3/8"	Core did not remain in plate. Functioned.
5	3/8"	Core did not remain in plate. Functioned.
6	15/32"	Core did not remain in plate. Functioned.
7	3/8"	Core did not remain in plate. Functioned.
8	15/32"	Core did not remain in plate. Functioned.
9	3/8"	Core did not remain in plate. Functioned.
10	3/8"	Core did not remain in plate. Functioned.

Total of 12 rounds fired. Two cores remained lodged in plate. Bases broke off making measurement impossible.

Depth, Average: .50"
Crater Size: 1/4" x 5/8"

APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950

Time Started: 1505

Time Finished:

Weapon, Type: T25

Weapon No.: 10

Explosive Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 44°F

Density: 1.034 Wind: SSE, 10 mph

Weather: Overcast

Range: 100 Yd

Target Type: 1-1/2" Armor Plate at 30°

Test Ammunition: Cartridge, Caliber .30, Ball, F104

RPT NO.	PENETRATION		REMARKS
	DEPTH	LENGTH	
1	5/41"	17/32"	Core did not remain in plate.
2	1/32"	5/8"	Core did not remain in plate.
3	1/32"	9/16"	Core did not remain in plate.
4	5/64"	9/16"	Core did not remain in plate.
5	5/64"	9/16"	Core did not remain in plate.
6	1/32"	9/16"	Core did not remain in plate.
7	5/64"	9/16"	Core did not remain in plate.
8	1/32"	17/32"	Core did not remain in plate.
9	3/32"	17/32"	Core did not remain in plate.
10	1/32"	9/16"	Core did not remain in plate.

Average Crater Width: 3/8".

Depth, Average: .056".

Length, Average: .559".

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APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950 Time Started: 1345 Time Finished: 1455
Weapon, Type: T25 Weapon No.: ~~100-111-111-111~~ Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 44°F
Density: 1.064 Wind: SSE, 10 mph Weather: Overcast Range: 100 Yd
Target Type: 1-1/2" Armor Plate at 30°
Test Ammunition: Cartridge, Caliber .50, M1, T93

HIT NO.	PENETRATION		REMARKS
	DEPTH	LENGTH	
1	9/16"	11/16"	Core did not remain in plate.
2	17/32"	11/16"	Core did not remain in plate.
3	9/16"	5/8"	Core did not remain in plate.
4	9/16"	5/8"	Core did not remain in plate.
5	17/32"	5/8"	Core did not remain in plate.
6	1/2"	11/16"	Core did not remain in plate.
7	9/16"	5/8"	Core did not remain in plate.
8	5/8"	11/16"	Core did not remain in plate.
9	9/16"	5/8"	Core did not remain in plate.
10	9/16"	5/8"	Core did not remain in plate.

Average Crater Width: 3/8".
Total of 29 rounds fired. Ninety-one cores
remained in plate. Base of ~~plate~~ ~~cores~~ ~~remained~~
measurements impossible. ~~Base of plate~~ ~~cores~~ ~~remained~~

Depth, Average: .556".
Length, Average: .650".

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~~CONFIDENTIAL~~

APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950

Time Started: 1455

Time Finished: 1505

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature: 1200 Hours:

Density:

Wind:

Weather: Overcast

Range: 100 Yd

Target Type: 1-1/2" Armor Plate at 30°

Test Ammunition: Cartridge, Caliber .50, API, T101

HIT NO.	PENETRATION		REMARKS
	DEPTH	LENGTH	
1	3/16"	15/16"	Core did not remain in plate. Functioned.
2	3/16"	7/8"	Core did not remain in plate. Functioned.
3	1/8"	5/8"	Core did not remain in plate. Functioned.
4	1/4"	7/8"	Core did not remain in plate. Functioned.
5	5/16"	15/16"	Core did not remain in plate. Functioned.
6	3/16"	7/8"	Core did not remain in plate. Functioned.
7	5/32"	7/8"	Core did not remain in plate. Functioned.
8	1/8"	3/4"	Core did not remain in plate. Functioned.
9	5/32"	7/8"	Core did not remain in plate. Functioned.
10	5/32"	7/8"	Core did not remain in plate. Functioned.

Metal gouged out.

Average Crater Width: 1/4".

Depth, Average: .171".

Length, Average: .850".

~~CONFIDENTIAL~~

APPENDIX P

PENETRATION FIRING DATA

Date: 11 April 1950

Time Started: 1100

Time Finished: 1110

Weapon, Type: M2

Weapon No. ~~XXXXXXXXXX~~ Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Rain

Range: 100 Yd

Target Type: 1-1/2" Armor Plate at 30°

Test Ammunition: Cartridge, Caliber .280, Ball

HIT NO.	PENETRATION		REMARKS
	DEPTH	LENGTH	
1	1/32"	1/8"	Core did not remain in plate.
2	1/64"	1/8"	Core did not remain in plate.
3	1/64"	1/8"	Core did not remain in plate.
4	1/64"	1/8"	Core did not remain in plate.
5	1/64"	1/8"	Core did not remain in plate.
6	1/32"	1/8"	Core did not remain in plate.
7	1/64"	1/8"	Core did not remain in plate.
8	1/32"	1/8"	Core did not remain in plate.
9	1/64"	1/16"	Core did not remain in plate.
10	1/64"	1/16"	Core did not remain in plate.

Average Width of Crater: 1/8".

Depth, Average: .020".

Length, Average: .112".

APPENDIX P

PENETRATION FIRING DATA

Date: 11 April 1950 Time Started: 1025 Time Finished: 1040
Weapon, Type: M2 Weapon No. [REDACTED] Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 52°F
Density: 1.025 Wind: Calm Weather: Rain Range: 100 Yd
Target Type: 1-1/2" Armor Plate at 30°
Test Ammunition: Cartridge, Caliber .280, AP

HIT NO.	PENETRATION		REMARKS
	DEPTH	LENGTH	
1	3/16"	5/8"	Cores did remain in plates. Metal gouged out only.
2	5/32"	5/8"	Cores did remain in plates.
3	5/32"	5/8"	Cores did remain in plates.
4	3/16"	5/8"	Cores did remain in plates.
5	5/32"	5/8"	Cores did remain in plates.
6	7/32"	5/8"	Cores did remain in plates.
7	5/32"	5/8"	Cores did remain in plates.
8	3/16"	3/4"	Cores did remain in plates.
9	3/16"	5/8"	Cores did remain in plates.
10	3/16"	3/4"	Cores did remain in plates.

Average Width of Crater: 1/4".
Depth, Average: .178".
Length, Average: .650".

APPENDIX P

PENETRATION FIRING DATA

Date: 11 April 1950 Time Started: 1045 Time Finished: 1050
 Weapon, Type: M2 Weapon No.: [REDACTED] Previous Rounds:
 Ammunition Temperature: Ambient Dry Temperature at 1200 Hours:
 Density: Wind: Weather: Fair Range: 100 Yd
 Target Type: 1-1/2" Armor Plate at 30°
 Test Ammunition: Cartridge, Caliber .280 API

HIT NO.	PENETRATION		REMARKS
	Depth	Length	
1	3/16"	3/4"	Core did not remain in plate. Functioned.
2	3/16"	1/2"	Core did not remain in plate. Functioned.
3	3/16"	5/8"	Core did not remain in plate. Functioned.
4	1/8"	5/8"	Core did not remain in plate. Functioned.
5	3/16"	5/8"	Core did not remain in plate. Functioned.
6	3/16"	3/4"	Core did not remain in plate. Functioned.
7	5/32"	2/4"	Core did not remain in plate. Functioned.
8	1/8"	9/16"	Core did not remain in plate. Functioned.
9	3/16"	5/8"	Core did not remain in plate. Functioned.
10	5/32"	3/4"	Core did not remain in plate. Functioned.

Average Width of Crater: 1/4".
 Depth, Average: .138".
 Length, Average: .668".

APPENDIX P

PENETRATION FIRING DATA

Date: 11 April 1950 Time Started: 1500 Time Finished: 1510
 Weapon, Type: T25 Weapon No.: [REDACTED] Rounds:
 Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 52°F
 Density: 1.025 Wind: Calm Weather: Overcast Range: 100 Yd
 Target Type: 1-1/2" Armor Plate at 40°
 Test Ammunition: Cartridge, Caliber .50, Ball, T104

HIT NO.	PENETRATION		REMARKS
	DEPTH	LENGTH	
1	1/16"	1/2"	Core did not remain in plate.
2	1/16"	1/2"	Core did not remain in plate.
3	5/32"	1/2"	Core did not remain in plate.
4	3/64"	7/16"	Core did not remain in plate.
5	1/16"	1/2"	Core did not remain in plate.
6	1/16"	7/16"	Core did not remain in plate.
7	5/32"	1/2"	Core did not remain in plate.
8	1/16"	1/2"	Core did not remain in plate.
9	1/16"	1/2"	Core did not remain in plate.
10	1/16"	1/2"	Core did not remain in plate.

Average Crater Width: 3/8".

Depth, Average: .0578".
 Length, Average: .4875".

APPENDIX P

PENETRATION FIRING DATA

Date: 11 April 1950

Time Started: 1130

Time Finished: 1140

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 100 Yd

Target Type: 1-1/2" Armor Plate at 40°

Test Ammunition: Cartridge, Caliber .50, AP, T93

HIT NO.	PENETRATION		REMARKS
	DEPTH	LENGTH	
1	1/8"	1"	
2	1/8"	7/8"	
3	5/32"	15/16"	
4	5/32"	15/16"	
5	1/8"	7/8"	
6	1/8"	1"	
7	1/8"	3/4"	
8	1/8"	7/8"	
9	1/8"	15/16"	
10	5/32"	3/4"	

Average Width of Crater: 5/16"

Depth, Average: .1347"

Length, Average: .8938"

APPENDIX P

PENETRATION FIRING DATA

Date: 11 April 1950

Time Started: 1145

Time Finished: 1150

Weapon, Type: M25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 100 Yd

Target Type: 1-1/2" Armor Plate at 40°

Test Ammunition: Cartridge, Caliber .50, API, T101

HIT NO.	PENETRATION		REMARKS
	DEPTH	LENGTH	
1	3/32"	5/8"	Functioned
2	3/32"	5/8"	Functioned
3	7/16"	1/2"	Functioned
4	1/8"	5/8"	Functioned
5	3/32"	5/8"	Functioned
6	1/8"	5/8"	Functioned
7	7/16"	5/8"	Functioned
8	3/32"	5/8"	Functioned
9	1/8"	1/2"	Functioned
10	1/8"	5/8"	Functioned

Average crater width: 5/16"

Depth, Average: .1093"

Length, Average: .6000"

APPENDIX B

PENETRATION FIRING DATA

Date: 11 April 1950

Time Started: 1550

Time Finished: 1355

Weapon, Type: M2

Weapon No. ~~XXXXXXXXXX~~

Previous Rounds: ~~XXXXXXXXXX~~

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Rain

Range: 100 Yd

Target Type: 1-1/2" Armor Plate at 40°

Test Ammunition: Cartridge, Caliber .280, Ball

Hit No.	PENETRATION		REMARKS
	DEPTH	LENGTH	
1	1/32"	1/8"	
2	1/32"	1/8"	
3	1/32"	1/8"	
4	1/32"	1/8"	
5	1/32"	1/8"	
6	1/32"	1/8"	
7	1/32"	1/8"	
8	1/32"	1/8"	
9	1/32"	1/8"	
10	1/32"	1/8"	

Average crater width: 1/8"

Depth, Average: .0156"

Length, Average: .1250"

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APPENDIX P

PENETRATION FIRING DATA

Date: 11 April 1950 Time Started: 1325 Time Finished: 1335
Weapon, Type: EM2 Weapon No.: 3 Previous Rounds:
Ammunition Temperature: Ambient Daily Temperature at 1200 hours: 52°F
Density: 1.025 Wind: Calm Weather: ~~██████████~~ Range: 100 Yd
Target Type: 1-1/2" Armor Plate at 40°
Test Ammunition: Cartridge, Caliber .280, AP

HIT NO.	PENETRATION		REMARKS
	DEPTH	LENGTH	
1	3/16"	5/8"	
2	3/16"	3/4"	
3	1/8"	3/8"	
4	1/8"	3/4"	
5	1/8"	5/8"	
6	3/16"	9/16"	
7	1/8"	9/16"	
8	1/8"	5/8"	
9	3/16"	5/8"	
10	5/32"	5/8"	

Average width of crater 1/4"
Depth, Average .1531"
Length, Average .5375"

APPENDIX P

PENETRATION FIRING DATA

Date: 11 April 1950

Time Started: 1340

Time Finished: 1345

Weapon, Type: M2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: ~~Cloudy~~ 100 Yd

Target type: 1-1/2" Armor Plate at 40°

Test Ammunition: Cartridge, Caliber .280, API

HIT NO.	PENETRATION		REMARKS
	DEPTH	LENGTH	
1	3/16"	9/16"	Functioned
2	5/16"	1/2"	Functioned
3	1/4"	9/16"	Functioned
4	1/4"	5/8"	Functioned
5	5/16"	5/8"	Functioned
6	3/16"	5/8"	Functioned
7	7/16"	5/8"	Functioned
8	3/16"	9/16"	Functioned
9	3/16"	5/8"	Functioned
10	1/8"	5/8"	Functioned

Average crater width: 1/4"

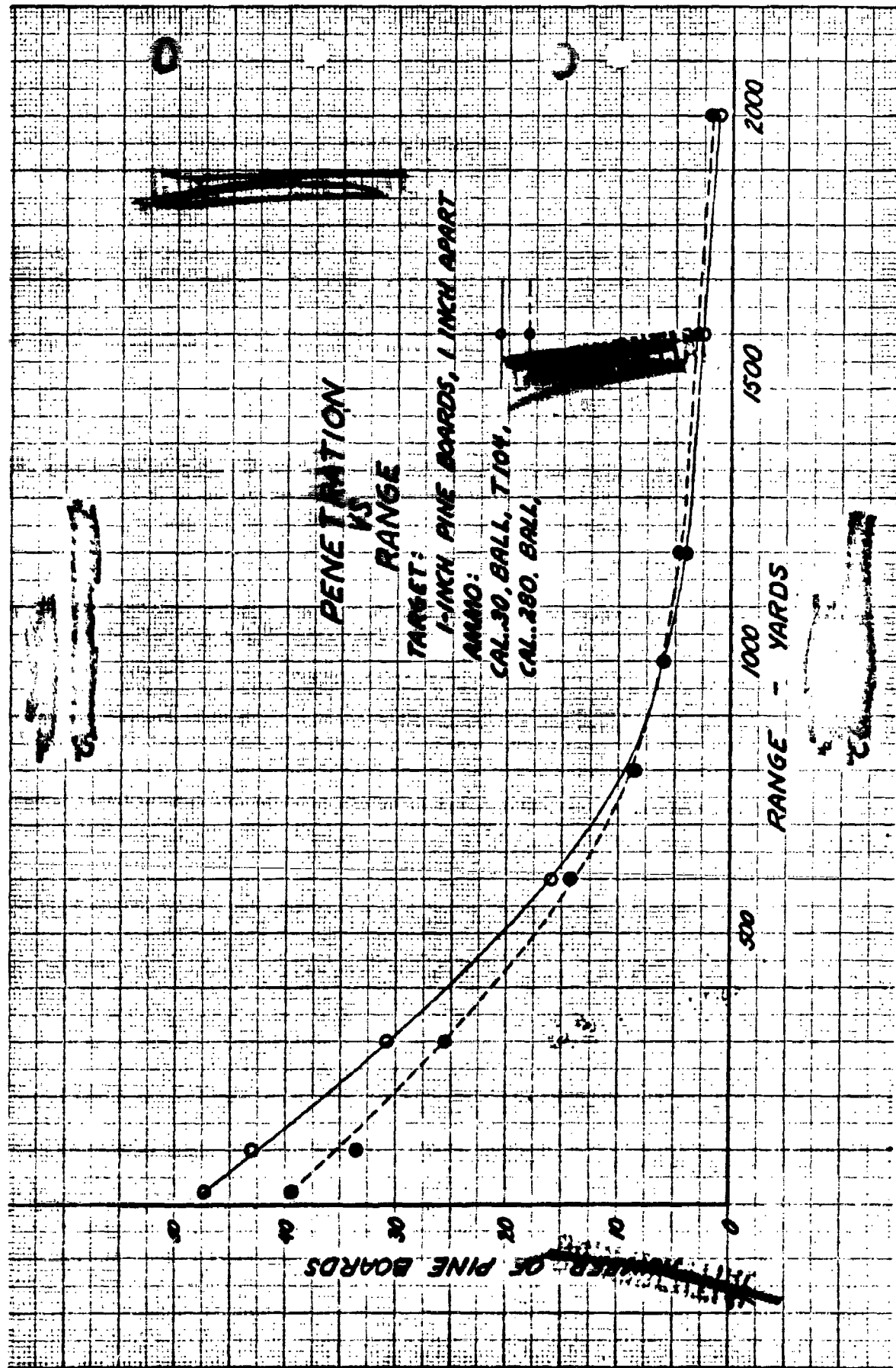
Depth, average: .1656"

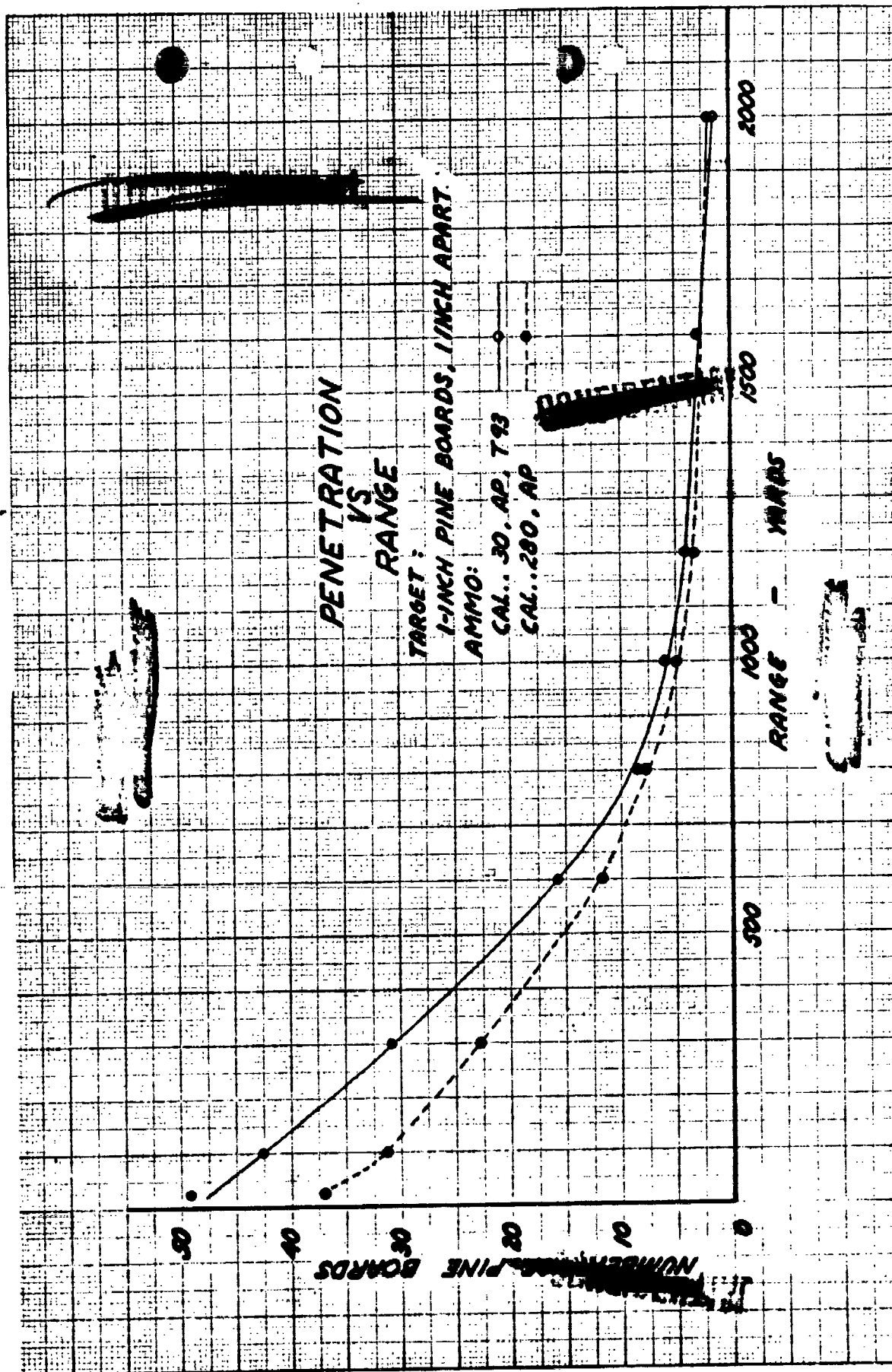
Length, average: .5957"

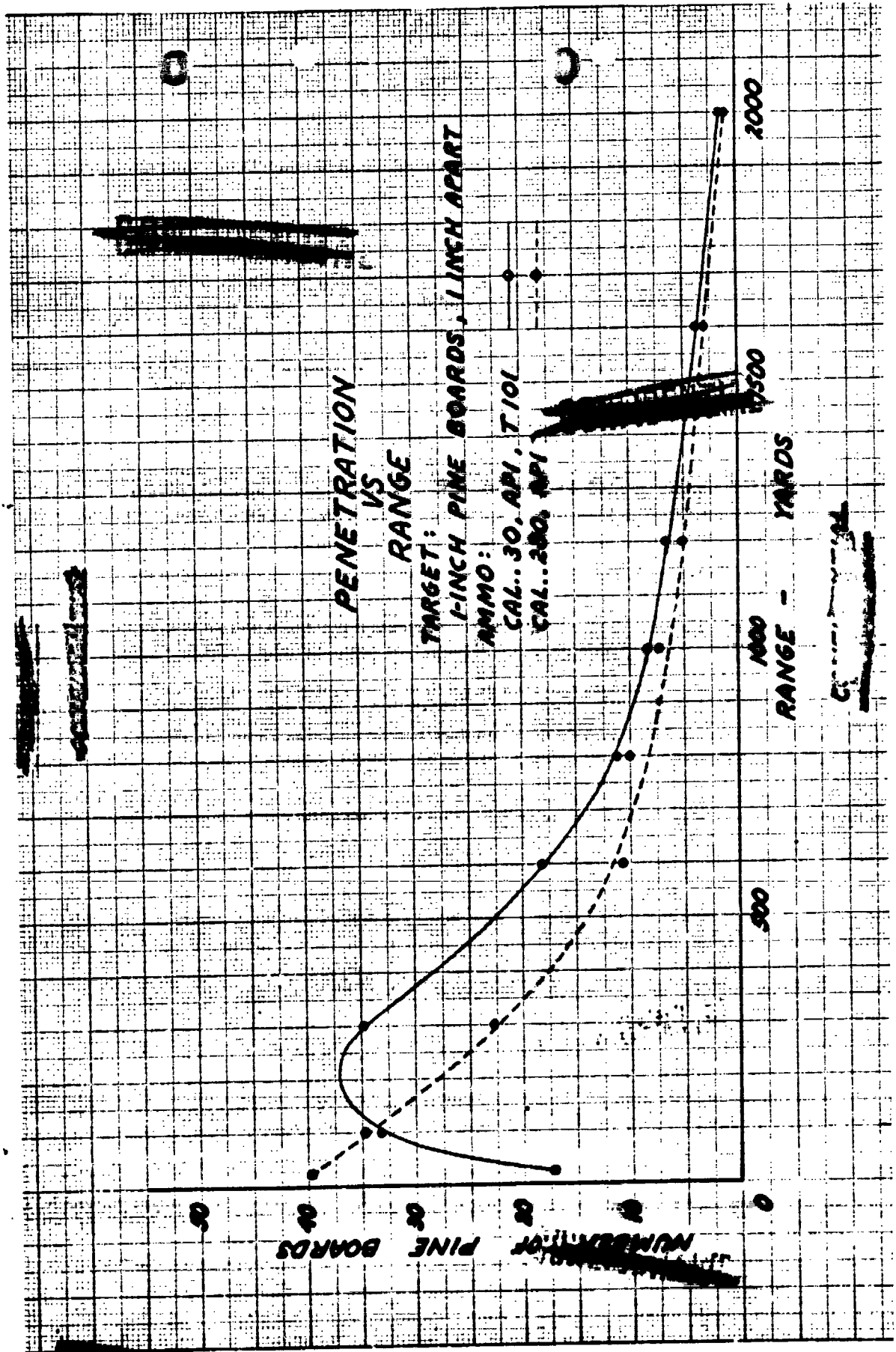
APPENDIX Q

Penetration Curves

(6 curves)







PENETRATION VS RANGE

TARGET:

10-GA. MILD STEEL PLATE

4 INCHES APART

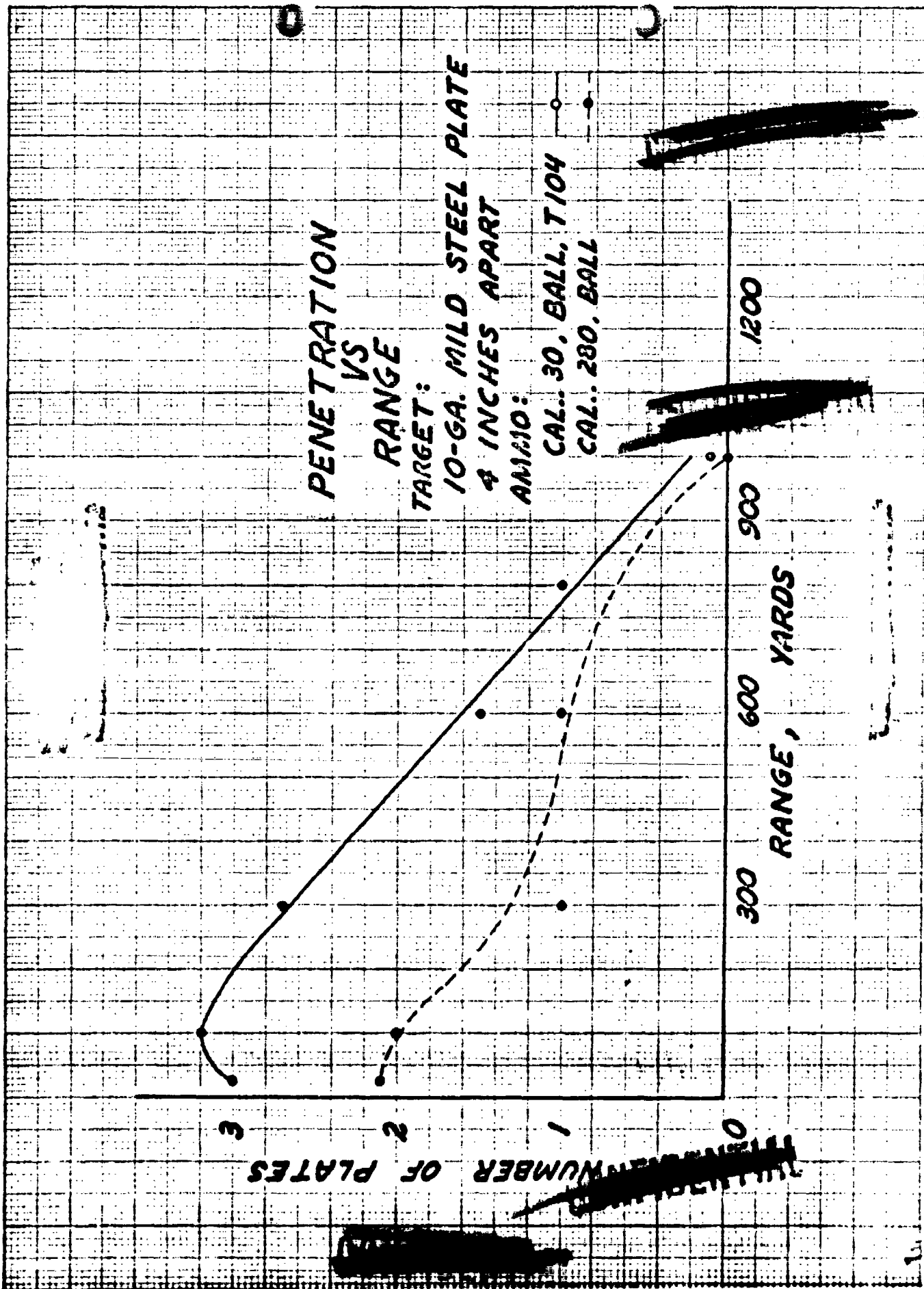
AMMO:

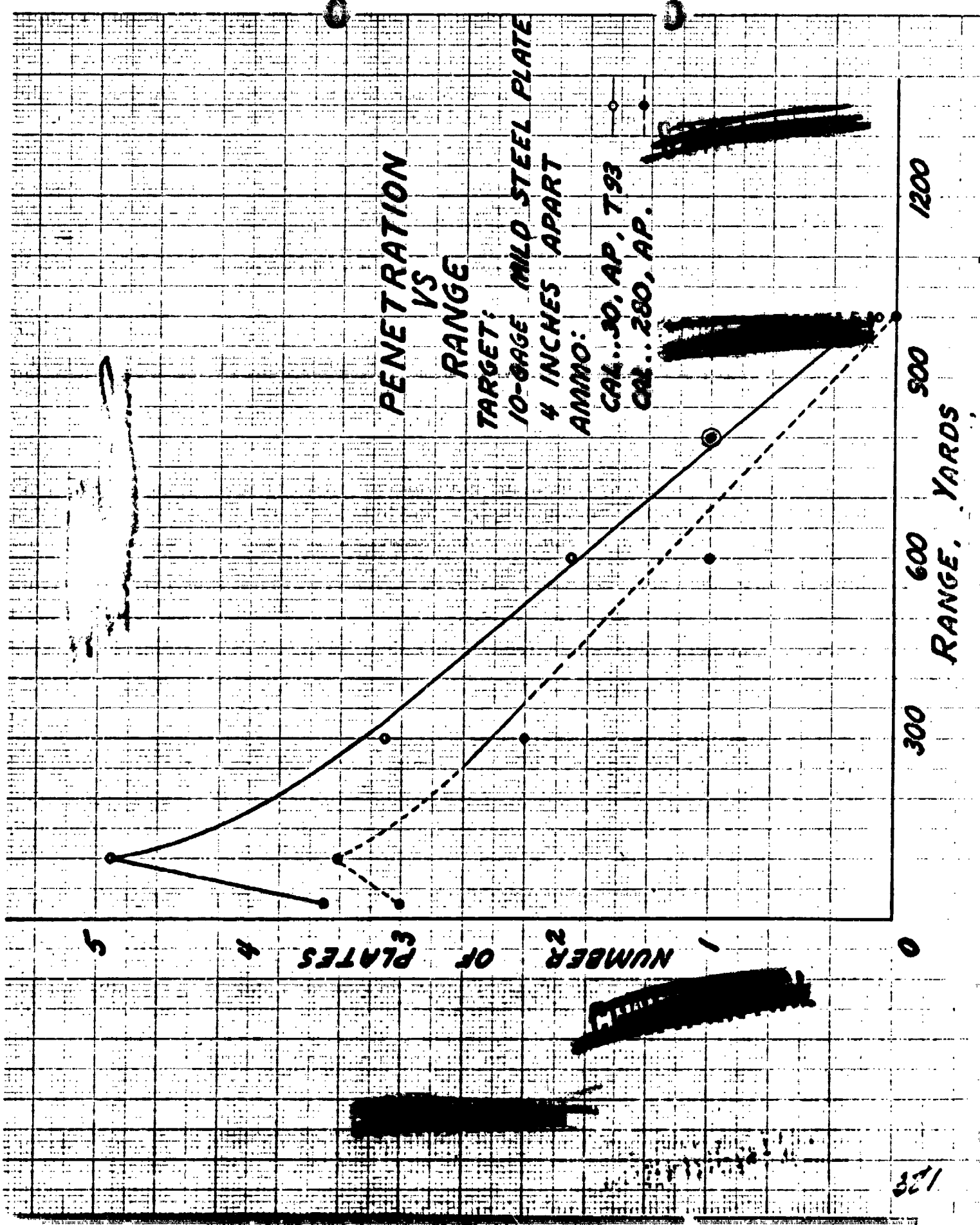
CAL.. 30. BALL, T104

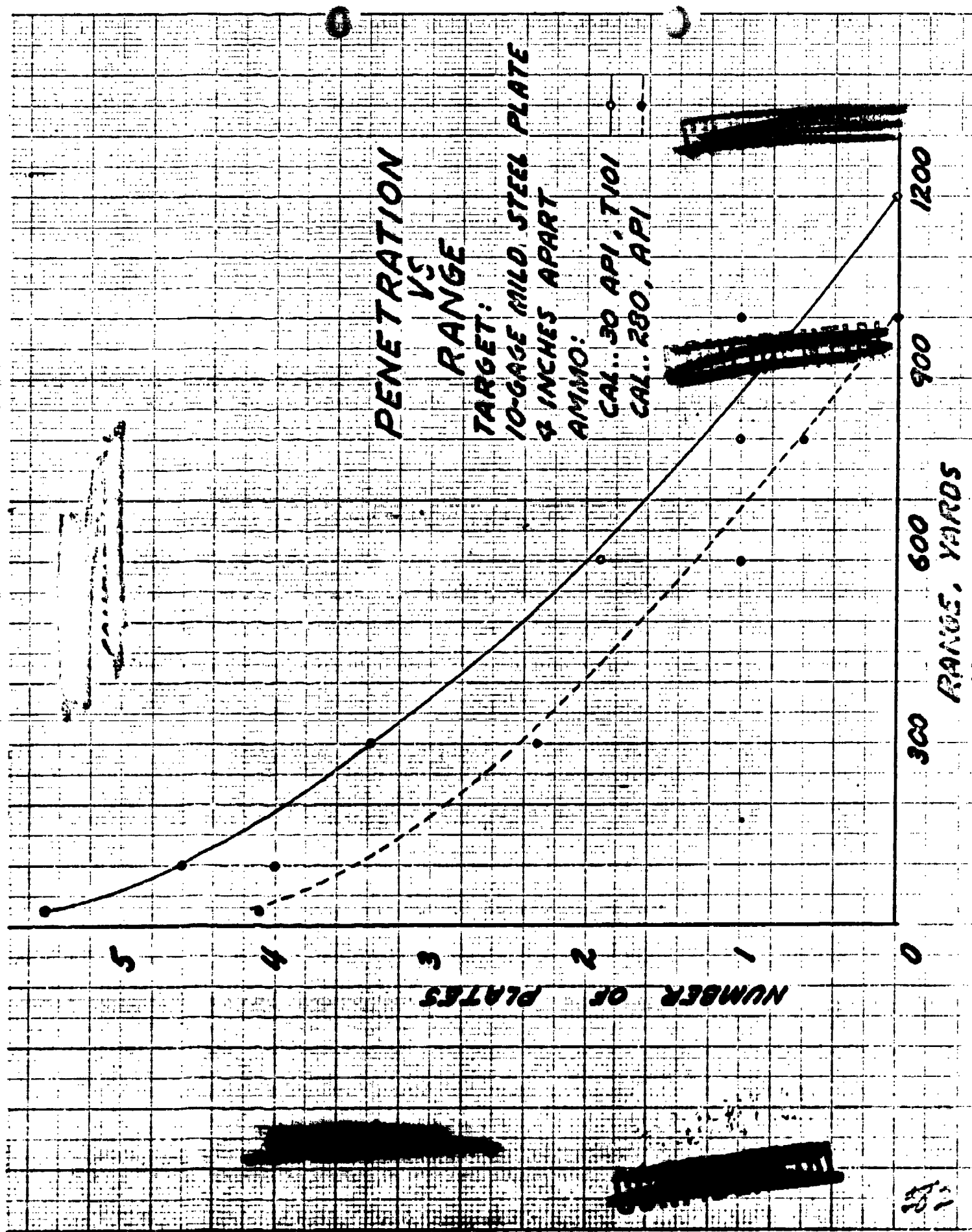
CAL.. 280. BALL

NUMBER OF PLATES

300 600 900 1200
RANGE, YARDS





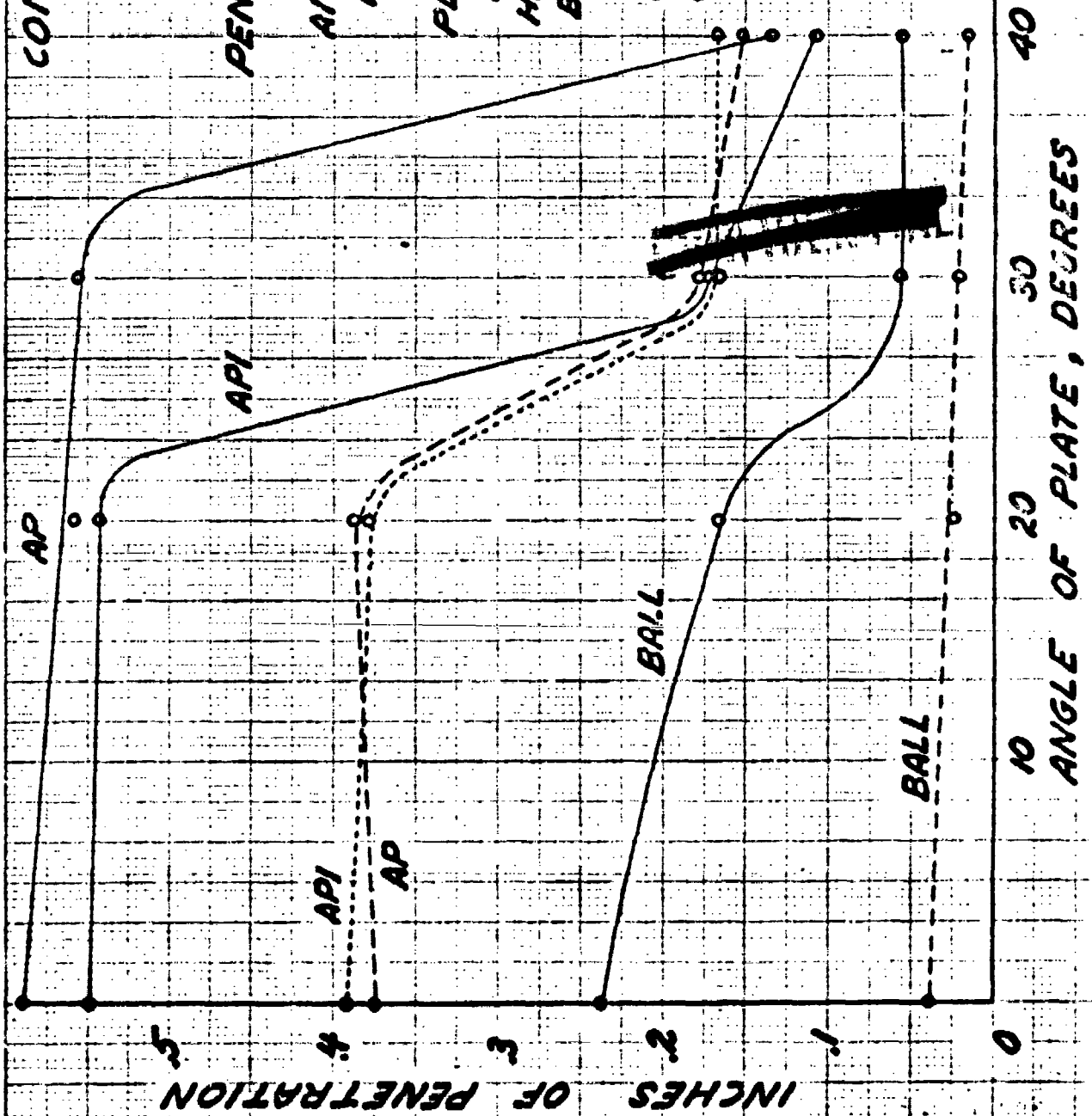


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PENETRATION
VS
ANGLE OF
PLATE

PLATE:
1 1/2-IN. HOMO-
HARD, 286-
BRINELL

AMMO:
CAL..30
CAL..280



10 20 30 40
ANGLE OF PLATE, DEGREES

INCHES OF PENETRATION

CONFIDENTIAL

PENETRATION VS RANGE

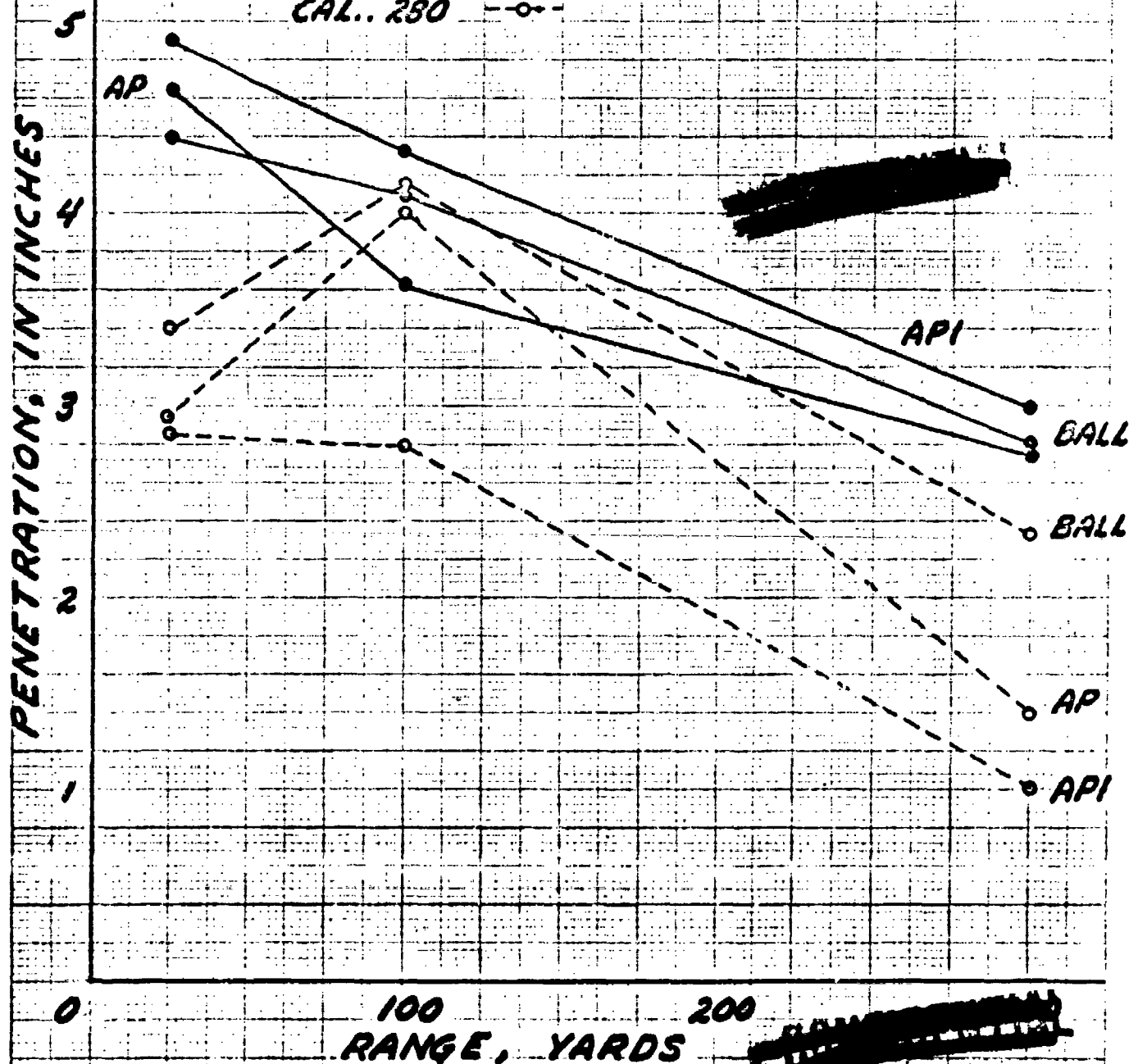
TARGET:

BRICK WALL, 8½-IN. THICK

AMMO:

CAL.. 30

CAL.. 280



APPENDIX R

FIRING DATA FOR OBSERVING AMMUNITION

(8 Sheets)

APPENDIX R

8 May 1950

AMMUNITION: Cartridge, Cal. .30, Spotting, T103, Lot No. 2

WEAPON: Accuracy Barrel No. 5 fitted to 1903 Action No. 1528613

RANGE - 1000 Yards

TARGETS: Brick wall, 8-1/2" thick
Hard cinder road
Sand firing butts
Grassy Field
Scrub Brush

TEMP: 49°F

DENSITY: 1.055

<u>TIME</u>	<u>RD</u>	<u>TARGET HIT</u>	<u>FUNCT.</u>	<u>REMARKS</u>
1030	1	Sand	No	
	2	Sand	No	
	3	Grass	No	
	4	Sand	No	
	5	Grass	No	
	6	Grass	No	
	7	Sand	No	
	8	Sand	No	
	9	Sand	No	
	10	Sand	No	
	11	Sand	No	
	12	Grass	No	
	13	Sand	OK	Smoke not visible from gun.
	14	Sand	OK	" " " " "
	15	Sand	No	
	16	Grass	No	
	17	Grass	No	
	18	Grass	OK	Smoke not visible at gun.
	19	Brush	No	
	20	Brush	No	
	21	Road	No	
	22	Road	No	
	23	Grass	No	
	24	Wood	No	
	25	Sand	No	

APPENDIX R

<u>TIME</u>	<u>HD</u>	<u>TARGET HIT</u>	<u>FUNCT.</u>	<u>REMARKS</u>
26		Brick	OK	Large flash and smoke.
27		Sand	No	
28		Brush	No	
29		Sand	No	
30		Brick	No	
31		Brick	OK	Large flash and smoke.
32		Brush	No	
33		Sand	No	
34		Lost		
35		Road	No	
36		Grass	No	
37		Brick	OK	Large flash and smoke.
38		Brick	OK	" " " "
39		Grass	No	
40		Brick	OK	Large flash and smoke
41		Grass	No	
42		Road	No	
43		Grass	No	
44		Road	OK	Good flash.
45		Brick	OK	" "
46		Brick	OK	" "
47		Road	No	
48		Grass	No	
49		Brick	OK	Good flash
50		Brick	OK	" "
51		Sand	No	
52		Brick	OK	Good flash.
53		Brick	OK	" "
54		Brick	OK	" "
55		Brick	OK	" "
56		Brick	OK	" "
57		Grass	No	
58		Brick	OK	Good flash.
59		Brick	OK	" "
60		Road	OK	No flash.
61		Road	No	
62		Road	No	
63		Road	No	
64		Road	OK	No flash.
65		Sand	No	
66		Brick	OK	No flash

APPENDIX R

<u>TIME</u>	<u>RD</u>	<u>TARGET HIT</u>	<u>FUNCT.</u>	<u>REMARKS</u>
67		Sand	No	
68		Brick	No	
69		Road	OK	Fair flash.
70		Brick	OK	Large flash.
71		Brick	OK	" "
72		Brick	OK	" "
73		Grass	No	
74		Brick	OK	Large flash.
75		Grass	No	
76		Brick	OK	Large flash.
77		Brick	OK	" "
78		Road	No	
79		Brick	OK	Large flash.
80		Road	OK	Good flash.
81		Road	No	
82		Grass	No	
83		Brush	No	
84		Brush	No	
85		Brush	No	
86		Road	OK	Functioned after ricochet.
87		Brick	OK	Good flash.
88		Road	No	
89		Grass	No	
90		Grass	No	
91		Road	No	
92		Grass	No	

APPENDIX B

FIRING DATA

AMMUNITION: Cartridge, S.A., Cal. .280, Observing Lot 17A

GUN: Mamm Barrel, 450/3, fitted to a P-17 Receiver

RANGE - 1000 Yards

TEMP - 45° F

DENSITY - 1.062

TARGETS: Brick wall, 8-1/2" thick
Hard Cinder Road
Sand Firing Butt
Small Scrub Brush
Grassy Field

<u>TIME</u>	<u>RD</u>	<u>TARGET</u> <u>STRUCK</u>	<u>FUNCTION</u>	<u>REMARKS</u>
0925	1	Locaters		
	2	"		
	3	Grass	OK	Small flash.
	4	Lost		
	5	Sand	OK	No flash, little smoke.
	6	Brick	OK	Good flash and smoke.
	7	Grass	OK	No flash.
	8	Brick	OK	Good flash and smoke.
	9	Brick	OK	" " " "
	10	Brick	OK	Small flash and smoke.
	11	Brick	OK	Good flash and smoke.
	12	Brick	OK	" " " "
	13	Grass	No	
	14	Brick	OK	Good flash.
	15	Grass	OK	" "
	16	Road	OK	" "
	17	Road	OK	" "
	18	Wood	OK	" "
	19	Brick	OK	" "
	20	Brick	OK	" "
	21	Brick	OK	" "
	22	Brick	OK	" "
	23	Brick	OK	" "

APPENDIX R

<u>TILE</u>	<u>RD</u>	<u>TARGET</u> <u>STPUCK</u>	<u>FUNCTION</u>	<u>REMARKS</u>
24		Brick	OK	Good flash.
25		Brick	OK	" "
26		Brick	OK	" "
27		Grass	OK	No flash.
28		Grass	No	Little flash.
29		Brick	OK	Good flash.
30		Road	No	
31		Grass	OK	No flash.
32		Grass	OK	Little flash.
33		Road	No	Good flash.
34		Grass	OK	" "
35		Road	OK	Little flash.
36		Grass	OK	
37		Road	OK	
38		Grass	OK	Very little, not visible at 1000 yards.
39		Road	No	
40		Lost	—	
41		Road	No	
42		Lost	—	
43		Road	OK	No flash.
44		Grass	OK	Little flash.
45		Grass	No	
46		Road	OK	No flash.
47		Brick	OK	Good flash.
48		Grass	No	Little flash.
49		Grass	No	
50		Grass	OK	No flash.
51		Grass	No	
52		Brick	OK	Little flash.
53		Grass	OK	" "
54		Grass	OK	" "
55		Road	No	" "
56		Grass	OK	Good flash.
57		Grass	OK	" "
58		Grass	OK	
59		Grass	OK	
60		Wood	OK	
61		Road	OK	
62		Brush	No	
63		"	No	
64		Lost		
65		Lost		

APPENDIX

<u>FILE</u>	<u>RD</u>	<u>TARGET HIT</u>	<u>FUNCTION</u>	<u>REMARKS</u>
	66	Brush	No	
	67	"	No	
	68	"	No	
	69	"	No	
	70	"	OK	
	71	"	OK	
	72	Lost		
	73	Brush	No	
	74	Brush	No	
	75	Sand	OK	
	76	Sand	OK	
	77	Sand	OK	
	78	Sand	OK	
	79	Sand	OK	
	80	Sand	No	
	81	Missile Burst		
	82	Sand	OK	
	83	Sand	OK	
	84	Sand	OK	
	85	Sand	OK	
	86	Sand	OK	Visible at 1000 yards
	87	Sand	OK	
	88	Sand	OK	

APPENDIX R

FIRING DATA

AMMUNITION: Cartridge, 7.92 mm, Spotting.

WEAPON: 7.92 mm Rifle

RANGE: 1000 Yards

TARGETS: Brick wall, 8-1/2" thick
Sand Firing Butts
Hard Cinder Road
Scrub Brush
Grassy Field

TEMP: 53°F

DENSITY: 1.047

<u>TIME</u>	<u>RD</u>	<u>TARGET HIT</u>	<u>FUNCTION</u>	<u>REMARKS</u>
1215	1	Sand	OK	Visible from gun.
	2	"	"	" " "
	3	"	"	" " "
	4	"	"	" " "
	5	"	"	" " "
	6	"	"	" " "
	7	"	"	" " "
	8	"	"	" " "
	9	"	"	" " "
	10	"	"	" " "
	11	Grass	"	Good flash and good smoke.
	12	Road	"	" " " " "
	13	Grass	"	" " " " "
	14	Road	"	" " " " "
	15	Road	"	" " " " "
	16	Grass	"	" " " " "
	17	Grass	"	" " " " "
	18	Brick	"	" " " " "
	19	Brick	"	" " " " "
	20	Road	"	" " " " "
	21	Road	"	" " " " "

APPENDIX R

<u>TIDE</u>	<u>RD</u>	<u>TARGET HIT</u>	<u>FUNCTION</u>	<u>REMARKS</u>
	22	Brick	OK	Good flash and smoke.
	23	"	"	" " " "
	24	"	"	" " " "
	25	Road	"	" " " "
	26	Wood	"	" " " "
	27	Brick	"	" " " "
	28	"	"	" " " "
	29	"	"	" " " "
	30	Grass	"	" " " "
	31	"	"	" " " "
	32	Road	"	" " " "
	33	Grass	"	" " " "
	34	Brick	"	" " " "
	35	Road	"	" " " "
	36	Grass	"	" " " "
	37	Brick	"	" " " "
	38	Road	"	" " " "
	39	Grass	"	" " " "
	40	Road	"	" " " "
	41	Brush	"	Good smoke.
	42	Brush	"	" "
	43	Brush	No	
	44	Brush	OK	Good smoke.
	45	Brush	"	" "
	46	Brush	No	
	47	Brush	"	
	48	Brush	OK	Good smoke.
	49	Brush	"	" "
	50	Brush	No	
	51	Road	OK	Good flash and smoke.
	52	Road	"	" " " "
	53	Road	"	" " " "

APPENDIX S

Complete Velocity Data of Rifles

(17 sheets)

APPENDIX S

VELOCITY TEST

Date: 27 February 1950

Time Started: 1055

Time Finished: 1115

Caliber Receiver No.: 10

Barrel No. ~~1001~~ Previous Rounds: 117

Ammunition Temperature: 70°F

Range Temperature: 23°F

Density: 1.113

Chronograph Type: Counter

Initiator Type: Luciline

Test Ammunition: Cartridge, Ball, Caliber .30, 1104, Lot WAX-30-1388
Rifle, Lightweight, Caliber .30, T25

ROUND NO.

INSTANTANEOUS VELOCITY AT 70', fms

PRESSURE, psi

1	2759
2	2756
3	2745
4	2728
5	2702
6	2717
7	2712
8	2719
9	2726
10	2750
11	2761
12	2709
13	2706
14	2733
15	2732
16	2717
17	2737
18	2745
19	2695
20	2735
21	2750
22	2775

Rounds 1, 2 - Warmers.

APPENDIX S

VELOCITY TEST

Caliber .30 Rifle, T-25

Date: 17 April 1950

Time Started: 1325

Time Finished: 1345

Receivable No.: 10

Barrel No.: 10

Propellant Rounds: 707

Ambient Temperature: +70°F

Range Temperature: +69°F

Density: 1.058

Chronograph Type: Sinter

Initiator Type: Lumiline

Test Ammunition: Cartridge, Ball, Caliber .30, T104, Lot FAX-50-1558

ROUND NO.

INSTANTANEOUS VELOCITY AT 780, FPS

PRESSURE, psi

1	2677
2	2777
3	2773
4	2727
5	2728
6	2705
7	2719
8	2725
9	2732
10	2732
11	2723
12	2733
13	2702
14	2753
15	2728
16	2753
17	2752
18	2752
19	2775
20	2759
21	2772
22	2761
23	2722
24	2752
25	2759

Rounds 1-5 - Warmers.

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APPENDIX S

VELOCITY TEST Caliber .30 Rifle, T- 25

Date: 17 February 1950

Time Started: 0901

Time Finished: 0927

RECEIVER Receiver No.: 14

Barrel No.: 14

Range Rounds: 7

Atmosphere temperature: 73°F

Range Temperature: 38°F

Density: 1.074

Chronograph Type: Counter

Initiator Type: Lumiline

Test Ammunition: Cartridge, Ball, Caliber .30, T104, Lot No. FA130-1358

Range, yds.

INSTANTANEOUS VELOCITY AT 73°F, fps

PRESSURE, psi

1	2700
2	2725
3	2684
4	2638
5	2702
6	2600
7	2651
8	2671
9	2660
10	2662
11	2668
12	2650
13	2643
14	2671
15	2660
16	2723
17	2742
18	2680
19	2705
20	2697

APPENDIX S

VELOCITY TEST

Caliber .30 Rifle, T-25

Date: 7 March 1950

Time Started: 1030

Time: 1050

Receiver No.: 11

Barrel No.: 1

Rounds: 615

Ambient Temperature: 70°F

Range Temperature: 35°F

Density: 1.105

Initiator Type: Lucifine

Initiator Type: Lucifine

Cartridge: Ball, Caliber .30, T104, Lot F-100-1558.

ROUND NO.

INSTANTANEOUS VELOCITY AT 700 YDS

PRESSURE, psi

1	2667
2	2661
3	2647
4	2670
5	2664
6	2666
7	2666
8	2667
9	2662
10	2667
11	2662
12	2667
13	2660
14	2663
15	2663
16	2667
17	2673
18	2678
19	2671
20	2664
21	2655
22	2667
23	2668
24	2662
25	2627

Rounds 1-5 - Warmers.

APPENDIX S

VELOCITY TEST

Caliber .30 Rifle, T-25

Date: 17 February 1950

Time Started: 0901

Time Finished: 0927

Receiver No.: 15

Barrel No.: 15

Previous Rounds: 9

Atmospheric Temperature: 70°F

Range Temperature: 28°F

1.074

Chronograph Type: Counter

Initiator T-25

Lumiline

Test Ammunition: Cartridge, Ball, Caliber .30, T104, FMRC-1358.

ROUND NO.

INSTANTANEOUS VELOCITY AT 78', fps

PRESSURE, psi

1	2677
2	2654
3	2674
4	2668
5	2654
6	2671
7	2717
8	2637
9	2662
10	2660
11	2671
12	2643
13	2630
14	2673
15	2640
16	2677
17	2661
18	2651
19	2664
20	2685

APPENDIX S

VELOCITY TEST

Caliber .30 Rifle, T-25

Date: 17 March 1950

Time Started: 1339

Time Finished: 1400

Receiver No.: 15

Barrel No.: [REDACTED]

Previous Rounds: 6398

Ambient Temperature: 70°F

Range Temperature: 49°F

Density: 1.054

Chronograph Type: Counter

Initiator Type: Lumiline

Test Ammunition: Corbin's, Ball, Caliber .30, T164, Lot FA130-1358.

ROUND NO.

AMBIENT VELOCITY AT 70', f/s

PRESSURE, psi

1	2726
2	2714
3	2709
4	2688
5	2680
6	2711
7	2637
8	2674
9	2716
10	2714
11	2684
12	2711
13	2684
14	2711
15	2698
16	2687
17	2682
18	2678
19	2711
20	2695

APPENDIX S

VELOCITY TEST

Caliber .230 Rifle EM-2

Date: 27 February 1950

Time Started: 1135

Time Finished: 1150

WAI M&M Receiver No.: 3

Barrel No.: 3

Previous Rounds: 242

Atmosphere Temperature: 70°F

Range Temperature: ~~70°F~~

Density: 1.115

Chronograph Type: Counter

Chronograph Type: Lumiline

Test Ammunition: Carbine, .230, Lot 19A.

Automatic Rifle, Caliber .230, EM-2

ROUND NO.

INSTANTANEOUS VELOCITY AT 76', fms

PRESSURE, psi

1	2231
2	2233
3	2273
4	2272
5	2242
6	2231
7	2214
8	2211
9	2179
10	2214
11	2173
12	2200
13	2210
14	2207
15	2222
16	2130
17	2214
18	2170
19	2197
20	2211
21	2190
22	2246
23	2186

Rounds 1-3 - Warmers.

APPENDIX 3

VELOCITY TEST

Date: 17 April 1959

Time Started: 1350

Time Finished: 1410

Universal Receiver No.: EM2 No. 3 Barrel No.: EM2 No. 3 Previous Rounds: 1006

Ambient Temperature: 78°F Baro Temperature: 78°F Density: 1.038

Chronograph Type: Counter

Initiator Type: Luciline

Test Ammunition: Cartridge, SA, Ball, Caliber .280, Lot 19A.

ROUND NO.

INITIAL VELOCITY AT 75', fps

PRESSURE, psi

1	2260
2	2326
3	2355
4	2302
5	2197
6	2113
7	2179
8	2177
9	2197
10	2146
11	2142
12	2142
13	2138
14	2105
15	2111
16	2255
17	2131
18	2175
19	2105
20	2145
21	2129
22	2136
23	2109
24	2191
25	2214

Rounds 1-5 - Warmers.

APPENDIX S

VELOCITY TEST Caliber .280 Automatic, EM-2

Date: 17 February 1950 Time Started: 1135 Time Finished: 1200
Receiver No.: 6 Barrel No.: 6 Previous Rounds: 7
Ambient Temperature: 70°F Range Temperature: 37°F Velocity: 1,000 ft/sec
Chronograph Type: Counter Initiator: ~~Electric~~
Cartridge: Cartridge, SA, Caliber .280, Lot 19A.

<u>ROUND NO.</u>	<u>INSTRUMENTAL VELOCITY AT 73', f.p.s.</u>	<u>PRESSURE, psi</u>
1	2214	
2	2234	
3	2230	
4	2242	
5	2189	
6	2226	
7	2230	
8	2230	
9	2214	
10	2210	
11	2205	
12	2193	
13	2211	
14	2157	
15	2212	
16	2211	
17	2236	
18	2176	
19	2227	
20	2242	

APPENDIX S

VELOCITY TEST

Caliber .230 Rifle, FM-2

Date: 7 March 1950

Time Started: 0928

Time Finished: 0945

Receiver No.: 6

Barrel No.: 6

Previous Rounds: 410

Ambient Temperature: 70°F

Range Temperature: [REDACTED] Velocity: 1.103

Chronograph Type: Counter

Initiator Type: Lumiline

Test Ammunition: Cartridge, Ball, Caliber .230, Lot 191.

Round No.

DIFFERENTIAL VELOCITY AT 701, Fps

PRESSURE, psi

1	2198
2	2205
3	2235
4	2258
5	2261
6	2201
7	2213
8	2232
9	2183
10	2212
11	2233
12	2219
13	2224
14	2193
15	2198
16	2225
17	2168
18	2193
19	2213
20	2203
21	2214
22	2150
23	2196
24	2177
25	2203

Rounds 1-5 - Warmers.

APPENDIX S

VELOCITY TEST Caliber .280 Auto-rifle, EM-2

Date: 17 February 1950

Time Started: 1317

Time Finished: 1444

Receiver No.: 8

Barrel No.: 8

Previous Rounds: 10

Atmospheric Temperature: 70°F

Target Temperature: 59°F

Humidity: 1.074

Chronograph Type: Counter

Initiator: ~~Pyrotechnic~~ Auxiliary

Test Ammunition: Cartridge, OA, Caliber .280

NO. OF

VELOCITY MEASUREMENTS AT 700 YDS

PRESSURE, psi

1	2356
2	2291
3	2283
4	2237
5	2245
6	2197
7	2237
8	2245
9	2205
10	2195
11	2210
12	2191
13	2197
14	2230
15	2176
16	2214
17	2189
18	2204
19	2182
20	2162

APPENDIX 9

VELOCITY TEST Caliber .280, Auto-rifle, EM-2

Date: 27 February 1950

Time Started: 1030

Time Finished: 1050

U.S. Army Ordnance No.: 8

Barrel No.: 8

Previous Rounds: 1278

Ambient Temperature: 70°F

Range Temperature: 20°F

Density: 1.113

Counter Type: Counter

Initial Pressure: ~~2200~~ 2200

Cartridge: .280, Caliber .280, Lot 191.

ROUND NO.

INSTANTANEOUS VELOCITY AT 78', fps

PRESSURE, psi

1	2213
2	2213
3	2206
4	2200
5	2201
6	2200
7	2207
8	2201
9	2203
10	2201
11	2200
12	2202
13	2170
14	2200
15	2209
16	2184
17	2193
18	2211
19	2187
20	2183
21	2191
22	2208
23	2190

Rounds 1-3 - Warners.

APPENDIX 5

VELOCITY TEST

Caliber .280. Auto-rifle, EM-2

Date: 17 March 1950

Time Started: 1311

Time Finished: 1331

Receivable Receiver No.: 8

Barrel No.: 8

Previous Rounds: 6599

Ambient Temperature: +70°F

Range Temperature: +48°F

Barometric Pressure: 1.054

Chronograph Type: Counter

Initiator Type: ~~XXXXXXXXXX~~

Test Condition: Cartridge, SA, Ball

Round

MEAN VELOCITY IN FPS AT 750 YDS

PRESSURE, psi

1	2247
2	2225
3	2197
4	2193
5	2151
6	2137
7	2135
8	2121
9	2177
10	2175
11	2175
12	2173
13	2174
14	2179
15	2190
16	2208
17	2214
18	2187
19	2173
20	2167

APPENDIX S

VELOCITY TEST

Caliber .280, Auto-rifle, FN

Date: 17 February 1950

Time Started: 1046

Time Finished: 1107

Receiver No.: 6

Barrel No.: ~~XXXXXXXXXX~~

Previous Rounds: 7

Ambient Temperature: 70°F

Range Temperature: 37°F

Density:

Chronograph Type: Counter

Initiator Type: Lamaline

Cartridge: Cartridge, 28, Caliber .280, Lot 19

Auto Rifle, Caliber .280, FN (Load Model)

ROUND

MEASURED VELOCITY AT 70', fps

PRESSURE, psi

1	2274
2	2273
3	2236
4	2252
5	2201
6	2232
7	2240
8	2217
9	2243
10	2175
11	2252
12	2243
13	2222
14	2215
15	2213
16	2213
17	2260
18	2251
19	2240
20	2216

APPENDIX S

VELOCITY TEST Caliber .280, Auto-rifle, FN

Date: 17 March 1950

Time Started: 1245

Time Finished: 1305

Receiver No.: 6

Barrel No.: 6

Previous Rounds: 478

Ambient Temperature: +70°F

Range Temperature: +63°F

Density: 1.004

Chronograph Type: Counter

Initiator Type: Lumine

Test Ammunition: Cartridge, 28, Ball, Caliber .280, Lot No. 19A.

ROUND NO.

MEASURED VELOCITY AT 751, fps

PRESSURE, psi

1	2180
2	2228
3	2199
4	2213
5	2169
6	2189
7	2196
8	2187
9	2195
10	2211
11	2216
12	2201
13	2171
14	2187
15	2229
16	2196
17	2152
18	2256
19	2173
20	2214

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APPENDIX 9

VELOCITY TEST

Caliber .380 Auto-rifle, FM

Date: 17 February 1950

Time Started: 1111

Time Finished: 1131

Receiver No.: 7

Previous Rounds: 7

Condition Temperature: 60°F

Range Temperature: 37°F

Density:

Chronograph Type: Counter

Initiator Type: Lumiline

Test Ammunition: Cartridge, SA, Caliber .280, Lot 19

ROUND NO.

MEASURED INITIAL VELOCITY AT 70', fps

PRESSURE, psi

1	2245
2	2244
3	2251
4	2244
5	2244
6	2246
7	2244
8	2257
9	2254
10	2242
11	2233
12	2220
13	2226
14	2275
15	2223
16	2259
17	2230
18	2240
19	2232
20	2256

APPENDIX S

VELOCITY TEST Caliber .240, Auto-rifle, FN

Date: 7 March 1950

Time Started: 0909

Time Finished: 0923

Receiver No.: 7

Barrel No.: 7

Number of Rounds: 25

Ambient Temperature: 63°F

Barrel Temperature: 154°F

Humidity: 1.103

Chronograph Type: Counter

Initiator Type: Lamiline

Test Ammunition: Cartridge, Ball, Caliber .240, Lot 19A.

ROUND NO.

MEASURED VELOCITY AT 721, FPS

PRESSURE, PSI

1	2236
2	Lost
3	2258
4	2206
5	2233
6	2186
7	2180
8	2193
9	2190
10	2197
11	2211
12	2205
13	2198
14	2193
15	2191
16	2198
17	2227
18	2194
19	2197
20	2250
21	2162
22	2194
23	2160
24	2210
25	2197

Rounds 1-5 - Warmers.

APPENDIX T

Machine Gun Firing Data and Velocities

(8 sheets)

~~CONFIDENTIAL~~

APPENDIX T

FUNCTION AND VELOCITY FIRING OF AP, BALL, API AND SPOTTING CARTRIDGES

18 April 50

Temp: 74°

Density: 1.028

Weapon: Gun, Machine, Caliber .280, M1919A1, No. OW 4966

Barrel No. 3. Previous Rounds: Approximately 5000

<u>TIME</u>	<u>ROUNDS</u>	<u>AMMUNITION</u>	<u>REMARKS</u>
1110	20	Caliber .280, Ball, Lot 19A	Function velocity screens.
1115	20	Caliber .280, Ball, Lot 19A	Function velocity screens.
1125	20	Caliber .280, Ball, Lot 19A	Fired to determine velocity from barrel No. 3. (Penetration barrel)
1310	25	Linked, 4 Ball 1 API	Function - OK. No muzzle flashes or bursts.
1310 1/2	25	Linked, 4 Ball 1 API	Function - OK.
1311	25	Linked, 4 Ball 1 API	Function - OK.
1311 1/2	25	Linked, 4 Ball 1 API	Function - OK.
1312	25	Linked, 4 Ball 1-OBS	1 FF
1312 1/2	25	Linked, 4 Ball 1-OBS	Function - OK.
1313	25	Linked, 4 Ball 1-OBS	Function - OK.
1313 1/2	25	Linked, 4 Ball 1-OBS	1 FF

APPENDIX T

<u>TIME</u>	<u>ROUNDS</u>	<u>AMMUNITION</u>	<u>REMARKS</u>
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Barrel cooled 2 minutes.

1315 1/2	145	4 Ball, 1 API	Function - OK.
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Barrel cooled 4 minutes.

1319 1/2	150	4 Ball, 1 OBS	Function - OK.
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On above firing no muzzle bursts of either API or OBS cartridge were observed. On several rounds muzzle flashes occurred; however, it was felt this was due to barrel erosion. To corroborate this, one 100 round burst of ball ammunition, Lot 19A was fired through the same barrel.

1321 1/2	100	Ball, Lot 19A	Function - OK. Serious muzzle flash.
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1450	100	Linked, 4 Ball 1 OBS	Fired from Barrel No. 4. No muzzle bursts or flashes occurred. Function - OK.
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Weapon: Gun, Machine, Caliber .30, M1919A4, No. 39252. Barrel No. 3.

18 April 1950 Temp: 74°F

1350	25	Ball, Lot FA- X30-1358	Fired for velocity check of barrel 3. (Penetration)
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1352	25	Ball, Lot FA- X30-1358	Fired for velocity check of barrel 3. (Penetration)
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1400	25	Linked, 4 AP and 1 API	Function - OK. No muzzle bursts.
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1400 1/2	25	Linked, 4 AP and 1 API	Function - OK. No muzzle bursts.
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1401	25	Linked, 4 AP and 1 API	Function - OK. No muzzle bursts.
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1401 1/2	25	Linked, 4 AP and 1 API	Function - OK. No muzzle bursts.
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APPENDIX T

<u>TIME</u>	<u>ROUNDS</u>	<u>AMMUNITION</u>	<u>REMARKS</u>
1402	25	Linked, 4 AP to 1 Spotting	Function - OK. No muzzle bursts.
1402 1/2	25	Linked, 4 AP to 1 Spotting	Function - OK. No muzzle bursts.
1403	25	Linked, 4 AP to 1 Spotting	Function - OK. No muzzle bursts.
1403 1/2	25	Linked, 4 AP to 1 Spotting	Function - OK. No muzzle bursts
1405 1/2	150	Linked, 4 AP to 1 API	Function - OK. No muzzle bursts
1409 1/2	120	Linked, 4 AP to 1 Spotting	Function - OK. No muzzle bursts

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APPENDIX T

MACHINE GUN VELOCITIES

Instrumental velocities at 78' of ball ammunition fired from M1919A4 machine gun barrels used throughout penetration test.

Gun: Machine, caliber .30, M1919A4, No. 39252
Barrel No. 3. Previous Rounds 6273.
Ammunition Cartridge Ball, caliber .30, T104 Lot No. FA-X30-1358.
Chronograph: Machine Gun Counter
Initiators: Lumiline Screens at 53 and 103 feet from the gun muzzle.
Velocity is given in feet per second

Burst Velocity Data

Date: 18 April 1950

Barrel No. 3

Burst No. 1 Rounds 6274-6298, 704 rounds per minute.

Velocity: 2728, 2665, 2662, 2684, 2672, 2682, 2653, 2684, 2681, 2687, 2644, 2693, 2682, 2675, 2716, 2682, 2662, 2670, 2701, 2694, 2667, 2700, 2691, 2706, 2700.

Burst No. 2 rounds 6299-6323, 704 rounds per minute.

Velocity: 2674, 2654, 2675, 2682, 2671, 2738, 2710, 2671, 2704, 2691, 2698, 2685, 2682, 2695, 2684, 2700, 2700, 2685, 2700, 2701, 2661, 2711, 2682, 2711, 2723.

Gun, machine, caliber .30, M1919A4, No. 39252/
Barrel No. 3. Previous Rounds 6348.

Ammunition:

Burst No. 1 to 4 Linked 4 AP to 1 API.
Burst No. 5 to 8 Linked 4 AP to 1 Spot.
Burst No. 9 Linked 4 AP to 1 API.
Burst No. 10 Linked 4 AP to 1 Spot.

Cartridge, AP, Caliber .30, T93 FAX30-1357.
Cartridge, API, Caliber .30, T101, FAX30-1356.
Cartridge, Spotting, Caliber .30, T103, Lot No. 2.

Burst No. 1 AP - API, Rounds 6349-6373, 695 rounds per minute.

Velocity: 2701, 2729, 2685, 2671, 2720, 2725, 2690, 2707, 2664, 2710, 2716, 2711, 2700, 2684, 2677, 2722, 2700, 2701, 2717, 2671, 2672, 2671, 2701, 2690, 2707.

Burst No. 2 AP - API, Rounds 6374-6398, 715 rounds per minute.

Velocity: 2647, 2685, 2762, 2723, 2636, 2713, 2661, 2681, 2710, 2697, 2752, 2746, 2722, 2700, 2710, 2711, 2738, 2698, 2731, 2701, 2700, 2687, 2738, 2671, 2701.

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Burst No. 3 AP - API, Rounds 6399 to 6423, 724 rounds per minute.

Velocity: 2691,2675,2684,2701,2639,2672,2711,2737,2726,2741,2700,2716,2775,2719,
2735,2743,2723,2731,2664,2731,2700,2722, 2714.

Burst No. 4 AP - API, Rounds 6424 to 6448, 720 rounds per minute.

Velocity: 2729,2706,2674,2734,2773,2703,2725,2728,2716,2714,2716,2728,2737,
2671,2695,2687,2752,2695,2734,2714,2695,2719,2710,2723.

Burst No. 5 AP - OBS, Rounds 6449 to 6473, 715 rounds per minute.

Velocity: 2709,2716,2682,2682,2714,2657,2818,2729,2710,2684,2695,2725,2701,2775,2660,
2743,2734,2710,2694,2755,2749,2767,2707,2758,2729.

Burst No. 6 AP - OBS, Rounds 6474 to 6498, 722 rounds per minute.

Velocity: 2684,2779,2731,2614,2707,2682,2717,2750,2747,2803,2716,2770,2781,2740,2701,
2749,2722,2728,2773,2719,2701,2746,2776,2767,2773.

Burst No. 7 AP - OBS, Rounds 6499 to 6523, 715 rounds per minute.

Velocity: 2701,2704,2734,2737,2729,2750,2759,2779,2749,2807,2725,2792,2782,2749,2746,
2716,2784,2795,2759,2740,2722,2790,2807,2744,2764.

Burst No. 8 AP - OBS, Rounds 6524 to 6548, 725 rounds per minute.

Velocity: 2693,2744,2762,2786,2759,2668,2703,2786,2767,2753,2716,2731,2765,2725,2747,
2684,2726,2731,2806,2761,2671,2743,2758,2792,2722.

Burst No. 9 AP - API, Rounds 6549 to 6698, 720 rounds per minute.

Velocity: 2795,2731,2713,2756,2734,2713,2779,2722,2740,2731,2759,2770,2801,2734,2728,
2701,2713,2735,2728,2745,2761,2778,2726,2759,2746,2701,2720,2789,2782,2750,
2713,2752,2779,2749,2719,2737,2737,2729,2764,2737,2743,2731,2749,2740,2764,
2740,2675,2795,2729,2776,2734,2719,2764,2761,2725,2749,2743,2749,2792,2728,
2728,2746,2776,2756,2770,2731,2764,2749,2752,2806,2773,2710,2764,2767,2734,
2728,2767,2770,2722,2767,2823,2725,2728,2713,2793,2719,2707,2728,2725,2761,
2737,2725,2773,2755,2734,2782,2746,2765,2737,2725,2789,2764,2776,2773,2773,
2761,2740,2792,2779,2719,2743,2770,2773,2776,2820,2789,2731,2731,2764,2737,
2710,2776,2738,2722,2770,2707,2770,2704,2782,2795,2752,2752,2773,2782,2743,
2755,2737,2798,2761,2731,2795,2710,2725,2744,2801,2737,2764,2786,2758,2746,
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APPENDIX T

Burst No. 10 AP - OBS, Rounds 6699 to 6815, 750 rounds per minute.

Velocity: 2744, 2795, 2759, 2728, 2726, 2707, 2729, 2775, 2729, 2752, 2653, 2790, 2775, 2697, 2779, 2687, 2755, 2765, 2767, 2790, 2700, 2772, 2784, 2804, 2752, 2599, 2758, 2789, 2749, 2761, 2723, 2759, 2786, 2761, 2719, 2684, 2786, 2767, 2779, 2786, 2695, 2606, 2830, 2767, 2786, 2719, 2820, 2755, 2758, 2770, 2725, 2770, 2764, 2795, 2820, 2588, 2782, 2767, 2770, 2770, 2678, 2776, 2710, 2807, 2764, 2720, 2758, 2755, 2725, 2740, 2672, 2820, 2731, 2749, 2779, 2693, 2740, 2775, 2743, 2807, 2639, 2782, 2814, 2770, 2746, 2630, 2786, 2773, 2776, 2758, 2759, 2800, 2764, 2776, 2792, 2687, 2764, 2789, 2773, 2789, 2573, 2804, 2776, 2844, 2795, 2678, 2734, 2798, 2807, 2767, 2728, 2782, 2807, 2767, 2770.

Gun, machine, caliber .280, M1919A1, No. OW 4966.

Barrel No. 3. Previous Rounds: 6748.

Ammunition, Cartridge, SA Ball, caliber .280, Lot No. 19A.

Chronograph: Machine Gun Counter.

Initiation: Lumiline Screens placed 53 and 103 feet from the gun muzzle.

Velocity is given in feet per second.

Burst No. 1, Rounds 6749 to 6768, 830 rounds per minute.

Velocity: 2126, 2170, 2159, 2162, 2127, 2143, 2193, 2156, 2219, 2142, 2170, 2168, 2206, Lost, 2181, 2179, 2167, 2163, 2162, 2186.

The following velocities were recorded on a counter-chronograph initiated by lumiline screens at 53 and 103 feet from the gun muzzle.

Gun, machine, caliber .280, M1919A1 No. OW 4966

Barrel No. 3. Previous Rounds: 6768.

Ammunition:

Burst 1 to 4 Linked, 4 Ball to 1 API.
Burst 5 to 8 Linked, 4 Ball to 1 OBS.
Burst 9 Linked, 4 Ball to 1 API.
Burst 10 Linked, 4 Ball to 1 OBS.
Burst 11 All ball

Cartridge, SA, Ball, Caliber .280, Lot 19A.

Cartridge, SA, API, Caliber .280, Lot 23A.

Cartridge, SA, OBS, Caliber .280, Lot 17A.

Burst No. 1, Rounds 6769 to 6793, 810 rounds per minute.

Velocity: 2190, 2136, 2249, 2163, 2182, 2233, 2196, 2169, 2143, 2165, 2245, 2131, 2155, 2185, 2182, 2272, 2229, 2154, 2230, 2182, 2158, 2181, 2184, 2174.

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Burst No. 2, Rounds 6794 to 6818, 814 rounds per minute.

Velocity: 2210, 2171, 2141, 2182, 2239, 2201, 2182, 2175, 2189, 2260, 2180, 2156, 2166, 2190, 2270, 2230, 2219, 2129, 2213, 2268, 2201, 2173, 2225.

Burst No. 3, Rounds 6819 to 6843, 842 rounds per minute.

Velocity: 2202, 2190, 2251, 2172, 2214, 2197, 2184, 2269, 2215, 2176, 2225, 2226, 2299, 2290, 2239, 2199, 2197, 2249.

Burst No. 4, Rounds 6844 to 6868.

Velocity: 2281, 2220, 2198, 2233, 2227, 2302, 2204, 2251, 2280, 2220, 2244, 2224, 2305, 2259.

Burst No. 5, Rounds 6869 to 6893, 869 rounds per minute.

Velocity: 1764, 2195, 2256, 2229, 2256, 1856, 2285, 2237, 2067, 2302, 2285, 2245, 2282, 2278, 2260.

Burst No. 6, Rounds 6894 to 6918, 846 rounds per minute.

Velocity: 2180, 2307, 2277, 2215, 2257, 2263, 2218, 2238, 1978, 2237, 2247, 2245, 2215, 2256, 2245, 2213, 2280, 1889, 2219, 2272, 2268.

Burst No. 7, Rounds 6919 to 6943, 848 rounds per minute.

Velocity: 2197, 2291, 2288, 2278, 2269, 1930, 2279, 2276, 2277, 2276, 2253, 2247, 2297, 2260, 1914, 2336, 2276, 2240, 2323, 2263, 2272, 2307.

Burst No. 8, Rounds 6944 to 6968, 857 rounds per minute.

Velocity: 2293, 2282, 2260, 2270, 2288, 2288, 2239, 1759, 2275, 2246, 2253, 2303, 1885, 2294, 2327, 2320, 2307, 1757, 2295, 2261, 2255.

Burst No. 9, Rounds 6969 to 7113, 893 rounds per minute.

Velocity: 2321, 2311, 2296, 2212, 2334, 2264, 2300, 2350, 2321, 2287, 2271, 2307, 2296, 2317, 2342, 2325, 2293, 2367, 2322, 2270, 2299, 2290, 2317, 2286, 2301, 2278, 2286, 2322, 2293, 2262, 2281, 2320, 2304, 2333, 2299, 2290, 2331, 2268, 2353, 2282, 2320, 2311, 2286, 2320, 2299, 2235, 2351, 2362, 2272, 2360, 2268, 2327, 2284, 2288, 2247, 2291, 2325, 2364, 2323, 2366, 2305, 2320, 2303, 2316, 2290, 2353, 2274, 2303, 2284, 2305, 2307, 2297, 2353, 2301, 2300, 2325, 2278, 2331, 2303, 2320, 2309, 2351, 2325, 2312, 2351, 2320, 2310, 2288, 2293, 2293, 2305, 2355, 2314, 2290, 2333, 2307, 2333, 2316, 2342, 2319, 2320, 2284, 2320, 2314, 2312, 2286, 2311, 2280, 2340, 2316, 2307, 2331, 2303, 2314.

APPENDIX T

Burst No. 10, Rounds 714 to 7263, 871 rounds per minute

Velocity: 2285, 1722, 2317, 2269, 1776, 2285, 2333, 2281, 2344, 2303, 2312, 2329, 2327, 2338, 2333, 2340, 1834, 2318, 2318, 2326, 2301, 1758, 2327, 2342, 2351, 2322, 1789, 2282, 2305, 2314, 2275, 1818, 2281, 2338, 2320, 2316, 2321, 2325, 2312, 2280, 2305, 2344, 2342, 2318, 2318, 2274, 1761, 2325, 2364, 2335, 2335, 1740, 2312, 2331, 2340, 2312, 2340, 2288, 2312, 2316, 2305, 1825, 2293, 2307, 2295, 2307, 1818, 2325, 2288, 2316, 2290, 1797, 2288, 2320, 2355, 2301, 2325, 2322, 2290, 2319, 1872, 2371, 2335, 2316, 2379, 2308, 2342, 2314, 2327, 2327, 2286, 2325, 2278, 2307, 2325, 2327, 1798, 2287, 2301, 2295, 2270.

Burst No. 11, Rounds 7264 to 7363, 871 rounds per minute.

Velocity: 2302, 2331, 2301, 2322, 2307, 2293, 2257, 2296, 2311, 2296, 2306, 2296, 2299, 2342, 2286, 2306, 2291, 2322, 2307, 2308, 2316, 2271, 2312, 2335, 2286, 2309, 2327, 2307, 2312, 2307, 2297, 2291, 2295, 2307, 2285, 2293, 2353, 2318, 2304, 2288, 2320, 2295, 2353, 2314, 2316, 2295, 2320, 2307, 2221, 2271, 2293, 2303, 2259, 2230, 2235, 2315, 2305, 2259, 2209, 2268, 2156, 2259, 2206, 2237, 2274, 2225, 2167, 2235, 2249, 2145, 2139, 2134, 2227, 2141, 2037, 2209, 2156, 2187, 2147, 2053, 2093, 2091, 2112.

Burst No. 12, Rounds 7364 to 7463, 816 rounds per minute.

Velocity: 2369, 2281, 2278, 2257, 2334, 2267, 2362, 2221, 2267, 2245, 2208, 2272, 2221, 2380, 2225, 2240, 2255, 2327, 2256, 2256, 2243, 2250, 2240, 2335, 2272, 2241, 2349, 2261, 2245, 2353, 2253, 2240, 2297, 2307, 2357, 2278, 2290, 2360, 2278, 2384, 2278, 2274, 2290, 2266, 2307, 2263, 2255, 2244, 2280, 2333, 2260, 2244, 2223, 2330, 2245, 2216, 2213, 2256, 2259, 2302, 2293, 2335, 2309, 2271, 2260, 2242, 2357, 2286, 2266, 2260, 2288, 2331, 2239, 2293, 2255, 2335, 2275, 2255, 2259.

APPENDIX U

Ballistic Data

(7 sheets and cover sheet)

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COMPARISON OF
U. K. CALIBER 0.28 AMMUNITION
AND
U. S. CALIBER 0.30 AMMUNITION

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The tabulated form factors are from vertical target time of flight firings at 600 and 1000 yards range conducted at Aberdeen Proving Ground, Maryland during 31 March and 3 April 1950.

The tabulated ballistic data are computed by the Siacci Method, employing (1) the form factors derived from the vertical target firings and (2) projectile weights and instrumental velocities derived from random samples of the ammunition lots fired.

The designations of the ammunition fired and the ballistic coefficients of each type are:

Type	U. K. Caliber 0.28	C _s	U. S. Caliber 0.30	C _s
Ball	Lot 19A	.256	T104, Lot FAX 30-1358	.213
AP	Lot 24A	.232	T93, Lot FAX 30-1357	.212
API	Lot 23A	.240	T101, Lot FAX 30-1356	.222
Tracer	Lot 32A	.309	T102, Lot FAX 30-1359	.262
Observing	Lot 17A	.242	T103, Lot 2	.184

Ballistic Research Laboratories
Computing Laboratory
Firing Table Branch
Aberdeen Proving Ground, Maryland
May 1950

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Cartridge Ball

	Cal. .28	Cal. .30
Range	Elev.	Elev.
yds	ft	ft
0	0.0	0.0
200	2.1	1.4
400	4.8	3.3
600	8.5	5.9
800	13.4	9.7
1000	19.7	15.1
1200	27.4	22.0
1400	36.4	30.5
1600	46.6	40.5
1800	58.2	52.1
2000	71.2	65.4

Special water impact firings, conducted on 28 April and 4 May 1950, indicate that the maximum range of each of the two types of Ball Ammunition is approximately 3000 yards at approximately 26° elevation.

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Caliber .28
Cartridge - Ball
1_s = .995 Wt. = 139.6 grains

Range	Remaining Velocity	Striking Energy	Time of Flight	Maximum Ordinate
yds	f/s	ft.lbs.	secs	feet
0	2328	1681	0.00	0.0
26	2273	1603	0.03	0.0
100	2120	1394	0.14	0.1
200	1920	1144	0.29	0.3
300	1732	931	0.45	0.8
400	1559	754	0.63	1.6
500	1403	611	0.83	2.8
600	1264	496	1.06	4.6
800	1065	352	1.58	10.2
1000	972	293	2.17	19.1
1500	812	205	3.87	60.9
2000	679	143	5.90	141.0

Caliber .30
Cartridge - Ball
1_s = 1.022 Wt. = 136.8 grains

Range	Remaining Velocity	Striking Energy	Time of Flight	Maximum Ordinate
yds	f/s	ft.lbs.	secs	feet
0	2843	2457	0.00	0.0
26	2771	2334	0.03	0.0
100	2572	2011	0.11	0.0
200	2314	1628	0.23	0.2
300	2066	1298	0.37	0.6
400	1830	1018	0.53	1.1
500	1613	791	0.70	2.0
600	1420	613	0.90	3.3
800	1117	381	1.38	7.7
1000	984	281	1.95	15.4
1500	711	143	3.66	54.3
2000	611	123	5.90	141.0

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Caliber .28
Cartridge - AP
 $I_s = 1.010$ Wt. = 128.4 grains

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Range	Remaining Velocity	Striking Energy	Time of Flight	Maximum Ordinate
yds	f/s	ft.lbs.	secs	feet
0	2262	1460	0.00	0.0
26	2202	1384	0.04	0.0
100	2036	1183	0.14	0.1
200	1821	946	0.30	0.4
300	1622	751	0.47	0.9
400	1443	594	0.67	1.8
500	1286	472	0.89	3.2
600	1153	379	1.14	5.3
800	1007	289	1.70	11.7
1000	924	244	2.32	21.8
1500	760	164	4.12	68.7
2000	621	110	6.30	160.7

Caliber .30
Cartridge - AP
 $I_s = 1.020$ Wt. = 136.1 grains

Range	Remaining Velocity	Striking Energy	Time of Flight	Maximum Ordinate
yds	f/s	ft.lbs.	secs	feet
0	2896	2535	0.00	0.0
26	2822	2408	0.03	0.0
100	2621	2077	0.10	0.0
200	2358	1681	0.23	0.2
300	2107	1342	0.36	0.5
400	1868	1055	0.52	1.1
500	1647	820	0.69	1.9
600	1449	635	0.88	3.1
800	1134	389	1.35	7.4
1000	991	297	1.92	14.9
1500	796	192	3.62	53.1
2000	640	124	5.72	132.5

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Caliber .28
Cartridge - API
 $i_s = .988$ Wt. = 130.2 grains

Range	Remaining Velocity	Striking Energy	Time of Flight	Maximum Ordinate
yds	f/s	ft.lbs.	secs	feet
0	2253	1469	0.00	0.0
26	2196	1396	0.04	0.0
100	2036	1200	0.14	0.1
200	1828	967	0.30	0.4
300	1635	774	0.47	0.9
400	1460	617	0.66	1.8
500	1306	494	0.88	3.1
600	1174	399	1.12	5.1
800	1019	301	1.68	11.4
1000	935	253	2.30	21.4
1500	775	174	4.05	66.5
2000	638	118	6.20	155.7

Caliber .30
Cartridge - API
 $i_s = .981$ Wt. = 137.5 grains

Range	Remaining Velocity	Striking Energy	Time of Flight	Maximum Ordinate
yds	f/s	ft.lbs.	secs	feet
0	2808	2409	0.00	0.0
26	2739	2292	0.03	0.0
100	2551	1989	0.11	0.0
200	2304	1622	0.24	0.2
300	2067	1306	0.37	0.6
400	1841	1036	0.53	1.1
500	1632	814	0.70	2.0
600	1445	638	0.90	3.3
800	1144	400	1.37	7.6
1000	1000	306	1.93	15.1
1500	810	201	3.60	52.5
2000	659	133	5.66	129.7

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Caliber .28
Cartridge - Tracer
15 = .679 Wt. = 115.2 grains

Range	Remaining Velocity	Striking Energy	Time of Flight	Maximum Ordinate
yds	f/s	ft.lbs.	secs	feet
0	2293	1345	0.00	0.0
26	2248	1293	0.03	0.0
100	2122	1152	0.14	0.1
200	1956	979	0.28	0.3
300	1797	826	0.44	0.8
400	1648	695	0.62	1.6
500	1509	583	0.81	2.7
600	1383	489	1.02	4.2
800	1169	350	1.49	9.0
1000	1040	277	2.04	16.9
1500	885	201	3.61	52.8
2000	764	149	5.44	119.9

Caliber .30
Cartridge - Tracer
15 = .814 Wt. = 134.1 grains

Range	Remaining Velocity	Striking Energy	Time of Flight	Maximum Ordinate
yds	f/s	ft.lbs.	secs	feet
0	2685	2148	0.00	0.0
26	2629	2059	0.03	0.0
100	2471	1819	0.12	0.1
200	2264	1527	0.24	0.2
300	2063	1268	0.38	0.5
400	1870	1042	0.53	1.1
500	1689	850	0.70	2.0
600	1523	691	0.89	3.2
800	1242	460	1.33	7.2
1000	1057	333	1.86	14.0
1500	871	226	3.43	47.7
2000	732	160	5.31	114.2

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Caliber .28
Cartridge - Observing
15 = .962 Wt. = 127.5 grains

Range	Remaining Velocity	Striking Energy	Time of Flight	Maximum Ordinate
yds	f/s	ft.lbs.	secs	feet
0	2398	1629	0.00	0.0
26	2340	1551	0.03	0.0
100	2177	1343	0.13	0.1
200	1963	1092	0.28	0.3
300	1761	879	0.44	0.8
400	1575	703	0.62	1.6
500	1408	562	0.82	2.8
600	1262	451	1.05	4.5
800	1057	317	1.57	10.0
1000	963	263	2.17	19.1
1500	796	180	3.89	61.2
2000	658	123	5.96	143.9

Caliber .30
Cartridge - Observing
15 = 1.033 Wt. = 119.7 grains

Range	Remaining Velocity	Striking Energy	Time of Flight	Maximum Ordinate
yds	f/s	ft.lbs.	secs	feet
0	2809	2097	0.00	0.0
26	2726	1975	0.03	0.0
100	2498	1658	0.11	0.1
200	2204	1291	0.24	0.2
300	1924	984	0.38	0.6
400	1665	737	0.55	1.2
500	1437	549	0.75	2.3
600	1244	411	0.97	3.8
800	1016	274	1.52	9.3
1000	911	221	2.14	18.5
1500	712	135	4.01	65.1
2000	549	80	6.41	166.1

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**REMAINING VELOCITY AND STRIKING ENERGY
FOR REDUCED INSTRUMENTAL VELOCITY**

Caliber .28 Ball
2195 f/s @78'

Caliber .30 Ball
2689 f/s @78'

Range	Remaining Velocity	Striking Energy	Remaining Velocity	Striking Energy
yds	f/s	ft.lbs.	f/s	ft.lbs.
600	1217	460	1367	568
1000	958	285	970	286

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APPENDIX V

Data taken During the Time of
Flight and Maximum Range Firing

(16 Pages)

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APPENDIX V

WEATHER DATA

Temperature readings given were recorded at the range at the times indicated. Relative atmospheric densities were calculated for these temperatures using pressure and humidity data recorded by the Meteorological Measurements Unit, Development and Proof Services.

DATE	TIME	ATMOSPHERIC TEMPERATURE	RELATIVE ATMOSPHERIC DENSITY
31 March 50	1356	54	1.036
	1420	52	1.041
	1435	53	1.037
	1459	49	1.048
	1513	50	1.046
	1543	50	1.046
3 April 50	1002	59	1.016
	1041	60	1.014
	1409	64	1.004
	1428	63	1.006
	1438	64	1.004
	1505 to 1627	65	1.001

TIME OF FLIGHT TEST

Barrels:

(U.S.) Mann barrel No. 5 (with receiver No. 1528613) previously fired 407 rounds.

(U.K.) Mann barrel No. 450/3, previously fired 545 rounds.

Ammunition:

(U.S.) Cartridge, ball, caliber .30, T104, Lot No. FAX30-1358
 Cartridge, AP, caliber .30, T93, Lot No. FAX30-1357.
 Cartridge, API, caliber .30, T101, Lot No. FAX30-1356.
 Cartridge, Tracer, caliber .30, T102, Lot No. FAX30-1359.
 Cartridge, Observing, caliber .30, T103, Lot No. 2.

(U.K.) Cartridge, ball, caliber .280, Lot No. 19A.
 Cartridge, AP, caliber .280 Lot No. 24A.
 Cartridge, API, caliber .280, Lot No. 23A.
 Cartridge, Tracer, caliber .280, Lot No. 32A.
 Cartridge, Observing, caliber .280, Lot No. 17A.

Screen Distances:

Gun muzzle to 1st velocity screen: 26 feet.
 Gun muzzle to 2nd velocity screen: 128 feet.
 Gun muzzle to Time-of-Flight screen: 600 yards and 1000 yards.

Asimuth of Fire: 14° clockwise from south.

APPENDIX V

TIME-OF-FLIGHT SCREEN AT 600 YARDS

DATE: 31 March 1950

Cartridge, ball, caliber .280, Lot No. 19A

TIME	RD. NO.	WIND VELOCITY mph	WIND DIRECTION	INST. VELOCITY AT 78'fps	TIME OF FLIGHT sec	REMARKS
	1-2					
1356	3	Lost	Lost	2352	1.02503	
1358	4	14	WNW	2343	1.01839	
1358½	5	12	WNW	2342	1.02588	
1359	6	11	NW	Lost	.98924	Velocity lost
1359½	7	12	NW	2339	1.01724	
1400	8	10	WNW	Lost	1.00267	Velocity lost
1401	9	5	SW	Lost	1.02631	Velocity lost
1406	10	4	W	2303	1.04385	
1406½	11	3	NW	2308	1.03973	
1407	12	1	WNW	2324	1.03938	
1409	13	9	NW	2300	1.05812	
1409½	14	7	NW	2316	1.03829	
1410	15	11	W	2329	1.04113	
1411	16	10	NW	2358	1.01807	
1411½	17	9	W	2387	.99907	
1412	18	15	WNW	2363	1.00415	
1412½	19	8	WNW	2355	1.02174	
1413	20	11	NW	2360	1.00664	
1414	21	9	NW	2344	1.02854	
1414½	22	8	NW	2341	1.02869	
1415	23	10	WNW	2362	1.00815	
1416	24	9	NW	2354	1.01998	
1417	25	9	W	2370	1.00133	
1417½	26	8	NW	2350	1.00261	
1418	27	11	NW	2358	1.00764	
1418½	28	5	NW	2362	1.02733	
1419	29	7	NW	2327	1.03979	
1420	30	8	NW	2366	1.01073	
1420½	31	6	NW	2360	1.02292	Temp. 52°F

Cartridge, ball, caliber .30, T104, Lot FAX30-1358

1010						
1423	32	10	W	2772	Lost	Locators Missed time-of-flight screen. Temp. 52°F
1424	33	5	W	2812	.87309	
1424½	34	11	WNW	2813	.88287	
1425	35	10	WNW	2828	.87350	
1425½	36	7	NW	2830	.87073	
1426	37	9	WNW	2811	.87143	
1426½	38	9	W	2777	.88147	
1427	39	6	WNW	2754	.89886	
1427½	40	3	W	2772	.88938	
1428	41	6	NW	2774	.89009	

APPENDIX V

TIME	RD. NO.	WIND VELOCITY mph	WIND DIRECTION	INST. VELOCITY AT 78'fps	TIME OF FLIGHT sec
1429	42	2	NW	2794	.87998
1429½	43	1	NW	2795	.88773
1430	44	0	--	2778	.88732
1430½	45	1	NW	2779	.88888
1431	46	2	NW	2838	.87243
1431½	47	6	NNW	2800	.88241
1432	48	4	WNW	2753	.89851
1432½	49	6	NNW	2820	.87369
1433	50	4	NNW	2812	Lost
1433½	51	4	NNW	2763	.89849
1434	52	5	WNW	2792	.88153
1434½	53	3	NW	2748	.90428
1435	54	2	NNW	2765	.89206

Lost time-of-flight.

Temp. 53°F

Cartridge, AP, Caliber .280, Lot 24A

1499	55	4	SW	2275	1.08453
1499½	56	3	SW	2273	1.09286
1500	57	1	NW	2311	1.06512
1500½	58	9	NW	Lost	1.06516
1501	59	10	WNW	2313	1.06284
1501½	60	3	NW	2329	1.05460
1502	61	0	--	2315	1.06232
1502½	62	0	--	Lost	1.07673
1503	63	0	--	2321	1.06270
1503½	64	0	--	2315	1.06639
1504	65	0	--	Lost	1.07021
1504½	66	0	--	Lost	1.05949
1507	67	15	N	2275	1.08110
1507½	68	13	NNE	2239	1.11207
1508	69	12	N	2307	1.06890
1508½	70	8	N	2301	1.06768
1509	71	4	NNE	2297	1.07551
1509½	72	7	NNE	2317	1.05199
1510	73	10	N	2298	1.08474
1510½	74	7	NNE	2282	1.08592
1511	75	7	N	2300	1.06967
1511½	76	7	NW	2293	1.07431
1512	77	6	NW	2306	1.06313
1512½	78	4	NNW	2308	1.06677
1513	79	6	N	2322	1.05867

Velocity lost.

Velocity lost.

Temp. 50°F

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APPENDIX V

TIME	RD. NO.	WIND VELOCITY mph	WIND DIRECTION	INST. VELOCITY AT 78' fps	TIME OF FLIGHT sec	REMARKS
<u>Cartridge, AP, Caliber .30, T93, Lot FAX30-1357</u>						
1514	80	5	NNE	2745	Lost	Time-of-flight lost
1517	81	0	--	2853	Lost	Temp. 50°F
1517½	82	0	--	2789	Lost	Time-of-flight lost
1519	83	3	WNW	2838	Lost	Time-of-flight lost
1521	84	4	W	2817	Lost	Time-of-flight lost
1535	85	11	NW	2760	.90624	CONFIDENTIAL
1535½	86	4	NW	2826	.87967	
1536	87	6	WNW	2873	.86662	
1536½	88	5	W	2819	.88530	
1537	89	8	WNW	2846	.87184	
1537½	90	10	NW	2803	.88935	
1538	91	7	W	2833	.87549	
1538½	92	9	WNW	2812	.88268	
1539	93	4	WNW	2838	.86796	
1539½	94	3	WNW	2808	.88035	
1540	95	4	WNW	2844	.87135	Temp. 50°F
1540½	96	6	SW	2798	.88286	
1540½	97	8	WSW	2850	.86527	
1540½	98	10	W	2812	.88054	
1541	99	10	W	2818	.88174	
1541½	100	7	WSW	2844	.87385	
1542	101	6	W	2802	.88966	
1542½	102	7	W	2818	.88143	
1543	103	5	W	2810	.88775	
1543½	104	6	WNW	2808	.88044	

DATE: 3 April 1950 Cartridge, API, Caliber .30, T101, Lot FAX30-1356

1002	105	11	SSW	2748	.89332	Temp. 59°F
1003	106	10	S	2775	.88289	
1003½	107	10	SSW	2775	.87891	CONFIDENTIAL
1004	108	13	W	2765	.88086	
1004½	109	11	SSW	2787	.87649	
1005	110	11	SSW	2782	.98302	
1005½	111	10	SSW	2799	.87338	
1006	112	9	SW	2793	.88169	
1006½	113	9	S	2783	.87876	
1007	114	10	S	2779	.87617	
1007½	115	14	S	2795	.87018	
1007½	116	11	S	2783	.87698	
1008	117	14	S	2774	.87507	Temp. 50°F
1008½	118	11	S	2786	.87648	
1008½	119	11	S	2800	.87155	
1009	120	12	SSW	2766	.88057	
1009½	121	12	SSW	2764	.88040	

APPENDIX V

TIME	RD. NO.	WIND VELOCITY mph	WIND DIRECTION	INST. VELOCITY AT 78' fps	TIME OF FLIGHT sec	REMARKS
1010	122	9	SW	2775	.87823	
1010	123	9	SSW	2742	.89057	
1010	124	10	SW	2766	.87830	Temp. 58-1/2°F

Cartridge, APT, Caliber .280, Lot 23A

1015	125	7	SW	2268	1.05640	Temp. 58-1/2°F
1015	126	8	S	2294	1.04459	
1016	127	8	S	2289	1.05517	
1016	128	10	SSW	2306	1.04535	
1016	129	11	S	2261	1.07065	
1017	130	10	SSW	2276	1.06132	
1017	131	11	S	2278	1.06094	
1018	132	9	SW	2246	1.07385	
1018	133	7	S	2284	1.05602	
1020	134	7	S	2279	1.05892	
1020	135	10	SSW	2296	1.05909	
1020	136	9	SSW	2258	1.06874	
1021	137	6	S	2247	1.08001	
1021	138	9	SW	2253	1.07283	
1021	139	11	SSW	2244	1.07701	
1022	140	12	SSW	2277	1.06183	
1022	141	10	SSW	2254	1.06906	
1023	142	8	SW	2215	1.08632	
1023	143	9	SW	2247	1.07278	
1024	144	10	S	2253	1.06609	Temp. 58-1/2°F

Cartridge, Tracer, Caliber .30, T102, Lot FAX30-1359

1028	145	5	SSW	2595	.89837	Temp. 58-1/2°F
1028	146	10	SW	2600	.89724	
1029	147	8	S	2642	.87299	
1029	148	8	S	2622	.88192	
1030	149	9	S	2661	.87676	
1030	150	10	SSW	2603	.89308	
1030	151	8	SSW	2630	.88165	
1031	152	10	SSW	2654	.87636	
1031	153	12	SSW	2651	.87312	
1031	154	9	SSW	2660	.86817	
1032	155	9	SW	2660	.89179	
1032	156	11	SSW	2695	.85163	
1032	157	8	SSW	2617	.89072	

APPENDIX V

<u>TIME</u>	<u>RD. NO.</u>	<u>WIND VELOCITY</u> mph	<u>WIND DIRECTION</u>	<u>INST. VELOCITY</u> AT 78' fps	<u>TIME OF FLIGHT</u> sec	<u>REMARKS</u>
1033	158	6	SSW	2655	.86998	
1033½	159	6	SW	2655	.87769	
1034	160	10	SW	2601	.89085	
1034½	161	15	SW	2614	.88870	
1035	162	11	SSW	2680	.86948	
1035½	163	10	SSW	2663	.86393	
1036	164	11	SW	2639	.87967	
1037	165	8	SW	2616	.88682	Temp. 60°F

Cartridge, Tracer, Caliber .280, Lot 32A

1041	166	9	SW	2260	1.00940	Temp. 60°F
1041½	167	11	SW	2244	1.01342	
1042	168	9	SW	2239	1.02417	
1042½	169	10	SW	2271	1.00338	
1043	170	7	SW	2265	.99923	
1043½	171	10	SW	2213	1.02527	
1044	172	11	SSW	2260	.99863	
1044½	173	10	SSW	2270	1.00998	
1044½	174	11	SSW	2275	.99599	
1045½	175	9	SSW	2260	1.03935	
1045½	176	6	SW	2302	.99418	
1045½	177	5	SW	Lost	.99437	Velocity lost
1047	178	7	SW	2312	.98166	
1047½	179	8	WSW	2274	1.00590	
1048	180	7	SSW	2261	1.00453	
1048½	181	6	SSW	2274	1.00245	
1049	182	6	SW	2277	1.00322	
1049½	183	10	SSW	2258	1.01364	
1049½	184	8	WSW	2290	1.00061	
1050	185	8	SW	2273	.99750	
1050½	186	10	SW	2270	1.01591	Temp. 60°F

Cartridge, Observing, Caliber .30, T103, Lot 2

1055	187	7	SW	2750	.96338	Temp. 60°F
1055½	188	9	SSW	2782	.94706	
1056	189	10	SSW	2799	.97400	
1056½	190	9	SW	2752	.95087	
1056½	191	11	SSW	2761	.93963	
1057	192	13	SSW	2768	.94956	
1057½	193	10	SW	2757	.95093	
1058	194	11	S	2794	.94084	
1058½	195	10	SW	2765	.95948	
1058½	196	7	SW	2750	.93061	

APPENDIX V

<u>TIME</u>	<u>RD. NO.</u>	<u>WIND VELOCITY mph</u>	<u>WIND DIRECTION</u>	<u>INST. VELOCITY AT 78' fps</u>	<u>TIME OF FLIGHT sec</u>	<u>REMARKS</u>
1059	197	8	SW	2817	.90575	
1059½	198	11	SW	2773	.93486	
1100	199	11	SW	2814	.92882	
1100½	200	12	SSW	2784	.93781	
1100¾	201	10	SW	2750	.94917	
1101	202	10	SW	2756	.94008	
1101½	203	10	SW	2786	.93832	
1102	204	10	SSW	2802	.92667	
1103	205	7	SW	2806	.92369	
1103½	206	6	SW	2781	.92982	Temp. 59°F

Cartridge, Observing, Caliber .280, Lot 17A

1108	207	4	SW	2384	1.02209	Temp. 59°F
1108½	208	5	SSW	2394	1.00753	
1108¾	209	5	SW	2399	1.00507	
1109	210	4	SSW	2420	.99180	
1109½	211	7	SSW	2391	1.00685	
1109¾	212	5	SSW	2400	1.00278	
1110	213	8	SW	2397	1.00694	
1110½	214	10	SSW	2370	1.01542	
1111	215	10	SW	2400	1.01664	
1112	216	5	SW	2355	1.02901	
1112½	217	7	SW	2392	1.00690	
1113	218	9	SW	2370	1.01660	
1113½	219	6	SW	2394	1.01587	
1114	220	5	SW	2390	1.01076	
1114½	221	7	SSW	2391	1.01263	
1114¾	222	8	SSW	2069	Lost	Muzzle burst
1116	223	5	S	2413	1.00958	
1116½	224	5	SW	2430	.98384	
1117	225	4	SW	2322	Lost	Muzzle burst
1117½	226	5	SW	2414	.99898	
1118	227	7	SSW	2387	1.01214	
1118½	228	6	SSW	2432	.99417	Temp. 59°F

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APPENDIX V

TIME-OF-FLIGHT SCREEN AT 1000 YARDS

TIME	RD. NO.	WIND VELOCITY mph	WIND DIRECTION	INST. VELOCITY AT 78' fps	TIME OF FLIGHT sec	REMARKS
<u>Cartridge, Tracer, Caliber .30, Lot FAX30-1359</u>						
1409	1	2	N	2634	1.84595	Temp. 64°F
1409½	2	2	N	2641	1.85509	
1410	3	1	N	2625	1.84079	~~CONFIDENTIAL~~ Velocity lost
1410½	4	3	N	2627	1.84472	
1411	5	1	N	2590	1.90962	
1411½	6	2	N	2650	1.84939	
1411¾	7	4	N	Lost	1.83411	
1412	8	0	-	2606	1.88085	
1412½	9	0	-	2599	1.87208	
1412¾	10	0	-	2694	1.80228	
1413	11	1	N	2644	1.84130	
1413½	12	0	-	2607	1.86861	
1413¾	13	0	-	2649	1.83165	
1414	14	0	-	2620	1.85288	
1414½	15	0	-	2639	1.83598	
1414¾	16	0	-	2621	1.84348	
1415	17	0	-	2620	1.86330	
1415½	18	0	-	2604	1.87951	
1416	19	0	-	2610	1.84929	
1416½	20	0	-	2639	1.83977	
1417	21	0	-	2688	1.82685	Temp. 64°F

Cartridge, Tracer, Caliber .280, Lot 32A

1420	22	2	NNE	2264	2.02316	Temp. 64°F
1420½	23	3	N	2275	2.00713	
1421	24	0	-	2280	2.01349	~~CONFIDENTIAL~~
1421½	25	0	-	2305	1.99383	
1422	26	0	-	2285	1.99646	
1423	27	0	-	2284	1.97819	
1423½	28	0	-	2286	1.98138	
1424	29	0	-	2320	1.97882	
1424½	30	0	-	2298	1.96905	
1424¾	31	2	N	2283	1.98624	
1425	32	3	N	2271	1.98447	
1425½	33	2	N	2274	2.00558	
1425¾	34	2	N	2308	1.97377	
1426	35	1	N	2280	1.98612	
1426½	36	0	-	2279	2.00475	
1426¾	37	0	-	2269	1.99988	
1427	38	0	-	2313	1.97231	
1427½	39	0	-	2258	2.00684	
1427¾	40	0	-	2294	1.97352	
1428	41	0	-	2345	1.93109	Temp. 63°F

APPENDIX V

TIME	RD. NO.	WIND VELOCITY mph	WIND DIRECTION	INST. VELOCITY AT 78' fps	TIME OF FLIGHT sec	REMARKS
<u>Cartridge, Ball, Caliber .30, T104, Lot FAX30-1358</u>						
1430	42	0	-	2838	1.91803	Temp. 63°F
1430½	43	3	N	2788	1.94144	
1431	44	4	N	2753	1.97393	
1431½	45	3	N	2772	1.97118	
1432	46	2	N	2763	1.95993	
1432½	47	2	N	2788	1.99376	
1433	48	1	N	2800	1.90607	
1433½	49	2	N	2797	1.95437	
1434	50	1	NW	2731	1.96438	
1434½	51	0	-	2789	1.94027	
1435	52	0	-	2771	1.96405	
1435½	53	0	-	2819	1.92318	
1435¾	54	0	-	2799	1.90037	
1436	55	0	-	2775	1.94941	
1436¼	56	0	-	2837	1.92944	
1436½	57	0	-	2821	1.91046	
1437	58	0	-	2745	1.95350	
1437½	59	0	-	2782	1.91819	
1438	60	0	-	2826	1.90032	
1438½	61	0	-	2824	1.91494	Temp. 64°F

Cartridge, Ball, Caliber .280, Lot 19A

1441	62	0	-	2369	2.08541	Temp. 64°F
1441½	63	0	-	2339	Lost	Missed Time-of-flight screen.
1442	64	0	-	2403	2.06397	
1442½	65	0	-	2353	2.09324	
1443	66	0	-	2356	2.10331	
1443½	67	0	-	2380	2.07315	
1444	68	0	-	2380	2.04517	
1444½	69	2	E	2372	2.07426	
1444¾	70	1	E	2378	2.06843	
1445	71	4	E	2354	2.11404	
1445½	72	3	ENE	2342	2.10549	
1446	73	0	-	2385	2.07505	
1449	74	0	-	2420	2.03524	
1449½	75	0	-	2370	2.08332	
1450	76	0	-	2349	2.11018	
1450½	77	0	-	2364	2.09139	

APPENDIX V

ME	RD. NO.	WIND VELOCITY mph	WIND DIRECTION	INST. VELOCITY AT 78' fps	TIME OF FLIGHT sec	REMARKS
51	78	0	-	2320	2.11909	
51 $\frac{1}{2}$	79	0	-	2348	2.11136	
52	80	0	-	2352	2.09084	
52 $\frac{1}{2}$	81	0	-	2349	2.08232	
53	82	0	-	2358	2.05845	
53 $\frac{1}{2}$	83	0	-	2374	2.06183	
54	84	0	-	2355	2.09009	Temp. 65°F

Cartridge, AP, Caliber .30, T93, Lot FAX30-1357

59	85	0	-	2801	1.94308	Temp. 65°F
59 $\frac{1}{2}$	86	0	-	2810	1.90353	
59 $\frac{1}{4}$	87	0	-	2803	1.95508	
00	88	0	-	2851	1.93679	
00 $\frac{1}{2}$	89	0	-	2835	1.87137	
00 $\frac{1}{4}$	90	0	-	2789	1.93242	
01	91	0	-	2808	1.89776	
01 $\frac{1}{2}$	92	0	-	2830	1.92333	
02	93	0	-	2798	1.91586	
02 $\frac{1}{2}$	94	0	-	2797	1.96380	
03	95	0	-	2827	1.91704	
03 $\frac{1}{2}$	96	0	-	2830	1.91212	
03 $\frac{1}{4}$	97	0	-	2860	1.90676	
03 $\frac{1}{8}$	98	0	-	2804	1.91737	
04	99	0	-	2768	1.97209	
04 $\frac{1}{2}$	100	0	-	2764	1.97167	
04 $\frac{1}{4}$	101	0	-	2790	1.95754	
05	102	0	-	2763	1.97926	
05 $\frac{1}{2}$	103	0	-	2829	1.92153	
05 $\frac{1}{4}$	104	0	-	2807	1.94458	Temp. 65°F

Cartridge, AP, Caliber .280, Lot 24A

08	105	0	-	2263	2.27795	Temp. 65°F
08 $\frac{1}{2}$	106	2	ENE	2284	2.21787	
09	107	2	ENE	2319	Lost	Missed Time-of-flight screen
10	108	1	E	2312	Lost	Missed Time-of-flight screen
12	109	0	-	2294	Lost	Missed Time-of-flight screen
12 $\frac{1}{2}$	110	0	-	2292	Lost	Missed Time-of-flight screen
15	111	0	-	2325	Lost	Missed Time-of-flight screen
16	112	0	-	Lost	Lost	Missed Time-of-flight screen
19	113	0	-	2334	2.20608	
20	114	0	-	2359	2.16431	
20 $\frac{1}{2}$	115	0	-	2310	2.16431	
21	116	0	-	Lost		Velocity and time-of-flight lost

APPENDIX V

ME	RD. NO.	WIND VELOCITY mph	WIND DIRECTION	INST. VELOCITY AT 78' fps	TIME OF FLIGHT sec	REMARKS
22	117	0	-	2328	2.17639	
22½	118	0	-	2305	2.22631	
23	119	0	-	2343	2.19087	
23½	120	0	-	2318	2.24025	
24	121	0	-	Lost	2.17616	Velocity lost
24½	122	0	-	2300	2.20819	
24¾	123	0	-	2283	2.25756	
25	124	0	-	2293	2.23098	
25½	125	0	-	2301	2.21487	
25¾	126	0	-	2302	2.23028	
26	127	0	-	2275	2.23261	
26½	128	0	-	Lost	2.20771	Velocity lost
28	129	0	-	Lost	2.24082	Velocity lost
28½	130	0	-	2285	2.25165	
28¾	131	0	-	2275	2.26185	
29	132	0	-	Lost	2.24240	
29½	133	0	-	2300	2.22748	
30	134	0	-	2279	2.26037	
30½	135	0	-	2273	2.26315	
31	136	0	-	2266	2.27708	
31½	137	0	-	2286	Lost	Missed Time-of-flight screen
32	138	0	-	2303	2.22902	
32½	139	0	-	2258	2.25902	Temp. 65°F

Cartridge, API, Caliber .30, T101, Lot FAX30-1356

35	140	0	-	2755	1.90481	Temp. 65°F
35½	141	0	-	2749	1.91658	
36	142	0	-	2792	1.90101	
36¼	143	0	-	2800	1.89935	
36½	144	0	-	2747	1.94678	
36¾	145	0	-	2753	1.92973	
37	146	0	-	2768	1.89736	
37½	147	0	-	2737	1.91810	
38	148	0	-	2753	1.90386	
38½	149	0	-	2770	1.90048	
39	150	0	-	2743	1.90488	
39½	151	0	-	2737	1.93879	
39¾	152	0	-	2770	1.91550	
40	153	0	-	2751	1.92380	
40½	154	0	-	2765	1.90031	
40¾	155	0	-	2761	1.90302	
41	156	0	-	2759	1.91163	
41½	157	0	-	2748	1.89976	
41¾	158	0	-	2749	1.90072	
42	159	0	-	2782	1.88043	Temp. 65°F

APPENDIX V

TIME	RD. NO.	WIND VELOCITY mph	WIND DIRECTION	INST. VELOCITY AT 78' fps	TIME OF FLIGHT sec	REMARKS
Cartridge, API, Caliber .280, Lot 25A						
1545	160	0	-	2234	2.23008	Temp. 65°F
1545½	161	0	-	2210	2.29831	
1546	162	0	-	2229	2.23159	
1546¼	163	0	-	2241	2.26263	
1546½	164	0	-	2244	2.22946	
1547	165	0	-	2247	2.24597	
1547½	166	0	-	2256	2.26812	
1547¾	167	0	-	2239	2.27046	
1548	168	0	-	2228	2.25248	
1548¼	169	0	-	2260	2.23813	
1548½	170	0	-	2233	2.23742	
1549	171	0	-	2207	2.30871	
1549¾	172	0	-	2243	2.27342	
1549½	173	0	-	2239	2.23005	
1550	174	0	-	2198	2.29124	
1550¼	175	0	-	2210	2.26436	
1550½	176	0	-	Lost	2.25050	Velocity lost
1550¾	177	0	-	2224	2.26219	
1551	178	0	-	2200	2.28336	
1552	179	0	-	2215	2.26060	
1552½	180	0	-	2222	2.28462	Temp. 65°F

Cartridge, Observing, Caliber .280, Lot 17A						
1559	181	3	N	2347	2.15613	
	182	2	NE	2398	2.10722	
	183	2	N	2395	2.08658	
	184	0	-	Lost	2.09735	Velocity lost
1600	185	0	-	2366	2.13144	
	186	0	-	2382	2.10113	
	187	0	-	2415	Lost	Missed Time-of-flight screen.
	188	0	-	2405	2.09885	
1601	189	0	-	2380	2.11235	
	190	0	-	Lost	2.10883	Velocity lost
1602	191	0	-	2416	Lost	Missed Time-of-flight screen
1603	192	2	N	2404	2.09954	
1604	193	3	NE	2392	2.11256	
	194	2	NE	2325	2.140	
	195	2	N	2325	2.08332	

APPENDIX V

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TIME	RD. NO.	WIND VELOCITY mph	WIND DIRECTION	INST. VELOCITY AT 78' fps	TIME OF FLIGHT sec	REMARKS
1605	196	1	N	2390	2.09766	
	197	3	N	2378	2.14945	
	198	2	N	2384	2.12831	
1606	199	3	N	2410	2.08264	
	200	4	N	2399	2.11770	
	201	3	N	2392	2.12140	
	202	3	N	2417	2.07774	
1607	203	5	N	2385	2.11655	
	204	5	NE	2384	2.13718	Temp. 65°F

Cartridge, Observing, Caliber .30, T103, Lot 2

1610	205	3	N	2793	Lost	Missed Time-of-flight screen. Temp. 65°F
1619	206	0	-	2797	2.07673	
	207	0	-	2741	2.17823	
	208	0	-	2811	2.07295	
1620	209	0	-	2755	2.13849	
	210	0	-	2763	2.07025	
	211	0	-	2792	2.07159	
	212	0	-	2740	2.12615	
1621	213	3	N	2780	2.06911	
	214	5	N	2772	2.09845	
	215	3	N	2769	2.09515	
	216	2	N	2781	2.11239	
1622	217	6	N	2766	2.10269	
	218	5	N	2772	2.06516	
1623	219	6	N	2772	Lost	Missed Time-of-flight screen
1625	220	2	N	2771	2.11239	
	221	2	N	2771	2.15236	
1626	222	2	NNW	2819	2.07405	
	223	0	-	2786	2.11889	
	224	0	-	2811	2.06161	
	225	0	-	2733	2.13358	
1627	226	0	-	2784	2.11339	Temp. 65°F

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APPENDIX V

MAXIMUM RANGE DATA

DATE: 4 May 1950

AMMUNITION: Cartridge, Ball, Caliber .280 Lot 19A

GUN: Mann Barrel, 450/2 Fitted to Enfield Receiver

RD. NO.	TIME	RANGE yd	DEF yd	TIME OF FLIGHT sec	REMARKS
1-9	0900				Locaters. Short Locaters.
10-15	0917				
16	0920	2856	20R	23.6	
17	0921	2846	40R	23.5	
18	0922				Short.
19	0923				Short. Moved mount.
20	0932	2936	20L	Lost	
21	0933	2926	18L	24.7	
22	0934	2896	10L	23.8	
23	0935	2876	30L	Lost	
24	0936	2846	28L	23.5	Moved right 30 yards.
25	0937	2836	10L	23.3	First record round.
26	0938	2841	5L	23.5	
27	0939	2906	5R	23.8	
28	0940	2856	10L	23.5	
29	0940	2861	10L	23.5	
30	0941	Lost	--	--	Lost.
31	0941	2881	5L	23.5	
32	0942	Lost	--	--	Lost.
33	0943	2926	0	23.7	
34	0944	2996	5L	24.4	
35	0945	2831	5L	23.4	
36	0946	2916	5L	23.7	
37	0947	2986	10L	23.7	
38	0948	2986	5L	23.6	
39	0948	Lost	--	--	Lost.
40	0949	2846	5L	23.4	
41	0949	2826	5L	23.5	
42	0950	2876	5L	23.5	
43	0951	2816	5L	23.3	
44	0952	Lost	--	--	Lost.
45	0952	2996	5L	24.1	
46	0953	2841	5L	23.1	
47	0954	2816	10L	23.3	
48	0955	2986	0	24.1	
49	0956	2986	5L	24.1	
50	0957	2886	10L	23.4	
51	0958	2926	5L	23.8	
52	0958	2846	10L	23.3	

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APPENDIX V

Height of Muzzle above Mean Low Tide - 20.30 feet.

Elevation of Fire - 28° 0'

WEATHER DATA ~~CONFIDENTIAL~~

DATE: 4 May 1950

<u>TIME</u>	<u>TEMP</u> <u>°F</u>	<u>DENSITY</u>	<u>TIDE</u> <u>LEVEL</u> <u>ft</u>	<u>WIND VELOCITY, mph</u>	
				<u>SURFACE</u>	<u>ALOFT</u>
0900	56	1.025	+ .9	0	0
0930	57	1.023	+1.1	0	0
1000	58	1.022	+1.4	0	0

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APPENDIX V

DATE: 28 April 1950

AMMUNITION: Cartridge, Ball, Caliber .30, Lot No. FAX30-1358

GUN: Accuracy Barrel No. 5, Fitted to 1903 Receiver No. 1528613

RD. NO.	TIME	RANGE yd	DEF? yd	TIME OF FLIGHT sec	REMARKS
1	0955	2834	6L	23.5	First record round.
2	0956	2853	1R	23.6	
3	1004	2818	4R	23.5	
4	1005	2838	0	23.5	
5	1006	2794	3L	23.2	
6	1007	Lost	-	--	Lost.
7	1007	2814	0	23.2	
8	1009	2808	3R	23.4	
9	1010	2776	3L	23.2	
10	1010	Lost	-	--	Lost.
11	1011	Lost	-	--	Lost
12	1012	2823	2R	24.4	
13	1013	2803	1L	23.2	
14	1014	Lost	-	--	Lost
15	1015	2823	1L	23.5	
16	1016	Lost	-	23.6	Lost
17	1017	2808	3L	23.4	
18	1019	2818	3L	23.5	
19	1020	Lost	-	23.5	Lost
20	1022	Lost	-	23.5	Lost
21	1024	2848	8L	23.5	
22	1026	Lost	--	24.0	Lost
23	1029	Lost	-	-	Lost
24	1030	2893	10L	23.9	

Height of Muzzle above Mean Low Tide - 20.23 feet.

Elevation of Fire - 28° 0'

WEATHER DATA

DATE: 28 April 1950

TIME	TEMP °F	DENSITY	TIDE LEVEL ft	WIND VELOCITY, mph	
				SURFACE	ALOFT
0950	56	1.026	0.5	0	0
1020	57	1.024	0.7	0	0

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APPENDIX W

Velocity Data for Caliber .280
Accuracy Barrels 450/2 and 450/3

(2 sheets)

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APPENDIX W

VELOCITY TEST

Date: 12 May 1950

Time Started: 1300

Time Finished: 1325

Receiver No.: 450/2

Barrel No.: 450/2

Previous Rounds: 431

Ambient Temperature: 70°F

Range Temperature: 62°F

Density: 1.025

Chronograph Type: Gunner

Initiator Type: Lumiline

Test Ammunition: Cartridge, Caliber .280, Ball, Lot 19A.

ROUND NO.

MEASURED VELOCITY AT 70', f/s

PRESSURE, psi

1	2367
2	2392
3	2413
4	2379
5	2376
6	2370
7	2365
8	2358
9	2366
10	2361
11	2380
12	2353
13	2359
14	2385
15	2362
16	2398
17	2365
18	2352
19	2333
20	2366

APPENDIX W

VELOCITY TEST

Date: 12 May 1950

Time Started: 1135

Time Finished: 1200

Receiver No.: 450/3

Barrel No.: 450/3

Previous Rounds: 244

Ammunition Temperature: 70°F

Range Temperature: 62°F

Density: 1.022

Chronograph Type: Counter

Initiator Type: Lumiline

Test Ammunition: Cartridge, Caliber .280, Ball, Lot 19A.

ROUND NO.

INSTANTANEOUS VELOCITY AT 73', fps

PRESSURE, psi

1	2340
2	2331
3	2332
4	2332
5	2332
6	2307
7	2322
8	2318
9	2325
10	2350
11	2335
12	2361
13	2341
14	2338
15	2315
16	2353
17	2315
18	2330
19	2328
20	2356

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