(12)

WT-568(EX)
EXTRACTED VERSION

# OPERATION TUMBLER-SNAPPER

## TECHNICAL AIR OPERATIONS

Paul H. Fackler
4925th Test Group (Atomic)
Special Weapons Center

January 1953

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19. ABSTRACT (Continue on reverse if necessary and identify by block number)

This report presents data on all phases of technical air operations during Operation Tumbler-Snapper. The phases covered are cloud sampling and tracking, bomb-drop data, terrain surveys and decontamination of personnel and aircraft. All observations, technical data and statistics are documented.

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FOREWORD

Classified material has been removed in order to make the information available on an unclassified, open publication basis, to any interested parties. The effort to declassify this report has been accomplished specifically to support the Department of Defense Nuclear Test Personnel Review (NTPR) Program. The objective is to facilitate studies of the low levels of radiation received by some individuals during the atmospheric nuclear test program by making as much information as possible available to all interested parties.

The material which has been deleted is either currently classified as Restricted Data or Formerly Restricted Data under the provisions of the Atomic Energy Act of 1954 (as amended), or is National Security Information, or has been determined to be critical military information which could reveal system or equipment vulnerabilities and is, therefore, not appropriate for open publication.

The Defense Nuclear Agency (DNA) believes that though all classified material has been deleted, the report accurately portrays the contents of the original. DNA also believes that the deleted material is of little or no significance to studies into the amounts, or types, of radiation received by any individuals during the atmospheric nuclear test program.

Report to the Test Director

# TECHNICAL AIR OPERATIONS

## Operation Tumbler-Snapper

By

Paul H. Fackler
Lieutenant Colonel, USAF

4925th Test Group (Atomic)
Special Weapons Center
Kirtland Air Force Base
Albuquerque, New Mexico
January 1953

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CHAPTER 1

# MAPS AND CHARTS

## 1.1 SCOPE

The material contained in this chapter is of value only as a guide in finding locations of certain aircraft, target areas, and bombing flight patterns. A list of abbreviations used throughout this report is also included. A special grid map (Fig. 1.6) identical to the one used by the crew on manned-sampling, terrain-survey, and cloud-tracking aircraft is also included as a means of identifying the location of data collected (see Chaps. 4, 5, and 6).

## 1.2 CODE OF ABBREVIATIONS

IBDA, indirect bomb damage assessment
RADIAC, radiation detection, indication, and computation
WADC, Wright Air Development Center
SWC, Special Weapons Command (now Special Weapons Center)
SAC, Strategic Air Command
NRDL, Naval Radiological Defense Laboratory
EG&G, Edgerton, Germeshausen & Grier, Inc.
CAA, Civil Aeronautics Administration
CE, circular error in feet
CG, center of gravity
IFR, instrument flight rules
HE, high explosives
AEC, Atomic Energy Commission
APGC, Air Proving Ground Command
LASL, Los Alamos Scientific Laboratory
IFI, inflight insertion
MAFB, Maxwell Air Force Base
KAFB, Kirtland Air Force Base
ISAFB, Indian Springs Air Force Base
Jumbo, 4925th Operations Office
Seminole, Indian Springs Air Force Base
Bingo, Nellis Air Force Base
Rosie, atomic cloud
Sharkbait, Silver Lake
Sourdough, Yucca Flat
Ellen, Las Vegas radio range
Big Deal, live run
Angels, altitude measured in 1000-ft increments
Hairpin, Control Point
Buttercup, general call for the SAC
Zero Fox, pilot has no radiation exposure
Zebra, Greenwich time
Chili Pepper, contaminated aircraft

Table 1.1--TUMBLER-SNAPPER TEST-AIRCRAFT PARTICIPATION

(Primary Aircraft)

| Type aircraft | Serial No. | Use of aircraft | Code name* | Parent organization | Location of aircraft |
|---|---|---|---|---|---|
| B-50 | 169 | Drop | Hazel | 4925th TG(A) | KAFB |
| B-50 | 165 | Alt drop | Hazel | 4925th TG(A) | KAFB |
| B-50 | 169 | Drop | Bluefish | 4925th TG(A) | KAFB |
| B-50 | 165 | Alt drop | Bluefish | 4925th TG(A) | KAFB |
| B-50 | 169 | Drop | Tugboat | 4925th TG(A) | KAFB |
| B-50 | 165 | Alt drop | Tugboat | 4925th TG(A) | KAFB |
| B-45 | 001 | Drop | Cutthroat | 4925th TG(A) | KAFB |
| C-47 | 197 | Disaster | Milkman | 4901st SW(A) | KAFB |
| C-47 | 197 | Disaster | Armchair | 4901st SW(A) | KAFB |
| C-47 | 197 | Disaster | Rainbow | 4901st SW(A) | KAFB |
| C-47 | 197 | Disaster | Dagwood | 4901st SW(A) | KAFB |
| B-29 | 818 | Telemeter | Copy Cat 1 | 4925th TG(A) | KAFB |
| B-50 | 169 | Telemeter | Copy Cat 2 | 4925th TG(A) | KAFB |
| B-50 | 260 | IBDA | Tiger 1 | SAC | KAFB |
| B-50 | 278 | IBDA | Tiger 2 | SAC | KAFB |
| B-50 | 337 | IBDA | Tiger 3 | SAC | KAFB |
| B-17 | 9246 | Radiac | Scarecrow | WADC | KAFB |
| B-29 | 1863 | Blast | Hot Foot 1 | RADC | KAFB |
| B-29 | 1742 | Blast | Hot Foot 2 | RADC | KAFB |
| B-29 | 386 | Obser. sampling | Crystal | 4925th TG(A) | ISAFB |
| B-29 | 285 | Sampling | Bullhead 1 | 4925th TG(A) | ISAFB |
| T-33 | 9920 | Sampling | Bullhead 2 | APG | ISAFB |
| T-33 | 9951 | Sampling | Bullhead 3 | APG | ISAFB |
| T-33 | 4048 | Sampling | Bullhead 4 | APG | ISAFB |
| T-33 | 9913 | Sampling | Bullhead 5 | ARDC | ISAFB |
| F-84 | 1033 | Sampling | Bullhead 6 | SAC | ISAFB |
| F-84 | 1051 | Sampling | Bullhead 7 | SAC | ISAFB |
| F-84 | 1054 | Sampling | Bullhead 8 | SAC | ISAFB |
| F-84 | 1043 | Sampling | Bullhead 9 | SAC | ISAFB |
| F-84 | 1042 | Sampling | Bullhead 10 | SAC | ISAFB |
| B-29 | 1826 | Tracking | Hound Dog 1 | AWS | ISAFB |
| B-29 | 774 | Tracking | Hound Dog 2 | AWS | ISAFB |
| B-29 | | Tracking (weather recon.) | Hound Dog 3 | AWS | MAFB |
| B-25 | 099 | Tracking | Hound Dog 4 | 4901st SW(A) | [illegible]AFB |
| C-47 | 308 | Terrain survey | Badger 1 | 4901st SW(A) | [illegible]FB |
| C-47 | 386 | Terrain survey | Badger 2 | 4901st SW(A) | ISAFB |
| L-20 | 464 | Terrain survey | Woodchuck 1 | 4901st SW(A) | ISAFB |
| L-20 | 467 | Terrain survey | Woodchuck 2 | 4901st SW(A) | ISAFB |
| C-45 | 750 | Terrain survey | Woodchuck 3 | 4901st SW(A) | ISAFB |
| YH-12 | 225 | AEC | Dreamboat 1 | 4925th TG(A) | ISAFB |

Table 1.1 — (Continued)

| Type aircraft | Serial No. | Use of aircraft | Code name | Parent organization | Location of aircraft |
|---|---|---|---|---|---|
| C-46 | | Paradrop | Shanghai 1 – 6 | TAC Troop Carrier | Nellis AFB |
| C-47 | | Air evacuation | Shanghai 7 | TAC Troop Carrier | Nellis AFB |
| C-47 | 990 | Photo | Eyeball | Air Pictorial Service | ISAFB |
| B-50 | | Observation | Buttercup 1 – 12 | SAC | Castle AFB |
| B-50 | | Observation | Buttercup 1 – 12 | SAC | Barksdale AFB |
| B-29 | | Observation | Buttercup 1 – 4 | SAC | Travis AFB |
| B-36 | | Observation | Buttercup 1 – 2 | SAC | Travis AFB |
| B-36 or B-50 | | Photo recon. | Buttercup 13 – 14 | SAC | Travis AFB |

*Code numbers in chapters indicate the chronological use of an airplane for a particular mission, i.e., Copy Cat 2 of this master list becomes Copy Cat 1 when it is used as the observer sampling plane.

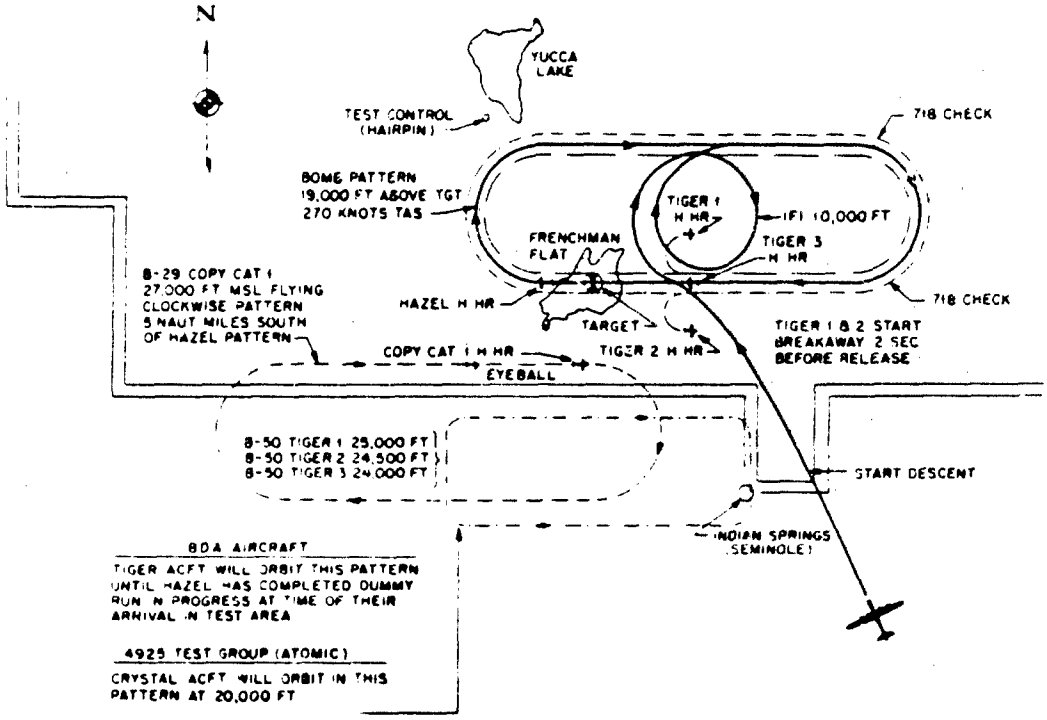


Fig. 1.1 — B-50 bomb-run pattern and associated aircraft, Frenchman Flat target. Bombing track, 223 to 303° or 64 to 123°. Participating IBDA aircraft at shots 0 and 1 included: B-50 Tiger 1, 1800 ft above and in loose formation on right wing of Hazel in bombing pattern. B-50 Tiger 2, 1300 ft above and in loose formation on left wing of Hazel in bombing pattern. B-50 Tiger 3, 800 ft above and 7 nautical miles in trail of Hazel in bombing pattern. Eyeball (Air Pictorial Service), 7 nautical miles south of target at 10,000 ft in clockwise pattern. Aircraft at Seminole included: Hound Dog 1 and 2 (B-29); Hound Dog 4 (B-25); Bullhead 1 (B-29); Bullhead 2, 3, 4, and 5 (T-33); and Badger 1 and 2 (C-47).

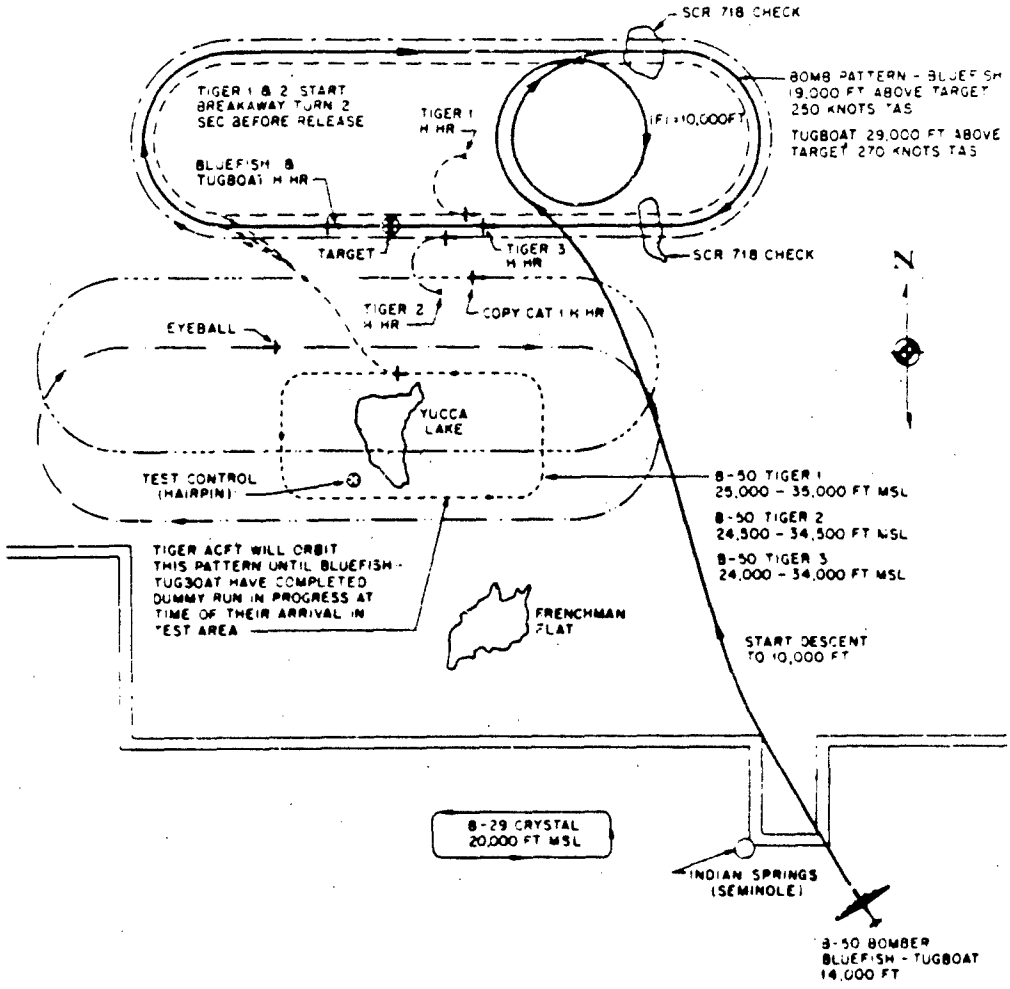


Fig. 1.2 — B-50 bomb-run pattern and associated aircraft, area 7, target 3. Bombing track, 240 to 305°. Participating IBDA aircraft at shots 2 and 3 included: -----, B-50 Tiger 1, 1800 ft above and in loose formation on right wing of Bluefish and Tugboat in bombing pattern. — —, B-50 Tiger 2, 1300 ft above and in loose formation on left wing of Bluefish and Tugboat in bombing pattern. ——, B-50 Tiger 3, 800 ft above and 7 nautical miles in trail of Bluefish and Tugboat in bombing pattern. – – –, B-29 Copy Cat 1, 27,000 ft MSL flying clockwise pattern 5 nautical miles south of Bluefish pattern and 28,000 ft MSL flying counterclockwise pattern 3 nautical miles south of Tugboat pattern. – · – · –, Eyeball (Air Pictorial Service), 7 nautical miles south of target at 10,000 ft in clockwise pattern. Aircraft at Seminole included: Badger 1 and 2 (C-47); Hound Dog 1 and 2 (B-29); Hound Dog 4 (B-25); Bullhead 1 (B-29); and Bullhead 2, 3, 4, and 5 (T-33).

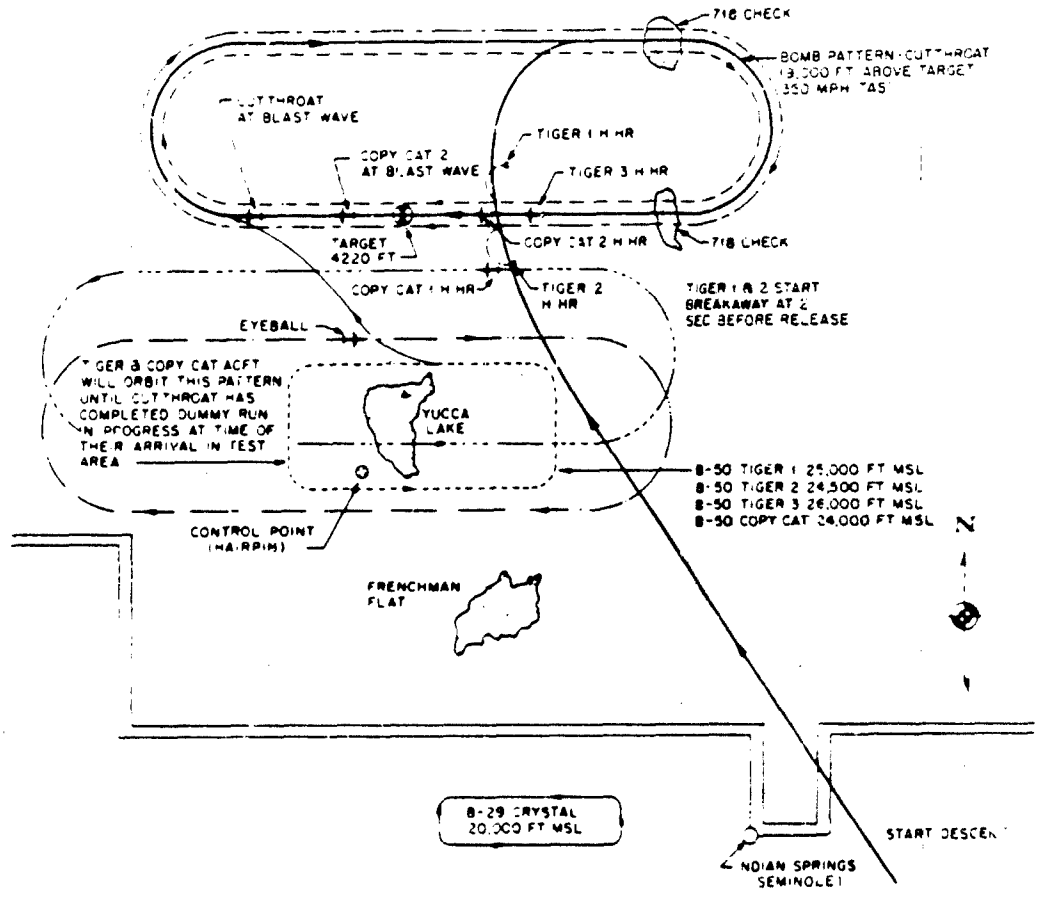


Fig. 1.3 — B-45 bomb-run pattern and associated aircraft, shot 4. Bombing track, 240 to 305°. Participating (BDA aircraft included: ----, B-50 Tiger 1, 1800 ft above and in loose formation on right wing of Cutthroat in bomb pattern. - - -, B-50 Tiger 2, 1300 ft above and in loose formation on left wing of Cutthroat in bomb pattern. ——, B-50 Tiger 3, 2800 ft above and 7 nautical miles in trail of Cutthroat in bomb pattern. 4925th aircraft included: - - -, B-29 Copy Cat 1, 27,000 ft MSL flying counterclockwise pattern 3 nautical miles south of Cutthroat. ——, B-50 Copy Cat 2, 800 ft above and 5 nautical miles in trail of Cutthroat in bomb pattern. - - -, Eyeball (Air Pictorial Service), 7 nautical miles south of target at 10,000 ft in clockwise pattern. Aircraft at Seminole included: Hound Dog 1 and 2 (B-29); Hound Dog 4 (B-25); Bullhead 1 (B-29); Bullhead 2, 3, 4, and 5 (T-33); and Badger 1 and 2 (C-47).

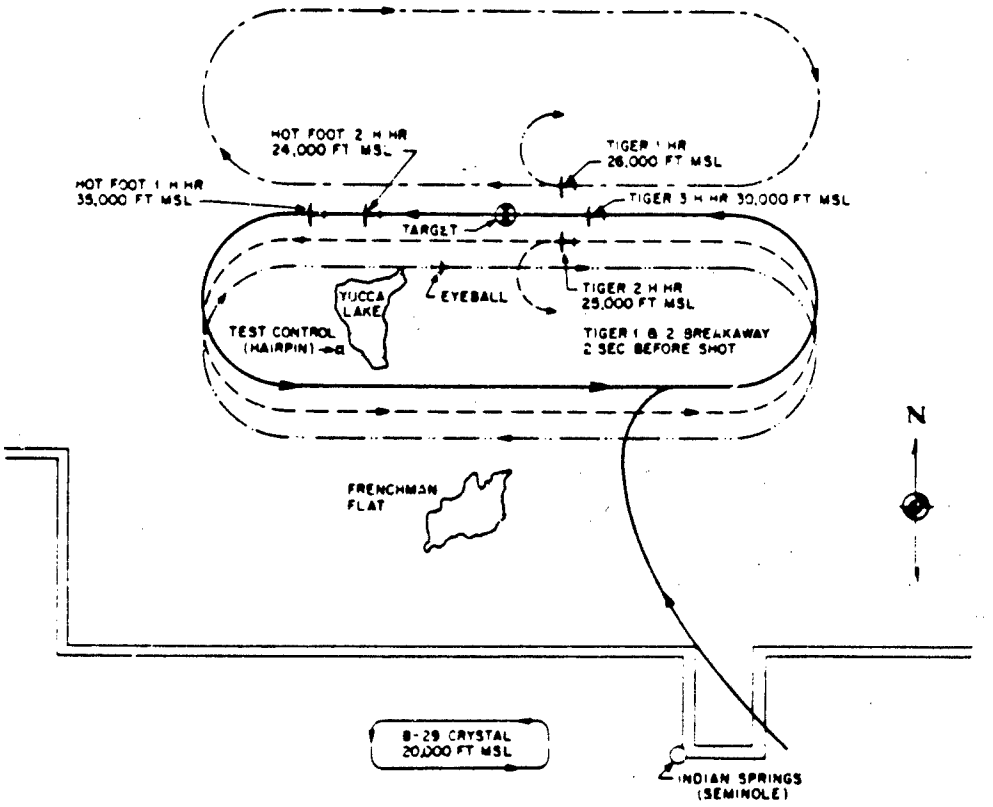


**Fig. 1.4** — **Associated aircraft in Snapper phase, shot 5. Participating IBDA aircraft included: —·—, B-50 Tiger 1, right-hand pattern approach 4 miles right of target at 26,000 ft MSL. ----, B-50 Tiger 2, left-hand pattern approach 4 miles left of target at 25,000 ft MSL. ——, B-50 Tiger 3, left-hand pattern at 30,000 ft MSL and 9 miles from target on final approach at H hour. Aircraft in blast pattern for shots 5 and 8 included: ——, B-29 Hot Foot 1, left-hand pattern at 31,800 ft MSL, regular bomb-run pattern; ——, B-29 Hot Foot 2, left-hand pattern at 24,000 ft MSL, regular bomb-run pattern; and ----, Eyeball (Air Pictorial Service), 7 nautical miles south of target at 10,000 ft in clockwise pattern. Aircraft at Seminole included: Badger 1 and 2 (C-47); Hound Dog 1 and 2 (B-29); Hound Dog 4 (B-25); and Bullhead 1 (B-29); and Bullhead 2, 3, 4, and 5 (T-33).**

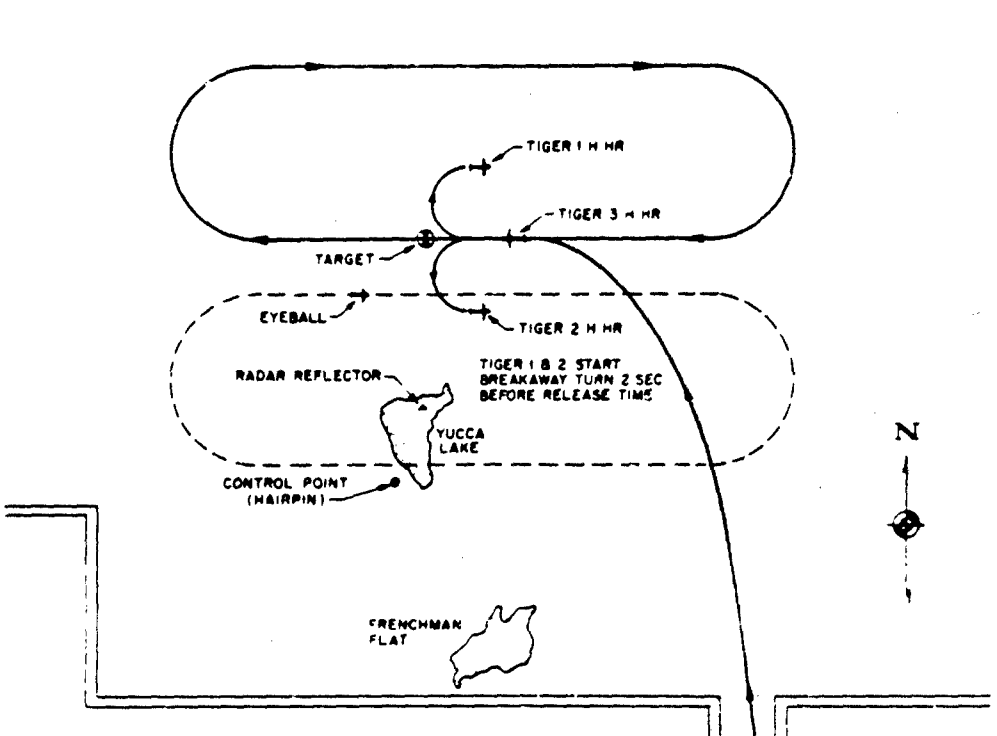


Fig. 1.5—Associated aircraft in Snapper phase, shot 6. Participating IBDA aircraft included: B-50 Tiger 1, 28,000 ft MSL, simulated bomb run; B-50 Tiger 2, 27,000 ft MSL, simulated bomb run; B-50 Tiger 3, 27,000 ft MSL, simulated bomb run to be 7 miles in trail and 7 miles from target at H hour; and Eyeball (Air Pictorial Service), 7 nautical miles south of target at 10,000 ft in clockwise pattern. Aircraft at Seminole included: Badger 1 and 2 (C-47); Hound Dog 1 and 2 (B-29); Hound Dog 4 (B-25); Bullhead 1 (B-29); and Bullhead 2, 3, 4, and 5 (T-33).

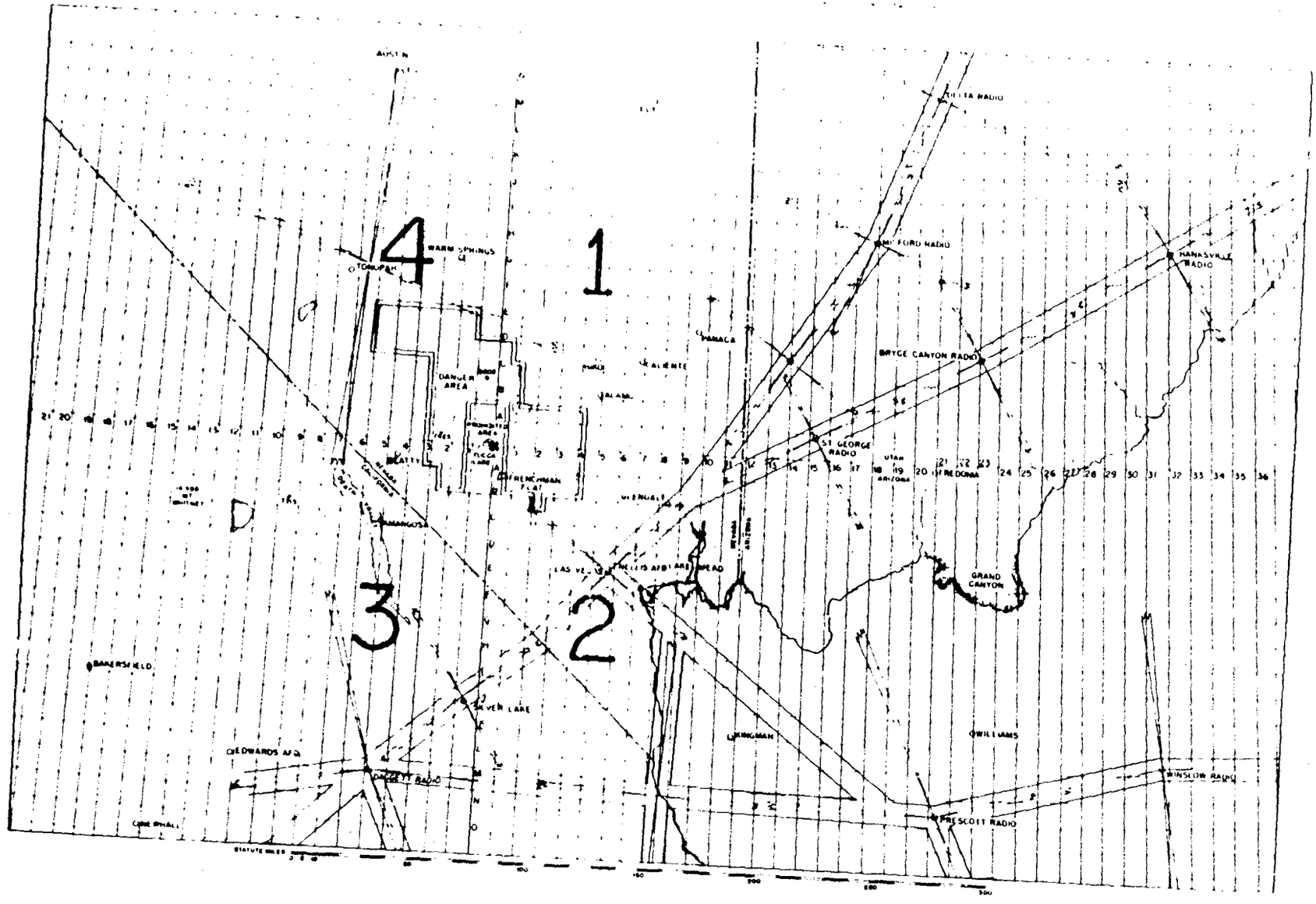


Fig. 1.6—Map of coordinates to be used in determining plane positions for terrain survey and cloud tracking.

CHAPTER 2

# TEST-AIRCRAFT OPERATIONAL DATA

To present a chronological time sequence of all test-aircraft participation prior to and after each nuclear explosion and/or practice mission, these data are presented in a columnated form. The data were recorded by the test-aircraft controller (Hairpin control) located at the AEC Command Post, Mercury, Nev.

Table 2.1 — TEST-AIRCRAFT OPERATIONAL DATA FOR TUMBLER ABLE, X RAY

Shot Time: 0929:24 PST, 30 March 1952

| Type aircraft | Code name | Use of aircraft | Take-off location | Take-off time | Enter area | Leave area | Landing time | Remarks |
|---|---|---|---|---|---|---|---|---|
| C-47 | Milkman | Disaster | Jumbo | 0430 | | | 0448 | Abort at home station, mag. trouble; canceled |
| B-50 | Hazel | Strike | Jumbo | 0500 | 0736 | 0932 | 1410 | IFI, start, 0738; complete, 0807. Landing, Seminole at 0939; airborne, Seminole at 1207 |
| B-29 | Copy Cat 1 | Telemeter | Jumbo | 0550 | | | 0734 | Abort at home station, engine trouble |
| B-50 | Tiger 1 | IBDA | Jumbo | 0600 | 0829 | 0940 | 1154 | Over Ellen at 0814; winds report, 302° at 41 mph at 25,000 ft |
| B-50 | Tiger 2 | IBDA | Jumbo | 0610 | 0905 | 0935 | 1145 | Over Ellen at 0824 |
| B-50 | Tiger 3 | IBDA | Jumbo | 0620 | 0859 | 0934 | 1122 | |
| B-50 | Buttercup | SAC obser. | Castle AFB | | 0849 | | | Departed Sharkbait at 0751 |
| B-50 | Buttercup 13 | SAC obser. | Travis AFB | | 0901 | 0933 | | |
| B-50 | Buttercup 14 | SAC obser. | Travis AFB | | 0901 | 0933 | | |
| B-29 | Crystal[a] | Observation sampler | Seminole | 0838 | 0855 | 0936 | 1046 | Crystal instructs Bullheads' take-offs at 1005, 1007, 1009, and 1011; proceed to 2A3 at B-15 |
| C-47 | Eyeball | Photo | Seminole | 0848 | 0859 | 1014 | 1025 | Starting photo mission at 0950 |
| B-29 | Hound Dog 1 | Tracker | Seminole | 0942 | | | 1100 | |
| B-25 | Hound Dog 4 | Tracker | Seminole | 0944 | | | 1100 | Requests Baker Dog; advised simulate mission, proceed to 2B1 |
| B-29 | Bullhead 1[b] | Sampler | Seminole | 0955 | | | 1125 | Simulated mission directed by Crystal |
| T-33 | Bullhead 2[c] | Sampler | Seminole | 1007 | | | 1105 | Simulated mission |
| T-33 | Bullhead 3[d] | Sampler | Seminole | 1010 | | | 1110 | Simulated mission |
| T-33 | Bullhead 4[e] | Sampler | Seminole | 1010 | | | 1110 | Simulated mission |
| T-33 | Bullhead 5[f] | Sampler | Seminole | 1011 | | | 1105 | Simulated mission |
| C-47 | Badger 1 | Terrain survey | Seminole | 1135 | | | 1545 | Simulated mission, radio check-out |

[a]Serial No. 386. [b]Serial No. 285. [c]Serial No. 920. [d]Serial No. 951. [e]Serial No. 048. [f]Serial No 913.

Table 2.2 — TEST-AIRCRAFT OPERATIONAL DATA FOR TUMBLER ABLE

Shot Time: 0900:07.5 PST, 1 April 1952

| Type aircraft | Code name | Use of aircraft | Take-off location | Take-off time | Enter area | Leave area | Landing time | Remarks |
|---|---|---|---|---|---|---|---|---|
| C-47 | Milkman | Disaster | Jumbo | 0330 | 0750 | 0903 | 1200 | Landed Bingo at 0645 |
| B-50 | Hazel | Strike | Jumbo | 0430 | 0655 | 0905 | 1110 | Completed Big Deal at 0859:45; IFI, start, 0656; complete, 0721 |
| B-29 | Copy Cat 1 | Telemeter | Jumbo | 0506 | 0736 | 0904 | 1037 | |
| B-50 | Tiger 1 | IBDA | Jumbo | 0515 | 0740 | 0906 | 1125 | At 0820 reports base of cloud about 3000 ft thick |
| B-50 | Tiger 2 | IBDA | Jumbo | 0525 | 0800 | 0903 | 1125 | Reports winds 284° at 31 mph |
| B-50 | Tiger 3 | IBDA | Jumbo | 0535 | 0819 | 0910 | 1105 | Reports winds 218° at 9 Angels |
| B-50 | Buttercup 1–12 | SAC obser. | Castle AFB | | 0852 | 0903 | | |
| B-50 | Buttercup 14 | SAC obser. | Travis AFB | | 0830 | 0903 | | |
| B-29 | Crystal[a] | Observation sampler | Seminole | 0755 | 0815 | 1118 | 1145 | Reports top of Rosie 16,000 ft, bottom of Rosie 14,000 ft |
| C-47 | Eyeball | Photo | Seminole | 0759 | 0812 | 0903 | 0909 | |
| B-29 | Hound Dog 1 | Tracker | Seminole | 0935 | | | 1615 | |
| B-29 | Bullhead 1[b] | Sampler | Seminole | 0910 | | | 1145 | |
| B-29 | Hound Dog 2 | Tracker | Seminole | 0915 | | | 0920 | Abort engine 1 |
| B-25 | Hound Dog 4 | Tracker | Seminole | 0918 | | | 1425 | |
| T-33 | Bullhead 2[c] | Sampler | Seminole | 1020 | | | 1160 | |
| T-33 | Bullhead 3[d] | Sampler | Seminole | 1026 | | | 1055 | |
| T-33 | Bullhead 4[e] | Sampler | Seminole | 1031 | | | 1105 | |
| T-33 | Bullhead 5[f] | Sampler | Seminole | 1036 | | | 1105 | |
| C-47 | Badger 1 | Terrain survey | Seminole | 1130 | | | 1540 | |
| C-47 | Badger 2 | Terrain survey | Seminole | 1220 | | | 1530 | |

[a]Serial No. 386. [b]Serial No. 285. [c]Serial No. 920. [d]Serial No. 951. [e]Serial No. 048. [f]Serial No. 913.

Table 2.3 — TEST-AIRCRAFT OPERATIONAL DATA FOR TUMBLER BAKER

Shot Time: 0929:57.05 PST, 15 April 1952

| Type aircraft | Code name | Use of aircraft | Take-off location | Take-off time | Enter area | Leave area | Landing time | Remarks |
|---|---|---|---|---|---|---|---|---|
| C-47 | Armchair | Disaster | Jumbo | 0400 | 0830 | 0935 | 1230 | |
| B-50 | Bluefish | Strike | Jumbo | 0500 | 0735 | 0935 | 1133 | IFI, start, 0740; complete, 0817. Completed Big Deal at 0930 |
| B-29 | Copy Cat 1 | Telemeter | Jumbo | 0535 | 0814 | 0935 | 1130 | |
| B-50 | Tiger 1 | IBDA | Jumbo | 0545 | 0820 | 0935 | 1140 | |
| B-50 | Tiger 2 | IBDA | Jumbo | 0555 | 0859 | 0935 | 1135 | |
| B-50 | Tiger 3 | IBDA | Jumbo | 0605 | 0846 | 0935 | 1125 | |
| B-50 | Buttercup 1–12 | SAC obser. | Barksdale AFB | | 0829 | 0935 | | |
| B-50 | Buttercup 13–14 | SAC obser. | Travis AFB | | 0835 | 0935 | | |
| C-47 | Eyeball | Photo | Seminole | 0830 | 0850 | 0939 | 0955 | |
| B-29 | Crystal[a] | Observation sampler | Seminole | 0935 | 0938 | 1240 | 1300 | |
| L-20 | Woodchuck 2 | Terrain survey | Seminole | 0940 | | | 1010 | Preliminary Rad-Safe mission |
| B-29 | Hound Dog 1 | Tracker | Seminole | 0945 | | | 1430 | |
| B-25 | Hound Dog 4 | Tracker | Seminole | 0948 | | | 1518 | |
| T-33 | Bullhead 2[b] | Sampler | Seminole | 1100 | | | 1145 | |
| T-33 | Bullhead 4[c] | Sampler | Seminole | 1105 | | | 1150 | |
| T-33 | Bullhead 5[d] | Sampler | Seminole | 1110 | | | 1200 | |
| T-33 | Bullhead 3[e] | Sampler | Seminole | 1125 | | | 1230 | |
| C-47 | Badger 1 | Terrain survey | Seminole | 1210 | | | 1740 | |
| C-47 | Badger 2 | Terrain survey | Seminole | 1215 | | | 1715 | |
| L-20 | Woodchuck 1 | Terrain survey | Seminole | 1430 | | | 1800 | |

[a]Serial No. 386. [b]Serial No. 920. [c]Serial No. 048. [d]Serial No. 913. [e]Serial No. 951.

Table 2.4 — TEST-AIRCRAFT OPERATIONAL DATA FOR TUMBLER CHARLIE

Shot Time: 0930:10 PST, 22 April 1952

| Type aircraft | Code name | Use of aircraft | Take-off location | Take-off time | Enter area | Leave area | Landing time | Remarks |
|---|---|---|---|---|---|---|---|---|
| B-29 | Hound Dog 3 | Tracker | McClellan AFB | 0025 | | | | Weather recon. at 0200; position, 37° 19′ north at 30,000 ft; winds, 120° at 16 knots; position, 38° 15′ north, 117° 46′ west at 30,000 ft; temp. 44°F, humd. 43% at 0225; no clouds over area; visibility, 50 miles; position, 38° 2′ north, 118° 20′ west; humd. 50% |
| C-47 | Rainbow | Disaster | Jumbo | 0345 | 0800 | 0934 | 1250 | Landed Bingo at 0656; airborne Bingo at 0747 |
| B-50 | Tugboat | Strike | Jumbo | 0445 | 0705 | 0941 | 1145 | IFI, start, 0705; complete, 0750 |
| L-20 | Woodchuck 2 | Security | Seminole | 0511 | | | 0818 | Security patrol of Forward Area |
| B-50 | Copy Cat 2 | Telemeter | Jumbo | 0520 | 0753 | 0933 | 1210 | At 0805 wind report, 310° at 25 knots; at 0820, permission granted to drop 1000 ft in altitude |
| B-50 | Tiger 1 | IBDA | Jumbo | 0530 | 0751 | 0936 | 1530 | At 0757 wind report, 334° at 15 knots; at 0818 wind report, 320° at 24 knots; not returning direct to Jumbo |
| B-50 | Tiger 2 | IBDA | Jumbo | 0540 | 0759 | 0936 | 1210 | |
| B-50 | Tiger 3 | IBDA | Jumbo | 0550 | 0819 | 0946 | 1140 | At 0818 wind report, 302° at 16 knots |
| F-84 | Bullhead 8 | Sampler | Seminole | 0620 | | | 0640 | Communications check flight |
| B-50 | Buttercup Pathfinder | SAC obser. | Sharkbait | | 0656 | 0946 | | Entering Topside for three wind runs; at 0714 wind report, 307° at 25 knots |
| YH-12 | Dreamboat | Rad. safety | Hairpin Mat | 0715 | | | 0810 | At 0738 plans on remaining in air until 0810 to burn fuel and recharge batteries |
| B-29 | Crystal[a] | Observation sampler | Seminole | 0815 | | | 1430 | At 0934 top of Rosie 26,000 ft; at 1108 leading edge 105, velocity 26 knots, direction 208°; at 1124 position B-30 at 2C3; at 1131 Rosie 2E2 B-30; at 1204 Rosie at B-16 |

[a]Serial No. 285.

Table 2.4 — (Continued)

| Type aircraft | Code name | Use of aircraft | Take-off location | Take-off time | Enter area | Leave area | Landing time | Remarks |
|---|---|---|---|---|---|---|---|---|
| B-50 | Buttercup 13 | SAC obser. | Sharkbait | 0821 | 0847 | 0934 | | |
| B-50 | Buttercup 14 | SAC obser. | Sharkbait | 0822 | | | | |
| B-50 | Buttercup Leader | SAC obser. | Sharkbait | 0828 | | | | With 12 Buttercups |
| C-47 | Eyeball | Photo | Seminole | 0832 | 0845 | 0941 | 1000 | |
| B-29 | Bullhead 1[a] | Sampler | Seminole | 0838 | | | 1327 | At 1058 Rosie is splitting and dispersing, appears to be at B-16; at 1312 returning to Seminole |
| B-29 | Hound Dog 1 | Tracker | Seminole | 0945 | | | 1505 | |
| B-25 | Hound Dog 4 | Tracker | Seminole | 0948 | | | 1248 | |
| C-46 | Shanghai Leader | Paradrop | Ellen | 1050 | | | | Drop time of troops 1115 in primary zone; entered Sourdough 1105; at 1125 leaving penetration |
| C-46 | Shanghai 2, 3, 5, and 6 | Paradrop | Ellen | 1050 | | | | To stay on HF, no contact on VHF; at 1125 leaving penetration |
| C-46 | Shanghai 4 | Paradrop | Ellen | 1050 | | | | At 1120 explains troopers jumped on red light instead of green; at 1126 requests helicopter be sent to troopers; at 1143 landing at Sourdough; at 1352 on way to Seminole; at 1400 leaving area |
| L-20 | Woodchuck 3 | Rad. safety | Seminole | 1120 | | | 1405 | Landing at Sourdough |
| YH-12 | Dreamboat | Rad. safety | Hairpin Mat | 1141 | | | 1225 | Going to SSW corner of Yucca to assist paratroopers; at 1151 reports two injured troopers; advised to return to Sourdough; at 1200 reports, as a guess, that injuries are light and no more injured troopers are left in area; at 1611 airborne for Seminole |
| T-33 | Bullhead 2[b] | Sampler | Seminole | 1145 | | | 1255 | |
| T-33 | Bullhead 3[c] | Sampler | Seminole | 1152 | | | 1249 | Will be airborne in 10 min; driver has Zero Fox; proceeding to 247, B-40 |

[a]Serial No. 386. [b]Serial No. 951. [c]Serial No. 920.

Table 2.4—(Continued)

| Type aircraft | Code name | Use of aircraft | Take-off location | Take-off time | Enter area | Leave area | Landing time | Remarks |
|---|---|---|---|---|---|---|---|---|
| T-33 | Bullhead 4[a] | Sampler | Seminole | 1155 | | | 1310 | At 1206 change to 202 at B-20; penetrate to the east and upper portion of Rosie |
| T-33 | Bullhead 5[b] | Sampler | Seminole | 1205 | | | 1218 | At 1208 proceeding to 2E5, B-4; at 1218, aborting because of engine trouble, return to Seminole |
| C-46 | Shanghai 5 | Paradrop | Ellen | 1223 | | 1230 | | Airborne Sourdough at 1223 |
| B-29 | Hound Dog 2 | Tracker | Seminole | 1230 | | | | |
| C-47 | Badger 2 | Terrain survey | Seminole | 1252 | | | 1550 | |
| C-47 | Badger 1 | Terrain survey | Seminole | 1300 | | | 1730 | |
| F-84 | Bullhead 6[c] | Sampler | Seminole | 1300 | | | 1358 | At 1312 proceeding to 2A7, B-39.5 |
| F-84 | Bullhead 8[d] | Sampler | Seminole | 1312 | | | 1420 | Proceeding to 2A7, B-39 |
| F-84 | Bullhead 7[e] | Sampler | Seminole | 1328 | | | 1425 | At 1332 proceeding to 2A7, B-39.5 |
| F-84 | Bullhead 9[f] | Sampler | Seminole | 1330 | | | 1425 | At 1339 proceeding to B-41 |
| F-84 | Bullhead 10[g] | Sampler | Seminole | 1335 | | | 1435 | At 1338 at 2A7, B-40 |
| T-33 | Bullhead 3[h] | Sampler | Seminole | 1345 | | | 1455 | |
| L-20 | Woodchuck 1 | Rad. safety | Seminole | 1557 | | | 1635 | At 1557 inbound to Sourdough; at 1603 requests transportation to pick up reports; at 1613 departing Sourdough for Seminole |

[a]Serial No. 048. [b]Serial No. 913. [c]Serial No. 033. [d]Serial No. 054. [e]Serial No. 051. [f]Serial No. 043. [g]Serial No. 042. [h]Serial No. 920.

Table 2.5 — TEST-AIRCRAFT OPERATIONAL DATA FOR TUMBLER DOG

Shot Time: 0829.58.6 PST, 1 May 1952

| Type aircraft | Code name | Use of aircraft | Take-off location | Take-off time | Enter area | Leave area | Landing time | Remarks |
|---|---|---|---|---|---|---|---|---|
| B-50 | Copy Cat 2 | Telemeter | Jumbo | 0420 | | | 1058 | |
| C-47 | Dagwood | Disaster | Jumbo | 0440 | 0700 | 0834 | 1125 | |
| B-50 | Tiger 1 | IBDA | Jumbo | 0450 | 0710 | 0836 | 1058 | At 0815 wind report, 261° at 20 knots |
| B-50 | Tiger 2 | IBDA | Jumbo | 0500 | 0710 | 0836 | 1125 | At 0840 wind report, 281° at 30 knots |
| B-50 | Tiger 3 | IBDA | Jumbo | 0510 | 0743 | 0840 | 1035 | |
| B-50 | Buttercup Weather | SAC obser. | Sharkbait | | 0521 | 0619 | | Wind runs in area, departing for Sharkbait |
| B-45 | Cutthroat | Strike | Jumbo | 0600 | 0724 | 0832 | 0947 | IFI completed at 0920 |
| B-50 | Buttercup Leader | SAC obser. | Sharkbait | | | | | At 0801 with 12 Buttercups over 2B, proceeding with mission |
| B-29 | Copy Cat 1 | Telemeter | Jumbo | 0625 | | | 1040 | Abort, engine 3 feathered, returning to Jumbo. Land at 0500; first take-off at 0430 |
| B-50 | Buttercup 14 | SAC obser. | Sharkbait | | 0744 | 0834 | | |
| B-50 | Buttercup 13 | SAC obser. | Sharkbait | | 0749 | 0836 | | At 0824 over Sharkbait |
| B-29 | Bullhead 1[a] | Sampler | Seminole | 0730 | | | 1215 | Reports top of Rosie, estimated at 27,000 to 28,000 ft |
| C-47 | Eyeball | Photo | Seminole | 0732 | 0744 | 0839 | 0907 | |
| B-29 | Hound Dog 2 | Tracker | Seminole | 0845 | | | 1347 | |
| YH-12 | Dreamboat | Rad. safety | Hairpin Mat | 0846 | | | 1158 | Mission completed at Groom Lake at 0935. Returned Indian Springs at 1700 |
| B-25 | Hound Dog 4 | Tracker | Seminole | 0848 | | | 1240 | |
| T-33 | Bullhead 3[b] | Sampler | Seminole | 0920 | | | 1010 | At 1036 suggest that more Bullheads be dispatched, Rosie moving fast |
| B-29 | Crystal[c] | Observation sampler | Seminole | 0947 | | | 1150 | Reports receiver inoperative, landing at Seminole at 0920; first take-off at 0720 |
| T-33 | Bullhead 2[d] | Sampler | Seminole | 0949 | | | 1040 | At 1102 proceeding to 2B8 |

[a]Serial No. 386. [b]Serial No. 920. [c]Serial No. 285. [d]Serial No. 951.

Table 2.5 — (Continued)

| Type aircraft | Code name | Use of aircraft | Take-off location | Take-off time | Enter area | Leave area | Landing time | Remarks |
|---|---|---|---|---|---|---|---|---|
| T-33 | Bullhead 4[a] | Sampler | Seminole | 1004 | | | 1104 | |
| T-33 | Bullhead 5[b] | Sampler | Seminole | 1015 | | | 1155 | |
| L-20 | Woodchuck 2 | Rad. safety | Seminole | 1020 | | | 1240 | |
| H-12 | Dreamboat | Rad. safety | Hairpin Mat | 1108 | | | 1200 | Returning to Seminole at 1610 |
| F-84 | Bullhead 6[c] | Sampler | Seminole | 1110 | | | 1210 | |
| F-84 | Bullhead 7[d] | Sampler | Seminole | 1115 | | | 1220 | |
| F-84 | Bullhead 8[e] | Sampler | Seminole | 1118 | | | 1153 | |
| F-84 | Bullhead 9[f] | Sampler | Seminole | 1120 | | | 1220 | |
| F-84 | Bullhead 10[g] | Sampler | Seminole | 1128 | | | 1208 | |
| C-47 | Badger 1 | Terrain survey | Seminole | 1131 | | | 1656 | |
| C-47 | Badger 2 | Terrain survey | Seminole | 1155 | | | 1620 | At position 1D4. You are directed to remain at this position and try to contact vehicles as listed. Remain at this position for instructions |

[a]Serial No. 048. [b]Serial No. 913. [c]Serial No. 033. [d]Serial No. 051. [e]Serial No. 054. [f]Serial No. 043. [g]Serial No. 042.



Table 2.6 — TEST-AIRCRAFT OPERATIONAL DATA FOR SNAPPER EASY

Shot Time: 0414:59.29 PST, 7 May 1952

| Type aircraft | Code name | Use of aircraft | Take-off location | Take-off time | Enter area | Leave area | Landing time | Remarks |
|---|---|---|---|---|---|---|---|---|
| B-29 | Hot Foot 1 | Para-gauge | Jumbo | 2205 | 0132 | 0424 | 0625 | At 0350 unable to establish wind run, Zebra 240° |
| B-29 | Hot Foot 2 | Para-gauge | Jumbo | 2321 | 0112 | 0422 | 0634 | At 0255, altitude correction 2.9; at 0406 wind report, 230° at 24 knots at 24,000 ft |
| B-50 | Tiger 1 | IBDA | Jumbo | 0045 | 0334 | 0422 | 1045 | |
| B-50 | Tiger 3 | IBDA | Jumbo | 0105 | 0350 | 0423 | 0635 | |
| B-50 | Tiger 2 | IBDA | Jumbo | 0127 | 0402 | 0423 | 0845 | At 0150, delayed take-off, oil leak |

Table 2.6 — (Continued)

| Type aircraft | Code name | Use of aircraft | Take-off location | Take-off time | Enter area | Leave area | Landing time | Remarks |
|---|---|---|---|---|---|---|---|---|
| C-47 | Eyeball | Photo | Seminole | 0335 | 0351 | 0430 | 0440 | |
| B-29 | Crystal[a] | Observation sampler | Seminole | 0350 | | | 1030 | At 0634 top of Rosie is 29,000 ft |
| B-29 | Bullhead 1[b] | Sampler | Seminole | 0400 | | | 0925 | At 0524 top of Rosie is 25,000 ft |
| F-84 | Bullhead 6[c] | Sampler | Seminole | 0426 | | | 0455 | |
| B-29 | Hound Dog 1 | Tracker | Seminole | 0430 | | | 0700 | Aborted, replaced by Hound Dog 2 |
| B-25 | Hound Dog 4 | Tracker | Seminole | 0433 | | | 0950 | Look for T-33 at 1C7, down and out of gas, believed to be in that vicinity. Airborne Caliente at 0805, for area; returning to Seminole at 1037 |
| H-12 | Dreamboat | Rad. safety | Hairpin Mat | 0458 | | | | |
| T-33 | Bullhead 2[d] | Sampler | Seminole | 0520 | | | 1430 | At 0608 emergency landing north of Ellen at Caliente. Land at 0615 |
| T-33 | Bullhead 4[e] | Sampler | Seminole | 0526 | | | 0625 | |
| C-47 | Badger 2 | Terrain survey | Seminole | 0530 | | | 1200 | At 0653 proceeding to 1O2; at 0743 proceeding to 1D2 at 10,000 ft |
| T-33 | Bullhead 3[f] | Sampler | Seminole | 0535 | | | 0725 | |
| T-33 | Bullhead 5[g] | Sampler | Seminole | 0535 | | | 0725 | |
| B-29 | Hound Dog 2 | Tracker | Seminole | 0558 | | | 1235 | At 1118 proceeding to 1X22 |
| F-84 | Bullhead 6[h] | Sampler | Seminole | 0558 | | | 0715 | |
| F-84 | Bullhead 7 | Sampler | Seminole | 0605 | | | 0745 | Aborted, left wing tip did not feed |
| F-84 | Bullhead 8[i] | Sampler | Seminole | 0605 | | | 0735 | |
| F-84 | Bullhead 9[j] | Sampler | Seminole | 0608 | | | 0735 | |
| F-84 | Bullhead 10[k] | Sampler | Seminole | 0810 | | | 0745 | |
| C-47 | Badger 1 | Terrain survey | Seminole | 0715 | | | 1230 | |
| L-20 | Woodchuck 1 | Rad. safety | Seminole | 0719 | | | 1106 | Reports no readings at 1D2 area; proceeding to 5 miles SSE of 1D2 to road intersection, making readings, and returning to Seminole |
| L-20 | Woodchuck | Rad. safety | Seminole | | | | 0910 | At 1049 returning to Seminole; at 1105 airborne Sourdough |

[a]Serial No. 386. [b]Serial No. 285. [c]Serial No. 040. [d]Serial No. 951. [e]Serial No. 048. [f]Serial No. 920. [g]Serial No. 913.
[h]Serial No. 040. [i]Serial No. 054. [j]Serial No. 043. [k]Serial No. 042.

Table 2.7 – TEST-AIRCRAFT OPERATIONAL DATA FOR SNAPPER FOX

Shot Time: 0359:59.6 PST, 25 May 1952

| Type aircraft | Code name | Use of aircraft | Take-off location | Take-off time | Enter area | Leave area | Landing time | Remarks |
|---|---|---|---|---|---|---|---|---|
| B-50 | Tiger 2 | IBDA | Jumbo | 2300 | 0246 | 0404 | 0927 | At 0252 wind report, 231° at 25 knots radar and clear at 30,000 ft; at 0637 proceeding to 1D2 |
| B-50 | Tiger 1 | IBDA | Jumbo | 0015 | 0236 | 0420 | 0615 | At 0328 wind report, 228° at 28 knots radar, est. Baker clouds $^{1}/_{10}$ - $^{2}/_{10}$ stratus at 15,000 - 17,000 ft; at 0512 top of Rosie 33,000 ft; landed Seminole at 0615 |
| B-50 | Tiger 3 | IBDA | Jumbo | 0025 | 0245 | 0404 | 0627 | |
| B-50 | Buttercup Snooper | SAC observ. | Sharkbait | | 0156 | 0405 | | At 0142 starting speed runs |
| B-50 | Buttercup Leader | SAC observ. | Sharkbait | | 0340 | 0407 | | With seven Buttercups |
| C-47 | Eyeball | Photo | Seminole | 0320 | 0337 | 0404 | 0415 | |
| B-29 | Crystal[a] | Observation sampler | Seminole | 0344 | | | 0918 | At 0554 position of Rosie 1A2; at 0618 leading edge 1A3 at 39,500 ft |
| B-29 | Bullhead 1[b] | Sampler | Seminole | 0345 | | | 0700 | At 0510 special mission canceled |
| F-84 | Bullhead 6[c] | Sampler | Seminole | 0408 | | | 0445 | At 0527 top of Rosie 39,500 ft; at 0531 bottom of Rosie sloping 30,000 ft to partially 31,000 ft |
| B-29 | Hound Dog 1 | Tracker | Seminole | 0415 | | | 1018 | |
| B-25 | Hound Dog 4 | Tracker | Seminole | 0418 | | | 0805 | At 0715 unable to maintain 1D4 |
| T-33 | Bullhead 2[d] | Sampler | Seminole | 0625 | | | 0740 | |
| C-47 | Badger 2 | Terrain survey | Seminole | 0625 | | | 0840 | At 0728 orbiting over 1E1 |
| T-33 | Bullhead 4[e] | Sampler | Seminole | 0630 | | | 0735 | |
| C-47 | Badger 1 | Tracker | Seminole | 0631 | | | 1130 | At 1131 position at 1D4 |
| T-33 | Bullhead 3[f] | Sampler | Seminole | 0637 | | | 0815 | |
| T-33 | Bullhead 5[g] | Sampler | Seminole | 0645 | | | 0910 | |
| F-84 | Bullhead 7[h] | Sampler | Seminole | 0711 | | | 0820 | |
| F-84 | Bullhead 8[i] | Sampler | Seminole | 0746 | | | 0900 | |

[a]Serial No. 285. [b]Serial No. 386. [c]Serial No. 834. [d]Serial No. 951. [e]Serial No. 048. [f]Serial No. 920. [g]Serial No. 913. [h]Serial No. 030. [i]Serial No. 791.

Table 2.7 (Continued)

| Type aircraft | Code name | Use of aircraft | Take-off location | Take-off time | Enter area | Leave area | Landing time | Remarks |
|---|---|---|---|---|---|---|---|---|
| F-84 | Bullhead 9[a] | Sampler | Seminole | 0753 | | | 0910 | |
| F-84 | Bullhead 10[b] | Sampler | Seminole | 0805 | | | 0945 | |
| YH-12 | Dreamboat 3 | Rad. safety | Sourdough | 0835 | | | 0932 | Mission completed to Groom Lake at 0935. Returning to Seminole at 1101 |
| F-84 | Bullhead 11[c] | Sampler | Seminole | 0900 | | | 0930 | |
| L-20 | Woodchuck 2 | Rad. safety | Seminole | 0927 | | | 1125 | |

[a]Serial No. 845. [b]Serial No. 782. [c]Serial No. 717.

Table 2.8 — TEST-AIRCRAFT OPERATIONAL DATA FOR SNAPPER GEORGE

Shot Time: 0354:59.8 PST, 1 June 1952

| Type aircraft | Code name | Use of aircraft | Take-off location | Take-off time | Enter area | Leave area | Landing time | Remarks |
|---|---|---|---|---|---|---|---|---|
| B-50 | Buttercup 13 | Weather recon. | Sharkbait | 0100 | | | | Weather reports at 25,000 ft, 260° 100-mile course from Sourdough |
| B-50 | Buttercup 1 | SAC obser. | Sharkbait | 0259 | | 0400 | | At 0424 speed run at 25,000 ft |
| C-47 | Eyeball | Photo | Seminole | 0327 | 0334 | 0400 | 0416 | |
| B-29 | Bullhead 1[a] | Sampler | Seminole | 0352 | | | 0627 | |
| B-29 | Crystal[b] | Observation sampler | Seminole | 0404 | | | 1000 | At 0524, leading edge of Rosie 1B2; at 0545, leading edge 1D2; at 0708, leading edge 1J3 |
| T-33 | Bullhead 3[c] | Sampler | Seminole | 0407 | | | 0505 | |
| T-33 | Bullhead 7[d] | Sampler | Seminole | 0407 | | | 0525 | |
| B-29 | Hound Dog 2 | Tracker | Seminole | 0410 | | | 1155 | |
| B-25 | Hound Dog 4 | Tracker | Seminole | 0418 | | | 0905 | At 0856 reports Easy reading negative, think not necessary to continue; at 0859 instructed to continue |

[a]Serial No. 386. [b]Serial No. 285. [c]Serial No. 920. [d]Serial No. 030.

Table 2.8 - (Continued)

| Type aircraft | Code name | Use of aircraft | Take-off location | Take-off time | Enter area | Leave area | Landing time | Remarks |
|---|---|---|---|---|---|---|---|---|
| F-84 | Bullhead 6[a] | Sampler | Seminole | 0506 | | | 0532 | At 0516, top of Rogie 32,500 ft, east; at 0519, lower Rogie west at 19,000 ft; at 0523, lower stem 18,500 ft down to 14,000 ft |
| L-20 | Woodchuck 2 | Terrain survey | Seminole | 0530 | | | 0805 | |
| T-33 | Bullhead 2[b] | Sampler | Seminole | 0622 | | | 0744 | |
| T-33 | Bullhead 5[c] | Sampler | Seminole | 0629 | | | 0736 | |
| C-47 | Badger 1 | Terrain survey | Seminole | 0630 | | | 1125 | |
| T-33 | Bullhead 4[d] | Sampler | Seminole | 0634 | | | 0803 | At 0758 beginning penetration at B-32 |
| F-84 | Bullhead 9[e] | Sampler | Seminole | 0639 | | | 0800 | At 0801 proceeding to 11.6 |
| C-47 | Badger 2 | Tracker | Seminole | 0650 | | | 1255 | At 0755 proceeding to 4F7; at 1001 proceeding to 1J1; at 1019, to 1O0; at 1053, to 1B4; and at 1314, to 1B2 |
| F-84 | Bullhead 6[f] | Sampler | Seminole | 0719 | | | 0809 | |
| F-84 | Bullhead 8[g] | Sampler | Seminole | 0725 | | | 0840 | |
| F-84 | Bullhead 10[h] | Sampler | Seminole | 0730 | | | 0843 | |
| F-84 | Bullhead 11[i] | Sampler | Seminole | 0733 | | | 0838 | |
| F-84 | Bullhead 12[j] | Sampler | Seminole | 0852 | | | 0958 | At 0956 proceeding to 1M5 at B-33 |
| B-29 | Hound Dog 1 | Tracker | Seminole | 0917 | | | 1300 | At 1215 reports at 1D0; at 1354 reports at 1K2, proceeding to Point 0 to survey, then home |

[a]Serial No. 781. [b]Serial No. 951. [c]Serial No. 913. [d]Serial No. 048. [e]Serial No. 834. [f]Serial No. 781. [g]Serial No. 791
[h]Serial No. 717. [i]Serial No. 859. [j]Serial No. 781.

Table 2.9 — TEST-AIRCRAFT OPERATIONAL DATA FOR SNAPPER HOW

Shot Time: 0355:00.3 PST, 5 June 1952

| Type aircraft | Code name | Use of aircraft | Take-off location | Take-off time | Enter area | Leave area | Landing time | Remarks |
|---|---|---|---|---|---|---|---|---|
| B-29 | Hot Foot 1 | | Jumbo | 2150 | 0128 | 0401 | 0510 | |
| B-29 | Hot Foot 2 | | Jumbo | 2155 | 0045 | 0358 | 0510 | |
| B-36 | Buttercup 4180 | | Sharkbait | 0034 | 0338 | 0408 | | What are your Angels? Ans., 38 |
| C-47 | Eyeball | Photo | Seminole | 0320 | | 0400 | 0430 | |
| B-29 | Crystal[a] | Observation sampler | Seminole | 0346 | | 0401 | 0916 | |
| B-29 | Bullhead 1[b] | Sampler | Seminole | 0346 | | | 0836 | |
| F-84 | Bullhead 6[c] | Sampler | Seminole | 0402 | | | | Top of Rosie (lower) Baker 17,000 ft at 0509, 0526 reports top of Rosie, 41,500 ft |
| B-29 | Hound Dog 1 | Tracking | Seminole | 0410 | | | 1000 | |
| B-25 | Hound Dog 4 | Tracking | Seminole | 0413 | | 0801 | | 0744 Chili Pepper, returning to Seminole at 0847 |
| T-33 | Bullhead 2[d] | Sampler | Seminole | 0431 | | | 0519 | |
| F-84 | Bullhead 7[e] | Sampler | Seminole | 0510 | | | 0621 | |
| L-20 | Woodchuck 2 | Terrain survey | Seminole | 0521 | | | 0811 | |
| C-47 | Badger 1 | Terrain survey | Seminole | 0555 | | | 1139 | |
| C-47 | Badger 2 | Terrain survey | Seminole | 0605 | | | | Part of Rosie located at 412. Returning to Seminole at 1131 |
| T-33 | Bullhead 3[f] | Sampler | Seminole | 0627 | | 0743 | | |
| T-33 | Bullhead 4[g] | Sampler | Seminole | 0631 | | 0734 | | |
| T-33 | Bullhead 5[h] | Sampler | Seminole | 0640 | | | | |
| F-84 | Bullhead 9[i] | Sampler | Seminole | 0642 | | 0735 | | Canceled 2d mission |
| F-84 | Bullhead 6[j] | Sampler | Seminole | 0659 | | | 0740 | |
| F-84 | Bullhead 8[k] | Sampler | Seminole | 0703 | | 0731 | | |
| F-84 | Bullhead 10[l] | Sampler | Seminole | 0706 | | | | Returning to Seminole at 0915 |
| F-84 | Bullhead 11 | Sampler | Seminole | 0714 | | | | Returning to Seminole at 0855 |
| L-20 | Woodchuck 2 | Terrain survey | Seminole | 0925 | | | 1155 | Special mission for J-6, Rad. safety |
| L-20 | Woodchuck 1 | Terrain survey | Seminole | 1230 | | | 1153 | Left Sourdough at 1207, flew 30 min and returned to Sourdough, on ground at 1153. Airborne Sourdough at 1238, returning to Seminole |

[a]Serial No. 285. [b]Serial No. 386 [c]Serial No. 859. [d]Serial No. 951. [e]Serial No. 030. [f]Serial No. 920.
[g]Serial No. 048. [h]Serial No. 913. [i]Serial No. 834. [j]Serial No. 859. [k]Serial No. 791. [l]Serial No. 717.

CHAPTER 3

# BOMB-DROP DATA

This chapter presents data collected by the telemetering aircraft and telemetering ground stations (unevaluated) and reports actual weather conditions at the nuclear detonation time as supplied by the Air Force Weather Service.

Table 3.1 — ACTUAL WEATHER CONDITIONS FOR NUCLEAR DETONATION ONE, 1 APRIL 1952 (0900 PST)

Location: Mercury Weather Station, NPG, Mercury, Nev.
Cloud cover: $^{1}/_{10}$ alto-stratus at 18,000 ft MSL. $^{5}/_{10}$ cirro-stratus at 25,000 ft MSL
Precipitation: no precipitation within 1000 miles
Pressure: Ground Zero, 914 mb
Burst height, 888.5 mb
Virtual temperature: Ground Zero, 58.5°F
Burst height, 57.0°F
Actual temperature: Ground Zero, 58.0°F
Burst height, 56.5°F
Relative humidity: Ground Zero, 28 %
Burst height, 30 %
Altimeter setting: 30.19 in.
Surface observation at Control Point, 0900 PST: sky, overcast with two layers of clouds, a scattered layer at 18,000 ft MSL and overcast at 25,000 ft MSL; visibility, 40 miles; sea-level pressure, 1002.6 mb; temperature, 54.0°F; dew point, 22.0°F; wind, NW at 6 knots; station pressure, 25.971 in.; relative humidity, 32 %

| Winds above Ground Zero | | | Winds above Ground Zero | | |
|---|---|---|---|---|---|
| Height above MSL, ft | Deg from true north | Speed, knots | Height above MSL, ft | Deg from true north | Speed, knots |
| Surface | 050 | 06 | 14,000 | 250 | 14 |
| 5,000 | 090 | 05 | 15,000 | 260 | 17 |
| 6,000 | 120 | 05 | 16,000 | 260 | 20 |
| 7,000 | 140 | 07 | 18,000 | 260 | 34 |
| 8,000 | 170 | 08 | 20,000 | 260 | 37 |
| 9,000 | 200 | 08 | 25,000 | 260 | 43 |
| 10,000 | 210 | 10 | 30,000 | 270 | 64 |
| 12,000 | 250 | 15 | | | |

Table 3.2—ACTUAL WEATHER CONDITIONS FOR NUCLEAR DETONATION TWO, 15 APRIL 1952 (0930 PST)

Location: Mercury Weather Station, NPG, Mercury, Nev.
Cloud cover: clear, visibility 40 miles
Precipitation: nearest precipitation at Salt Lake City, Utah
Pressure: Ground Zero, 878 mb
Burst height, 842 mb
Virtual temperature: Ground Zero, 55.0°F
Burst height, 48.3°F
Actual temperature: Ground Zero, 52.8°F
Burst height, 48.0°F
Relative humidity: Ground Zero, 30 %
Burst height, 30 %
Altimeter setting: 30.19 in.
Surface observation at Control Point, 0930 PST: sky, clear; visibility, 40 miles; sea-level pressure, 1002.5 mb; temperature, 54.0°F; dew point, 24.0°F; wind, NNW at 9 knots; station pressure, 25.970 in.; relative humidity, 30 %

| Winds above Ground Zero | | | Winds above Ground Zero | | |
|---|---|---|---|---|---|
| Height above MSL, ft | Deg from true north | Speed, knots | Height above MSL, ft | Deg from true north | Speed, knots |
| Surface | 050 | 06 | 16,000 | 310 | 18 |
| 5,000 | 040 | 06 | 18,000 | 310 | 18 |
| 6,000 | 040 | 06 | 20,000 | 300 | 25 |
| 7,000 | 050 | 09 | 25,000 | 270 | 30 |
| 8,000 | 040 | 12 | 30,000 | 260 | 35 |
| 9,000 | 030 | 12 | 35,000 | 260 | 22 |
| 10,000 | 360 | 09 | 40,000 | 270 | 28 |
| 12,000 | 340 | 08 | 45,000 | 270 | 40 |
| 14,000 | 320 | 09 | 50,000 | 270 | 40 |
| 15,000 | 310 | 14 | 55,000 | 270 | 23 |

Table 3.3 — ACTUAL WEATHER CONDITIONS FOR NUCLEAR DETONATION THREE, 22 APRIL 1952 (0930 PST)

Location: Mercury Weather Station, NPG, Mercury, Nev.
Cloud cover: cumulus with less than $^{1}/_{10}$ coverage
Precipitation: no precipitation within 1000 miles
Pressure: Ground Zero, 873 mb
Burst height, 770 mb
Virtual temperature: Ground Zero, 68.2°F
Burst height, 47.0°F
Actual temperature: Ground Zero, 66.1°F
Burst height, 45.3°F
Relative humidity: Ground Zero, 30 %
Burst height, 47 %
Altimeter setting: 30.06 in.
Surface observation at Control Point, 0930 PST: sky, clear with few cumulus NE (less than $^{1}/_{10}$ coverage); visibility 30 miles; sea-level pressure, 1014.1 mb; temperature, 65.0°F; dew point, 38°F; wind, calm; station pressure, 25.855 in.; relative humidity, 37 %

| Winds above Ground Zero | | | Winds above Ground Zero | | |
|---|---|---|---|---|---|
| Height above MSL, ft | Deg from true north | Speed, knots | Height above MSL, ft | Deg from true north | Speed, knots |
| Surface | 230 | 06 | 15,000 | 330 | 16 |
| 5,000 | 220 | 08 | 16,000 | 330 | 14 |
| 6,000 | 220 | 08 | 18,000 | 330 | 13 |
| 7,000 | 210 | 07 | 20,000 | 340 | 15 |
| 8,000 | 210 | 05 | 25,000 | 330 | 16 |
| 9,000 | 240 | 03 | 30,000 | 310 | 29 |
| 10,000 | 290 | 05 | 35,000 | 290 | 15 |
| 12,000 | 350 | 08 | 40,000 | 270 | 22 |
| 14,000 | 360 | 16 | 45,000 | 250 | 28 |

Table 3.4 — ACTUAL WEATHER CONDITIONS FOR NUCLEAR DETONATION FOUR, 1 MAY 1952 (0830 PST)

Location: Mercury Weather Station, NPG, Mercury, Nev.
Cloud cover: clear
Precipitation: no precipitation within 1000 miles
Pressure: Ground Zero, 877 mb
Burst height, 845 mb
Virtual temperature: Ground Zero, 65.2°F
Burst height, 61.4°F
Actual temperature: Ground Zero, 62.8°F
Burst height, 59.0°F
Relative humidity: Ground Zero, 47 %
Burst height, 50 %
Altimeter setting: 30 17 in.
Surface observation at Control Point, 0830 PST: sky, clear; visibility, 50 miles; sea-level pressure, 1018.2 mb; temperature, 63.0°F; dew point, 42.0°F; wind, W at 2 knots; station pressure, 25.950 in.; relative humidity, 47 %

| Winds above Ground Zero | | | Winds above Ground Zero | | |
|---|---|---|---|---|---|
| Height above MSL, ft | Deg from true north | Speed, knots | Height above MSL, ft | Deg from true north | Speed, knots |
| Surface | 020 | 03 | 14,000 | 250 | 12 |
| 5,000 | 240 | 04 | 15,000 | 260 | 18 |
| 6,000 | 210 | 06 | 16,000 | 280 | 19 |
| 7,000 | 200 | 09 | 18,000 | 270 | 26 |
| 8,000 | 190 | 11 | 20,000 | 260 | 31 |
| 9,000 | 180 | 12 | 25,000 | 260 | 21 |
| 10,000 | 190 | 13 | 30,000 | 250 | 38 |
| 12,000 | 190 | 12 | 35,000 | 260 | 41 |

Table 3.5 — ACTUAL WEATHER CONDITIONS FOR NUCLEAR DETONATION FIVE, 7 MAY 1952 (0420 PST)

Location: Mercury Weather Station, NPG, Mercury, Nev.
Cloud cover: $^{8}/_{10}$ alto-cumulus and alto-stratus at 18,000 ft MSL
Precipitation: nearest precipitation at Salt Lake City, Utah
Pressure: Ground Zero, 868 mb
Burst height, 858 mb
Virtual temperature: Ground Zero, 62.4°F
Burst height, 64.0°F
Actual temperature: Ground Zero, 60.5°F
Burst height, 63.8°F
Relative humidity: Ground Zero, 40 %
Burst height, 37 %
Altimeter setting: 29.89 in.
Surface observation at Control Point, 0420 PST: sky, overcast; visibility, 35 miles; sea-level pressure, 1007.8 mb; temperature, 57.0°F; dew point, 30.0°F; wind, calm; station pressure, 25.700 in.; relative humidity, 35 %

| Winds above Ground Zero | | | Winds above Ground Zero | | |
|---|---|---|---|---|---|
| Height above MSL, ft | Deg from true north | Speed, knots | Height above MSL, ft | Deg from true north | Speed, knots |
| Surface | Calm | Calm | 12,000 | 190 | 45 |
| 4,000 | Calm | Calm | 14,000 | 190 | 54 |
| 5,000 | Calm | Calm | 15,000 | 190 | 49 |
| 6,000 | 180 | 20 | 16,000 | 210 | 48 |
| 7,000 | 180 | 26 | 18,000 | 210 | 58 |
| 8,000 | 180 | 32 | 20,000 | 220 | 67 |
| 9,000 | 190 | 35 | 25,000 | 220 | 78 |
| 10,000 | 180 | 36 | 30,000 | 220 | 93 |

Table 3.6 — ACTUAL WEATHER CONDITIONS FOR NUCLEAR DETONATION SIX, 25 MAY 1952 (0400 PST)

Location: Mercury Weather Station, NPG, Mercury, Nev.
Cloud cover: $^{2}/_{10}$ alto-cumulus at 18,000 ft MSL
Precipitation: nearest precipitation at Pocatello, Idaho
Pressure: Ground Zero, 868 mb
Burst height, 858 mb
Virtual temperature: Ground Zero, 58.4°F
Burst height, 69.3°F
Actual temperature: Ground Zero, 57.1°F
Burst height, 67.0°F
Relative humidity: Ground Zero, 41 %
Burst height, 41 %
Altimeter setting: 30.00 in.
Surface observation at Control Point, 0400 PST: $^{2}/_{10}$ alto-cumulus at 18,000 ft MSL; visibility, 40 miles; sea-level pressure, 1011.0 mb; temperature, 56.0°F; dew point, 37.0°F; wind, NNW at 3 knots; station pressure, 25.801 in.; relative humidity, 48 %

| Winds above Ground Zero | | | Winds above Ground Zero | | |
|---|---|---|---|---|---|
| Height above MSL, ft | Deg from true north | Speed, knots | Height above MSL, ft | Deg from true north | Speed, knots |
| Surface | Calm | Calm | 14,000 | 200 | 06 |
| 5,000 | 210 | 02 | 15,000 | 150 | 04 |
| 6,000 | 210 | 08 | 16,000 | 120 | 06 |
| 7,000 | 220 | 11 | 18,000 | 140 | 09 |
| 8,000 | 220 | 11 | 20,000 | 220 | 08 |
| 9,000 | 220 | 11 | 25,000 | 240 | 23 |
| 10,000 | 220 | 10 | 30,000 | 230 | 25 |
| 12,000 | 210 | 09 | 35,000 | 240 | 35 |

Table 3.7 — ACTUAL WEATHER CONDITIONS FOR NUCLEAR DETONATION SEVEN, 1 JUNE 1952 (0355 PST)

Location: Mercury Weather Station, NPG, Mercury, Nev.
Cloud cover: clear
Precipitation: nearest precipitation at Salt Lake City, Utah
Pressure: Ground Zero, 872 mb
Burst height, 862 mb
Virtual temperature: Ground Zero, 54.0°F
Burst height, 59.3°F
Actual temperature: Ground Zero, 52.6°F
Burst height, 57.4°F
Relative humidity: Ground Zero, 48 %
Burst height, 50 %
Altimeter setting: 29.82 in.
Surface observation at Control Point, 0355 PST: sky, clear; visibility, 30 miles; sea-level pressure, 1005.4 mb; temperature, 52.0°F; dew point, 25.0°F; wind, calm; station pressure, 25.640 in.; relative humidity, 34 %

| Winds above Ground Zero | | | Winds above Ground Zero | | |
|---|---|---|---|---|---|
| Height above MSL, ft | Deg from true north | Speed, knots | Height above MSL, ft | Deg from true north | Speed, knots |
| Surface | Calm | Calm | 14,000 | 180 | 26 |
| 5,000 | Calm | Calm | 15,000 | 170 | 26 |
| 6,000 | 170 | 17 | 16,000 | 170 | 29 |
| 7,000 | 170 | 18 | 18,000 | 190 | 30 |
| 8,000 | 170 | 17 | 20,000 | 190 | 44 |
| 9,000 | 160 | 17 | 25,000 | 200 | 42 |
| 10,000 | 160 | 15 | 30,000 | 190 | 36 |
| 12,000 | 180 | 17 | | | |

Table 3.8 — ACTUAL WEATHER CONDITIONS FOR NUCLEAR DETONATION EIGHT, 5 JUNE 1952 (0355 PST)

Location: Mercury Weather Station, NPG, Mercury, Nev.
Cloud cover: clear
Precipitation: no precipitation within 800 miles
Pressure: Ground Zero, 863 mb
Burst height, 854 mb
Virtual temperature: Ground Zero, 65.3°F
Burst height, 72.0°F
Actual temperature: Ground Zero, 64.0°F
Burst height, 68.7°F
Relative humidity: Ground Zero, 45 %
Burst height, 50 %
Altimeter setting: 30.04 in.
Surface observation at Control Point, 0355 PST: sky, clear; visibility, 50 miles; sea-level pressure, 1011.3 mb; temperature, 64.0°F; dew point, 36.0°F; wind, N at 2 knots; station pressure, 25.836 in.; relative humidity, 37 %

| Winds above Ground Zero | | | Winds above Ground Zero | | |
|---|---|---|---|---|---|
| Height above MSL, ft | Deg from true north | Speed, knots | Height above MSL, ft | Deg from true north | Speed, knots |
| Surface | Calm | Calm | 14,000 | 120 | 25 |
| 5,000 | Calm | Calm | 15,000 | 120 | 24 |
| 6,000 | 210 | 05 | 16,000 | 120 | 22 |
| 7,000 | 170 | 06 | 18,000 | 150 | 19 |
| 8,000 | 150 | 06 | 20,000 | 150 | 15 |
| 9,000 | 140 | 11 | 25,000 | 160 | 22 |
| 10,000 | 140 | 13 | 30,000 | 150 | 25 |
| 12,000 | 130 | 17 | | | |

CHAPTER 4

# CLOUD SAMPLING BY MANNED AIRCRAFT

## 4.1 SCOPE

The purposes of this chapter are to report on all phases of cloud-sampling operations including the F-84G training program for Task Group 132.4; to give an account of personnel radiation dosages encountered during operations; to narrate in detail the actual operation of the airborne sampler-controller and each manned sampler; and to present a record of data collected which includes the sample size attained during each penetration through a nuclear cloud.

## 4.2 ORGANIZATION AND PLANNING

### 4.2.1 Personnel

The sampler-controller aircraft crew consisted of a B-29 flight crew, radiological director, and a representative from SWC and LASL. Manned-sampling aircraft crews consisted of a B-29 flight crew, 8 T-33 pilots, and 10 radiological officers. The personnel were from 4925th Test Group (ATOMIC), WADC, APGC, and SAC. The F-84G pilots assigned to SWC for training were to be a part of Task Group 132.4.

### 4.2.2 Train[illegible]

Sixteen SAC officers with passive defense backgrounds arrived for training in cloud sampling and terrain survey 10 March. Twelve SAC officers received complete training in ground and terrain survey, and four were sent to MAFB, California, for a special course in terrain survey and instrumentation. Following the lecture series at KAFB on terrain survey and cloud sampling, a flying program was initiated demonstrating techniques and procedures for each officer so that he would become fully acquainted with all instruments and equipment. The following flights were accomplished during this period: seven B-29 airborne control flights; thirty T-33 sampler flights; and three C-47 terrain survey flights.

### 4.2.3 Equipment

The major items of operating equipment used at ISAFB consisted of the following radiac instruments:

(a) AN/PDR T1-B ion chamber
(b) 200-mr pocket dosimeter
(c) 1-r pocket dosimeter
(d) 10-r pocket dosimeter

(e) Electronic integrating gamma-dosage device (developed by the Electronics Section, LASL)
(f) 4.5 density goggles

### 4.2.4 Facilities

Manned-sampling headquarters, briefing and operations, were located in a large quonset hut on the eastern end of the flight line at ISAFB.

## 4.3 FACTUAL DATA

Tables 4.1 to 4.9 of this chapter outline in columnated form all data collected by each sampling aircraft for each penetration made through the nuclear cloud. A detailed summary of each shot is given in Secs. 4.3.1 to 4.3.9.

### 4.3.1 Manned Sampling for Tumbler Able X Ray (Dry Run)

An HE unit was dropped at 0929:24, 30 March 1952. The sampler-controller aircraft, B-29 No. 386, was on orbit as scheduled. The T-33 type aircraft flew normal missions, making 10 simulated penetrations and returning to ISAFB. The entire mission took approximately 50 min.

The sampler-controller, B-29 No. 386, took off at 0838 and was on orbit at 0900. Aboard were the assigned crew and the radiological directors. At 0955 the first sampler, B-29 No. 285, was called up for a penetration; three succeeding penetrations were made through simulated clouds, and practice messages were transmitted to the airborne controller. The second sampler, T-33 No. 920, was vectored to a position, made three passes, and returned to ISAFB. The third sampler, T-33 No. 951, took off at 1010, made three practice penetrations, transmitted simulated inflight reports to the airborne controller, and returned to ISAFB. The fourth and fifth samplers, T-33 Nos. 048 and 913, each took off at 1-min intervals, climbed to an altitude of 15,000 ft, made three passes at simulated atomic clouds, checked radio procedures for reporting, and then returned to ISAFB.

This mission was the dress rehearsal for the forthcoming nuclear tests. Radiological monitors, pilots, and other crew members received a final check-out in sampling Standing Operating Procedures, and pilots received additional familiarization on terrain features and vectoring procedures. A final debriefing was held to clear up minor discrepancies.

### 4.3.2 Manned Sampling for Tumbler Able

The mission was completed in accordance with the schedule. The grid system proved to be satisfactory. The T-33 aircraft took off as called for, completed their sampling penetrations, and returned to ISAFB in approximately 30 min after take-off.

The sampler-controller, B-29 No. 386, took off at 0755 and was in orbit at 0758; aboard were the assigned crew plus the radiological directors. At 0840 the first sampler, B-29 No. 285, was called and was given a vector for its first penetration; two penetrations were made at 14,500 ft. Radiation was initially detected at 5 miles out from the cloud on an MX-5 type of radiac instrument. The aircraft contamination background after leaving the cloud was approximately 5 mr/hr.

The second sampler, T-33 No. 920, was given its first vector at 1020 and flew directly to the cloud. This aircraft could not go faster than 320 mph indicated air speed due to landing gear trouble. However, two passes on headings of 260 and 80° were made, and the aircraft then returned to ISAFB with a dosimeter reading of 80 mr.

The third sampler, T-33 No. 951, was called up at 1026; it made two penetrations and returned to ISAFB with a dosimeter reading of 90 mr.

The fourth sampler, T-33 No. 048, took off at 1031, made three penetrations, and returned to ISAFB with a dosimeter reading of 85 mr.

Table 4.1 — FILM-BADGE READINGS FOR MANNED-SAMPLING PERSONNEL
(IN MILLIROENTGENS)

| Personnel | Tumbler | | | | | Snapper | | | | | Total T-S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Able | Baker | Charlie | Dog | Total | Easy | Fox | George | How | Total | |
| Pilot | 40 | 250 | 154 | 25 | 469 | 15 | 840 | 0 | 375 | 1230 | 1699 |
| Copilot | 52 | 300 | 140 | 25 | 517 | 0 | | | | 0 | 517 |
| L. scanner | 38 | 300 | 135 | | 473 | 0 | 1025 | 0 | 510 | 1535 | 2008 |
| R. scanner | 20 | 310 | 100 | | 430 | 15 | 1100 | 8 | | 1123 | 1553 |
| Rad. officer | 38 | 260 | 120 | 25 | 443 | 25 | 24 | 8 | | 57 | 500 |
| SWC | 38 | 160 | 130 | 20 | 348 | 25 | 15 | 8 | | 48 | 396 |
| LASL | 40 | 215 | 130 | 25 | 410 | 0 | 40 | 8 | | 48 | 458 |
| Pilot | 225 | | 450 | | 675 | 1070 | 24 | 980 | | 2074 | 2749 |
| Copilot | 225 | | 410 | | 635 | 990 | 950 | 0 | | 1940 | 2575 |
| Engineer | 225 | | | | 225 | | | | | 0 | 225 |
| L. scanner | 270 | | 480 | 35 | 785 | 1085 | 32 | 960 | | 2077 | 2862 |
| R. scanner | 255 | | 510 | 25 | 790 | 1115 | 24 | 1210 | | 2349 | 3139 |
| Rad. officer | 220 | 360 | 1240 | 1990 | 3810 | | | | | 0 | 3810 |
| Pilot | 175 | 60 | 780 | 760 | 1775 | | | | | 0 | 1775 |
| Rad. officer | 160 | 50 | | 1830 | 2040 | | | | | 0 | 2040 |
| Pilot | 225 | 90 | 340 | 1890 | 2545 | | | | | 0 | 2545 |
| Rad. officer | 190 | | | | 190 | | | | | 0 | 190 |
| Pilot | 200 | 90 | 1300 | 1130 | 2720 | | | | | 0 | 2720 |
| Rad. officer | 200 | 90 | 1740 | 1160 | 3190 | | | | | 0 | 3190 |
| Engineer | | 280 | | | 280 | 0 | 910 | 0 | | 910 | 1190 |
| Rad. officer | | 90 | 160 | 875 | 1125 | | | | | 0 | 1125 |
| Pilot | | 340 | 1370 | 2330 | 4040 | | | | | 0 | 4040 |
| Rad. safety | | | 430 | 1910 | 2340 | | | | | 0 | 2340 |
| Eng. officer | | | 450 | | 450 | | | | | 0 | 450 |
| Copilot | | | | | | | | | 320 | 320 | 320 |
| Engineer | | | | | | | | | 0 | 0 | 0 |
| Pilot | | | 360 | | 360 | | | | | 0 | 360 |
| Pilot | | | 180 | | 180 | | | | | 0 | 180 |
| Pilot | | | 230 | | 230 | | | | | 0 | 230 |
| Pilot | | | 130 | | 130 | | | | | 0 | 130 |
| Pilot | | | 160 | | 160 | | | | | 0 | 160 |
| Pilot | | | 180 | | 180 | | | | | 0 | 180 |
| Pilot | | | | 60 | 60 | | | | | 0 | 60 |
| Pilot | | | | 80 | 80 | | | | | 0 | 80 |
| Pilot | | | | 155 | 155 | | | | | 0 | 155 |
| Pilot | | | | 115 | 115 | | | | | 0 | 115 |
| Pilot | | | | 45 | 45 | | | | | 0 | 45 |
| Pilot | | | | 2045 | 2045 | | | | | 0 | 2045 |
| Copilot | | | | 1130 | 1130 | | | | | 0 | 1130 |
| Engineer | | | | 2000 | 2000 | | | | | 0 | 2000 |

Table 4.1 — (Continued)

| Personnel | Tumbler | | | | | Snapper | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Able | Baker | Charlie | Dog | Total | Easy | Fox | George | How | Total | T-S |
| L. scanner | | | | 2370 | 2370 | | | | | 0 | 2370 |
| R. scanner | | | | 2300 | 2300 | | | | | 0 | 2300 |
| Engineer | 20 | | | 25 | 45 | 1100 | 15 | 970 | 15 | 2100 | 2145 |
| Rad. officer | | | | | | 991 | 460 | 5000 | | 6451 | 6451 |
| Rad. officer | | | | | | 0 | 1100 | 375 | 420 | 1895 | 1895 |
| Pilot | | | | | | 0 | 1050 | 410 | 490 | 1950 | 1950 |
| Pilot | | | | | | 1160 | 470 | 4600 | | 6230 | 6230 |
| Rad. officer | | | | | | 1080 | | 880 | 35 | 1995 | 1995 |
| Pilot | | | | | | 0 | 220 | 1320 | 120 | 1660 | 1660 |
| Rad. officer | | | | | | 0 | 230 | 1225 | 130 | 1585 | 1585 |
| Pilot | | | | | | 886 | 190 | 530 | 92 | 1698 | 1698 |
| Rad. officer | | | | | | 992 | 220 | 500 | 74 | 1786 | 1786 |
| Pilot | | | | | | 140 | | | | 140 | 140 |
| Pilot | | | | | | 15 | | | 66 | 81 | 81 |
| Pilot | | | | | | 405 | | | | 405 | 405 |
| Pilot | | | | | | 140 | | | | 140 | 140 |
| Pilot | | | | | | 24 | | | | 24 | 24 |
| Pilot | | | | | | | | | 15 | 15 | 15 |
| Rad. officer | | | | | | 800 | | | 310 | 1110 | 1110 |
| Pilot | | | | | | 450 | | | | 450 | 450 |
| Pilot | | | | | | 140 | | | | 140 | 140 |
| Pilot | | | | | | 50 | | | | 50 | 50 |
| Pilot | | | | | | | | | 8 | 8 | 8 |
| Pilot | | | | | | 65 | | | | 65 | 65 |
| Pilot | | | | | | 65 | | | | 65 | 65 |
| Pilot | | | | | | | | | 48 | 48 | 48 |
| Pilot | | | | | | 170 | | | | 170 | 170 |
| Rad. office. | | | | | | | | 930 | | 930 | 930 |
| Pilot | | | | | | | | 75 | | 75 | 75 |
| Pilot | | | | | | | | | 48 | 48 | 48 |
| Pilot | | | | | | | | • | | | • |
| Pilot | | | | | | | | | 66 | 66 | 66 |
| Pilot | | | | | | | | 35 | | 35 | 35 |
| Pilot | | | | | | | | | 66 | 66 | 66 |
| Pilot | | | | | | | | 215 | | 215 | 215 |
| Pilot | | | | | | | | 25 | | 25 | 25 |
| Pilot | | | | | | | | 8 | | 8 | 8 |
| Pilot | | | | | | | | 75 | | 75 | 75 |

*No reading.

Table 4.2 — MANNED-SAMPLING DATA FOR TUMBLER ABLE

Shot Time: 0900:07.5 PST, 1 April 1952
Apparent Fireball Yield: 1.28 ± 0.13 Kt*

| Aircraft type and code No. | Penetration No. | Altitude, $10^3$ ft MSL | Indicated air speed, mph | Total time in cloud, sec | Peak intensity, r | Time from 1 r to 1 r, sec | Cumulative dosimeter reading, mr | Dir. and dist. from zero point | Max. A/C intensity, mr/hr | Sample size per sq ft of filter paper |
|---|---|---|---|---|---|---|---|---|---|---|
| Crystal B-29 No. 386† | | | | | | | | | | |
| Bullhead 1 | 1 | 14.5 | 205 | NR | 6 | 70 | 65 | 112°, 26 mi | Neg | |
| B-29 No. 285 | 2 | 14.5 | 210 | NR | 5 | NR | 105 | 112°, 26 mi | Neg | $1.1 \times 10^{-10}$ |
| Bullhead 2 | 1 | 14.5 | 320 | 30 | 10 | 28 | 40 | 108°, 33 mi | 1100 | |
| T-33 No. 920 | 2 | 14.5 | 310 | 60 | 5 | 85 | 80 | 108°, 33 mi | 1100 | $4.35 \times 10^{-10}$ |
| Bullhead 3 | 1 | 14 | 390 | 60 | 8 | 35 | 35 | 112°, 26 mi | 240 | |
| T-33 No. 951 | 2 | 14.5 | 400 | 60 | 8 | NR | 90 | 112°, 26 mi | 240 | $2.4 \times 10^{-9}$ |
| Bullhead 4 | 1 | 14 | 400 | 60 | 10 | 28 | 5 | 108°, 33 mi | 900 | |
| T-33 No. 048 | 2 | 14.5 | 400 | 60 | 12 | NR | 60 | 108°, 33 mi | 900 | |
| | 3 | 15 | 400 | 60 | 10 | NR | 85 | 108°, 33 mi | 900 | $1.7 \times 10^{-10}$ |
| Bullhead 5 | 1 | 14.5 | 360 | 55 | 9 | 52 | 35 | 108°, 33 mi | 140 | |
| T-33 No. 913 | 2 | 15 | 375 | NR | 3 | | 90 | 108°, 33 mi | 140 | $3.3 \times 10^{-10}$ |

*Taken from Tumbler-Snapper Summary Report on Diagnostic Measurements, WT-550, November 1952.

†Sampler-controller.

The fifth sampler, T-33 No. 913, was vectored at 1036, made two penetrations, and returned to ISAFB with a dosimeter reading of 90 mr.

### 4.3.3 Manned Sampling for Tumbler Baker

After H-hour the cloud ascended to approximately 16,000 ft. It slowly dispersed with the lower part moving south and the upper part moving 135° from zero point (see grid map Chap. 1). The sampler-controller, B-29 No. 386, was on orbit as scheduled, but owing to communication difficulties returned to ISAFB, repaired set, and was back in the air at 0935. After observing the cloud and taking photographs of formation, the controller alerted the sampling aircraft for take-off, and then actual of the nuclear cloud took place within 100 min. Sampler one, B-29 No. 285, had a gas leak and aborted the mission. It was necessary to use the sampler-controller, B-29 No. 386, as a number one sampler; with this double mission, the sampler aircraft made four penetrations through the nuclear cloud after directing the T-33 samplers. Sampler two, T-33 No. 920, had no difficulty in locating the cloud in the grid path. The cloud was easily visible after take-off but the determination of a good penetration altitude was hard. The first penetration gave a peak reading of only 200 mr. It was noted by the radiological officer that on a sharp turn to the right, with gravity forces approximately 2.5, the integrated dosimeter gained about 50 mr; no explanation other than a possible geometry factor involved could be given.

Samplers two and four, T-33 No. 920 and T-33 No. 048, were requested to sample crosswinds, and samplers three and five, T-33 No. 951 and T-33 No. 913, sampled upwind and downwind. Sampling, in general, was difficult since there were no directional shears of the wind. The sampling operation was completed in approximately 2 hr 45 min.

Four penetrations by Bullhead 2 were made with a maximum dosimeter reading of 30 mr. The third sampler, T-33 No. 951, was called up at 1125. Three penetrations were made with a dosimeter reading of 60 mr. This aircraft had difficulty in making passes through the cloud at an altitude of 10,000 ft. The cloud was irregular and not clearly defined at this altitude. The fourth, T-33 No. 048, was given a vector at 1105 and also had difficulty in penetrating the cloud at a proper altitude; however, four penetrations were made with a dosimeter reading of only 45 mr. The fifth sampler, T-33 No. 913, was called at 1110. This aircraft orbited for 15 min at 20,000 ft. The nuclear cloud was easily visible below, although it was spread out over several miles. Penetrations were made through the dense portion of the cloud with layers of the cloud above and below. Three penetrations were made, and the aircraft returned to ISAFB with a dosimeter reading of 148 mr.

The mission was successful in accordance with instructions. It was recommended that longer separation in take-off times for the T-33 aircraft be established, because a large part of the time was spent orbiting and waiting for other sampler aircraft to leave the nuclear cloud before making an initial, second, or a third penetration. The additional dosages from aircraft contamination occurred during these waiting periods. It was noted that in several cases the integrated dosage instruments in the T-33's read lower than the dosimeter readings; the probable cause might have been due to the proximity of the instrument to the outside skin of the aircraft.

### 4.3.4 Manned Sampling for Tumbler Charlie

The sampler-controller aircraft, B-29 No. 285, was airborne and on orbit at 0825 at an altitude of 21,000 ft. The mission lasted approximately 2 hr longer than was expected. This was due to slower dissipation of the cloud, and hence sampler aircraft were held out for maximum periods. The best samples were obtained from the upper portion of the cloud. The best penetration altitude was 39,200 ft. Movies were taken of the cloud formation by an AEC Photo Laboratory representative and will be used in training F-84 manned-sampling personnel.

The first sampler, B-29 No. 386, was airborne at 0838, observed the shot, and then tracked the cloud for 1½ hr. Four penetrations were made with dosimeter readings of 125 mr and an

Table 4.3 — MANNED-SAMPLING DATA FOR TUMBLER BAKER

Shot Time: 0929:57.05 PST, 15 April 1952
Apparent Fireball Yield: 1.29 ± 0.13 Kt*

| Aircraft type and code No. | Penetration No. | Altitude, $10^3$ ft MSL | Indicated air speed, mph | Total time in cloud, sec | Cockpit background after pen., mr | Peak intensity, r | Time from 1 r to 1 r, sec | Cumulative dosimeter reading, mr | Dir. and dist from zero point | Max. A/C intensity, mr/hr | Sample size per sq ft of filter paper |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Crystal | 1 | 15 | 225 | NR | NR | 1.3 | 20 | 15 | 140°, 30 mi | 600 | |
| B-29 No. 386 | 2 | 14.5 | 225 | NR | NR | 1.2 | NR | 45 | 140°, 30 mi | 600 | |
| | 3 | 14 | 210 | NR | NR | 2.2 | NR | 70 | 140°, 30 mi | 600 | |
| | 4 | 14 | 225 | NR | NR | 3.2 | NR | 140 | | 600 | $1.4 \times 10^{-9}$ |
| Bullhead 2 | 1 | 12 | 405 | NR | NR | 0.2 | NR | NR | 125°, 20 mi | 1000 | |
| T-33 No. 920 | 2 | 12 | 410 | NR | NR | 1.0 | 8 | 10 | 125°, 20 mi | 1000 | |
| | 3 | 13 | 410 | NR | NR | 2.0 | 22 | 20 | 125°, 20 mi | [illegible] | |
| | 4 | 11.5 | 420 | 30 | NR | 4.5 | 27 | 30 | 125°, 20 mi | 1000 | $8.2 \times 10^{-10}$ |
| Bullhead 3 | 1 | 11.5 | 410 | NR | NR | 2.0 | 20 | 10 | 140°, 26 mi | 400 | |
| T-33 No. 951 | 2 | 11.5 | 410 | NR | NR | 1.5 | NR | 20 | 140°, 26 mi | 400 | |
| | 3 | 11.5 | 400 | NR | NR | 1.5 | NR | 50 | 140°, 26 mi | 400 | $1.36 \times 10^{-9}$ |
| Bullhead 4 | 1 | 15.5 | 400 | 51 | NR | 1.5 | 9 | 8 | 123°, 20 mi | 230 | |
| T-33 No. 048 | 2 | 14.5 | 400 | NR | NR | 2.5 | 12 | 15 | 123°, 20 mi | 230 | |
| | 3 | 14.5 | 400 | NR | NR | 2.5 | 19 | 25 | 123°, 20 mi | 230 | |
| | 4 | 15 | 400 | NR | NR | 12.0 | | 45 | 123°, 20 mi | 230 | $6.9 \times 10^{-10}$ |
| Bullhead 5 | 1 | 15 | 410 | NR | NR | 3.0 | 30 | 20 | 140°, 13 mi | 1500 | |
| T-33 No. 913 | 2 | 14 | 450 | NR | NR | 8.0 | NR | 80 | 140°, 13 mi | 1500 | |
| | 3 | 14.5 | 400 | NR | NR | 7.0 | NR | 148 | 140°, 13 mi | 1500 | $6.9 \times 10^{-9}$ |

*Taken from Tumbler-Snapper Summary Report on Diagnostic Measurements, WT-550, November 1952.

Table 4.4 — MANNED-SAMPLING DATA FOR TUMBLER CHARLIE

Shot Time: 0930:10 PST, 22 April 1952
Apparent Fireball Yield: 30.8 ± 1.5 Kt*

| Aircraft type and code No. | Penetration No. | Altitude, $10^3$ ft MSL | Indicated air speed, mph | Total time in cloud, sec | Cockpit background after pen., mr | Peak intensity, r | Time from 1 r to 1 r, sec | Cumulative dosimeter reading, mr | Dir. and dist. from zero point | Max. A/C intensity, mr/hr | Sample size per sq ft of filter paper |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Crystal† B-29 No. 285 | | | | | | | | | | | |
| Bullhead 1 | 1 | 29 | 220 | NR | 4 | 0.8 | NR | 100 | 141°, 74 mi | 300 | |
| B-29 No. 386 | 2 | 30 | 220 | NR | 4.5 | 0.35 | NR | 100 | 136°, 79 mi | | |
| | 3 | 30 | 210 | NR | 4 | 0.25 | NR | 100 | 133°, 87 mi | | |
| | 4 | 33 | 220 | NR | 7 | 1.00 | 5 | 125 | 128°, 93 mi | | $2.65 \times 10^{-11}$ |
| Bullhead 2 | 1 | 38 | 255 | NR | 0.5 | 0.3 | NR | 0 | NR | | |
| T-33 No. 951 | 2 | 38.5 | 255 | NR | 0.5 | 1.4 | 22 | 0.25 | NR | 1900 | |
| | 3 | 40 | 245 | NR | 0.3 | 12.5 | NR | 0.3 | NR | | $2.69 \times 10^{-10}$ |
| Bullhead 3 | 1 | 36 | 320 | NR | 0 | 0 | 0 | 0 | 162°, 60 mi | 1700 | |
| T-33 No. 920 | 2 | 34 | 320 | NR | 80 | 3.6 | 120 | 100 | 141°, 73 mi | | |
| | 3 | 31.5 | 310 | NR | Neg | 2.4 | 30 | 150 | 141°, 73 mi | | $1.57 \times 10^{-9}$ |
| Bullhead 3 | 1 | 39 | 250 | 30 | Neg | 8 | 90 | 250 | 95°, 112 mi | | |
| T-33 No. 920 | 2 | 39.0 | 260 | NR | 500 | 6 | NR | 400 | 95°, 112 mi | | |
| (2d mission) | 3 | 39.5 | 250 | NR | 100 | 10 | NR | 500 | 95°, 112 mi | 5000 | $8.7 \times 10^{-10}$ |
| Bullhead 4 | 1 | 39.5 | 260 | 8 | 4.5 | 3.0 | 52 | 100 | 103°, 47 mi | 8000 | |
| T-33 No. 048 | 2 | 39.5 | 260 | 180 | 0.9 | 17 | 180 | 950 | 162°, 181 mi | | |
| Bullhead 6 | 1 | 40 | 215 | 35 | 0 | 1.5 | 15 | 125 | 102°, 56 mi | 8 | |
| F-84 No. 033 | 2 | 40 | 280 | 60 | 0 | 1.7 | NR | 200 | 76°, 48 mi | | |
| Bullhead 7 F-84 No. 051 | 1 | 39.5 | 245 | 25 | 0 | 40 | 25 | 10 | 99°, 65 mi | 12 | |
| Bullhead 8 F-84 No. 054 | 1 | 39.2 | 250 | NR | 0 | 20 | 180 | 180 | NR | | |
| Bullhead 9 F-84 No. 043 | 1 | 41 | 240 | NR | 0 | 1 | 0 | 175 | 99°, 65 mi | 10 | |
| Bullhead 10 F-84 No. 042 | 1 | 40 | 275 | 14 | 0.01 | 0.88 | NR | 100 | 99°, 65 mi | 2 | |

*Taken from Tumbler-Snapper Summary Report on Diagnostic Measurements, WT-550, November 1952

†Sampler-controller.

integron reading of 160 mr; however, because of fall-out, the aircraft became contaminated with an integrated dosage of 100 mr before a penetration was made. The second sampler, T-33 No. 951, took off at 1145 and made an initial climb to 38,500 ft; plexiglass in the canopy was iced up heavily which made the cloud difficult to see. The first two penetrations were made to "nip" a corner of the cloud; very low readings were obtained in this manner. Penetration three was excellent; the pass was made through the dense portion of the cloud picking up a peak reading of 12.5 r. Maximum reading upon landing was 0.3 mr. These penetrations were good, but it was suggested that the first and second penetrations should have been made directly into the cloud instead of as tangential passes.

Sampler three, T-33 No. 920, flew two missions on this shot because sampler five, T-33 No. 913, was forced to abort on a climb at 30,000 ft due to the engine cutting out and fluctuation of fuel pressure. On the first mission sampler three was airborne at 1152 and climbed to orbit at 36,000 ft. The cloud at this time was approximately 40 miles northeast of the vectored position (2E2, see Fig. 1.6 for grid map of area). Three passes were made in small strips of a brown cloud (probable lower portion of main nuclear cloud); light dosimeter readings were observed, the maximum readings being 150 mr. The second mission was off at 1345. No decontamination was performed at this time; the cockpit reading was 40 mr prior to take-off, but, because of the importance of obtaining more samples, the crew was replaced, the aircraft was refueled, and the oxygen supply was replenished. Three penetrations were made at an altitude of 40,000 ft. The cloud was observed as top being 40,000 ft and base at 37,000 ft (upper portion of nuclear cloud). The maximum dosimeter reading upon landing was 500 mr; however, in spite of the high readings, the radiological officer was found to have only a 30-mr reading on his clothing and the pilot none. Sampler four, T-33 No. 048, was airborne at 1155, made two penetrations, and returned to home station. Maximum dosimeter reading was 950 mr. Sampler six, F-84 No. 033, took off at 1306 and made two penetrations at 40,000 ft without difficulty with only a 200-mr dosimeter reading upon landing. The pilot was not found to be contaminated. Sampler seven, F-84 No. 051, was called for at 1328. Take-off was accomplished as briefed, and no difficulty was encountered in locating the nuclear cloud or making a penetration.

The rate meter on this aircraft was highly erratic and was working improperly so that readings obtained were only approximations. Only a 10-mr reading on a dosimeter was found upon landing. The pilot was not contaminated. Sampler eight, F-84 No. 054, aborted mission after take-off because of fuel leakage. Sampler nine, F-84 No. 043, took off at 1330 as directed by the sampler-controller aircraft. It made one penetration at 41,000 ft and returned to base with a maximum dosimeter reading of 175 mr. Sampler ten, F-84 No. 042, was off at 1335, reached assigned altitude of 40,000 ft, and was given a vector by the sampler-controller at 1354. The first penetration was made at an altitude of 40,000 ft at 1502. This altitude placed the aircraft approximately 1100 ft above the cloud. Readings taken were low and of little value; highest dosimeter reading was 100 mr. Another pass was anticipated, but the sampler-controller recalled sampler ten to home station.

This mission was highly successful from the LASL representative's point of view. The F-84G air crews gained considerable experience in sampling techniques as well as a knowledge of the many problems to be encountered in making penetrations of a nuclear cloud. Personnel exposures for the F-84 crews were cut down to a minimum, and contamination of aircraft and radiac equipment was little or none.

### 4.3.5 Manned Sampling for Tumbler Dog

This mission went off as scheduled, with the exception of the sampler-controller aircraft, B-29 No. 285, which had communication trouble and had to return to ISAFB; however, this trouble was located and repaired, and the sampler-controller took off and assumed its position. During this period, the aircraft controller officer at the Control Point, through Hairpin Control, directed and vectored the sampling phase until the sampler-controller was airborne.

Sampler one, B-29 No. 386, was off the ground and in orbit at 0757. After the shot went

Table 4.5 — MANNED-SAMPLING DATA FOR TUMBLER DOG

Shot Time: 0829:58.6 PST, 1 May 1952
Apparent Fireball Yield: 20.0 ± 1.0 Kt*

| Aircraft type and code No. | Penetration No. | Altitude, $10^3$ ft MSL | Indicated air speed, mph | Total time in cloud, sec | Cockpit background after pen., mr | Peak intensity, r | Time from 1 r to 1 r, sec | Cumulative dosimeter reading, mr | Dir. and dist. from zero point | Max. A/C intensity, mr/hr | Sample size per sq ft of filter paper |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Crystal† B-29 No. 285 | | | | | | | | | | | |
| Bullhead 1 B-29 No. 386 | 1 | 16.5 | 250 | NR | 3.5 | 0.8 | 0 | 10 | | 500 | |
| | 2 | 21 | 220 | NR | 8.5 | 1.5 | 30 | 40 | 157°, 43 mi | | |
| | 3 | 26 | 210 | NR | 600 | 0.5 | NR | 55 | 140°, 30 mi | | |
| | 4 | 31.5 | 200 | NR | NR | 6.5 | NR | 500 | 108°, 69 mi | | |
| | 5 | 33.5 | 190 | NR | 100 | 4.0 | NR | 830 | 104°, 86 mi | | |
| | 6 | 35 | 185 | NR | 100 | 2.0 | NR | 1000 | 102°, 94 mi | | |
| | 7 | 35 | 210 | NR | 150 | 2.0 | NR | 1100 | 104°, 86 mi | | |
| | 8 | 31.5 | 185 | NR | 150 | 3.0 | NR | 1250 | 101°, 105 mi | | |
| | 9 | 31 | 200 | NR | 130 | 3.25 | NR | 1400 | 102°, 94 mi | | |
| | 10 | 31 | 195 | NR | 150 | 2.0 | NR | 1500 | 96°, 102 mi | | $2.76 \times 10^{-10}$ |
| Bullhead 2 T-33 No. 951 | 1 | 36.5 | 285 | NR | 150 | 23 | 68 | 600 | 104°, 95 mi | | |
| | 2 | 36 | 295 | NR | 500 | 22 | NR | 1600 | 102°, 103 mi | 1500 | $3.41 \times 10^{-10}$ |
| Bullhead 3 T-33 No. 920 | 1 | 40 | 250 | 80 | 600 | 48 | 78 | 300 | 104°, 87 mi | | |
| | 2 | 42 | 250 | 15 | 800 | 50 | 45 | 600 | 104°, 87 mi | 7000 | $5.7 \times 10^{-10}$ |
| Bullhead 4 T-33 No. 048 | 1 | 37.5 | 280 | NR | 0.1 | 22 | 0.35 | 200 | 95°, 110 mi | 2000 | |
| | 2 | 36 | 290 | NR | 0.2 | 11 | NR | 500 | 96°, 102 mi | | |
| | 3 | 30 | 310 | NR | 0.33 | 11 | NR | 850 | 97°, 93 mi | | |
| | 4 | 34.5 | 300 | NR | 50 | 6.5 | NR | 1600 | NR | | $7.5 \times 10^{-10}$ |

Table 4.5 — (Continued)

| Aircraft type and code No. | Penetration No. | Altitude, $10^3$ ft MSL | Indicated air speed, mph | Total time in cloud, sec | Cockpit background after pen., mr | Peak intensity, r | Time from 1 r to 1 r, sec | Cumulative dosimeter reading, mr | Dir. and dist. from zero point | Max. A/C intensity, mr/hr | Sample size per sq ft of filter paper |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bullhead 5 | 1 | 41 | 200 | NR | NR | 6 | 70 | 70 | 95°, 138 mi | 6000 | |
| T-33 No. 913 | 2 | 39 | 260 | NR | NR | 4 | NR | 200 | 95°, 138 mi | | |
| | 3 | 37.5 | 250 | NR | NR | 4 | NR | 270 | 95°, 138 mi | | |
| | 4 | 37.5 | 250 | NR | NR | 8 | NR | 500 | 95°, 138 mi | | |
| | 5 | 37 | 250 | NR | NR | 6 | NR | 600 | 95°, 138 mi | | |
| | 6 | 37 | 250 | NR | NR | 6 | NR | 670 | 95°, 138 mi | | |
| | 7 | 37 | 250 | NR | NR | 6 | NR | 1750 | 95°, 138 mi | | $2.23 \times 10^{-3}$ |
| Bullhead 6 | 1 | 40 | 280 | 42 | NR | 2.8 | 74 | 75 | 42°, 220 mi | 30 | |
| F-84 No. 033 | | | | | | | | | | | |
| Bullhead 7 | 1 | 34.5 | 290 | 240 | 20 | 0.5 | NR | 0 | 95°, 121 mi | 100 | |
| F-84 No. 051 | 2 | 32 | 290 | 260 | 50 | 0.5 | 40 | 75 | 96°, 103 mi | | |
| Bullhead 8 | 1 | 33.5 | 290 | NR | Neg | 1 | Neg | Neg | 85°, 110 mi | 35 | |
| F-84 No. 054 | 2 | 35 | 290 | NR | 10 | 5 | 40 | 75 | 87°, 93 mi | | |
| Bullhead 9 | 1 | 38.2 | 290 | NR | 25 | 1.0 | 5 | 10 | 95°, 138 mi | 26 | |
| F-84 No. 043 | 2 | 38.5 | 290 | NR | 50 | 3 | 35 | 15 | 95°, 146 mi | | |
| | 3 | 38.0 | 290 | NR | 75 | 1.5 | 42 | 75 | 95°, 128 mi | | |
| Bullhead 10 | 1 | 42.5 | 290 | NR | Neg | 1.5 | 12 | 75 | NR | 22 | |
| F-84 No. 042 | | | | | | | | | | | |

*Taken from Tumbler-Snapper Summary Report on Diagnostic Measurements, WT-550, November 1952.

†Sampler-controller.

off, sampler one was directed to make a first penetration at 0919; nine penetrations followed in a period of 2 hr 10 min. Engines 2 and 4 of this aircraft became rough running and would not hold manifold pressure above 31,000 ft; thus only the lower portion of the nuclear cloud was sampled, and this at 35,000 ft. Also this aircraft had landing gear trouble, the shimmy dampener on the nose wheel was not operating correctly, and this kept the crew aloft for a longer period of time. The total dosimeter reading upon landing was found to be 1500 mr. Sampler two, T-33 No. 951, was off at 0949 and made two penetrations. Passes were made at 35,000 ft and 37,000 ft, and both times high peak readings were obtained. The final dosimeter reading upon landing was 1600 mr, maximum. Sampler three, T-33 No. 920, was airborne 50 min after burst. It then climbed to 40,000 ft and made its first penetration. The T1-B radiac instrument registered 48 r as a peak reading for this pass. On the second penetration the G-M instrument went off scale and stayed on the peg for 5+ sec. The cockpit of the aircraft read 2 r all during the flight back to base. The highest dosimeter reading upon landing was 600 mr.

Sampler four, T-33 No. 048, was off at 1004. The cloud at this time was observed to be highly dispersed but was easily recognized. Some fall-out was picked up from the higher portions of the nuclear cloud prior to entering the lower portion. Four penetrations were made in only 3 min; however, the dosimeter reading upon landing was 1600 mr, maximum.

Sampler five, T-33 No. 913, was off the ground at 1015, climbed to 41,000 ft, and made its first penetration at 1155. Successive passes were made at 37,000 ft. Seven penetrations were made, and, when the integron reached a reading of 100 mr, the aircraft left the area and proceeded to land at ISAFB. The maximum dosimeter reading when landing was 1750 mr. Sampler six, F-84 No. 033; sampler seven, F-84 No. 051; sampler eight, F-84 No. 054; and sampler nine, F-84 No. 043, took off at 1110 at 5-min intervals, made seven penetrations in all, and landed at base with each a maximum dosimeter reading of 75 mr. These sampling aircraft were successful in completing their assigned missions.

It was observed that the cloud had broken up into three distinctive formations, an upper, an intermediate, and a lower cloud. This formation was anticipated by the radiological directors, and a briefing prior to the shot explained this phenomenon.

### 4.3.6 Manned Sampling for Snapper Easy

This was the first tower shot. There were multiple layers of clouds with a total of approximately $\frac{7}{8}$ coverage. The top was variable at 25,000 ft and higher to the north. Winds were strong, and the nuclear cloud strung out in a long ribbon, with a concentration about 10 miles in back of the leading edge. With wind and cloud coverage as they were, conditions were extremely unsatisfactory for sampling. Two T-33's could not make it to the cloud, so they returned to ISAFB. One of these aircraft made a forced landing because of a loss of oxygen which forced the pilot to fly at lower altitude and thus exhausted the fuel sooner than anticipated. The other aircraft was held in a waiting position and, when called for by the control, was unable to find the cloud. Samples collected by the other T-33 and the B-29 No. 285 were satisfactory; F-84G penetrations were successful.

Sampler one, B-29 No. 285, was off the ground at 0400 and climbed to an altitude of 33,000 ft. Three passes were made from this altitude at 10-min intervals. Total dosimeter reading upon landing was 675 mr; however, it was found that 100 mr was accumulated prior to the first penetration due to leaving the orbit too soon. Sampler two, T-33 No. 951, was off at 0520 and, after climbing to the assigned altitude, had to abort as stated in the above paragraph. Sampler three, T-33 No: 920, was off the ground at 0535. First penetration was made at 0610 at an altitude of 31,000 ft.

Four additional penetrations were made at 32,000 ft. The total dosimeter reading upon landing was 700 mr. Sampler four, T-33 No. 048, was called for by the controller at 0526, climbed to an altitude of 32,000 ft, and waited for directions for his first penetration. When directed to proceed with a pass, this aircraft was low on fuel and returned to ISAFB. Sampler five, T-33 No. 913, was off the ground at 0535. First penetration was made at 0725, two ad-

Table 4.6 — MANNED-SAMPLING DATA FOR SNAPPER EASY

Shot Time: 0414:59.29 PST, 7 May 1952
Apparent Fireball Yield: 13.0 ± 2.0 Kt*

| Aircraft type and code No. | Penetration No. | Altitude, $10^3$ ft MSL | Indicated air speed, mph | Total time in cloud, sec | Cockpit background after pen., mr | Peak intensity, r | Time from 1 r to 1 r, sec | Cumulative dosimeter reading, mr | Dir and dist. from zero point | Max A/C intensity, mr/hr | Sample size per sq ft of filter paper |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Crystal† B-29 No. 386 | | | | | | | | | | | |
| Bullhead 1 B-29 No. 285 | 1 | 33 | 190 | NR | 150 | 1.5 | 30 | 200 | 67°, 73 mi | 800 | |
| | 2 | 32.5 | 210 | NR | 200 | 6 | NR | 300 | 67°, 73 mi | | |
| | 3 | 32 | 210 | NR | 250 | 5 | NR | 675 | 67°, 73 mi | | $2.83 \times 10^{-13}$ |
| Bullhead 2‡ T-33 No. 951 | | | | | | | | | | | |
| Bullhead 3 T-33 No. 920 | 1 | 31 | 280 | NR | 100 | 14 | 45 | 50 | 49°, 206 mi | 900 | |
| | 2 | 32 | 280 | NR | 200 | 10 | NR | 100 | 49°, 206 mi | | |
| | 3 | 32 | 280 | NR | 340 | 9 | NR | 200 | 49°, 207 mi | | |
| | 4 | 32 | 280 | NR | 420 | 6.5 | NR | 300 | 49°, 257 mi | | |
| | 5 | 31.5 | 280 | NR | 600 | 14.5 | NR | 700 | 49°, 257 mi | | $4.57 \times 10^{-3}$ |
| Bullhead 4 T-33 No. 048 | 1 | NR | NR | NR | NR | NR | NR | NR | NR | NR | $5.4 \times 10^{-3}$ |
| Bullhead 5 T-33 No. 913 | 1 | 32.5 | 320 | NR | 300 | 9 | 28 | 200 | NR | 700 | |
| | 2 | 32 | 310 | NR | 410 | 6 | NR | 300 | NR | | |
| | 3 | 32 | 310 | NR | 465 | 5.2 | NR | 440 | NR | | $3.40 \times 10^{-13}$ |
| Bullhead 6 F-84 No. 040 | 1 | 32.5 | 330 | NR | 50 | 15 | 80 | 50 | 67°, 169 mi | 100 | |
| Bullhead 7‡ | | | | | | | | | | | |
| Bullhead 8 F-84 No. 054 | 1 | 32.8 | 310 | NR | 80 | 4 | 72 | 30 | 49°, 257 mi | 80 | |
| Bullhead 9 F-84 No. 043 | 1 | 32.5 | 325 | 120 | 250 | 17 | 132 | 150 | 49°, 214 mi | 500 | |
| | 2 | 32.5 | 325 | NR | 150 | NR | NR | NR | 49°, 214 mi | | |
| Bullhead 10 F-84 No. 042 | 1 | 33 | 310 | NR | 20 | 4 | 25 | 800 | 42°, 244 mi | 100 | |

*Taken from Tumbler-Snapper Summary Report on Diagnostic Measurement, WT-550, November 1952.

†Sampler-controller

‡Aborted mission

ditional passes were made, and the aircraft returned to ISAFB with a total dosimeter reading of 440 mr. The four F-84G samplers were off the ground at 5-min intervals; one F-84G aborted mission because the tip tank did not feed. Penetrations for these aircraft were made at approximately 32,000 ft. Samples collected from these aircraft were adequate. Contamination of aircraft was nil. The total reading averaged 356 mr per aircraft crew.

### 4.3.7 Manned Sampling for Snapper Fox

The sampler-controller aircraft, B-29 No. 285, was airborne and in orbit at 0344 at an altitude of 25,000 ft. After shot time this aircraft left its orbit at 0404 and proceeded to the nuclear cloud.

The first sampler, B-29 No. 386, was off the ground at 0345 and in orbit at an altitude of 20,000 ft. At 0535 a first penetration through the nuclear cloud was made at 30,000 ft. The snap-sampler bag was filled during this pass. Four succeeding penetrations were made with average peak readings of 4.5 r per pass. It was apparent from the radiac instruments that the aircraft did not get fully clear of the cloud at the end of each penetration with the result that background readings were higher at the end of the first two passes and dropped off as the aircraft left the fifth pass. After the plane landed, the dosimeter read 550 mr, and the aircraft contamination was 1900 mr/hr. Personnel contamination was approximately 1 r.

The second sampler, T-33 No. 951, was called for a first penetration at 0625, climbed to an altitude of 37,000 ft, and made its first pass at 0655. The cloud was visible at this altitude. Five penetrations were made with an average peak reading of 3.5 r. The aircraft left the area at 0716 and returned to ISAFB. The dosimeter reading upon landing was approximately 550 mr, personnel exposure averaged 1 r, and aircraft intensity was 2600 mr/hr. Good samples were obtained. The third sampler, T-33 No. 920, took off at 0637, climbed to an altitude of 39,500 ft in orbit, and awaited a call from the controller. At 0750 it penetrated through the nuclear cloud. Difficulty was found in defining the pass and in finding the portion of the cloud which it had been instructed to sample. This was due to the variable wind shears which broke the nuclear cloud in scattered masses. Readings from this penetration were light, although a peak reading of 3 r was pegged for 5 sec. The dosimeter reading upon landing was 250 mr, the aircraft contamination was 1000 mr/hr, and actual personnel exposure amounted to approximately 460 mr. The fourth sampler, T-33 No. 048, was airborne at 0630 and was instructed to penetrate the cloud at 0656 at an altitude of 37,000 ft. Three passes were made at this altitude with a peak reading of 5 r. The dosimeter reading upon landing was 250 mr with an aircraft contamination of only 310 mr/hr. Final personnel exposures for the pilot and radiological officer were 1050 and 1100 mr. The fifth sampler, T-33 No. 913, was off the ground at 0645, climbed to an altitude of 38,000 ft, and made two penetrations. The first penetration gave a peak reading of 3.2 r, but in the second pass the readings were under 1 r; therefore no record was made. The final accumulative dosage on the ground was 215 mr. The aircraft intensity was 400 mr/hr, and the final personnel exposure averaged 200 mr. The F-84 participation in this mission was successful. These aircraft made penetrations as directed by the sampler-controller with minimum exposures both to personnel and aircraft. (See Table 4.1 for personnel film-badge reading and factual sampling data.) This mission was again a success for the manned-sampling project. The B-29 aircraft performed with no difficulties; the T-33 collected favorable samples, and the F-84 pilots gained experience in sampling techniques. In addition to the regular samplers, an IBDA aircraft (B-50) made four penetrations through the nuclear cloud. This mission was performed to determine the ionization effects on radar equipment.

### 4.3.8 Manned Sampling for Snapper George

The sampler-controller aircraft, B-29 No. 285, was airborne at 0404. Take-off was delayed after the detonation due to hydraulic trouble in the aircraft. This mission went off with no difficulties. The T-33 aircraft took off as called for by the controller aircraft, made their respective penetrations, and returned to ISAFB. The F-84 pilots made good penetrations

Table 4.7 — MANNED-SAMPLING DATA FOR SNAPPER FOX

Shot Time: 0359:59.6 PST, 25 May 1952
Apparent Fireball Yield: 12.0 ± 2.0 Kt*

| Aircraft type and code No. | Penetration No. | Altitude, $10^3$ ft MSL | Indicated air speed, mph | Total time in cloud, sec | Cockpit background after pen., mr | Peak intensity, r | Time from 1 r to 1 r, sec | Cumulative dosimeter reading, mr | Dir. and dist from zero point | Max. A C intensity, mr/hr | Sample size per sq ft of filter paper |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Crystalf<br>B-29 No. 285 | | | | | | | | | | | |
| Tiger 1‡<br>B-50 No. 260 | 1 | 38 | 190 | 82 | 0 | 5 | 66 | 50 | 66°, 30 mi | | |
| | 2 | 38 | 190 | 214 | 48 | 40 | 198 | 880 | 66°, 30 mi | | |
| | 3 | 33.5 | 195 | 215 | 70 | 21 | 199 | 1350 | 72°, 38 mi | | |
| | 4 | 35 | 195 | 169 | 180 | 30 | 153 | 1600 | 58°, 43 mi | | |
| Bullhead 1<br>B-29 No. 386 | 1 | 30 | 165 | NR | 65 | 7 | 25 | 100 | 75°, 47 mi | 1900 | |
| | 2 | 30 | 165 | NR | 120 | 4 | NR | 260 | 57°, 44 mi | | |
| | 3 | 30 | 170 | NR | 200 | 2.2 | NR | 300 | 63°, 51 mi | | |
| | 4 | 20 | 185 | NR | 330 | 8 | NR | 450 | 72°, 38 mi | | |
| | 5 | 30 | 190 | NR | 110 | 4.5 | NR | 550 | 57°, 44 mi | | $1.96 \times 10^{-3}$ |
| Bullhead 2<br>T-33 No. 951 | 1 | 37 | 290 | NR | 100 | 4 | 72 | 100 | 69°, 97 mi | 2600 | |
| | 2 | 36.5 | 250 | NR | NR | 4.5 | 90 | 275 | 69°, 97 mi | | |
| | 3 | 36 | 250 | NR | 500 | 3.5 | 127 | 400 | 71°, 106 mi | | |
| | 4 | 36 | 250 | NR | 300 | 3 | 75 | 480 | 71°, 106 mi | | |
| | 6 | 36.5 | 250 | NR | 600 | 3.5 | 105 | 550 | 69°, 97 mi | | $9.3 \times 10^{-3}$ |
| Bullhead 3<br>T-33 No. 920 | 1 | 39.5 | 250 | 300 | 200 | 3 | 300 | 250 | 69°, 165 mi | 1000 | $6.21 \times 10^{-6}$ |
| Bullhead 4<br>T-33 No. 048 | 1 | 37 | 280 | NR | 80 | 3 | 47 | 50 | NR | 310 | |
| | 2 | 37 | 340 | NR | 100 | 4 | NR | 100 | NR | | |
| | 3 | 37 | 340 | NR | 180 | 5 | NR | 250 | NR | | $1.65 \times 10^{-6}$ |

Table 4.7 — (Continued)

| Aircraft type and code No | Penetration No | Altitude, $10^3$ ft MSL | Indicated air speed, mph | Total time in cloud, sec | Cockpit background after pen., mr | Peak intensity, r | Time from 1 r to 1 r, sec | Cumulative dosimeter reading, mr | Dir and dist from zero point | Max A/C intensity, mr/hr | Sample size per sq ft of filter paper |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bullhead 5 T-33 No. 913 | 1 | 37.5 | 300 | 30 | 310 | 3.2 | 22 | 215 | 76°, 206 mi | 400 | $2.05 \times 10^{-10}$ |
| Bullhead 6 F-84 No. 834 | 1 | 37 | 260 | NR | 45 | NR | 340 | 50 | 60°, 95 mi | 500 | |
| | 2 | 39 | 260 | NR | 40 | NR | 45 | 140 | 69°, 97 mi | | |
| Bullhead 7 F-84 No. 030 | 1 | 40 | 270 | NR | 0 | 1.4 | 16 | 100 | 72°, 190 mi | 60 | |
| | 2 | 40 | 270 | NR | 0 | 0.5 | NR | 75 | 82°, 182 mi | | |
| Bullhead 8 F-84 No. 791 | 1 | 34.5 | 300 | NR | 0 | 1.5 | 15 | 50 | 71°, 106 mi | 50 | |
| | 2 | 35 | 300 | NR | 0 | 3 | NR | 85 | 74°, 132 mi | | |
| Bullhead 9 F-84 No. 846 | 1 | 33.5 | 310 | NR | 0 | 0.5 | 0 | 0 | 69°, 145 mi | 48 | |
| | 2 | 40 | 310 | NR | 0 | 0.4 | 0 | 0 | 70°, 135 mi | | |
| | 3 | 23 | 380 | NR | 0.02 | 0.35 | 0 | 5 | 38°, 60 mi | | |
| | 4 | 20 | 395 | NR | 0.06 | 0.07 | 0 | 5 | 45°, 65 mi | | $6.46 \times 10^{-9}$ |
| Bullhead 10 F-84 No. 782 | 1 | 37 | 280 | NR | 0 | 0.1 | 0 | 0 | 69°, 125 mi | 260 | |
| | 2 | 40 | 270 | NR | 0 | 0.2 | 0 | 40 | 74°, 171 mi | | |
| | 3 | 40 | 270 | NR | 0 | 0.1 | 0 | NR | 71°, 174 mi | | |
| Bullhead 11 F-84 No. 717 | 1 | 36.5 | 300 | NR | 0.01 | 1.2 | 3 | 0 | 60°, 169 mi | 15 | |
| | 2 | 36.5 | 280 | NR | 0.05 | 1.5 | 12 | 25 | 63°, 181 mi | | |
| | 3 | 38.5 | 275 | NR | 0.12 | 1.2 | 30 | 50 | 68°, 177 mi | | |

*Taken from Tumbler-Snapper Summary Report on Diagnostic Measurements, WT-550, November 1952.

†Sampler-controller

‡Special mission

Table 4.8 — MANNED-SAMPLING DATA FOR SNAPPER GEORGE

Shot Time: 0354:59.8 PST, 1 June 1952
Apparent Fireball Yield: 17.0 ± 0.7 Kt*

| Aircraft type and code No. | Penetration No. | Altitude, $10^3$ ft MSL | Indicated air speed, mph | Total time in cloud, sec | Cockpit background after pen., mr | Peak intensity, r | Time from 1 r to 1 r, sec | Cumulative dosimeter reading, mr | Dir. and dist. from zero point | Max. A/C intensity, mr/hr | Sample size per sq ft of filter paper |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Crystal† B-29 No. 285 | | | | | | | | | | | |
| Bullhead 1 B-29 No. 386 | 1 | 27.5 | 165 | NR | 180 | 24 | 128 | 750 | 17°, 61 mi | 1000 | $1.45 \times 10^{-3}$ |
| Bullhead 2 | 1 | 34 | 300 | NR | NR | NR | NR | 40 | 28°, 132 mi | 1600 | |
| T-33 No. 951 | 2 | 34 | 300 | NR | NR | NR | NR | 185 | 28°, 132 mi | | |
| | 3 | 35 | 300 | NR | NR | NR | NR | 260 | 28°, 132 mi | | $5.16 \times 10^{-10}$ |
| Bullhead 3 T-33 No. 920 | 1 | 33.5 | 260 | 53 | 6000 | 140 | 50 | 6000 | 23°, 50 mi | 2600 | $1.3 \times 10^{-9}$ |
| Bullhead 4 | 1 | 32 | 300 | NR | 90 | 4.6 | 51 | 100 | NR | 3600 | |
| T-33 No. 048 | 2 | 33 | 300 | NR | 460 | 8 | 120 | 300 | NR | | |
| | 3 | 32.5 | 300 | NR | 1000 | 4.6 | 480 | 1400 | NR | | $1.23 \times 10^{-9}$ |
| Bullhead 5 | 1 | 32 | 280 | 60 | 140 | 10 | 55 | 80 | 17°, 121 mi | 1600 | |
| T-33 No. 913 | 2 | 32.5 | 290 | 69 | 320 | 11 | 72 | 380 | 17°, 121 mi | | $3.08 \times 10^{-9}$ |
| Bullhead 6 F-84 No. 781 | 1 | 35 | 295 | 120 | 32 | 1.5 | 40 | 80 | 150°, 192 mi | 125 | |
| Bullhead 7 F-84 No. 050 | 1 | 33 | 300 | NR | 200 | 70 | 12 | 400 | 45°, 66 mi | 1900 | |
| Bullhead 8 F-84 No. 791 | 1 | 34 | 320 | 180 | 150 | 1.5 | 20 | 100 | 15°, 192 mi | 80 | |
| Bullhead 9 | 1 | 27 | 300 | NR | NR | NR | NR | 75 | 207°, 163 mi | 800 | |
| F-84 No. 834 | 2 | 35 | 300 | NR | NR | NR | NR | 75 | 16°, 181 mi | | $2.43 \times 10^{-10}$ |
| Bullhead 10 | 1 | 33 | 270 | 40 | 25 | 3 | 40 | 50 | 17°, 158 mi | 20 | |
| F-84 No. 717 | 2 | 33 | 270 | 60 | 50 | 2 | 60 | 50 | 17°, 158 mi | | |
| Bullhead 11 F-84 No. 859 | 1 | 27 | 300 | NR | 125 | 1.5 | 40 | 100 | 15°, 192 mi | 28 | |
| Bullhead 12 | 1 | 34 | 300 | NR | NR | 4 | 120 | 50 | 15°, 178 mi | 180 | |
| F-84 No. 781 | 2 | 35 | 300 | NR | NR | 3 | 45 | 70 | 15°, 178 mi | | |

*Taken from Tumbler-Snapper Summary Report on Diagnostic Measurements, WT-550, November 1952

†Sampler-controller

through the cloud and had little difficulty in reading the radiac instruments.

The first sampler, B-29 No. 386, took off at 0352 and, after orbiting until H+1:43 hr, went in and made a first penetration through the nuclear cloud. Only one penetration was made. A snap-sampler was used, and it was estimated that a good sample was taken. A peak reading of 24 r was attained with duration of 1 r to 1 r of 118 sec. The accumulative dosage was 750 mr. The aircraft contamination upon landing was 1000 mr/hr, and the crew had an average exposure of 767 mr. The second sampler, T-33 No. 951, took off at 0622 and was on orbit at 0730; its altitude was 34,000 ft. Sampler-controller called for a penetration at 0740; negative readings were taken for this and two succeeding passes. It was discovered upon landing that the radiac equipment was inoperative during all passes; however, the dosimeter gave a final reading of 260 mr. The third sampler, T-33 No. 920, was off the ground at 0407 and was ready for its first penetration at 0445. Only one pass was made, and this was through a hot portion of the nuclear cloud. This aircraft entered the cloud at 0445 at an altitude of 33,500 ft and immediately hit a hot pocket of contaminated particles; the rate meter indicated from 1 to 70 r for 25 sec, then dropped to 50 r and held for 26 sec, and then instantly rose to 140 r, then back to 6 r, and then to 1 r within 50 sec. After reporting these data to the controller, this aircraft was cleared to return to ISAFB. After the aircraft was landed, contamination was found to be 1000 mr/hr and the accumulative dosage, 6000 mr. Final film-badge exposure reading for this crew was pilot, 4600 mr, and radiological officer, 5000 mr. The fourth sampler, T-33 No. 048, was called for at 0634. First penetration was at 0703, and two succeeding passes were made at 7-min intervals. A total dosimeter reading upon landing was 1400 mr, with a cockpit background of 1000 mr. Highest peak intensity reached was 8 r. The aircraft contamination was only 3600 mr/hr, and personnel film-badge readings were pilot, 1320 mr, and radiological officer, 1225 mr. The fifth sampler, T-33 No. 913, was off the ground at 0629. First penetration was made at 0705 and the second pass was at 0710. Highest peak reading was 11 r. Cumulative dosage upon landing was 380 mr, and the cockpit background was 320 mr. Personnel received an average exposure of 525 mr. The sixth sampler, F-84 No. 781, was off the ground at 0719, climbed to 35,000 ft, made one penetration, and returned to ISAFB. A peak reading of 1.5 r was recorded with a dosimeter reading of only 80 mr. The pilot received an exposure of 75 mr. Sampler seven, F-84 No. 030, was called for at 0407, climbed to an altitude of 33,000 ft, and made one pass at 0459. A peak reading of 70 r was received on the radiac instrument. A cumulative dosimeter reading of 400 mr and a cockpit background of 200 mr were recorded upon landing. The eighth sampler, F-84 No. 791, was off the ground at 0725, made one penetration at 0752, and landed at ISAFB. The ninth sampler, F-84 No. 834, was off at 0639, made two penetrations, and returned to ISAFB. No readings were taken because the radiac instruments proved inoperative. The tenth sampler, F-84 No. 717, was called up by the sampler-controller at 0730 and made two penetrations at 33,000 ft with a peak reading of 3 r and a cumulative dosage of 50 mr. This aircraft returned to ISAFB upon completion of the second pass. Sampler eleven, F-84 No. 859, was airborne at 0733, climbed to an altitude of 27,000 ft, made one pass, and returned to ISAFB. The readings recorded were low. The twelfth sampler, F-84 No. 781, was called for at 0852, climbed to an altitude of 34,000 ft, and made the first penetration at 0919. An additional pass was made at 35,000 ft. Peak reading recorded was 4 r, with a cumulative dosage of only 70 mr. This mission was accomplished with no difficulties. The aircraft returned to ISAFB with an intensity of only 180 mr/hr, and the pilot had a film-badge exposure of 75 mr.

The mission as a whole was a success. The B-29 observer and sampler had no mechanical troubles, the T-33's collected good samples, and the F-84 personnel checked out final manned-sampling techniques.

### 4.3.9 Manned Sampling for Snapper How

The shot went off as scheduled. Sampler-controller, B-29 No. 285, took off at 0346 and was on orbit at 0410. Difficulties were encountered by the controller in finding the cloud and

Table 4.9 — MANNED-SAMPLING DATA FOR SNAPPER HOW

Shot Time: 0355:00.3 PST, 5 June 1952
Apparent Fireball Yield: 17.6 ± 1.2 Kt*

| Aircraft type and code No. | Penetration No. | Altitude, $10^3$ ft MSL | Indicated air speed, mph | Total time in cloud, sec | Cockpit background after pen., mr | Peak intensity, r | Time from 1 r to 1 r, sec | Cumulative dosimeter reading, mr | Dir. and dist. from zero point | Max. A/C intensity, mr/hr | Sample size per sq ft of filter paper |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Crystal† B-29 No. 285 | | | | | | | | | | | |
| Bullhead 1 | 1 | 24 | 195 | NR | 30 | 1.1 | 35 | 100 | 354°, 101 mi | 450 | |
| B-29 No. 386 | 2 | 24 | 185 | NR | 80 | 1.1 | 50 | 200 | 351°, 105 mi | | |
| | 3 | 24 | 185 | NR | 80 | 0.8 | 0 | 250 | 354°, 101 mi | | |
| | 4 | 23 | 195 | NR | 60 | 1.0 | 25 | 300 | 354°, 101 mi | | |
| | 5 | 22 | 190 | NR | 60 | 0.4 | 0 | 325 | 351°, 125 mi | | |
| | 6 | 21.5 | 200 | NR | 65 | 0.6 | 0 | 375 | 342°, 94 mi | | $1.1 \times 10^{-10}$ |
| Bullhead 2 T-33 No. 951 | 1 | 36 | 250 | NR | 550 | 20 | 90 | 200 | 25°, 63 mi | 3100 | $2.3 \times 10^{-10}$ |
| Bullhead 3 | 1 | 35 | 250 | NR | 0 | 0 | 0 | 0 | NR | 80 | |
| T-33 No. 920 | 2 | 35 | 250 | NR | 0 | 0 | 0 | 0 | NR | | |
| | 3 | 35 | 250 | NR | 0 | 0 | 0 | 0 | NR | | |
| | 4 | 35 | 250 | NR | 0 | 0 | 0 | 0 | NR | | Neg |
| Bullhead 4 | 1 | 34.5 | 260 | NR | 100 | 0.2 | 0 | 100 | 50°, 109 mi | 270 | |
| T-33 No. 048 | 2 | 35 | 260 | NR | 150 | 0.6 | 0 | 200 | 50°, 109 mi | | $0.76 \times 10^{-10}$ |
| Bullhead 5 T-33 No. 913 | 1 | 35 | 260 | NR | 0 | 0 | 0 | 0 | NR | 260 | $0.607 \times 10^{-10}$ |
| Bullhead 6 F-84 No. 859 | 1 | 17 | 350 | 180 | 50 | 1.3 | 50 | 75 | 329°, 78 mi | 100 | |
| Bullhead 7 F-84 No. 030 | 1 | 35 | 300 | NR | 20 | 3 | 60 | 40 | 51°, 102 mi | 100 | |
| Bullhead 8 | 1 | 18 | 310 | 60 | 0 | 1.3 | 4 | 0 | 343°, 70 mi | 120 | |
| F-84 No. 791 | 2 | 18 | 330 | 120 | 50 | 1.9 | 20 | 25 | 343°, 70 mi | | |
| Bullhead 9 F-84 No. 834 | 1 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | NR | 11 | $0.03 \times 10^{-10}$ |
| Bullhead 10 | 1 | 30 | 350 | 120 | 0 | 0.2 | 0 | 0 | 328°, 92 mi | 75 | |
| F-84 No. 717 | 2 | 22 | 380 | 120 | 0 | 0.5 | 0 | 15 | 328°, 79 mi | | |
| Bullhead 11 | 1 | 24 | 350 | NR | 0 | 0 | 65 | 20 | 377°, 92 mi | 170 | |

*Taken from Tumbler-Snapper Summary Report on Diagnostic Measurements, WT-550, November 1952.

†Sampler-controller.

vectoring the sampling aircraft. The nuclear cloud rapidly rose to a height of 41,000 ft and then began to disperse in several shearing directions. The lower portion of this cloud (17,000 to 20,000 ft) also moved rapidly to the northwest, and the upper part moved to the northeast. The velocity of leading edge of this cloud was approximately 60 mph, twice as much as was anticipated during the briefing. This caused maximum dispersion at the most important sampling levels. The sampler aircraft were vectored to the lower cloud where most of the air sampling took place. Radiation intensities encountered by the sampling aircraft were much less than expected; this was also due to the dispersion. Sample sizes picked up by the sampling aircraft, according to field calculations, averaged $2 \times 10^{-10}$ per square foot of filter paper.

The first sampler, B-29 No. 386, was off the ground at 0346. The first penetration was made at 0703. The cloud was visible to the radiological officer, but only low radiation intensities were encountered; the maximum peak reading, 1.1 r, was held for 35 sec. Six penetrations were made through the nuclear cloud with an average peak reading of 1 r. The snap-sampler was triggered at 0739 on the fourth pass, although the known radiation intensities were far below the desirable level; it was then or never. The cumulative dosimeter reading was 375 mr upon landing, and the aircraft-contamination intensity was 450 mr/hr which was nil to both personnel and aircraft.

The second sampler, T-33 No. 951, was vectored at 0431, climbed to 36,000 ft, and made one penetration. This pass was successful. A peak reading of 20 r was observed. The aircraft contamination was found to have a reading of 3100 mr/hr; the personnel had, on the average, a total cumulative dose reading of 455 mr. This penetration was an excellent one and one of the few which obtained good samples. Sampler three, T-33 No. 920, was called for by the sampler-controller at 0627. Four penetrations were made, but no readings were obtained; however, the aircraft was found to have a contamination of 80 mr/hr. The personnel dosages were only 15 mr for the pilot and 35 mr for the radiological officer. The fourth sampler, T-33 No. 048, was called for at 0631 and made two penetrations at 35,000 ft with a peak reading of 0.6 r. The cloud was observed at this altitude to be thin and highly scattered. This was very unsatisfactory for sampling. The fifth sampler, T-33 No. 913, was off the ground at 0640. Four passes were made through the cloud, but no readings were obtained; however, the aircraft was found to have a contamination of 260 mr/hr, and the personnel were found to have an average cumulative dosage of 80 mr. The F-84 samplers encountered the same difficulties in sampling. The nuclear cloud was very thin and widely scattered at the time they were vectored. Very low readings were observed, and in one case a peak reading of 3 r was recorded. This particular penetration was made by sampler seven, F-84 No. 030. The pass was completed at 35,000 ft at an air speed of 300 mph. The sample collected was roughly calculated to be sufficient for chemical analysis.

This particular nuclear cloud was difficult to sample. The anticipated characteristic phenomena were not encountered because of shifting winds and the nature of the bomb itself. The cloud arising from the detonation was typical in shape and form but was more rapid in its ascent. At 40,000 ft the shearing effect of the winds cut into the cloud rise and quickly scattered it. The cloud dissipated rapidly, and the fact that the sampling aircraft were held out too long by the sampler-controller made the operation difficult to accomplish. However, it was calculated that adequate samples were obtained for LASL.

CHAPTER 5

# CLOUD TRACKING

## 5.1 SCOPE

The purpose of this chapter is to report on all phases of cloud-tracking operations; to present the data collected for each shot; to give a schematic diagram of the nuclear-cloud progression in relation to winds at various altitudes and directions and in relation to the point of burst.

## 5.2 ORGANIZATION AND PLANNING

### 5.2.1 Personnel

Cloud-tracking crews consisted of two B-29 crews from Air Weather Service and one B-25 crew from 4901st Support Wing (ATOMIC) with a radiological observer from Test Command on each aircraft.

### 5.2.2 Equipment

The equipment used for cloud tracking was as follows:

1. AN/PDR-T1B ion chamber.
2. AN/PDR 2610A gamma survey meter.
3. MX-5 (Beckman model) beta-gamma survey meter.
4. 200-mr to 0-10-r pocket dosimeter.
5. The aircraft used on these missions were furnished by the SWC and the 55th Weather Reconnaissance Squadron, MAFB. They included two B-29's and one B-25.

### 5.2.3 Facilities

The same buildings and facilities that were used for manned sampling were used here.

## 5.3 FACTUAL DATA

Tables 5.1 to 5.8 of this chapter outline the data collected. (Also see Fig. 1.6 to locate positions.)

## 5.4 GENERAL

In addition to charting cloud progression and radiation intensities for scientific research, an additional mission of clearing civil air lanes for civil traffic after each atomic detonation was performed.

Table 5.1 — CLOUD-TRACKING DATA FOR TUMBLER ABLE

Shot Time: 0900:07.5 PST, 1 April 1952

| Aircraft type and code No. | Report No. | Position, grid No. | Time of report, PST | Altitude nearest 500 ft, $10^3$ ft MSL | G-M reading, mr/hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Hound Dog 1 B-29 No. 826 | 1 | 207 | 0950 | 25 | 0.08 | 24 | 152°, 35 kn | |
| | 2 | 208 | 1015 | 21 | 0.8 | 19 | NR | |
| | 3 | NR | NR | NR | NR | NR | NR | |
| | 4 | 1A5 | 1045 | 21 | 0.08 | NR | NR | |
| | 5 | 106 | 1100 | 21 | 1 | NR | NR | |
| | 6 | 107 | 1109 | 21 | 0.2 | NR | NR | |
| | 7 | 2A8 | 1121 | 21 | 0.5 | NR | NR | |
| | 8 | 107 | 1136 | 21 | 0.7 | NR | NR | |
| | 9 | 1A8 | 1151 | 21 | 0.9 | NR | NR | |
| | 10 | 1A9 | 1214 | 21 | 0.2 | NR | NR | |
| | 11 | 1A9 | 1228 | 19 | 1 | 19 | NR | Cloud scattered |
| | 12 | 1A10 | 1235 | 19 | 0.7 | 19 | NR | |
| | 13 | 1B11 | 1257 | 19 | 0.4 | 17 | NR | |
| | 14 | 1A11 | 1312 | 19 | 3 | [illegible] | NR | |
| | 15 | 1B14 | 1327 | 19 | 6 | 15 | NR | |
| | 16 | 1B15 | 1336 | 19 | 5 | 19 | NR | |
| | 17 | 1B15 | 1359 | 17 | 10 | 17 | NR | |
| | 18 | 1B15 | 1414 | 17 | 7 | 17 | NR | |

Table 5.1 — (Continued)

| Aircraft type and code No. | Report No. | Position grid No. | Time of report, PST | Altitude nearest 500 ft, $10^3$ ft MSL | G-M reading, mr/hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Hound Dog 4 B-25 No. 099 | 1 | 2A0 | 0834 | 10 | 14 | NR | NR | |
| | 2 | 2A1 | 0846 | 11.5 | 100 | NR | NR | |
| | 3 | 2A2 | 0901 | 12 | 110 | 15 | NR | |
| | 4 | 2A3 | 0915 | 12 | 25 | 15 | NR | |
| | 5 | 2A4 | 0927 | 12 | 18 | 15 | NR | |
| | 6 | 2A4 | 0942 | 12 | 80 | 17 | NR | |
| | 7 | 205 | 0958 | 12 | 27 | 17 | NR | |
| | 8 | 106 | 1015 | 12 | 11 | 17 | NR | |
| | 9 | 2B7 | 1033 | 12 | 50 | NR | NR | |
| | 10 | 2A8 | 1045 | 12 | 60 | NR | NR | |
| | 11 | 2A8 | 1100 | 12 | 360 | NR | NR | |
| | 12 | 2A8 | 1116 | 12 | 28 | NR | NR | |
| | 13 | 2A8 | 1130 | 12 | 110 | NR | NR | |
| | 14 | 2B9 | 1144 | 12 | 95 | NR | NR | |
| | 15 | 2B10 | 1158 | 12 | 90 | NR | NR | |
| | 16 | 2A10 | 1214 | 12 | 28 | NR | NR | |
| | 17 | 109 | 1229 | 12 | 75 | NR | NR | |
| | 18 | 110 | 1242 | 12 | 85 | NR | NR | |

Table 5.2— CLOUD-TRACKING DATA FOR TUMBLER BAKER

Shot Time: 0929.57.05 PST, 15 April 1952

| Aircraft type and code No. | Report No. | Position, grid No. | Time of report, PST | Altitude nearest 500 ft, $10^3$ ft MSL | G-M reading, mr/hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Hound Dog 1 B-29 No. 826 | 1 | 2B4 | 0930 | 12 | NR | NR | 350°, 17 kn | |
| | 2 | 2B2 | 1058 | 17 | 4 | 16 | 300°, 12 kn | Extremely scattered |
| | 3 | 2B2½ | 1111 | 17 | 2 | 16 | | |
| | 4 | 2A1 | 1139 | 17 | 1.4 | 16 | NR | |
| | 5 | 2B2 | 1143 | 15 | 1.5 | 15 | NR | |
| | 6 | 2A2 | 1155 | 15 | 0.5 | 15 | 330°, 11 kn | Thin and scattered |
| | 7 | 2C3 | 1206 | 15 | 4 | 15 | NR | |
| | 8 | 2B0 | 1211 | 14 | 4 | 14 | NR | |
| | 9 | 2D0 | 1240 | 13 | 6 | 14 | 305°, 13 kn | |
| | 10 | 2D4 | 1253 | 13 | 6 | 15 | 008°, 12 kn | |
| | | | | | | | NR | Long, thin diffused streamers |
| Hound Dog 4 B-25 No. 099 | 1 | 000 | 0901 | 9 | 0.15 | 10 | NR | Cloud broken |
| | 2 | 101 | 0915 | 12 | 0.1 | 14 | NR | |
| | 3 | 401 | 1027 | 10 | 0.08 | NR | NR | Dust cloud visible |
| | 4 | 2A1 | 1043 | 6 | 0.12 | 15 | NR | Scattered |
| | 5 | 2A1 | 1059 | 8.5 | 0.13 | 16 | NR | |

Table 5.2 — (Continued)

| Aircraft type and code No. | Report No. | Position, grid No. | Time of report, PST | Altitude nearest 500 ft $10^3$ ft MSL | G-M reading, mr/hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Hound Dog 4 B-25 No. 099 (continued) | 6 | 100 | 1113 | 9 | 1 | 16 | NR | Horseshoe shaped |
| | 7 | 2A0 | 1129 | 10 | 0.15 | 11 – 16 | NR | |
| | 8 | 2A2 | 1145 | 11 | 0.12 | 16 | NR | Scattered thinly |
| | 9 | 2B2 | 1200 | 12 | 0.2 | 14 | NR | |
| | 10 | 3D2 | 1215 | 10 | 1 | NR | NR | Extremely scattered |
| | 11 | 2B2 | 1230 | ..5 | 2 | NR | NR | |
| | 12 | 2B1 | 1238 | 8 | 1.1 | NR | NR | |
| | 13 | 2C1 | 1245 | 7.5 | 3 | NR | NR | |
| | 14 | 2B½3 | 1258 | 8 | 0.9 | NR | NR | |
| | 15 | 2B½1 | 1304 | 8 | 1.8 | NR | NR | |
| | 16 | 2B½0 | 1316 | 8 | 0.8 | NR | NR | |
| | 17 | 3B½1 | 1318 | 0.8 | 0.9 | NR | NR | |
| | 18 | 3B½2 | 1323 | 8 | 0.8 | NR | NR | |
| | 19 | 2C1 | 1339 | 7.5 | 6.5 | NR | NR | Cloud not visible |

Table 5.3 — CLOUD-TRACKING DATA FOR TUMBLER CHARLIE

Shot Time: 0930:10 PST, 22 April 1952

| Aircraft type and code No. | Report No. | Position, grid No. | Time of report, PST | Altitude nearest 500 ft, $10^3$ ft MSL | G-M reading, mr/hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Hound Dog 1 B-29 No. 826 | 1 | 2C1 | 0917 | 20 | 0 | NR | 360°, 6 kn | |
| | 2 | 2B1 | 0942 | 20 | 9 | NR | NR | Cloud stratus form |
| | 3 | 2A0 | 1000 | 20 | 7 | NR | NR | |
| | 4 | 2B1 | 1008 | 15 | 5 | 15 | NR | Diffusing rapidly |
| | 5 | 2B1 | 1030 | 22 | 3 | NR | NR | Diffusing rapidly |
| | 6 | 2B0 | 1034 | 22 | 19 | NR | NR | |
| | 7 | 2B4 | 1043 | 22 | 4 | NR | 350°, 21 kn | |
| | 8 | 2C4 | 1047 | 22 | 8 | NR | NR | |
| | 9 | 2E6 | 1135 | 26 | 18 | NR | 318°, 23 kn | Lightly scattered |
| | 10 | 2D7 | 1146 | 26 | 3.5 | NR | NR | Extremely scattered |
| | 11 | 2C8 | 1155 | 26 | 4 | NR | 310°, 26 kn | Extremely scattered, big shear |
| | 12 | 2B9 | 1205 | 26 | 2 | NR | NR | |
| | 13 | 2D7 | 1215 | 26 | 30 | NR | NR | |
| | 14 | 2G7 | 1228 | 26 | 110 | NR | NR | No visible cloud in area |
| | 15 | 2H8 | 1235 | 25 | 7 | NR | NR | |
| | 16 | 2E5 | 1300 | 26 | 14 | NR | 308°, 34 kn | |
| | 17 | 2E5 | 1328 | 15 | 0.1 | NR | NR | |

Table 5.3 (Continued)

| Aircraft type and code No. | Report No. | Position, grid No. | Time of report, PST | Altitude nearest 500 ft, $10^3$ ft MSL | G-M reading, mr/hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Hound Dog 4 | 1 | 4I0 | 0915 | 11 | 0.5 | 12.5 | NR | |
| B-25 No. 099 | 2 | 4A0 | 0930 | 8.5 | NR | 12.5 | NR | Cloud stratus form |
| | 3 | 300 | 0951 | 13 | 20 | 13 | NR | |
| | 4 | 2A3 | 1023 | 22 | 0.4 | NR | 350°, 26 kn | Upper cloud stratus form |
| | 5 | 2A1 | 1035 | 8.5 | 7 | NR | NR | Extremely diffused |
| | 6 | 2B2 | 1106 | 10 | 0.4 | NR | NR | |
| | 7 | 2E5 | 1116 | 10 | 0.3 | NR | NR | |
| | 8 | 2G7 | 1126 | 10 | 0.3 | NR | NR | |
| | 9 | 2D4 | 1136 | 10 | 0.2 | NR | NR | |

Table 5.4 CLOUD TRACKING DATA FOR TUMBLER DOG

Shot Time: 0829.58.6 PST, 1 May 1952

| Aircraft type and code No. | Report No | Position grid No | Time of report, PST | Altitude nearest 500 ft, $10^3$ ft MSL | G-M reading, mr/hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Hound Dog 2 B-29 No. 774 | 1 | 2A8 | 1020 | 23 | 0.7 | 40 | 274°, 27 kn | Thin stratus between top and lower cloud |
| | 2 | 109 | 1037 | 23 | 13 | 30 | NR | Thin and scattered |
| | 3 | 209 | 1045 | 23 | 10 | 30 | NR | Lower cloud 23,000 ft |
| | 4 | 2A15 | 1100 | 23 | 1.5 | NR | 276°, 20 kn | |
| | 5 | 2A16 | 1115 | 22 | 1 | 30• | NR | Dissipating rapidly |
| | 6 | 1A10 | 1130 | 22 | 21 | 30• | 275°, 24 kn | Thin and scattered, middle cloud 30,000 ft drifting SSE |
| | 7 | 209 | 1150 | 19 | 80 | 30• | NR | |
| | 8 | 2B7 | 1205 | 19 | 0.5 | 30• | 270°, 20 kn | Extremely scattered |
| | 9 | 1C9 | 1220 | 19 | 4 | 23• | NR | |
| | 10 | 2B14 | 1237 | 19 | 3 | 23• | NR | Lower cloud topping mountains from 2C1 to 2C10 |
| | 11 | 1A3 | 1255 | 17 | 6 | 23• | NR | |
| | 12 | 2A9 | 1320 | 17 | 0.5 | 20• | NR | |
| | 13 | 1B11 | 1335 | 17 | 4 | 20• | 257°, 15 kn | Very widely scattered |

Table 5.4 — (Continued)

| Aircraft type and code No. | Report No. | Position, grid [illegible] | Time of report, PST | Altitude nearest 500 ft $10^3$ ft MSL | G-M reading, mr hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Hound Dog 4 B-25 No. 099 | 1 | 4A1 | 0908 | 7.5 | 0.2 | NR | NR | |
| | 2 | 1B0 | 0920 | 8.5 | 0.4 | NR | NR | |
| | 3 | 2A2 | 0932 | 12 | 0.5 | NR | NR | |
| | 4 | 1A4 | 0944 | 11.5 | 3 | NR | NR | Lower cloud 14,000 ft |
| | 5 | 1A1 | 1001 | 8 | 0 | NR | NR | Thin and scattered |
| | 6 | 204 | 1018 | 9.5 | 0.03 | NR | NR | Scattered |
| | 7 | 106 | 1033 | 10 | 0.5 | NR | NR | |
| | 8 | 1B5 | 1050 | 8.5 | 0.3 | NR | NR | Thin and scattered |
| | 9 | 104½ | 1102 | 7 | 3 | NR | NR | Thin and scattered |

*Base.

Table 5 5 CLOUD-TRACKING DATA FOR SNAPPER EASY

Shot Time: 0414.59.29 PST, 7 May 1952

| Aircraft type and code No. | Report No | Position, grid No | Time of report, PST | Altitude nearest 500 ft, $10^3$ ft MSL | G-M reading, mr/hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Hound Dog 1 B-29 No 826 | 1 | 2C3 | 0453 | 15 | 0 | 15• | 208°, 41 kn | |
| | 2 | 3A1 | 0512 | 15 | 0 | 15• | 186°, 44 kn | |
| | 3 | 1G2 | 0552 | 15 | 3 | NR | NR | Thin and scattered |
| | 4 | 1H2 | 0558 | 15 | 15 | NR | 0 | |
| | 5 | 1H3 | 0606 | 14 | 1 | NR | 195°, 49 kn | Cloud not visible |
| | 6 | 1M17 | 0727 | 24 | 0 | NR | 226°, 68 kn | Aborting, Hound Dog 2 replacement |
| | 7 | 1N18 | 0805 | 20 | 13 | NR | 223°, 56 kn | Thin and scattered |
| | 8 | 1O22 | 0829 | 17 | 100 | NR | NR | |
| | 9 | 1P24 | 0835 | 17 | 14 | NR | 217°, 51 kn | |
| | 10 | 1O26 | 0843 | 17 | 28 | NR | NR | |
| | 11 | 1N25 | 0846 | 16 | 11 | NR | NR | |
| | 12 | 1N26 | 0848 | 15 | 3 | NR | NR | |
| | 13 | 1S23 | 0841 | 15 | 8 | NR | NR | |
| | 14 | 1S22 | 0914 | 15 | 15 | NR | 209°, 33 kn | |
| | 15 | 1V18 | 0914.30 | 15 | 0.6 | NR | NR | Alto-cumulus, merging with cloud |
| | 16 | 1X22 | 1022 | 10 | 1.1 | NR | NR | |
| Hound Dog 4 B-25 No 099 | 1 | 4A1 | 0452 | 4 | NR | NR | NR | |
| | 2 | 4A2 | 0456 | 8 | NR | NR | NR | |
| | 3 | 4A2 | 0458 | 9 | NR | NR | NR | |
| | 4 | 4B3 | 0501 | 10 | 0.2 | NR | NR | |
| | 5 | 4B2 | 0503 | 11 | 20 | NR | NR | |

Table 5.5 --(Continued)

| Aircraft type and code No. | Report No. | Position, grid No. | Time of report, PST | Altitude nearest 500 ft, $10^3$ ft MSL | G-M reading, mr/hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Round Dog 4 B-25 No. 099 (continued) | 6 | 4C1 | 0506 | 12 | NR | NR | NR | |
| | 7 | 4C2 | 0509 | 13 | NR | NR | NR | Lower cloud dispersed |
| | 8 | 4C2½ | 0512 | 14 | 1 | NR | NR | |
| | 9 | 4B1 | 0515 | 13 | NR | 16 | NR | |
| | 10 | 4B0 | 0519 | 12 | NR | NR | NR | |
| | 11 | 4A1 | 0523 | 10 | 1 | NR | NR | |
| | 12 | 4A1½ | 0526 | 9 | NR | NR | NR | |
| | 13 | 4B1 | 0530 | 10 | 0.7 | NR | NR | |
| | 14 | 4C0 | 0535 | 12 | NR | NR | NR | |
| | 15 | 1E1 | 0539 | 13 | NR | NR | NR | |
| | 16 | 1H3 | 0543 | 14 | 2 | NR | NR | Lower cloud not visible |
| | 17 | 1I2 | 0548 | 13 | 5 | NR | NR | |
| | 18 | 1G1 | 0533 | 12 | NR | NR | NR | |
| | 19 | 4F0 | 0556 | 10 | 0.7 | NR | NR | |
| | 20 | 1G2 | 0603 | 11 | NR | NR | NR | |
| | 21 | 1J5 | 0617 | 13 | 5 | NR | NR | Cloud not visible |
| | 22 | 1J5 | 0620 | 13 | 30 | NR | NR | |
| | 23 | 1H2 | 0625 | 12 | NR | NR | NR | |
| | 24 | 1A3 | 0644 | 11 | NR | NR | NR | |
| | 25 | 1I2 | 0658 | 12 | 0.3 | NR | NR | |
| | 26 | 1I8 | 0714 | 10 | 0.3 | NR | NR | |
| | 27 | 1D7 | 0732 | 8.5 | 0.15 | NR | NR | |
| | 28 | 1E3 | 0748 | 9 | 0.4 | NR | NR | |
| | 29 | 1I1 | 0800 | 10.5 | 0 | NR | NR | |

*Base.

Table 5.6 CLOUD-TRACKING DATA FOR SNAPPER FOX

Shot Time 0350.59.6 PST, 25 May 1952

| Aircraft type and code No. | Report No | Position, grid No | Time of report, PST | Altitude nearest 500 ft, $10^3$ ft MSL | G-M reading, mr/hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Mound Dog 1 B-29 No 826 | 1 | 1A3 | 0505 | 22 5 | 550 | NR | NR | Top cloud thin connecting to lower cloud by a tail ending at 1B2. Edge of top cloud, 1D4 |
| | 2 | 1C2 | 0517 | 22 | 6.4 | NR | NR | |
| | 3 | 4A1 | 0530 | 24 | 7 | NR | NR | |
| | 4 | 101 | 0535 | 24 | 8 | NR | Neg | |
| | 5 | 1A4 | 0545 | 24 | 12 | NR | NR | |
| | 6 | 1C5 | 0550 | 24 | 22 | 27* | NR | Top cloud merging with cover, lower cloud thin and scattered |
| | 7 | 1C7 | 0604 | 24 | 6 | NR | NR | |
| | 8 | 1D7 | 0611 | 24 | 3 | NR | NR | |
| | 9 | 1C4 | 0620 | 24 | 8 | NR | NR | |
| | 10 | 1C3 | 0630 | 24 | 9 | NR | NR | |
| | 11 | 2A3 | 0644 | 24 | 10 | NR | NR | |
| | 12 | 1D8 | 0657 | 24 | 10 | NR | NR | |
| | 13 | 1E8 | 0713 | 24 | 10 | NR | NR | |
| | 14 | 1I4 | 0717 | 24 | 12 | NR | NR | |
| | 15 | 1E6 | 0721 | 24 | 14 | NR | NR | |
| | 16 | 1A3 | 0721 | 24 | 14 | NR | NR | |
| | 17 | 1D3 | 0732 | 24 | 10 | NR | NR | |
| | 18 | 1E2 | 0735 | 24 | 10 | NR | NR | Thin and scattered |
| | 19 | 1A4 | 0745 | 24 | 10 | NR | NR | |
| | 20 | 1A6 | 0751 | 24 | 200 | NR | NR | |
| | 21 | 1B9 | 0800 | 24 | 10 | NR | NR | |
| | 22 | 1E9 | 0806 | 24 | 10 | NR | NR | |
| | 23 | 1G14 | 0818 | 24 | 10 | NR | NR | Cloud dissipated except for isolated patches |

Table 5.6 · (Continued)

| Aircraft type and code No. | Report No. | Position, grid No. | Time of report, PST | Altitude nearest 500 ft, $10^3$ ft MSL | G-M reading, mr/hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Hound Dog 1 | 24 | 1F13 | 0835 | 24 | 36 | NR | NR | |
| B-29 No. 828 | 25 | 1C10 | 0643 | 24 | 20 | NR | NR | |
| (continued) | 26 | 1A7 | 0852 | 24 | 22 | NR | NR | G-M reading taken in isolated patches |
| | 27 | 1C3 | 0910 | 24 | 10 | NR | NR | |
| | 28 | 1B4 | 0915 | 24 | 30 | NR | NR | |
| | 29 | 1A6 | 0924 | 24 | 12 | NR | NR | |
| | 30 | 1A6½ | 0945 | 24 | 13 | NR | NR | |
| | 31 | 1A9 | 0950 | 24 | 22 | 24 | NR | Cloud thin, no reading on G-M instrument |
| Hound Dog 4 | | | | | | | | |
| B-25 No. 099 | 1 | 1A0 | 0440 | 5 | 2 | NR | NR | |
| | 2 | 4A½1 | 0443 | 9 | 2 | NR | NR | |
| | 3 | 1A0½ | 0502 | 9 | 2 | NR | NR | |
| | 4 | 1B½1½ | 0505 | 9 | 2 | NR | NR | |
| | 5 | 1B3 | 0510 | 9 | 3 | NR | NR | |
| | 6 | 1B0 | 0525 | 9 | NR | NR | NR | |
| | 7 | 1A1 | 0548 | 14 | 14 | NR | NR | |
| | 8 | 4C0 | 0555 | 14 | 90 | NR | NR | |
| | 9 | 1C4 | 0608 | 14 | 36 | NR | NR | |
| | 10 | 1C4½ | 0630 | 13 | 16 | NR | NR | |
| | 11 | 1B0 | 0708 | 9 | 4 | NR | NR | |
| | 12 | 1B1 | 0722 | 9 | 3 | NR | NR | |
| | 13 | NR | NR | 16.6 | 18 | NR | NR | Unable to get G-M reading quadrant 4, aircraft heavily contaminated |
| | 14 | NR | NR | NR | 18 | NR | NR | |

*Top.

Table 5.7 — CLOUD-TRACKING DATA FOR SNAPPPER GEORGE

Shot Time: 0354.59.8 PST, 1 June 1952

| Aircraft type and code No. | Report No. | Position, grid No. | Time of report, PST | Altitude nearest 500 ft, $10^3$ ft MSL | G-M reading, mr/hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Hound Dog 1 B-29 No. 826 | 1 | 4D4 | 0445 | 18 | 0 | NR | 190°, 22 kn | Small portion of cloud flanking 10° over horizon |
| | 2 | 4A1 | 0455 | 18 | 1 | NR | NR | |
| | 3 | 1D3 | 0506 | 18 | 0.2 | NR | NR | High cloud scattered and thin SW direction |
| | 4 | 1E5 | 0509 | 18 | 0 | NR | NR | |
| | 5 | 1E3 | 0515 | 18 | 9 | NR | NR | |
| | 6 | 1F2 | 0518 | 18 | 10 | NR | NR | |
| | 7 | 1F1 | 0522 | 18 | 20 | NR | NR | |
| | 8 | 1D2 | 0531 | 16 | 70 | NR | NR | Thin and scattered in a W-shaped form |
| | 9 | 1C3 | 0550 | 22 | 1700 | NR | 195°, 32 kn | |
| | 10 | 1I4 | 0555 | 22 | 2 | NR | NR | |
| | 11 | 1J3 | 0609 | 22 | 10 | NR | NR | |
| | 12 | 4I1 | 0617 | 22 | 2.5 | NR | NR | |
| | 13 | 1G6 | 0648 | 18 | 0.04 | NR | NR | |
| | 14 | 1M6 | 0702 | 18 | 0.5 | 18 | 190°, 38 kn | |
| | 15 | 1O6 | 0708 | 18 | 1 | 18 | NR | 240° from point 1O6 |
| | 16 | 1O3 | 0712 | 18 | 2 | 15 | NR | |
| | 17 | 1O1 | 0717 | 18 | 6 | 22 | NR | |
| | 18 | 4O1 | 0721 | 18 | 4 | 22 | NR | Cloud clearly defined |
| | 19 | 4O1 | 0738 | 18 | 10 | NR | NR | |
| | 20 | 1F0 | 0955 | 18 | 7 | NR | NR | Lower cloud dissipating rapidly |
| | 21 | 4W1 | 1022 | 22 | 2 | 16 | NR | |
| | 22 | 4R2 | 1038 | 22 | 0 | 18 | NR | |
| | 23 | 1Y9 | 1113 | 18 | 2 | NR | NR | |

Table 5.7 – (Continued)

| Aircraft type and code No | Report No | Position, grid No. | Time of report, PST | Altitude nearest 500 ft, $10^3$ ft MSL | G-M reading, mr/hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Hound Dog 1 | 24 | 1Y4 | 1136 | 20 | 12 | NR | NR | |
| B-29 No. 826 | 25 | 1X3 | 1152 | 22 | 3 | NR | NR | |
| (continued) | 26 | 1Z7 | 1207 | 22 | 3 | NR | NR | |
| | 27 | 1Y8 | 1215 | 22 | 2 | NR | NR | |
| Hound Dog 4 | 1 | 2A1 | 0425 | 0.9 | 48 | 13 | NR | |
| B-25 No. 099 | 2 | 1A0 | 0435 | 9 | 1 | 11.5 | NR | |
| | 3 | 4C0 | 0447 | 4 | 1 | 12 | NR | |
| | 4 | 4C1 | 0450 | 9 | 6 | 10 | NR | |
| | 5 | 4C1⅓ | 0454 | 9 | 8 | 10 | NR | |
| | 6 | 4B2 | 0456 | 9 | 2 | 10 | NR | |
| | 7 | 4C0 | 0505 | 13.4 | 2 | NR | NR | |
| | 8 | 4C1 | 0512 | 14 | 2 | 13 | NR | |
| | 9 | 4C1⅓ | 0514 | 14 | 2 | 15 | NR | |
| | 10 | 4D0 | 0516 | 14 | 20 | 16 | NR | |
| | 11 | 4C1 | 0518 | 14 | 2 | 16 | NR | |
| | 12 | 1D1 | 0523 | 14 | 8 | 14 | NR | |
| | 13 | 1E1 | 0524 | 14 | 10 | 14 | NR | |
| | 14 | 1D2 | 0526 | 14 | 5 | NR | NR | |
| | 15 | 1B1 | 0534 | 14 | 4 | 9–16 | NR | |
| | 16 | 1B1 | 0537 | 14 | 3 | 0 | NR | |
| | 17 | 1C4 | 0548 | 14 | 3 | 22 | NR | Thin and scattered |
| | 18 | 1D4 | 0550 | 14 | 3 | 22 | NR | Scattered to north of 1D4 |
| | 19 | 1I6 | 0600 | 14 | 3 | 22 | NR | Thin and scattered |
| | 20 | 1I3 | 0605 | 13 | 20 | 22 | NR | Scattered |
| | 21 | 1I1 | 0612 | 13 | 4 | 22 | NR | Scattered to the east of 1I1 |
| | 22 | 1D0 | 0621 | 13 | 5 | 22 | NR | Scattered and light |
| | 23 | 4D1 | 0629 | 13 | 4 | NR | NR | |
| | 24 | 4B1 | 0636 | 10 | 3 | NR | NR | |

Table 5.8 — CLOUD-TRACKING DATA FOR SNAPPER HOW

Shot Time. 0355.00.3 PST, 5 June 1952

| Aircraft type and code No. | Report No. | Position, grid No. | Time of report, PST | Altitude nearest 500 ft, $10^3$ ft MSL | G-M reading, mr/hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Hound Dog 1 B-29 No. 826 | 1 | 1D2 | 0450 | 18 | 1.5 | 17 (base) | 158°, 9 kn | Cloud inverted corkscrew with long point |
| | 2 | 1B4 | 0458 | 18 | 0.4 | NR | NR | |
| | 3 | 1D6 | 0506 | 18 | 0.1 | 40 (top) | NR | Thin and scattered |
| | 4 | 1C4 | 0512 | 18 | 0.3 | NR | NR | |
| | 5 | 1D2 | 0516 | 18 | 1 | 30 | NR | Background 0.1 mr under leading edge, thin and scattered |
| | 6 | 4D0 | 0521 | 18 | 6 | NR | NR | |
| | 7 | 4C1 | 0528 | 18 | 30 | 18 | NR | Middle portion of cloud thick |
| | 8 | 4B4 | 0530 | 18 | 0.5 | NR | 137°, 6 kn | |
| | 9 | 402 | 0535 | 18 | 35 | NR | NR | |
| | 10 | 4D1 | 0551 | 22 | 45 | NR | NR | |
| | 11 | 4F1 | 0554 | 22 | 5 | NR | NR | |
| | 12 | 1E2 | 0559 | 22 | 0.6 | NR | NR | |
| | 13 | 1F4 | 0605 | 22 | 0.6 | NR | NR | |
| | 14 | 1F7 | 0611 | 22 | 0.6 | NR | NR | |
| | 15 | 1G9 | 0618 | 22 | 0.4 | NR | NR | |
| | 16 | 1G8 | 0625 | 22 | 0.6 | NR | 150°, 32 kn | |
| | 17 | 1H3 | 0633 | 22 | 0.7 | NR | NR | |
| | 18 | 3I4 | 0646 | 22 | 1.8 | NR | NR | |
| | 19 | 4E6 | 0658 | 18 | 1.3 | NR | NR | |
| | 20 | 4E5 | 0702 | 18 | 1.1 | NR | NR | |

Table 5.8 — (Continued)

| Aircraft type and code No. | Report No | Position, grid No. | Time of report, PST | Altitude nearest 500 ft, $10^3$ ft MSL | G-M reading, mr/hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Hound Dog 1 B-29 No. 826 (continued) | 21 | 4C2 | 0711 | 18 | 1.1 | NR | NR | |
| | 22 | 4F1 | 0718 | 18 | 1.3 | NR | NR | |
| | 23 | 4A1 | 0730 | 18 | 1.5 | NR | NR | |
| | 24 | 4L1 | 0734 | 18 | 1.6 | 24 | NR | Thin and scattered |
| | 25 | 4A4 | 0747 | 22 | 1.5 | NR | NR | |
| | 26 | 4K4 | 0751 | 22 | 2.5 | NR | NR | |
| | 27 | 4H5 | 0811 | 22 | 2 | NR | 170°, 24 kn | Lower cloud, thin and scattered merging with cumulus clouds |
| | 28 | 4N2 | 0830 | 22 | 3 | NR | NR | |
| | 29 | 4L4 | 0840 | 19 | 5 | NR | NR | Active cloud merged with cumulus. No readings |
| | 30 | 4L5 | 0846 | 19 | 3 | NR | NR | |
| Hound Dog 4 B-25 No. 099 | 1 | 4A1 | 0430 | 9 | 0.2 | 10.5 | NR | |
| | 2 | 4C1 | 0435 | 9 | 0.2 | 11 | NR | |
| | 3 | 4A2 | 0439 | 9 | 0.2 | 10.5 | NR | |
| | 4 | 4A1 | 0441 | 9 | 5 | 10.5 | NR | |
| | 5 | 001 | 0444 | 9 | 100 | 6 | NR | |
| | 6 | 4B3 | 0453 | 14 | 0.2 | 15 | NR | |
| | 7 | 4C2 | 0458 | 14 | 18 | 16 | NR | |
| | 8 | 4B2 | 0501 | 14 | 5 | 15 | NR | |
| | 9 | 4B1 | 0504 | 14 | 1 | 15.5 (top) | NR | Top, 15,500 ft, base, 8000 ft |
| | 10 | 4C1 | 0509 | 14 | 20 | 18 | NR | Thin and scattered |

Table 5 8 (Continued)

| Aircraft type and code No | Report No. | Position, grid No. | Time of report, PST | Altitude nearest 500 ft, $10^3$ ft MSL | G-M reading, mr/hr | Altitude of cloud, $10^3$ ft MSL | Double-drift reading | Remarks |
|---|---|---|---|---|---|---|---|---|
| Hound Dog 4 B-25 No. 099 (continued) | 11 | 0C0 | 0511 | 14 | 1 | 18 | NR | Thin and scattered |
| | 12 | 4C1 | 0514 | 14 | 10 | 18 | NR | |
| | 13 | 4B1 | 0515 | 14 | 0.5 | 15 | NR | |
| | 14 | 4C4 | 0519 | 14 | 0.8 | Neg | NR | |
| | 15 | 4D4 | 0523 | 14 | 20 | Neg | NR | |
| | 16 | 4D3 | 0529 | 14 | 0.5 | 16 | NR | |
| | 17 | 4C1 | 0532 | 9.5 | 20 | 16 | NR | Light and scattered |
| | 18 | 4B1 | 0534 | 9 | 5 | 16 | NR | Light and scattered |
| | 19 | 4A1 | 0538 | 9 | 14 | Neg | NR | |
| | 20 | 4B2 | 0542 | 9 | 5 | Neg | NR | |
| | 21 | 4C4 | 0545 | 9 | 5 | Neg | NR | |
| | 22 | 4D5 | 0547 | 9 | 5 | Neg | NR | |
| | 23 | 4D4 | 0559 | 9 | 0.5 | Neg | NR | |
| | 24 | 4C2 | 0608 | 14 | 2 | Neg | NR | |
| | 25 | 4D4 | 0613 | 14 | 4 | Neg | NR | |
| | 26 | 4D5 | 0616 | 14 | 9.2 | Neg | NR | |
| | 27 | 4E5 | 0625 | 14 | 1.5 | 18 | NR | |
| | 28 | 4E4 | 0627 | 14 | 100 | Neg | NR | |
| | 29 | 4D5 | 0636 | 14 | 10 | Neg | NR | |
| | 30 | 4E4 | 0702 | 14 | 3 | Neg | NR | |
| | 31 | 4E5 | 0704 | 13 | 1.5 | 14 | NR | Cloud west of 4E5 light and scattered |
| | 32 | 4E6 | 0705 | 13 | 4 | 14 | NR | |
| | 33 | 4E5 | 0711 | 9 | 4 | Neg | NR | |
| | 34 | 4E4 | 0713 | 9 | 2 | Neg | NR | |
| | 35 | 4E4 | 0714 | 9 | 1 | Neg | NR | |

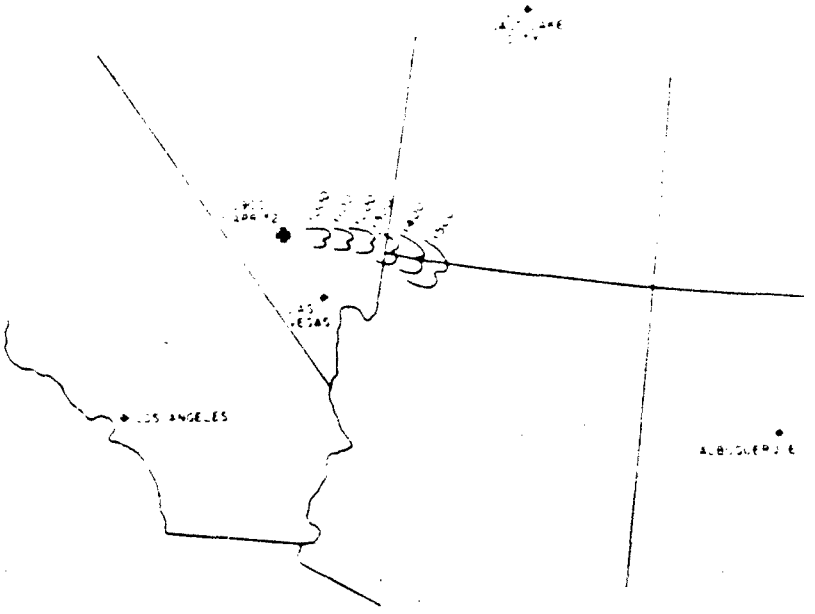


Fig. 5.1 — Cloud progression for Tumbler Able Shot, 1 Apr. 1952, 0900 07.5 PST.

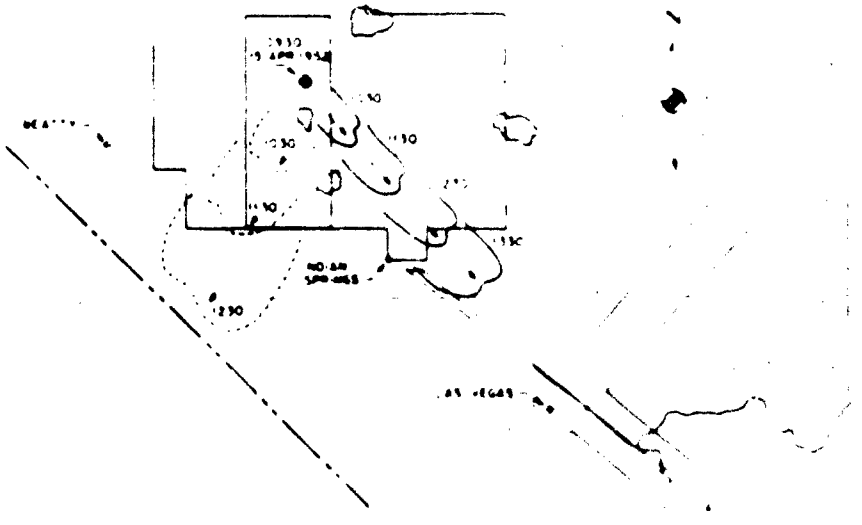

Fig. 5.2 — Cloud progression for Tumbler Baker Shot, 15 Apr. 1952, 0929 57.08 PST. Winds surface, 9000 ft, dust cloud and ——, surface, 13,000 to 15,000 ft, puff.

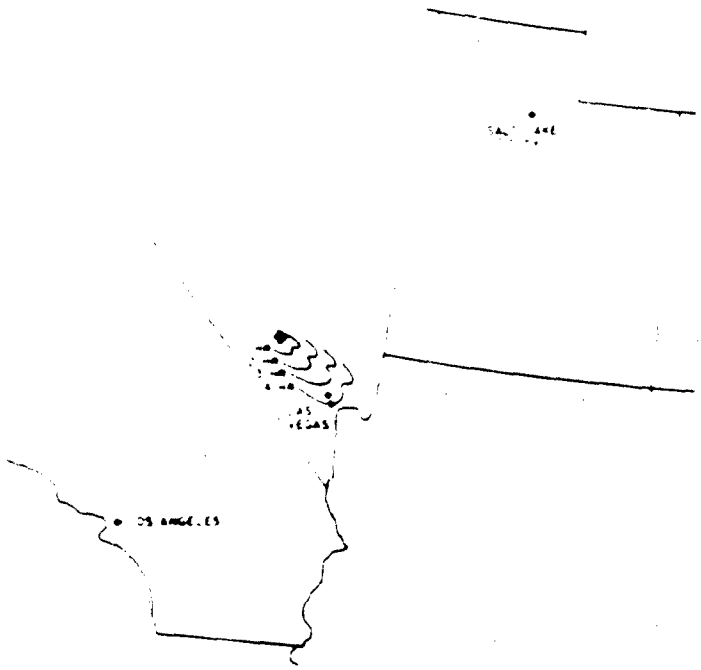

Fig. 5.3 — Cloud progression for Tumbler Charlie Shot, 22 Apr. 1952, 0930 10 PST.

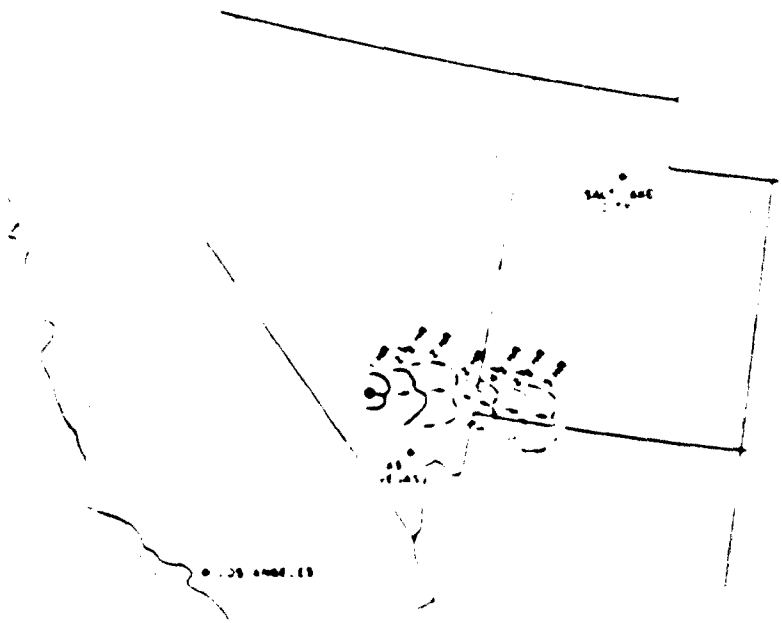

Fig. 5.4 — Cloud progression for Tumbler Dog Shot, 1 May 1952, 0829 56.6 PST. Winds —— 15,000 ft, - - - 20,000 ft, - - - - 30,000 ft, and 40,000 ft.

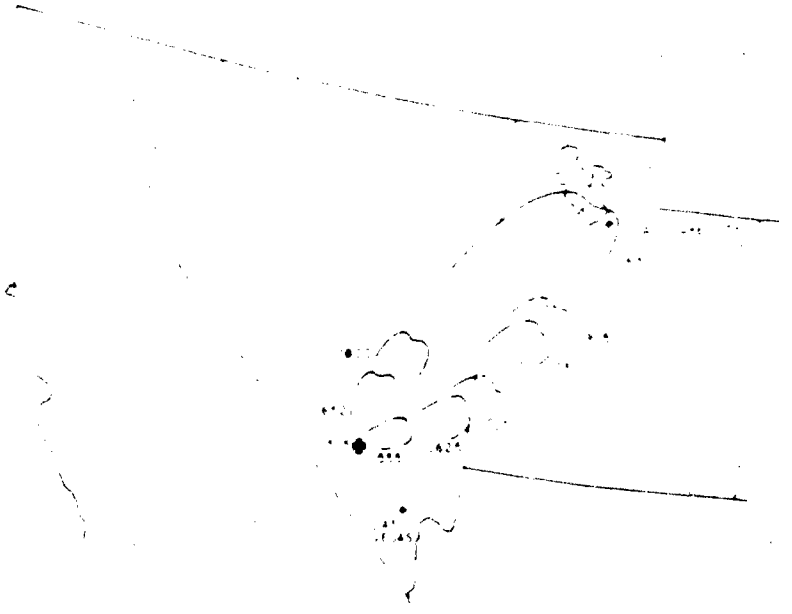

Fig. 5.5 — Cloud progression for Snapper Easy Shot, 7 May 1952, 0414 59.29 PST. Winds ——, 10,000 ft; – – –, 20,000 ft, and – · –, 30,000 ft.

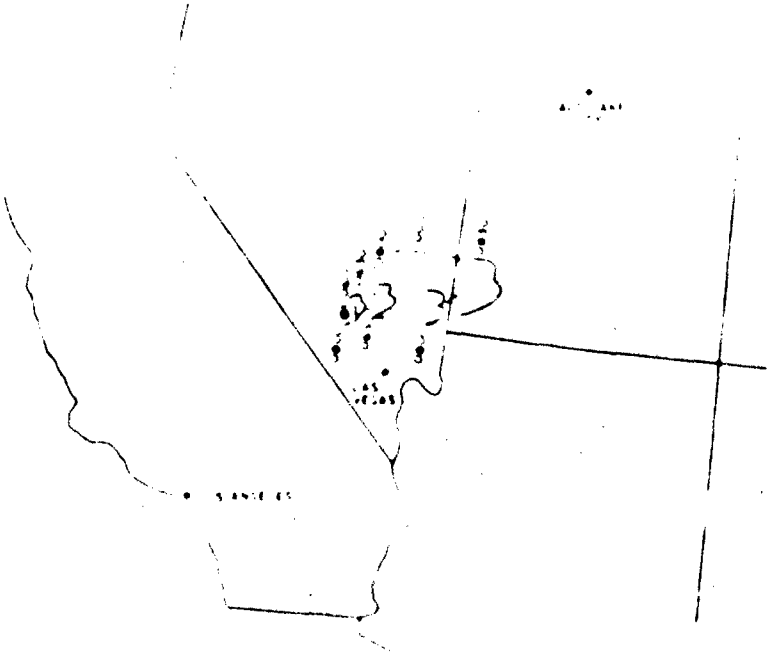

Fig. 5.6 — Cloud progression for Snapper Fox Shot, 25 May 1952, 0358 59.6 PST. Winds ——, 9000 to 14,000 ft, – – –, 20,000 to 25,000 ft, and – · –, 35,000 to 40,000 ft.

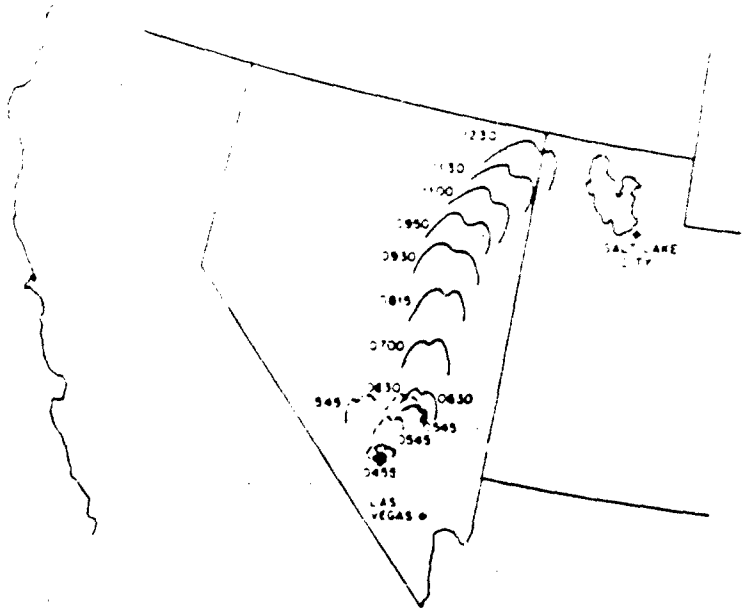


Fig. 5.7 — Cloud progression Snapper George Shot, 1 June 1952, 0354 58.8 PST. Winds ···, 10,000 ft; ——, 25,000 to 30,000 ft and - - -, 15,000 to 20,000 ft.

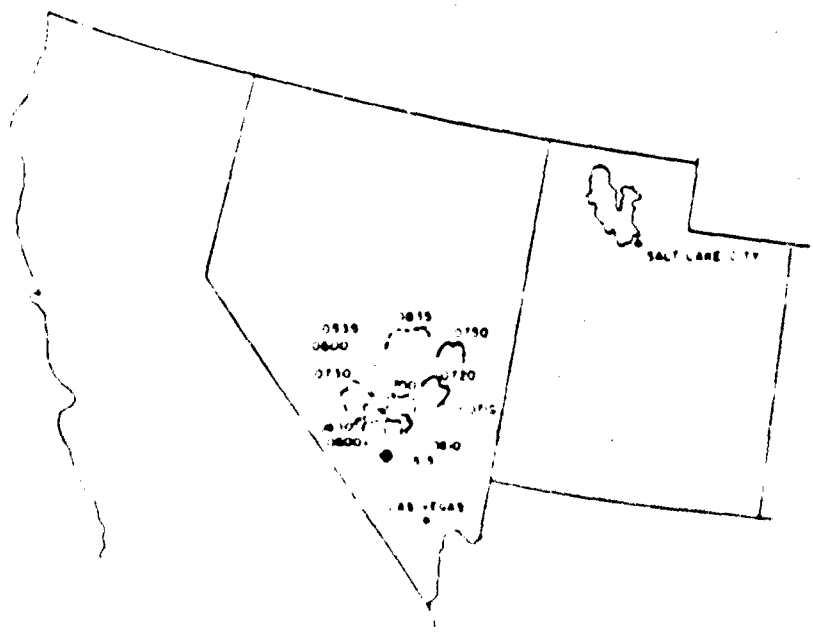


Fig. 5.8 — Cloud progression Snapper How Shot, 5 June 1952, 0355 00.3 PST. Winds ···, 10,000 ft, - - -, 20,000 ft, ——, 30,000 ft, and - · -, 40,000 ft.

CHAPTER 6

# TERRAIN SURVEY

## 6.1 SCOPE

This chapter reports all phases of the aircraft terrain survey and presents the data collected. These phases include the personnel training, instrumentation, and operations.

## 6.2 ORGANIZATION AND PLANNING

### 6.2.1 Personnel

There were four radiological officers and two airmen assigned to SWC from SAC. The airmen utilized for ground maintenance and installation of radiac equipment came from various squadrons and groups at KAFB. The Radiological Safety Section of Test Command assigned four officers and four airmen to supplement the assigned personnel. Pilots and crews were furnished by SWC.

### 6.2.2 Training

Training in the uses of specialized radiac equipment was given at KAFB by SWC instructors and also by the 1009th Squadron MAFB. Training flights were conducted by the 4925th Test Group (ATOMIC) at KAFB and ISAFB.

### 6.2.3 Equipment

The following were the major items of operational equipment used at ISAFB.

1. B-21 radiac instrument (consisted of an air-conductivity tube, an air-ionization chamber, and a recorder).
2. Scintillation counter (adapted for airborne use in recording intensities of the filtering papers).
3. AN/PDR T-1B ionization chamber
4. MX-5 Beckman model) beta-gamma survey meter
5. 200-mr to 1-r, pocket dosimeter
6. Film badges.

### 6.2.4 Facilities

The same buildings and facilities were used as were used for manned sampling

6.2.5 General

Data collected in flight were radioed to the Control Point, Mercury, Nev. The information received was charted on a map and a progression map of fall-out intensities was maintained. The Radiological Safety Section and Test Command maintained this map with the information gathered by ground-survey teams; they were able to plot zones of contamination, giving the various degrees of intensities. (See Fig. 1.6 for areas concerned.)

## 6.3 FACTUAL DATA

Tables 6.1 to 6.8 outline the data collected. Use Fig. 1.6 to find locations.

Table 6 1 – TERRAIN SURVEY FOR TUMBLER ABLE

Shot Time: 0900 07 5 PST, 1 April 1952

| Aircraft | Report No | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 1 | 2C2 | 1135 | 5 | 55 55 | 25 | 0.02 | NR |
| C 47 No 388 | 2 | 2C1 | 1140 | 4 5 | 55 55 | 30 | 0 | NR |
| | 3 | 2C0 | 1145 | 5 5 | 40 40 | 30 | 0.02 | NR |
| | 4 | 2B0 | 1150 | 4 5 | 47 57 | 40 | 0.01 | NR |
| | 5 | 2A0 | 1155 | 4 5 | 50 950 | 520 C2 | | NR |
| | 6 | 000 | 1200 | 5 6 | 60 140 | 40 | 0.03 | NR |
| | 7 | 1A1 | 1205 | 5 5 | 60 300 | Neg | 3.5 | NR |
| | 8 | 1B1 | 1210 | 6 4 | 300/700 | 3200 | 1.5 | Contaminated |
| | 9 | 1B1 | 1215 | 4 6 | 500/3200 | Neg | 1 | Contaminated |
| | 10 | 001 | 1220 | 6 | 450 550 | Neg | 0.2 | Contaminated |
| | 11 | 2A1 | 1225 | 5 6 | 400 900 | Neg | 0.3 | NR |
| | 12 | 2B1 | 1230 | 4 5 | 38 38 | 1000 | 0.2 | NR |
| | 13 | 2C1 | 1235 | 5 | 370 370 | 1000 | 0.3 | NR |
| | 14 | 2B2 | 1240 | 4 8 | 370 370 | 900 | 0.2 | NR |
| | 15 | 2A2 | 1245 | 3 5 | 370 370 | 900 | 0.1 | NR |
| | 16 | 002 | 1250 | 5 2 | 370 430 | 1100 | 0 3 | NR |
| | 17 | 1A2 | 1255 | 4 6 | 370 550 | 1200 | 0.3 | NR |
| | 18 | 1B2 | 1300 | 6 5 | 370 3300 | 10,000 + | 2 | NR |
| | 19 | 1B3 | 1305 | 4 5 | 900 2300 | Neg | 1.5 | Contaminated |
| | 20 | 1A3 | 1310 | 4 4 | 700 3900 | Neg | 0.5 | Contaminated |
| | 21 | 003 | 1315 | 5 | 650 650 | Neg | 0.3 | Contaminated |
| | 22 | 003 | 1320 | 6 | 500 500 | 2200 | 0.3 | NR |
| | 23 | 2A3 | 1325 | 4 | 600 600 | 2200 | 0.3 | NR |
| | 24 | 2B3 | 1330 | 3 7 | 700 700 | 2200 | 0 3 | NR |
| | 25 | NR | NR | NR | NR | NR | NR | NR |
| | 26 | NR | NR | NR | NR | NR | NR | NR |
| | 27 | 2D4 | 1345 | 2 7 | 560 710 | 160 | 0.3 | NR |
| | 28 | 2C4 | 1350 | 4 | 650 650 | 1700 | 0.3 | NR |
| | 29 | 2B4 | 1355 | 5 2 | 670 670 | 1800 | 0 3 | NR |
| | 30 | 2A4 | 1400 | 5 8 | 650 650 | 1700 | 0 3 | NR |

Table 6.1 (Continued)

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 31 | 1A5 | 1405 | 5.2 | 660 660 | 1800 | 0.3 | NR |
| C-47 No. 386 | 32 | 1B5 | 1410 | * | 570 570 | 1600 | 0.4 | NR |
| (continued) | 33 | 2C5 | 1415 | 7.5 | 600 600 | 1600 | 0.3 | NR |
| | 34 | 2D0 | 1420 | Unknown | 000 000 | 1600 | 0.4 | NR |
| | 35 | 2E5 | 1425 | 2.6 | 570 570 | 1700 | 0.4 | NR |
| | 36 | 2F5 | 1430 | 2.6 | 550 550 | 1700 | 0.3 | NR |
| | 37 | 2F6 | 1435 | 2.5 | 600 600 | 1600 | 0.3 | NR |
| | 38 | 2E6 | 1440 | 3.6 | 600 600 | 1600 | 0.2 | NR |
| | 39 | 2D6 | 1445 | 3.5 | 600 600 | 1600 | 0.3 | NR |
| | 40 | 2C6 | 1450 | 3.5 | 610 610 | 1500 | 0.2 | NR |
| | 41 | 2B6 | 1455 | 4.5 | 590 590 | 1400 | 0.11 | NR |
| | 42 | 2A6 | 1500 | 4.5 | 600 600 | 1400 | 0.3 | NR |
| | 43 | 2A7 | 1505 | 5 | 600 600 | 1400 | 0.3 | NR |
| Badger 2 | 1 | 2C2 | 1230 | Neg | 65 65 | 10 | Neg | Climbing |
| C-47 No. 303 | 2 | 2A3.1 | 1245 | 10 | 85 90 | 10 | 0.02 | Off scale |
| | 3 | 1A3.1 | 1250 | 10 | 12,500 | Neg | 0.4 | Air-conductivity tube |
| | 4 | 1A3.1 | 1300 | 10 | 11,500 | Neg | 0.6 | Contaminated |
| | 6 | 1A3.1 | 1320 | 10 | 11,000 11,000 | Neg | 0.15 | Off scale |
| | 7 | 1A9.1 | 1330 | 10 | 1100 1100 | Neg | 0.7 | Off scale |
| | 8 | 1A8 | 1340 | 19 | Neg | Neg | 0.2 | Off scale |
| | 9 | 2B9 | 1355 | 10 | Neg | Neg | 0.2 | Off scale |
| | 10 | 2D9 | 1410 | 10 | Neg | Neg | 0.2 | Off-scale |
| | 11 | 3A5 | 1420 | 10 | Neg | Neg | 0.1 | Off-scale |
| | 12 | 4A8 | 1430 | 10 | Neg | Neg | 0.2 | Off-scale |
| | 13 | 4A8 | 1440 | 10 | Neg | Neg | 0.5 | Off-scale |
| | 14 | 3B2 | 1450 | 10 | Neg | Neg | 0.3 | Off-scale |
| | 15 | 3E2 | 1500 | 10 | Neg | Neg | 0.15 | Off-scale |
| | 16 | 3D3 | 1510 | 10 | 100 300 | 860 | 0.5 | NR |

Table 6.2 — TERRAIN SURVEY FOR TUMBLER BAKER

Shot Time: 0929.57.05 PST, 15 April 1952

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 1 | 1B2 | 1238 | 7 | 75/75 | 40 | 0 | |
| C-47 No. 308 | 2 | 1B0 | 1243 | 1 | 75/140 | 40 | 0 | |
| | 3 | 4B1 | 1248 | 0.5 | 75/205 | 45 | 0 | |
| | 4 | 4B2 | 1253 | 0.5 | 80/100 | 45 | 0 | |
| | 5 | 4A2 | 1256 | 0.6 | 80/95 | 45 | 0 | |
| | 6 | 4A1 | 1302 | 0.4 | 75/90 | 40 | 0 | |
| | 7 | 4A0 | 1305 | 1 | 80/990 | 100 | 0 | |
| | 8 | 1A0 | 1312 | 0.7 | 75/75 | 40 | 0 | |
| | 9 | 3D1 | 1319 | 0.4 | 75/170 | 80 | 0 | |
| | 10 | 3A3 | 1324 | 1 | 70/70 | 40 | 0 | |
| | 11 | 3B5 | 1333 | 0.6 | 70/70 | 40 | 0 | |
| | 12 | 3B4 | 1340 | 1.5 | 70/70 | 40 | 0 | |
| | 13 | 3B3 | 1343 | 0.7 | 70/70 | 40 | 0 | |
| | 14 | 3B2 | 1348 | 0.5 | 70/320 | 500 | 0 | |
| | 15 | 3B1 | 1354 | 0.5 | 70/475 | 1200 | 0 | |
| | 16 | 2B0 | 1357 | 0.6 | 75/120 | 1200 | 0 | |
| | 17 | 2B1 | 1400 | 1 | 75/530 | 3000 | 1.5 | |
| | 18 | 2D3 | 1421 | 0.5 | 420/420 | | 1.3 | |
| | 19 | 2E4 | 1431 | 1 | 460/460 | 1800 | 1.1 | |
| | 20 | 2E3 | 1444 | 0.5 | 400/400 | 2000 | 1.2 | |
| | 21 | NR | NR | NR | NR | NR | NR | |
| | 22 | 3F2 | 1503 | 0.6 | 450/6000 | 10,000 | 7.5 | |
| | 23 | 3E4 | 1508 | NR | Neg | NR | 1.8 | Rate meter and B-21 equipment not in operation |
| | 24 | 3D6 | 1520 | NR | Neg | NR | 1.5 | |
| | 25 | 3D8 | 1525 | NR | Neg | NR | 1.4 | |
| | 26 | 3D9 | 1530 | NR | Neg | NR | 1.4 | |
| | 27 | 3D10 | 1533 | NR | Neg | NR | 1.4 | |
| | 28 | 3E10 | 1538 | NR | Neg | NR | 1.4 | |
| | 29 | 3F10 | 1542 | NR | Neg | NR | 1.4 | |
| | 30 | 3F9 | 1546 | NR | Neg | NR | 1.4 | |

Table 6.2 (Continued)

| Aircraft | Report No | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 31 | 3F7 | 1551 | NR | Neg | NR | 1.4 | |
| C-47 No. 308 | 32 | 3F6 | 1555 | NR | Neg | NR | 1.3 | |
| (continued) | 33 | 3F4 | 1602 | NR | Neg | NR | 1.4 | |
| | 34 | 3F3 | 1605 | NR | Neg | NR | 1.4 | |
| | 35 | 3F2 | 1610 | NR | NR | NR | 2.0 | |
| | 36 | 3F½ | 1615 | NR | NR | NR | 3.5 | |
| | 37 | 2F1 | 1620 | NR | NR | NR | 1.5 | |
| | 38 | 2F2 | 1623 | NR | NR | NR | 1.5 | Rate meter and B-21 equipment not in operation |
| | 39 | 2F3 | 1628 | NR | NR | NR | 1.5 | |
| | 40 | 2F4 | 1632 | 1.2 | 2500/2500 | NR | 1.5 | |
| | 41 | 2F5 | 1636 | NR | NR | NR | 1.4 | |
| | 42 | 2F6 | 1641 | NR | NR | NR | 1.4 | |
| | 43 | 2E4 | | | | | 1.4 | |
| | 44 | | | | | | | |
| | 45 | 2E2 | 1703 | NR | NR | NR | 1.3 | |
| | 46 | 2E1 | 1707 | NR | NR | NR | 2.0 | |
| | 47 | 2E0 | 1711 | NR | NR | NR | 1.5 | |
| Badger 2 | 1 | 3C3 | 1245 | 10 | 60/27,000 | Neg | 0.6 | |
| C-47 No. 366 | 2 | 3D4 | 1300 | 10 | 1750/1750 | Neg | 0.4 | |
| | 3 | 3B2 | 1315 | 10 | 1550/2800 | Neg | 0.5 | |
| | 4 | 3C2½ | 1330 | 10 | 1500/2000 | Neg | 0.4 | |
| | 5 | 3D2½ | 1345 | 10 | 1500/1500 | Neg | 0.4 | |
| | 6 | 3B1½-1 | 1400 | 10 | 1200/1200 | Neg | 0.3 | |
| | 7 | 3C1½ | 1415 | 10 | 1200/3000 | Neg | 3.5 | |
| | 8 | 3F0 | 1430 | 10 | 10,000/10,000 | Neg | 0.4 | |
| | 9 | 3D0 | 1445 | 10 | 850/880 | 4000 | 0.5 | |
| | 10 | 2C1½-1 | 1500 | 10 | 1300/5500 | 6500 | 3.0 | |

Table 6.2 – (Continued)

| Aircraft | Report No | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 2 | 11 | 2D0 | 1515 | 10A | 1000/8700 | 2000 | 0.8 | |
| C-47 No. 386 | 12 | 2G3 | 1530 | 10A | 2000/2000 | 3500 | 0.5 | |
| (continued) | 13 | 2D4 | 1545 | 10A | 2000/2000 | 2800 | 0.7 | |
| | 14 | 2C3 | 1548 | 10A | 2000/2000 | 2000 | 0.5 | |
| | 15 | 2D3 | 1553 | 10 | 2000/2000 | 1500 | 0.6 | |
| | 16 | 2F3 | 1600 | 10 | 2000/2000 | 500 | 0.7 | |
| | 17 | 2F1 | 1606 | 10 | 1900/1900 | 300 | 0.5 | |
| | 18 | 2D1 | 1612 | 10 | 1900/7000 | 10 | 8.0 | |
| | 19 | 2C1 | 1617 | 10 | 1900/18,000 | 0 | 24.0 | |
| | 20 | 3C3 | 1700 | 10 | 5300/5300 | 1400 | 1.2 | |
| Woodchuck 1 | 1 | | | | | | | |
| L-20 No. 464 | 2 | 2C0 | 1502 | 0.1 | Neg | Neg | 0.4 | Not equipped with B-21 or rate meter |
| | 3 | 3C1 | 1508 | 0.1 | Neg | Neg | 0.3 | |
| | 4 | 3C2 | 1513 | 0.2 | Neg | Neg | 0.4 | |
| | 5 | 3C3 | 1517 | 0.1 | Neg | Neg | 0.3 | |
| | 6 | 3C4 | 1521 | 1 | Neg | Neg | 0.4 | |
| | 7 | 3C5 | 1536 | 0.25 | Neg | Neg | 0.3 | |
| | 8 | 3C6 | 1540 | 0.3 | Neg | Neg | 0.3 | |
| | 9 | $3C^1_2$ | 1614 | 0.4 | Neg | Neg | 0.8 | |
| | 10 | $3C^1_2$ | 1619 | 1 | Neg | Neg | 2 | |
| | 11 | 2B0 | 1620 | 0.8 | Neg | Neg | 0.5 | |

Table 6.3 – TERRAIN SURVEY FOR TUMBLER CHARLIE

Shot Time: 0930:10 PST, 22 April 1952

| Aircraft | Report No | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 1 | 2A4 | 1312 | 1 | 320/320 | NR | 0.04 | |
| C-47 No. 308 | 2 | 203 | 1318 | 0.5 | 320/450 | NR | 0.05 | |
| | 3 | 202 | 1321 | 1 | 320/680 | NR | 0.1 | |
| | 4 | 2A3 | 1325 | 0.8 | 320/810 | NR | 0.05 | |
| | 5 | 2B4 | 1333 | 1 | NR | NR | 0.03 | |
| | 6 | 2C5 | 1340 | 1.5 | 320/320 | NR | 0.02 | |
| | 7 | 2D5 | 1344 | 1.5 | 320/320 | NR | 0.05 | |
| | 8 | 3C4 | 1348 | 0.5 | NR | NR | 0.03 | |
| | 9 | 2B3 | 1352 | 0.5 | 320/320 | NR | 0.03 | |
| | 10 | 2A2 | 1356 | 0.7 | 320/320 | NR | 0.03 | |
| | 11 | 2O1 | 1405 | 0.7 | 320/1000 | NR | 0.1 | |
| | 12 | 2A1 | 1409 | 1.5 | 320/960 | NR | 0.2 | |
| | 13 | 2B2 | 1415 | 0.6 | 350/350 | NR | 0.05 | |
| | 14 | 2C3 | 1420 | 0.5 | 330/330 | NR | 0.03 | |
| | 15 | 2D4 | 1429 | 0.5 | 310/310 | NR | 0.03 | Rate meter inoperative |
| | 16 | 2E4 | 1435 | 0.5 | 310/310 | NR | 0.03 | |
| | 17 | 2D6 | 1443 | 1 | 320/320 | NR | 0.03 | |
| | 18 | 2D7 | 1337 | 1 | 340/340 | NR | 0.04 | |
| | 19 | 2D4 | 1451 | 0.5 | 330/330 | NR | 0.03 | |
| | 20 | 2D9 | 1455 | 0.8 | 340/340 | NR | 0.03 | |
| | 21 | 2D10 | 1459 | 1.5 | 340/340 | NR | 0.04 | |
| | 22 | 2E10 | 1504 | 1 | 340/340 | NR | 0.02 | |
| | 23 | 2E9 | 1507 | 1 | 340/340 | NR | 0.03 | |
| | 24 | 2E8 | 1511 | 0.5 | 330/330 | NR | 0.02 | |
| | 25 | 2E7 | 1515 | 0.5 | 340/340 | NR | 0.04 | |
| | 26 | 2E6 | 1519 | 0.5 | 300/300 | NR | 0.03 | |
| | 27 | 2E5 | 1523 | 0.5 | 310/310 | NR | 0.03 | |
| | 28 | 2E4 | 1527 | 1 | 330/330 | NR | 0.03 | |
| | 29 | 2D3 | 1530 | 0.5 | 320/320 | NR | 0.03 | |
| | 30 | 2C2 | 1537 | 0.5 | 320/500 | NR | 0.05 | |

Table 6 3 – (Continued)

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 31 | 2B1 | 1545 | 0 2 | 320 810 | NR | 0.12 | |
| C-47 No. 305 | 32 | 2B0 | 1549 | 1 5 | 320/970 | NR | 0.2 | |
| (continued) | 33 | 2C1 | 1557 | 0 8 | 320/830 | NR | 0.18 | |
| | 34 | 2E2 | 1602 | 0.5 | 320/500 | NR | 0.04 | |
| | 35 | 2E3 | 1608 | 1.5 | 340/340 | NR | 0.03 | |
| | 36 | 2F4 | 1615 | 1 | 360/360 | NR | 0.04 | |
| | 37 | 2F5 | 1618 | 1 5 | 380 380 | NR | 0 03 | |
| | 38 | 2F6 | 1621 | 1 | 360/360 | NR | 0.03 | |
| | 39 | 2F7 | 1625 | 0 1 | 360 360 | NR | 0.04 | Rate meter inoperative |
| | 40 | 2F8 | 1628 | 0 5 | 360/360 | NR | 0.03 | |
| | 41 | 2F9 | 1632 | 1.5 | 350/350 | NR | 0.03 | |
| | 42 | 2F10 | 1637 | 0 5 | 350/350 | NR | 0 03 | |
| | 43 | 2G10 | 1642 | 0 5 | 350/350 | NR | 0.03 | |
| | 44 | 2G9 | 1646 | 1 | 330/330 | NR | 0.03 | |
| | 45 | 2G8 | 1650 | 0 5 | 330/330 | NR | 0.03 | |
| | 46 | 2G7 | 1653 | 0.4 | 330 330 | NR | 0.03 | |
| | 47 | 2G6 | 1656 | 0 7 | 350/350 | NR | 0 03 | |
| | 48 | 2G5 | 1700 | 0 4 | 330 330 | NR | 0.04 | |
| Badger 2 | 1 | 402 | 1315 | 10 | 1300/3000 | 3500 | 0.05 | |
| C-47 No. 386 | 2 | 4C4 | 1330 | 10 | 1300/1300 | 3500 | 0 04 | |
| | 3 | 4E6 | 1345 | 10 | 1200 1200 | 3500 | 0.03 | |
| | 4 | 4F6 | 1400 | 10 | 1100/1100 | 3500 | 0 04 | |
| | 5 | 4A$^1/_2$5 | 1415 | 10 | 500/500 | 3500 | 0.04 | |
| | 3 | 3B4 | 1430 | 10 | 480 480 | 3500 | 0.05 | |
| | 7 | 3B1 | 1445 | 10 | 480 2600 | 3500 | 0 5 | |
| | 8 | 3C1 | 1500 | 10 | 1500 2700 | 3500 | 0 4 | |
| | 9 | 3F1 | 1515 | 10 | 530 530 | 3500 | 0 1 | |

Table 6.3 (Continued)

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Weasel Buck 2 L-20 No. 467 | 1 | 1C0 | 1544 | 0.5 | NR | NR | NR | |
| | 2 | 4C$^1_2$ | 1546 | 0.2 | NR | NR | NR | |
| | 3 | 4D$^1_2$ | 1601 | 0.2 | NR | NR | NR | |
| | 4 | 4D1 | 1603 | 0.2 | NR | NR | NR | |
| | 5 | 4C1 | 1616 | 0.3 | NR | NR | NR | |
| | 6 | 4C1$^1_2$ | 1620 | 0.2 | NR | NR | NR | |
| | 7 | 4D1$^1_2$ | 1636 | 0.1 | NR | NR | NR | |
| | 8 | | | | | | | |
| | 9 | 1A$^1_2$-2 | 1137 | 0.2 | NR | NR | 0.1 | Not equipped with B-21 or rate meter |
| | 10 | 4A$^1_2$-2 | 1157 | 0.5 | NR | NR | 0.1 | |
| | 11 | 4A2 | 1202 | 0.5 | NR | NR | 0.1 | |
| | 12 | 1A2 | 1215 | 0.2 | NR | NR | 0.1 | |
| | 13 | 1$^1_2$A2 | 1218 | 0.1 | NR | NR | 0.1 | |
| | 14 | 4$^1_2$A2 | 1238 | 0.1 | NR | NR | 0.1 | |
| | 15 | 4D2 | 1241 | 0.1 | NR | NR | | |
| | 16 | 1D2 | 1259 | 0.5 | NR | NR | | |
| | 17 | 2$^1_2$A2 | 1302 | 0.1 | NR | NR | | |
| | 18 | 3$^1_2$A2 | 1319 | 0.1 | NR | NR | | |
| | 19 | 3A2 | 1322 | 0.5 | NR | NR | | |
| | 20 | 2A4 | 1345 | 0.2 | NR | NR | | |

Table 8.4 — TERRAIN SURVEY FOR TUMBLER DOG

Shot Time: 0829:58.6 PST, 1 May 1952

| Aircraft | Report No. | Position, grid No. | Time | Altitude $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Pedger 1 C-47 No. 306 | 1 | 300 | 1148 | 1 | 85/85 | 400 | 0.025 | |
| | 2 | 301 | 1153 | 1.5 | 90/90 | 400 | 0.02 | |
| | 3 | 4A1 | 1157 | 1 | 90/90 | 600 | 0.03 | |
| | 4 | 4B1 | 1202 | 1 | 90/90 | 600 | 0.025 | |
| | 5 | 4C1 | 1207 | 1 | 90/130 | 700 | 0.035 | |
| | 6 | 4B8 | 1208 | 1 | 90/175 | 700 | 0.045 | |
| | 7 | 4B4 | 1212 | 0.7 | 80/05 | 700 | 0.025 | |
| | 8 | 1B3 | 1216 | 1.5 | 100/145 | 800 | 0.04 | |
| | 9 | 1A5 | 1220 | 1.5 | 110/180 | 800 | 0.035 | |
| | 10 | 1A2 | 1223 | 1 | 130/285 | 900 | 0.08 | |
| | 10A | 105 | 1225 | 1 | 130/470 | 1000 | 0.085 | |
| | 11 | 105 | 1231 | 1.5 | 90/90 | 800 | 0.025 | |
| | 12 | 105 | 1235 | 8 | 90/90 | 800 | 0.025 | |
| | 13 | 205 | 1238 | 0.2 | 80/80 | 700 | 0.02 | |
| | 14 | 2A7 | 1243 | 1 | 75/75 | 600 | 0.012 | |
| | 15 | 2B7 | 1246 | 0.8 | 75/75 | 800 | 0.02 | |
| | 16 | 2B8 | 1251 | 2 | 75/75 | 800 | 0.02 | |
| | 17 | 2A8 | 1255 | 1.5 | 75/75 | 800 | 0.02 | |
| | 18 | 205 | 1259 | 0.8 | 80/80 | 1300 | 0.18 | |
| | 19 | 206 | 1304 | 1 | 80/80 | 800 | 0.02 | |
| | 20 | 105 | 1309 | 0.5 | 90/300 | 900 | 0.1 | |
| | 20A | 107 | 1311 | 0.8 | 90/700 | 1300 | 0.18 | |
| | 21 | 1A4 | 1314 | 0.5 | 90/410 | 900 | 0.12 | |
| | 22 | 1A5 | 1319 | 1 | 100/300 | 900 | 0.08 | |
| | 23 | 1B2 | 1323 | 0.4 | 100/180 | 900 | 0.035 | |

Table 6.4 — (Continued)

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 24 | 1B5 | 1327 | 0.5 | 100/180 | 2000 | 0.03 | |
| C-47 No. 308 | 25 | 1C0 | 1330 | 0.4 | 100/100 | 900 | 0.025 | |
| (continued) | 26 | 1D0 | 1334 | 1 | 90/90 | 800 | 0.02 | |
| | 27 | 1C5 | 1339 | 1 | 90/90 | 900 | 0.02 | |
| | 28 | 1C2 | 1344 | 0.5 | 110/110 | 900 | 0.03 | |
| | 29 | 1B5 | 1348 | 1 | 110/170 | 900 | 0.035 | |
| | 30 | 1B4 | 1353 | 0.5 | 110/175 | 1000 | 0.04 | |
| | 31 | 1A5 | 1359 | 1 | 110/110 | 1000 | 0.03 | |
| | 32 | 1A6 | 1403 | 1.5 | 90/90 | 900 | 0.025 | |
| | 32A | 1A5 | 1355 | 0.6 | 110/250 | 1100 | 0.055 | |
| | 33 | 105 | 1406 | 1.5 | 90/90 | 1000 | 0.025 | |
| | 34 | 208 | 1400 | 1.5 | 90/120 | 650 | 0.03 | |
| | 35 | 205 | 1415 | 0.5 | 90/90 | 650 | 0.02 | |
| | 36 | 2A10 | 1419 | 0.8 | 80/80 | 650 | 0.02 | |
| | 37 | 2B10 | 1424 | 0.7 | 85/85 | 650 | 0.02 | |
| | 38 | 2C10 | 1430 | 1.5 | 80/80 | 650 | 0.015 | |
| | 39 | 2C11 | 1433 | 1 | 90/90 | 650 | 0.02 | |
| | 40 | 2C12 | 1438 | 1 | 90/90 | 650 | 0.015 | |
| | 41 | 2C13 | 1441 | 1.5 | 90/90 | 650 | 0.02 | |
| | 42 | 2C14 | 1445 | 0.2 | 90/90 | 800 | 0.02 | |
| | 43 | 2C15 | 1448 | 0.5 | 95/95 | 700 | 0.02 | |
| | 44 | 2B15 | 1451 | 1 | 95/95 | 700 | 0.025 | |
| | 45 | 2A5 | 1455 | 0.5 | 95/95 | 700 | 0.025 | |
| | 46 | | | | | | | |
| | 47 | 205 | 1504 | 1 | 90/90 | 700 | 0.02 | |
| | 48 | 2011 | 1508 | 0.5 | 90/310 | 1400 | 0.05 | |
| | 49 | 105 | 1511 | 0.7 | 90/370 | 100,000 | 0.13 | |

Table 6.4 -- (Continued)

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 50 | 1A9 | 1515 | 1.5 | 90/315 | 100,000 | 0.045 | |
| C-47 No. 308 | 50A | 108 | 1513 | 1 | 90/670 | 100,000 | 0.25 | |
| (continued) | 51 | 1A5 | 1519 | 1 | 90/240 | 100,000 | 0.04 | |
| | 52 | 1B7 | 1524 | 0.5 | 90/255 | 100,000 | 0.045 | |
| | 53 | 1B5 | 1529 | 0.5 | 90/200 | 1000 | 0.035 | |
| Badger 2 | 1 | 1B3 | 1245 | 10 | 200/1400 | 360 | 0.02 | |
| C-47 No. 380 | 2 | 1B5 | 1256 | 4.5 | 200/410 | 340 | 0.02 | |
| | 3 | 1B½3½ | 1305 | 1.7 | 200/400 | Neg | 0.02 | |
| | 4 | 1C3 | 1310 | 5.5 | 200/220 | 500 | 0.01 | |
| | 5 | 1C2 | 1315 | 6.4 | 195/195 | 390 | 0.01 | |
| | 6 | 4D0 | 1329 | 6.7 | 180/190 | 400 | 0.02 | |
| | 7 | 4E1 | 1322 | 6 | 180/180 | 400 | 0.02 | |
| | 8 | 1E5 | 1402 | 10 | 200/830 | 600 | 0.02 | |
| | 9 | 1E8 | 1410 | 10 | 200/200 | 780 | 0.02 | |
| | 10 | 1D7 | 1425 | 10 | 200/1300 | 1100 | 0.2 | |
| | 11 | 1D5 | 1439 | 4.7 | 200/200 | 200 | 0.02 | |
| | 12 | 1D3 | 1446 | 5.6 | 230/230 | 500 | 0.02 | |
| | 13 | 1E2 | 1455 | 7.5 | 200/200 | 500 | 0.02 | |
| | 14 | 1E2 | 1458 | 7 | 190/190 | 500 | 0.01 | |
| | 15 | 1F0 | 1509 | 6.2 | 180/180 | 500 | 0.02 | |
| | 16 | 4G1 | 1515 | 7.5 | 180/180 | 500 | 0.02 | |
| Woodchuck 1 | 1 | 401 | 1026 | 7.5 | NR | NR | 0.03 | |
| L-20 No. 464 | 2 | 4B1 | 1033 | 2.0 | NR | NR | 0.1 | |
| | 3 | 4B0 | 1041 | 1.0 | NR | NR | 0.2 | |
| | 4 | 2A6 | 1109 | 6.0 | NR | NR | 0.02 | |

Table 6.5 TERRAIN SURVEY FOR SNAPPER EASY

Shot Time: 0414:59.29 PST, 7 May 1952

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 1 | 1B0 | 0735 | 0.8 | 70/70,000 | 85,000 | 5.10 | |
| C-47 No. 386 | 2 | 1C0 | 0741 | 5 | 70/12,000 | 80,000 | 4.2 | |
| | 3 | 1C1 | 0746 | 5 | 70/800 | 10,000 | 0.3 | |
| | 4 | 1C2 | 0749 | 1.5 | 70/120 | 10,000 | 0.01 | |
| | 5 | 1C3 | 0752 | 1.5 | | 9000 | 0 | |
| | 6 | 1C4 | 0756 | 0.4 | 110/110 | 850 | 0 | |
| | 7 | 1C5 | 0800 | 5 | 70/70 | 3800 | 0.01 | |
| | 8 | 1D5 | 0803 | 0.5 | 70/70 | 700 | 0 | |
| | 9 | 1D4 | 0807 | 0.5 | 70/70 | 700 | 0.02 | |
| | 10 | 1D3 | 0810 | 1 | 70/100 | 2500 | 0.45 | |
| | 11 | 1D2 | 0815 | 1 | 70/2300 | 6200 | 1.20 | |
| | 12 | 1D1 | 0818 | 1.5 | 70/1000 | 2400 | 0.45 | |
| | 13 | 1D0 | 0823 | 5 | 40/500 | 3800 | 0.01 | |
| | 14 | 1E0 | 0829 | 1.5 | 90/90 | 3800 | 0 | |
| | 15 | 1E1 | 0833 | 1 | 90/270 | 4200 | 0.02 | |
| | 16 | 1E2 | 0836 | 1.5 | 90/400 | 5000 | 0.18 | |
| | 17 | 1E3 | 0840 | 0.7 | 90/2800 | 12,600 | 2.6 | |
| | 18 | 1E4 | 0846 | 1.5 | 90/500 | 7600 | 0.08 | |
| | 19 | 1E5 | 0849 | 1.5 | 80/80 | 7000 | 0 | |
| | 20 | 1E6 | 0853 | 1 | 80/80 | 7000 | 0 | |
| | 21 | 1E7 | 0856 | 0.7 | 80/80 | 7000 | 0 | |
| | 22 | 1E8 | 0900 | 1 | 80/80 | 7000 | 0 | |
| | 23 | 1E½10 | 0906 | 0.8 | 80/80 | 7000 | 0 | |
| | 24 | 1F10 | 0910 | 0.8 | 80/80 | 6000 | 0 | |
| | 25 | 1F9 | 0915 | 1 | 80/80 | 7000 | 0 | |
| | 26 | 1F8 | 0919 | 1 | 90/90 | 6800 | 0 | |
| | 27 | 1F7 | 0923 | 0.8 | 80/80 | 6800 | 0 | |

Table 6.5 — (Continued)

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 28 | 1F6 | 0926 | 1.5 | 80/80 | 2000 | 0 | |
| C-47 No. 386 | 29 | 1F5 | 0930 | 1 | 80/500 | 7000 | 0 | |
| (continued) | 30 | 1F4 | 0934 | 1.5 | 80/800 | 8000 | 0.55 | |
| | 31 | 1F3 | 0938 | 1.5 | 80/600 | 7600 | 0.28 | |
| | 32 | 1F2 | 0943 | 1 | 80/400 | 11,000 | 0.00 | |
| | 33 | 1F1 | 0946 | 0.5 | 80/250 | 12,500 | 0.01 | |
| | 34 | 1F0 | 0949 | 1.5 | 80/130 | 13,000 | 0 | |
| | 35 | 1G0 | 0954 | 1 | 100/100 | 13,000 | 0 | |
| | 36 | 1G2 | 1001 | 0.5 | 90/150 | 14,000 | 0.02 | |
| | 37 | 1G3 | 1006 | 1 | 90/250 | 2000 | 0.02 | |
| | 38 | 1G5 | 1014 | 1.5 | 90/380 | 3400 | 0.04 | |
| | 39 | 1G6 | 1018 | 1 | 90/400 | 3500 | 0.03 | |
| | 40 | 1G7 | 1022 | 1 | 90/90 | 3500 | 0 | |
| | 41 | 1G8 | 1025 | 5 | 90/90 | 3500 | 0 | |
| | 42 | 1G9 | 1028 | 1.5 | 90/100 | 3500 | 0 | |
| | 43 | 1G10 | 1032 | 1 | 90/90 | 3500 | 0 | |
| | 44 | 1G11 | 1034 | 1.5 | 90/90 | 3500 | 0 | |
| | 45 | 1G12 | 1037 | 1 | 100/100 | 3500 | 0 | |
| | 46 | 1G$^1_2$13 | 1040 | 0.8 | 90/900 | 3400 | 0 | |
| | 47 | 1H13 | 1044 | 2 | 100/100 | 3400 | 0 | |
| | 48 | 1H12 | 1048 | 1.5 | 100/100 | 3400 | 0 | |
| | 49 | 1H11 | 1052 | 1 | 90/200 | 4000 | 0.3 | |
| | 50 | 1H10 | 1056 | 5 | 100/950 | 4100 | 0.3 | |
| | 51 | 1H9 | 1100 | 1.5 | 100/250 | 3400 | 0 | |
| | 52 | 1H8 | 1104 | 5 | 100/570 | 4400 | 0.3 | |
| | 53 | 1H7 | 1107 | 1.5 | 100/730 | 3800 | 0.06 | |
| | 54 | 1H6 | 1111 | 1 | 100/400 | 3400 | 0.02 | |

Table 6.5 — (Continued)

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Woodchuck 1 L-20 No. 464 | 1 | 1B4 | 0756 | 0.2 | NA | NA | 0.001 | Not equipped with B-21 or rate meter |
| | 2 | 1C3 | 0805 | 0.15 | NA | NA | 20 | |
| | 3 | 1D2 | 0817 | 0.5 | NA | NA | 0.005 | |
| | 4 | 1E1 | 0824 | 2.5 | NA | NA | 0.005 | |
| | 5 | 1D2 | 0955 | 1.5 | NA | NA | 5.0 | |
| Woodchuck 2 L-20 No. 467 | 1 | 401 | 0704 | 2.0 | NA | NA | Neg | Not equipped with B-21 or rate meter |
| | 2 | 103 | 0721 | 2.5 | NA | NA | 0.03 | |
| | 3 | 1½A3 | 0723 | 2.0 | NA | NA | 0.02 | |
| | 4 | 4½A1 | 0740 | 2.5 | NA | NA | Neg | |
| | 5 | 4A1 | 0743 | 2.5 | NA | NA | Neg | |
| | 6 | 1A3 | 0759 | 2 | NA | NA | Neg | |
| | 7 | 1A½3 | 0801 | 2 | NA | NA | 0.04 | |
| | 8 | 4A½3 | 0822 | 0.5 | NA | NA | | |
| | 9 | 4B1 | 0830 | 0.1 | NA | NA | 0.03 | |
| | 10 | 1B5 | 0846 | 0.5 | NA | NA | 0.02 | |
| Badger 2 C-47 No. 308 | 1 | 102 | 0600 | 10 | 40 | 140/670 | 0.0 | |
| | 2 | 1B2 | 0608 | 10 | 40 | 140/840 | 0.05 | |
| | 3 | 4E1 | 0620 | 10 | 40 | 150/150 | 0.05 | |
| | 4 | 1D2 | 0640 | 10 | 60 | 210/425 | 0.5 | |
| | 5 | 1D4 | 0704 | 10 | 160 | 160/555 | 0.1 | |
| | 6 | 1F9 | 0719 | 10 | 20 | 150/160 | 0.05 | |
| | 7 | 1B2 | 0804 | 10 | 40 | 150/350 | 0.1 | |
| | 8 | 1F2 | 0840 | 10 | 100 | 150/250 | 0.05 | |
| | 9 | 1D½2 | 0928 | 10 | 200 | 150/360 | 0.05 | |
| | 10 | 1D2 | 1042 | 10 | Neg | 140/320 | 0.05 | |

Table 6.6 – TERRAIN SURVEY FOR SNAPPER FOX

Shot Time: 0359:59.6 PST, 25 May 1952

| Aircraft | Report No | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 1 | 1C8 | 0708 | 1 | 70/70 | 400 | Neg | Background only |
| C-47 No. 386 | 2 | 1C7 | 0712 | 1 | 70/70 | 450 | Neg | |
| | 3 | 1C6 | 0716 | 1 | 70/70 | 450 | Neg | |
| | 4 | 1C5 | 0719 | 0.7 | 70/165 | 600 | 0 | |
| | 5 | 1C4 | 0725 | 0.5 | 70/9300 | 100,000 | 5 | |
| | 6 | 1C6 | 0726 | 0.3 | 70/11,000 | 100,000 | 30 | No background |
| | 7 | 1C3 | 0729 | 1 | 70/7200 | 100,000 | 5 | |
| | 8 | 1C2 | 0733 | 1 | 70/3900 | 10,000 | 4 | |
| | 9 | 1C1 | 0738 | 1.5 | 70/9000 | 100,000 | 15 | |
| | 10 | 1C0 | 0743 | 7 | 70/8006 | Neg | 10 | |
| | 11 | 4C1 | 0748 | 1.5 | 70/4600 | Neg | 3 | |
| | 12 | 4C2 | 0751 | 0.5 | 70/3900 | Neg | 3 | |
| | 13 | 4D2 | 0755 | 1 | 70/3900 | Neg | 3 | |
| | 14 | 4D1 | 0800 | 1 | 70/3800 | Neg | 3 | |
| | 15 | 1D1 | 0804 | 0.8 | 70/3900 | Neg | 2.8 | |
| | 16 | 1D2 | 0810 | 1 | 70/3600 | Neg | 2.6 | |
| | 17 | 1D3 | 0815 | 0.5 | 70/3500 | Neg | 2.4 | |
| | 18 | 1D4 | 0820 | 1.5 | 70/3100 | Neg | 2.3 | |
| | 19 | 1D5 | 0823 | 5 | 70/3700 | Neg | 2.4 | |
| | 20 | 1D6 | 0827 | 1 | 70/12,000 | Neg | 30 | Rate meter contaminated |
| | 21 | 1D6 | 0829 | 0.4 | 70/5000 | Neg | 7 | |
| | 22 | 1D7 | 0831 | 0.5 | 70/8500 | Neg | 4.2 | |
| | 23 | 1D8 | 0835 | 0.5 | 70/6500 | Neg | 3.2 | |
| | 24 | 1D9 | 0839 | 0.5 | 70/3800 | Neg | 2.8 | |
| | 25 | 1D10 | 0844 | 0.5 | 70/3800 | Neg | 2.8 | |
| | 26 | 1D½11 | 0848 | 1 | 70/3700 | Neg | 2.8 | |
| | 27 | 1D½12 | 0854 | 0.5 | 70/3700 | Neg | 2.8 | |
| | 28 | 1E13 | 0857 | 0.5 | 70/3400 | Neg | 2.5 | |
| | 29 | 1E12 | 0901 | 0.5 | 70/3500 | 4200 | 2.5 | |
| | 30 | 1E11 | 0905 | 1 | 70/3500 | 6000 | 2.4 | |

Table 6.6 — (Continued)

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr-hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 31 | 1E10 | 0909 | 0.7 | 70/3500 | 6000 | 2.4 | Rate meter contaminated |
| C-47 No. 386 | 32 | 1E9 | 0912 | 1 | 3000/5000 | 1500 | 3.2 | |
| (continued) | 33 | 1E8 | 0917 | 1 | 3000/8000 | None | 4.8 | |
| | 34 | 1E7 | 0921 | 1 | 3000/3800 | None | 2.8 | |
| | 35 | 1E6 | 0924 | 1 | 3000/3300 | None | 2.3 | |
| | 36 | 1E5 | 0928 | 0.5 | 3000/3700 | None | 2.3 | |
| | 37 | 1E4 | 0933 | 1 | 3000/3600 | None | 2.4 | |
| | 38 | 1E2 | 0939 | 1 | 3000/3500 | None | 2.4 | |
| | 39 | 1E1 | 0943 | 1 | 3000/3500 | None | 2.4 | |
| | 40 | 1E0 | 0946 | 1 | 3000/3400 | None | 2.3 | |
| | 41 | 4E1 | 0951 | 1 | 3000/3100 | None | 2.3 | |
| | 42 | 4E2 | 0954 | 1 | 3000/3000 | None | 2 | |
| | 43 | 4E2 | 0959 | 1 | 3000/3000 | None | 2 | |
| | 44 | 4E1 | 1003 | 1 | 2800/2800 | None | 2 | |
| | 45 | 4E0 | 1007 | 1 | 2800/2800 | None | 2 | |
| | 46 | 1E1 | 1011 | 0.5 | 2800/2800 | None | 2 | |
| | 47 | 1E2 | 1014 | 1 | 2700/2700 | None | 1.9 | |
| | 48 | 1E3 | 1017 | 1 | 2800/2800 | None | 1.9 | |
| Badger 2 | 1 | 1B2 | 0658 | 10 | 110/9200 | | 20 | |
| C-47 No. 308 | 2 | 1B½ | 0617 | 10 | 940/16,000 | | 20 | |
| | 3 | 1C2 | 0723 | 10 | 10,000/95,000 | 23 | 23 | |
| | 4 | 1B⅓3 | 0734 | 10 | 19,000/19,000 | | 4 | |
| Woodchuck 1 | 1 | 1½A2 | 0526 | 1 | NA | NA | 0.03 | Not equipped with B-21 or rate meter |
| L-20 No. 464 | 2 | 4½A2 | 0546 | 1.5 | NA | NA | 0.01 | |
| | 3 | 4A2 | 0552 | 0.2 | NA | NA | 0.03 | |
| | 4 | 1A2 | 0606 | 0.5 | NA | NA | 1.8 | |
| | 5 | 1B3 | 0621 | 0.2 | NA | NA | 1.5 | |

Table 6.6 — (Continued)

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Woodchuck 1 L-20 No. 464 (continued) | 6 | 4B2 | 0648 | 1 | NA | NA | 5.0 | Not equipped with B-21 or rate meter |
| | 7 | 4B½2 | 0652 | 1.5 | NA | NA | 5.5 | |
| | 8 | 1B½1½ | 0721 | 3 | NA | NA | 3.5 | |
| | 9 | 1D3 | 0725 | 10 | NA | NA | 4.8 | |
| | 10 | 1B½6 | 0742 | 5 | NA | NA | 4.2 | |
| Woodchuck 2 L-20 No. 467 | 1 | 4D2 | 0954 | 0.2 | NA | NA | 0.1 | |
| | 2 | 4B½2 | 0957 | 0.1 | NA | NA | 0.5 | |
| | 3 | 4A2 | 0960 | 0.1 | NA | NA | 0.2 | |
| | 4 | 4A½2 | 1003 | 0.05 | NA | NA | 0.4 | |
| | 5 | 4B2 | 1006 | 0.05 | NA | NA | 0.2 | |
| | 6 | 4B½3 | 1010 | 0.05 | NA | NA | 0.3 | |
| | 7 | 4C2 | 1013 | 0.05 | NA | NA | 0.3 | |
| | 8 | 4C½2 | 1016 | 0.05 | NA | NA | 0.2 | |
| | 9 | 4D2 | 1019 | 0.05 | NA | NA | 0.2 | |
| | 10 | 4D3 | 1021 | 0.02 | NA | NA | 0.3 | Not equipped with B-21 or rate meter |
| | 11 | 4D4 | 1023 | 0.02 | NA | NA | 0.2 | |
| | 12 | 4C½4 | 1026 | 0.02 | NA | NA | 0.1 | |
| | 13 | 4C4 | 1027 | 0.02 | NA | NA | 0.2 | |
| | 14 | 4B½4 | 1032 | 0.05 | NA | NA | 0.15 | |
| | 15 | 4B4 | 1036 | 0.1 | NA | NA | 0.2 | |
| | 16 | 4A½4 | 1038 | 0.02 | NA | NA | 0.2 | |
| | 17 | 4A4 | 1042 | 0.05 | NA | NA | 0.15 | |
| | 18 | 4B½4 | 1045 | 0.05 | NA | NA | 0.3 | |
| | 19 | 4D4 | 1048 | 0.05 | NA | NA | 0.2 | |

Table 6.7 — TERRAIN SURVEY FOR SNAPPER GEORGE

Shot Time: 0354:59.8 PST, 1 June 1952

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 1 | 1B4 | 0653 | 0.5 | 200/200 | 2500 | 0 | |
| C-47 No. 386 | 2 | 1B3 | 0657 | 0.8 | 200/200 | 2600 | 0 | |
| | 3 | 1B2 | 0701 | 0.5 | 200/80 | 3000 | 0.1 | |
| | 4 | 1B1 | 0704 | 0.8 | 200/500 | 2600 | 0 | |
| | 5 | 1B0 | 0707 | 0.5 | 200/11,500 | 100,000 | 70 | |
| | 6 | 4B1 | 0711 | 0.4 | 200/2900 | 1800 | 0.2 | |
| | 7 | 4B2 | 0715 | 0.3 | 200/290 | 18,000 | 0 | |
| | 8 | 4B3 | 0718 | 1 | 200/200 | 17,000 | 0 | |
| | 9 | 4B4 | 0722 | 0.8 | 200/200 | 9000 | 0 | |
| | 10 | 4C4 | 0724 | 1 | 200/200 | 80,000 | 0 | |
| | 11 | 4C3 | 0727 | 1 | 200/200 | 8000 | 0 | |
| | 12 | 4C2 | 0731 | 0.3 | 200/250 | 8000 | 0 | |
| | 13 | 4C1 | 0736 | 1.5 | 200/1000 | 11,000 | 0.4 | |
| | 14 | 4C½ | 0737 | 0.5 | 200/4900 | 64,000 | 18 | |
| | 15 | 4C0 | 0739 | 1.5 | 200/4000 | 54,000 | 0 | |
| | 16 | 1C½ | 0741 | 1 | 200/2000 | 40,000 | 0 | |
| | 17 | 1C1 | 0743 | 1.5 | 200/200 | 24,000 | 0 | |
| | 18 | 1C2 | 0746 | 1.5 | 200/200 | 2400 | 0 | |
| | 19 | 1C3 | 0750 | 1.5 | 200/300 | 2400 | 0 | |
| | 20 | 1C4 | 0754 | 0.2 | 200/700 | 24,000 | 0 | |
| | 21 | 1D4 | 0758 | 0.5 | 200/270 | 22,000 | 0 | |
| | 22 | 1D3 | 0802 | 0.7 | 200/400 | 22,000 | 0 | |
| | 23 | 1D2 | 0806 | 1 | 200/300 | 22,000 | 0 | |
| | 24 | 1D1 | 0810 | 1 | 200/400 | 60,000 | 0.5 | |
| | 25 | 1D0 | 0813 | 0.5 | 200/500 | 6400 | 4 | |

Table 6.7 — (Continued)

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 26 | 1D1 | 0810 | 0.7 | 200/4100 | 50,000 | 5 | |
| C-47 No. 386 | 27 | 4D2 | 0820 | 0.5 | 200/1500 | 30,000 | 0 | |
| (continued) | 28 | 4D3 | 0824 | 1 | 200/200 | 28,000 | 0 | |
| | 29 | 4D4 | 0827 | 0.5 | 200/200 | 2400 | 0 | |
| | 30 | 4E5 | 0833 | 0.5 | 200/200 | 2400 | 0 | |
| | 31 | 4E4 | 0837 | 1 | 200/200 | 2200 | 0 | |
| | 32 | 4E3 | 0841 | 1 | 200/350 | 2200 | 0 | |
| | 33 | 4E2 | 0844 | 0.5 | 200/600 | 2400 | 0 | |
| | 34 | 4E1 | 0848 | 0.8 | 200/1500 | 10,000 | 1.5 | |
| | 35 | 4E0 | 0852 | 0.7 | 200/2400 | 14,000 | 1.7 | |
| | 36 | 4E0 | 0852 | 1.5 | 200/1700 | 10,000 | 6 | |
| | 37 | 1E1 | 0855 | 0.5 | 200/440 | 20,000 | 4 | |
| | 38 | 1E2 | 0900 | 1 | 200/200 | 7600 | 0 | |
| | 39 | 1E3 | 0904 | 0.8 | 200/400 | 8000 | 0 | |
| | 40 | 1E4 | 0909 | 1 | 200/300 | 70,000 | 0 | |
| | 41 | 1E4 | 0912 | 0.8 | 200/200 | 7000 | 0 | |
| | 42 | 1G4 | 0915 | 0.8 | 200/200 | 7000 | 0 | |
| | 43 | 1G3 | 0919 | 1.5 | 200/200 | 7000 | 0 | |
| | 44 | 1G2 | 0923 | 0.5 | 200/500 | 7000 | 0.1 | |
| | 45 | 1G0 | 0929 | 1 | 200/1000 | 7000 | 0.1 | |
| | 46 | 4G1 | 0933 | 0.7 | 200/1700 | 9000 | 1 | |
| | 47 | 4G2 | 0936 | 0.4 | 200/2500 | 12,000 | 0 | |
| | 48 | 4G3 | 0939 | 0.5 | 200/1000 | 50,000 | 0.1 | |
| | 49 | 1G4 | 0942 | 0.5 | 200/400 | 60,000 | 0 | |
| | 50 | 1G5 | 0946 | 1 | 200/300 | 55,000 | 0 | |

Table 6.7 — (Continued)

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 51 | 4H6 | 0951 | 1.5 | 200/200 | 2500 | 0 | |
| C-47 No. 386 | 52 | 4I7 | 0956 | 0.8 | 250/250 | 3000 | 0 | |
| (continued) | 53 | 4I6 | 1001 | 0.5 | 250/500 | 5000 | 0 | |
| | 54 | 4I5 | 1005 | 1 | 250/800 | 5000 | 0.2 | |
| | 55 | 4I0 | 1009 | 0.5 | 250/1000 | 10,000 | 0.2 | |
| | 56 | 4I3 | 1011 | 1 | 250/1300 | Inop | 0.2 | |
| | 57 | 4I2 | 1015 | 1.5 | 250/600 | Inop | 0 | |
| | 58 | 4I1 | 1018 | 1 | 250/800 | 70,000 | 0.1 | |
| | 59 | 4I0 | 1022 | 0.7 | 250/800 | 7000 | 0.1 | |
| | 60 | 1I1 | 1026 | 1 | 250/1100 | 7000 | 0.1 | |
| | 61 | 1I2 | 1031 | 1.5 | 250/600 | 7000 | 0 | |
| | 62 | 1B4 | 1038 | 1 | 200/200 | 7000 | 0 | |
| Badger 2 | 1 | 1E4 | 0755 | 10 | 170/610 | 900 | 0.1 | |
| C-47 No. 308 | 2 | 1D0 | 0915 | 1 | 1000/1000 | 1000 | 0.2 | |
| Woodchuck 2 | 1 | NR | 0613 | 0.3 | NR | NR | 0.03 | Not equipped with B-21 or rate meter |
| L-20 No. 467 | 2 | 403 | 0611 | 0.5 | NR | NR | 0.02 | |
| | 3 | 4½A3 | 0615 | 0.2 | NR | NR | 0.04 | |
| | 4 | 1½A3 | NR | 0.5 | NR | NR | 0.03 | |
| | 5 | 1½A3 | 0637 | 0.1 | NR | NR | 0.04 | |
| | 6 | 4A3 | 0702 | 0.2 | NR | NR | 0.04 | |
| | 7 | 4A4 | 0705 | 0.2 | NR | NR | 0.03 | |
| | 8 | 4A½4 | 0708 | 0.2 | NR | NR | 0.03 | |
| | 9 | 1A½4 | 0730 | 0.2 | NR | NR | 0.01 | |

Table 6.8 — TERRAIN SURVEY FOR SNAPPER HOW

Shot Time: 0355.00.3 PST, 5 June 1952

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 1 | 4D5 | 0627 | 1 | 115/140 | 100 | 0 | |
| C-47 No. 308 | 2 | 4A4 | 0632 | 0.5 | 115/135 | 100 | 0 | |
| | 3 | 4B3 | 0638 | 0.5 | 140/150 | 100 | 0 | |
| | 4 | 4C2 | 0643 | 0.5 | 3500/4450 | 100 | 6 | |
| | 5 | 4D7 | 0649 | 1 | 3000/5700 | 150 | 0.6 | |
| | 6 | 4G0 | 0655 | 1 | 1000/2300 | 175 | 0.3 | |
| | 7 | 4F0 | 0659 | 1 | 450/600 | 175 | 0.2 | |
| | 8 | 4E1 | 0707 | 1 | 700/1100 | 175 | 0.3 | |
| | 9 | 4D2 | 0713 | 0.5 | 2000/4000 | 200 | 0.3 | |
| | 10 | 4C3 | 0719 | 1 | 1000/4000 | 200 | 0 | |
| | 11 | 4B4 | 0724 | 0.5 | 135/155 | 200 | 0 | |
| | 12 | 4A5 | 0729 | 1 | 140/195 | 200 | 0 | |
| | 13 | 4A6 | 0735 | 1.5 | 120/125 | 200 | 0 | |
| | 14 | 4B5 | 0741 | 0.5 | 130/165 | 200 | 0 | |
| | 15 | 4C4 | 0747 | 0.5 | 140/160 | 200 | 0 | |
| | 16 | 4D3 | 0752 | 0.5 | 4000/6100 | 200 | 11 | |
| | 17 | 4E2 | 0759 | 0.5 | 3000/6000 | 200 | 1.8 | |
| | 18 | 4F1 | 0805 | 0.5 | 900/2250 | 200 | 0.5 | |
| | 19 | 4G0 | 0811 | 1 | 500/1100 | 200 | 0.05 | |
| | 20 | 4H0 | 0815 | 0.5 | 500/830 | 200 | 0.2 | |

Table 6.8 — (Continued)

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 21 | 4G1 | 0822 | 0.8 | 550/850 | 200 | 0.2 | |
| C-47 No. 308 | 22 | 4E1 | 0827 | 1 | 550/750 | 200 | 0.1 | |
| (continued) | 23 | 4E3 | 0833 | 0.8 | 1000/2000 | 200 | 5 | |
| | 24 | 4D4 | 0839 | 1 | 2300/4000 | 200 | 0.05 | |
| | 25 | 4C5 | 0846 | 1 | 145/175 | 200 | 0 | |
| | 26 | 4B6 | 0851 | 0.5 | 140/160 | 200 | 0 | |
| | 27 | 4A7 | 0858 | 1 | 140/165 | 200 | 0 | |
| | 28 | 4A8 | 0902 | 0.5 | 145/165 | 200 | 0 | |
| | 29 | 4A9 | 0905 | 1.5 | 135/145 | 200 | 0 | |
| | 30 | 4BH | 0911 | 0.5 | 140/150 | 2 0 | 0 | |
| | 31 | 4C7 | 0916 | 0.8 | 140/150 | 200 | 0 | |
| | 32 | 4D6 | 0922 | 1 | 145/165 | 200 | 0 | |
| | 33 | 4E5 | 0927 | 0.5 | 145/170 | 200 | 2 | |
| | 34 | 4F4 | 0933 | 0.5 | 2500/4250 | 200 | 5 | |
| | 35 | 4G3 | 0939 | 0.5 | 3000/4100 | 200 | 0.3 | |
| | 36 | 4H2 | 0945 | 1 | 450/650 | 200 | 2 | |
| | 37 | 4I1 | 0951 | 1 | 500/780 | 200 | 0 | |
| | 38 | 4J0 | 0958 | 0.5 | 400/600 | 200 | 0.05 | |
| | 39 | 4J1 | 1001 | 1 | 300/590 | 200 | 0.05 | |
| | 40 | 4J2 | 1006 | 0.5 | 450/710 | 200 | 0.1 | |
| | 41 | 4I3 | 1014 | 1 | 600/940 | 200 | 0.3 | |
| | 42 | 4H4 | 1022 | 1 | 800/1000 | 200 | 0.6 | |
| | 43 | 4G5 | 1027 | 1 | 800/1500 | 200 | 0.3 | |
| | 44 | 4F6 | 1033 | 0.5 | 700/2100 | 200 | 0 | |
| | 45 | 4E7 | 1038 | 0.5 | 140/190 | 200 | 0 | |

Table 6.8 (Continued)

| Aircraft | Report No. | Position, grid No. | Time | Altitude, $10^3$ ft MSL | B-21 readings, mv | Rate meter, counts/min | G-M readings, mr/hr | Remarks |
|---|---|---|---|---|---|---|---|---|
| Badger 1 | 46 | 4D8 | 1045 | 0.5 | 135/155 | 200 | 0 | |
| C-47 No. 308 | 47 | 4C9 | 1053 | 0.5 | 140/165 | 200 | 0 | |
| (continued) | 48 | 4B10 | 1058 | 1 | 135/140 | 200 | 0 | |
| Woodchuck 2 | 1 | 401 | 0541 | 0.01 | NR | NR | 0 | |
| L-20 No. 467 | 2 | 1B0 | 0554 | 0.02 | NR | NR | 5 | |
| (1st mission) | 3 | 1C1 | 0603 | 0.02 | NR | NR | 0 | |
| | 4 | 402 | 0630 | 0.02 | NR | NR | 0 | |
| | 5 | 4A2 | 0637 | 0.03 | NR | NR | 0 | |
| | 6 | 1C0 | 0657 | 0.02 | NR | NR | 0 6 | |
| | 7 | 1D0 | 0704 | 0.02 | NR | NR | 0.2 | |
| | 8 | 404 | 0738 | 0.02 | NR | NR | 0 | |
| Woodchuck 2 | 1 | 1C1 | 0950 | 0.01 | NR | NR | 0.3 | |
| L-20 No. 467 | 2 | 1G1 | 1010 | 0.02 | NR | NR | 0.6 | |
| (2d mission) | 3 | 1G2 | 1013 | 0.01 | NR | NR | 0.5 | |
| | 4 | 1C2 | 1032 | 0.01 | NR | NR | 2 | |
| | 5 | 1C3 | 1035 | 0.01 | NR | NR | 0.02 | |
| | 6 | 1G3 | 1052 | 0.02 | NR | NR | 0.35 | |
| | 7 | 1G4 | 1057 | 0.1 | NR | NR | 0.1 | |
| | 8 | 1C4 | 1117 | 0.01 | NR | NR | 0.2 | |

CHAPTER 7

# DECONTAMINATION OF PERSONNEL AND AIRCRAFT

## 7.1 SCOPE

This chapter is a report on all phases of the radiological safety operations and gives an account of the contamination encountered and the procedures used in decontamination of aircraft and personnel as accomplished by the 4925th Test Group (ATOMIC) Detachment at ISAFB. These phases include monitoring of aircraft, equipment, and personnel; operation of an aircraft-decontamination area; operation of a personnel-decontamination area; and coordination with the Radiological Safety Unit at the Control Point for acquisition, issue, and control of film badges. All observations and technical data concerned with contamination and decontamination are included. Conclusions and recommendations are also given.

## 7.2 ORGANIZATION AND PLANNING

### 7.2.1 Personnel

Two officers and ten airmen were originally assigned to the Radiological Safety Section on a full-time basis. This was later amended to include only eight airmen. The officer in charge came from the Radiological Section of the 4925th Test Group (ATOMIC) at KAFB. The remainder of the personnel came from various squadrons and groups at KAFB.

The two officers acted in a supervisory capacity for the over-all Rad-Safety operation. The eight airmen were used in the following manner:

1. One airman was made NCOIC and was given the responsibility of seeing that decontamination procedures were accomplished in a safe manner.
2. One airman was assigned as decontamination-equipment operator.
3. Six airmen functioned as personnel monitors and doubled as wash-crew personnel.

In addition to the above personnel, one man from supply handled all film-badge records as well as issuing and receiving badges.

### 7.2.2 Training

No specific training was given to any of the decontamination personnel. However, the NCOIC had received training in the Passive Defense Section of the 34th Air Division, and several of the airmen had attended a 40-hr lecture course in basic nuclear science.

### 7.2.3 Equipment

*(a) Decontamination.* The following were the major items of operational equipment used at ISAFB:

1. Two M3A2 decontamination trucks.

2. One gunk dispenser.

3. One weapons carrier to pull the gunk dispenser and to transport personnel from the planes to the personnel-decontamination center. It was found that, on shot day, two vehicles were needed.

4. Two B-29 type engine stands. (These were borrowed from Engineering as needed.)

5. One spinner type washing machine for clothing decontamination.

6. Eight large G.I. cans.

The radiac instruments used included:

1. AN PDR-T1B ion chamber.
2. AN PDR-23 ion chamber.
3. Beckman model MX-5 beta-gamma survey meter.
4. Electronic integrating ion-chamber dosimeter (integron).
5. 0–200-mr pocket dosimeter.
6. 0–1-r pocket dosimeter.
7. 0–5-r pocket dosimeter.
8. 0–10-r pocket dosimeter.

### 7.2.4 Decontamination Agents

The following decontamination agents were used:

1. Gunk which is a mixture of aircraft cleaning compound No. 20015 and dry cleaning solvent Spec. No. P-3-661 in the ratio of 1 part to 5 parts. Approximately 20 gal for each T-33 and 120 gal for each B-29 were used per shot.

2. Steam-cleaning compound, Formula C. Approximately 100 lb were used for the total mission.

3. Tide detergent. For the whole mission 100 lb were used.

4. Twenty bars of Ivory soap, large size.

### 7.2.5 Protective Clothing

A list of the protective clothing used included:

1. Fifty one-piece fatigue suits, various sizes
2. Fifty fatigue caps, various sizes.
3. Fifty pairs of shoes, various sizes.
4. Twenty pairs of rubber chemical gloves.
5. Twelve pairs of hip-length rubber boots.
6. Two hundred pairs of white cotton gloves.
7. Twenty-five pairs of drawers, various sizes.
8. Twenty-five undershirts, various sizes.
9. Fifty pairs of socks, various sizes.
10. One hundred towels for the shower room.

The above items and quantities were requisitioned on the assumption that there would be two B-29 and four T-33 sampling plane crews plus the decontamination crew. There proved to be a sufficient quantity of all items except shoes.

### 7.2.6 Facilities: Rad Safety Office and Personnel-decontamination Center

*(a) Rad Safety Office.* The Rad Safety office and personnel-decontamination center were located in a large quonset hut on the eastern end of the flight line. They consisted of a Rad Safety office, supply room, dressing room, shower, and two latrines. The installation comprises a permanent personnel-decontamination center.

*(b) Aircraft-decontamination Area.* The northeast corner of the concrete parking apron was used as the aircraft-decontamination area. Natural drainage was available and the "wash" was allowed to drain off the apron into the sand. Water and electric outlets were available at this area.

### 7.2.7 General

Approximately one month prior to the first test date, a trip was made to ISAFB in order to determine the condition of the facilities and stored equipment. In general, things were in good condition; however, it was necessary to replace some of the water lines and connections that had been damaged during the winter. One week prior to the first test, personnel moved to ISAFB and readied the personnel center and aircraft-decontamination areas for use.

## 7.3 FACTUAL DATA AND STATISTICS

### 7.3.1 Contamination

*(a) B-29 Aircraft.* An airplane was considered contaminated if at any point on the plane the reading of gamma intensities was above 20 mr/hr. Only one B-29 sampler was used per shot, and in each case it became contaminated. In all cases the contamination was greatest on the engines. The highest reading was 1900 mr. In looking over the data, it must be remembered that on the first (or hasty) survey the reading obtained at the filter boxes was taken with the filters still in place.

*(b) B-50 Aircraft.* One special mission was made with a B-50 aircraft in which an early penetration of the cloud was made. Upon landing, the plane was monitored, and the contamination recorded was 12.5 r. This was at $2\frac{1}{2}$ hr after H-hour.

*(c) T-33 Aircraft.* There were four T-33 aircraft used as samplers. Contamination was considered the same as for B-29 aircraft, and, in all cases where the plane penetrated the cloud, it became contaminated. In all cases the highest intensities of radiation were found near the compressor section. The highest intensity encountered was 26 r, recorded 1 hr, 10 min after H-hour.

*(d) F-84 Aircraft.* From five to seven F-84 aircraft participated in each shot in an on-the-job training program. Again as with the T-33's, the highest intensities encountered were in the compressor section with the highest intensity being 1900 mr, recorded 1 hr, 25 min after H-hour.

In addition to the above, there were three instances where the B-25 cloud-tracker aircraft and two C-47 terrain-survey aircraft were contaminated.

It is to be pointed out that the above data are given as they were recorded and may not give a true picture of the intensities encountered. To obtain a true picture, the intensities would need to be computed for a standard time (1 hr) after H-hour.

*(e) Area Contamination.* No fall-out occurred at ISAFB, and the personnel-decontamination area never became seriously contaminated. The aircraft-decontamination area became contaminated slightly; however, owing to copious use of water and early drain-off, the highest readings obtained were 18 mr/hr.

### 7.3.2 Decontamination

*(a) B-29 Aircraft.* During the Tumbler phase of operations the following procedure was used in decontamination: First gunk was applied in the form of a spray; then it was flushed off with cold water. Toward the end of Operation Tumbler a steam generator became available and during Operation Snapper the following procedure was used: Gunk was applied to the skin of the aircraft and cleaned off with steam containing a steam-cleaning compound (Formula C); this was followed with a cold-water rinse. For the engines (it was felt that steam might be injurious and so was not used) gunk was applied followed with a detergent and a cold-water solution as a rinse, then flushed off with cold water.

*(b) T-33 Aircraft.* The same procedures were used on the T-33 aircraft as were used on the B-29's, with the accessory section of the T-33's being treated similar to the B-29 engines.

*(c) F-84 Aircraft.* On the F-84 aircraft, only the surfaces of the planes were treated; no attempt was made to reach either the engine or the accessory section. The main operation was the use of gunk, the use of steam spray, and rinsing with water.

*(d) Personnel.* Personnel contamination was greatest on the hands, and this was effectively lowered by repeated scrubbings with soap and hot water. In one instance a dry-cleaning solvent was used to remove contaminated oil and grease from the hands. This, followed with soap and water scrubbing, proved effective.

*(e) Clothing.* A spinner type washing machine was obtained for decontamination of fatigues, caps, and cotton gloves. However, a quartermaster laundry (for decontamination of clothing) became available, and full use was made of this facility.

### 7.3.3 Statistics

Statistics are given in the form of columnated data with typical decay curves plotted for each plane involved (Figs. 7.1 to 7.20).

## 7.4 PERSONNEL FAD SAFETY AND DOSIMETRY

All film badges were picked up prior to each shot from the Test Command Rad Safety Section at the AEC Control Point, 45 miles by road from ISAFB. Exposed badges were delivered to the same place, and exposure records were received from this office. After the second shot it was believed that some of the film badges were giving erroneous readings; therefore it became the procedure to carry two badges, taped side by side, and the average of the two readings was recorded. The allowable cumulative exposure for all sampler personnel was set at 3.9 r; for other personnel it was 3.0 r. Radiation-exposure records, obtained from film-badge readings, are listed in Table 4.1 for all manned sampling personnel under the operational jurisdiction of the 4925th Test Group (ATOMIC).

## 7.5 CONCLUSIONS AND RECOMMENDATIONS

### 7.5.1 Personnel

The number, training, and job assignments of officers and enlisted personnel used in Operation Tumbler-Snapper were satisfactory. However, for accelerated tests more enlisted personnel could be utilized. The following recommendations are made:

1. The majority of personnel should possess military drivers' licenses for vehicles up to and including $2\frac{1}{2}$-ton capacity.
2. All officers and at least two airmen should have security clearances sufficiently high so that coordination with the Control Point Rad Safety Section may be easily accomplished.

### 7.5.2 Supply

Insofar as possible all supplies should be on hand at least two weeks prior to the first test. Difficulties were encountered in this respect.

The local purchase system proved entirely unsatisfactory. For example, it took more than six weeks to obtain some graph paper. It should be realized that special requirements arise, and, due to lack of time, regular supply channels cannot be used to satisfy these requirements. Any attempt to do so is a waste of time. For example, a pump was found broken on a decontamination truck during a test two weeks prior to the first test. The base supply organization insisted on using regular supply channels to requisition the pump. When the tests were all over, the pump had still failed to arrive; consequently, one decontamination truck sat idle through all the operations. If the second truck had broken down, the decontamination operations would have been seriously impaired.

### 7.5.3 Equipment

The equipment used proved to be satisfactory.

### 7.5.4 Decontamination Agents

The agents used were satisfactory.

### 7.5.5 Protective Clothing

1. Knee-length rubber boots should be used by the decontamination crew. Hip-length boots were used and proved to be too cumbersome.
2. One-piece fatigues were satisfactory.
3. Shoe sizes should run from $6\frac{1}{2}$D through 11D. In general, more small sizes were required than large.

### 7.5.6 Transportation

On shot day two weapons carriers are needed; on other days one is sufficient. A jeep was also available from the operations section and was frequently needed.

### 7.5.7 Facilities

The Rad Safety office and personnel-decontamination-center facilities were adequate. The aircraft-decontamination area was adequate to wash one plane at a time. Considerable effort would have to be expended to enlarge this facility.

CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT B-29 Acft #386 SHOT "ABLE" DATE 1 April 1952

SHOT TIME 0900:07.5 EST

| DECON. SURVEY | A | B | C | D | E | F | REMARKS |
|---|---|---|---|---|---|---|---|
| TIME (H + hours) Date / Time | 1/4 1155 | 2/4 0845 | 2/4 0937 | | | | All readings in milli-roentgens per hour. |
| POSITION | | | | | | | |
| 1 Nose | 100 | 20.0 | .6 | | | | a. A readings taken after plane had landed and parked. |
| 2 Air Intake Engine #3 | 70 | 6.0 | 2.8 | | | | b. B readings taken after plane had stood for 24 hours; immediately before washing. |
| 3 Left Turbo Engine #3 | | 10.0 | | | | | |
| 4 Right Turbo Engine #3 | | 8.0 | | | | | c. C readings taken after plane had a gunk application followed by cold water rinse. |
| 5 Air Intake Engine #4 | 90 | 8.0 | 3.4 | | | | |
| 6 Left Turbo Engine #4 | | 6.0 | | | | | |
| 7 Right Turbo Engine #4 | | 6.0 | | | | | |
| 8 Leading Edge Right Wg | | 4.0 | | | | | |
| 9 Tip Right Wing | | 4.0 | | | | | |
| 10 Trailing Edge Rt Wing | | 3.0 | | | | | |
| 11 Right Scanner Blister | | 2.0 | | | | | |
| 12 Right Horiz. Stabilizer | | 2.0 | | | | | |
| 13 Left Horiz. Stabilizer | | 3.0 | | | | | |
| 14 Left Scanner Blister | | 4.0 | | | | | |
| 15 Trailing Edge Wing | | 2.0 | | | | | |
| 16 Tip Left Wing | | 1.0 | | | | | |
| 17 Leading Edge Left Wing | | 3.0 | | | | | |
| 18 Air Intake Engine #1 | 80 | 5.0 | 2.9 | | | | |
| 19 Left Turbo Engine #1 | | 4.0 | | | | | |
| 20 Right Turbo Engine #1 | | 4.0 | | | | | |
| 21 Air Intake Engine #2 | 40 | 6.0 | 4.0 | | | | |
| 22 Left Turbo Engine #2 | | 4.0 | | | | | |
| 23 Right Turbo Engine #2 | | 4.0 | | | | | |
| 24 Filter Box, Left Wing | 500 | 2.0 | | | | | |
| 25 Filter Box, Right Wing | 220 | 5.0 | | | | | |
| 26 A-1 Filter Box | 140 | 4.0 | | | | | |

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

"ABLE"

AIRCRAFT T-33 #913 SHOT TIME 0900 DATE 1 April 1952

| DECON SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 1 Apr 1129 | 2 Apr 1039 | | | | |
| POSITION | | | | | | |
| 1 Nose | 11 | .6 | | | | |
| 2 Right Air Intake | 36 | 1.6 | | | | |
| 3 Leading Edge Right Wing | | 1.0 | | | | |
| 4 Front of Right Filter Box | 90 | 1.0 | | | | |
| 5 Tip Right Wing | | 1.2 | | | | |
| 6 Right Horizontal Stabilizer | | .6 | | | | |
| 7 Tail Pipe Opening | | 1.4 | | | | |
| 8 Left Horizontal Stabilizer | | 1.2 | | | | |
| 9 Tip Left Wing | | 1.0 | | | | |
| 10 Front of Left Filter Box | 60 | 1.0 | | | | |
| 11 Leading Edge Left Wing | | .8 | | | | |
| 12 Left Air Intake | | 1.6 | | | | |
| 13 Rear Cockpit | | 2.0 | | | | |
| 14 Accessory Section | | 2.0 | | | | |
| 15 Compressor Right Side | 140 | 6.0 | | | | |
| 16 Turbine Right Side | | 4.0 | | | | |
| 17 Turbine Left Side | | 3.2 | | | | |
| 18 Compressor Left Side | 140 | 6.0 | | | | |

REMARKS.

All readings taken in milli-roentgens per hour.

a. A readings taken after plane landed and parked. 1129-1131.
b. B readings taken after plane had stood for 24 hours. 1039-1043.

CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 #048 "ABLE" SHOT TIME 0900 DATE 1 April 1952

| DECON SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 1 Apr 1127 | 2 Apr 1034 | | | | |
| POSITION | | | | | | |
| 1 Nose | 50 | 1.0 | | | | |
| 2 Right Air Intake | 200 | 8.0 | | | | |
| 3 Leading Edge Right Wing | | 2.6 | | | | |
| 4 Front of Right Filter Box | 460 | 2.4 | | | | |
| 5 Tip Right Wing | | 3.8 | | | | |
| 6 Right Horizontal Stabilizer | | 3.8 | | | | |
| 7 Tail Pipe Opening | | 8.0 | | | | |
| 8 Left Horizontal Stabilizer | | 3.2 | | | | |
| 9 Tip Left Wing | | 2.6 | | | | |
| 10 Front of Left Filter Box | 390 | 2.2 | | | | |
| 11 Leading Edge Left Wing | | 2.0 | | | | |
| 12 Left Air Intake | 200 | 8.0 | | | | |
| 13 Rear Cockpit | | 0.0 | | | | |
| 14 Accessory Section | | 11.0 | | | | |
| 15 Compressor Right Side | 900 | 26.0 | | | | |
| 16 Turbine Right Side | | 14.0 | | | | |
| 17 Turbine Left Side | | 14.0 | | | | |
| 18 Compressor Left Side | 900 | 22.0 | | | | |

REMARKS.

All readings in milli-roentgens per hour.

a. A readings taken after plane had landed and parked. 1127-1129.
b. B readings taken after plane had stood for 24 hours. 1034-1039.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 #951 SHOT "ABLE" SHOT TIME 0900 DATE 1 April 1952

| DECON SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 1/4/52 1120 | 2/4/52 1030 | | | | |
| POSITION | | | | | | |
| 1 Nose | 22 | 1.4 | | | | |
| 2 Right Air Intake | 40 | 1.6 | | | | |
| 3 Leading Edge Right Wing | | 1.5 | | | | |
| 4 Front of Right Filter Box | 110 | 1.2 | | | | |
| 5 Tip Right Wing | | 1.2 | | | | |
| 6 Right Horizontal Stabiliser | | 1.8 | | | | |
| 7 Tail Pipe Opening | | 1.6 | | | | |
| 8 Left Horizontal Stabiliser | | 1.5 | | | | |
| 9 Tip Left Wing | | 0.8 | | | | |
| 10 Front of Left Filter Box | 110 | 0.4 | | | | |
| 11 Leading Edge Left Wing | | 0.8 | | | | |
| 12 Left Air Intake | 60 | 1.6 | | | | |
| 13 Rear Cockpit | | 0.0 | | | | |
| 14 Accessory Section | | 1.0 | | | | |
| 15 Compressor Right Side | 240 | 10.0 | | | | |
| 16 Turbine Right Side | | 4.0 | | | | |
| 17 Turbine Left Side | | 4.8 | | | | |
| 18 Compressor Left Side | 240 | 8.0 | | | | |

REMARKS:

All readings in milli-roentgens per hour.

a. A reading taken after plane landed and parked. 11:20 - 11:25.
b. B reading taken after the plane had stood for 24 hours. 10:30 - 10:34.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT B-29 Acft #286 SHOT BAKER DATE 15 April 1952

SHOT TIME 0929:57.05 PST

| DECON SURVEY | A | B | C | D | E | F | REMARKS |
|---|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 15/4 1315 | 16/4 0810 | 16/4 0925 | 16/4 1000 | 17/4 1055 | 17/4 1315 | All readings in milli-roentgens per hour. |
| POSITION | | | | | | | |
| 1 Nose | 90 | 30 | 4 | 2 | | | a. A readings taken after plane had landed and parked. |
| 2 Air Intake Engine #3 | 420 | 80 | 28 | 18 | 16 | 10 | b. B readings taken after plane had stood for 25 hours; immediately before washing. |
| 3 Left Turbo Engine #3 | | 44 | 22 | 18 | 16 | 8 | |
| 4 Right Turbo Engine #3 | | 48 | 22 | 14 | 12 | 7 | c. C readings taken after plane had been decontaminated. (See item g) |
| 5 Air Intake Engine #4 | 600 | 60 | 44 | 30 | 26 | 12 | |
| 6 Left Turbo Engine #4 | | 38 | 16 | 12 | 9 | 6 | d. D readings taken after plane had been decontaminated. (See item g) |
| 7 Right Turbo Engine #4 | | 42 | 14 | 8 | 7 | 8 | |
| 8 Leading Edge Right Wg | | 6 | | | | | e. E readings taken after plane had landed for 48 hours; immediately before washing. |
| 9 Tip Right Wing | | 3 | 2 | | | | |
| 10 Trailing Edge Rt Wing | | 4 | 1 | | | | f. F readings taken after plane had been decontaminated. (See item g) |
| 11 Right Scanner Blister | | 6 | 2 | | | | |
| 12 Right Horiz. Stabilizer | | 4 | 1 | | | | g. Decontamination process: Gunk application followed with cold water rinse. |
| 13 Left Horiz. Stabilizer | | 2 | 2 | | | | |
| 14 Left Scanner Blister | | 8 | 2 | | | | |
| 15 Trailing Edge Wing | | 6 | 4 | | | | |
| 16 Tip Left Wing | | 2 | 2 | | | | |
| 17 Leading Edge Left Wing | | 8 | | | | | |
| 18 Air Intake Engine #1 | 430 | 80 | 42 | 32 | 27 | 14 | |
| 19 Left Turbo Engine #1 | | 70 | 20 | 16 | 15 | 8 | |
| 20 Right Turbo Engine #1 | | 46 | 16 | 14 | 13 | 8 | |
| 21 Air Intake Engine #2 | 600 | 90 | 38 | 32 | 30 | 15 | |
| 22 Left Turbo Engine #2 | | 46 | 24 | 16 | 12 | 6 | |
| 23 Right Turbo Engine #2 | | 49 | 32 | 22 | 16 | 7 | |
| 24 Filter Box, Left Wing | 210 | 18 | 12 | | | | |
| 25 Filter Box, Right Wing | 240 | 22 | 10 | | | | |
| 26 A-1 Filter Box | 220 | 18 | 11 | | | | |

CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 #048 "BAKER" SHOT TIME 0930 DATE 15 April 1952

| DECON SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 15 Apr 1150 | 16 Apr 0828 | 16 Apr 0906 | 17 Apr 1035 | 17 Apr 1128 | |
| POSITION | | | | | | |
| 1 Nose | 11 | 1 | .5 | | | |
| 2 Right Air Intake | 50 | 2 | 1.6 | | | |
| 3 Leading Edge Right Wing | | 1 | 1 | | | |
| 4 Front of Right Filter Box | 120 | 2 | 1 | | | |
| 5 Tip Right Wing | | 2 | 1 | | | |
| 6 Right Horizontal Stabilizer | | 2 | 1 | | | |
| 7 Tail Pipe Opening | | 4 | 1 | | | |
| 8 Left Horizontal Stabilizer | | 2 | 1 | | | |
| 9 Tip Left Wing | | 2 | 1 | | | |
| 10 Front of Left Filter Box | 150 | 2 | 1 | | | |
| 11 Leading Edge Left Wing | | 2 | 1 | | | |
| 12 Left Air Intake | 50 | 4 | 2 | | | |
| 13 Rear Cockpit | | 2 | 1 | 1 | 1 | |
| 14 Accessory Section | | 15 | 12 | 10 | 6 | |
| 15 Compressor Right Side | 200 | 12 | 8 | 6 | 2 | |
| 16 Turbine Right Side | | 8 | 3 | | | |
| 17 Turbine Left Side | | 6 | 3 | | | |
| 18 Compressor Left Side | 230 | 10 | 4 | 8 | 2 | |

REMARKS.

All readings in milli-roentgens per hour.

a. A readings taken after plane had landed and parked. 1150-1155.
b. B readings taken after plane had stood for 24 hours.
c. C readings taken after plane had been decontaminated. 0906-0910. (See item f)
d. D readings taken after compressor and accessory were decontaminated. 1035-1038 17 Apr 52.
e. E readings taken after compressor and accessory were decontaminated. 1125-1128 17 Apr 52.
f. Decontamination process of plane consisted of gunk application followed by a cold water rinse.
g. Decontamination process for items d & e was an application of detergent followed by a cold water rinse.

CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

"BAKER"

AIRCRAFT T-33 #913 SHOT TIME 0930 DATE 15 April 1952

| DECON SURVEY | | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|---|
| TIME (H + hours) | Date Time | 15 April 1157 | 16 April 0745 | 16 April 0911 | 17 April 1020 | 17 April 1040 | 17 April 1055 | 17 April 1230 |
| POSITION | | | | | | | | |
| 1 Nose | | 90 | 2 | 1.5 | 1 | | | |
| 2 Right Air Intake | | 1000 | 26 | 18 | 9 | | | |
| 3 Leading Edge Right Wing | | | 4 | 2 | 1.1 | | | |
| 4 Front of Right Filter Box | | 1500 | 8 | 6 | 5 | | | |
| 5 Tip Right Wing | | | 18 | 8 | 3 | | | |
| 6 Right Horizontal Stabilizer | | | 20 | 20 | 6 | | | |
| 7 Tail Pipe Opening | | | 46 | 20 | 15 | | | |
| 8 Left Horizontal Stabilizer | | | 20 | 20 | 6 | | | |
| 9 Tip Left Wing | | | 11 | 7 | 2 | | | |
| 10 Front of Left Filter Box | | 2000 | 4 | 2 | 1 | | | |
| 11 Leading Edge Left Wing | | | 7 | 2 | 1 | | | |
| 12 Left Air Intake | | 1000 | 20 | 18 | 5 | | | |
| 13 Rear Cockpit | | | 6 | 3 | 8 | 2 | | |
| 14 Accessory Section | | | 220 | 160 | 80 | 50 | 35 | |
| 15 Compressor Right Side | | 1500 | 120 | 105 | 90 | 45 | 38 | 20 |
| 16 Turbine Right Side | | | 60 | 40 | 24 | | | |
| 17 Turbine Left Side | | | 65 | 40 | 34 | | | |
| 18 Compressor Left Side | | 1500 | 120 | 105 | 90 | 45 | 38 | 20 |

REMARKS:

All readings taken in milli-roentgens per hour.

a. A readings taken after plane had landed and parked. 1157-1200.

b. B readings taken after plane had stood for 24 hours. 0745-0750; immediately before washing.

c. C readings taken after plane had been decontaminated by washing with a gunk application and followed by rinsing with cold water.

d. D readings taken after plane had been decontaminated process same as item c.

e. E readings taken after compressor and accessory section were decontaminated with the use of plain cold water. f. F readings taken after compressor and accessory were decontaminated. g. G readings taken after compressor and accessory were decontaminated.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

SHOT "BAKER"

AIRCRAFT T-33 #920 SHOT TIME 0930 DATE 15 April 52

| DECON. SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 15 Apr 1220 | 16 Apr 0800 | 16 Apr 0915 | 17 Apr 1025 | 17 Apr 1040 | |
| POSITION | | | | | | |
| 1 Nose | 20 | 2 | 1.8 | | | |
| 2 Right Air Intake | 90 | 4 | | | | |
| 3 Leading Edge Right Wing | | 3 | | | | |
| 4 Front of Right Filter Box | 280 | 2 | | | | |
| 5 Tip Right Wing | | 2 | | | | |
| 6 Right Horizontal Stabilizer | | 3 | 1 | | | |
| 7 Tail Pipe Opening | | 4 | 2 | | | |
| 8 Left Horizontal Stabilizer | | 3 | 1 | | | |
| 9 Tip Left Wing | | 4 | 2.7 | | | |
| 10 Front of Left Filter Box | 280 | 3 | 3 | | | |
| 11 Leading Edge Left Wing | | 3 | 2.4 | | | |
| 12 Left Air Intake | 100 | 4 | 3 | | | |
| 13 Rear Cockpit | | 40 | 2 | 2 | 1 | |
| 14 Accessory Section | | 80 | 36 | 20 | 12 | |
| 15 Compressor Right Side | 380 | 28 | 16 | 14 | 8 | |
| 16 Turbine Right Side | | 12 | 8 | | | |
| 17 Turbine Left Side | | 14 | 12 | | | |
| 18 Compressor Left Side | 1000 | 24 | 14 | 14 | 8 | |

REMARKS All readings in milli-roentgens per hour.

a. A readings taken after plane had landed and parked. 1220 - 1225.
b. B readings taken after plane had stood for 25 hours. 0800 - 0806, 16 April 1952.
c. C readings taken after plane had been decontaminated. 0915 - 0920, 16 April 1952.
d. D readings taken after compressor and accessory were decon. 1025 - 1028, 17 April 52.
e. E readings taken after compressor and accessory were decon. 1040 - 1044, 17 April 52.
f. Decontamination of plane before C readings consisted of gunk application followed with a hot water rinse.
g. Decontamination of compressor and accessory section consisted of gunk application followed with a hot water rinse. Same process was used for both D & E readings.

CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

SHOT "BAKER"

AIRCRAFT T-33 #951 SHOT TIME 0930 DATE 15 April 52

| DECON SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 15/4 1145 | 16/4 0755 | 16/4 0900 | 16/4 1029 | 16/4 1115 | |
| POSITION | | | | | | |
| 1 Nose | 15 | 8 | 2 | | | |
| 2 Right Air Intake | 50 | 6 | 2.5 | | | |
| 3 Leading Edge Right Wing | | 3 | 1.6 | | | |
| 4 Front of Right Filter Box | 150 | 2 | 1 | | | |
| 5 Tip Right Wing | | 2 | 1 | | | |
| 6 Right Horizontal Stabilizer | | 2 | 1 | | | |
| 7 Tail Pipe Opening | | 8 | 1 | | | |
| 8 Left Horizontal Stabilizer | | 6 | 1 | | | |
| 9 Tip Left Wing | | 6 | 1 | | | |
| 10 Front of Left Filter Box | 190 | 4 | 1 | | | |
| 11 Leading Edge Left Wing | | 5 | 1.6 | | | |
| 12 Left Air Intake | 50 | 6 | 2 | | | |
| 13 Rear Cockpit | | 40 | 3 | 4 | | |
| 14 Accessory Section | | 60 | 16 | 12 | 6 | |
| 15 Compressor Right Side | 400 | 20 | 12 | 8 | 4 | |
| 16 Turbine Right Side | | 10 | 4 | | | |
| 17 Turbine Left Side | | 14 | 4 | | | |
| 18 Compressor Left Side | 300 | 20 | 10 | 8 | 4 | |

REMARKS.

All readings in milli-roentgens per hour.

a. A readings taken after plane landed and parked. 11:45 - 11:50
b. B readings taken after plane had stood for 25 hours; immediately before washing.
c. C readings taken after plane had been decontaminated with a gunk application followed with a cold water rinse.
d. D reading taken after compressor had been decontaminated with plain cold water.
e. E reading taken after compressor and accessory had been decontaminated with cold water for the second time.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT B-29 No. 386 SHOT "CHARLIE" DATE 22 April 1952

SHOT TIME 0930:10 PST

| DECON. SURVEY | A | B | C | D | E | F | REMARKS |
|---|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 22/4 1333-1354 | 23/4 0730 | 23/4 1350 | 24/4 0830 | | | All readings in milli-roentgens per hour. |
| POSITION | | | | | | | |
| 1 Nose | 12 | 2 | 2 | 1.4 | | | a. A reading taken as soon as plane landed and was parked. |
| 2 Air Intake Engine #3 | 120 | 20 | 18 | 7 | | | b. B reading taken as soon as plane had stood 24 hours. |
| 3 Left Turbo Engine #3 | 130 | 26 | 26 | 6 | | | c. C reading taken after plane had been decontaminated with a gunk application followed with detergent and rinsed with cold water. |
| 4 Right Turbo Engine #3 | 120 | 25 | 24 | 5 | | | |
| 5 Air Intake Engine #4 | 140 | 23 | 22 | 8 | | | |
| 6 Left Turbo Engine #4 | 120 | 25 | 24 | 5 | | | d. D reading was taken after plane had stood 48 hours. |
| 7 Right Turbo Engine #4 | 130 | 23 | 22 | 4 | | | |
| 8 Leading Edge Right Wg | 80 | 6 | 4 | 2 | | | |
| 9 Tip Right Wing | 10 | 3 | .5 | .4 | | | |
| 10 Trailing Edge Rt Wing | 60 | 3 | 2 | 1 | | | |
| 11 Right Scanner Blister | 20 | 1 | 0 | 0 | | | |
| 12 Right Horiz. Stabilizer | 10 | 1 | 0 | 0 | | | |
| 13 Left Horiz. Stabilizer | 10 | 1 | 0 | 0 | | | |
| 14 Left Scanner Blister | 20 | 2 | 0 | 0 | | | |
| 15 Trailing Edge Wing | 20 | 2 | 0 | 0 | | | |
| 16 Tip Left Wing | 10 | 3 | 0 | 0 | | | |
| 17 Leading Edge Left Wing | 60 | 6 | 0 | 0 | | | |
| 18 Air Intake Engine #1 | 100 | 23 | 18 | 8 | | | |
| 19 Left Turbo Engine #1 | 160 | 24 | 17 | 7 | | | |
| 20 Right Turbo Engine #1 | 60 | 26 | 20 | 6 | | | |
| 21 Air Intake Engine #2 | 130 | 26 | 18 | 8 | | | |
| 22 Left Turbo Engine #2 | 120 | 26 | 20 | 8 | | | |
| 23 Right Turbo Engine #2 | 120 | 28 | 24 | 6 | | | |
| 24 Filter Box, Left Wing | 180 | 8 | 0 | 0 | | | |
| 25 Filter Box, Right Wing | 300 | 11 | 0 | 0 | | | |
| 26 A-1 Filter Box | 300 | 8 | .8 | 0 | | | |

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 #048 "CHARLIE" SHOT TIME 0930 DATE 22 April 1952

| DECON. SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 22 Apr 1300 | 23 Apr 0800 | 23 Apr 1635 | 24 Apr 0945 | 25 Apr 0815 | 26 Apr 0745 |
| POSITION | | | | | | |
| 1 Nose | 400 | 48 | 20 | 16 | 8 | 8 |
| 2 Right Air Intake | 3100 | 240 | 80 | 30 | 22 | 18 |
| 3 Leading Edge Right Wing | 800 | 80 | 40 | 10 | 6 | 4 |
| 4 Front of Right Filter Box | 5000 | 110 | 60 | 10 | 8 | 6 |
| 5 Tip Right Wing | 3600 | 120 | 60 | 26 | 22 | 14 |
| 6 Right Horizontal Stabilizer | 600 | 80 | 60 | 12 | 10 | 7 |
| 7 Tail Pipe Opening | 1000 | 100 | 26 | 22 | 18 | 12 |
| 8 Left Horizontal Stabilizer | 600 | 200 | 140 | 30 | 14 | 8 |
| 9 Tip Left Wing | 2500 | 100 | 60 | 20 | 16 | 10 |
| 10 Front of Left Filter Box | 8000 | 100 | 60 | 16 | 8 | 8 |
| 11 Leading Edge Left Wing | 800 | 30 | 20 | 12 | 6 | 5 |
| 12 Left Air Intake | 3000 | 250 | 100 | 30 | 16 | 15 |
| 13 Rear Cockpit | 800 | 80 | 35 | 18 | 10 | 8 |
| 14 Accessory Section | | 460 | 380 | 100 | 40 | 22 |
| 15 Compressor Right Side | 8000 | 580 | 420 | 160 | 60 | 46 |
| 16 Turbine Right Side | 2400 | 260 | 160 | 40 | 20 | 17 |
| 17 Turbine Left Side | 2400 | 100 | 34 | 20 | 20 | 15 |
| 18 Compressor Left Side | 8000 | 560 | 340 | 140 | 60 | 44 |

REMARKS:

All readings in milli-roentgens per hour.

a. A readings taken after plane had landed and parked.
b. B readings taken after plane had stood for 24 hours; immediately before washing.
c. C readings taken after plane had been decontaminated with a process of gunk application followed by detergent and followed by a hot water rinse.
d. D readings taken 24 April 1952.
e. E readings taken 25 April 1952.
f. F readings taken 26 April 1952.

CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

"CHARLIE"

AIRCRAFT T-33 #048 (Cont'd) SHOT TIME 0930 DATE 22 April 1952

| DECON SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 28 Apr 0930 | 28 Apr 1330 | 29 Apr 0800 | | | |
| POSITION | | | | | | |
| 1 Nose | 3 | | 0 | | | |
| 2 Right Air Intake | 15 | 10 | 8 | | | |
| 3 Leading Edge Right Wing | 3 | | 0 | | | |
| 4 Front of Right Filter Box | | | 1.4 | | | |
| 5 Tip Right Wing | 4.5 | | 2 | | | |
| 6 Right Horizontal Stabilizer | 4.5 | | 2 | | | |
| 7 Tail Pipe Opening | 10 | | 4 | | | |
| 8 Left Horizontal Stabilizer | 4.5 | | 2.5 | | | |
| 9 Tip Left Wing | 4 | | 2.4 | | | |
| 10 Front of Left Filter Box | | | 1.4 | | | |
| 11 Leading Edge Left Wing | 2.5 | | 0 | | | |
| 12 Left Air Intake | 14 | 8 | 6 | | | |
| 13 Rear Cockpit | 3.5 | | | | | |
| 14 Accessory Section | 45 | 22 | 12 | | | |
| 15 Compressor Right Side | 50 | 26 | 16 | | | |
| 16 Turbine Right Side | 35 | 14 | 14 | | | |
| 17 Turbine Left Side | 35 | 12 | 12 | | | |
| 18 Compressor Left Side | 50 | 34 | 20 | | | |

REMARKS:
All readings taken in milli-roentgens per hour.

a. A reading taken on 28 April 1952.
b. B reading taken after compressor and intakes were washed with detergent and rinsed with cold water.
c. C reading taken 29 April 1952. 0800-0815

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 #951 SHOT "CHEROKEE" SHOT TIME 0930 DATE 22 April 1952

| DECON. SURVEY | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 22/4 1245 | 23/4 0810 | 23/4 1450 | 24/4 0800 | 28/4 0935 | 28/4 1400 | 29/4 0835 |
| POSITION | | | | | | | |
| 1 Nose | 180 | 8 | 7 | 2 | .8 | | 0 |
| 2 Right Air Intake | 1000 | 20 | 16 | 16 | 4 | 3.5 | .6 |
| 3 Leading Edge Right Wing | 340 | 18 | 4.8 | 4 | 1 | | 0 |
| 4 Front of Right Filter Box | 1200 | 34 | 15 | 12 | .5 | | .1 |
| 5 Tip Right Wing | 800 | 38 | 6 | 6 | 2 | | 2 |
| 6 Right Horizontal Stabilizer | 200 | 26 | 5 | 5 | 1.8 | | 0 |
| 7 Tail Pipe Opening | 300 | 24 | 6 | 5 | 2.5 | | 2 |
| 8 Left Horizontal Stabilizer | 200 | 28 | 40 | 20 | 1.5 | | 0 |
| 9 Tip Left Wing | 800 | 34 | 6 | 5 | 1.3 | | 0 |
| 10 Front of Left Filter Box | 1200 | 24 | 5 | 5 | .5 | | .1 |
| 11 Leading Edge Left Wing | 300 | 24 | 5 | 5 | 1 | | 0 |
| 12 Left Air Intake | 1000 | 20 | 16 | 5 | 3.5 | 3 | 2 |
| 13 Rear Cockpit | 2500 | 20 | 8 | 6 | 1.5 | | |
| 14 Accessory Section | 1500 | 70 | 30 | 21 | 18 | 6 | 4 |
| 15 Compressor Right Side | 1900 | 100 | 50 | 26 | 25 | 8 | 6 |
| 16 Turbine Right Side | 800 | 40 | 16 | 16 | 15 | 5 | 4 |
| 17 Turbine Left Side | 800 | 40 | 16 | 16 | 15 | 5 | 5 |
| 18 Compressor Left Side | 1800 | 140 | 55 | 40 | 25 | 8 | 8 |

REMARKS:

All readings in milli-roentgens per hour:

a. A reading taken after plane landed and parked.
b. B reading taken after plane had stood 24 hours; immediately before washing.
c. C reading taken after plane had been decontaminated with a gunk application followed by detergent and then rinsed with plain cold water.
d. D reading taken after plane had been decontaminated with same process as in item c.
e. E reading taken on 28 April 1952.
f. F reading taken after compressor and intakes were washed with plain cold water.
g. G reading taken 29 April 1952.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 #920 "CHARLIE" SHOT TIME 0930 DATE 22 April 1952

| DECON SURVEY | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 22 Apr 1308 | 22 Apr 1500 | 23 Apr 0806 | 24 Apr 1100 | 25 Apr 0815 | 26 Apr 0800 | 26 Apr 0845 |
| POSITION | | | | | | | |
| 1 Nose | 98 | 1500 | 250 | 98 | 80 | 20 | 14 |
| 2 Right Air Intake | 1700 | 1800 | 340 | 60 | 36 | 28 | 20 |
| 3 Leading Edge Right Wing | | 200 | 98 | 80 | 20 | 14 | 10 |
| 4 Front of Right Filter Box | 1200 | 600 | 40 | 20 | 16 | 12 | 8 |
| 5 Tip Right Wing | 200 | 900 | 140 | 80 | 60 | 28 | 20 |
| 6 Right Horizontal Stabilizer | | 400 | 120 | 40 | 34 | 12 | 10 |
| 7 Tail Pipe Opening | | 1100 | 200 | 180 | 80 | 40 | 18 |
| 8 Left Horizontal Stabilizer | | 800 | 150 | 130 | 40 | 30 | 24 |
| 9 Tip Left Wing | | 700 | 200 | 160 | 40 | 28 | 21 |
| 10 Front of Left Filter Box | 900 | 1000 | 180 | 80 | 38 | 16 | 10 |
| 11 Leading Edge Left Wing | | 500 | 100 | 22 | 20 | 10 | 9 |
| 12 Left Air Intake | 1500 | 2000 | 400 | 60 | 36 | 28 | 18 |
| 13 Rear Cockpit | 500 | 1100 | 80 | 44 | 30 | 18 | 14 |
| 14 Accessory Section | | 3300 | 480 | 180 | 100 | 80 | 60 |
| 15 Compressor Right Side | 1000 | 4800 | 540 | 240 | 140 | 100 | 70 |
| 16 Turbine Right Side | | 800 | 500 | 160 | 100 | 30 | 24 |
| 17 Turbine Left Side | | 800 | 400 | 180 | 100 | 12 | 11 |
| 18 Compressor Left Side | 1000 | 5000 | 520 | 240 | 160 | 100 | 75 |

REMARKS: All readings in milli-roentgens per hour.

a. A readings taken after landing after first penetration.
b. B readings taken after second penetration.
c. C readings taken after plane stood for 24 hours. d. D readings taken after plane had been washed with gunk application, followed by solvent and rinsed with cold water.
e. E readings taken after repeating same decontamination process as in item d.
f. F readings taken 25 April 1952.
g. G readings taken after plane had been washed with a gunk application followed by detergent and then rinsed with cold water.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 #920 (Cont'd) SHOT "CHARLIE" TIME 0930 PST DATE 22 April 1952

| DECON. SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H ± hours) Date Time | 28 Apr 0940 | 29 Apr 0830 | 29 Apr 0830 | | | |
| POSITION | | | | | | |
| 1 Nose | 4.5 | | | | | |
| 2 Right Air Intake | 15 | 6 | 6 | | | |
| 3 Leading Edge Right Wing | 3.5 | | 0 | | | |
| 4 Front of Right Filter Box | 15 | | 8 | | | |
| 5 Tip Right Wing | 12 | | 10 | | | |
| 6 Right Horizontal Stabiliser | 4 | | 2 | | | |
| 7 Tail Pipe Opening | 2.5 | | 2 | | | |
| 8 Left Horizontal Stabiliser | 20 | | 2 | | | |
| 9 Tip Left Wing | 12 | | 4 | | | |
| 10 Front of Left Filter Box | 8 | | 4 | | | |
| 11 Leading Edge Left Wing | 3.5 | | 2.5 | | | |
| 12 Left Air Intake | 15 | 6 | 6 | | | |
| 13 Rear Cockpit | 2 | 1 | | | | |
| 14 Accessory Section | 25 | 7 | 7 | | | |
| 15 Compressor Right Side | 30 | 18 | 10 | | | |
| 16 Turbine Right Side | 20 | 5 | 12 | | | |
| 17 Turbine Left Side | 20 | 8 | 6 | | | |
| 18 Compressor Left Side | 30 | 12 | 10 | | | |

REMARKS: All readings in milli-roentgens per hour.

a. A reading taken on 28 April 1952.
b. B reading taken after compressor and intakes were washed with detergent and rinsed with cold water.
c. C reading taken on 29 April 1952 0830-0835.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT B-29 Acft #386 SHOT "DOG" DATE 1 May 1952

SHOT TIME 0829:58.6 PST

| DECON SURVEY | A | B | C | D | E | F | REMARKS |
|---|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 1/5 | 2/5 | 2/5 | 3/5 | 5/5 | | All readings in milli-roentgens per hour. |
| POSITION | | | | | | | |
| 1 Nose | 48 | 10 | 4 | 2 | 1 | | a. A readings taken after plane had landed and parked. |
| 2 Air Intake Engine #3 | 490 | 110 | 28 | 22 | 6 | | *b. B readings taken after plane had stood for 25 hours; immediately before washing. |
| 3 Left Turbo Engine #3 | | 90 | 34 | | 8 | | |
| 4 Right Turbo Engine #3 | | 90 | 30 | | 8 | | c. C readings taken after plane was decontaminated. (See item f.) |
| 5 Air Intake Engine #4 | 500 | 100 | 26 | 20 | 6 | | |
| 6 Left Turbo Engine #4 | | 80 | 20 | | 9 | | d. D readings taken the 3d of May 1952. |
| 7 Right Turbo Engine #4 | | 110 | 30 | | 10 | | |
| 8 Leading Edge Right Wg | | 30 | 4 | 4 | 2 | | e. E readings taken 5 May 1952. |
| 9 Tip Right Wing | | 15 | 4 | 4 | 2 | | f. All engines were washed with gunk application followed by cold water. This was repeated twice. Fuselage was washed with gunk application and followed by cold water one time. |
| 10 Trailing Edge Rt Wing | | 8 | 2 | 2 | 1 | | |
| 11 Right Scanner Blister | | 12 | 2 | 2 | 1 | | |
| 12 Right Horiz. Stabilizer | | 10 | 10 | 8 | 4 | | |
| 13 Left Horiz. Stabilizer | | 12 | 10 | 8 | 5 | | *The background after B reading was 4 mr. The 4 motors were washed twice with gunk and water. After this the background read 17 mr, then it was given a complete wash. After the pavement was washed down, the background was 4 mr. |
| 14 Left Scanner Blister | | 12 | 4 | 2 | 1 | | |
| 15 Trailing Edge Wing | | 13 | 6 | 3 | 1 | | |
| 16 Tip Left Wing | | 18 | 4 | 3 | 1 | | |
| 17 Leading Edge Left Wing | | 14 | 12 | 4 | 3 | | |
| 18 Air Intake Engine #1 | 500 | 160 | 22 | 16 | 8 | | |
| 19 Left Turbo Engine #1 | | 100 | 34 | | 10 | | |
| 20 Right Turbo Engine #1 | | 150 | 32 | | 10 | | |
| 21 Air Intake Engine #2 | 420 | 160 | 24 | 16 | 6 | | |
| 22 Left Turbo Engine #2 | | 100 | 30 | | 8 | | |
| 23 Right Turbo Engine #2 | | 120 | 32 | | 8 | | |
| 24 Filter Box, Left Wing | 200 | 40 | 12 | | 6 | | |
| 25 Filter Box, Right Wing | 230 | 40 | 12 | | 6 | | |
| 26 A-1 Filter Box | 250 | 34 | 12 | | 7 | | |

CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

"DOG"

AIRCRAFT T-33 #913 SHOT TIME 0830 DATE 1 May 1952

| DECON SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 1 May 1205 | 2 May 0932 | 3 May 0805 | 4 May 1030 | 5 May 0845 | |
| POSITION | | | | | | |
| 1 Nose | 800 | 48 | 26 | 10 | 5 | |
| 2 Right Air Intake | 3000 | 290 | 140 | 80 | 26 | |
| 3 Leading Edge Right Wing | | 90 | 46 | 14 | 8 | |
| 4 Front of Right Filter Box | | 100 | 46 | 14 | 8 | |
| 5 Tip Right Wing | 2000 | 150 | 100 | 14 | 10 | |
| 6 Right Horizontal Stabilizer | | 180 | 100 | 12 | 6 | |
| 7 Tail Pipe Opening | | 280 | 120 | 50 | 16 | |
| 8 Left Horizontal Stabilizer | | 180 | 160 | 100 | 40 | |
| 9 Tip Left Wing | 2000 | 200 | 80 | 14 | 8 | |
| 10 Front of Left Filter Box | | 110 | 44 | 14 | 6 | |
| 11 Leading Edge Left Wing | | 90 | 40 | 14 | 8 | |
| 12 Left Air Intake | 3500 | 310 | 160 | 60 | 24 | |
| 13 Rear Cockpit | 600 | 120 | 80 | 24 | 10 | |
| 14 Accessory Section | 5000 | 800 | 360 | 90 | 75 | |
| 15 Compressor Right Side | 6000 | 1000 | 410 | 108 | 80 | |
| 16 Turbine Right Side | | 300 | 250 | 100 | 44 | |
| 17 Turbine Left Side | | 180 | 160 | 100 | 40 | |
| 18 Compressor Left Side | 5000 | 1000 | 300 | 160 | 60 | |

REMARKS:

All readings in milli-roentgens per hour.

a. A readings taken after plane landed and parked.
b. B readings taken after plane had stood for 24 hours.
c. C readings taken after plane had stood for 48 hours.
d. D readings taken after plane had been decontaminated.
e. E readings taken the 5 May 1952.
f. Plain cold water was used, this was repeated three times. Left wing was decontaminated with acid brightener and followed with cold water rinse. This was repeated three times. Fuselage was decontaminated with gunk application followed with cold water rinse. This was applied only once.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

"DOG"

AIRCRAFT T-33 #048 SHOT TIME 0830 DATE 1 May 1952

| DECON. SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H / hours) Date Time | 1 May 1157 | 2 May 0800 | 2 May 0945 | 3 May 0822 | 5 May 0800 | |
| POSITION | | | | | | |
| 1 Nose | 300 | 30 | 12 | 6 | 3 | |
| 2 Right Air Intake | 1500 | 150 | 90 | 28 | 6 | |
| 3 Leading Edge Right Wing | | 30 | 26 | 8 | 3 | |
| 4 Front of Right Filter Box | | 30 | 15 | 12 | 4.5 | |
| 5 Tip Right Wing | 1500 | 50 | 21 | 12 | 5 | |
| 6 Right Horizontal Stabilizer | | 35 | 14 | 8 | 2.8 | |
| 7 Tail Pipe Opening | | 48 | 42 | 20 | 4 | |
| 8 Left Horizontal Stabilizer | | 32 | 14 | 10 | 1.8 | |
| 9 Tip Left Wing | 1500 | 50 | 16 | 14 | 6 | |
| 10 Front of Left Filter Box | | 80 | 25 | 10 | 4 | |
| 11 Leading Edge Left Wing | | 26 | 10 | 8 | 3 | |
| 12 Left Air Intake | 1500 | 150 | 80 | 22 | 10 | |
| 13 Rear Cockpit | 210 | 20 | 15 | 8 | 6 | |
| 14 Accessory Section | 1900 | 170 | 140 | 90 | | |
| 15 Compressor Right Side | 2000 | 200 | 160 | 110 | 30 | |
| 16 Turbine Right Side | | 60 | 48 | 40 | 18 | |
| 17 Turbine Left Side | | 60 | 40 | 10 | 3.8 | |
| 18 Compressor Left Side | 2000 | 200 | 170 | 110 | 30 | |

REMARKS:
All readings taken in milli-roentgens per hour.

a. A readings taken after plane had landed and parked.
b. B readings taken after plane had stood for 24 hours; immediately before washing.
c. C readings taken after plane had been decontaminated (see item f).
d. D readings taken after plane had stood for 48 hours.
e. E readings taken the 5 May 1952.
f. Left wing was washed with a gunk application followed by steam cleaning compound and then rinsed with hot water. This process was repeated three times. Right wing was washed with gunk and brushes followed by rinsing with steam. This process was repeated three times. Fuselage was washed with gunk and brushes followed by rinsing with hot water. This process was for one time only.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 #951 SHOT "DOG" SHOT TIME 0830 DATE 1 May 1952

| DECON SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 1 May 1140 | 2 May 0910 | 2 May 1400 | 3 May 0830 | 5 May 0830 | |
| POSITION | | | | | | |
| 1 Nose | 200 | 15 | 8 | 5 | 2 | |
| 2 Right Air Intake | 1000 | 44 | 20 | 12 | 8 | |
| 3 Leading Edge Right Wing | | 20 | 4 | 4 | 5 | |
| 4 Front of Right Filter Box | | 22 | 16 | 6 | 5 | |
| 5 Tip Right Wing | 1000 | 36 | 10 | 8 | 3.8 | |
| 6 Right Horizontal Stabilizer | | 29 | 6 | 4 | 3 | |
| 7 Tail Pipe Opening | | 18 | 14 | 10 | 4 | |
| 8 Left Horizontal Stabilizer | | 29 | 14 | 8 | 3 | |
| 9 Tip Left Wing | 1000 | 30 | 12 | 8 | 4 | |
| 10 Front of Left Filter Box | | 18 | 10 | 8 | 4 | |
| 11 Leading Edge Left Wing | | 15 | 4 | 2 | 1 | |
| 12 Left Air Intake | 1000 | 45 | 16 | 14 | 5 | |
| 13 Rear Cockpit | 350 | 12 | 4 | 4 | 1 | |
| 14 Accessory Section | 1300 | 110 | 50 | 28 | | |
| 15 Compressor Right Side | 1500 | 120 | 60 | 34 | 12 | |
| 16 Turbine Right Side | | 80 | 36 | 24 | 10 | |
| 17 Turbine Left Side | | 70 | 6 | 4 | 3 | |
| 18 Compressor Left Side | 1500 | 90 | 60 | 34 | 4 | |

REMARKS.

All readings in milli-roentgens per hour.

a. A readings taken after plane landed and parked.
b. B readings taken after plane stood for 24 hours; immediately before washing.
c. C readings taken after plane was decontaminated (see item e).
d. D readings taken 3 May 1952.
e. Left wing was washed with steam cleaning compound followed by hot water rinse, this process was repeated three times. Right wing was washed with gunk application followed by a hot water rinse, this process was repeated three times. Fuselage was washed with gunk application followed by cold water rinse, this process was for one time only.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 #920 — SHOT TIME "DICE" 0830 PST — DATE 1 May 1952

| DECON SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 1 May 1115 | 2 May 0940 | 3 May 0930 | 3 May 1155 | 5 May 0820 | |
| POSITION | | | | | | |
| 1 Nose | 3000 | 38 | 8 | 6 | 5 | |
| 2 Right Air Intake | 4000 | 180 | 38 | 22 | 15 | |
| 3 Leading Edge Right Wing | | 40 | 10 | 4 | 3 | |
| 4 Front of Right Filter Box | | 70 | 26 | 12 | 11 | |
| 5 Tip Right Wing | 2900 | 125 | 24 | 12 | 11 | |
| 6 Right Horizontal Stabilizer | | 90 | 10 | 8 | 4 | |
| 7 Tail Pipe Opening | | 70 | 24 | 12 | 7 | |
| 8 Left Horizontal Stabilizer | | 100 | 34 | 30 | 25 | |
| 9 Tip Left Wing | 3400 | 130 | 25 | 14 | 7 | |
| 10 Fro. of Left Filter Box | | 100 | 30 | 14 | 6 | |
| 11 Leading Edge Left Wing | | 60 | 16 | 10 | 6 | |
| 12 Left Air Intake | 4400 | 190 | 36 | 20 | 13 | |
| 13 Rear Cockpit | 1000 | 60 | 12 | 8 | 5 | |
| 14 Accessory Section | 6500 | 190 | 82 | 45 | 32 | |
| 15 Compressor Right Side | 7000 | 200 | 86 | 50 | 37 | |
| 16 Turbine Right Side | | 90 | 42 | 32 | 25 | |
| 17 Turbine Left Side | | 125 | 16 | 10 | 5 | |
| 18 Compressor Left Side | 7000 | 200 | 86 | 50 | 37 | |

REMARKS All readings in milli-roentgens per hour.
a. A readings taken after plane landed and parked. b. B readings taken after plane stood for 24 hours. c. C readings taken after plane stood for 48 hours; immediately before washing. d. D readings taken after plane had been decontaminated. (see item f). e. E readings taken 5 May 52. f. Right wing - gunk was applied by a spray and followed by a cold water rinse. This process was repeated three times. Left wing - gunk was applied with brush and followed by a cold water rinse. This process repeated three time. Fuselage - gunk applied with spray and followed with water rinse. This process applied once.

CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT B-29 No. 285 SHOT "BAKER" DATE 7 May 1952

SHOT TIME 0422:59.25 PST

| DECON SURVEY | A | B | C | D | E | F | REMARKS |
|---|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 7/5 1020 | 8/5 0915 | 9/5 0807 | 9/5 1000 | 10/5 0800 | | All readings in milli-roentgens per hour. |
| POSITION | | | | | | | a. A readings taken after the plane had landed and parked. |
| 1 Nose | 40 | 15 | 7 | 3 | 1.4 | | b. B readings taken after the plane had stood for 24 hours. |
| 2 Air Intake Engine #3 | 900 | 110 | 100 | 44 | 20 | | c. C reading was taken 48 hours after plane landed; immediately before washing. |
| 3 Left Turbo Engine #3 | 800 | 75 | 60 | 42 | 14 | | d. D reading was taken after plane had been decontaminated with a gunk application followed by detergent and rinsed with cold water. |
| 4 Right Turbo Engine #3 | 800 | 75 | 50 | 40 | 12 | | e. E reading was taken 10 May 1952. |
| 5 Air Intake Engine #4 | 900 | 90 | 60 | 48 | 18 | | |
| 6 Left Turbo Engine #4 | 800 | 75 | 50 | 46 | 14 | | |
| 7 Right Turbo Engine #4 | 900 | 75 | 40 | 34 | 12 | | |
| 8 Leading Edge Right Wg | | 30 | 10 | 5 | 2 | | |
| 9 Tip Right Wing | | 20 | 6 | 2 | 4 | | |
| 10 Trailing Edge Rt Wing | | 40 | 10 | 5 | 1 | | |
| 11 Right Scanner Blister | | 20 | 10 | 4 | 2 | | |
| 12 Right Horiz. Stabilizer | | 30 | 10 | 4 | 2 | | |
| 13 Left Horiz. Stabilizer | | 30 | 8 | 4 | 4 | | |
| 14 Left Scanner Blister | | 20 | 8 | 2.5 | 2 | | |
| 15 Trailing Edge Wing | | 35 | 7 | 5 | 1 | | |
| 16 Tip Left Wing | | 20 | 4 | 1 | 1 | | |
| 17 Leading Edge Left Wing | | 20 | 5 | 5 | 2 | | |
| 18 Air Intake Engine #1 | 800 | 90 | 55 | 30 | 21 | | |
| 19 Left Turbo Engine #1 | 800 | 80 | 55 | 50 | 16 | | |
| 20 Right Turbo Engine #1 | 800 | 75 | 50 | 38 | 15 | | |
| 21 Air Intake Engine #2 | 900 | 90 | 50 | 19 | 16 | | |
| 22 Left Turbo Engine #2 | 800 | 80 | 55 | 20 | 12 | | |
| 23 Right Turbo Engine #2 | 800 | 80 | 60 | 36 | 16 | | |
| 24 Filter Box, Left Wing | 1000 | 65 | 34 | 8 | 6 | | |
| 25 Filter Box, Right Wing | 1100 | 75 | 38 | 10 | 6 | | |
| 26 A-1 Filter Box | 1000 | 75 | 50 | 30 | 12 | | |

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT F-13 #13 "EASY" SHOT TIME 0445 PST DATE 7 May 1952

| DECON SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 7 May 0855 | 8 May 0900 | 8 May 1530 | 9 May 0830 | 10 May 0820 | 14 May 0748 |
| POSITION | | | | | | |
| 1 Nose | 80 | 20 | 10 | 4 | 2 | 1.4 |
| 2 Right Air Intake | 700 | 75 | 35 | 20 | 10 | 6 |
| 3 Leading Edge Right Wing | | 30 | 15 | 4 | 3 | 1.6 |
| 4 Front of Right Filter Box | 450 | 25 | 10 | 2 | 2 | .8 |
| 5 Tip Right Wing | 450 | 30 | 15 | 6 | 4 | 1.8 |
| 6 Right Horizontal Stabilizer | | 30 | 10 | 6 | 4 | 1.6 |
| 7 Tail Pipe Opening | | 35 | 35 | 28 | 20 | 6 |
| 8 Left Horizontal Stabilizer | | 30 | 10 | 6 | 4 | 1.8 |
| 9 Tip Left Wing | 450 | 35 | 25 | 10 | 6 | 1.7 |
| 10 Front of Left Filter Box | 450 | 25 | 20 | 6 | 4 | .6 |
| 11 Leading Edge Left Wing | | 24 | 15 | 6 | 4 | 1.4 |
| 12 Left Air Intake | 700 | 75 | 35 | 20 | 12 | 4.8 |
| 13 Rear Cockpit | 620 | 30 | 15 | 6 | 4 | 18 |
| 14 Accessory Section | 650 | 90 | 60 | 50 | 40 | 18 |
| 15 Compressor Right Side | 700 | 100 | 65 | 60 | 48 | 20 |
| 16 Turbine Right Side | | 60 | 35 | 16 | 10 | 8 |
| 17 Turbine Left Side | | 60 | 20 | 12 | 10 | 8 |
| 18 Compressor Left Side | 700 | 100 | 65 | 60 | 45 | 20 |

REMARKS All readings in milli-roentgens per hour.
a. A readings taken after the plane landed and parked.
b. B readings taken after the plane stood for 24 hours; immediately before washing.
c. C readings taken after the plane had been decontaminated.
d. D readings taken after the plane had stood for 48 hours.
e. E readings taken 10 May 1952.
f. F readings taken 14 May 1952.
Decontamination Procedure: Left wing - detergent followed by brushing and rinsed by low pressure cold water. Right wing - low pressure water with brush, three times. Gunked the fuselage then washed it with steam. Gunked the intakes and accessory section with steam.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 #920 "EASY" SHOT TIME 0415 PST DATE 7 May 1952

| DECON SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 7 May 0825 | 8 May 0845 | 8 May 1545 | 9 May 0840 | 10 May 0815 | 13 May 0805 |
| POSITION | | | | | | |
| 1 Nose | 60 | 30 | 10 | 4 | 2 | 1.4 |
| 2 Right Air Intake | 400 | 60 | 30 | 20 | 16 | 6 |
| 3 Leading Edge Right Wing | | 20 | 10 | 6 | 2 | 1.5 |
| 4 Front of Right Filter Box | 900 | 20 | 15 | 4 | 2 | 1.5 |
| 5 Tip Right Wing | 600 | 35 | 15 | 6 | 6 | 1.8 |
| 6 Right Horizontal Stabilizer | | 20 | 15 | 8 | 4 | 2.4 |
| 7 Tail Pipe Opening | | 45 | 18 | 7 | 5 | 5 |
| 8 Left Horizontal Stabilizer | | 30 | 25 | 10 | 4 | 1 |
| 9 Tip Left Wing | 400 | 40 | 15 | 6 | 4 | 2.4 |
| 10 Front of Left Filter Box | 900 | 30 | 20 | 4 | 2 | 1.2 |
| 11 Leading Edge Left Wing | | 20 | 10 | 6 | 2 | 1 |
| 12 Left Air Intake | 400 | 60 | 30 | 20 | 12 | 7 |
| 13 Rear Cockpit | 320 | 30 | 12 | 4 | 1 | 1 |
| 14 Accessory Section | 750 | 90 | 60 | 45 | 32 | 12 |
| 15 Compressor Right Side | 800 | 100 | 75 | 60 | 36 | 16 |
| 16 Turbine Right Side | | 40 | 20 | 6 | 5 | 4 |
| 17 Turbine Left Side | | 40 | 20 | 8 | 4 | 4 |
| 18 Compressor Left Side | 800 | 100 | 75 | 60 | 28 | 10 |

REMARKS: All readings in milli-roentgens per hour.

a. A readings taken after plane landed and parked. b. B readings taken after plane stood for 24 hours; immediately before wash. c. C readings taken after plane was decontaminated (see item g). d. D readings taken after plane stood for 48 hours. e. E readings taken 10 May 52. f. F readings taken 13 May 52. g. Right wing - washed three times with detergent and rinsed each time with cold water. Left wing - gunk, detergent and rinsed with plain water. Same process three times. Fuselage - gunk and rinsed with cold water one time.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT B-29 No. 386 SHOT "FOX" DATE 25 May 1952

SHOT TIME 0359:59.6 PST

| DECON. SURVEY | A | B | C | D | E | F | REMARKS |
|---|---|---|---|---|---|---|---|
| TIME (H + hours) Date | 25/5 | 26/5 | 26/5 | | | | All readings in milli-roentgens per hour. |
| TIME (H + hours) Time | 0758 | 0900 | 1245 | | | | |
| POSITION | | | | | | | a. A readings taken after the plane had landed and parked. |
| 1 Nose | 70 | 5 | 2 | | | | b. B readings taken after the plane had stood for 24 hours; immediately before washing. |
| 2 Air Intake Engine #3 | 1000 | 50 | 18 | | | | c. C readings taken after the plane had been decontaminated with an application of gunk and steam cleaning compound followed with a cold water rinse. |
| 3 Left Turbo Engine #3 | | 44 | 16 | | | | |
| 4 Right Turbo Engine #3 | | 46 | 11 | | | | |
| 5 Air Intake Engine #4 | 800 | 60 | 18 | | | | |
| 6 Left Turbo Engine #4 | | 42 | 14 | | | | |
| 7 Right Turbo Engine #4 | | 41 | 14 | | | | |
| 8 Leading Edge Right Wg | | 11 | 3 | | | | |
| 9 Tip Right Wing | | 4.1 | 1.5 | | | | |
| 10 Trailing Edge Rt Wing | | 5 | 2 | | | | |
| 11 Right Scanner Blister | | 6 | 2 | | | | |
| 12 Right Horiz. Stabilizer | | 12 | 4 | | | | |
| 13 Left Horiz. Stabilizer | | 12 | 4 | | | | |
| 14 Left Scanner Blister | | 8 | 2 | | | | |
| 15 Trailing Edge Wing | | 9 | 3 | | | | |
| 16 Tip Left Wing | | 6 | 1.5 | | | | |
| 17 Leading Edge Left Wing | | 15 | 5 | | | | |
| 18 Air Intake Engine #1 | 350 | 60 | 20 | | | | |
| 19 Left Turbo Engine #1 | | 50 | 18 | | | | |
| 20 Right Turbo Engine #1 | | 30 | 17 | | | | |
| 21 Air Intake Engine #2 | 300 | 60 | 18 | | | | |
| 22 Left Turbo Engine #2 | | 50 | 15 | | | | |
| 23 Right Turbo Engine #2 | | 60 | 14 | | | | |
| 24 Filter Box, Left Wing | | 20 | 8 | | | | |
| 25 Filter Box, Right Wing | | 17 | 6 | | | | |
| 26 A-1 Filter Box | 1900 | | | | | | |

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT B-50 Acft #9260 SHOT "FOX" DATE 25 May 1952

SHOT TIME 2359:59.6

| DECON SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 25May 0703 | 26 May 0922 | 26May 1525 | 27May 0740 | 27May 1500 | 28 May 0810 |
| POSITION | | | | | | |
| 1 Nose | 1800 | 32 | 12 | 4 | | |
| 2 Air Intake Engine #3 | 12500 | 410 | 190 | 100 | 80 | 50 |
| 3 Left Turbo Engine #3 | | 190 | 90 | 60 | | |
| 4 Right Turbo Engine #3 | | 200 | 90 | 50 | | |
| 5 Air Intake Engine #4 | 11500 | 410 | 180 | 100 | 75 | 60 |
| 6 Left Turbo Engine #4 | | 175 | 145 | 60 | | |
| 7 Right Turbo Engine #4 | | 295 | 160 | 60 | | |
| 8 Leading Edge Right Wg | | 20 | 10 | 4 | | |
| 9 Tip Right Wing | | 30 | 12 | 10 | | |
| 10 Trailing Edge Rt Wing | | 60 | 22 | 14 | | |
| 11 Right Scanner Blister | | 39 | 15 | 10 | | |
| 12 Right Horiz. Stabilizer | | 36 | 10 | 8 | | |
| 13 Left Horiz. Stabilizer | | 40 | 12 | 8 | | |
| 14 Left Scanner Blister | | 48 | 15 | 8 | | |
| 15 Trailing Edge Wing | | 60 | 20 | 15 | | |
| 16 Tip Left Wing | | 30 | 12 | 8 | | |
| 17 Leading Edge Left Wing | | 26 | 10 | 8 | | |
| 18 Air Intake Engine #1 | 6000 | 415 | 145 | 120 | 110 | 60 |
| 19 Left Turbo Engine #1 | | 280 | 115 | 70 | | |
| 20 Right Turbo Engine #1 | | 175 | 80 | 60 | | |
| 21 Air Intake Engine #2 | 11000 | 420 | 180 | 100 | 80 | 50 |
| 22 Left Turbo Engine #2 | | 210 | 95 | 70 | | |
| 23 Right Turbo Engine #2 | | 280 | 90 | 60 | | |
| 24 Filter Box, Left Wing | | | | | | |
| 25 Filter Box, Right Wing | | | | | | |
| 26 A-1 Filter Box | | | | | | |

REMARKS

All readings taken in milli-roentgens per hour.

a. A readings taken after the plane had landed and parked.

b. B readings taken after the plane had stood for 24 hours; immediately before wash.

c. C readings taken after the plane had been decon with an application of gunk and steam cleaning component followed with a cold water rinse.

d. D readings taken 16 hours after last reading.

e. E readings taken after the plane had stood 16 hours after washing.

f. F readings taken the following morning or 17 hours after last reading.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT B-25 Acft No. 073 SHOT "FOX" DATE 25 May 1952

SHOT TIME 0455 PST

| DECON SURVEY | A | B | C | D | E | F | REMARKS |
|---|---|---|---|---|---|---|---|
| TIME (H + hours) Date / Time | 25/5 0938 | 26/5 1011 | | | | | All readings taken in milliroentgens per hour. |
| POSITION | | | | | | | |
| 1 Nose | 16 | 1.5 | | | | | a. A readings taken after the plane had landed and parked. |
| 2 Air Intake Engine #3 | | | | | | | b. B readings taken after the plane had been decon with an application of gunk and rinsed with water. |
| 3 Left Turbo Engine #3 | | | | | | | |
| 4 Right Turbo Engine #3 | | | | | | | |
| 5 Air Intake Engine #4 | | | | | | | |
| 6 Left Turbo Engine #4 | | | | | | | |
| 7 Right Turbo Engine #4 | | | | | | | |
| 8 Leading Edge Right Wg | | | | | | | |
| 9 Tip Right Wing | | | | | | | |
| 10 Trailing Edge Rt Wing | | | | | | | |
| 11 Right Scanner Blister | | | | | | | |
| 12 Right Horiz. Stabilizer | | | | | | | |
| 13 Left Horiz. Stabilizer | | | | | | | |
| 14 Left Scanner Blister | | | | | | | |
| 15 Trailing Edge Wing | | | | | | | |
| 16 Tip Left Wing | | | | | | | |
| 17 Leading Edge Left Wing | | | | | | | |
| 18 Air Intake Engine #1 | 100 | 10 | | | | | |
| 19 Left Turbo Engine #1 | | | | | | | |
| 20 Right Turbo Engine #1 | | | | | | | |
| 21 Air Intake Engine #2 | 60 | 8 | | | | | |
| 22 Left Turbo Engine #2 | | | | | | | |
| 23 Right Turbo Engine #2 | | | | | | | |
| 24 Filter Box, Left Wing | | | | | | | |
| 25 Filter Box, Right Wing | | | | | | | |
| 26 A-1 Filter Box | | | | | | | |

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT C-47 No. 386 SHOT "FOX" DATE 25 May 1952

SHOT TIME 0359:59.6

| DECON SURVEY | A | B | C | D | E | F | REMARKS |
|---|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 25/5 0910 | 25/5 1400 | 25/5 1405 | | | | All readings taken in milli-roentgens per hour. |
| POSITION | | | | | | | a. A readings taken after plane had landed and parked. |
| 1 Nose | 3 | 1 | .2 | | | | b. B readings taken immediately before washing. |
| 2 Air Intake Engine #3 | | | | | | | c. C readings taken after the plane had been decon with a gunk application and steam cleaning compound followed with a cold water rinse. |
| 3 Left Turbo Engine #3 | | | | | | | |
| 4 Right Turbo Engine #3 | | | | | | | |
| 5 Air Intake Engine #4 | | | | | | | |
| 6 Left Turbo Engine #4 | | | | | | | |
| 7 Right Turbo Engine #4 | | | | | | | |
| 8 Leading Edge Right Wg | | | | | | | |
| 9 Tip Right Wing | | 1 | 1 | | | | |
| 10 Trailing Edge Rt Wing | | 1 | 1 | | | | |
| 11 Right Scanner Blister | | | | | | | |
| 12 Right Horiz. Stabilizer | | .5 | .5 | | | | |
| 13 Left Horiz. Stabilizer | | .5 | .4 | | | | |
| 14 Left Scanner Blister | | | | | | | |
| 15 Trailing Edge Wing | | 1.5 | 1 | | | | |
| 16 Tip Left Wing | | 1 | 1 | | | | |
| 17 Leading Edge Left Wing | | 2 | .3 | | | | |
| 18 Air Intake Engine #1 | 10 | 5 | 1 | | | | |
| 19 Left Turbo Engine #1 | 40 | 4 | 1 | | | | |
| 20 Right Turbo Engine #1 | | | | | | | |
| 21 Air Intake Engine #2 | 10 | 6 | 1 | | | | |
| 22 Left Turbo Engine #2 | | | | | | | |
| 23 Right Turbo Engine #2 | | 4 | 1.5 | | | | |
| 24 Filter Box, Left Wing | | | | | | | |
| 25 Filter Box, Right Wing | | | | | | | |
| 26 A-1 Filter Box | | | | | | | |

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT C-47 No. 308 SHOT "FOX" DATE 25 May 1952

SHOT TIME 0359:59.6 PST

| DECON SURVEY | A | B | C | D | E | F | REMARKS |
|---|---|---|---|---|---|---|---|
| TIME (H + hours) Date / Time | 5/25 1330 | 5/25 1350 | | | | | All readings taken in milli-roentgens per hour. |
| POSITION | | | | | | | |
| 1 Nose | 2 | 0 | | | | | a. A readings taken after plane landed; immediately before washing. |
| 2 Air Intake Engine #3 | | | | | | | |
| 3 Left Turbo Engine #3 | | | | | | | b. B readings taken after plane had been decon with an application of gunk and steam cleaning compound followed with a cold water rinse. |
| 4 Right Turbo Engine #3 | | | | | | | |
| 5 Air Intake Engine #4 | | | | | | | |
| 6 Left Turbo Engine #4 | | | | | | | |
| 7 Right Turbo Engine #4 | | | | | | | |
| 8 Leading Edge Right Wg | | | | | | | |
| 9 Tip Right Wing | | | | | | | |
| 10 Trailing Edge Rt Wing | | | | | | | |
| 11 Right Scanner Blister | | | | | | | |
| 12 Right Horiz. Stabiliser | | | | | | | |
| 13 Left Horiz. Stabiliser | | | | | | | |
| 14 Left Scanner Blister | | | | | | | |
| 15 Trailing Edge Wing | | | | | | | |
| 16 Tip Left Wing | | | | | | | |
| 17 Leading Edge Left Wing | | | | | | | |
| 18 Air Intake Engine #1 | 10 | 2 | | | | | |
| 19 Left Turbo Engine #1 | 30 | 2 | | | | | |
| 20 Right Turbo Engine #1 | | | | | | | |
| 21 Air Intake Engine #2 | 10 | 4 | | | | | |
| 22 Left Turbo Engine #2 | | | | | | | |
| 23 Right Turbo Engine #2 | 30 | 8 | | | | | |
| 24 Filter Box, Left Wing | | | | | | | |
| 25 Filter Box, Right Wing | | | | | | | |
| 26 A-1 Filter Box | | | | | | | |

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 #920 "FOX" SHOT TIME 0400 PST DATE 25 May 1952

| DECON. SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H / hours) Date Time | 25 May 0923 | 26 May 0923 | 26 May 1001 | | | |
| POSITION | | | | | | |
| 1 Nose | 60 | 10 | 7 | | | |
| 2 Right Air Intake | 440 | 60 | 18 | | | |
| 3 Leading Edge Right Wing | | 19 | 4.8 | | | |
| 4 Front of Right Filter Box | 400 | 10 | 2.6 | | | |
| 5 Tip Right Wing | 360 | 27 | 11 | | | |
| 6 Right Horizontal Stabilizer | | 11 | 6 | | | |
| 7 Tail Pipe Opening | | 80 | 18 | | | |
| 8 Left Horizontal Stabilizer | | 70 | 6 | | | |
| 9 Tip Left Wing | 340 | 20 | 6 | | | |
| 10 Front of Left Filter Box | 500 | 13 | 8 | | | |
| 11 Leading Edge Left Wing | | 13 | 7 | | | |
| 12 Left Air Intake | 400 | 40 | 20 | | | |
| 13 Rear Cockpit | 200 | 10 | | | | |
| 14 Accessory Section | | 160 | 50 | | | |
| 15 Compressor Right Side | 1000 | 180 | 50 | | | |
| 16 Turbine Right Side | | 100 | 31 | | | |
| 17 Turbine Left Side | | 110 | 25 | | | |
| 18 Compressor Left Side | 1000 | 150 | 60 | | | |

REMARKS: All readings in milli-roentgens per hour.
a. A readings taken after the plane had landed and parked.
b. B readings taken after the plane stood for 24 hours; immediately before washing.
c. C readings taken after the plane had been decontaminated with an application of gunk and steam cleaning compound followed with a cold water rinse.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 #951 SHOT "FOX" SHOT TIME 0400 PST DATE 25 May 52

| DECON. SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 25 May 0845 | 26 May 1015 | 26 May 1203 | 27 May 0815 | 28 May 0823 | |
| POSITION | | | | | | |
| 1 Nose | 380 | 14 | 10 | 7 | 5 | |
| 2 Right Air Intake | 2200 | 80 | 55 | 38 | 22 | |
| 3 Leading Edge Right Wing | | 26 | 20 | 10 | 4.8 | |
| 4 Front of Right Filter Box | 1100 | 34 | 22 | 13 | 5 | |
| 5 Tip Right Wing | 2000 | 40 | 24 | 11 | 6 | |
| 6 Right Horizontal Stabilizer | | 24 | 15 | 9 | 6 | |
| 7 Tail Pipe Opening | | 34 | 26 | 18 | 12 | |
| 8 Left Horizontal Stabilizer | | 75 | 14 | 10 | 6 | |
| 9 Tip Left Wing | 1600 | 42 | 8 | 9 | 4.8 | |
| 10 Front of Left Filter Box | 1600 | 22 | 12 | 9 | 4.6 | |
| 11 Leading Edge Left Wing | | 24 | 12 | 8 | 4 | |
| 12 Left Air Intake | 2200 | 70 | 38 | 28 | 16 | |
| 13 Rear Cockpit | | 38 | | | | |
| 14 Accessory Section | | 180 | 125 | 90 | 40 | |
| 15 Compressor Right Side | 2600 | 200 | 140 | 100 | 50 | |
| 16 Turbine Right Side | | 75 | 60 | 55 | 38 | |
| 17 Turbine Left Side | | 126 | 80 | 50 | 32 | |
| 18 Compressor Left Side | 2400 | 160 | 130 | 100 | 60 | |

REMARKS: All readings in milli-roentgens per hour.

a. A readings taken after the plane had landed and parked.
b. B readings taken after the plane had stood for 25 hours; immediately before wash.
c. C readings taken after the plane had been decontaminated with an application of gunk and steam cleaning compound followed with a cold water rinse.
d. D readings taken 22 hours after C readings.
e. E readings taken 24 hours after D readings.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

"FOX"

AIRCRAFT T-33 #913 SHOT TIME 0400 PST DATE 25 May 1952

| DECON. SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 25 May 0904 | 26 May 0950 | | | | |
| POSITION | | | | | | |
| 1 Nose | 26 | 2.2 | | | | |
| 2 Right Air Intake | 120 | 90 | | | | |
| 3 Leading Edge Right Wing | | 7 | | | | |
| 4 Front of Right Filter Box | 160 | 6 | | | | |
| 5 Tip Right Wing | 105 | 11 | | | | |
| 6 Right Horizontal Stabilizer | | 3.4 | | | | |
| 7 Tail Pipe Opening | | 10 | | | | |
| 8 Left Horizontal Stabilizer | | 4.2 | | | | |
| 9 Tip Left Wing | 110 | 6 | | | | |
| 10 Front of Left Filter Box | 180 | 3 | | | | |
| 11 Leading Edge Left Wing | | 3.5 | | | | |
| 12 Left Air Intake | 140 | 10 | | | | |
| 13 Rear Cockpit | 13 | 6 | | | | |
| 14 Accessory Section | | 40 | | | | |
| 15 Compressor Right Side | 400 | 46 | | | | |
| 16 Turbine Right Side | | 26 | | | | |
| 17 Turbine Left Side | | 21 | | | | |
| 18 Compressor Left Side | 360 | 36 | | | | |

REMARKS:

All readings in milli-roentgens per hour.

a. A readings taken after the plane had landed and parked.
b. B readings taken after the plane had stood for 24 hours.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT F-33 #048 "FOX" SHOT TIME 0400 DATE 25 May 1952

| DECON. SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 25 May 0839 | 26 May 1027 | 26 May 1230 | | | |
| POSITION | | | | | | |
| 1 Nose | 27 | 2.8 | 1.4 | | | |
| 2 Right Air Intake | 180 | 10 | 4.5 | | | |
| 3 Leading Edge Right Wing | | 3.1 | 2 | | | |
| 4 Front of Right Filter Box | 200 | 2.5 | 2 | | | |
| 5 Tip Right Wing | 80 | 7 | 1.6 | | | |
| 6 Right Horizontal Stabilizer | | 1.3 | 1 | | | |
| 7 Tail Pipe Opening | | 4.6 | 3.4 | | | |
| 8 Left Horizontal Stabilizer | | 2.6 | 1.5 | | | |
| 9 Tip Left Wing | 80 | 3 | 1 | | | |
| 10 Front of Left Filter Box | 200 | 1.5 | 1.4 | | | |
| 11 Leading Edge Left Wing | | 2.5 | 1.2 | | | |
| 12 Left Air Intake | 180 | 10 | 4.6 | | | |
| 13 Rear Cockpit | 120 | | | | | |
| 14 Accessory Section | | 30 | 16 | | | |
| 15 Compressor Right Side | 310 | 35 | 18 | | | |
| 16 Turbine Right Side | | 19 | 8 | | | |
| 17 Turbine Left Side | | 13 | 8 | | | |
| 18 Compressor Left Side | 300 | 28 | 18 | | | |

REMARKS:

All readings in milli-roentgens per hour.

a. A readings taken after the plane had landed and parked.
b. B readings taken after the plane had stood for 24 hours; immediately before wash.
c. C readings taken after the plane had been decontaminated with an application of gunk and steam cleaning compound followed with a cold water rinse.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT B-29 Acft #386 SHOT "[illegible]" DATE 1 June 1952

SHOT TIME 0354:59.9 PST

| DECON. SURVEY | A | B | C | D | E | F | REMARKS |
|---|---|---|---|---|---|---|---|
| Date TIME (H + hours) Time | 1/6 0740 | 2/6 0700 | 2/6 1000 | 3/6 0655 | | | All readings taken in milli-roentgens per hour. |
| POSITION | | | | | | | a. A readings taken after plane had landed and parked. |
| 1 Nose | 100 | 8 | 6 | | | | b. B readings taken immediately before washing. |
| 2 Air Intake Engine #3 | 1000 | 60 | 40 | 30 | | | c. C readings taken after plane had been decon with an application of gunk and steam cleaning compound followed with a cold rinse. |
| 3 Left Turbo Engine #3 | | 60 | 44 | | | | d. D readings taken the following day after plane had stood for 19 hours. |
| 4 Right Turbo Engine #3 | | 50 | 36 | | | | |
| 5 Air Intake Engine #4 | 1000 | 60 | 40 | 30 | | | |
| 6 Left Turbo Engine #4 | | 50 | 38 | | | | |
| 7 Right Turbo Engine #4 | | 48 | 33 | | | | |
| 8 Leading Edge Right Wg | | 18 | | | | | |
| 9 Tip Right Wing | | 8 | | | | | |
| 10 Trailing Edge Rt Wing | | 10 | | | | | |
| 11 Right Scanner Blister | | 14 | | | | | |
| 12 Right Horiz. Stabilizer | | 22 | | | | | |
| 13 Left Horiz. Stabilizer | | 20 | | | | | |
| 14 Left Scanner Blister | | 16 | | | | | |
| 15 Trailing Edge Wing | | 12 | | | | | |
| 16 Tip Left Wing | | 15 | | | | | |
| 17 Leading Edge Left Wing | | 22 | | | | | |
| 18 Air Intake Engine #1 | 900 | 50 | 32 | 20 | | | |
| 19 Left Turbo Engine #1 | | 60 | 36 | | | | |
| 20 Right Turbo Engine #1 | | 60 | 30 | | | | |
| 21 Air Intake Engine #2 | 900 | 60 | 37 | 28 | | | |
| 22 Left Turbo Engine #2 | | 60 | 32 | | | | |
| 23 Right Turbo Engine #2 | | 60 | 43 | | | | |
| 24 Filter Box, Left Wing | 1600 | 70 | | | | | |
| 25 Filter Box, Right Wing | 1400 | 24 | | | | | |
| 26 A-1 Filter Box | 700 | 29 | | | | | |

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT B-25 Acft No. 073 SHOT "GEORGE" DATE 1 June 1952

SHOT TIME 0354:59.8

| DECON SURVEY | A | B | C | D | E | F | REMARKS |
|---|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 1/6 1005 | 2/6 1205 | | | | | All readings taken in milli-roentgens per hour. |
| POSITION | | | | | | | |
| 1 Nose | 20 | 8 | | | | | a. A readings taken after plane had landed and parked. |
| 2 Air Intake Engine #3 | | | | | | | b. B readings the following morning after plane had stood for 26 hours. |
| 3 Left Turbo Engine #3 | | | | | | | |
| 4 Right Turbo Engine #3 | | | | | | | |
| 5 Air Intake Engine #4 | | | | | | | |
| 6 Left Turbo Engine #4 | | | | | | | |
| 7 Right Turbo Engine #4 | | | | | | | |
| 8 Leading Edge Right Wg | | | | | | | |
| 9 Tip Right Wing | | | | | | | |
| 10 Trailing Edge Rt Wing | | | | | | | |
| 11 Right Scanner Blister | | | | | | | |
| 12 Right Horiz. Stabilizer | | | | | | | |
| 13 Left Horiz. Stabilizer | | | | | | | |
| 14 Left Scanner Blister | | | | | | | |
| 15 Trailing Edge Wing | | | | | | | |
| 16 Tip Left Wing | | | | | | | |
| 17 Leading Edge Left Wing | | | | | | | |
| 18 Air Intake Engine #1 | 18 | 18 | | | | | |
| 19 Left Turbo Engine #1 | | | | | | | |
| 20 Right Turbo Engine #1 | | | | | | | |
| 21 Air Intake Engine #2 | 30 | 10 | | | | | |
| 22 Left Turbo Engine #2 | | | | | | | |
| 23 Right Turbo Engine #2 | | | | | | | |
| 24 Filter Box, Left Wing | | | | | | | |
| 25 Filter Box, Right Wing | | | | | | | |
| 26 A-1 Filter Box | | | | | | | |

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

"GEORGE"

AIRCRAFT T-33 #913 SHOT TIME 0355 DATE 1 June 1952

| DECON SURVEY | | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|
| TIME (H + hours) | Date Time | 1/6 0840 | 3/6 1057 | 3/6 1450 | | | |
| POSITION | | | | | | | |
| 1 Nose | | 1000 | 30 | 10 | | | |
| 2 Right Air Intake | | 1000 | 32 | 19 | | | |
| 3 Leading Edge Right Wing | | | 30 | 6 | | | |
| 4 Front of Right Filter Box | | 1400 | 28 | 18 | | | |
| 5 Tip Right Wing | | 750 | 13 | 12 | | | |
| 6 Right Horizontal Stabilizer | | | 7 | 3 | | | |
| 7 Tail Pipe Opening | | | 10 | 8 | | | |
| 8 Left Horizontal Stabilizer | | | 6 | 3 | | | |
| 9 Tip Left Wing | | 700 | 12 | 10 | | | |
| 10 Front of Left Filter Box | | 1400 | 30 | 17 | | | |
| 11 Leading Edge Left Wing | | | 32 | 7 | | | |
| 12 Left Air Intake | | 1000 | 26 | 16 | | | |
| 13 Rear Cockpit | | 600 | 12 | | | | |
| 14 Accessory Section | | | | | | | |
| 15 Compressor Right Side | | 1600 | 360 | 50 | | | |
| 16 Turbine Right Side | | | 26 | 14 | | | |
| 17 Turbine Left Side | | | 20 | 10 | | | |
| 18 Compressor Left Side | | 1400 | 60 | 50 | | | |

REMARKS.
All readings taken in milli-roentgens per hour.

a. A readings taken after plane had landed and parked.
b. B readings taken 48 hours later or immediately before washing.
c. C readings taken after plane was decontaminated with an application of gunk followed with a cold water rinse.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 #Old "ZERO" SHOT TIME 0355 DATE 1 June 1952

| DECON SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 1 June 0915 | 2 June 0825 | 3 June 1012 | | | |
| POSITION | | | | | | |
| 1 Nose | 2000 | 130 | 42 | | | |
| 2 Right Air Intake | 2600 | 280 | 36 | | | |
| 3 Leading Edge Right Wing | | 270 | 70 | | | |
| 4 Front of Right Filter Box | 3600 | 220 | 50 | | | |
| 5 Tip Right Wing | 1600 | 160 | 12 | | | |
| 6 Right Horizontal Stabiliser | | 220 | 22 | | | |
| 7 Tail Pipe Opening | | 140 | 24 | | | |
| 8 Left Horizontal Stabilizer | | 200 | 60 | | | |
| 9 Tip Left Wing | 1200 | 120 | 12 | | | |
| 0 Front of Left Filter Box | 4200 | 200 | 80 | | | |
| 1 Leading Edge Left Wing | | 250 | 90 | | | |
| 2 Left Air Intake | 2000 | 220 | 28 | | | |
| 3 Rear Cockpit | 800 | 60 | 12 | | | |
| 4 Accessory Section | | | | | | |
| 5 Compressor Right Side | 3600 | 390 | 90 | | | |
| 6 Turbine Right Side | | 260 | 50 | | | |
| 7 Turbine Left Side | | 200 | 60 | | | |
| 8 Compressor Left Side | 3600 | 390 | 100 | | | |

REMARKS:
All readings taken in milli-roentgens per hour.

a. A readings taken after plane had landed and parked.
b. B readings taken immediately before washing.
c. C readings taken after plane had been decontaminated with an application of gunk, brush, and water.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 #920 SHOT "GEORGE" SHOT TIME 0355 DATE 1 June 1952

| DECON. SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 6/1 0605 | 6/2 0640 | 6/2 0830 | 6/3 1016 | | |
| POSITION | | | | | | |
| 1 Nose | 9000 | 100 | 48 | 42 | | |
| 2 Right Air Intake | 16000 | 220 | 160 | 60 | | |
| 3 Leading Edge Right Wing | | 100 | 90 | 33 | | |
| 4 Front of Right Filter Box | 14000 | 100 | 42 | 42 | | |
| 5 Tip Right Wing | 7000 | 80 | 32 | 14 | | |
| 6 Right Horisontal Stabilizer | | 130 | 80 | 28 | | |
| 7 Tail Pipe Opening | | 100 | 86 | 42 | | |
| 8 Left Horisontal Stabilizer | | 148 | 100 | 90 | | |
| 9 Tip Left Wing | 8000 | 80 | 37 | 18 | | |
| 10 Front of Left Filter Box | 24000 | 121 | 100 | 100 | | |
| 11 Leading Edge Left Wing | | 160 | 40 | 30 | | |
| 12 Left Air Intake | 16000 | 200 | 100 | 75 | | |
| 13 Rear Cockpit | 6000 | 60 | 32 | 26 | | |
| 14 Accessory Section | | | | | | |
| 15 Compressor Right Side | 26000 | 400 | 320 | 180 | | |
| 16 Turbine Right Side | | 160 | 110 | 100 | | |
| 17 Turbine Left Side | | 240 | 200 | 124 | | |
| 18 Compressor Left Side | 26000 | 420 | 340 | 180 | | |

REMARKS: All readings in milli-roentgens per hour.

a. A readings taken after the plane had landed and parked.
b. B readings taken after plane had stood for 24 hours; immediately before wash.
c. C readings taken after plane had been decontaminated with gunk put on by brushes and rinsed with water.
d. D readings taken 25 hours after washing.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT F-33 #951 SHOT "GEORGE" SHOT TIME 0355 DATE 1 June 1952

| DECON SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 1/6 0845 | 3/6 0754 | 3/6 1320 | | | |
| POSITION | | | | | | |
| 1 Nose | 120 | 9 | 4 | | | |
| 2 Right Air Intake | 900 | 30 | 14 | | | |
| 3 Leading Edge Right Wing | | 8 | 4 | | | |
| 4 Front of Right Filter Box | 900 | 8 | 3 | | | |
| 5 Tip Right Wing | 800 | 10 | 5 | | | |
| 6 Right Horizontal Stabilizer | | 10 | 3 | | | |
| 7 Tail Pipe Opening | | 18 | 9 | | | |
| 8 Left Horizontal Stabilizer | | 10 | 5 | | | |
| 9 Tip Left Wing | 900 | 12 | 6 | | | |
| 10 Front of Left Filter Box | 900 | 8 | 4 | | | |
| 11 Leading Edge Left Wing | | 8 | 4 | | | |
| 12 Left Air Intake | 800 | 26 | 13 | | | |
| 13 Rear Cockpit | 260 | 12 | 4 | | | |
| 14 Accessory Section | | | | | | |
| 15 Compressor Right Side | 1000 | 100 | 40 | | | |
| 16 Turbine Right Side | | 50 | 22 | | | |
| 17 Turbine Left Side | | 50 | 20 | | | |
| 18 Compressor Left Side | 1600 | 90 | 42 | | | |

REMARKS: All readings taken in milli-roentgens per hour.

a. A readings taken after plane had landed and parked.
b. B readings taken before washing.
c. C readings taken after decontamination with an application of gunk, steam cleaning compound, cold water rinse.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT B-29 Acft No. 386 SHOT "HOW" DATE 5 June 1952

SHOT TIME 0355:00.3 PST

| DECON. SURVEY | A | B | C | D | E | F | REMARKS |
|---|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 5/6 0940 | 5/6 1545 | 6/6 0715 | 6/6 0915 | 6/6 0930 | | All readings taken in milli-roentgens per hour. |
| POSITION | | | | | | | |
| 1 Nose | 32 | 20 | 9 | | 3 | | a. A readings taken after the plane had landed and parked. |
| 2 Air Intake Engine #3 | 450 | 160 | 60 | 28 | 26 | | b. B readings taken 6 hours after landing. |
| 3 Left Turbo Engine #3 | | 100 | 50 | | 26 | | |
| 4 Right Turbo Engine #3 | | 90 | 70 | | 22 | | c. C readings taken immediately before washing the plane. |
| 5 Air Intake Engine #4 | 410 | 160 | 60 | 28 | 26 | | d. D readings taken on the engines in wash area. |
| 6 Left Turbo Engine #4 | | 100 | 60 | | 25 | | |
| 7 Right Turbo Engine #4 | | 80 | 50 | | 20 | | e. E readings taken after the plane had been moved out of wash area after it had been decon with gunk, steam cleaning compound and cold water rinse. |
| 8 Leading Edge Right Wg | | 20 | 16 | | 6 | | |
| 9 Tip Right Wing | | 20 | 10 | | 6 | | |
| 10 Trailing Edge Rt Wing | | 28 | 12 | | 4 | | |
| 11 Right Scanner Blister | | 18 | 10 | | 4 | | |
| 12 Right Horiz. Stabilizer | | 34 | 18 | | 7 | | |
| 13 Left Horiz. Stabilizer | | 40 | 22 | | 12 | | |
| 14 Left Scanner Blister | | 20 | 10 | | 6 | | |
| 15 Trailing Edge Wing | | 42 | 18 | | 7 | | |
| 16 Tip Left Wing | | 14 | 6 | | 4 | | |
| 17 Leading Edge Left Wing | | 26 | 18 | | 10 | | |
| 18 Air Intake Engine #1 | 360 | 180 | 60 | 28 | 26 | | |
| 19 Left Turbo Engine #1 | | 100 | 70 | | 25 | | |
| 20 Right Turbo Engine #1 | | 80 | 60 | | 20 | | |
| 21 Air Intake Engine #2 | 380 | 126 | 60 | 26 | 24 | | |
| 22 Left Turbo Engine #2 | | 100 | 50 | | 22 | | |
| 23 Right Turbo Engine #2 | | 100 | 50 | | 26 | | |
| 24 Filter Box, Left Wing | 160 | 50 | 36 | | 16 | | |
| 25 Filter Box, Right Wing | 150 | 60 | 40 | | 12 | | |
| 26 A-1 Filter Box | 380 | 80 | 42 | | 18 | | |

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT B-25 Acft #073 SHOT "HOW" DATE 5 June 1952

SHOT TIME 0355:00.3

| DECON SURVEY | A | B | C | D | E | F | REMARKS |
|---|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 5/6 0917 | 5/6 1545 | 6/6 0910 | 6/6 0953 | | | All readings taken in milli-roentgens per hour. |
| POSITION | | | | | | | a. A readings taken after the plane had landed and parked. |
| 1 Nose | 65 | 6 | 2 | | | | b. B readings taken after the plane had stood for 6½ hours. |
| 2 Air Intake Engine #3 | | | | | | | c. C readings taken immediately before washing the plane. |
| 3 Left Turbo Engine #3 | | | | | | | d. D readings taken after the plane had been decon with gunk and water. |
| 4 Right Turbo Engine #3 | | | | | | | |
| 5 Air Intake Engine #4 | | | | | | | |
| 6 Left Turbo Engine #4 | | | | | | | |
| 7 Right Turbo Engine #4 | | | | | | | |
| 8 Leading Edge Right Wg | | 6 | | | | | |
| 9 Tip Right Wing | | 2 | | | | | |
| 10 Trailing Edge Rt Wing | | 3 | | | | | |
| 11 Tip Rt. Horiz Stabilizer | | 3 | | | | | |
| 12 Leading Edge Right Horiz Stabilizer | | 3 | | | | | |
| 13 Leading Edge Left Horiz Stabilizer | | 9 | | | | | |
| 14 Tip Lt. Horiz Stabilizer | | 2 | | | | | |
| 15 Trailing Edge Wing Left | | 2 | | | | | |
| 16 Tip Left Wing | | 1 | | | | | |
| 17 Leading Edge Left Wing | | 6 | | | | | |
| 18 Air Intake Engine #1 | 140 | 60 | 16 | 5 | | | |
| 19 Left Turbo Engine #1 | | | | | | | |
| 20 Right Turbo Engine #1 | | | | | | | |
| 21 Air Intake Engine #2 | 65 | 22 | 8 | 3 | | | |
| 22 Left Turbo Engine #2 | | | | | | | |
| 23 Right Turbo Engine #2 | | | | | | | |
| 24 Filter Box, Left Wing | | | | | | | |
| 25 Filter Box, Right Wing | | | | | | | |
| 26 A-1 Filter Box | | | | | | | |

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 #048 "HOW" SHOT TIME 0355 DATE 5 June 1952

| DECON. SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | June 5 0908 | June 5 1250 | June 5 1320 | June 6 0726 | | |
| POSITION | | | | | | |
| 1 Nose | 28 | 24 | 17 | 12 | | |
| 2 Right Air Intake | 80 | 42 | 24 | 12 | | |
| 3 Leading Edge Right Wing | | 34 | 18 | 14 | | |
| 4 Front of Right Filter Box | 140 | 44 | 16 | | | |
| 5 Tip Right Wing | 80 | 20 | 8 | 4 | | |
| 6 Right Horizontal Stabilizer | | 16 | 14 | 8 | | |
| 7 Tail Pipe Opening | | 28 | 16 | 10 | | |
| 8 Left Horizontal Stabilizer | | 12 | 8 | 6 | | |
| 9 Tip Left Wing | 40 | 18 | 8 | 2.6 | | |
| 10 Front of Left Filter Box | 120 | 48 | 18 | | | |
| 11 Leading Edge Left Wing | 38 | 18 | 12 | | | |
| 12 Left Air Intake | 100 | 46 | 24 | 13 | | |
| 13 Rear Cockpit | 28 | 16 | 9 | 3.6 | | |
| 14 Accessory Section | | | | | | |
| 15 Compressor Right Side | 270 | 120 | 60 | 50 | | |
| 16 Turbine Right Side | | 60 | 50 | 32 | | |
| 17 Turbine Left Side | | 60 | 50 | 30 | | |
| 18 Compressor Left Side | 240 | 80 | 60 | 50 | | |

REMARKS:
All readings in milli-roentgens per hour.

a. A readings taken after plane had landed and parked.
b. B readings taken after plane had stood for 2½ hours; immediately before wash.
c. C readings taken after plane had been decontaminated with gunk, brush, and water.
d. D readings taken the following day.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT F-31 #951 "HOW" SHOT TIME 0355 DATE 5 June 1952

| DECON. SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 5 June 0620 | 5 June 1155 | 5 June 1243 | 6 June 0721 | | |
| POSITION | | | | | | |
| 1 Nose | 380 | 34 | 18 | 4.4 | | |
| 2 Right Air Intake | 1300 | 100 | 44 | 16 | | |
| 3 Leading Edge Right Wing | | 44 | 14 | 8 | | |
| 4 Front of Right Filter Box | 1700 | 42 | 16 | | | |
| 5 Tip Right Wing | 1000 | 48 | 8 | 5 | | |
| 6 Right Horizontal Stabilizer | | 40 | 14 | 10 | | |
| 7 Tail Pipe Opening | | 48 | 20 | 13 | | |
| 8 Left Horizontal Stabilizer | | 26 | 12 | 10 | | |
| 9 Tip Left Wing | 1000 | 60 | 10 | 6 | | |
| 10 Front of Left Filter Box | 1700 | 42 | 17 | | | |
| 11 Leading Edge Left Wing | | 36 | 16 | 8 | | |
| 12 Left Air Intake | 1100 | 120 | 44 | 18 | | |
| 13 Rear Cockpit | 420 | 10 | 5 | 3.2 | | |
| 14 Accessory Section | | | | | | |
| 15 Compressor Right Side | 3100 | 350 | 270 | 80 | | |
| 16 Turbine Right Side | | 150 | 130 | 40 | | |
| 17 Turbine Left Side | | 120 | 100 | 40 | | |
| 18 Compressor Left Side | 2800 | 300 | 130 | 90 | | |

REMARKS:
All readings in milli-roentgens per hour.

a. A readings taken after plane had landed and parked.
b. B readings taken after plane stood for 24 hours; immediately before washing.
c. C readings taken after plane was decontaminated with gunk, brush, and water.
d. D readings taken the following day.

## CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 No. 913 SHOT TIME 0355 DATE 5 June 1952

| DECON. SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 5/6 0913 | 5/6 1508 | 5/6 1600 | 6/6 0740 | | |
| POSITION | | | | | | |
| 1 Nose | 22 | 8 | 6 | 5 | | |
| 2 Right Air Intake | 80 | 14 | 12 | 10 | | |
| 3 Leading Edge Right Wing | | 18 | 5 | 4 | | |
| 4 Front of Right Filter Box | 120 | 10 | 8 | | | |
| 5 Tip Right Wing | 80 | 9 | 5 | 1 | | |
| 6 Right Horizontal Stabilizer | | 10 | 7 | 6 | | |
| 7 Tail Pipe Opening | | 9 | 7 | 5 | | |
| 8 Left Horizontal Stabilizer | | 9 | 6 | 5 | | |
| 9 Tip Left Wing | 60 | 6 | 4 | 2 | | |
| 10 Front of Left Filter Box | 100 | 6 | 4 | | | |
| 11 Leading Edge Left Wing | | 14 | 10 | 7 | | |
| 12 Left Air Intake | 60 | 16 | 10 | 8 | | |
| 13 Rear Cockpit | 20 | 7 | 4 | 2.6 | | |
| 14 Accessory Section | | | | | | |
| 15 Compressor Right Side | 260 | 70 | 46 | 38 | | |
| 16 Turbine Right Side | | 23 | 21 | 18 | | |
| 17 Turbine Left Side | | 26 | 22 | 20 | | |
| 18 Compressor Left Side | 210 | 70 | 52 | 40 | | |

REMARKS:
All readings in milli-roentgens per hour.

a. A readings taken after plane had landed and parked.
b. B readings taken after the plane had stood for 6 hours; immediately before wash.
c. C readings taken after plane had been decontaminated with gunk and steam cleaning compound followed with a cold water rinse.
d. D readings taken the following morning.

CONSOLIDATED REPORT OF AIRCRAFT CONTAMINATION

AIRCRAFT T-33 #920 SHOT "HOW" SHOT TIME 0355 DATE 5 June 1952

| DECON SURVEY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME (H + hours) Date Time | 5/6 0904 | 5/6 1138 | 5/6 1310 | | | |
| POSITION | | | | | | |
| 1 Nose | 12 | 8 | 6 | | | |
| 2 Right Air Intake | 24 | 24 | 20 | | | |
| 3 Leading Edge Right Wing | | 8 | 6 | | | |
| 4 Front of Right Filter Box | 10 | | | | | |
| 5 Tip Right Wing | 8 | 6 | 5 | | | |
| 6 Right Horizontal Stabilizer | | 18 | 10 | | | |
| 7 Tail Pipe Opening | | 20 | 18 | | | |
| 8 Left Horizontal Stabilizer | | 19 | 12 | | | |
| 9 Tip Left Wing | 10 | 6 | 5 | | | |
| 10 Front of Left Filter Box | 18 | | | | | |
| 11 Leading Edge Left Wing | | 10 | 8 | | | |
| 12 Left Air Intake | 22 | 22 | 20 | | | |
| 13 Rear Cockpit | 8 | | | | | |
| 14 Accessory Section | | | | | | |
| 15 Compressor Right Side | 80 | 80 | 40 | | | |
| 16 Turbine Right Side | | 34 | 30 | | | |
| 17 Turbine Left Side | | 40 | 34 | | | |
| 18 Compressor Left Side | 80 | 80 | 60 | | | |

REMARKS: All readings in milli-roentgens per hour.
a. A readings taken after the plane had landed and parked.
b. B readings taken before the plane had been decontaminated.
c. C readings taken after the plane had been decontaminated with an application of gunk and steam cleaning compound followed with a cold water rinse.

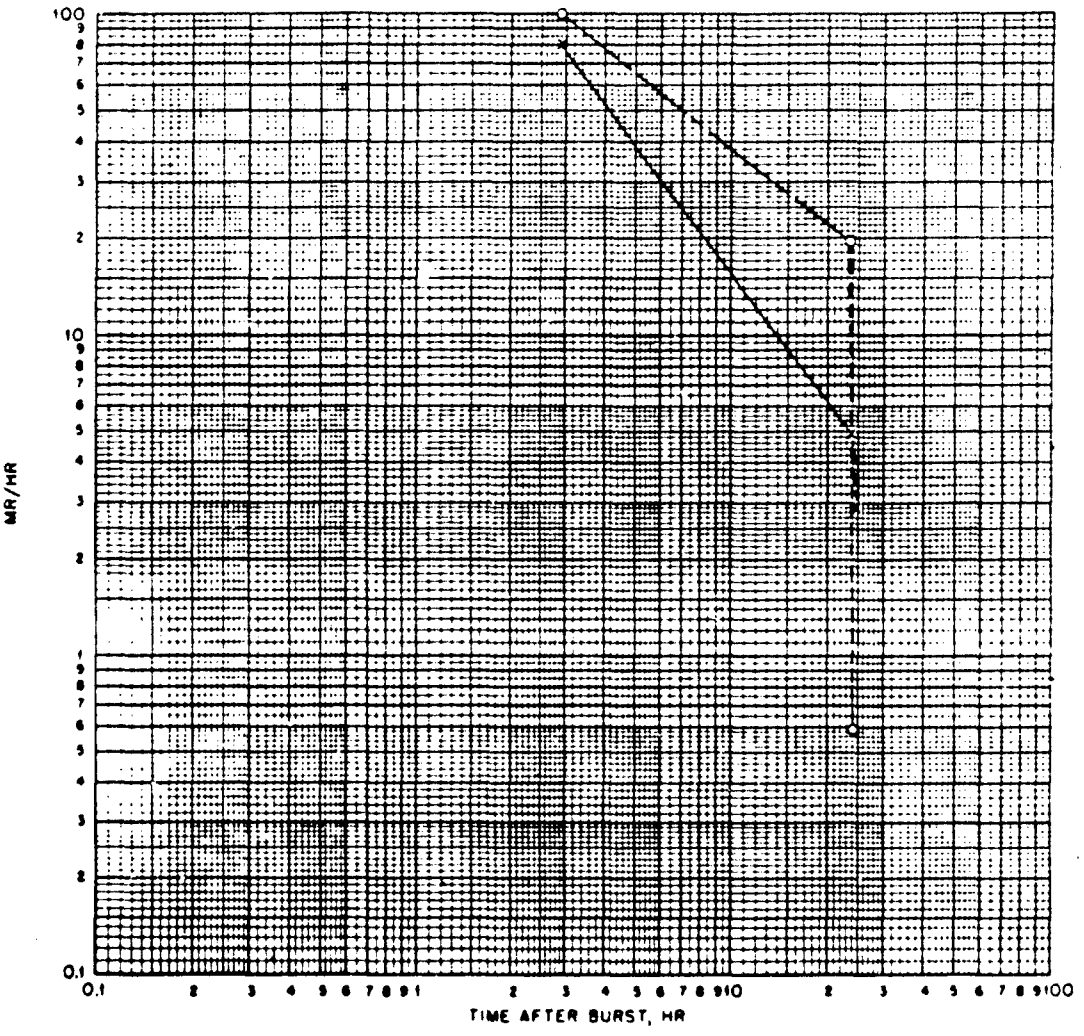


Fig. 7.1 — Decay pattern for contaminated aircraft B-29 No. 386 after Able Shot. ——, nose. – – –, air intake, engine 1. – – – –, decay after treatment with gunk, detergent, and water.

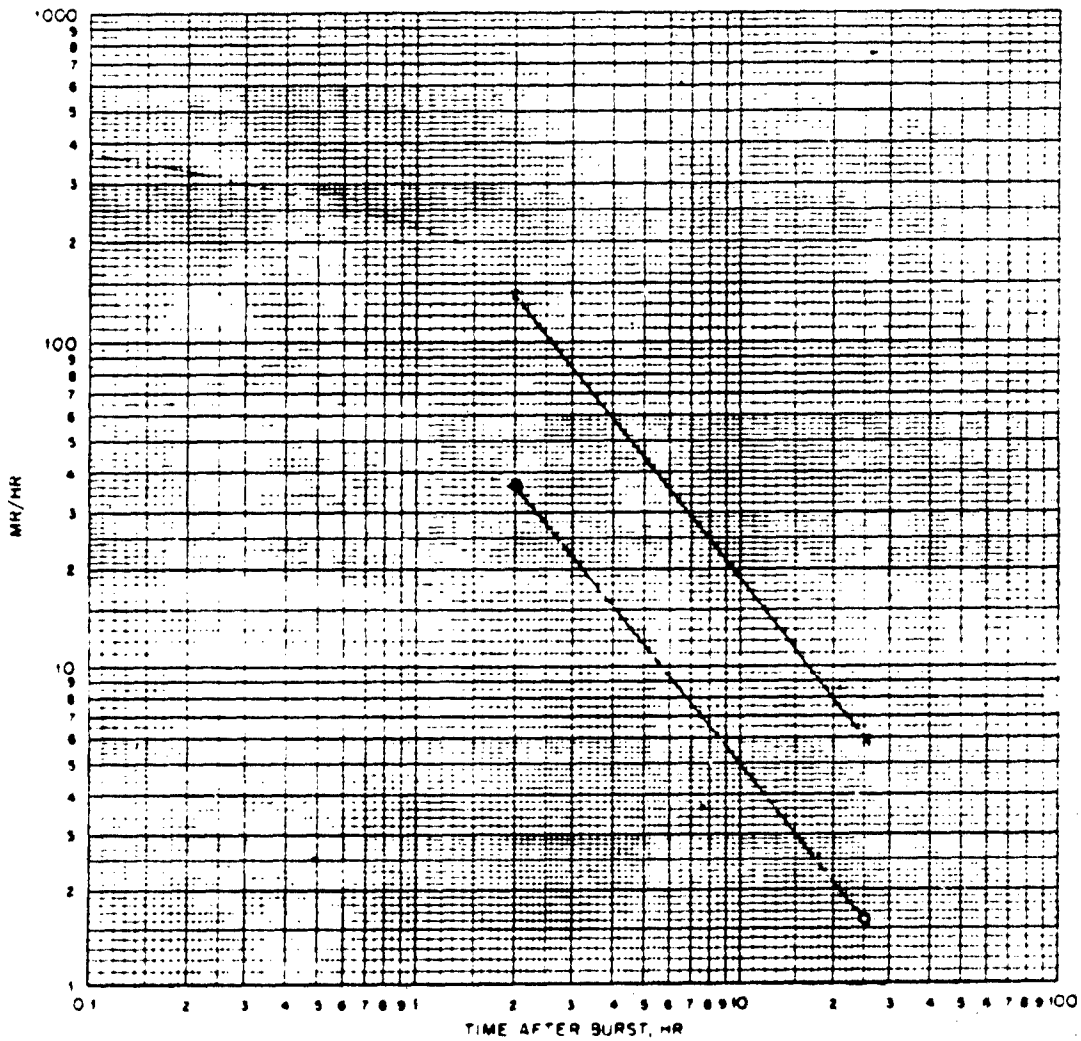


Fig. 7.2—Decay pattern for contaminated aircraft T-33 No. 913 after Able Shot. ——, right air intake. -·-·, right compressor.

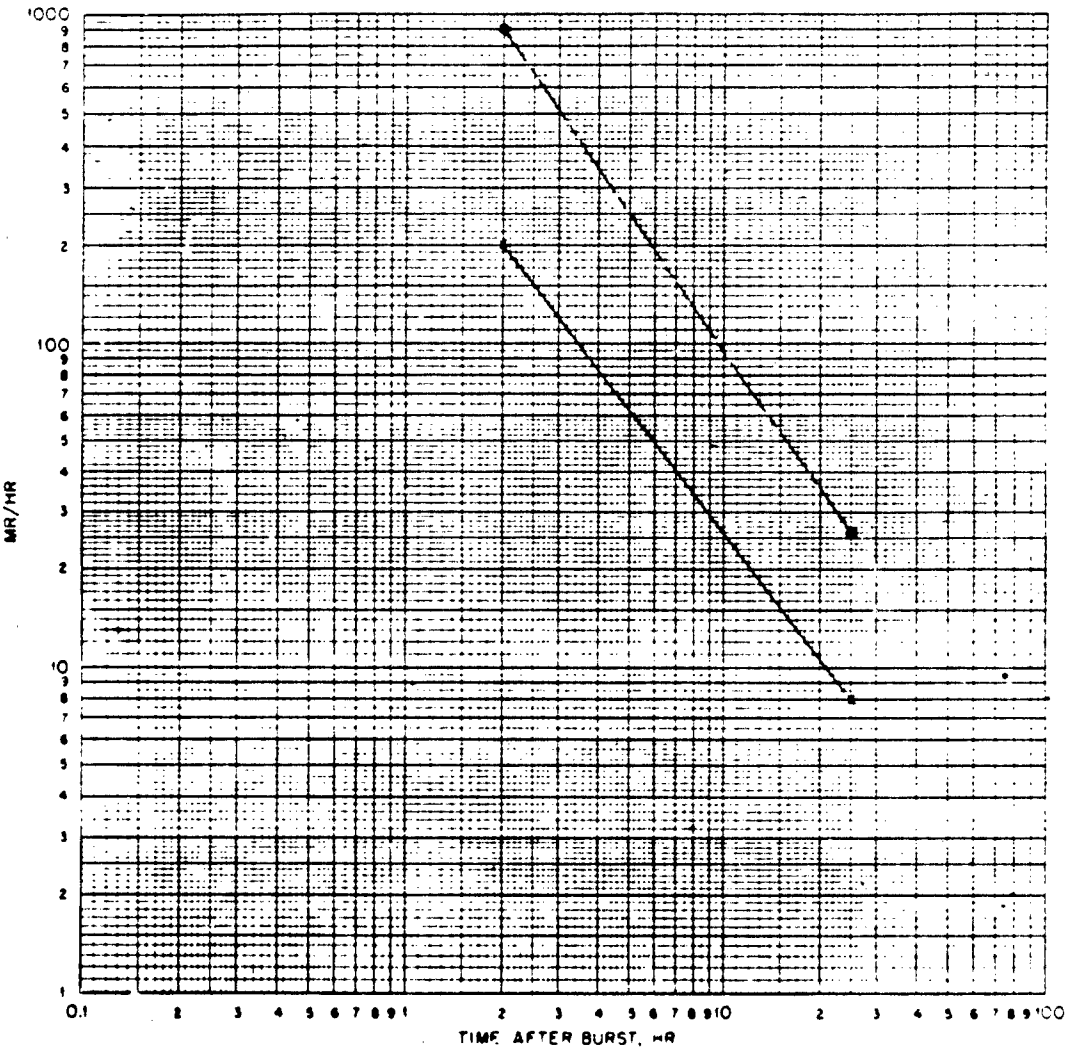


Fig. 7.3—Decay pattern for contaminated aircraft T-33 No. 048 after Able Shot. -·-, right air intake. ← →, right compressor.

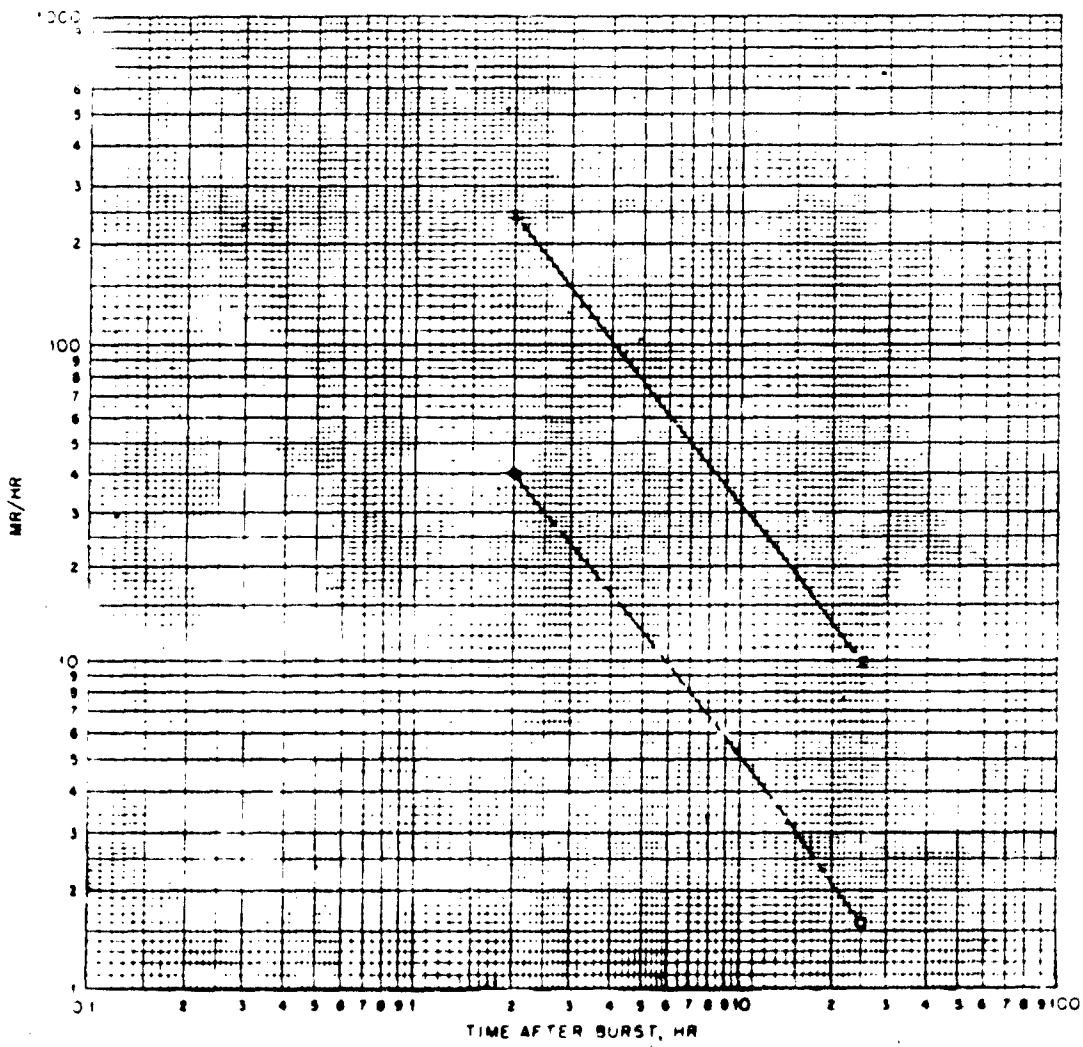


Fig. 7.4 — Decay pattern for contaminated aircraft T-33 No. 951 after Able Shot. ← →, right air intake. -•-, right compressor.

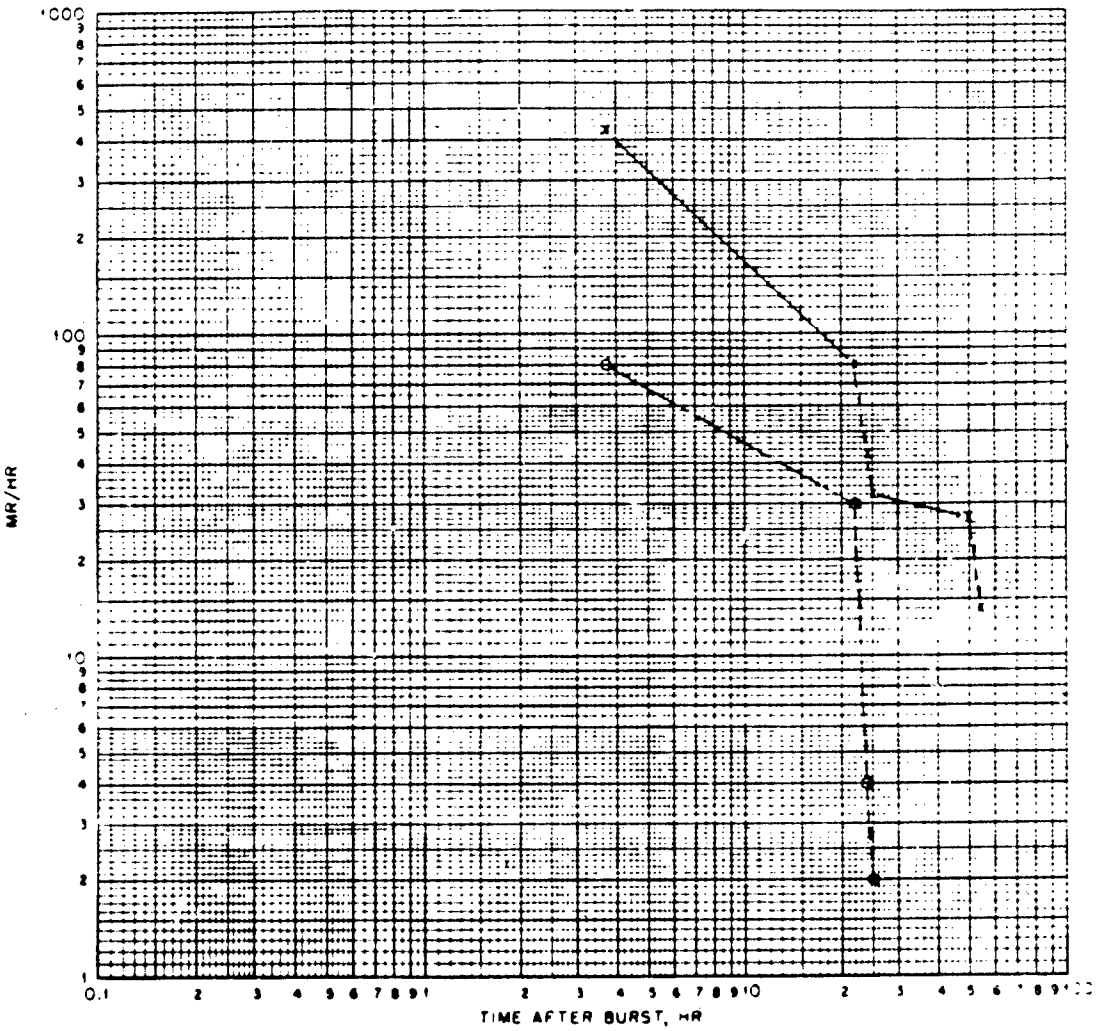


Fig. 7.5 — Decay pattern for contaminated aircraft B-29 No. 386 after Baker Shot. — —, nose. — —, air intake, engine 1. — — —, decay after treatment with gunk, detergent, and water.

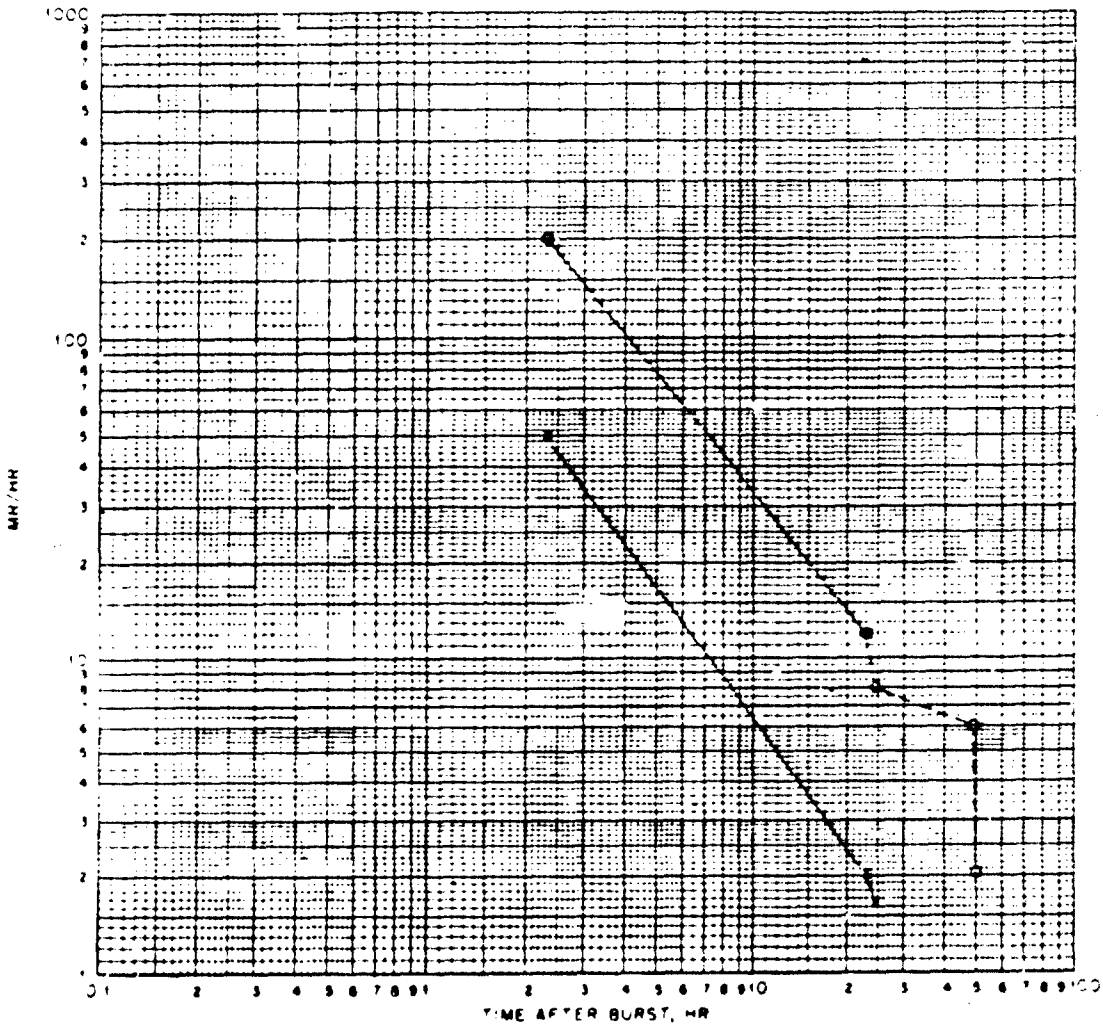


Fig. 7.6 — Decay pattern for contaminated aircraft T-33 No. 948 after Baker Shot. ---, right air intake ——, right compressor. - - - -, decay after treatment with gunk and water.

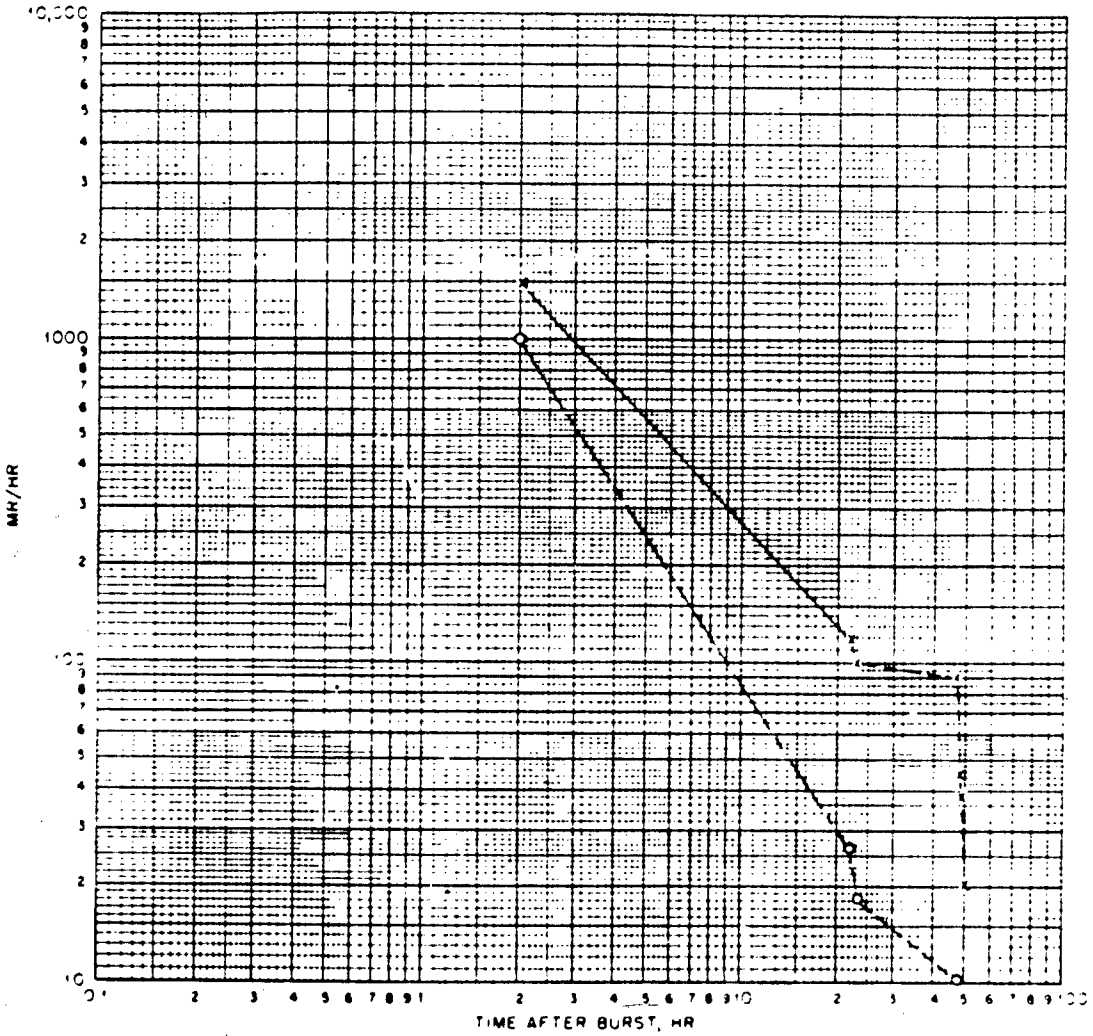


Fig. 7.7 — Decay pattern for contaminated aircraft T-33 No. 913 after Baker Shot. . . . , right air intake. -·-, right compressor. ----, decay after treatment with gunk and water.

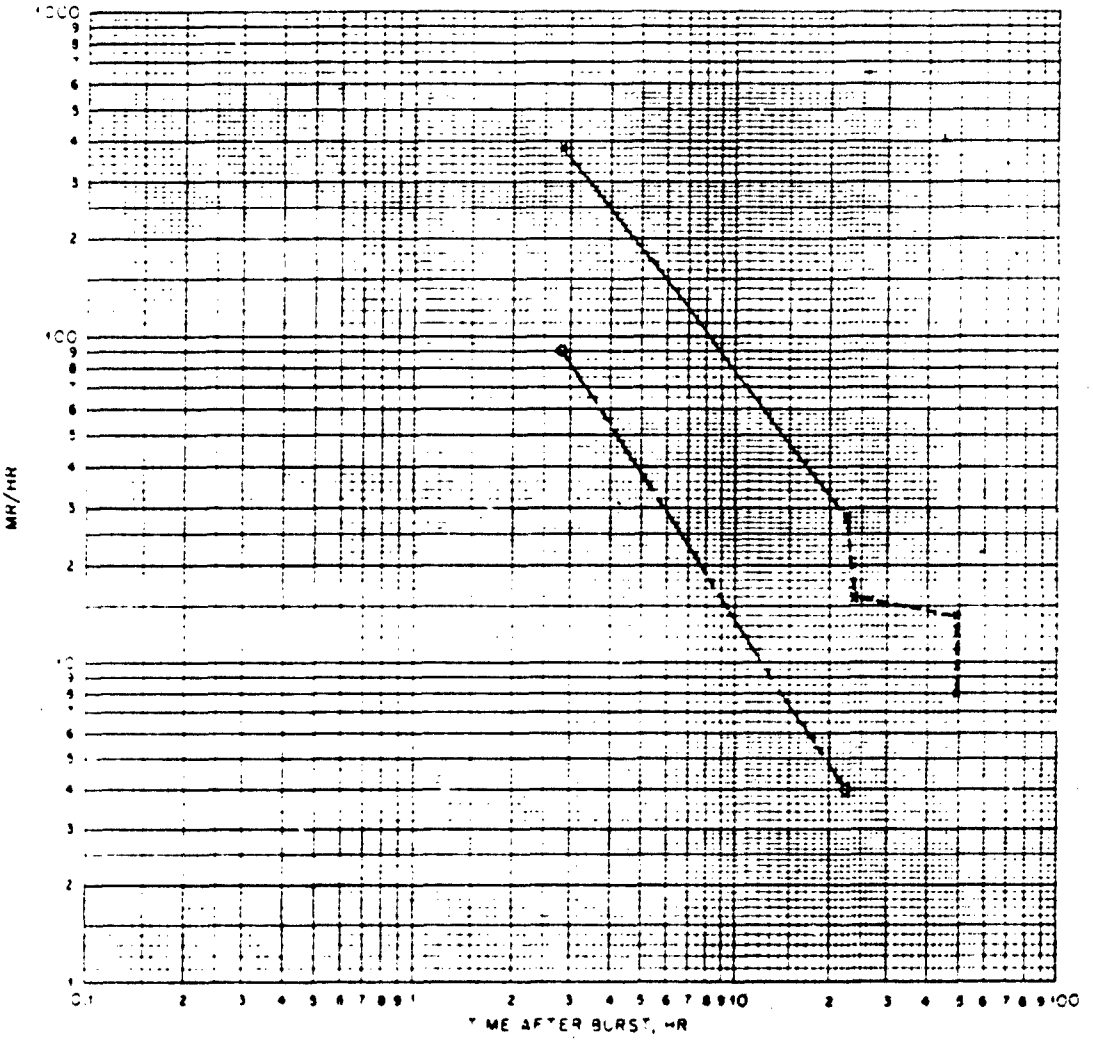


Fig. 7.8 — Decay pattern for contaminated aircraft T-33 No. 920 after Baker Shot. ← →, right air intake. -·-·, right compressor. - - - -, decay after treatment with gunk and water.

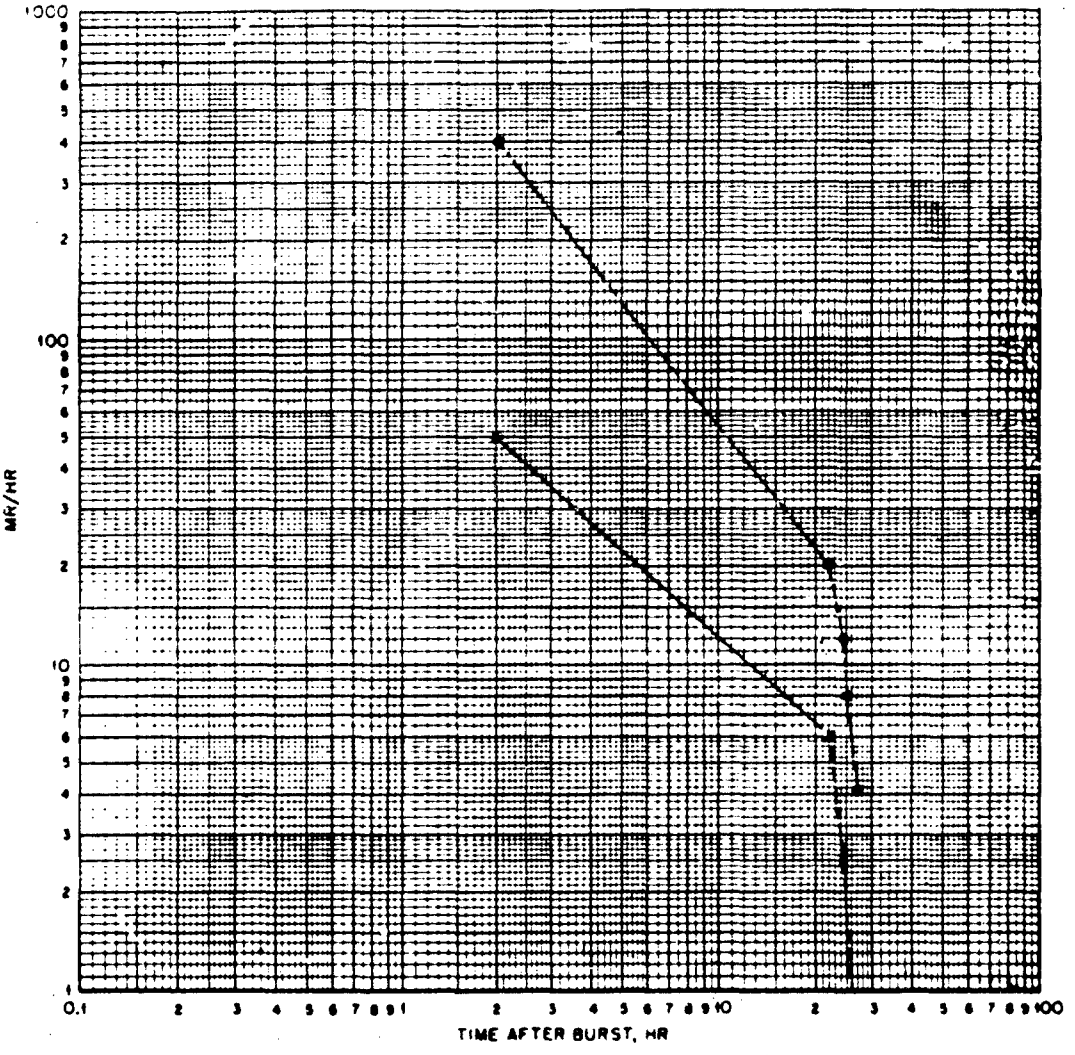


**Fig. 7.9—Decay pattern for contaminated aircraft T-33 No. 861 after Baker Shot. -•-, right air intake. ←—→, right compressor. ----, decay after treatment with gunk and water.**

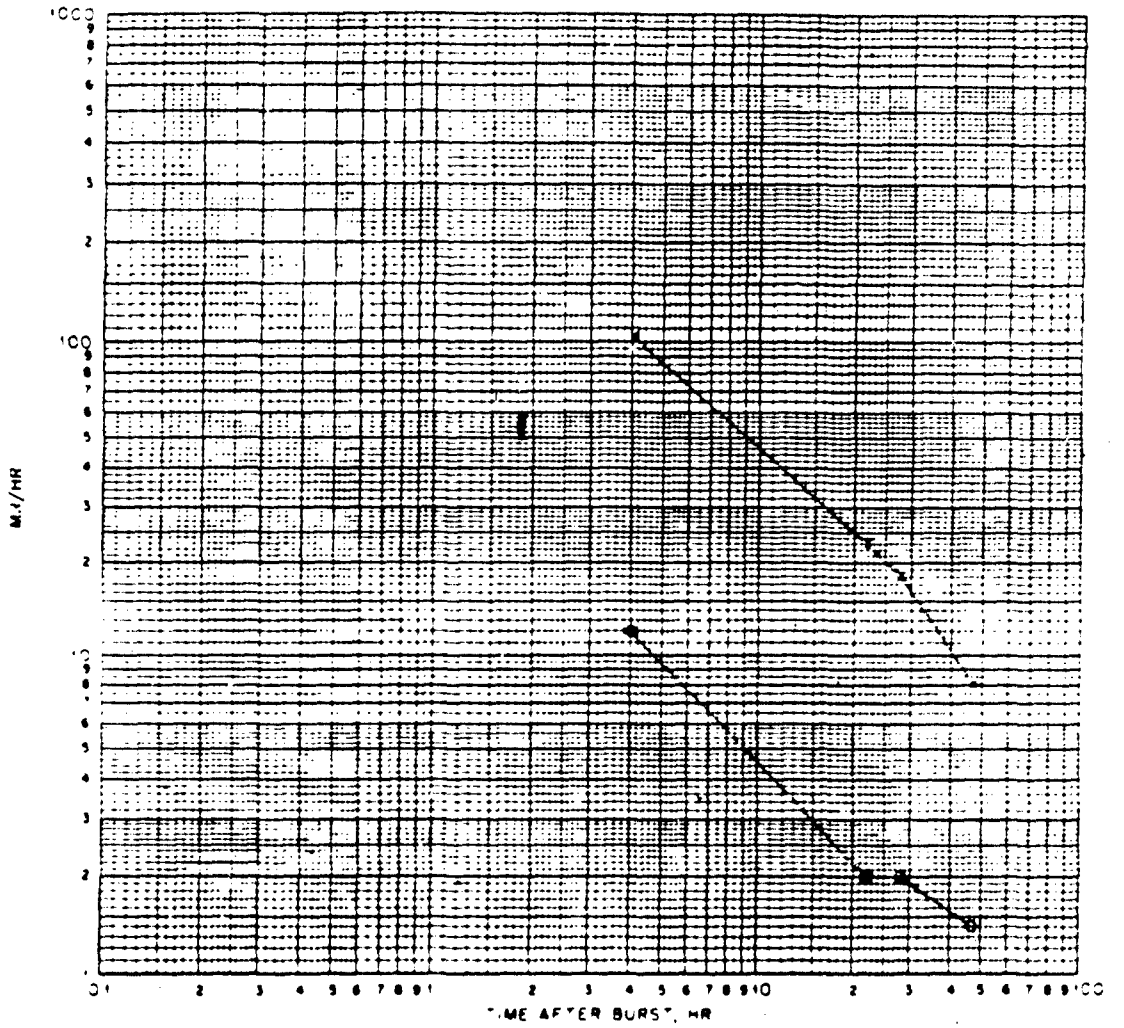


Fig. 7.10 — Decay pattern for contaminated aircraft B-29 No. 386 after Charlie Shot. ——, nose. ·-·-, air intake, engine 1. - - - -, decay after treatment with gunk, detergent, and water.

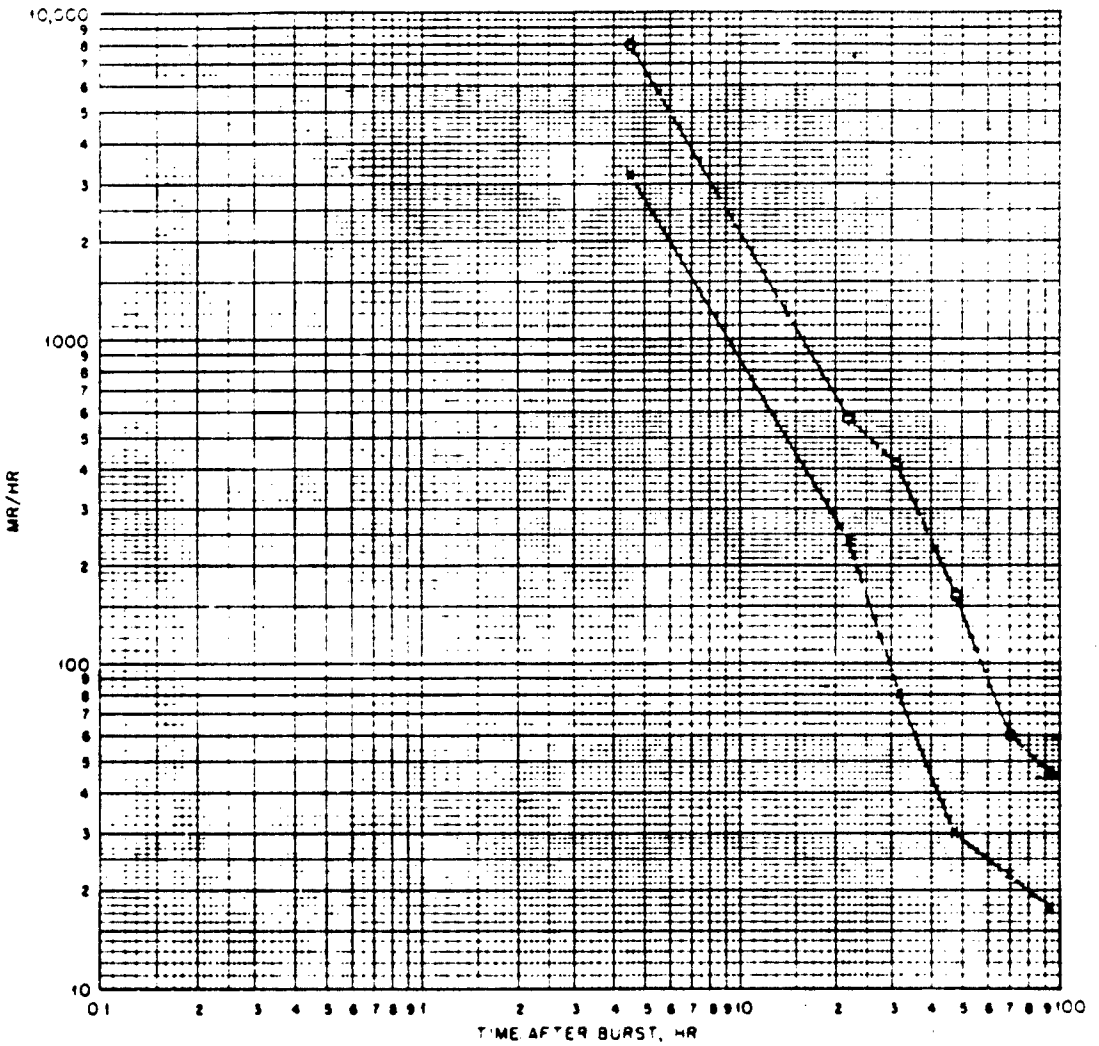


**Fig. 7.11** — Decay pattern for contaminated aircraft T-33 No. 048 after Charlie Shot. ·–, right air intake. ← →, right compressor. ----, decay after treatment with gunk, detergent, and water.

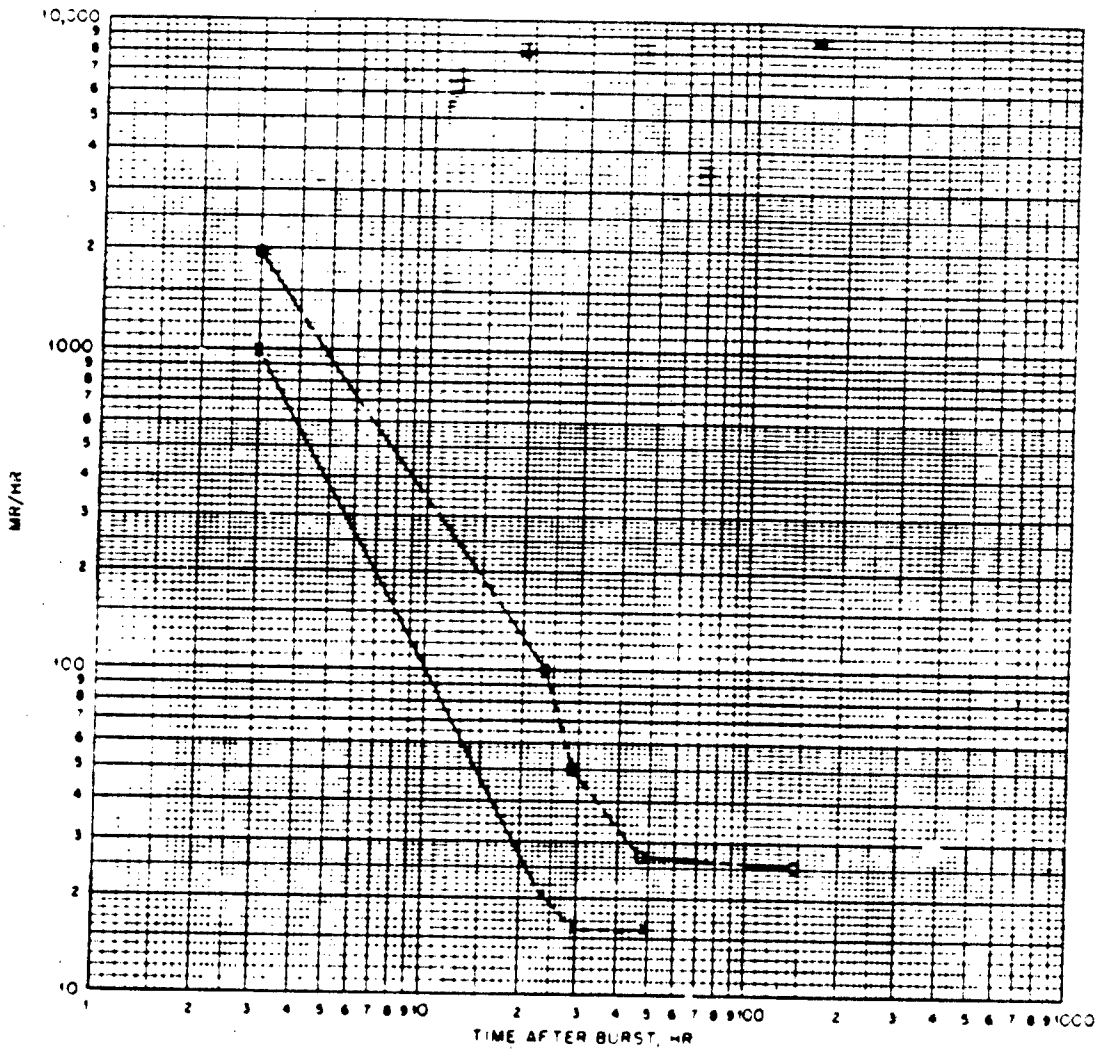


Fig. 7.12 — Decay pattern for contaminated aircraft T-33 No. 951 after Charlie Shot. —·—, right air intake. ---, right compressor. - - - -, decay after treatment with gunk, detergent, and water.

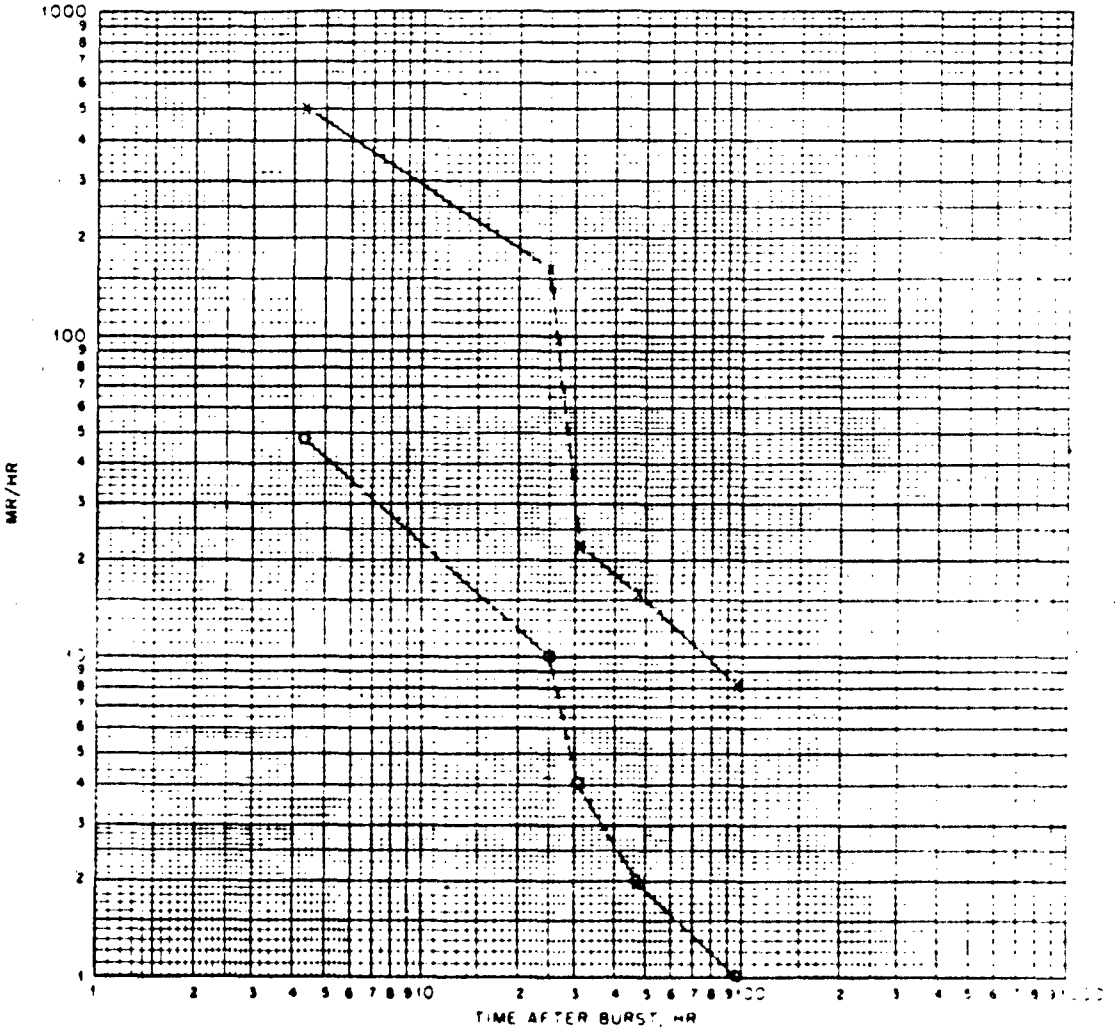


Fig. 7.13 — Decay pattern for contaminated aircraft B-29 No. 386 after Dog shot. [illegible] air intake, engine 1. ----, decay after treatment with gunk, detergent, and water.

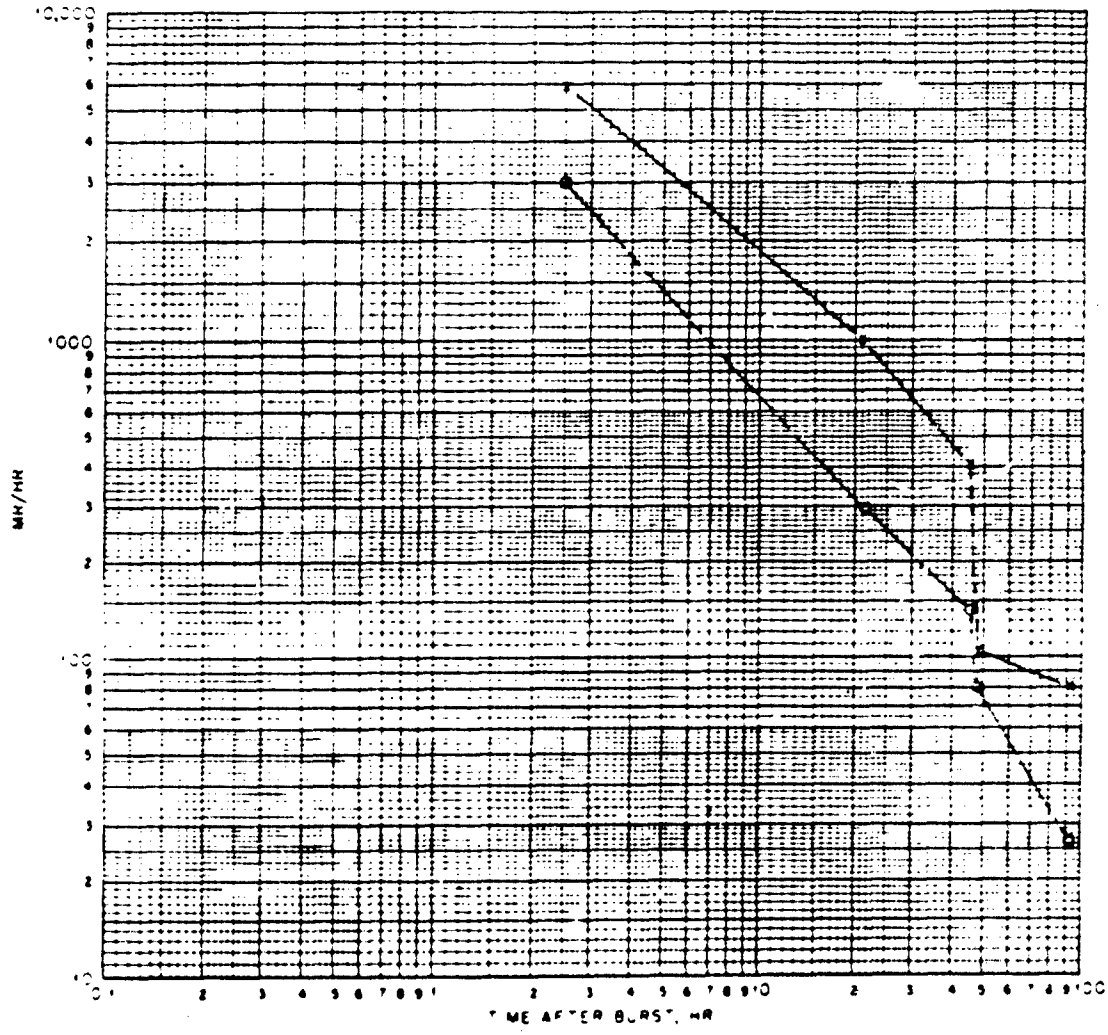


Fig. 7.14—Decay pattern for contaminated aircraft T-33 No. 913 after Dog Shot. — — , right air intake. — · — , right compressor. - - - - , decay after treatment with gunk and water.

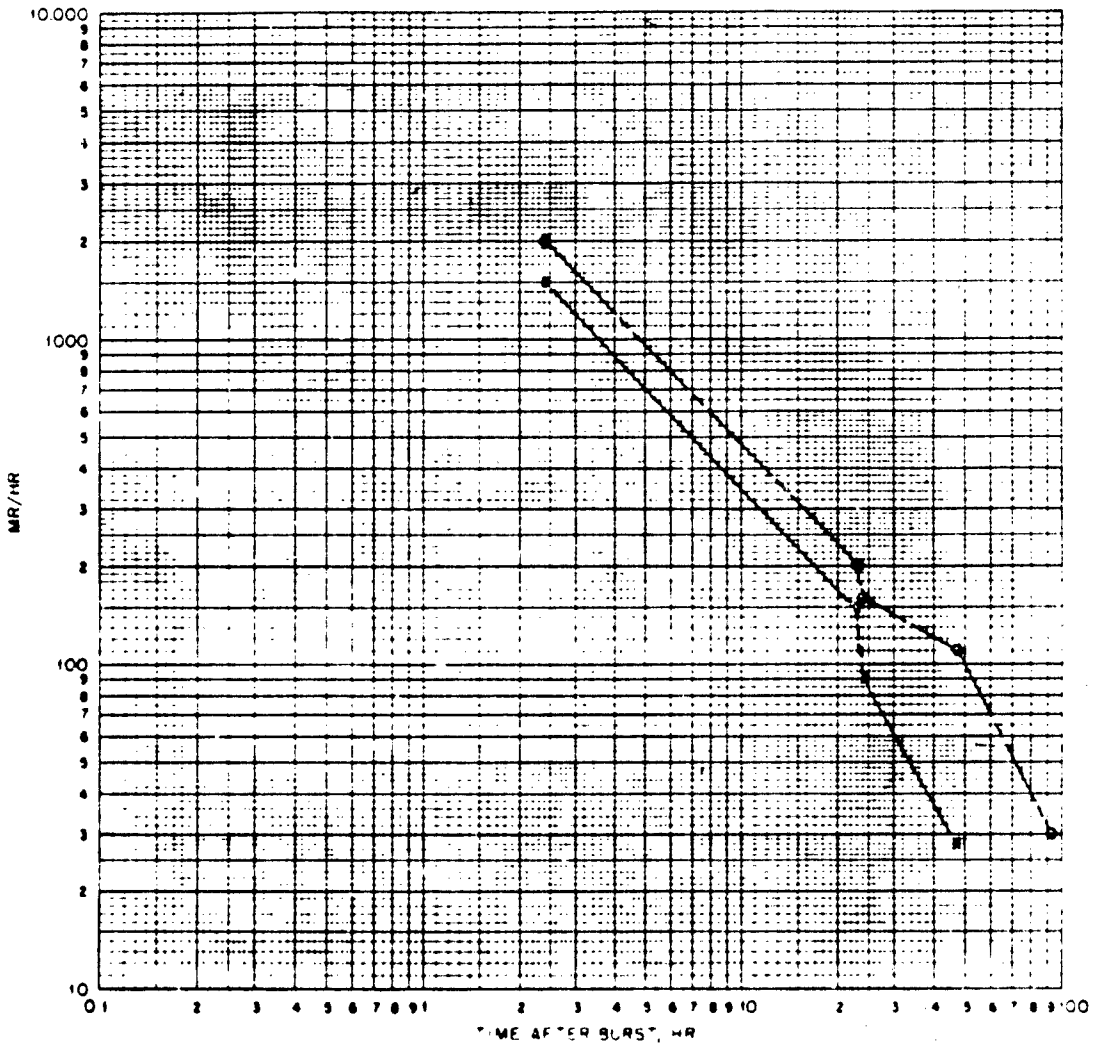


Fig. 7.15 — Decay pattern for contaminated aircraft T-33 No. 048 after Dog Shot. -·-, right air intake. ← →, right compressor. - - - -, decay after treatment with gunk and steam.

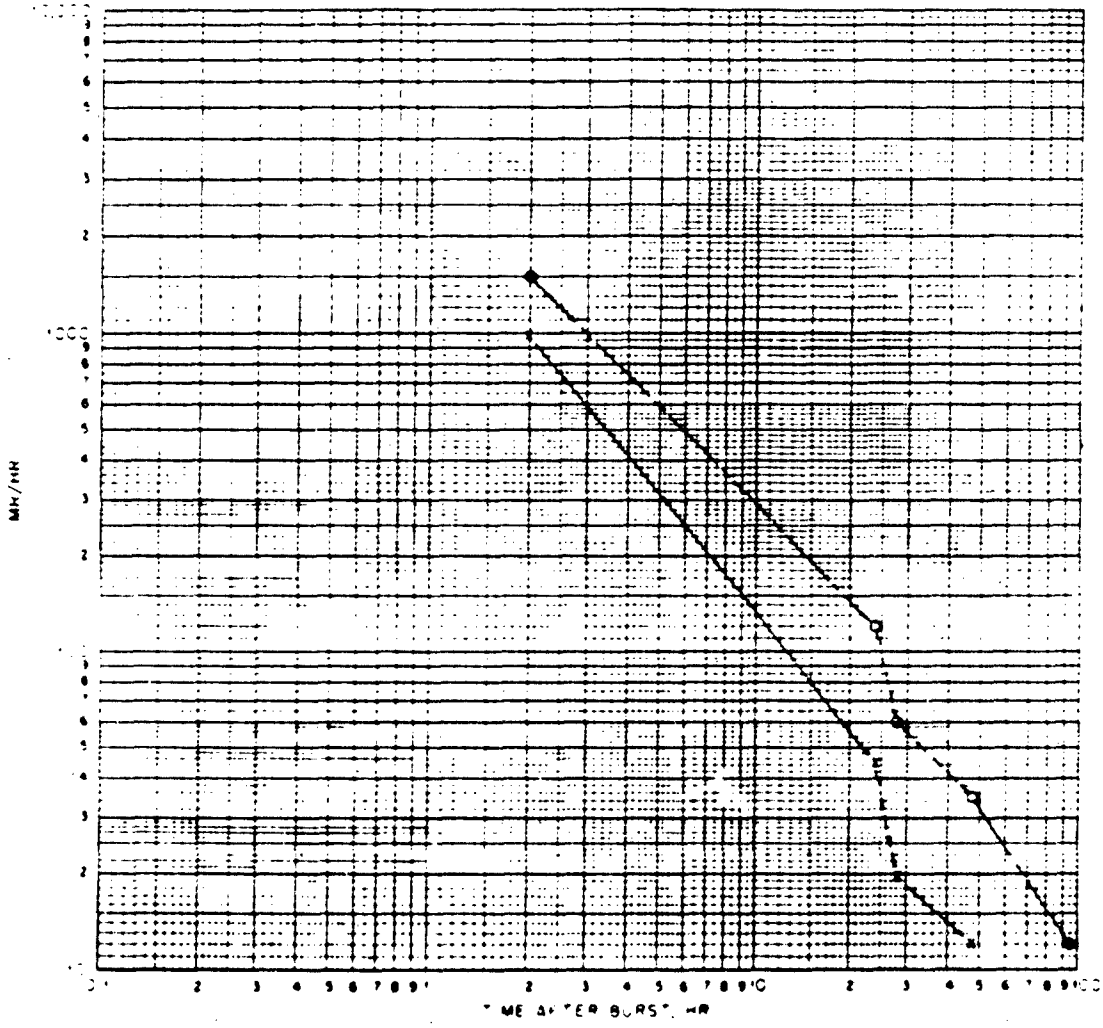


Fig. 7.16 — Decay pattern for contaminated aircraft T-33 No. 351 after Dog Shot. ——, right air intake. — —, right compressor. - - - -, decay after treatment with gunk and water.

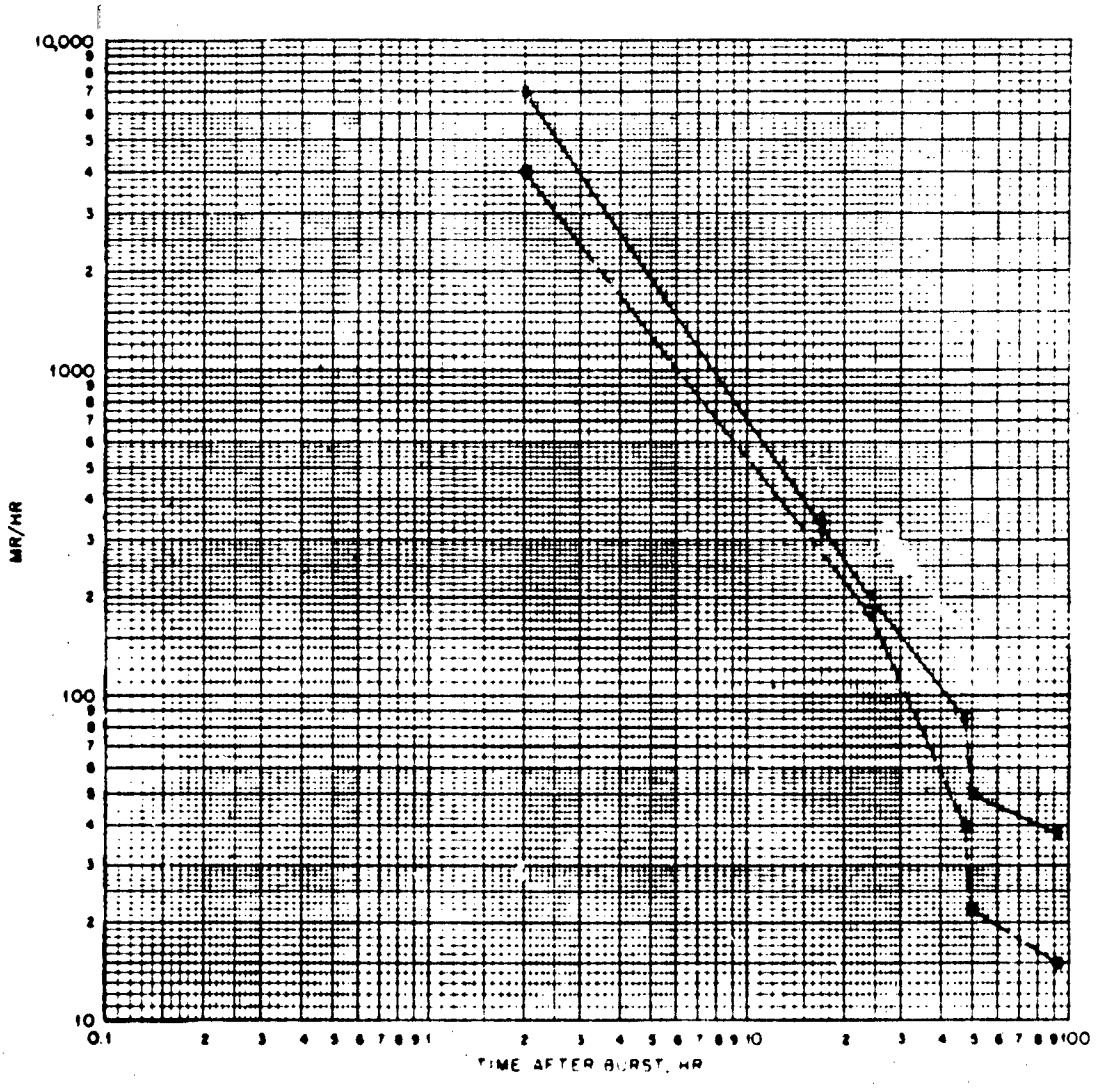


**Fig. 7.17 — Decay pattern for contaminated aircraft T-33 No. 920 after Dog Shot. ——, right air intake. -·-, right compressor. - - - -, decay after treatment with gunk and water.**

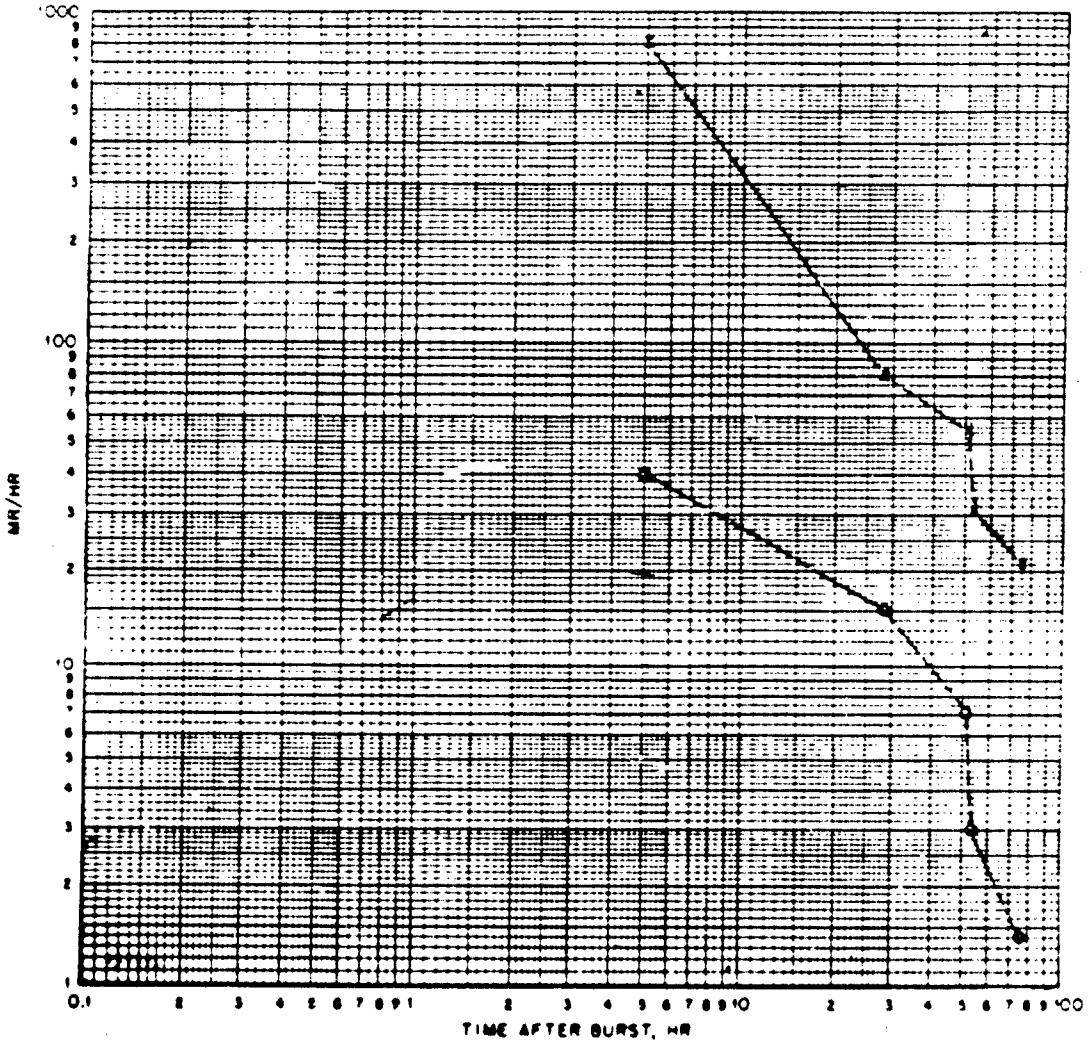


Fig. 7.18 — Decay pattern for contaminated aircraft B-29 No. 260 after Easy Shot. ← →, nose. ---, air intake, engine 1. ----, decay after treatment with gunk, detergent, and water.

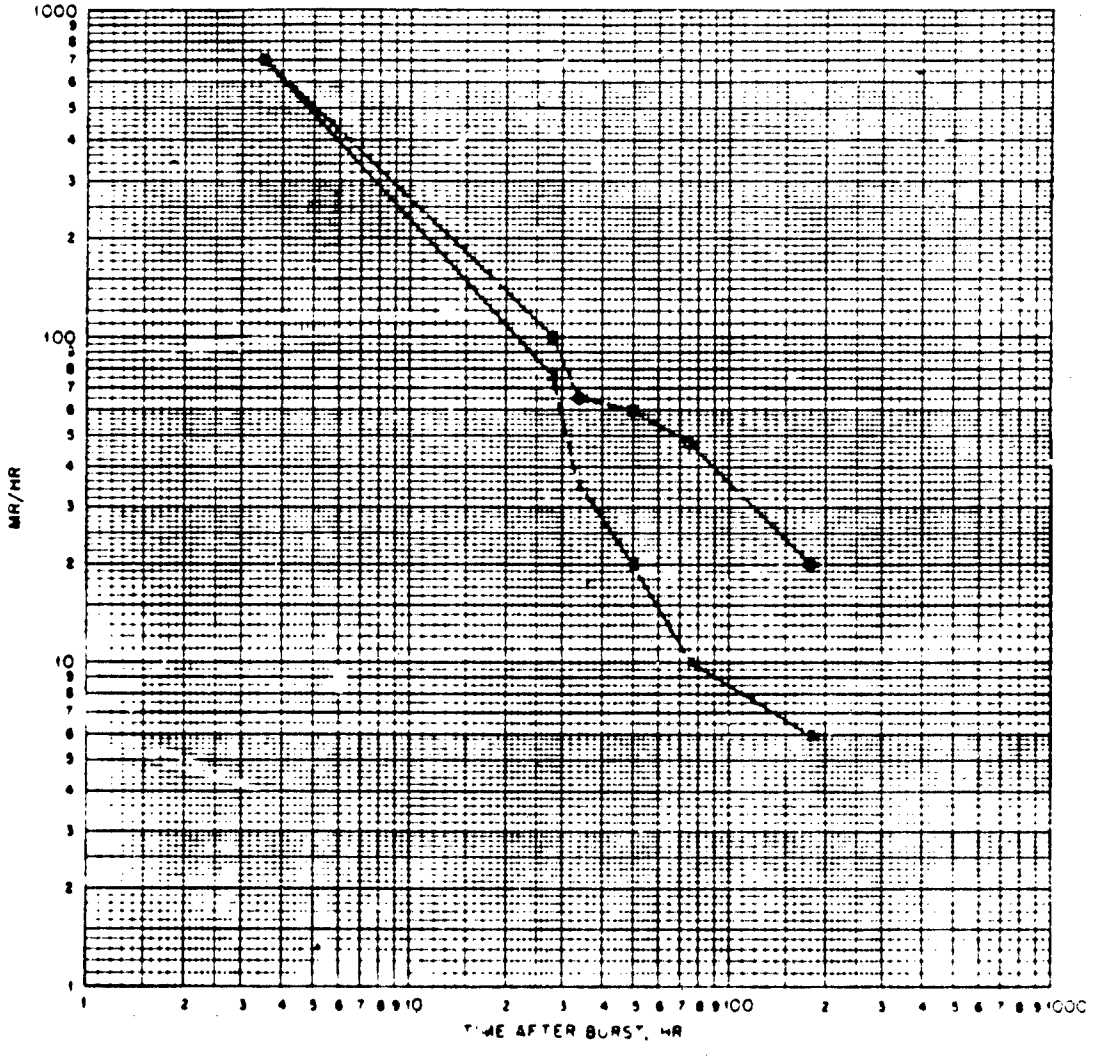


Fig. 7.19 — Decay pattern for contaminated aircraft T-33 No. 913 after Easy Shot. ·-·, right air intake. ←—→, right compressor. ----, decay after treatment with gunk, soap, and water

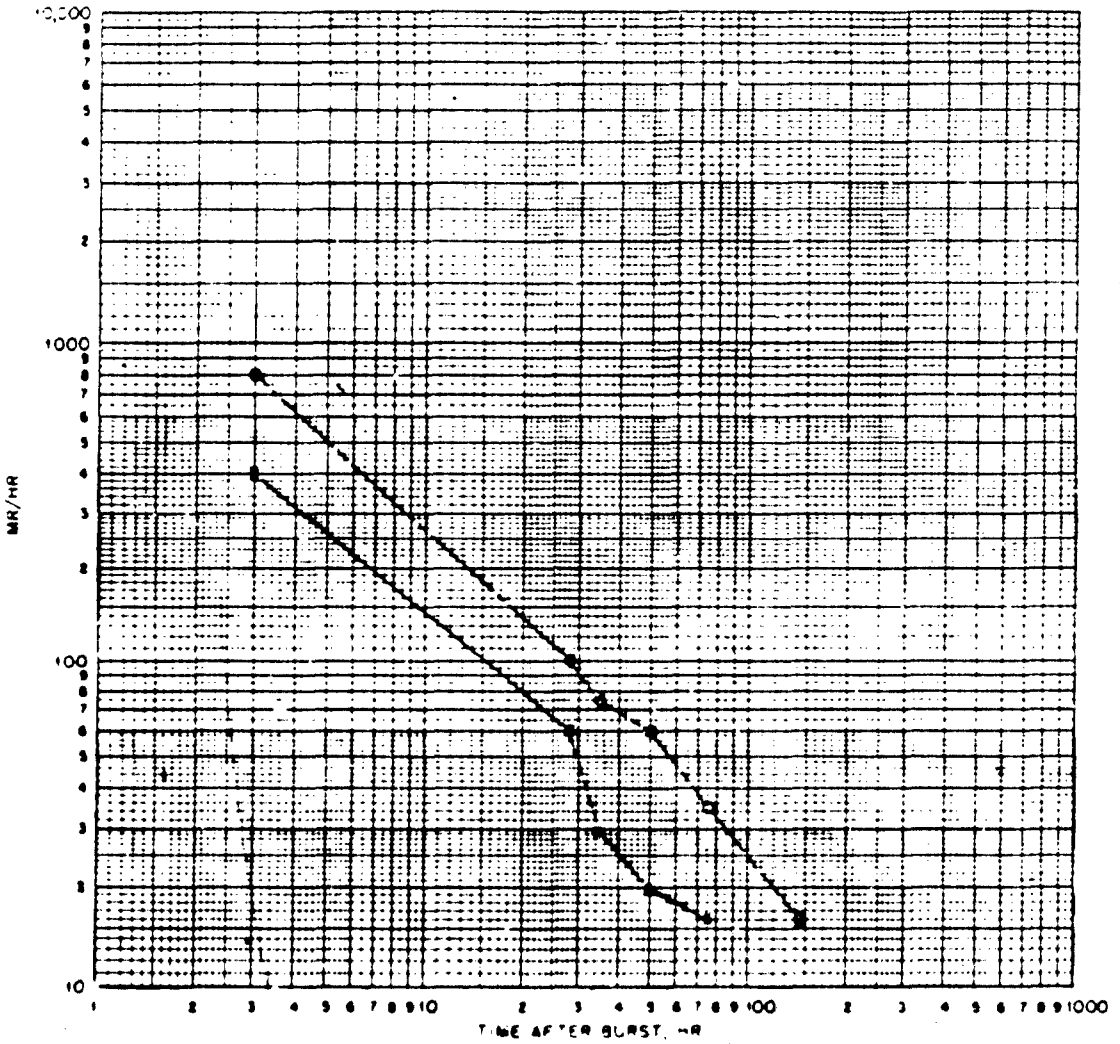


Fig. 7.20 — Decay pattern for contaminated aircraft T-33 No. 920 after Easy Shot. -•-, right air intake. ← →, right compressor. -----, decay after treatment with gunk, soap, and water.