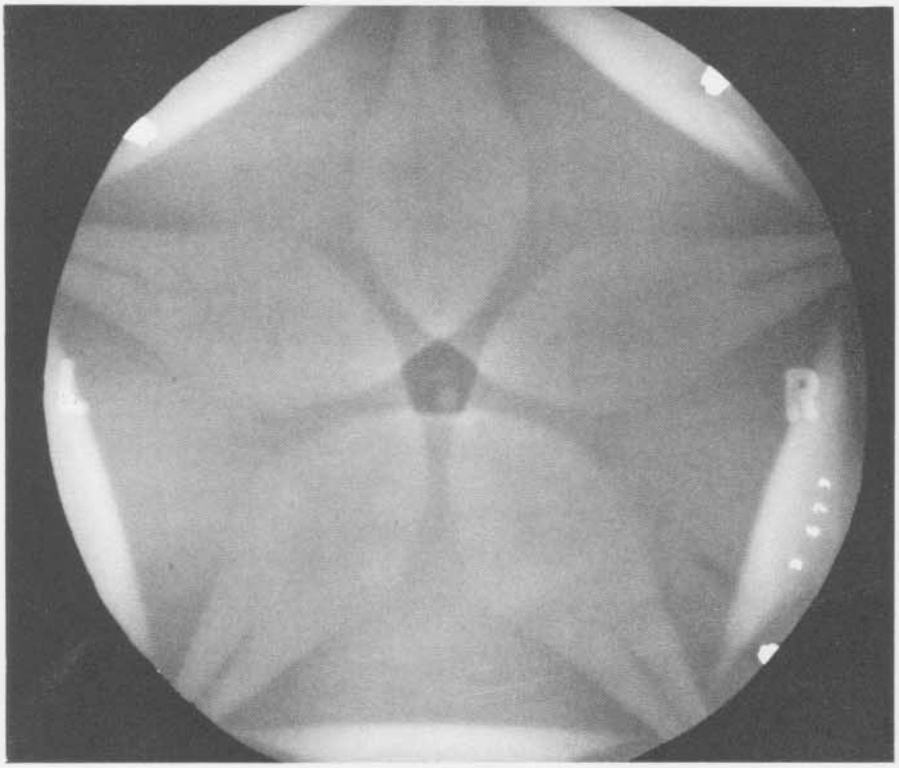
LASL PHERMEX DATA
VOLUME II



LOS ALAMOS SERIES ON DYNAMIC MATERIAL PROPERTIES

LASL PHERMEX DATA
VOLUME II

Editor
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INTRODUCTION

About 15 years ago, a unique and important flash-radiographic facility became operational at the Los Alamos Scientific Laboratory. This facility is known as PHERMEX, which is an acronym for *P*ulsed *H*igh *E*nergy *R*adiographic *M*achine *E*mitting *X* rays. The PHERMEX machine is a high-current, 30-MeV, linear electron accelerator that produces very intense but short-duration bursts of bremsstrahlung from a thin tungsten target for flash radiographic studies of explosives and explosive-driven metal systems. The facility was built in the early 1960s to complement other hydrodynamics facilities at Los Alamos and to implement studies of shock waves, jets, spalling, detonation characteristics of chemical explosives, and other hydrodynamic phenomena.

Flash radiography has been used in diagnosing explosive-driven systems for about 40 years and has provided direct observation of dynamic processes. The size of systems that could be radiographed dynamically using conventional equipment has always been severely limited by the poor ability of the available x-ray flux to penetrate the blast protection devices. PHERMEX, however, was designed and built to overcome these limitations and to permit precise radiography of large systems containing materials of high atomic number.

PHERMEX has been used to study materials in various geometries under a variety of shock conditions. Over 1800 unclassified radiographs will be presented and described in the LASL PHERMEX data collection. This is the second of the five volumes scheduled for publication by the LASL Data Center. The PHERMEX facility is described in Volume I.

DATA PRESENTATION

The PHERMEX data, starting with Shot 401, are presented by increasing shot number, which increases according to the date the shot was planned, not necessarily the date on which it was fired. A few shots either failed or were never completed. A descriptive shot title is given, along with the date on which the shot was fired and the name of the person who originated the experiment. The radiographic time is that from initiation of the detonator to the middle of the radiograph pulse. The radiograph pulse width is 0.2 μs. The plane-wave lens and detonator burning times (typical of the PHERMEX firing system) used to estimate other times were

P-040	13.5 μs,
P-081	22.5 μs,
P-120	29.5 μs.

Literature that describes a shot or its general purpose is cited. The purpose of the shot and important features of the radiograph are discussed. The experimental setup is sketched, and certain dimensions pertinent to each shot are given in millimeters. The distance, h, of the beam axis from some shot geometry location is given. All available static radiographs are presented, and the dynamic radiographs are shown on the same scale.

The first few hundred shots, described in Volume I, were designed to survey various topics of interest in the fields of shock hydrodynamics and detonations. The process of jet formation from grooved aluminum and steel plates was investigated extensively.

Shots 401 through 800, described in this volume, examined the dynamic fracture of other materials and the particle velocity flow patterns of detonation products. Materials such as iron, antimony, bismuth, and boron nitride, which exhibit phase change upon being shocked, were examined. Mach and regular reflections in metals and explosives were studied.

Table I is a cumulative summary of the dynamic fracture shots. Table II presents the spalling thicknesses observed in aluminum, copper, nickel, thorium, uranium, beryllium, lead, tin, zinc, and steel. Part of the data is from the shots described in Vol. I of the LASL PHERMEX data.

TABLE I

DYNAMIC FRACTURE SHOTS[a]

Shot No.	Explosive[b] Thickness (mm)	Material	Material Thickness (mm)	Radiographic Time (μs)
60	101.6	2024 aluminum	25.4	34.1
61	101.6	2024 aluminum	25.4	37.9
62	101.6	2024 aluminum	25.4	46.0
63	101.6	2024 aluminum	25.4	53.9
68	101.6	2024 aluminum	24.5	28.9
69	101.6	2024 aluminum	24.6	31.4
70	101.6	2024 aluminum	24.6	33.9
76	101.6	2024 aluminum	25.1	28.0
77	101.6	2024 aluminum	25.0	32.9
78	101.6	2024 aluminum	25.0	32.9
79	101.6	2024 aluminum	25.1	27.3
80	101.6	2024 aluminum	25.0	30.9
81	101.6	2024 aluminum	25.0	30.8
82	101.6	2024 aluminum	25.0	33.9
83	101.6	2024 aluminum	1	30.5
84	101.6	2024 aluminum	3	30.7
85	101.6	2024 aluminum	6	31.2
88	101.6	2024 aluminum	12	32.0
89	101.6	2024 aluminum	25.0	33.9
97	101.6	2024 aluminum	25.0	33.9
102	101.6	aluminum	3	34.3
103	101.6	aluminum	3	38.3
104	101.6	aluminum	6	38.4
105	101.6	aluminum	6	34.29
107	101.6	aluminum	6	28.43

[a]A P-040 lens was used throughout, except in Shots 245-247 for which a P-081 lens was used.

[b]Composition B-3 was used throughout, except in Shots 470-473 for which PBX-9404 was used.

Table I (cont)

Shot No.	Explosive[b] Thickness (mm)	Material	Material Thickness (mm)	Radiographic Time (μs)
108	101.6	aluminum	12	34.30
109	101.6	aluminum	12	30.43
110	101.6	aluminum	12	42.29
115	101.6	nickel	25.4	38.0
116	101.6	nickel	25.4	45.29
129	101.6	uranium	1	34.4
130	101.6	thorium	1	34.41
131	101.6	uranium	25	43.28
132	101.6	thorium	25	41.44
133	101.6	uranium	12	39.64
165	101.6	uranium	25	39.39
166	38.1	uranium	25	33.40
167	101.6	uranium	25	41.42
168	101.6	uranium	12	33.8
169	19.05	uranium	12	25.35
170	6.35	uranium	12	25.72
171	101.6	uranium	6	30.55
172	101.6	thorium	25	37.41
173	50.8	thorium	25	32.89
174	38.1	thorium	25	31.33
175	101.6	thorium	12	32.76
176	19.05	thorium	12	29.27
177	12.7	nickel	25	27.28
178	12.7	nickel	12	25.05
179	101.6	thorium	6	29.56
191	101.6	water	25.4	34.83
211	6.35	aluminum	25	18.28
212	6.35	aluminum	6	16.39
213	101.6	aluminum	6	37.53
222	101.6	aluminum	25	26.95
223	101.6	aluminum	25	27.88
224	101.6	aluminum	25	28.90
226	101.6	aluminum	25	29.89
227	101.6	aluminum	25	30.41
228	101.6	aluminum	25	30.92

Table I (cont)

Shot No.	Explosive[b] Thickness (mm)	Material	Material Thickness (mm)	Radiographic Time (μs)
229	101.6	aluminum	25	31.41
230	101.6	aluminum	25	32.40
231	101.6	aluminum	25	32.92
232	101.6	aluminum	25	33.42
234	101.6	aluminum	25	36.43
235	101.6	aluminum	25	36.40
236	101.6	aluminum	25	26.93
238	101.6	aluminum	25	32.43
239	19.05	copper	12	26.64
240	12.7	copper	12	25.25
241	19.05	aluminum	12	22.50
242	25.4	nickel	25	28.89
245	101.6	aluminum	6	38.24
246	6.35	aluminum	6	28.24
247	101.6	aluminum	6	37.51
270	19.05	nickel	12	25.91
271	50.8	beryllium	25	28.34
305	101.6	aluminum	25	33.38
348	50.8	aluminum	25	24.77
349	38.1	aluminum	25	23.02
355	50.8	aluminum	25	25.25
356	50.9	aluminum	25	25.71
357	50.8	aluminum	25	26.23
358	38.1	aluminum	25	25.07
359	38.1	aluminum	25	23.53
360	38.1	aluminum	25	24.02
361	38.1	aluminum	25	24.52
379	6.35	beryllium	25	21.52
380	25.4	beryllium	25	23.94
381	50.8	beryllium	25	27.04
382	38.1	beryllium	12	24.33
383	19.05	beryllium	12	21.95
384	12.7	beryllium	12	21.07
385	6.35	beryllium	6	19.60
386	25.4	aluminum	25	23.73

Table I (cont)

Shot No.	Explosive[b] Thickness (mm)	Material	Material Thickness (mm)	Radiographic Time (μs)
387	213.2	aluminum	25	46.10
389	50.8	copper	25	32.38
390	38.1	copper	25	31.00
391	25.4	copper	25	29.2
392	50.8	nickel	25	32.10
393	38.1	nickel	25	30.55
394	25.4	nickel	25	28.88
395	25.4	thorium	25	29.70
396	12.7	thorium	25	28.09
401	50.8	uranium	25.0	32.8
402	38.1	uranium	25.0	31.2
403	25.4	uranium	25.0	29.66
462	6.35	copper	6.0	23.4
463	50.8	uranium	25.0	33.76
464	25.4	copper	25.0	30.68
465	50.8	nickel	25.0	32.07
466	25.4	uranium	25.0	32.54
467	101.6	beryllium	25.0	33.4
468	12.7	beryllium	25.0	22.24
469	12.7	aluminum	12.0	20.52
470	50.8[b]	aluminum	25.0	26.0
471	25.4[b]	aluminum	25.0	23.14
472	12.7[b]	beryllium	12.0	21.04
473	25.4[b]	beryllium	25.0	23.47
486	101.6	aluminum	25.0	33.41
494	101.6	beryllium	25.0	36.48
496	12.7	aluminum	25.0	23.52
498	12.7	thorium	12.0	26.46
499	12.7	uranium	12.0	26.39
500	12.7	copper	25.0	27.59
501	6.35	copper	6.0	23.4
502	6.35	uranium	6.0	23.97
506	203.2	aluminum	25.0	46.12
507	12.7	uranium	25.0	31.95
508	12.7	beryllium	12.0	22.3

Table I (cont)

Shot No.	Explosive[b] Thickness (mm)	Material	Material Thickness (mm)	Radiographic Time (μs)
509	101.6	beryllium	25.0	36.75
517	101.6	lockalloy[c]	25.0	34.02
518	50.8	lockalloy[c]	25.0	26.2
519	38.1	lockalloy[c]	25.0	24.99
520	25.4	lockalloy[c]	25.0	23.71
521	12.7	lockalloy[c]	12.0	20.51
522	19.05	lockalloy[c]	12.0	22.35
604	101.6	lead	25.0	43.41
605	50.8	lead	25.0	37.03
606	38.1	lead	25.0	35.32
607	25.4	lead	25.0	33.82
608	12.7	lead	25.0	32.23
609	12.7	lead	12.0	28.55
610	19.05	lead	12.0	29.32
611	101.6	thorium	25.0	43.36
624	12.7	nickel	25.0	27.32
625	50.8	nickel	25.0	32.10
626	19.05	beryllium	12.0	21.86
627	12.7	beryllium	12.0	21.02
628	6.35	beryllium	6.0	19.56
640	101.6	tin	25.0	41.75
691	101.6	773 K aluminum	25.0	33.41
692	101.6	78 K lead	25.0	43.39
693	38.1	78 K lead	25.0	35.29
694	50.8	78 K lead	25.0	36.99
695	25.4	78 K lead	25.0	33.83
696	25.4	78 K lead	25.0	32.19
701	12.7	tin	25.0	29.61
702	12.7	tin	25.0	33.82
711	12.7	78 K lead	12.0	28.52
712	50.8	tin	25.0	35.41
713	12.7	tin	12.0	27.75
714	19.05	tin	12.0	28.79
715	50.8	beryllium	25.0	28.36
726	25.4	zinc	25.0	29.72

[c]Lockalloy is 38% aluminum and 62% beryllium; ρ_0 = 2.1 g/cm^3.

TABLE II

OBSERVED SPALL LAYER THICKNESSES
(mm)

HE[a]/Metal (mm)	Aluminum[b]	Copper[c]	Nickel[d]	Thorium[e]	Uranium[f]	Beryllium[g]	Lead[h]	Tin	Zinc	Steel[i]
200/25	2.5 ± 0.1									
100/25	2.6 ± 0.2	2.4 ± 0.2	3.3 ± 0.2	none	2.2 ± 0.2	2.5 ± 0.2	1.3 ± 0.2		2.35 ± 0.1	3.0 ± 0.2
51/25	2.4 ± 0.2	2.2 ± 0.2	2.9 ± 0.2	1.6 ± 0.2	2.0 ± 0.3	3.3 ± 0.2	1.1 ± 0.2	1.7 ± 0.2	2.35 ± 0.1	
38.1/25	2.1 ± 0.2	1.95 ± 0.2	2.9 ± 0.2	1.7 ± 0.1	1.9 ± 0.3	2.2 ± 0.2	0.85 ± 0.2	1.65 ± 0.2	2.30 ± 0.1	2.55 ± 0.1
25/25	1.85 ± 0.2	1.7 ± 0.2	2.6 ± 0.2	1.4 ± 0.1	1.95 ± 0.2	2.0 ± 0.2	1.0 ± 0.2	1.4 ± 0.1	1.95 ± 0.1	2.4 ± 0.1
12.7/25	1.8 ± 0.1	1.65 ± 0.2	2.2 ± 0.1	1.7 ± 0.1	2.0 ± 0.3	1.8 ± 0.2	1.2 ± 0.1	1.65 ± 0.1	2.38 ± 0.1	2.95 ± 0.1
19/12	1.45 ± 0.1	1.3 ± 0.2	1.85 ± 0.1	1.2 ± 0.1	1.6 ± 0.2	1.3 ± 0.2	0.75 ± 0.2	1.2 ± 0.1	1.45 ± 0.1	1.8 ± 0.1
12.7/12	1.5 ± 0.1	1.2 ± 0.2	1.7 ± 0.2	1.15 ± 0.1	1.7 ± 0.2	1.0 ± 0.2	0.40 ± 0.1	1.1 ± 0.2	1.6 ± 0.1	1.75 ± 0.1
6.37/25	none					2.4 ± 0.2				
6.37/6	0.7 ± 0.2	0.85 ± 0.1			1.45 ± 0.1	0.9 ± 0.1				
100/12	2.2 ± 0.2			none	2.2					
100/6	2.3 ± 0.2			none	none					
100/3	none									
100/1	none				none					

[a]The HE driver was Composition B-3, whose initial density was about 1.73 g/cm³.

[b]Aluminum specimens were Type 1100-F.

[c]Electrolytic tough pitch (ETP) copper was used.

[d]Commercially pure "A" nickel was used.

[e]High-purity (11.66-g/cm³) thorium was supplied by Oak Ridge.

[f]The uranium was 99.9% pure, at 18.93 g/cm³.

[g]General Astrometals Corporation Grade B-2 beryllium was used. This resembles Brush Corporation beryllium S-200-C. Several shots with beryllium used vacuum-cast material. The data for this material lay within the error flags for the GB-2 beryllium.

[h]Lead plates were formed from commercially pure deep-rolled material.

[i]This was 347 stainless steel.

Table I (cont)

Shot No.	Explosive[b] Thickness (mm)	Material	Material Thickness (mm)	Radiographic Time (μs)
727	25.4	tin	25.0	30.18
729	50.8	zinc	25.0	32.93
730	101.6	zinc	25.0	39.35
731	50.8	zinc	25.0	28.15
732	38.1	zinc	25.0	31.34
733	12.7	zinc	12.0	25.52
734	19.05	zinc	12.0	26.34
736	25.4	beryllium	25.0	25.15
756	19.05	347 steel	12.0	29.92
757	12.7	347 steel	12.0	29.27
758	12.7	347 steel	25.0	31.27
759	25.4	347 steel	25.0	32.89
760	38.1	347 steel	25.0	34.45
761	101.6	347 steel	25.0	42.46
762	50.8	347 steel	25.0	36.11
788	38.1	cobalt	25.0	30.44
789	12.7	cobalt	25.0	27.26
794	50.8	cobalt	25.0	32.57
795	25.4	cobalt	25.0	28.82

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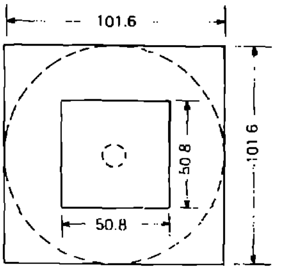
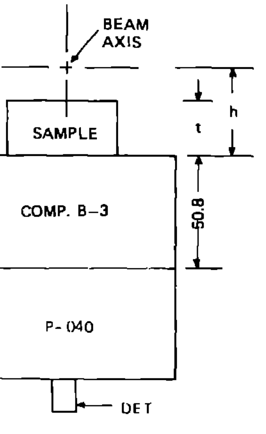
CATALOG OF SHOT SUBJECTS, PHERMEX SHOTS 1 THROUGH 800 (VOLUMES I AND II)

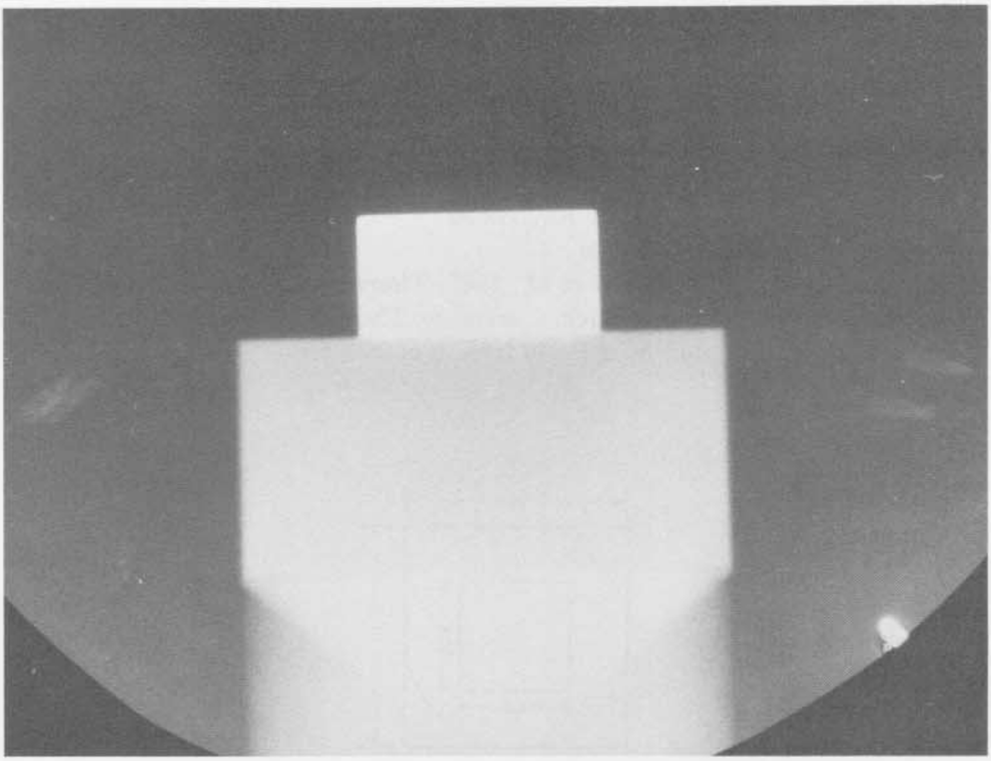
PHERMEX SHOTS 401 THROUGH 800

SHOT 401: **Dynamic Fracture of Uranium**
Date: December 22, 1965
Experimenter: Benny Ray Breed
Radiographic Time: 32.8 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, uranium. The plate is shocked by 50.8 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

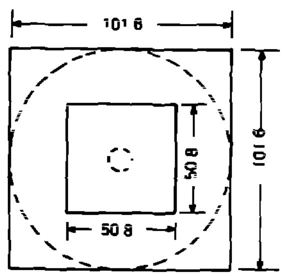


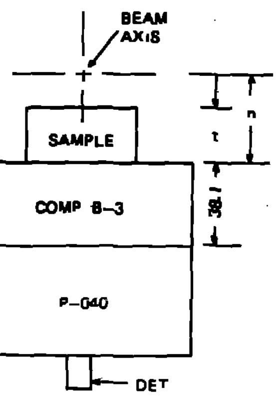


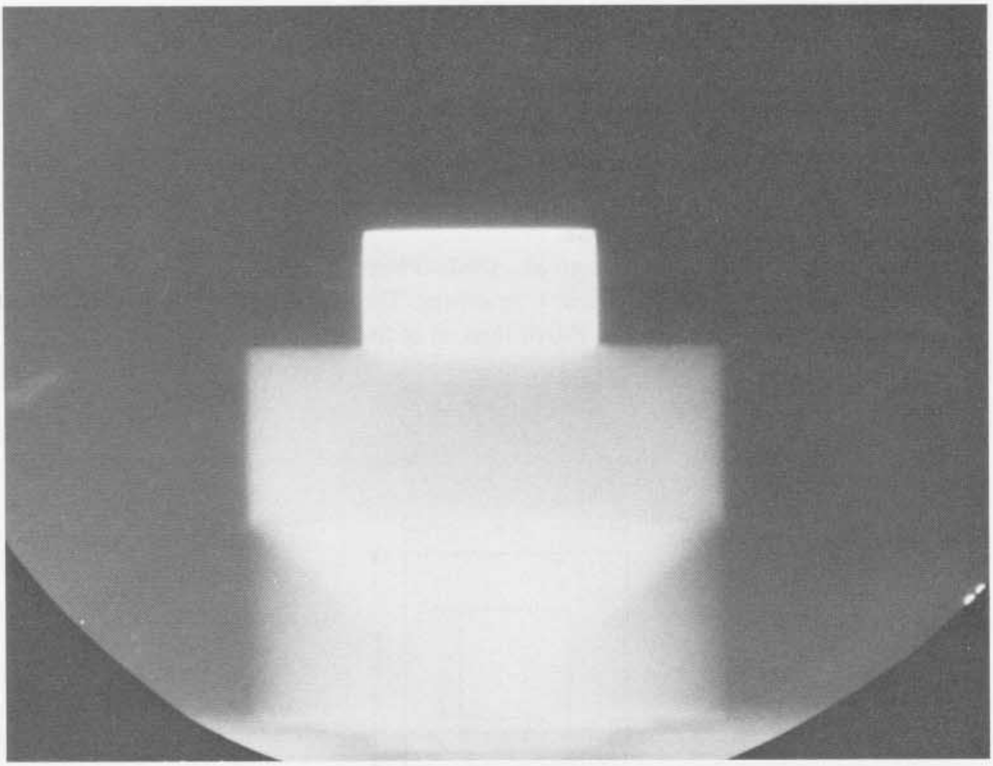


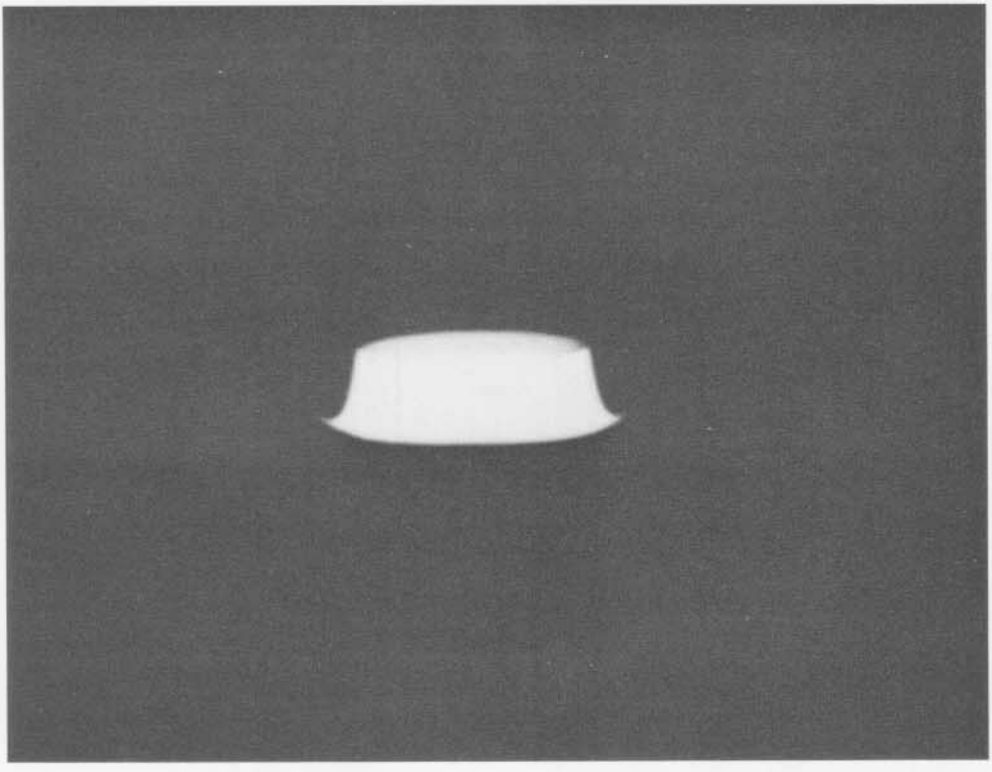
SHOT 402: **Dynamic Fracture of Uranium**
Date: December 30, 1965
Experimenter: Benny Ray Breed
Radiographic Time: 31.2 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, uranium. The plate is shocked by 38.1 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.









SHOT 403: **Dynamic Fracture of Uranium**

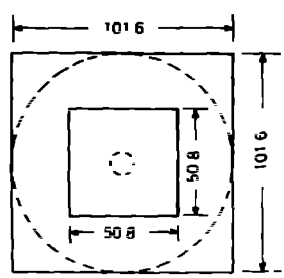
Date: December 29, 1965

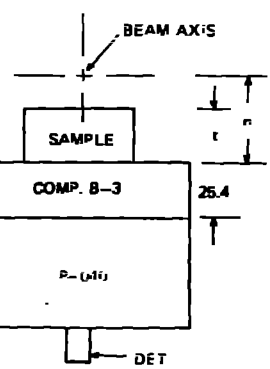
Experimenter: Benny Ray Breed

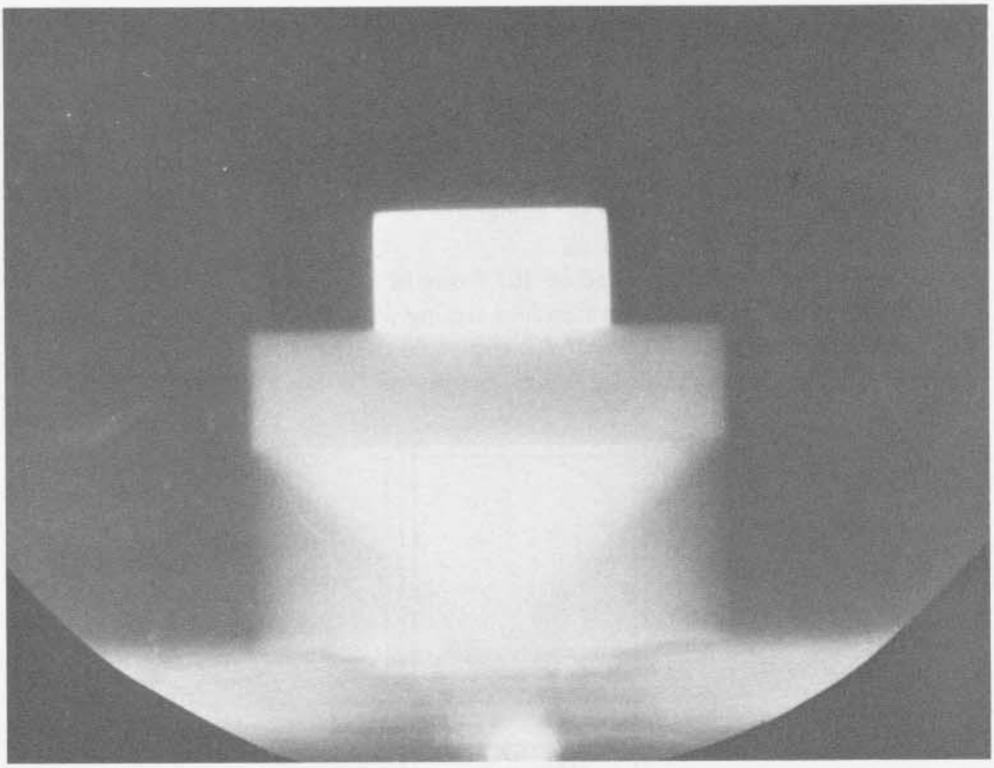
Radiographic Time: 29.66 μs

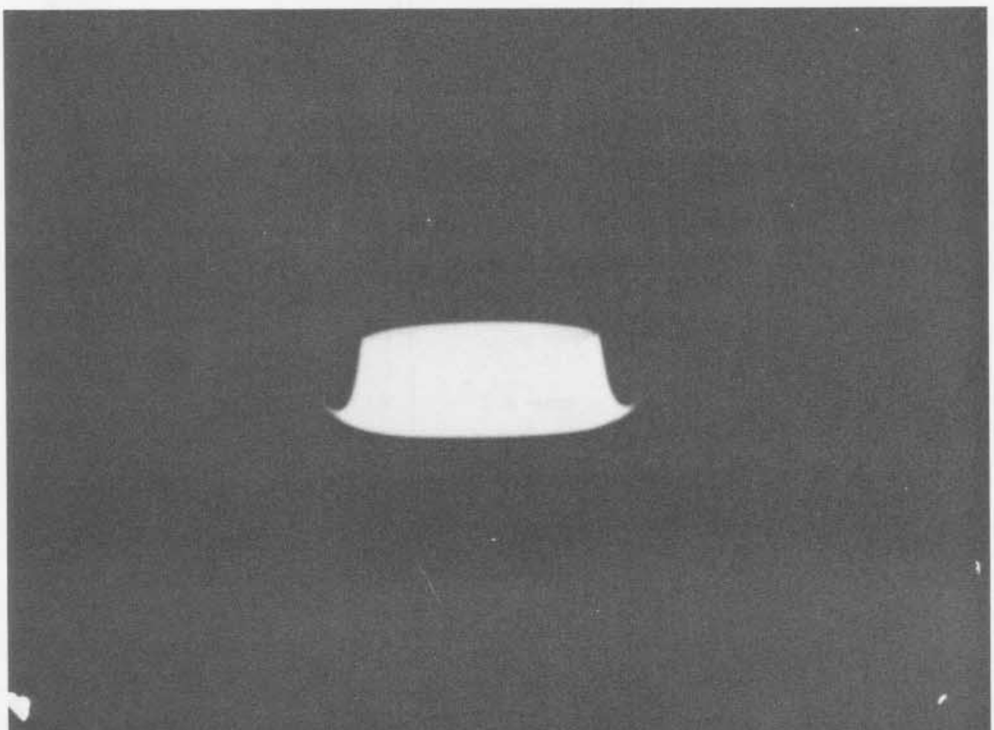
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, uranium. The plate is shocked by 25.4 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.



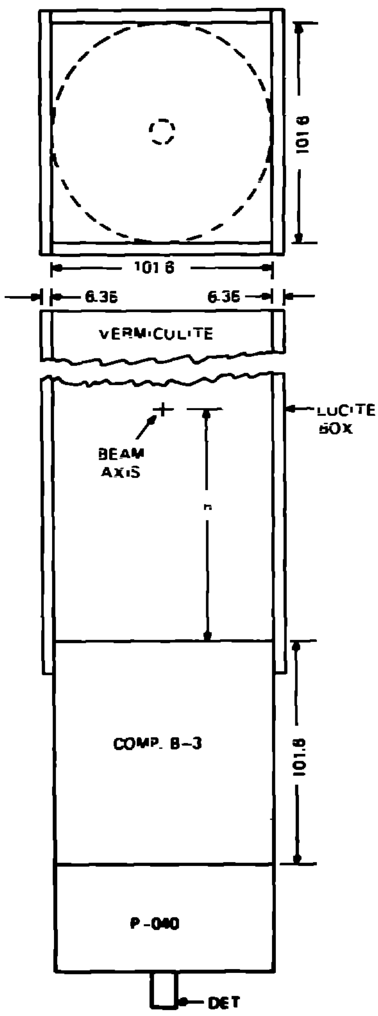


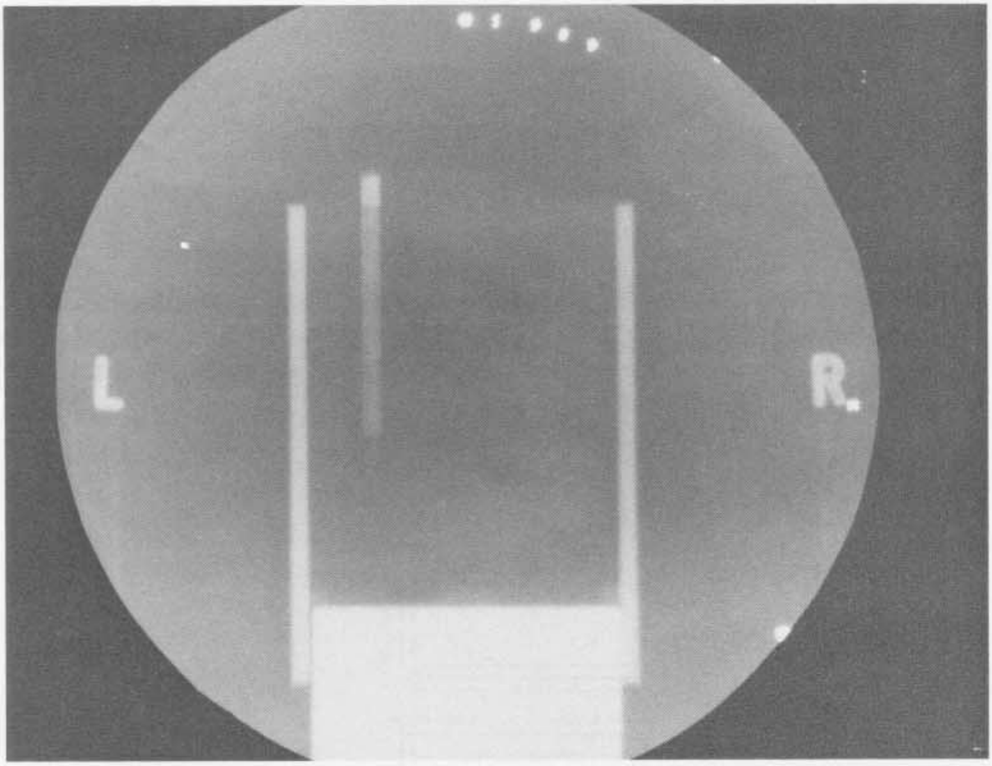


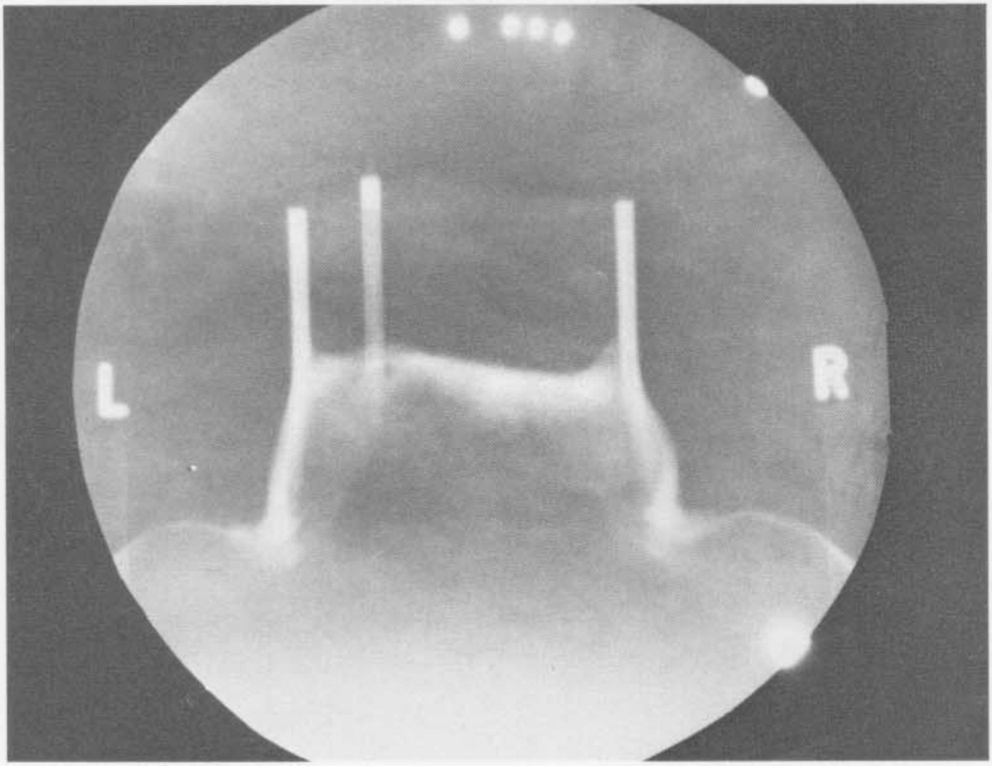


SHOT 404: **Vermiculite Shock Velocity**
Date: January 11, 1966
Experimenter: Gary W. Rodenz
Radiographic Time: 48.87 μs

Bulk-density vermiculite shocked by 101.6 mm of Composition B-3. The rod on the left side of the radiograph contained four timing pins 25.4 mm apart. h is 76.2 mm. The pin times were 26.26, 31.25, 37.69, and 45.66 μs, the first pin being at the Composition B-3 and vermiculite interface. See Shots 340 and 405.

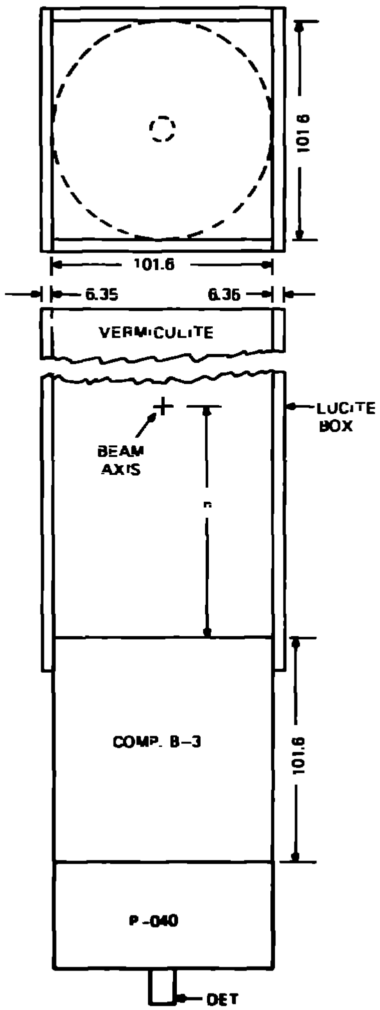


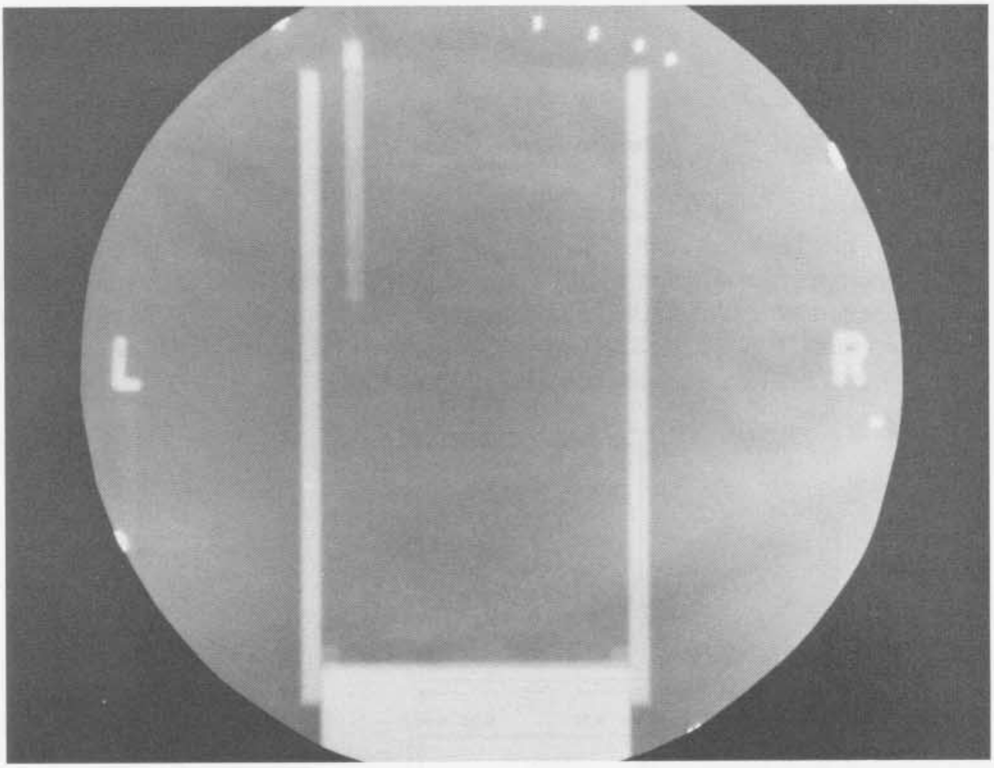

L
R

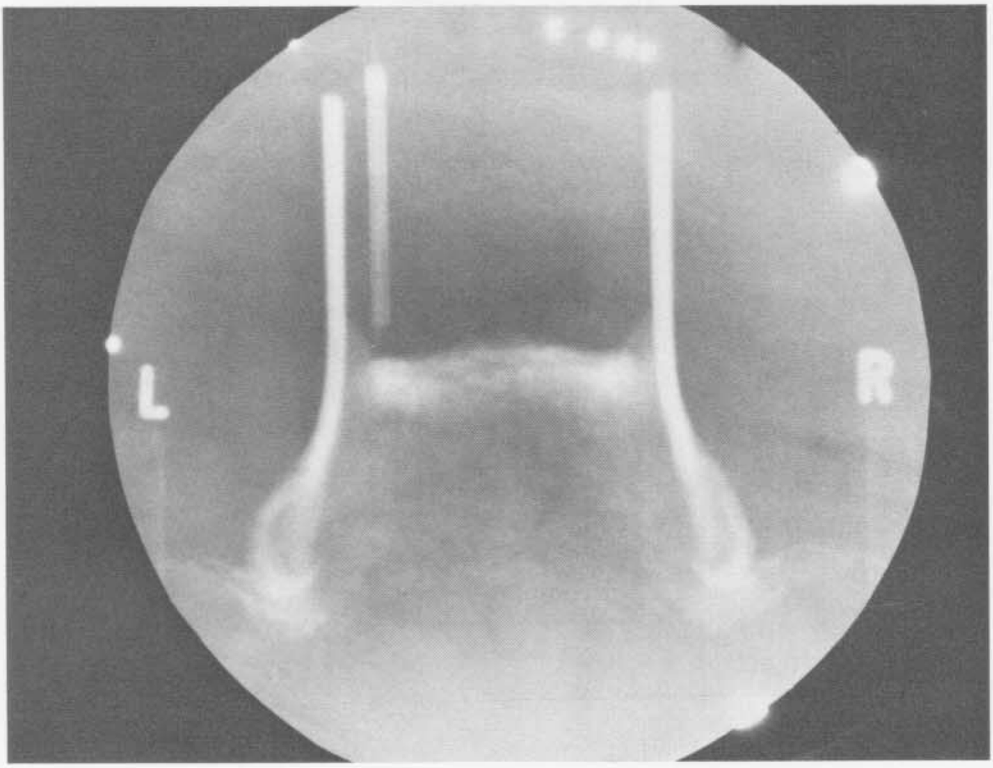

L
R

SHOT 405: **Vermiculite Shock Velocity**
Date: January 11, 1966
Experimenter: Gary W. Rodenz
Radiographic Time: 60.09 μs

Bulk-density vermiculite shocked by 101.6 mm of Composition B-3. The rod at the left side of the radiograph contained four timing pins 25.4 mm apart. h is 101.6 mm. The pin times were 47.77, 56.75, 64.76, and 75.35 μs, the first pin being 76.2 mm above the Composition B-3 and vermiculite interface. See Shots 340 and 404.

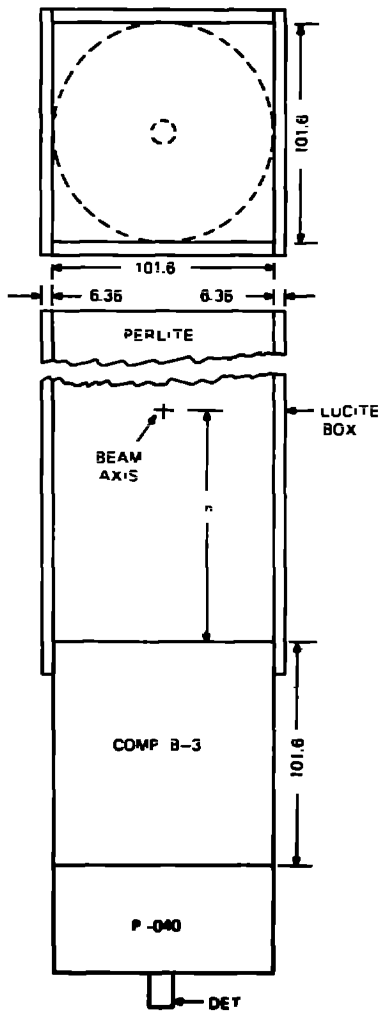


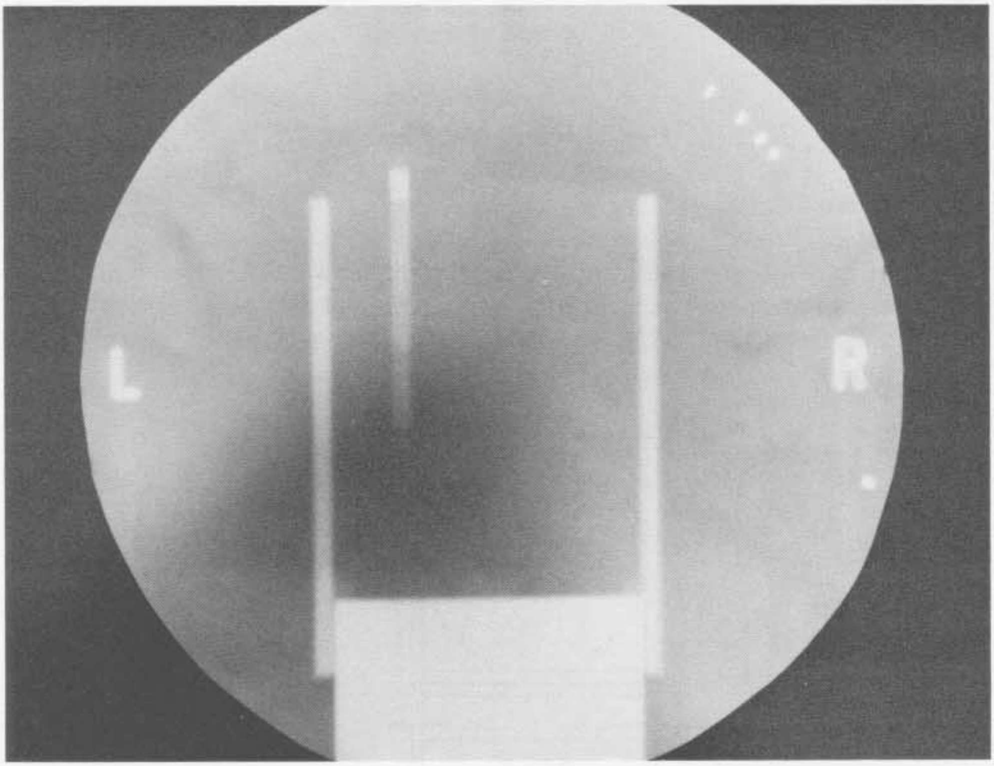

L
R

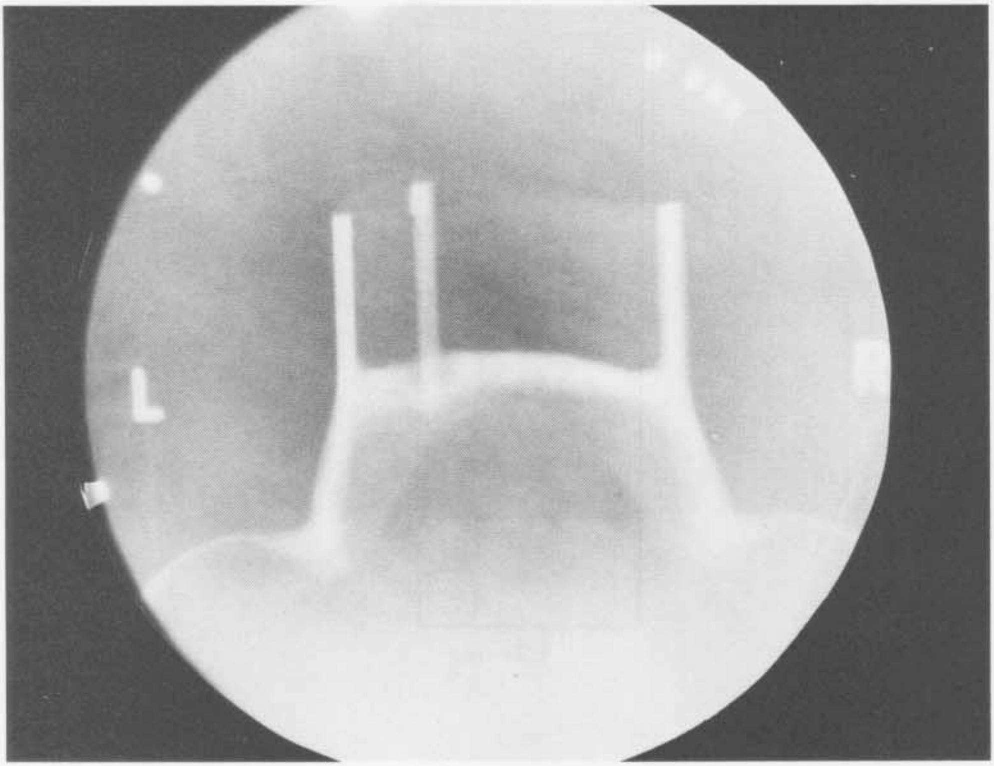

L
R

SHOT 406: **Perlite Shock Velocity**
Date: January 11, 1966
Experimenter: Gary W. Rodenz
Radiographic Time: 48.56 μs

Bulk-density perlite shocked by 101.6 mm of Composition B-3. The rod on the left side of the radiograph contained four timing pins 25.4 mm apart. h is 76.2 mm. The pin times were 26.22, 31.21, 37.86, and 45.84 μs, the first pin being at the Composition B-3 and perlite interface. See Shots 320 and 407.

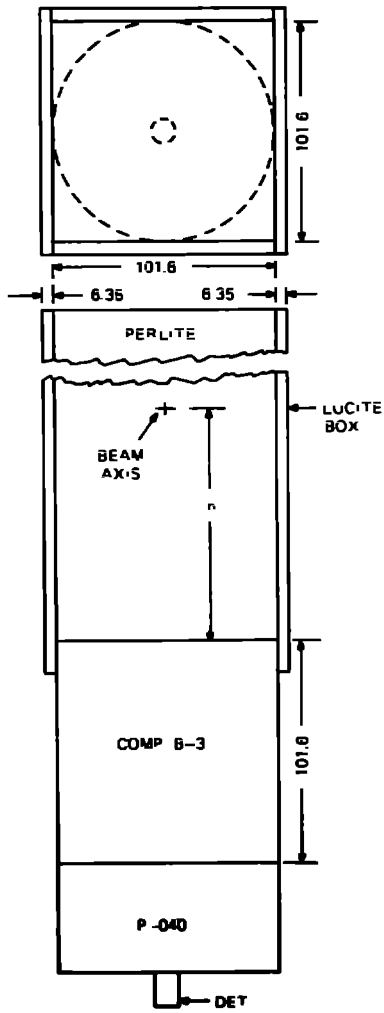


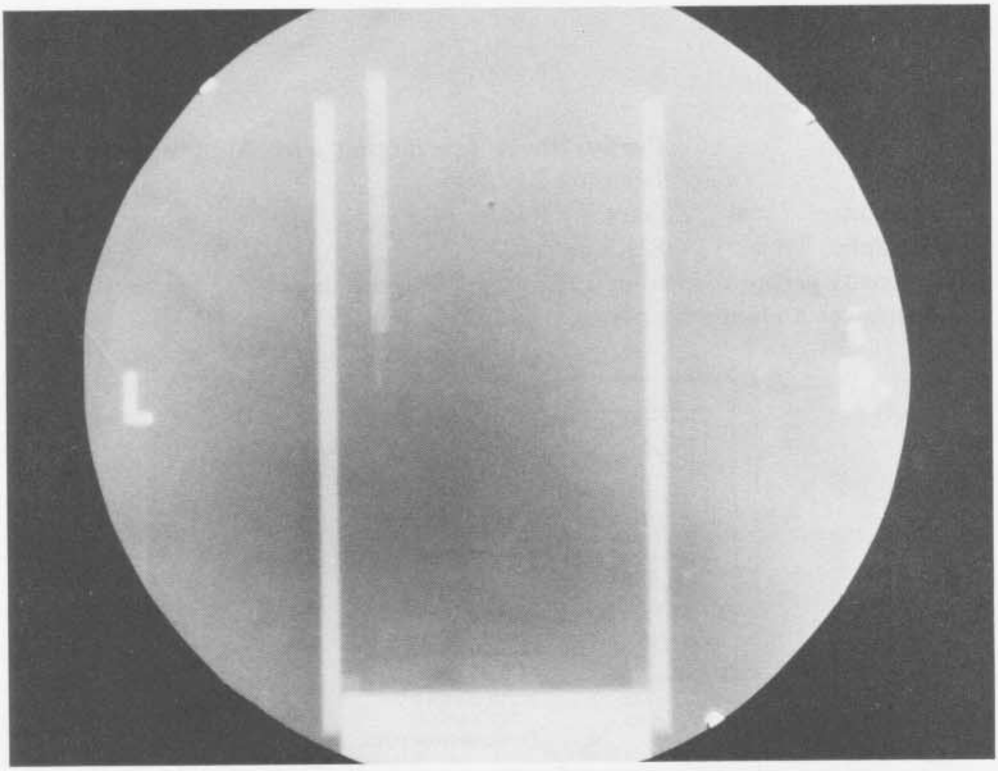

L
R


L

SHOT 407: **Perlite Shock Velocity**
Date: January 11, 1966
Experimenter: Gary W. Rodenz
Radiographic Time: 60.11 μs

Bulk-density perlite shocked by 101.6 mm of Composition B-3. The rod at the left side of the radiograph contained three timing pins 25.4 mm apart. h is 101.6 mm. The pin times were 46.67, 55.86, and 67.18 μs, the first pin being 76.2 mm above the Composition B-3 and perlite interface. See Shots 320 and 406.

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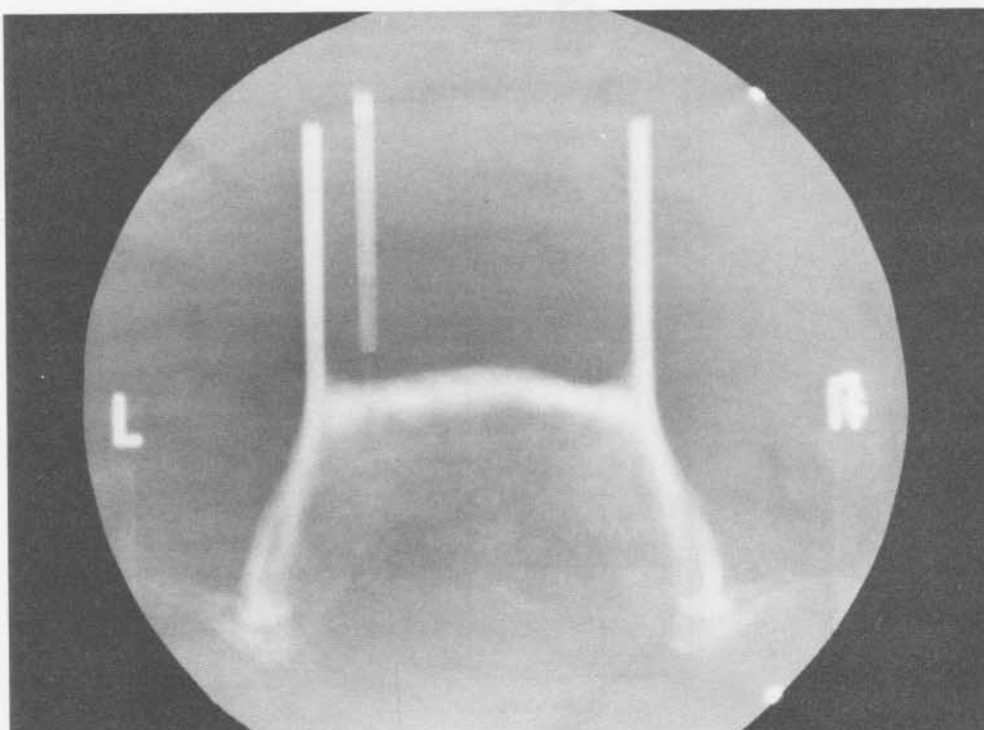
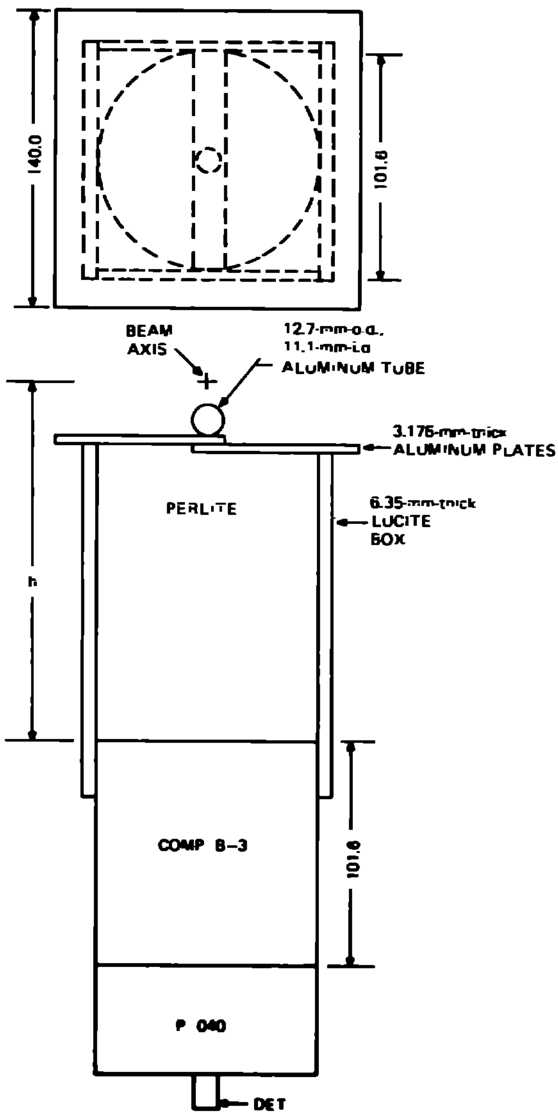
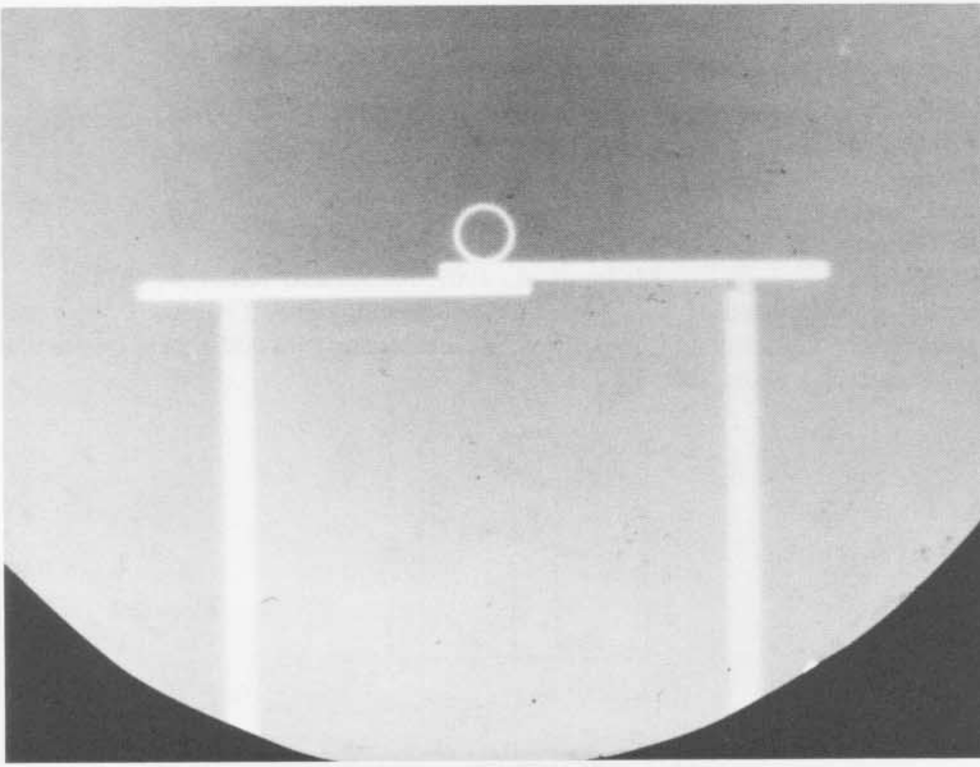
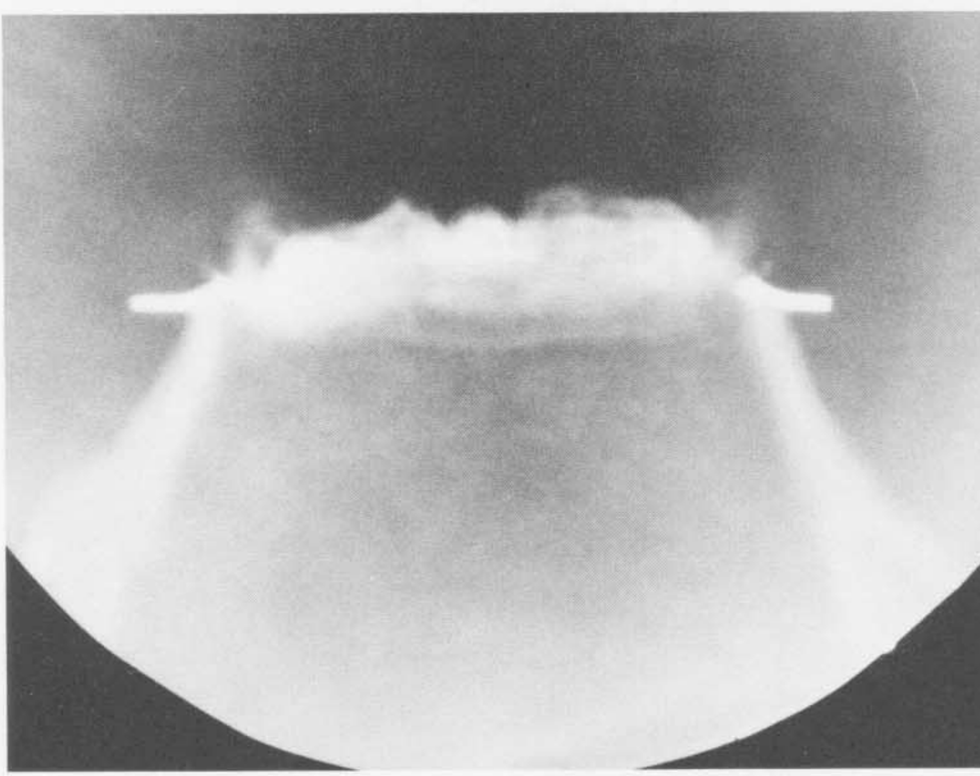

L
R

SHOT 408: **Perlite Shock Interacting with Aluminum Plates**
Date: February 23, 1966
Experimenter: Gary W. Rodenz
Radiographic Time: 83.47 μs

Bulk-density perlite shocked by 101.6 mm of Composition B-3 and interacting with 3.175-mm-thick aluminum plates. h is 158.75 mm. See Shot 493.

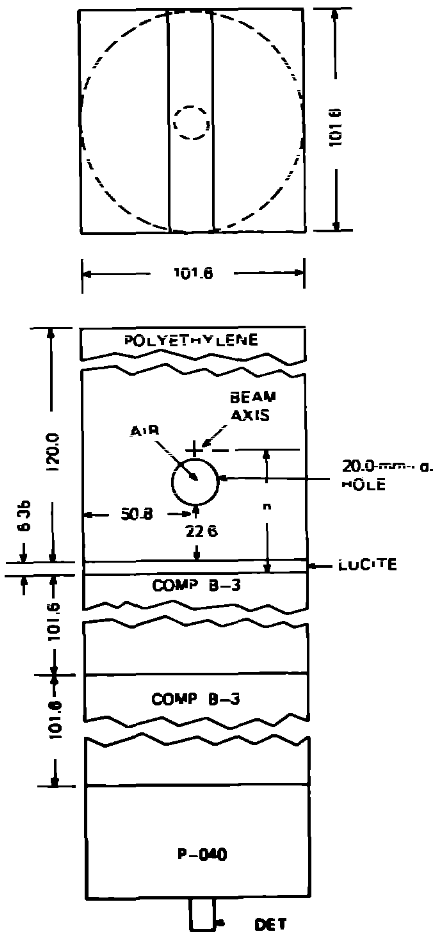


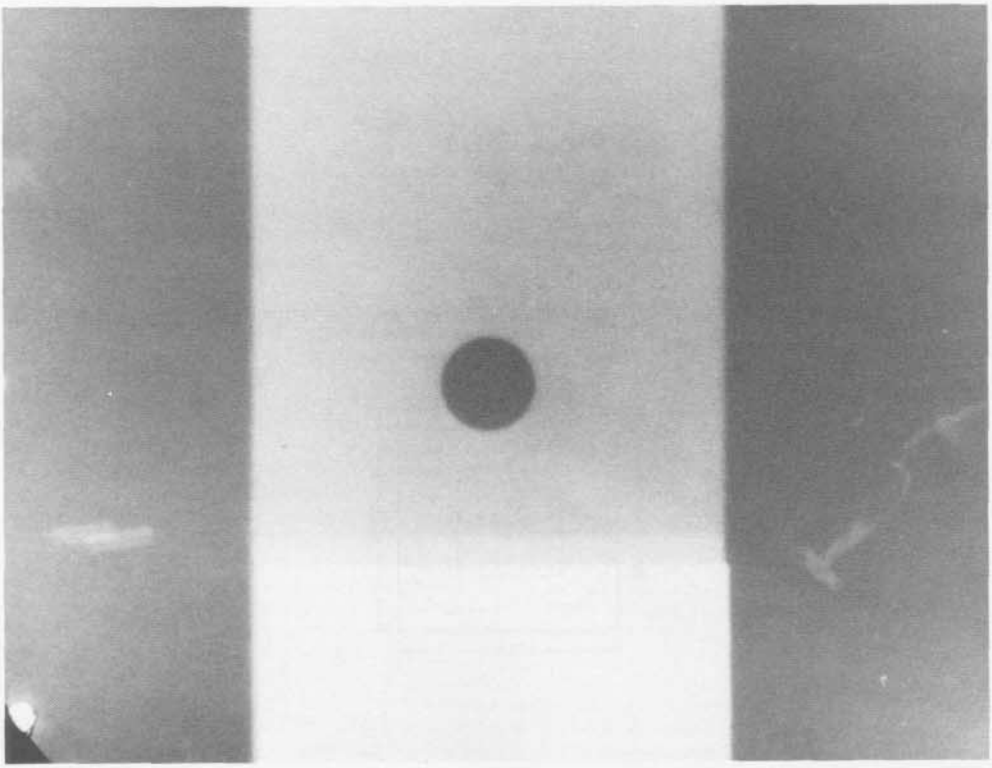


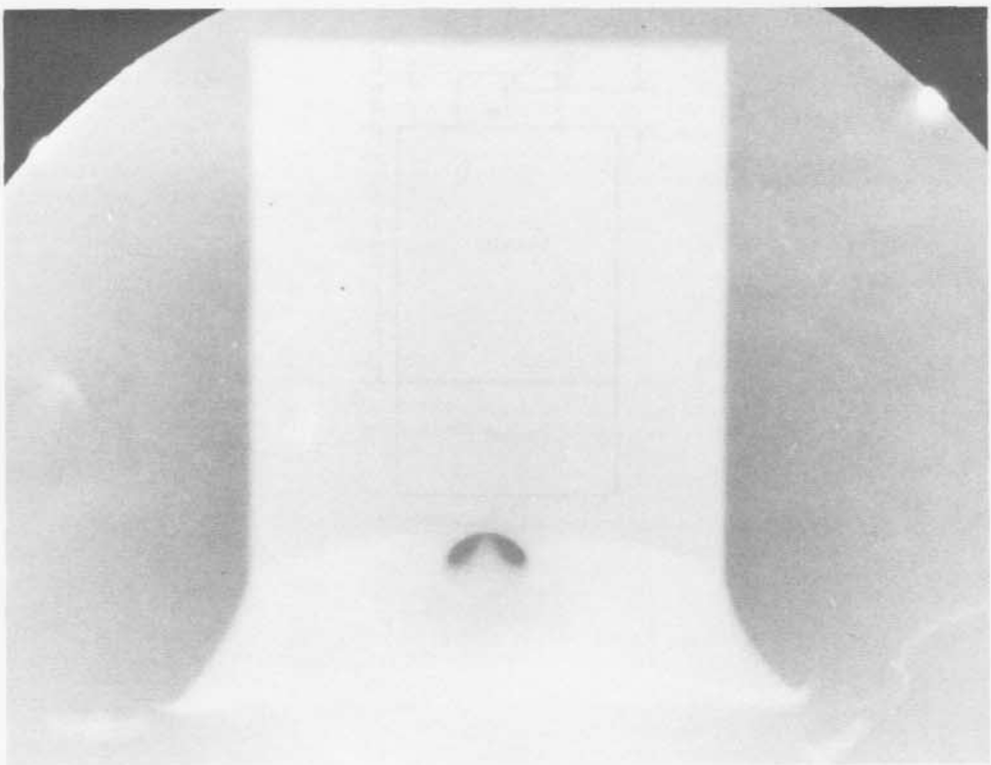


SHOT 409: **Cylindrical Hole in Polyethylene**
Date: February 14, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 46.23 μs
References: Mader et al., 1967; Mader and Kershner, 1972

Study of 10-mm-radius hole in a block of polyethylene. The shock wave was generated by 203.2 mm of Composition B-3 interacting with 6.35 mm of Lucite. h is 46.03 mm. See Shots 314 and 351.

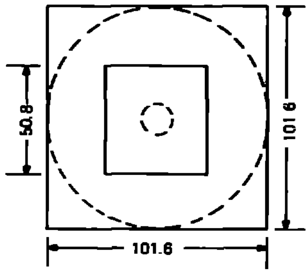


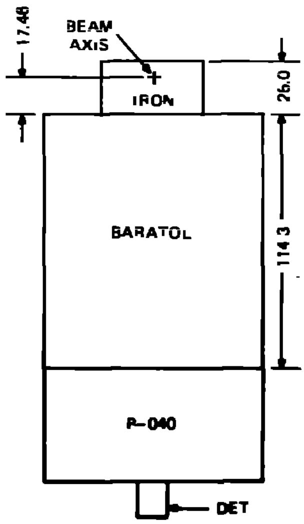


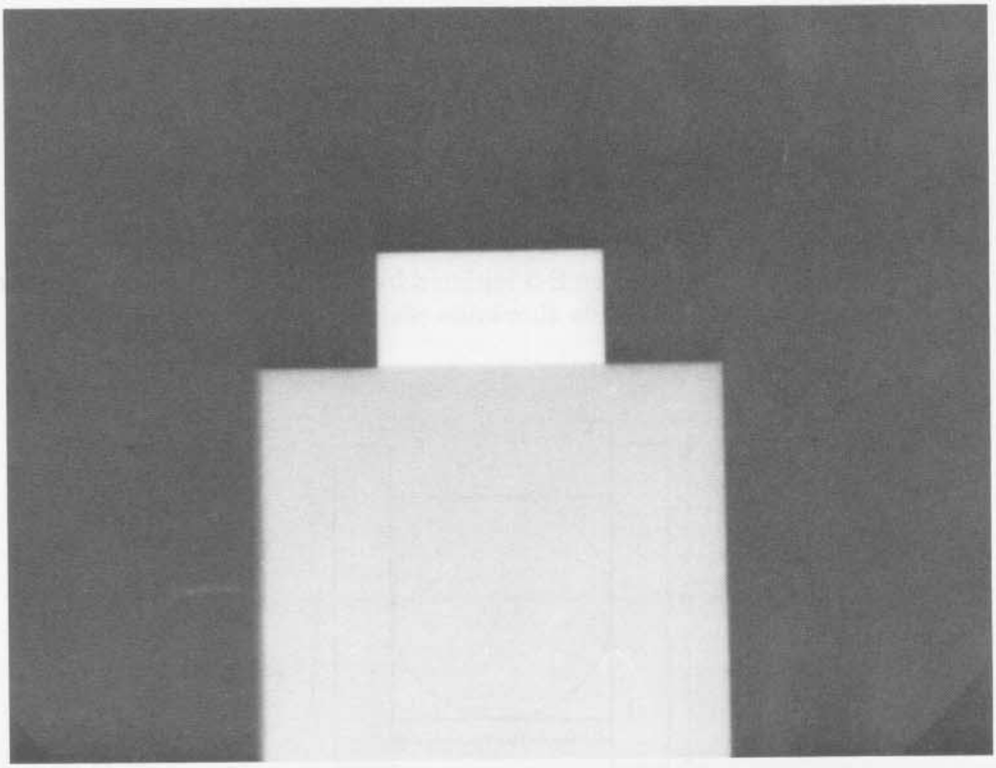


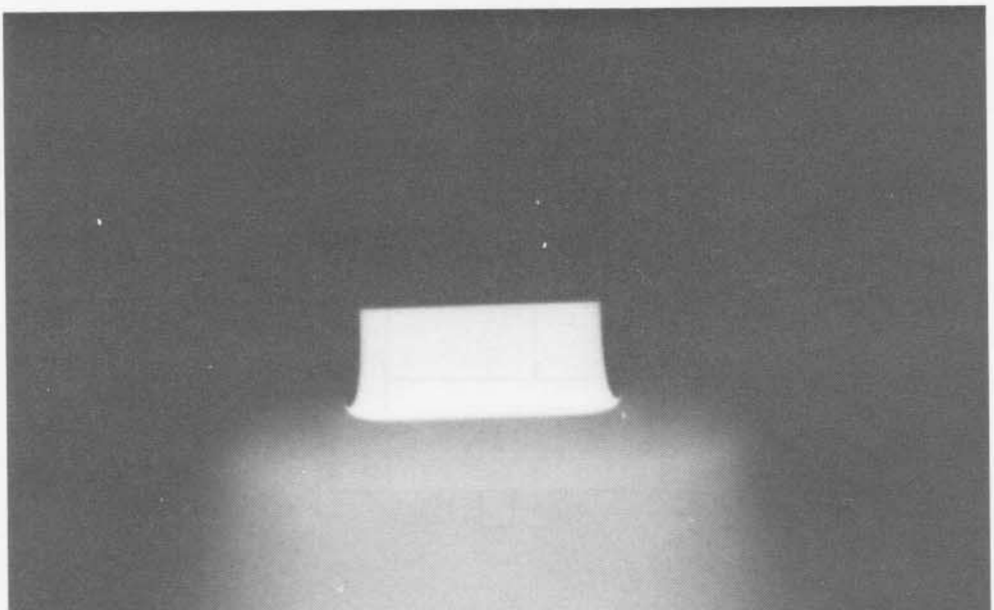
SHOT 410: **Iron Phase Change**
Date: January 18, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 40.89 μs
Reference: Mader, 1966b

A 50.8-mm² by 25.0-mm-high block of Armco iron is shocked by 114.3 mm of Baratol initiated by a P-040 lens.



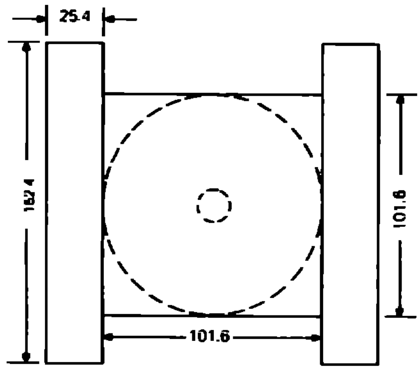


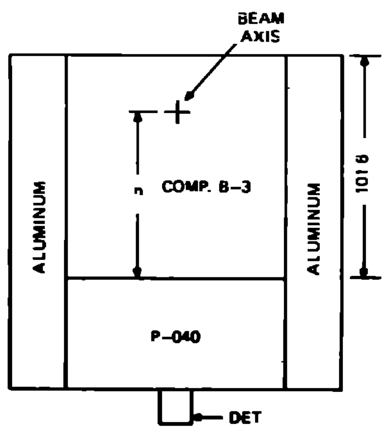


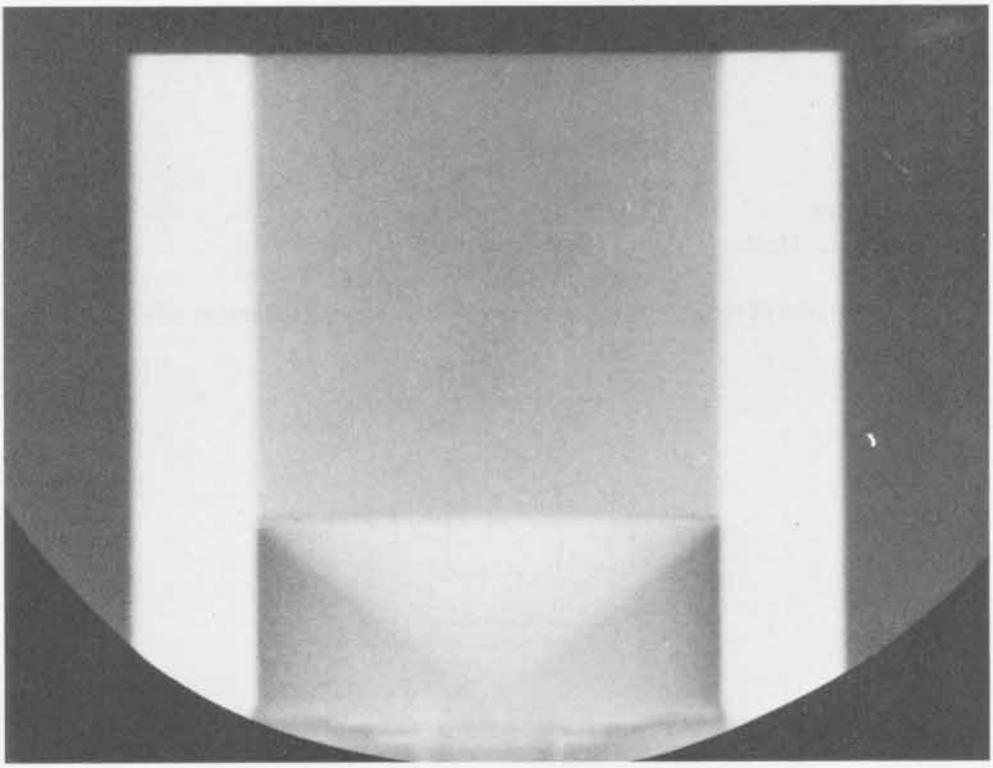


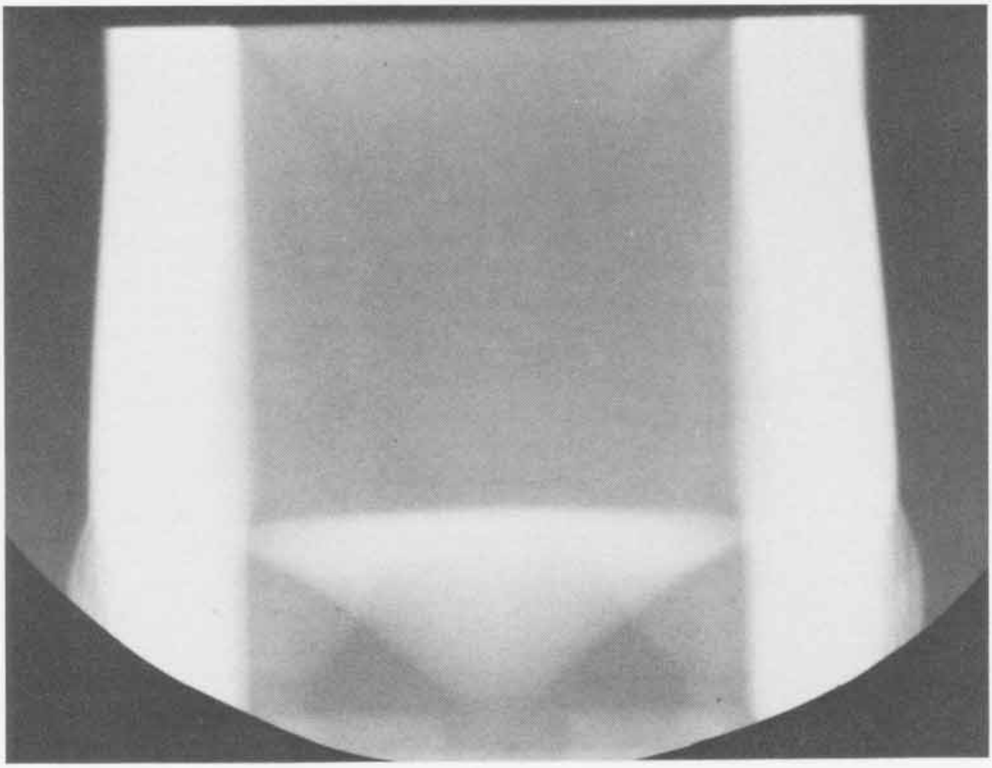
SHOT 411: **Composition B-3 Confined by Aluminum**
Date: January 18, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 26.32 μs

A 101.6-mm cube of Composition B-3 initiated by a P-040 lens is confined by two 25.4-mm-thick by 152.4-mm-wide aluminum plates. h is 80.26 mm.



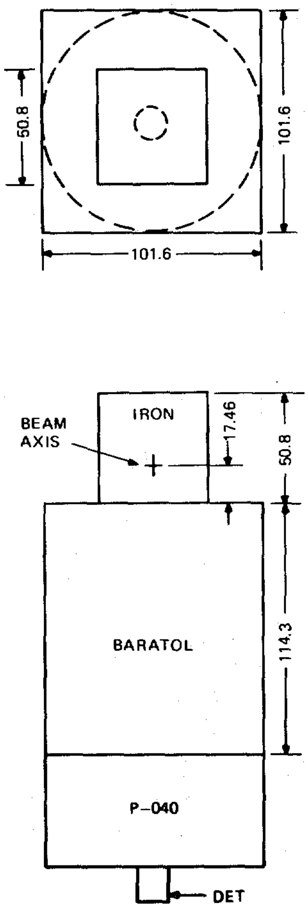


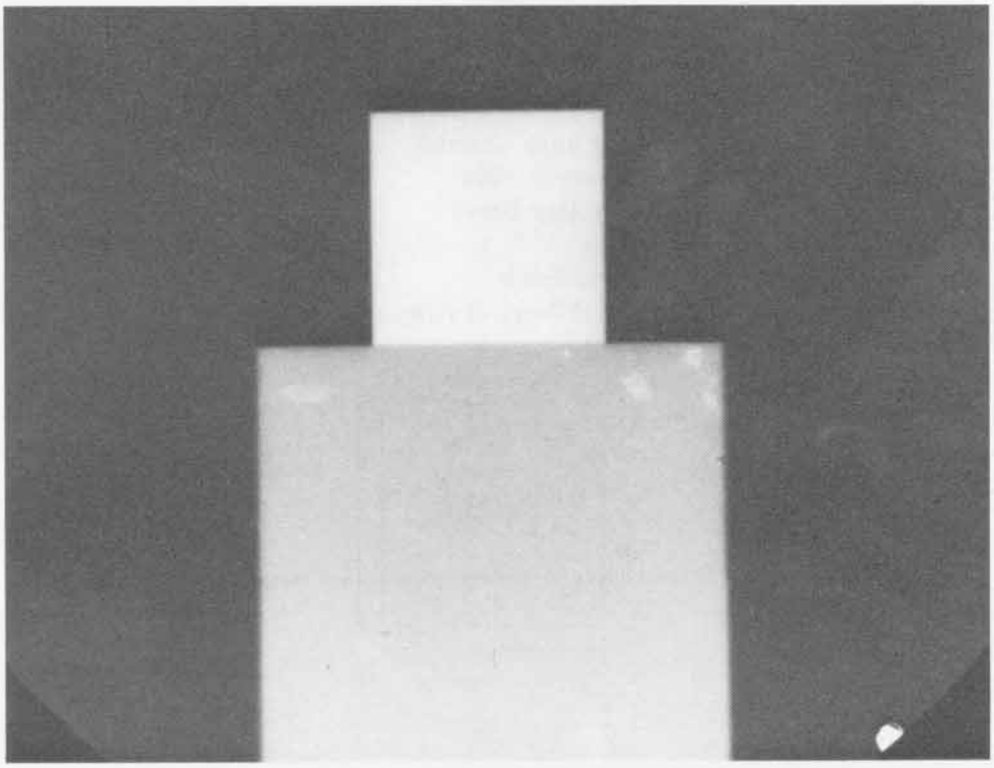


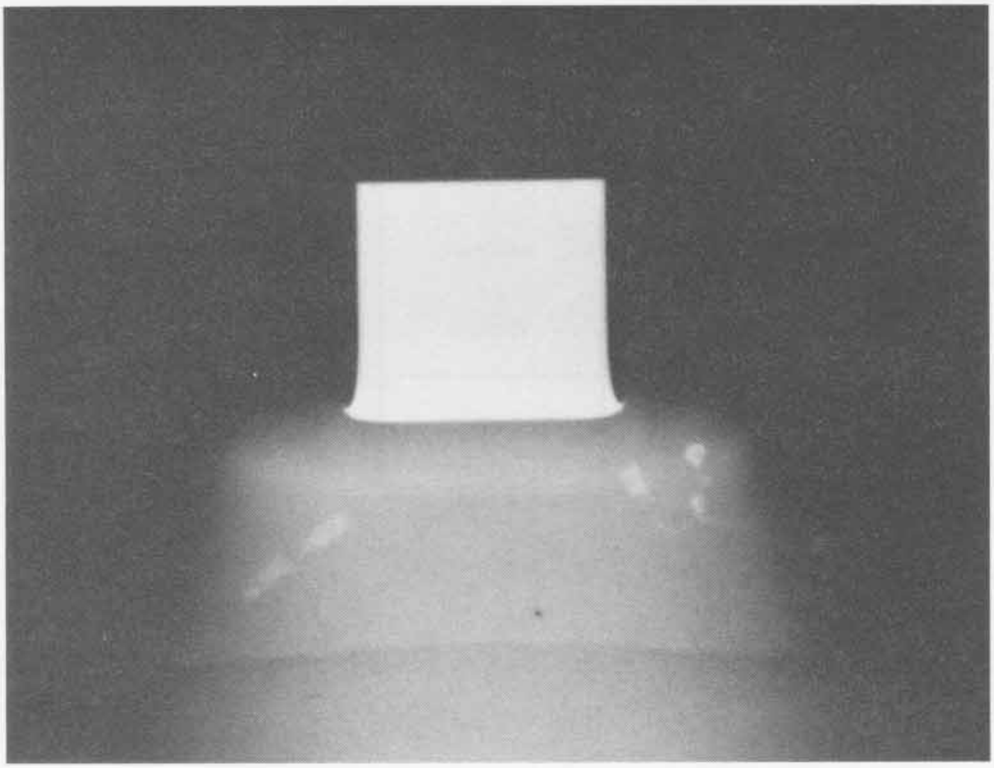


SHOT 412: **Iron Phase Change**
Date: January 31, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 40.84 μs
Reference: Mader, 1966b

A 50.8-mm cube of Armco iron is shocked by 114.3 mm of Baratol initiated by a P-040 lens.

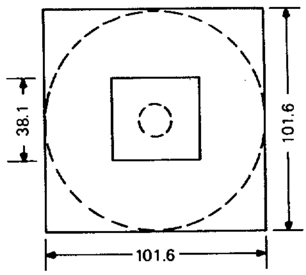


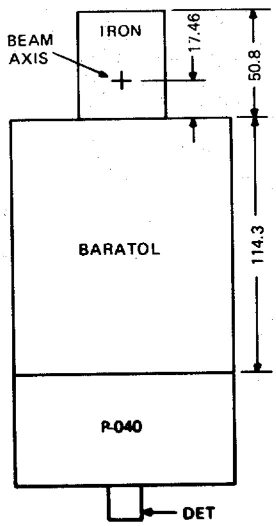


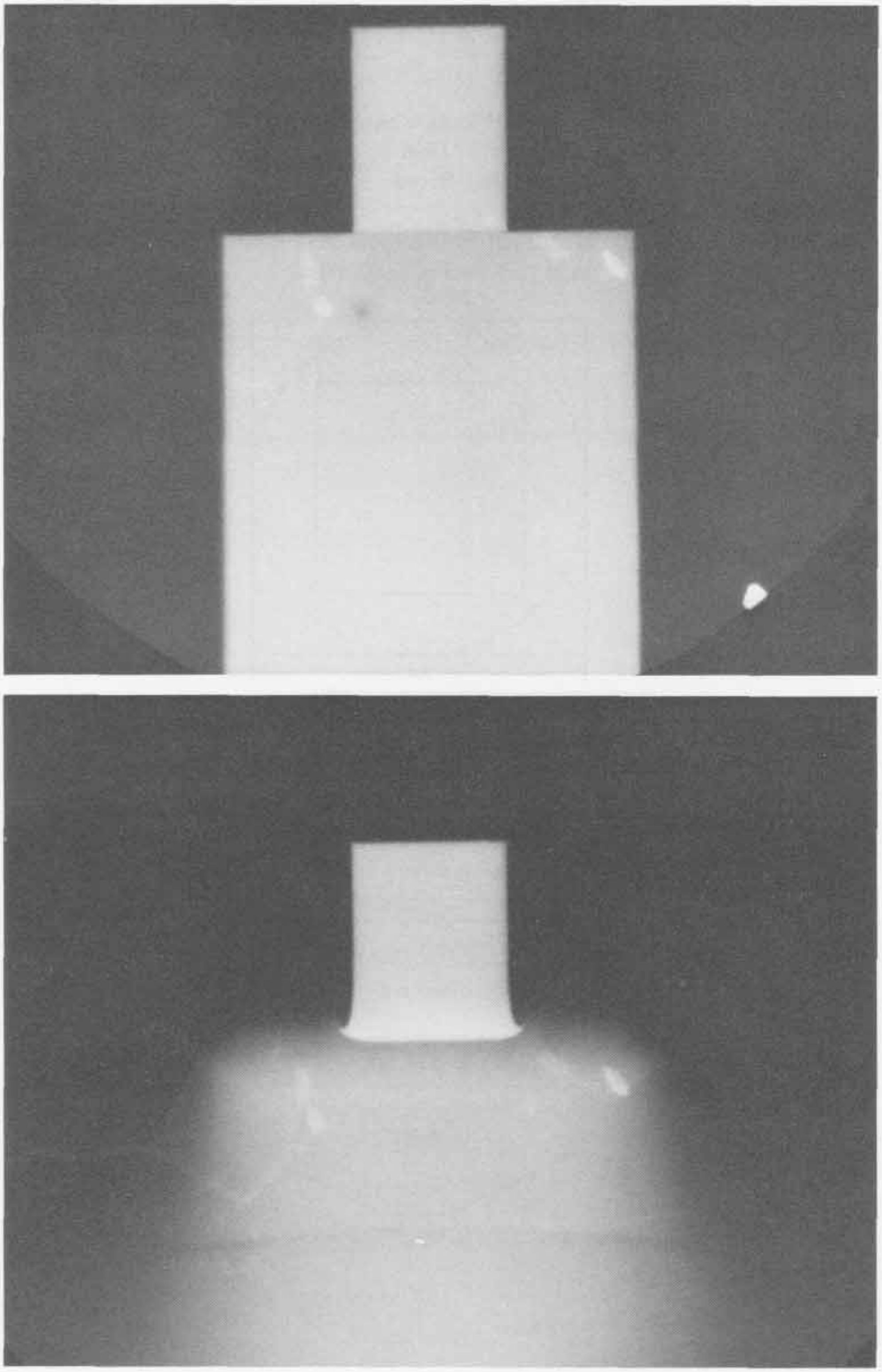


SHOT 413: **Iron Phase Change**
Date: February 1, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 40.9 μs
Reference: Mader, 1966b

A 50.8-mm-high by 38.1-mm-thick block of Armco iron is shocked by 114.3 mm of Baratol initiated by a P-040 lens.

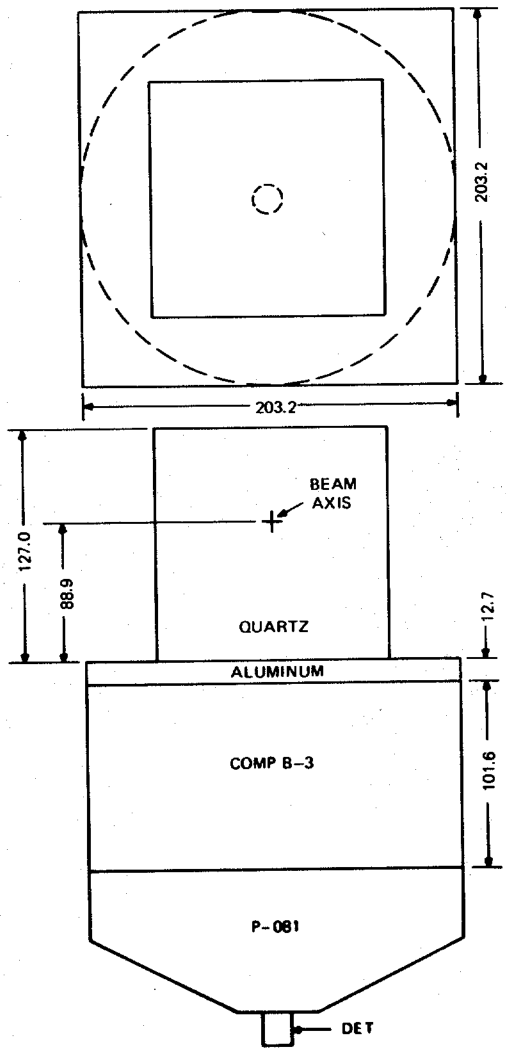


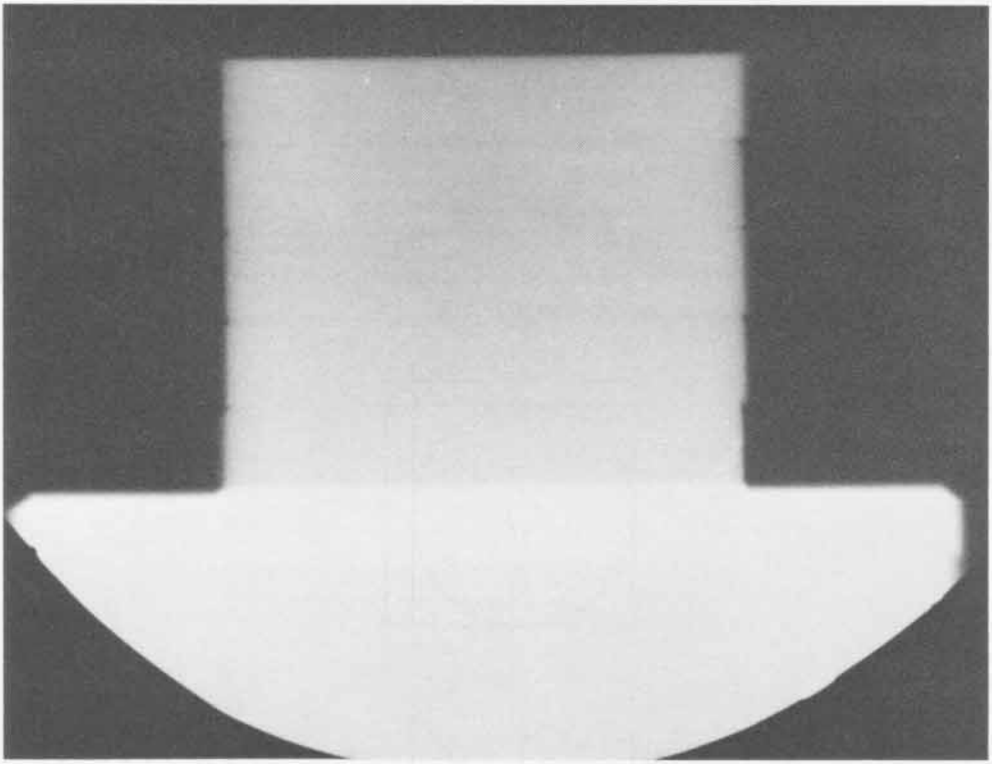


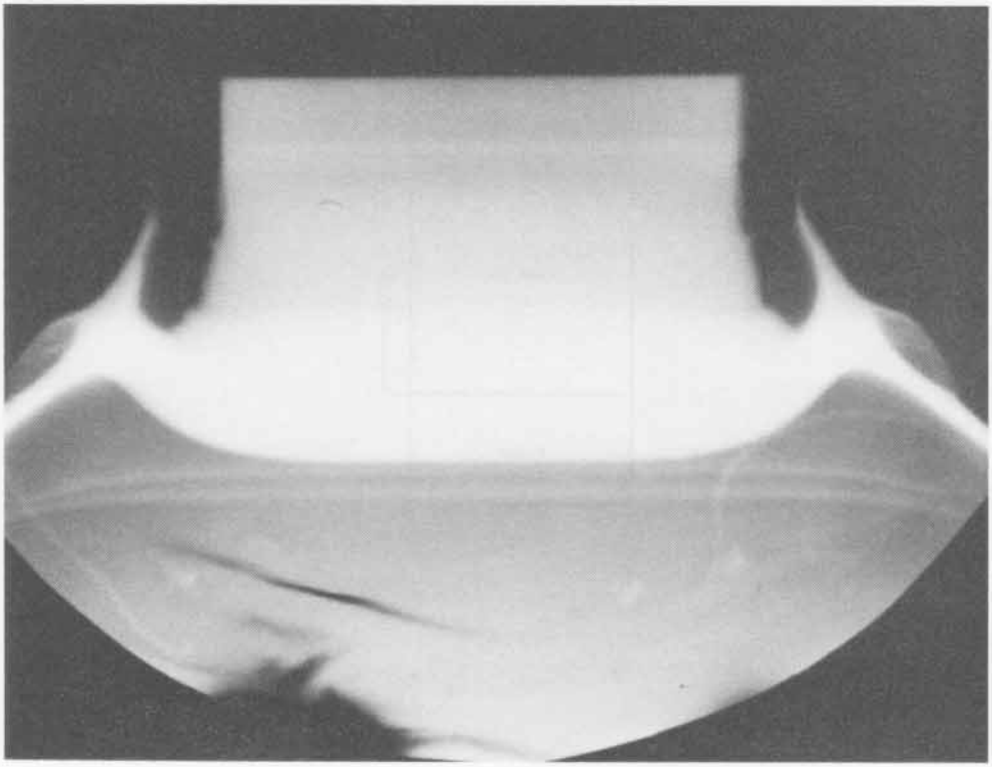


SHOT 414: **Quartz Phase Change**
Date: February 1, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 52.65 μs

A 127-mm cube of quartz is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens and interacts with 12.7 mm of aluminum.

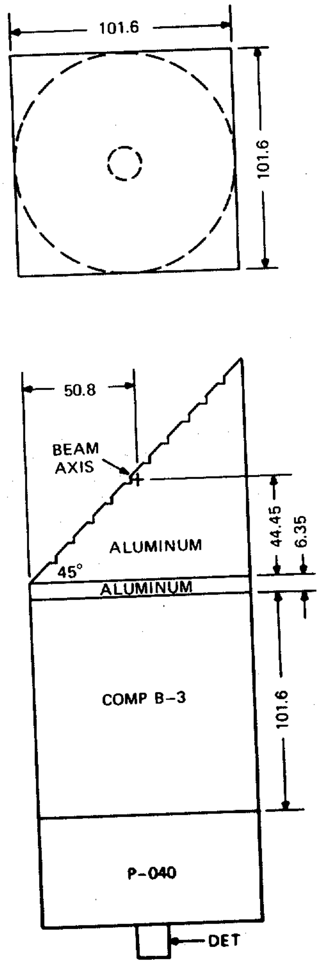


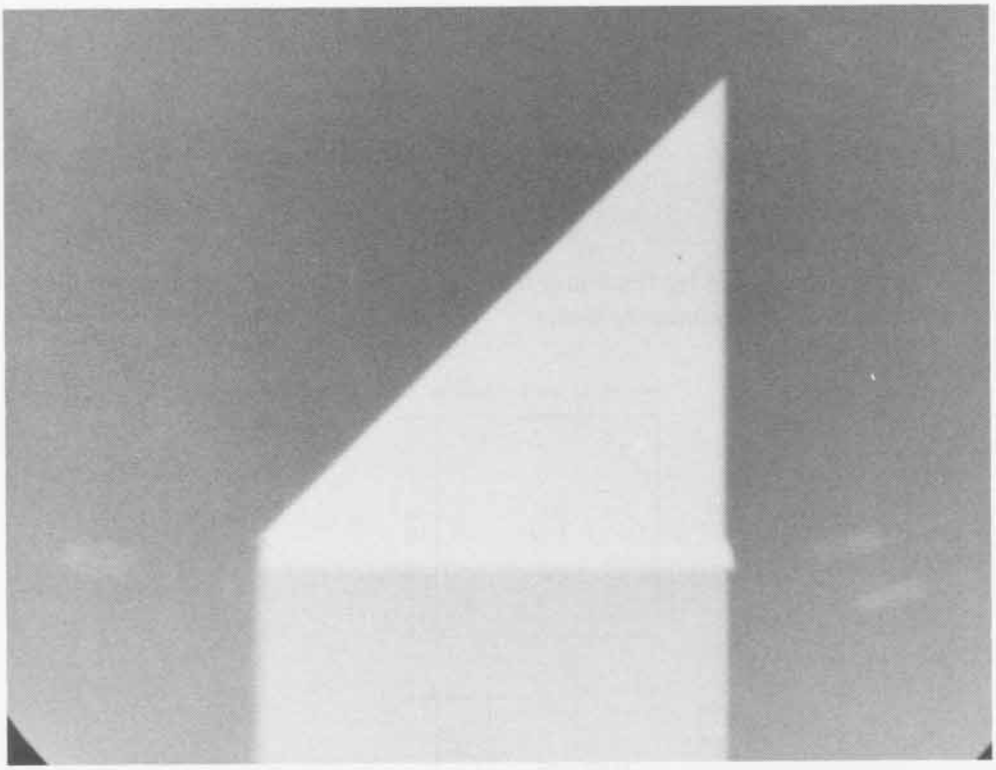


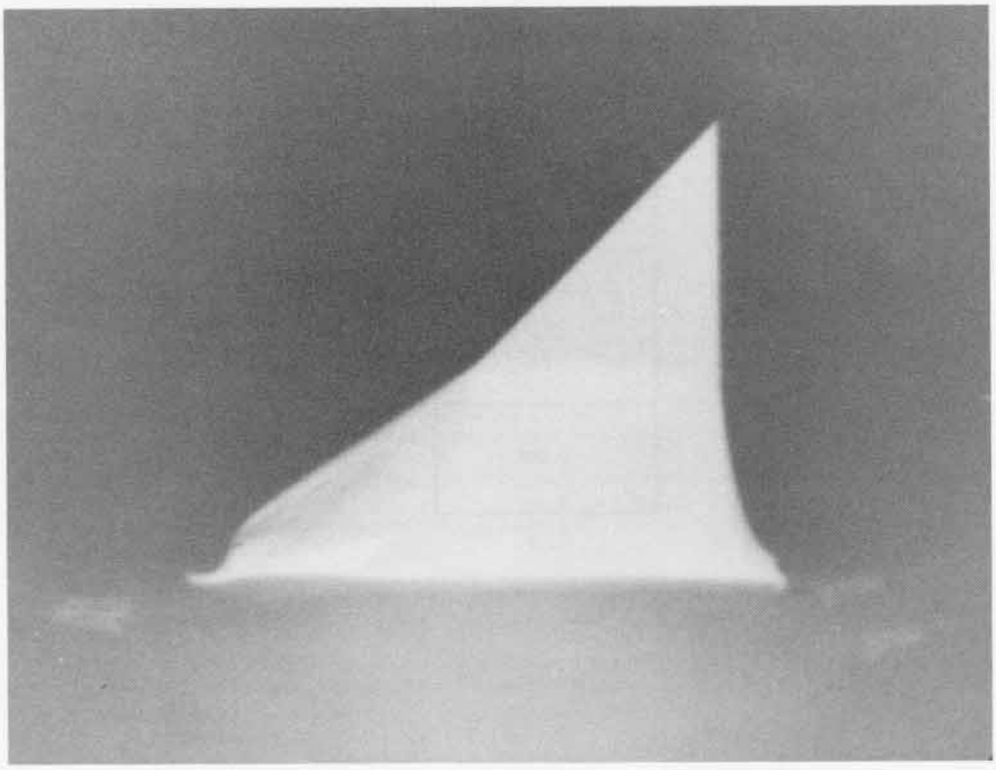


SHOT 415: **Aluminum Wedge**
Date: May 26, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 33.87 μs

A shock wave generated by 101.6 mm of Composition B-3 initiated by a P-040 lens interacts with a 45° aluminum wedge.

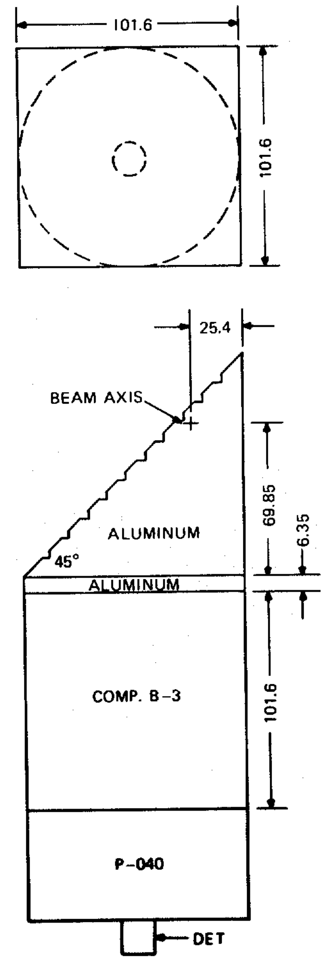


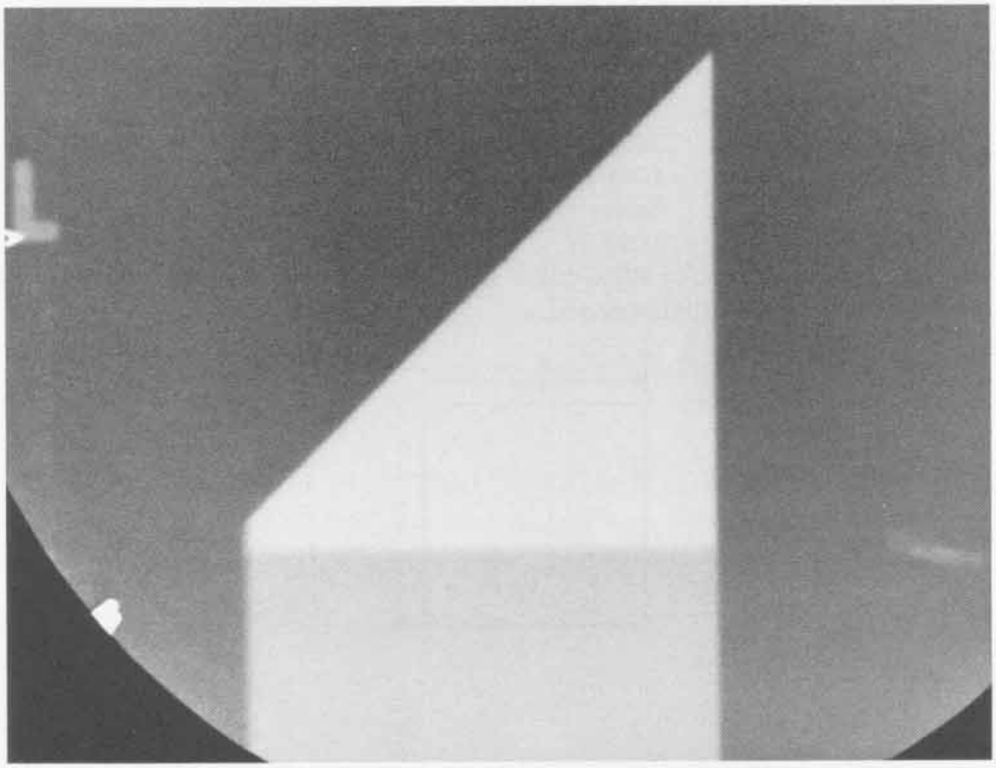


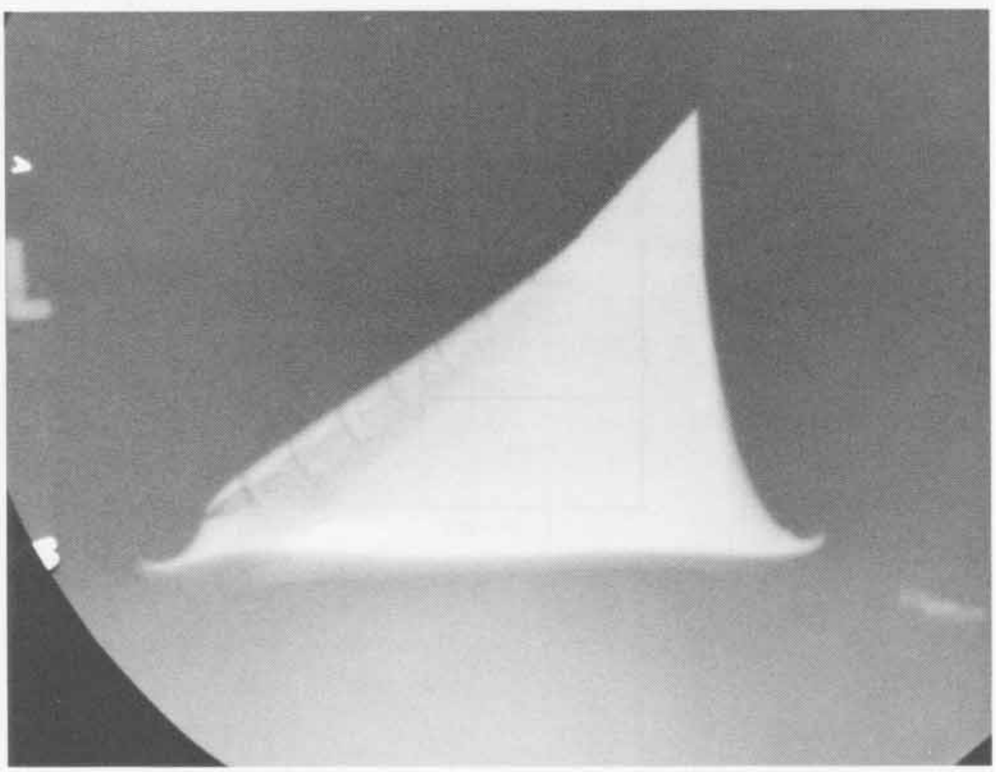


SHOT 416: **Aluminum Wedge**
Date: June 16, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 37.43 μs

A shock wave generated by 101.6 mm of Composition B-3 initiated by a P-040 lens interacts with a 45° aluminum wedge.

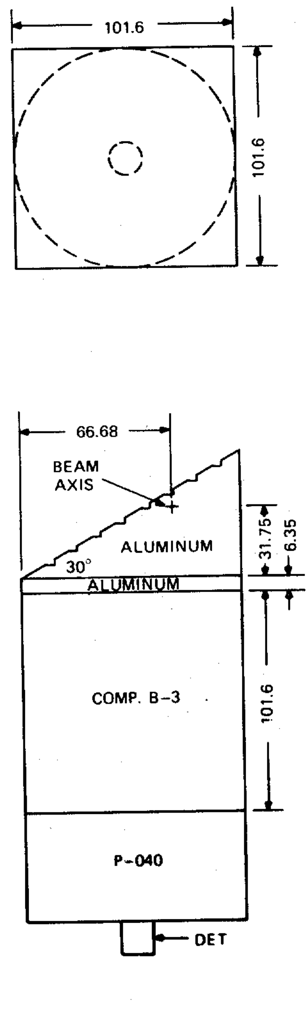


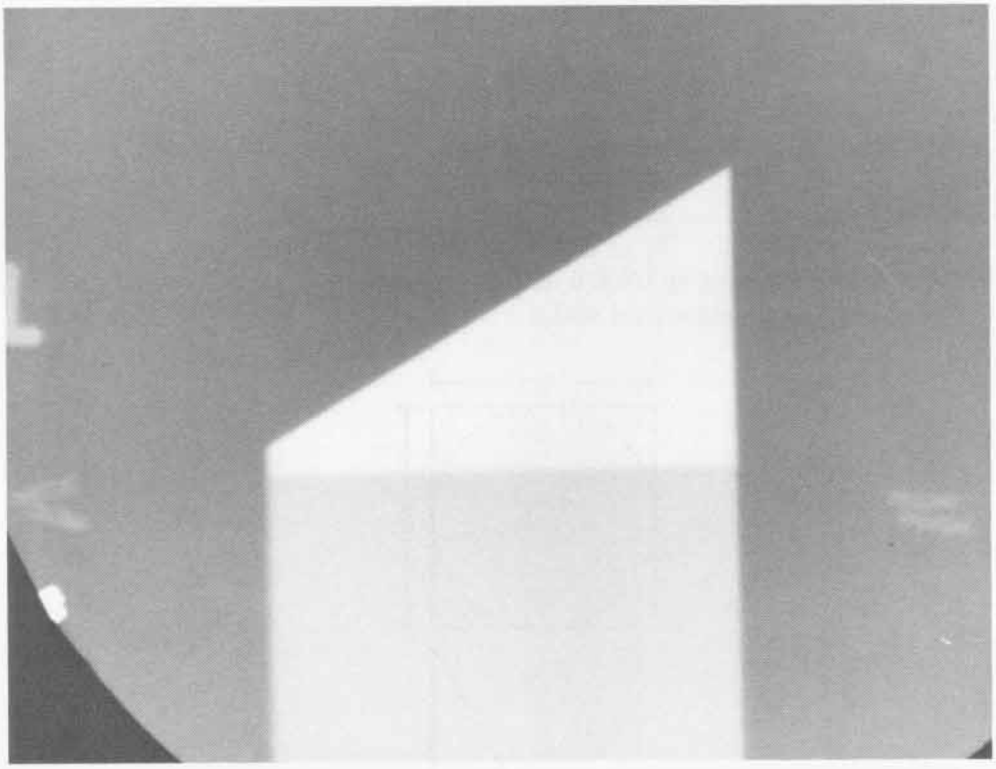


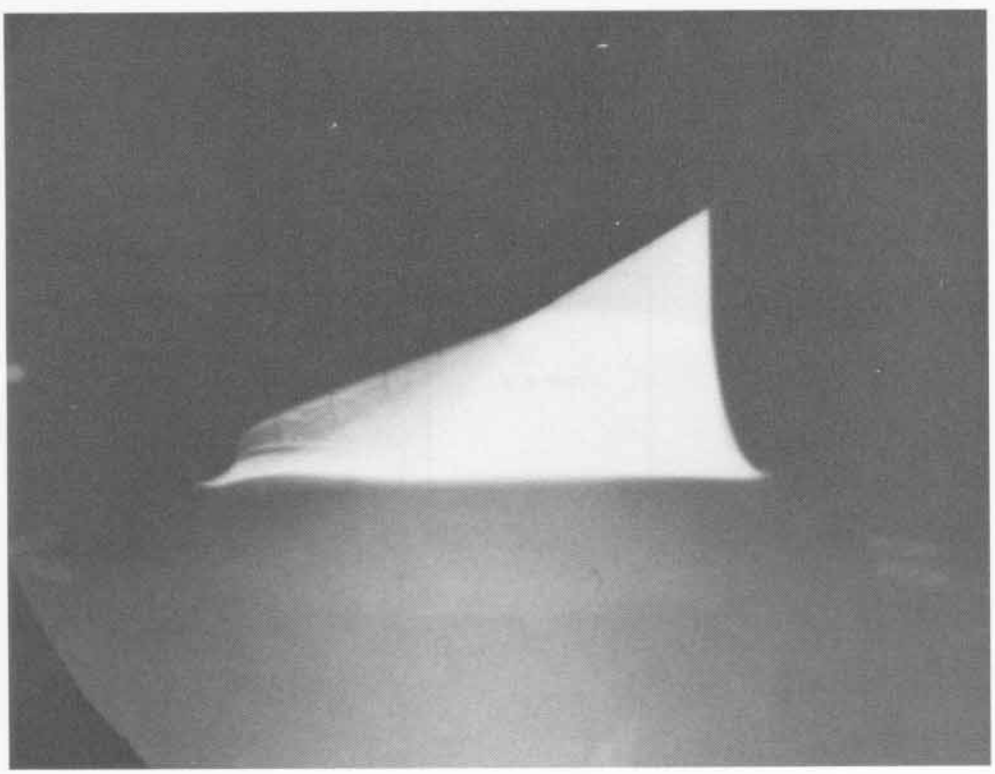


SHOT 417: **Aluminum Wedge**
Date: June 16, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 31.99 μs

A shock wave generated by 101.6 mm of Composition B-3 initiated by a P-040 lens interacts with a 30° aluminum wedge.

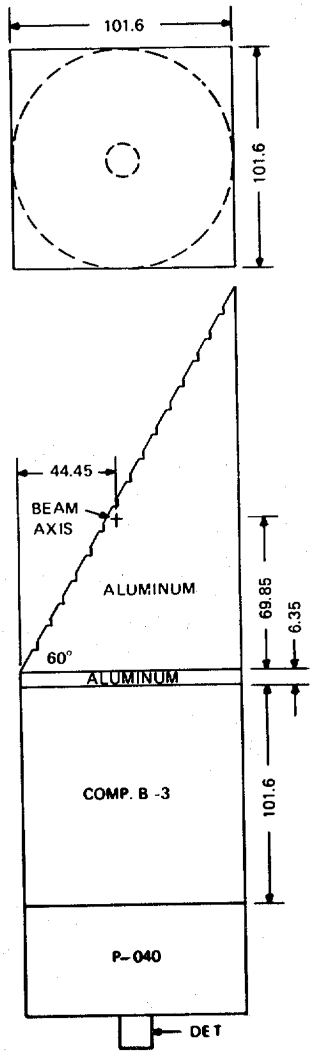


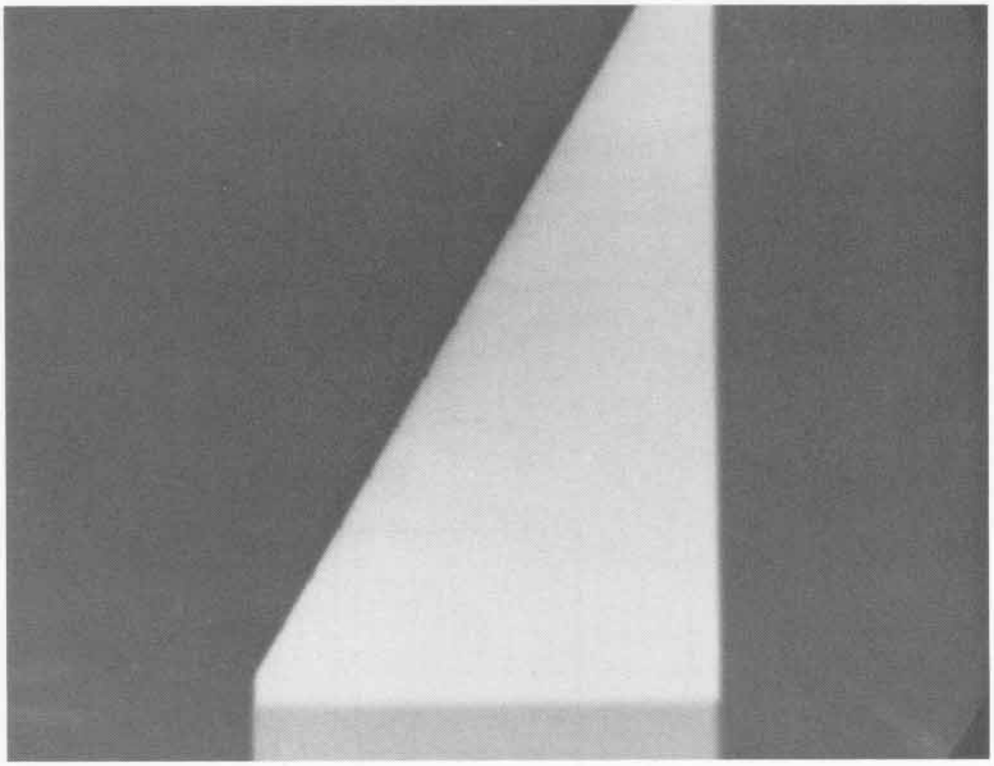


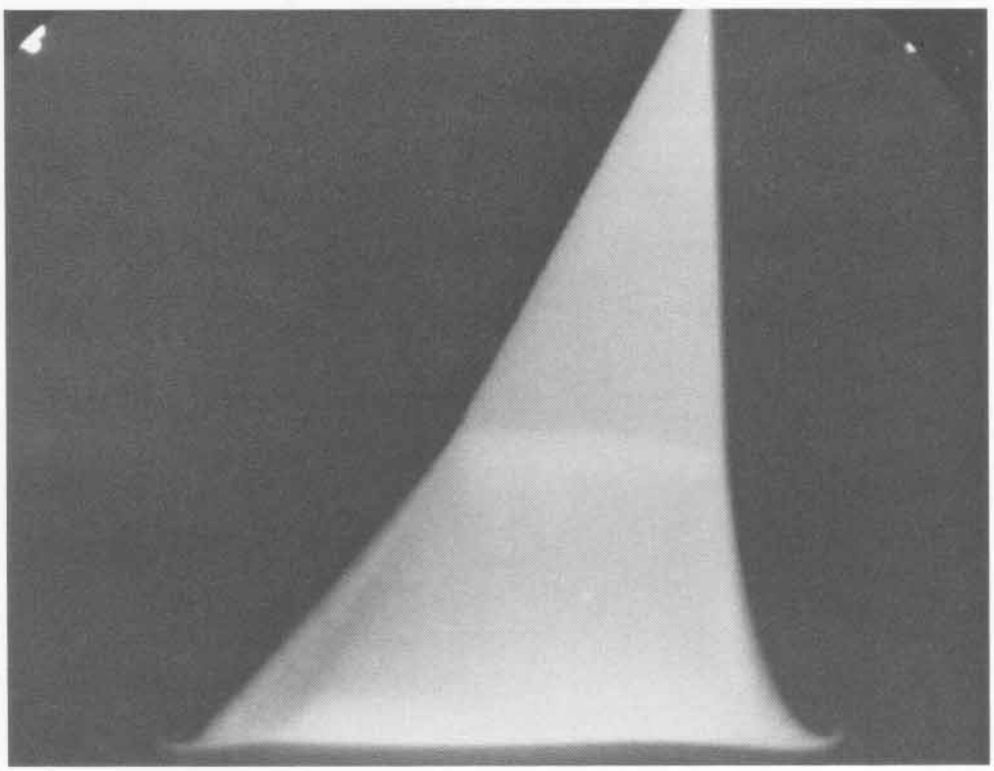


SHOT 418: **Aluminum Wedge**
Date: June 16, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 37.41 μs

A shock wave generated by 101.6 mm of Composition B-3 initiated by a P-040 lens interacts with a 60° aluminum wedge.

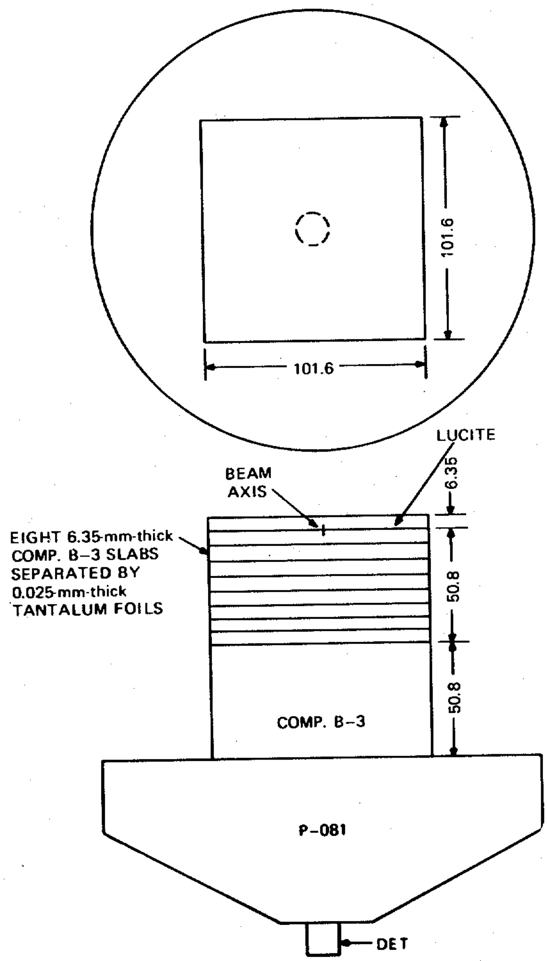


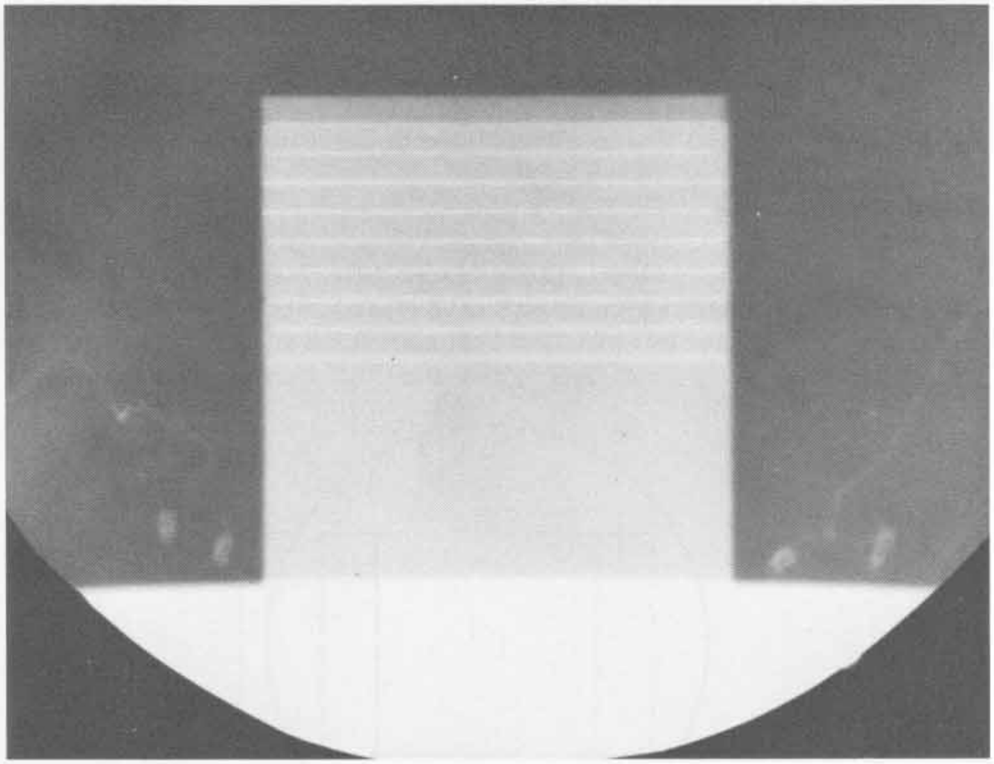


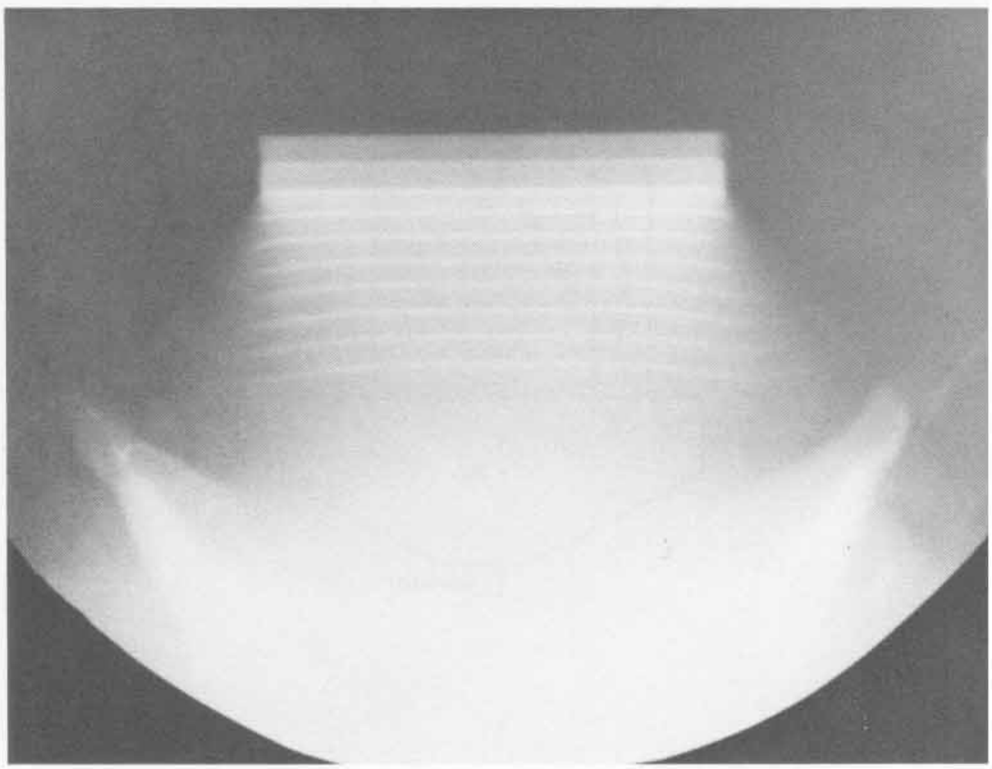


SHOT 419: **Composition B-3 with Embedded Tantalum Foils**
Date: November 9, 1966
Experimenter: Douglas Venable
Radiographic Time: 34.94 μs

Eight slabs of 6.35-mm-thick Composition B-3 separated by 0.025-mm-thick tantalum foils are initiated by a 50.8-mm-thick slab of Composition B-3 and a P-081 lens.

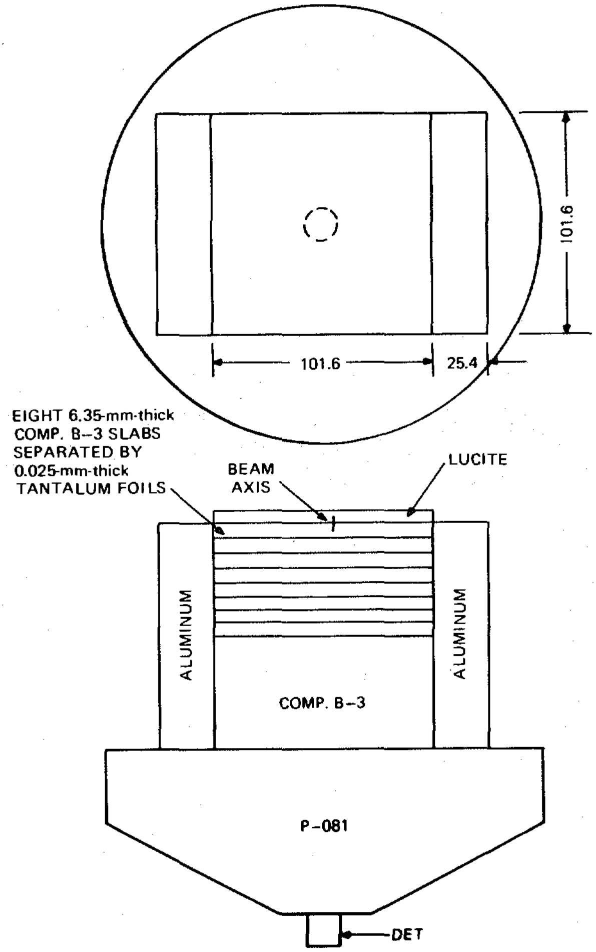


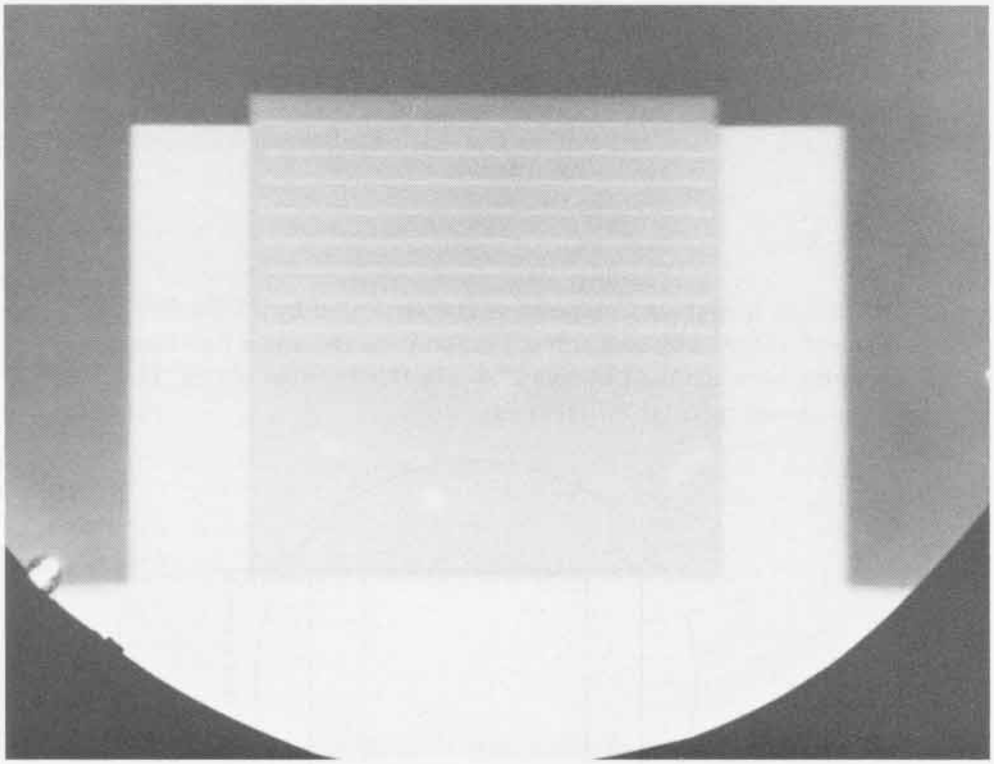


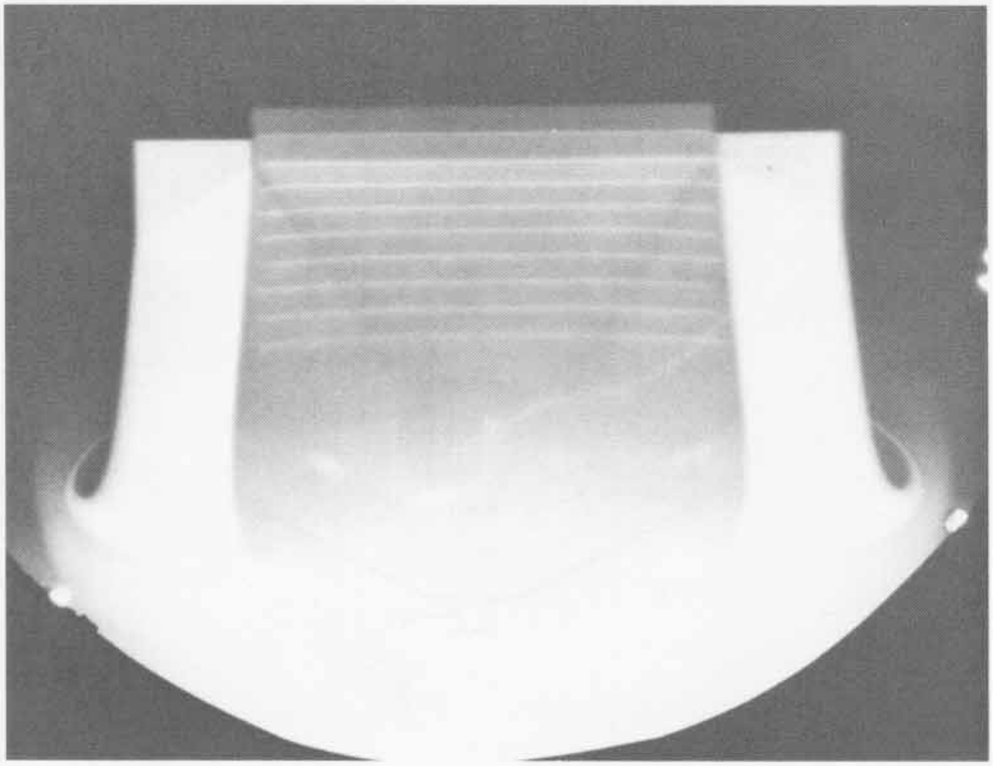


SHOT 423: **Composition B-3 with Embedded Tantalum Foils**
Date: November 6, 1966
Experimenter: Douglas Venable
Radiographic Time: 34.97 μs
References: Mader, 1972b; Mader, 1974; Mader, 1979

Eight slabs of 6.35-mm-thick Composition B-3 separated by 0.0254-mm-thick tantalum foils were initiated by 50.8 mm of Composition B-3 and a P-081 lens. The explosive products were confined by two 25.4-mm-thick aluminum plates.

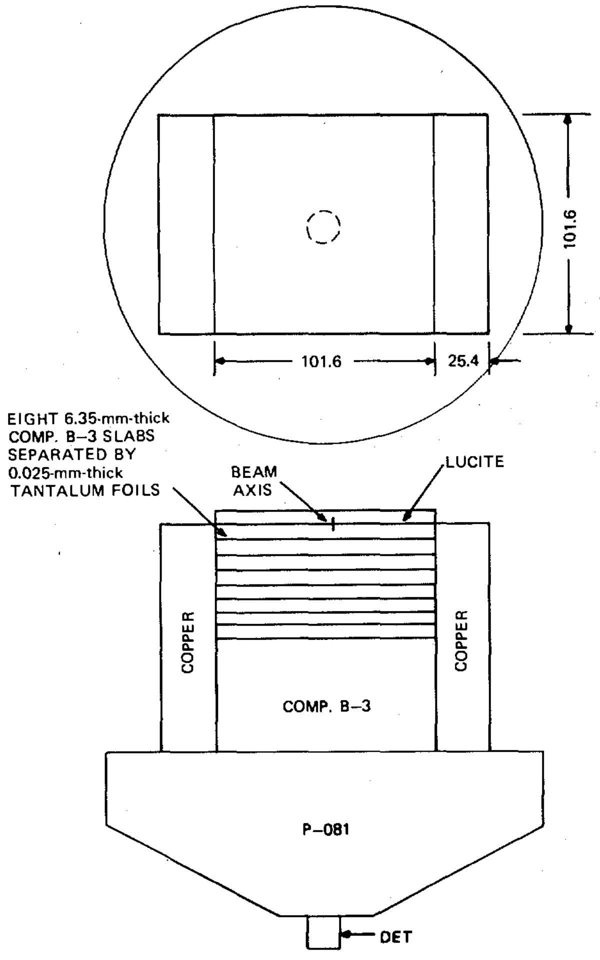


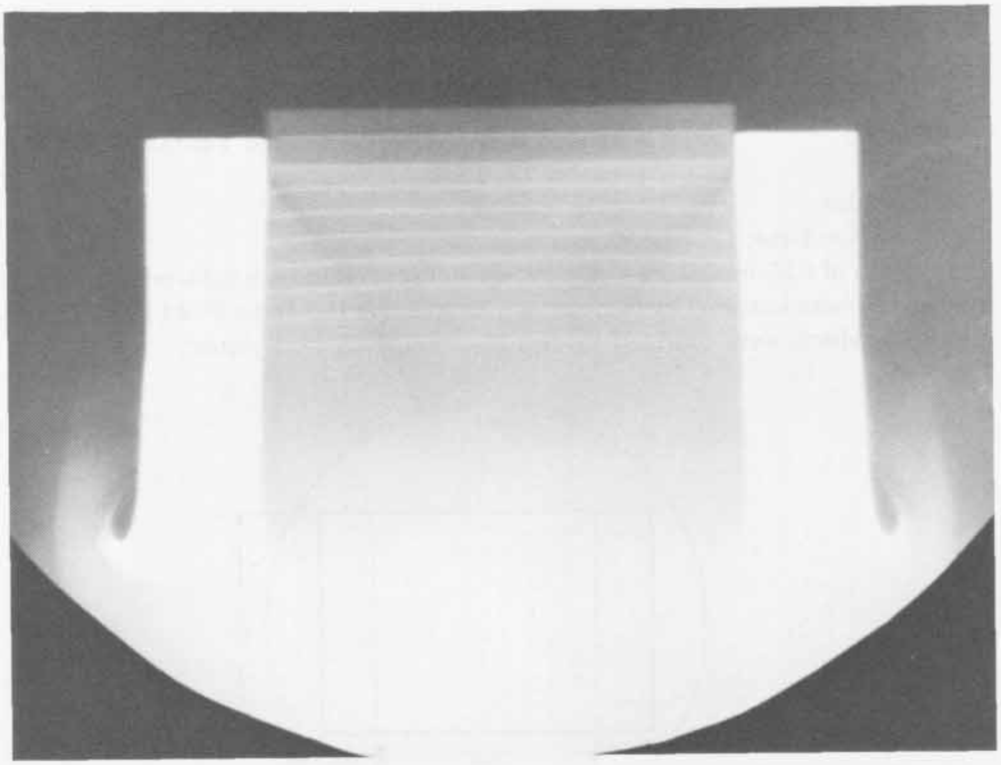


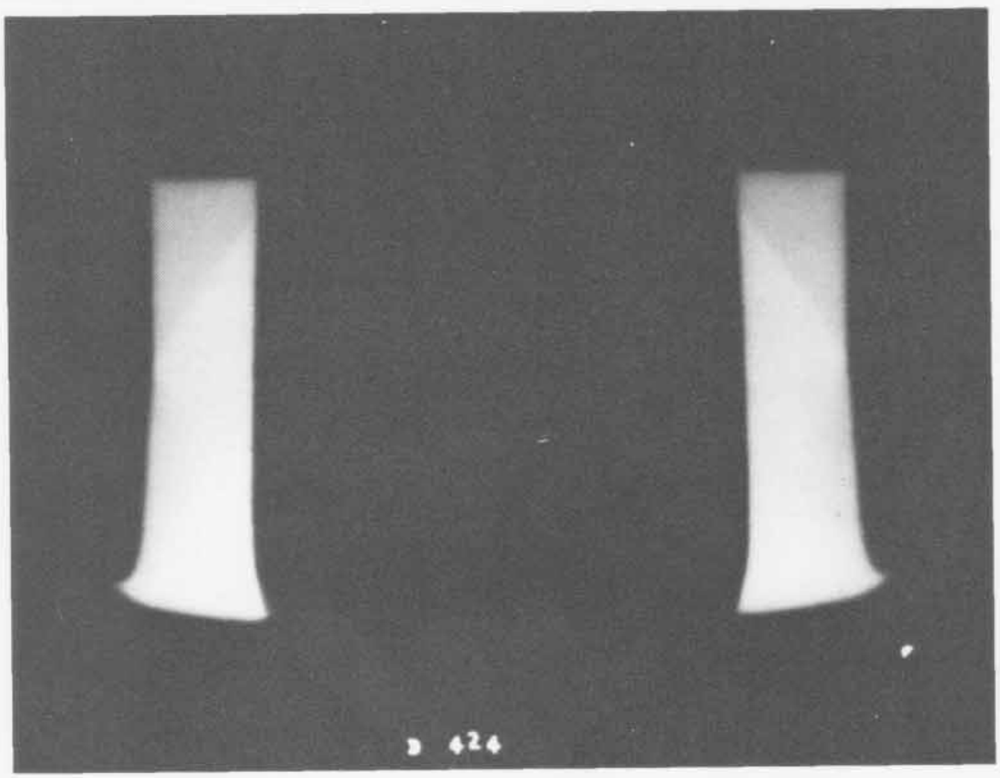


SHOT 424: **Composition B-3 with Embedded Tantalum Foils**
Date: January 5, 1967
Experimenter: Douglas Venable
Radiographic Time: 34.97 μs
Reference: Venable, 1965

Eight slabs of 6.35-mm-thick Composition B-3 separated by 0.0254-mm-thick tantalum foils were initiated by 50.8 mm of Composition B-3 and a P-081 lens. The explosive products were confined by two 25.4-mm-thick copper plates. The dynamic radiograph is shown twice at different exposures.

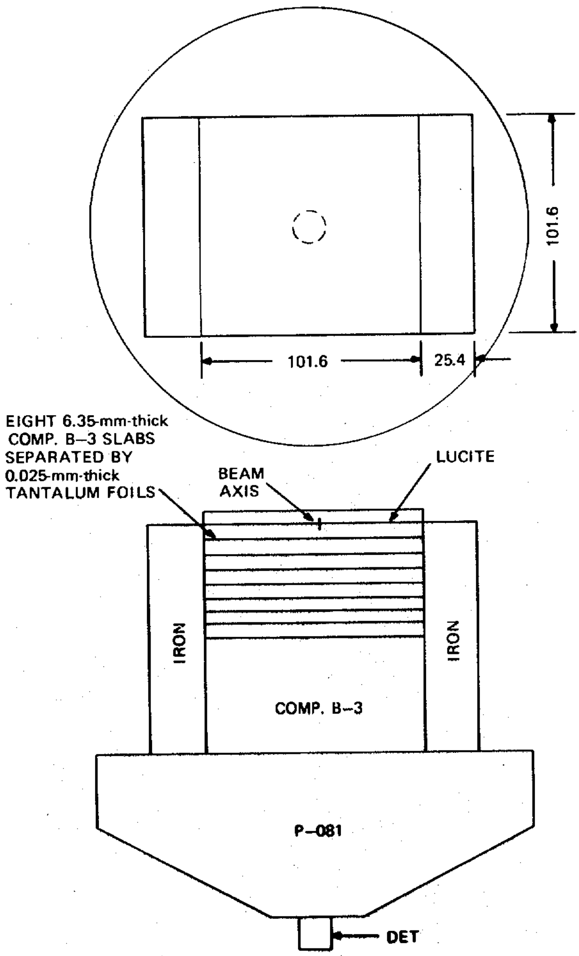


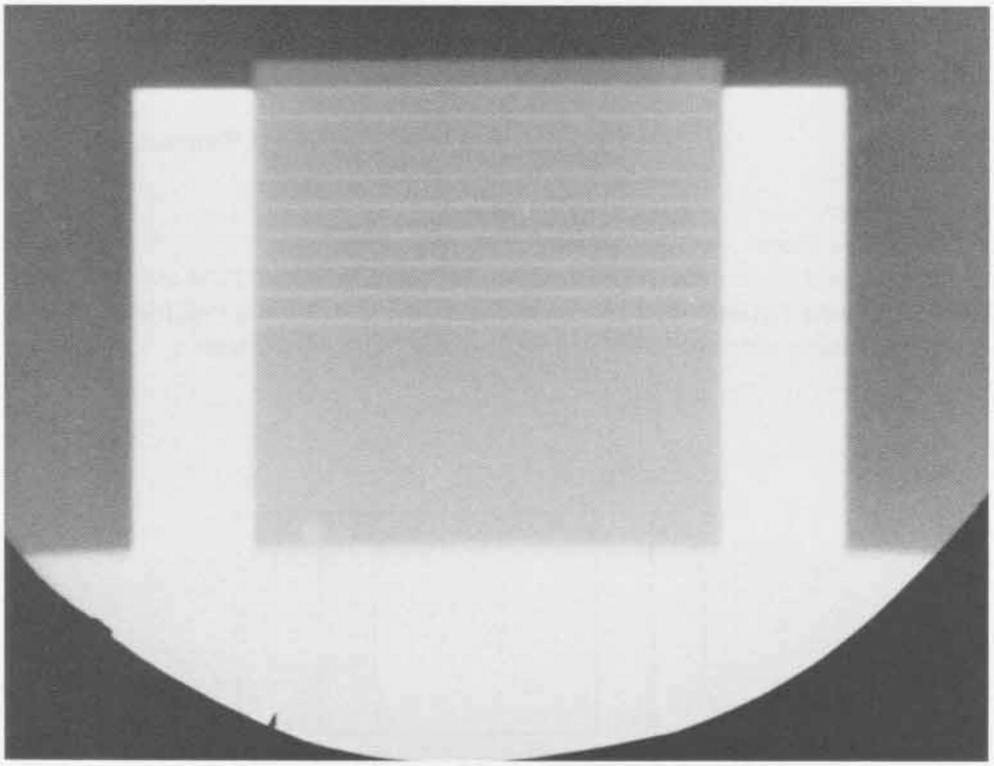


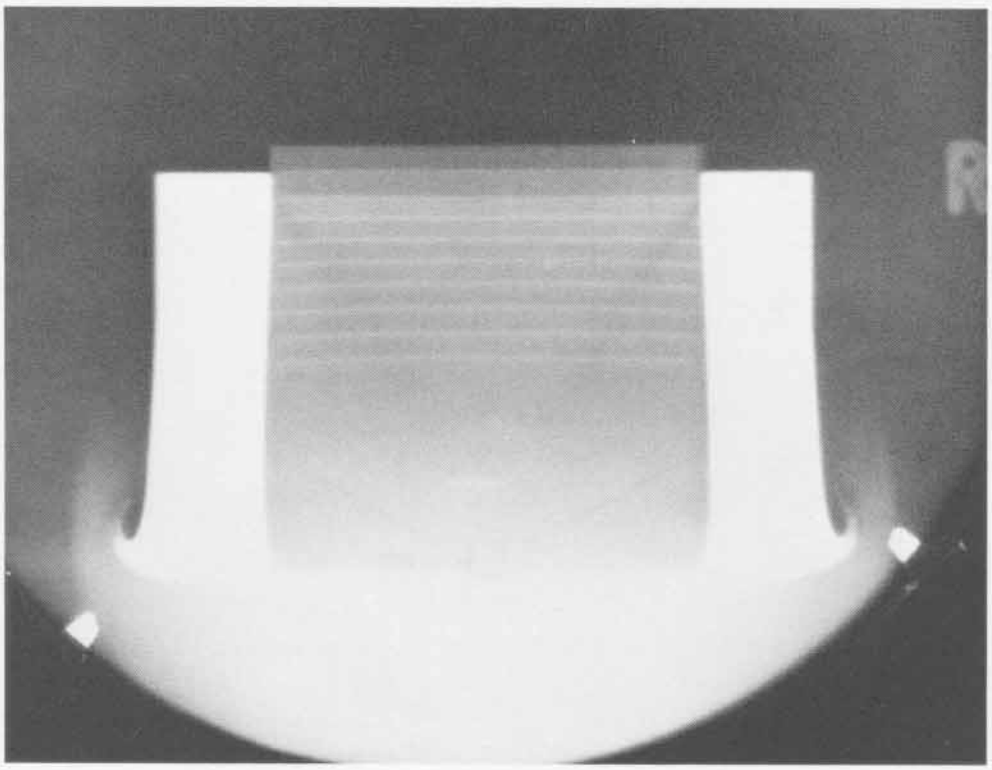

424

SHOT 425: **Composition B-3 with Embedded Tantalum Foils**
Date: November 23, 1966
Experimenter: Douglas Venable
Radiographic Time: 34.93 μs

Eight slabs of 6.35-mm-thick Composition B-3 separated by 0.0254-mm-thick tantalum foils were initiated by 50.8 mm of Composition B-3 and a P-081 lens. The explosive products were confined by two 25.4-mm-thick iron plates.

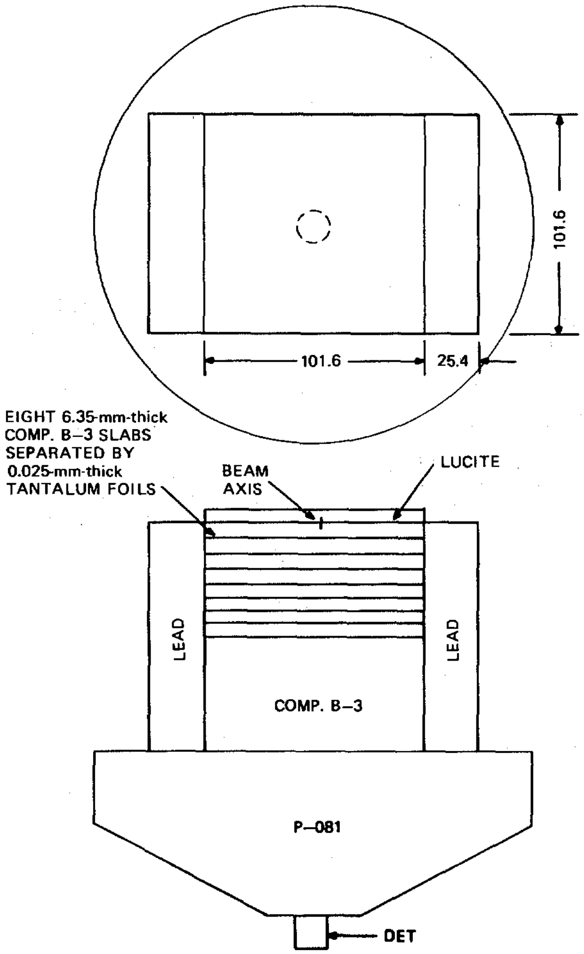


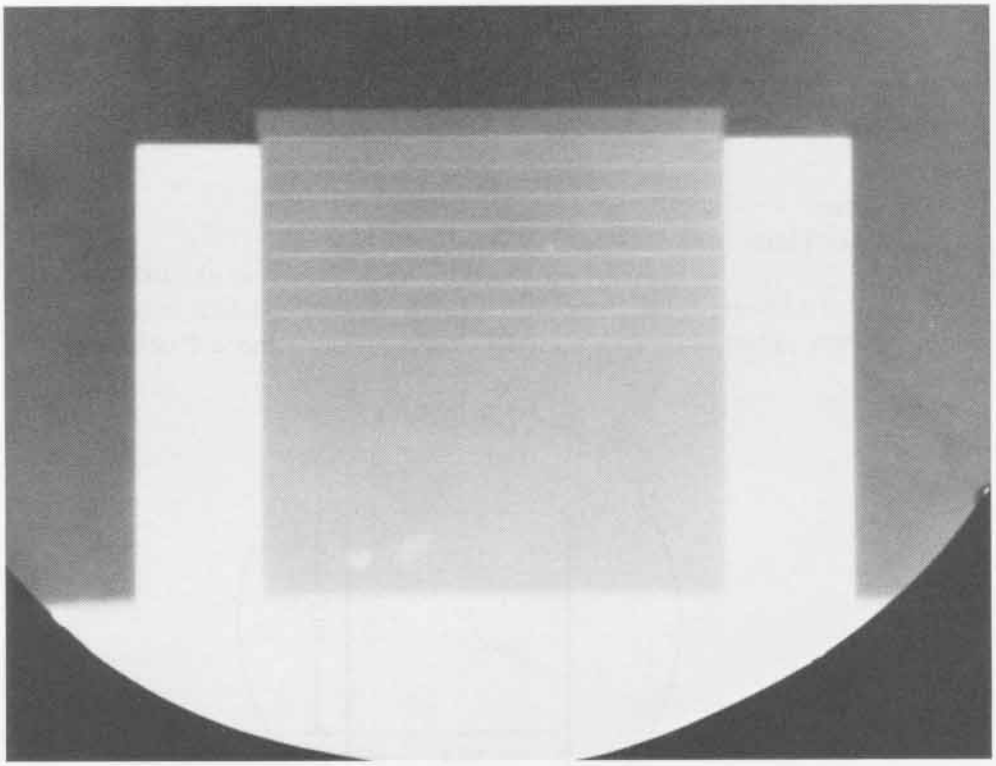


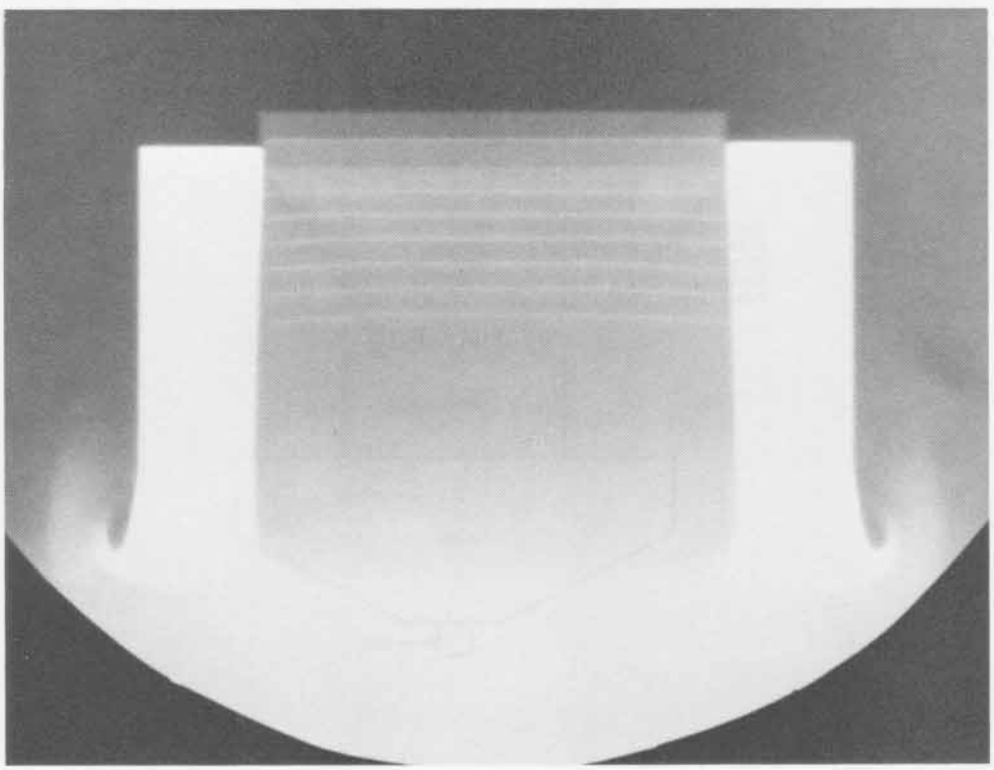


SHOT 426: **Composition B-3 with Embedded Tantalum Foils**
Date: December 7, 1966
Experimenter: Douglas Venable
Radiographic Time: 34.71 μs

Eight slabs of 6.35-mm-thick Composition B-3 separated by 0.0254-mm-thick tantalum foils were initiated by 50.8 mm of Composition B-3 and a P-081 lens. The explosive products were confined by two 25.4-mm-thick lead plates.

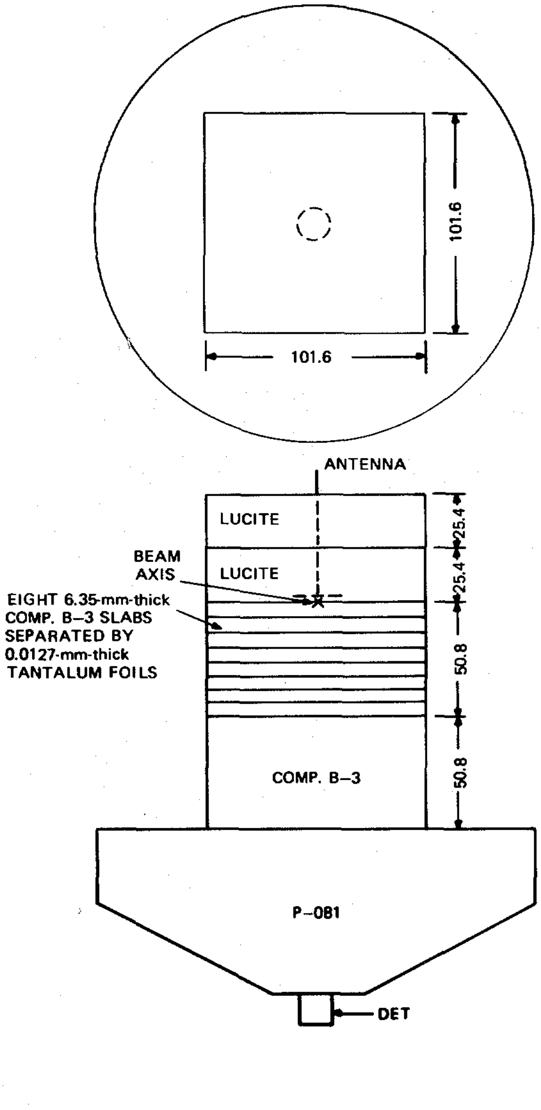


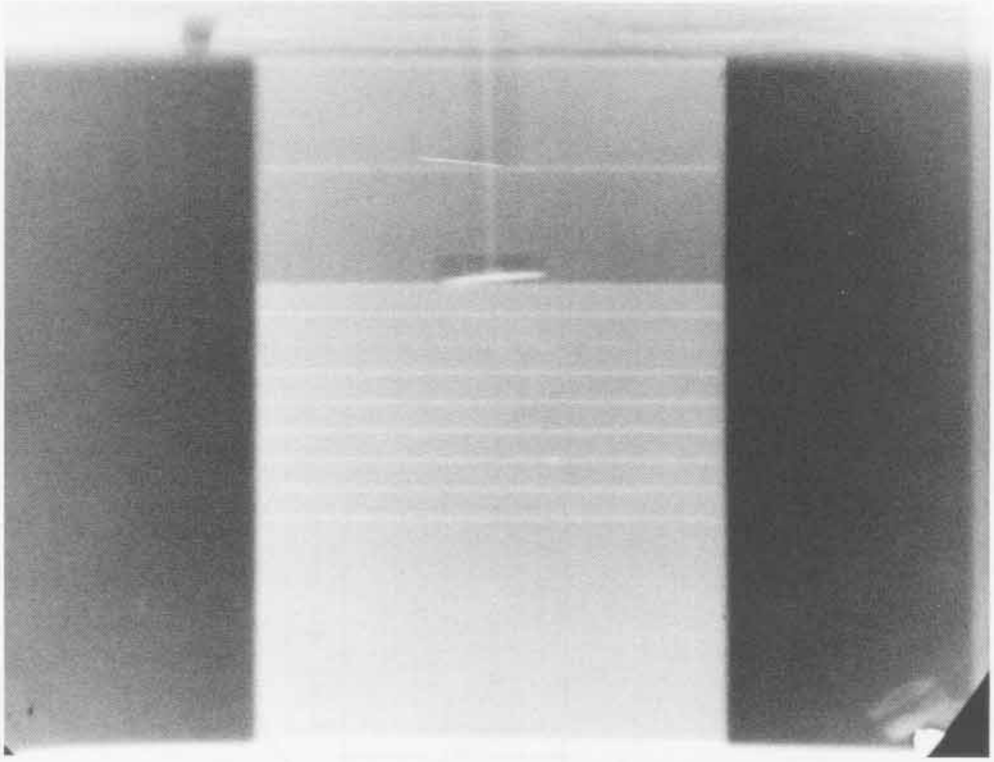


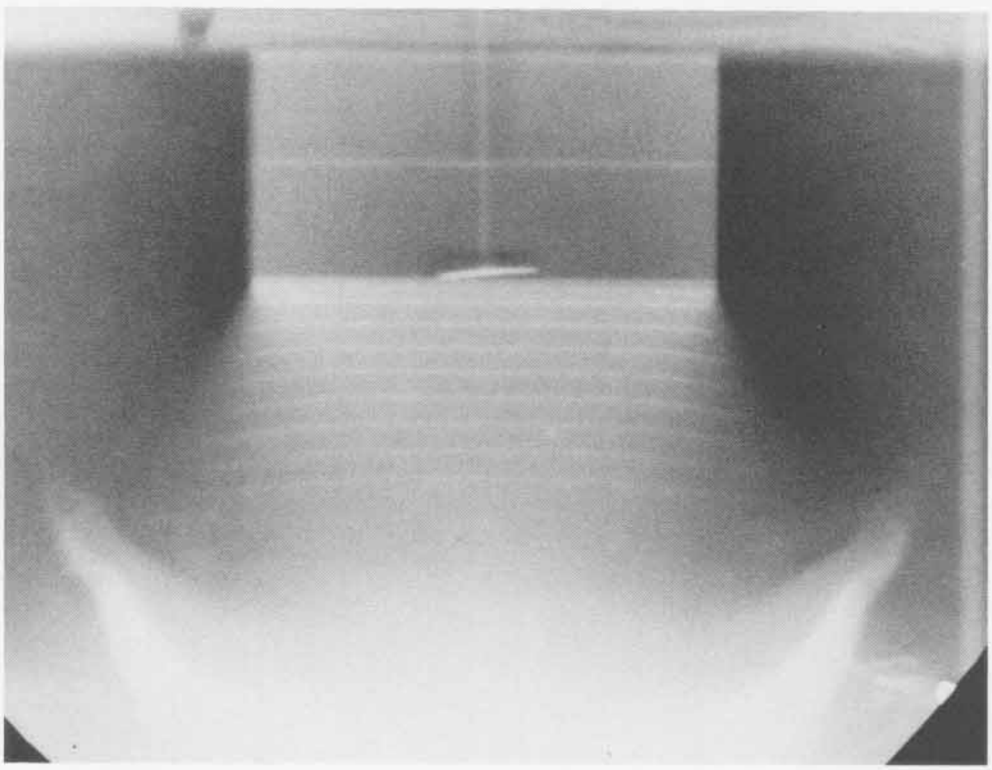


SHOT 427: **Composition B-3 with Embedded Tantalum Foils**
Date: February 27, 1968
Experimenter: Douglas Venable
Radiographic Time: 35.31 μs
References: Davis and Venable, 1970; Rivard et al., 1970

Eight slabs of 6.35-mm-thick Composition B-3 separated by 0.0127-mm-thick tantalum foils are initiated by 50.8 mm of Composition B-3 and a P-081 lens.

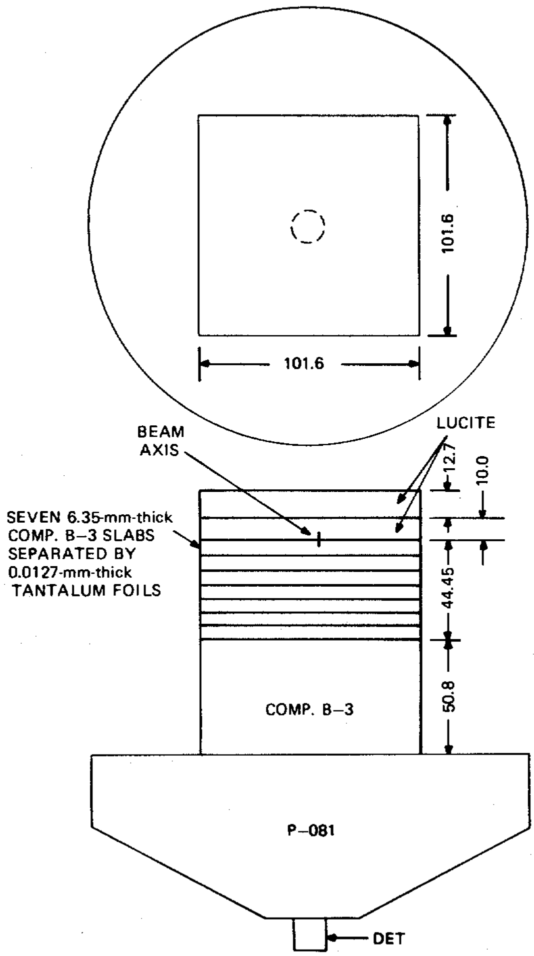


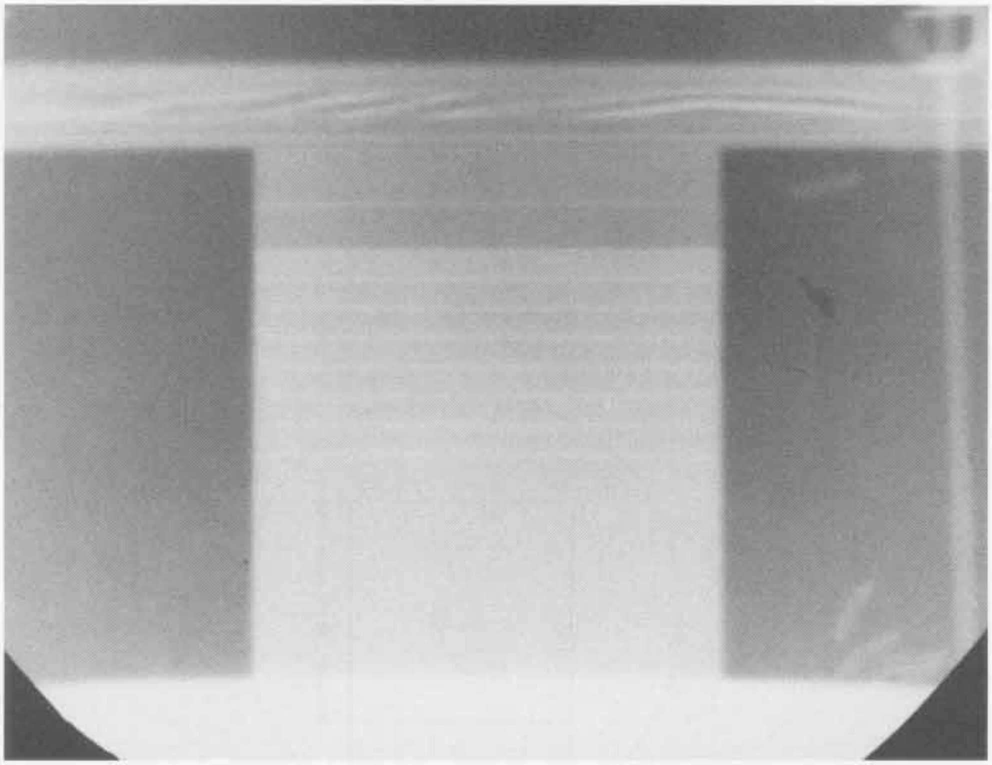


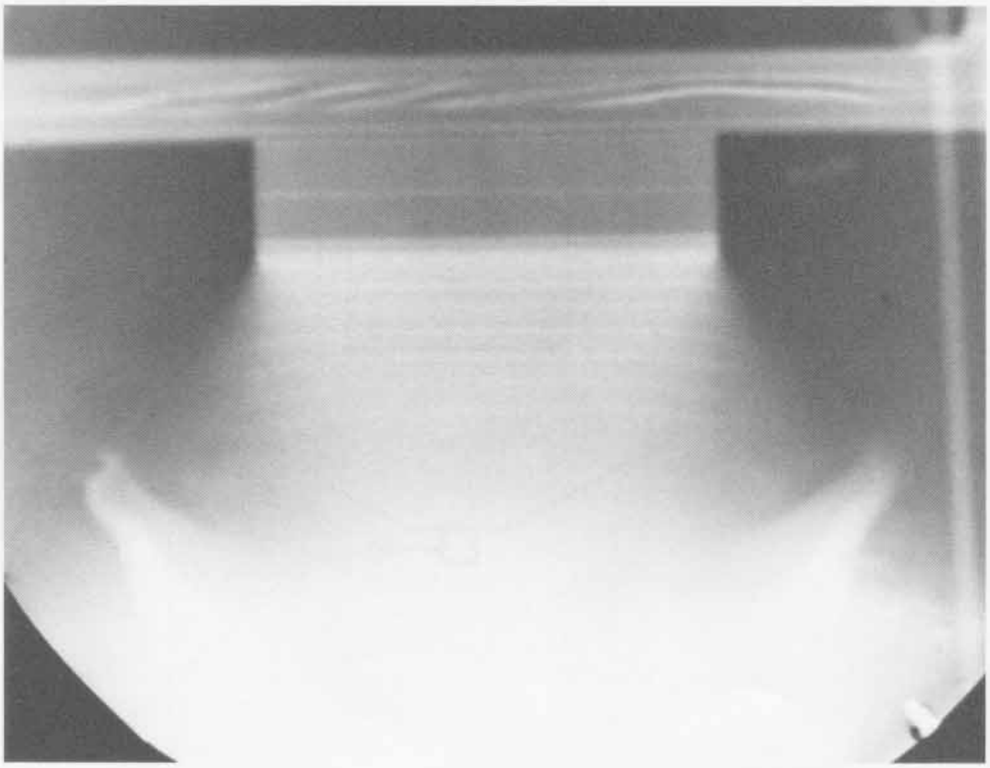


SHOT 428: **Composition B-3 with Embedded Tantalum Foils**
Date: May 14, 1968
Experimenter: Douglas Venable
Radiographic Time: 34.35 μs
References: Davis and Venable, 1970; Rivard et al., 1970

Seven slabs of 6.35-mm-thick Composition B-3 separated by 0.0127-mm-thick tantalum foils are initiated by 50.8 mm of Composition B-3 and a P-081 lens.

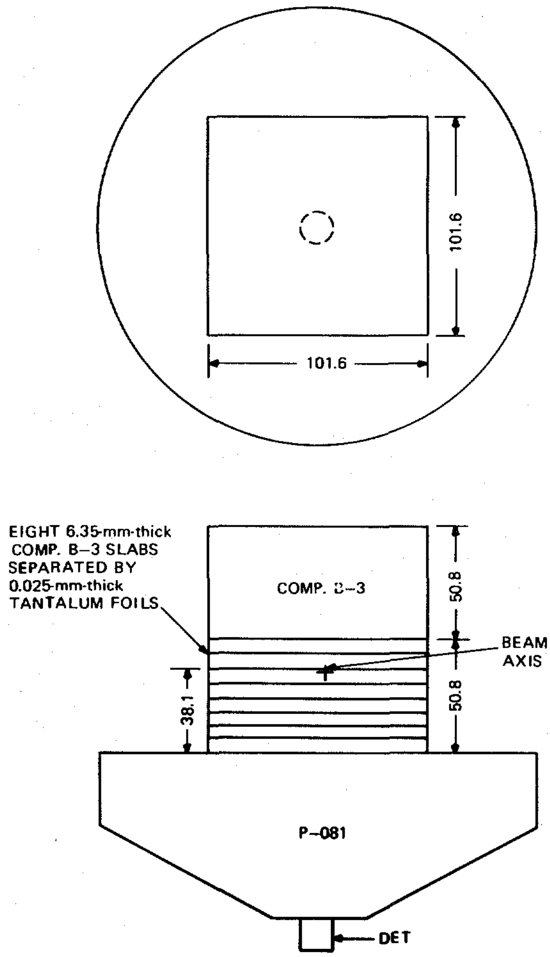


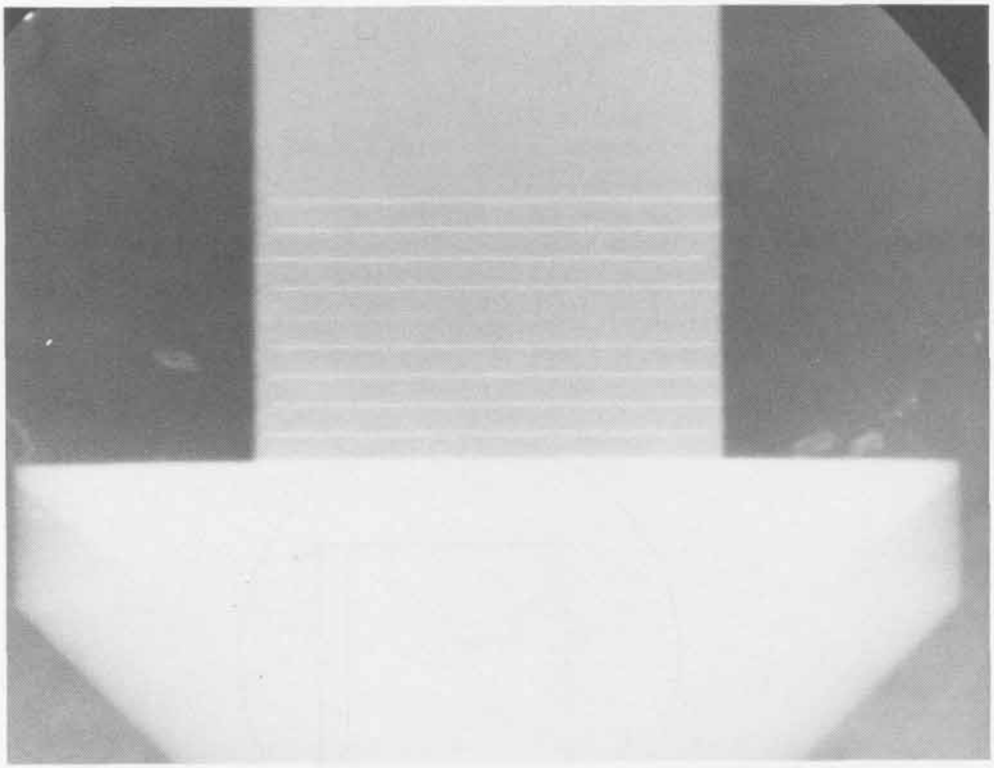


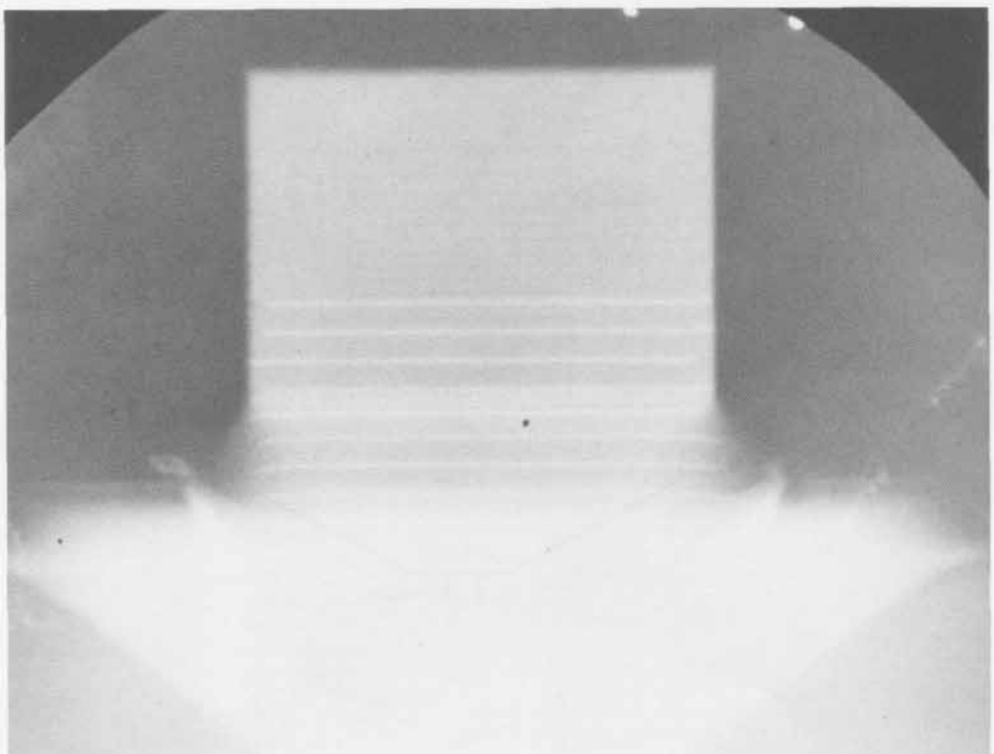


SHOT 429: **Composition B-3 with Embedded Tantalum Foils**
Date: November 3, 1966
Experimenter: Douglas Venable
Radiographic Time: 27.48 μs
References: Davis and Venable, 1970; Rivard et al., 1970

Eight slabs of 6.35-mm-thick Composition B-3 separated by 0.025-mm-thick tantalum foils are initiated by a P-081 lens.

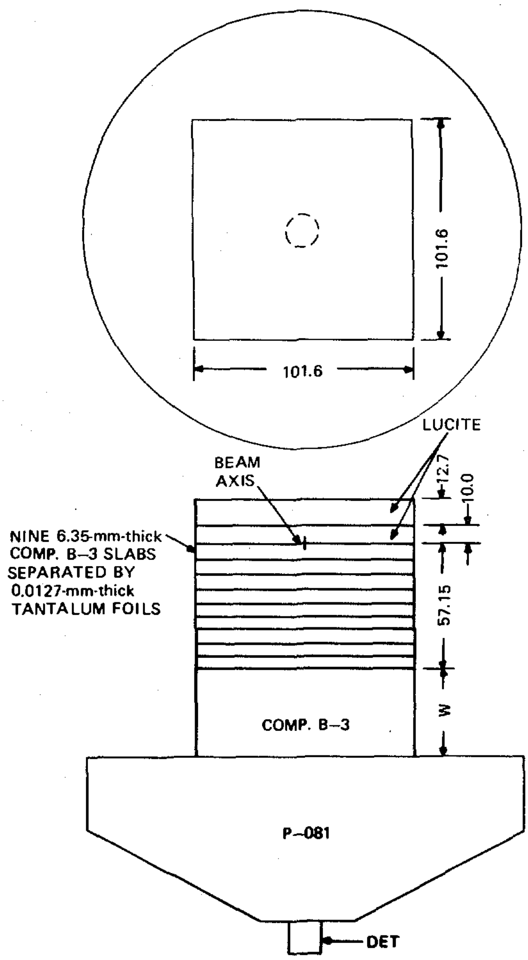


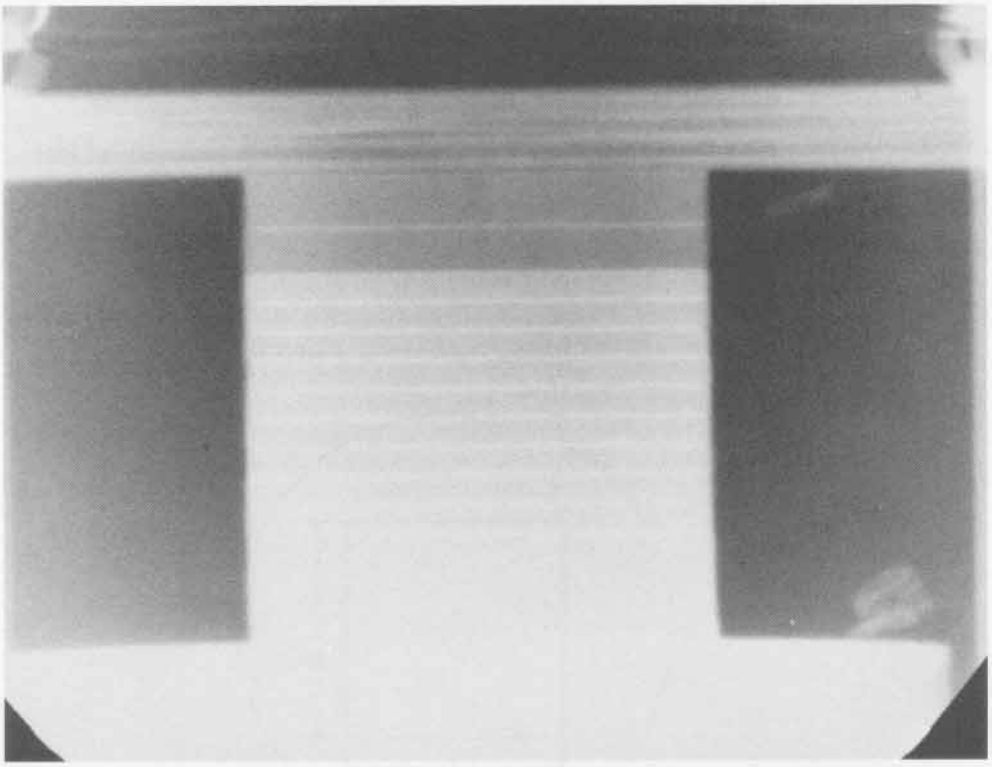


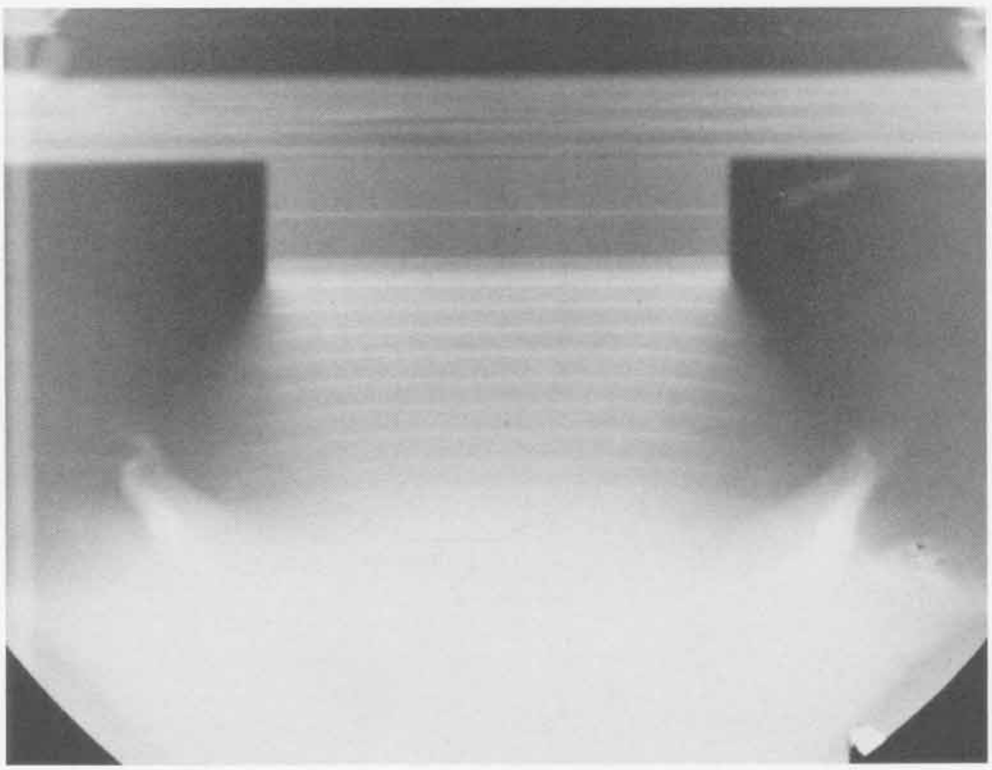


SHOT 430: **Composition B-3 with Embedded Tantalum Foils**
Date: May 20, 1968
Experimenter: Douglas Venable
Radiographic Time: 32.79 μs
References: Davis and Venable, 1970; Rivard et al., 1970

Nine slabs of 6.35-mm-thick Composition B-3 separated by 0.0127-mm-thick tantalum foils were initiated by 25.4 mm, W, of Composition B-3 and a P-081 lens.

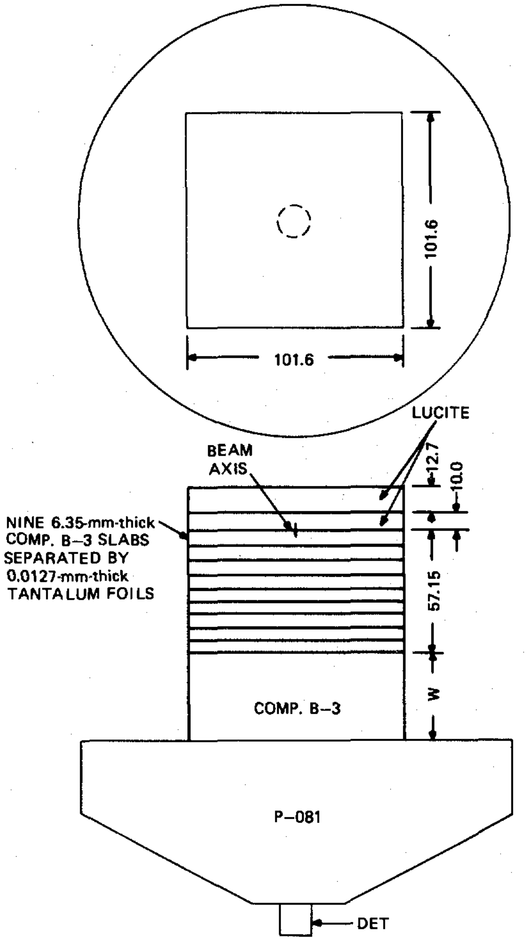


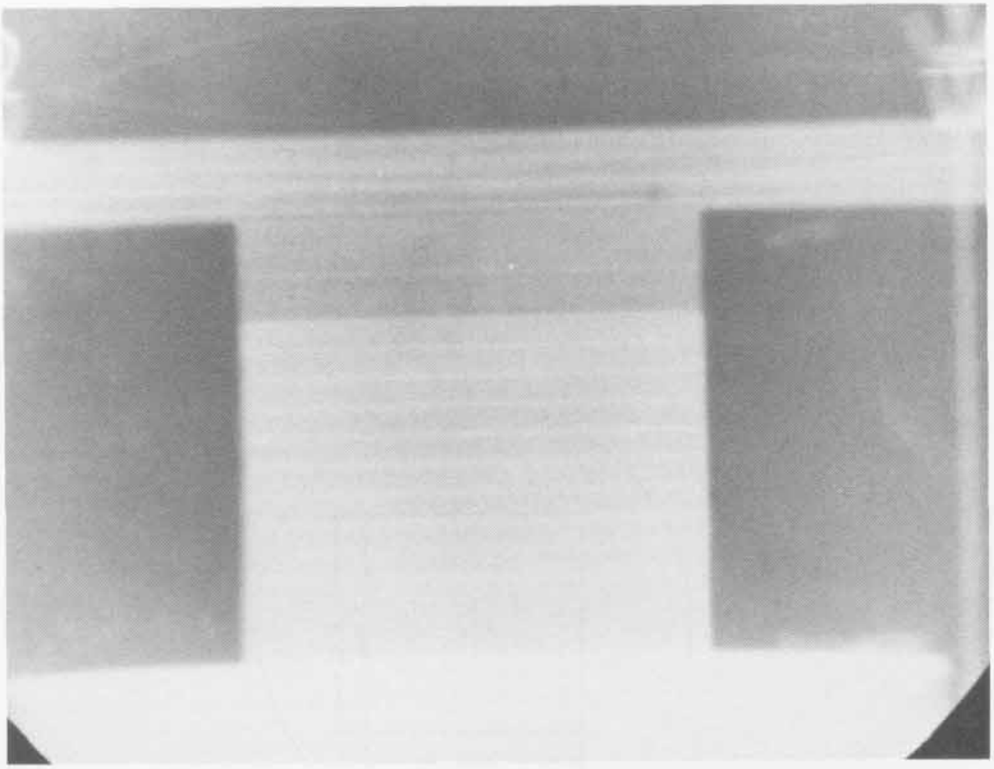


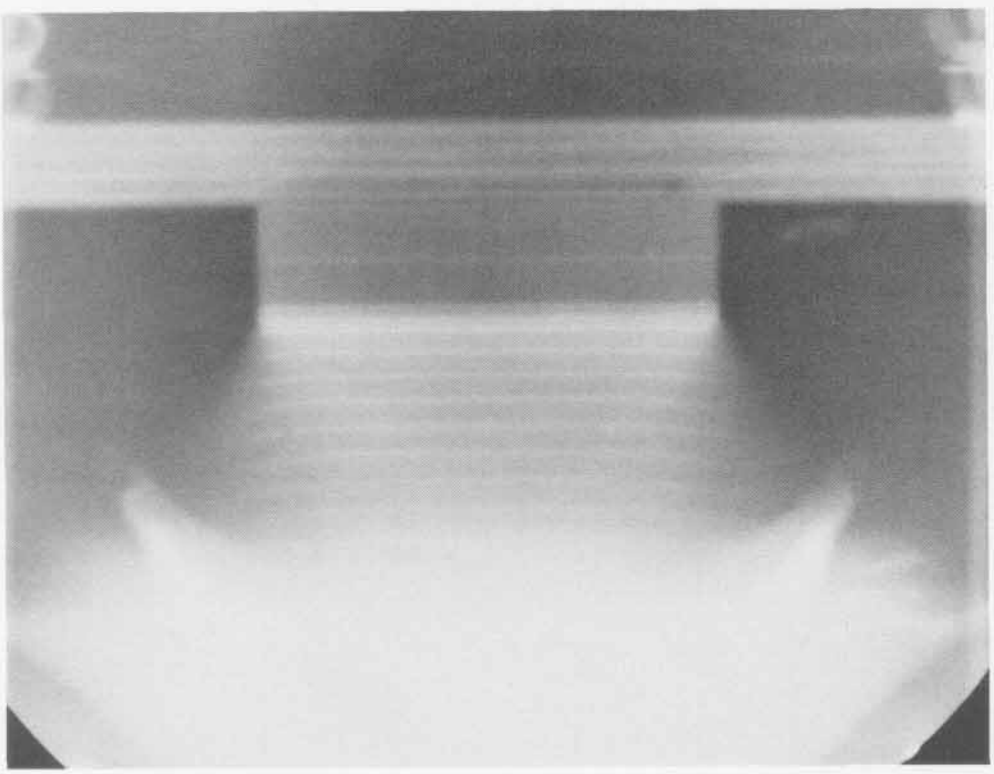


SHOT 431: **Composition B-3 with Embedded Tantalum Foils**
Date: May 16, 1968
Experimenter: Douglas Venable
Radiographic Time: 32.04 μs
References: Davis and Venable, 1970; Rivard et al., 1970

Nine slabs of 6.35-mm-thick Composition B-3 separated by 0.0127-mm-thick tantalum foils were initiated by 19.05 mm, W, of Composition B-3 and a P-081 lens.

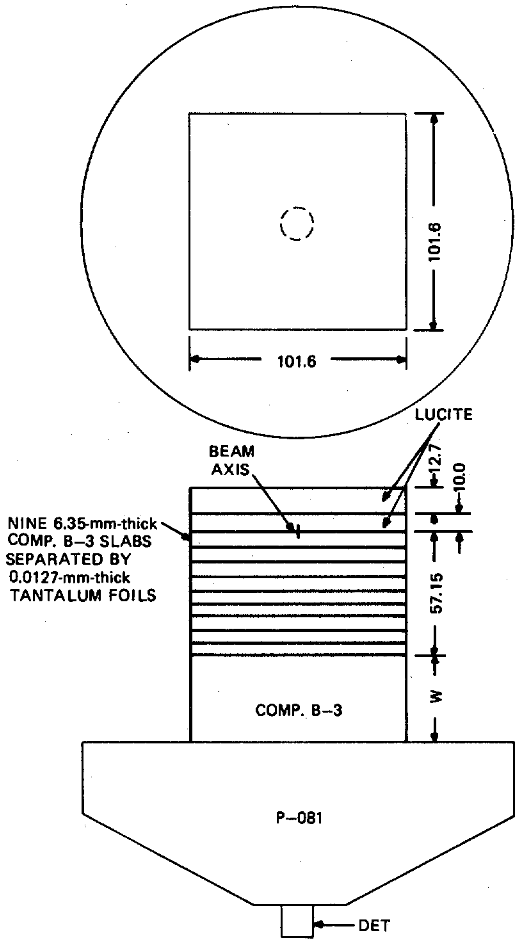


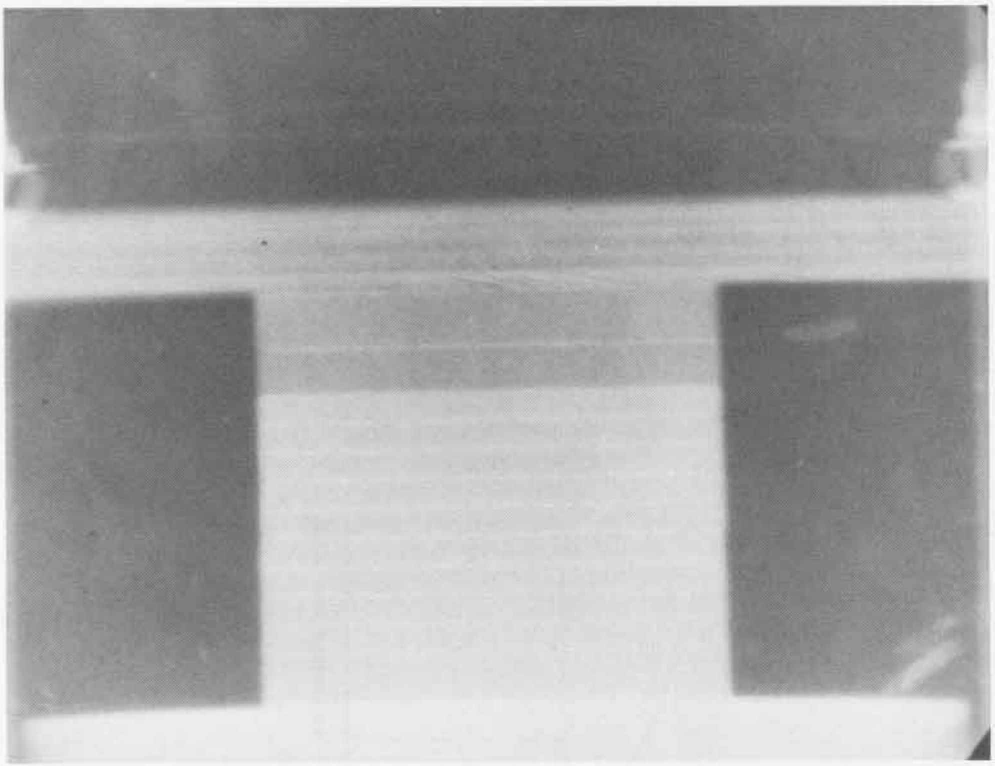


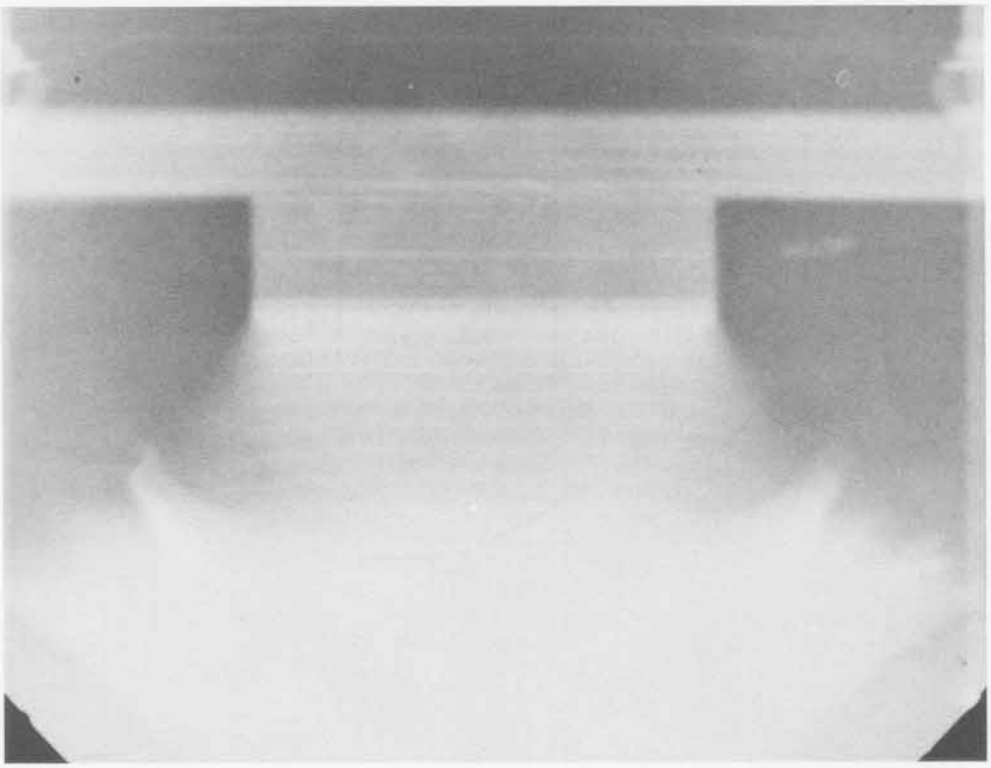


SHOT 432: **Composition B-3 with Embedded Tantalum Foils**
Date: May 16, 1968
Experimenter: Douglas Venable
Radiographic Time: 31.22 μs
References: Davis and Venable, 1970; Rivard et al., 1970

Nine slabs of 6.35-mm-thick Composition B-3 separated by 0.0127-mm-thick tantalum foils were initiated by 12.7 mm, W, of Composition B-3 and a P-081 lens.

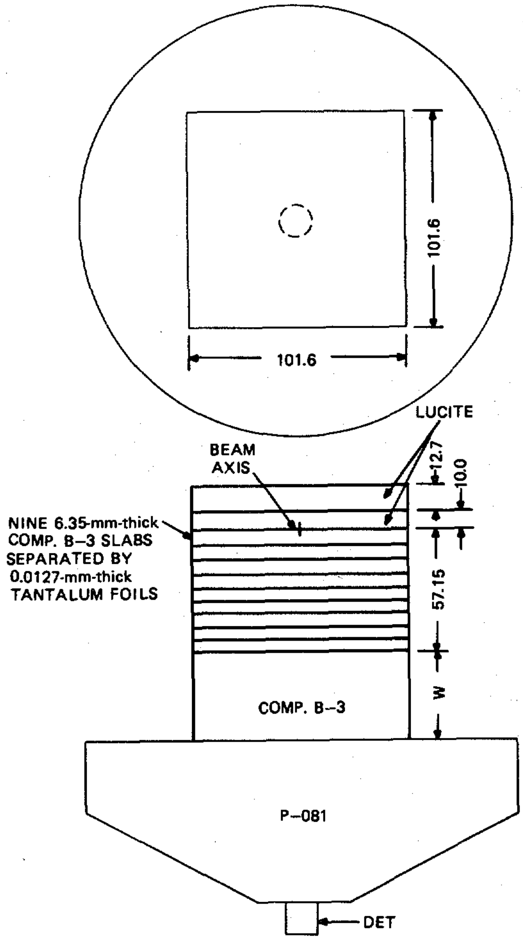


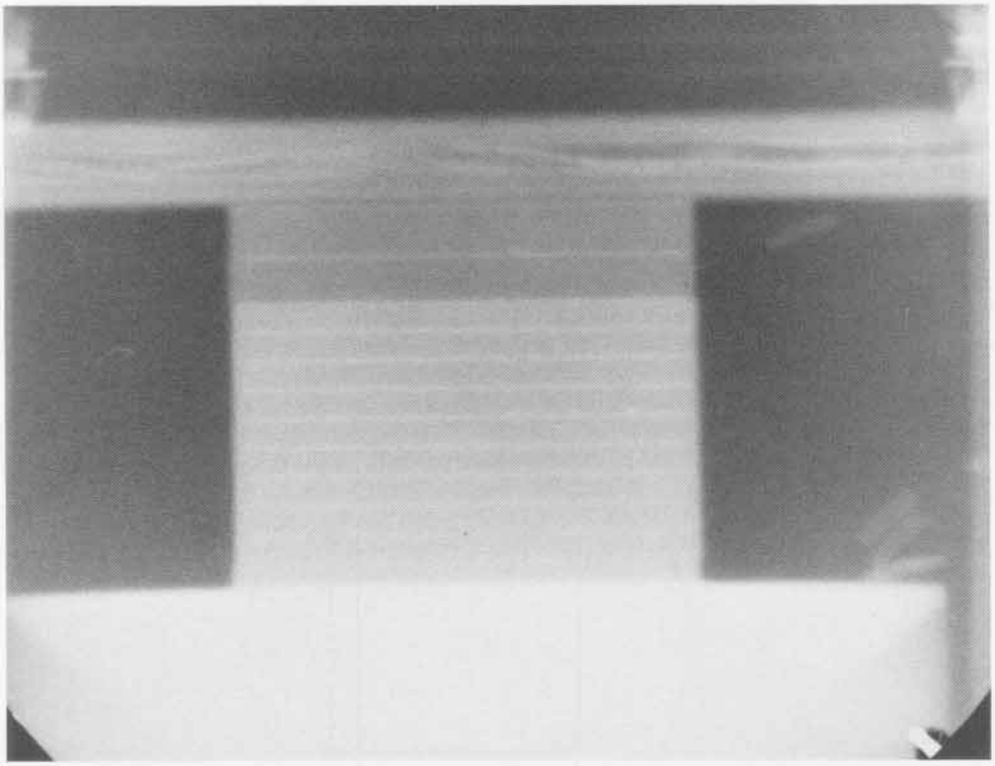


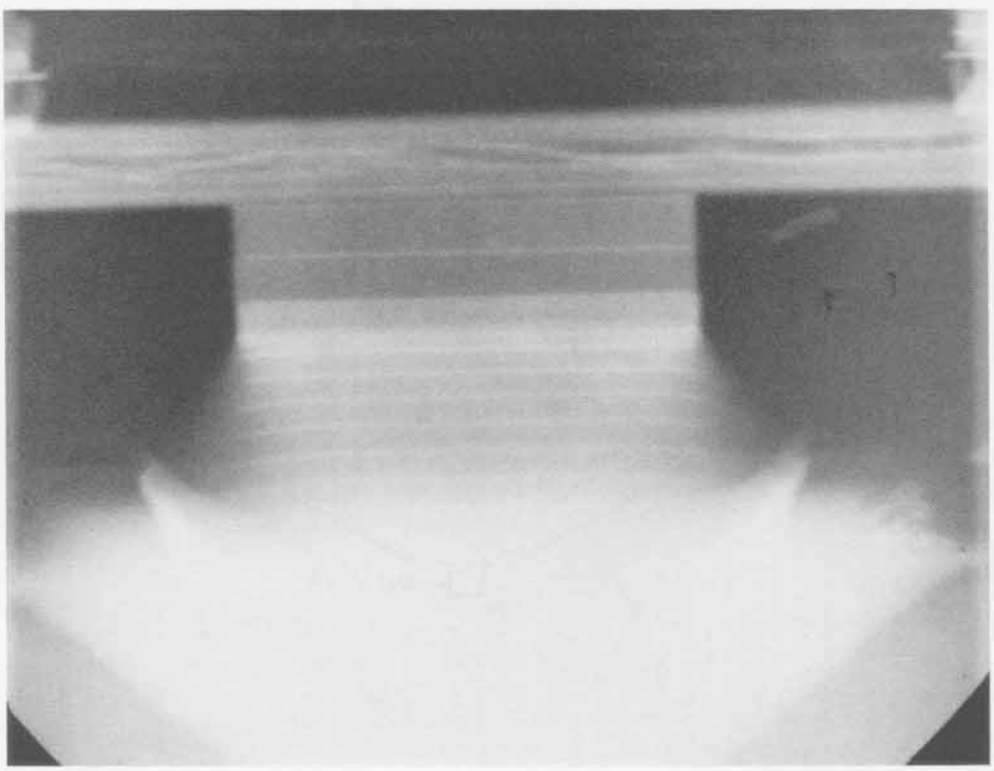


SHOT 433: **Composition B-3 with Embedded Tantalum Foils**
Date: May 15, 1968
Experimenter: Douglas Venable
Radiographic Time: 30.42 μs
References: Davis and Venable, 1970; Rivard et al., 1970

Nine slabs of 6.35-mm-thick Composition B-3 separated by 0.0127-mm-thick tantalum foils were initiated by 6.35 mm, W, of Composition B-3 and a P-081 lens.

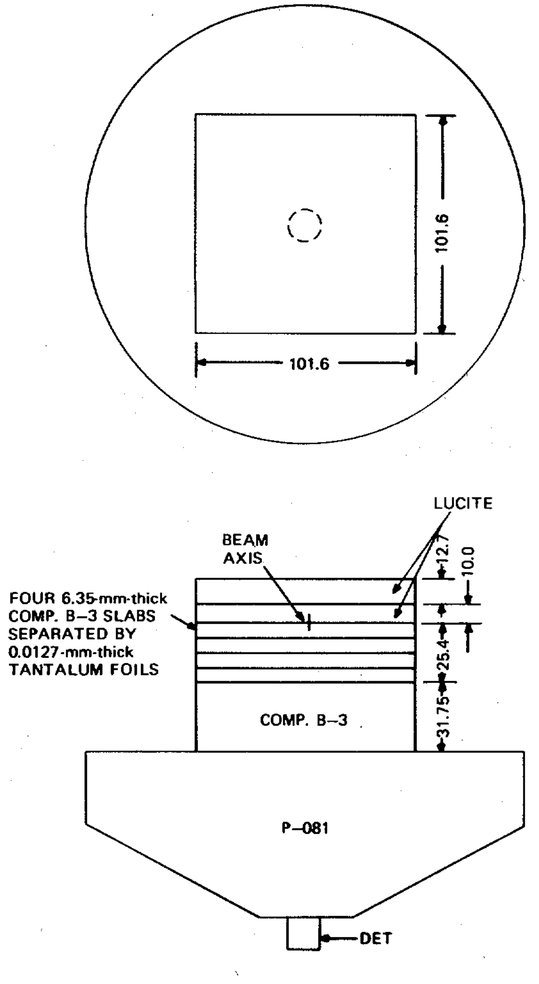


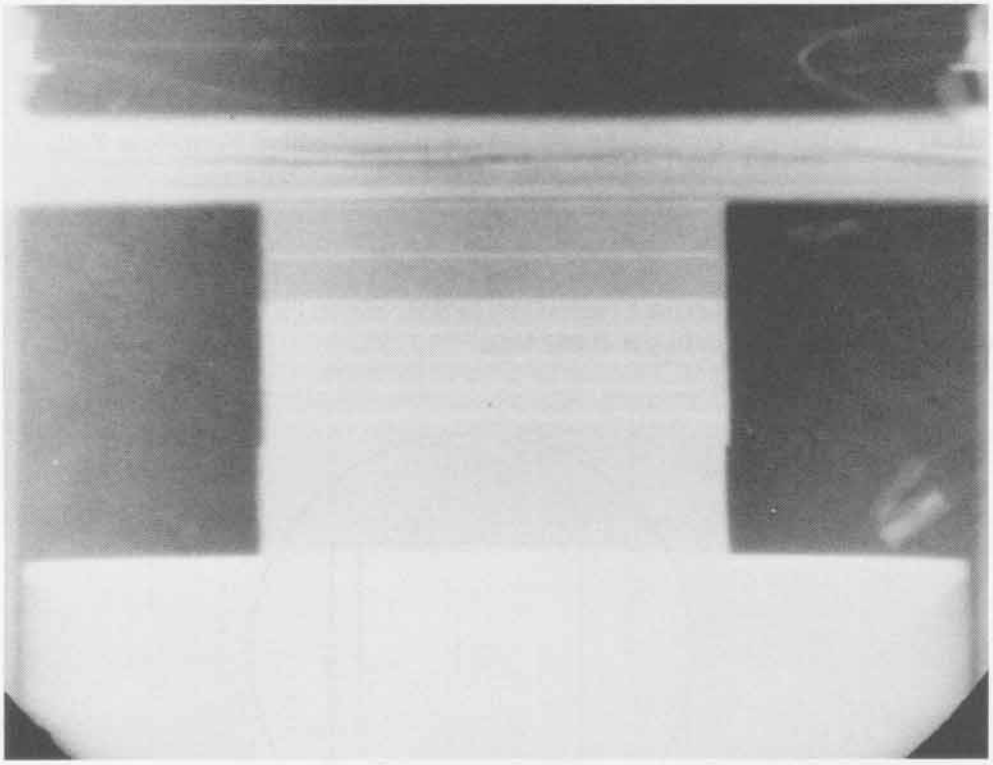


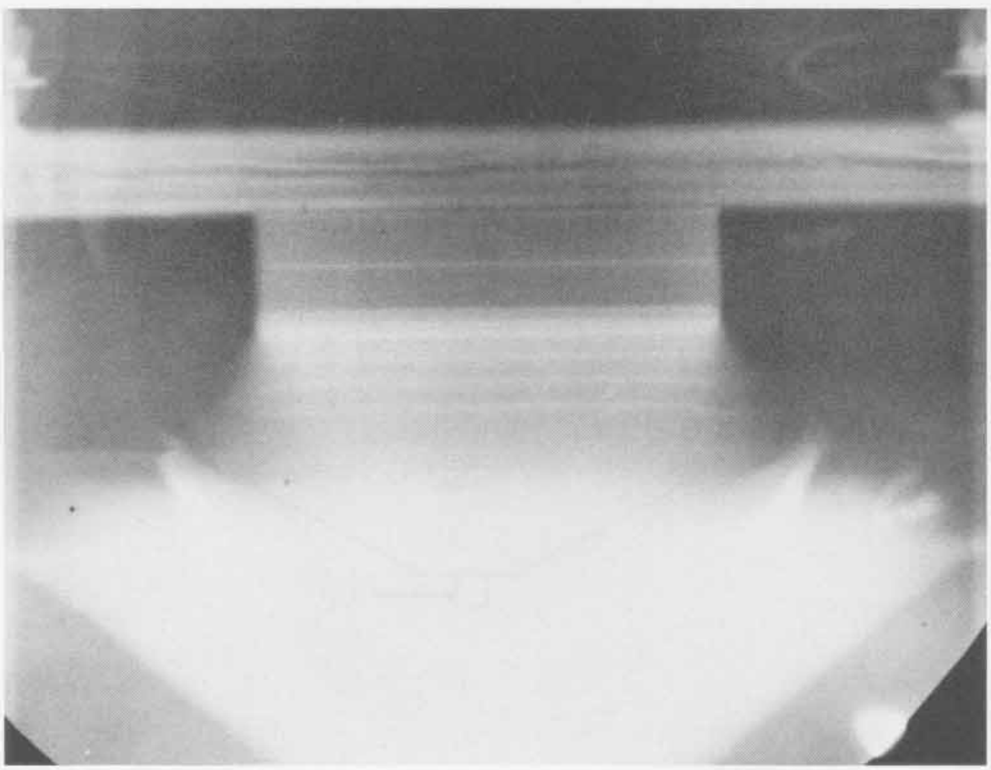


SHOT 434: **Composition B-3 with Embedded Tantalum Foils**
Date: May 13, 1968
Experimenter: Douglas Venable
Radiographic Time: 29.58 μs
References: Davis and Venable, 1970; Rivard et al., 1970

Four slabs of 6.35-mm-thick Composition B-3 separated by 0.0127-mm-thick tantalum foils were initiated by 31.75 mm of Composition B-3 and a P-081 lens.

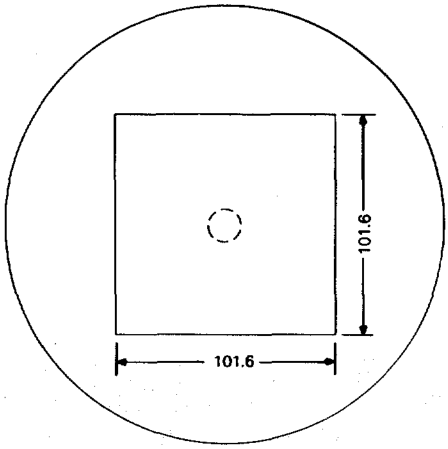


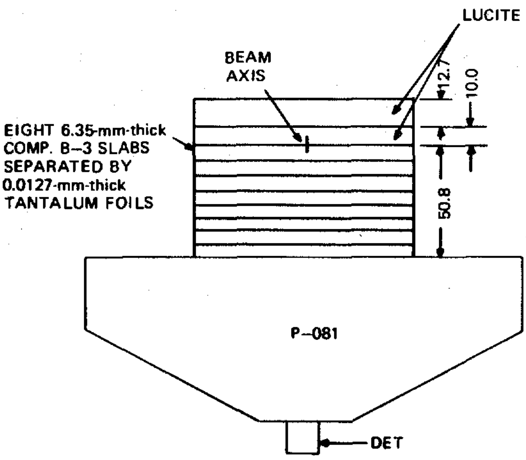


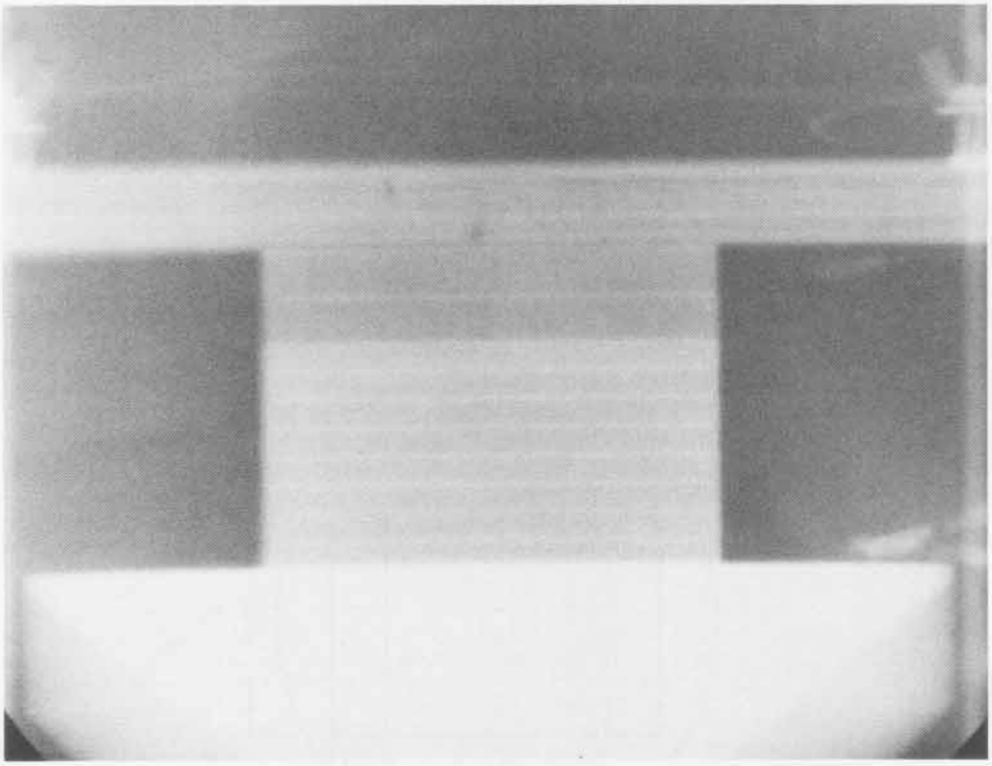


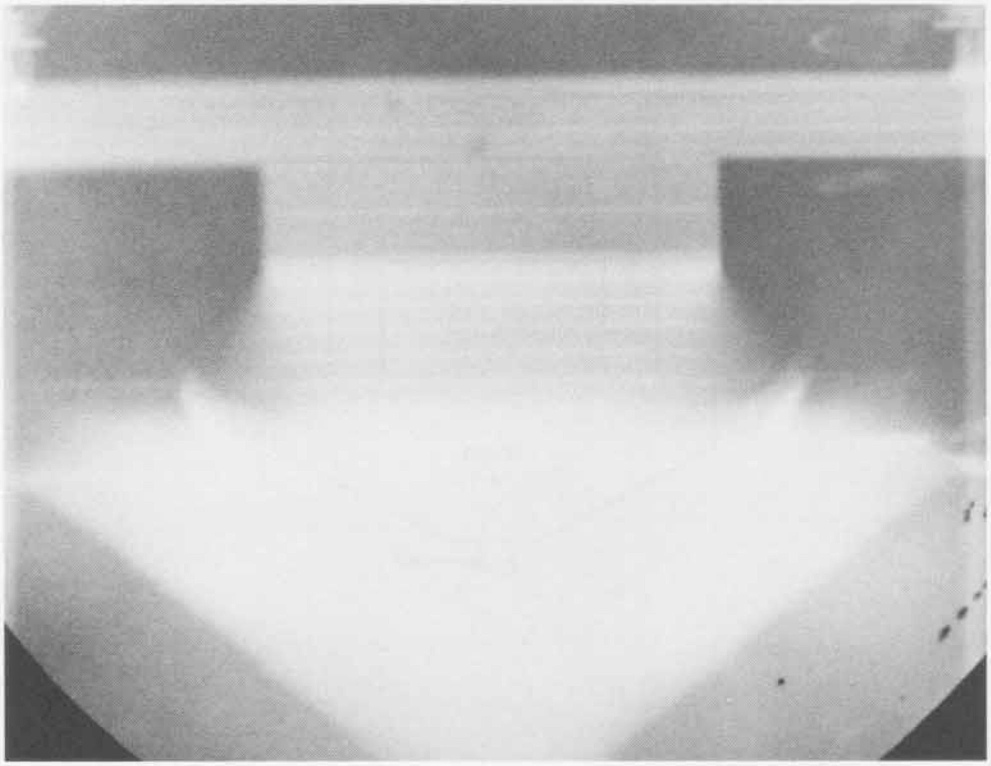
SHOT 435: **Composition B-3 with Embedded Tantalum Foils**
Date: May 15, 1968
Experimenter: Douglas Venable
Radiographic Time: 28.84 μs
References: Davis and Venable, 1970; Rivard et al., 1970

Eight slabs of 6.35-mm-thick Composition B-3 separated by 0.0127-mm-thick tantalum foils were initiated by a P-081 lens.



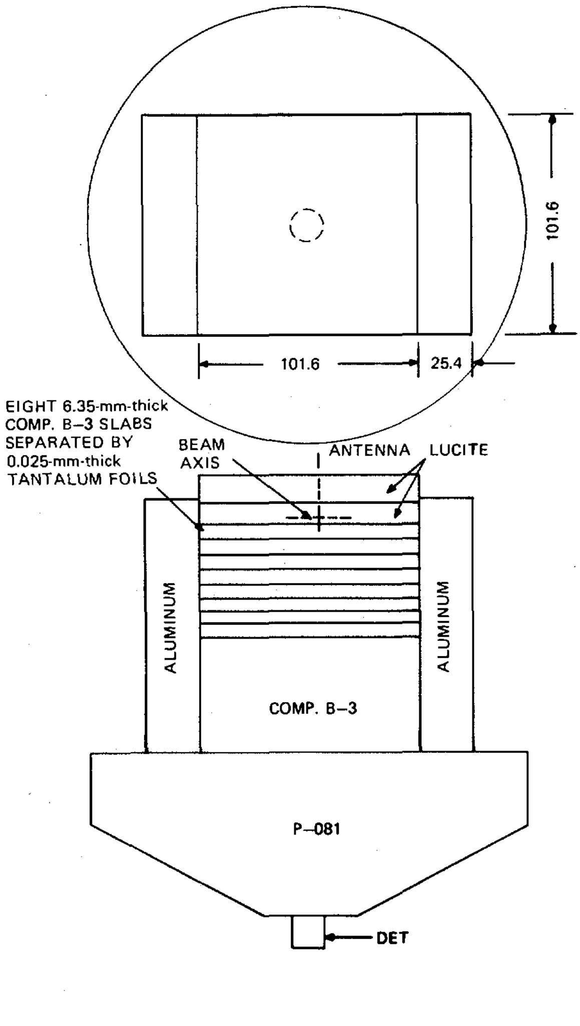


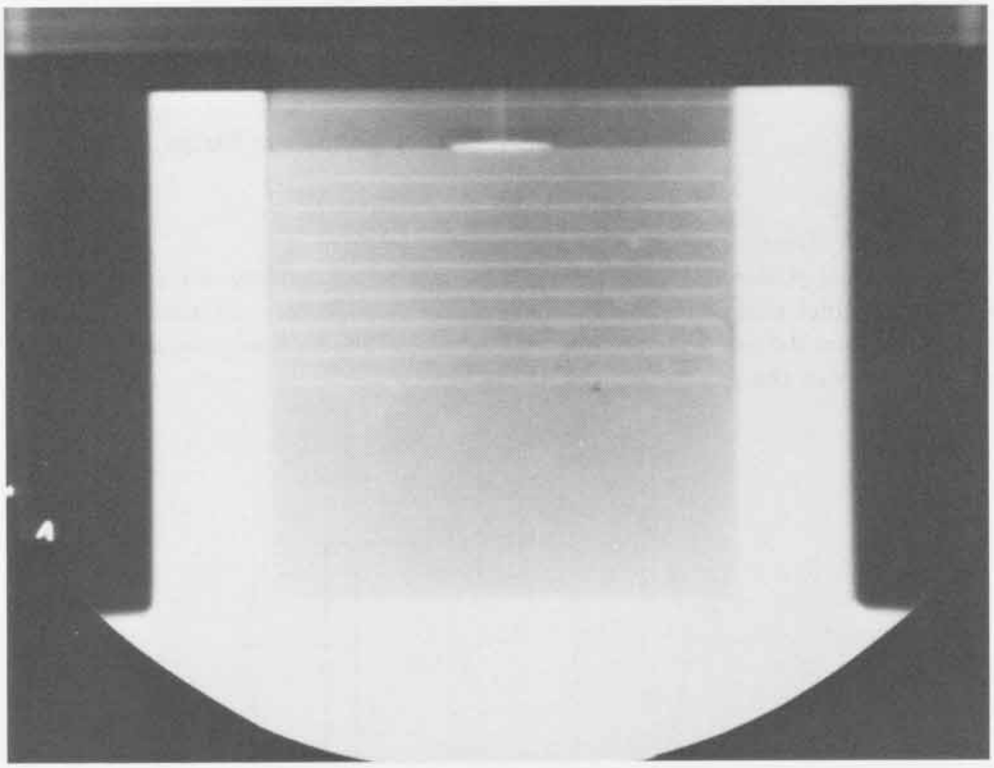


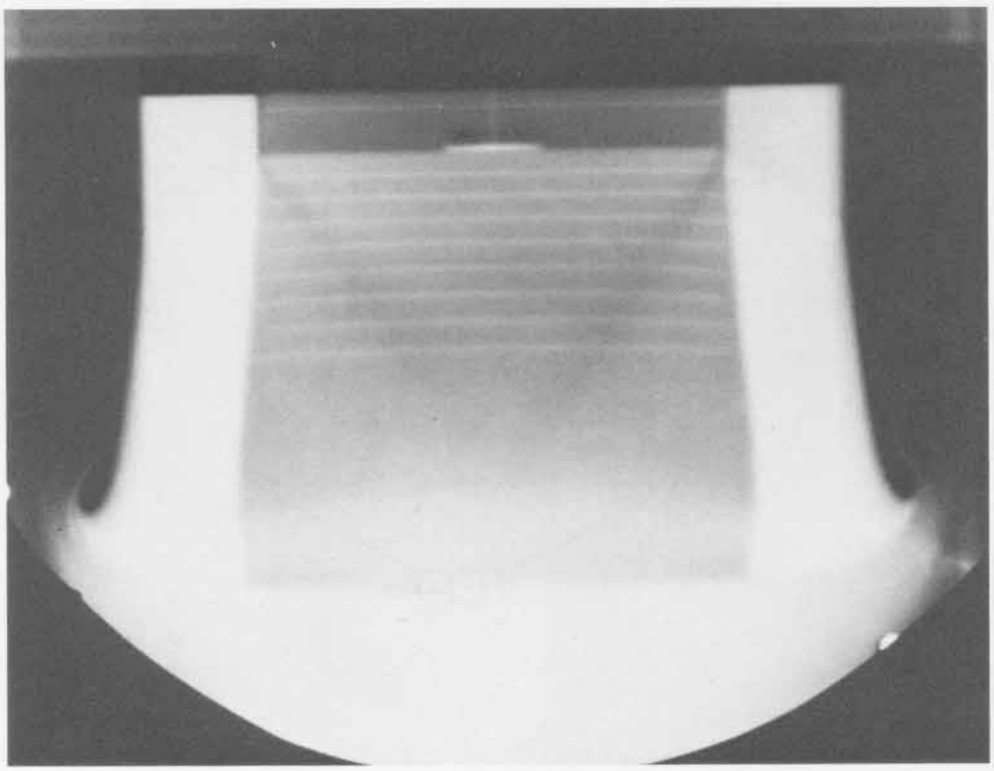


SHOT 436: **Composition B-3 with Embedded Tantalum Foils**
Date: April 10, 1968
Experimenter: Douglas Venable
Radiographic Time: 35.32 μs

Eight slabs of 6.35-mm-thick Composition B-3 separated by 0.0254-mm-thick tantalum foils were initiated by 50.8 mm of Composition B-3 and a P-081 lens. The explosive products were confined by two 25.4-mm-thick aluminum plates.

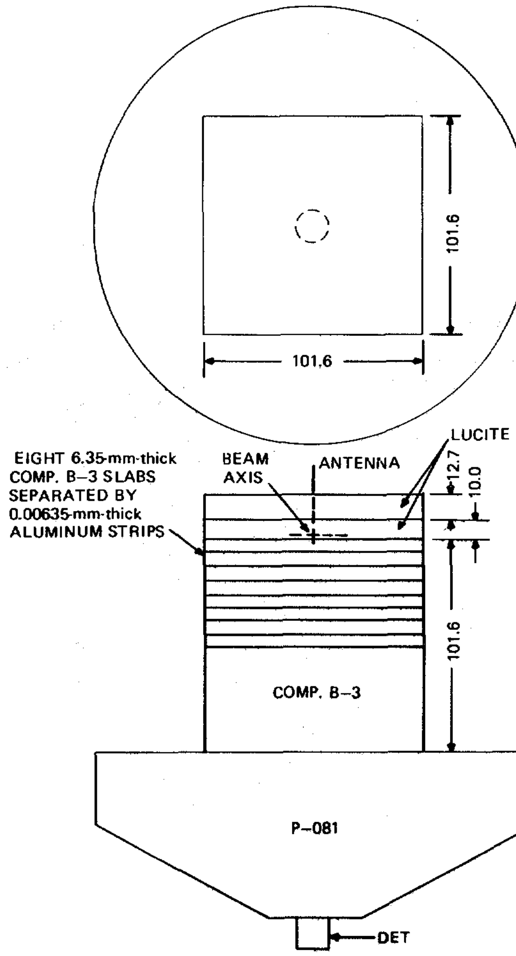


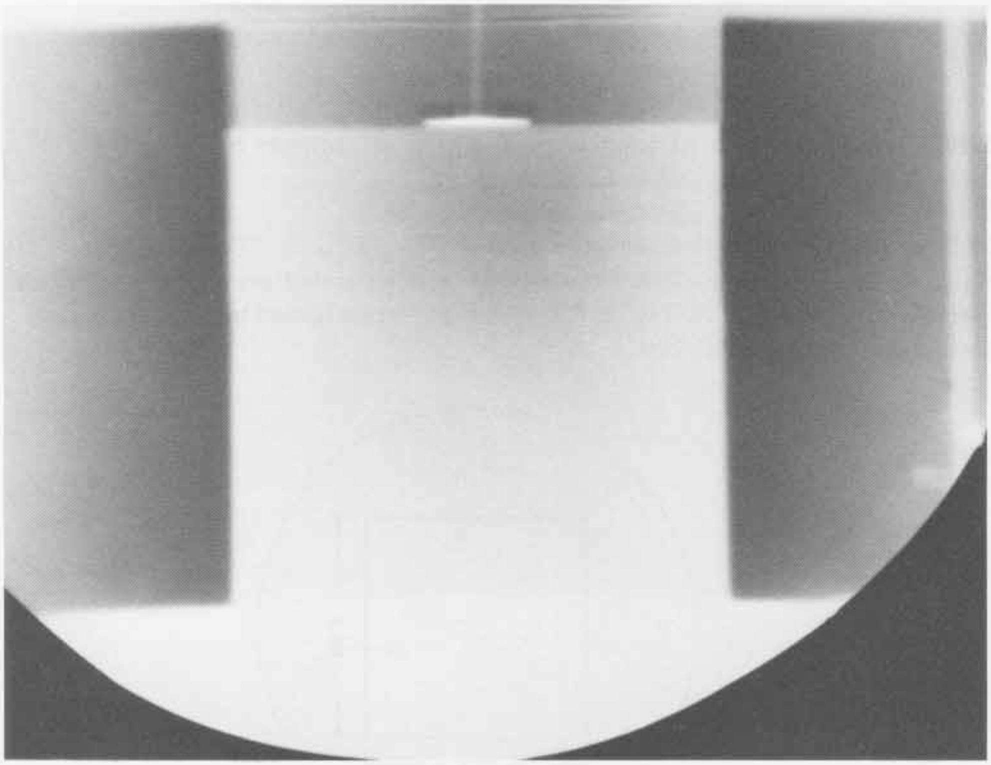


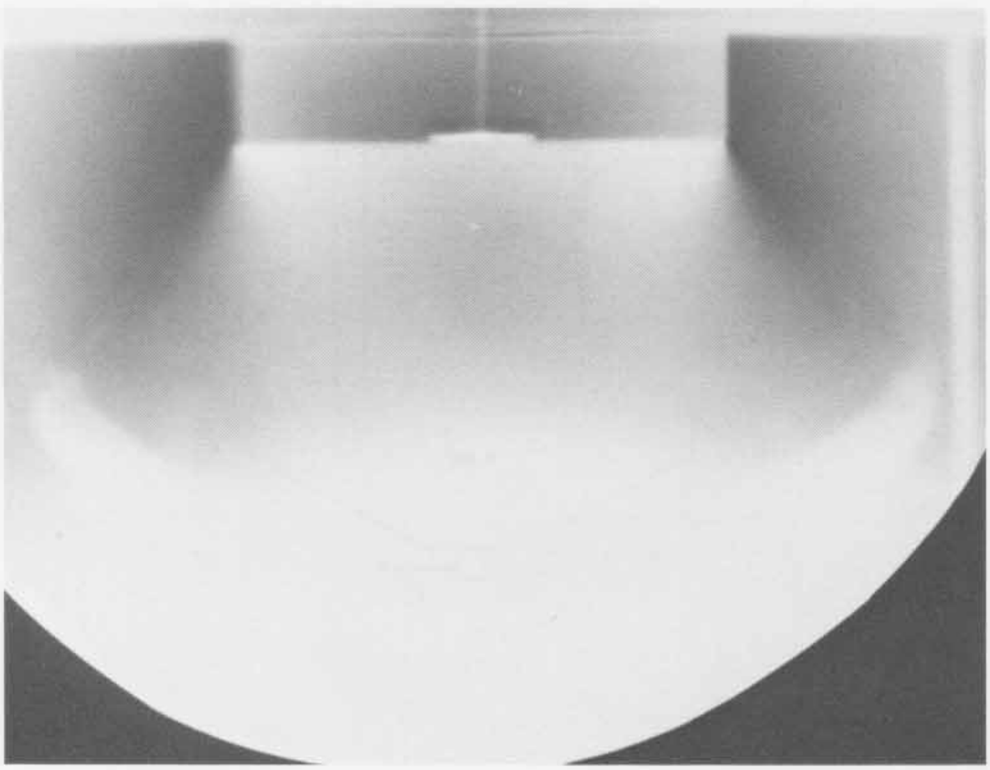


SHOT 437: **Composition B-3 with Aluminum Strips**
Date: April 9, 1968
Experimenter: Douglas Venable
Radiographic Time: 35.23 μs

Eight slabs of 6.35-mm-thick Composition B-3 separated around the edges by 0.0635-mm-thick aluminum (Mylar) strips 6.35 mm wide were initiated by 50.8 mm of Composition B-3 and a P-081 lens. The purpose of the shot was to study the effect of gaps between the explosive slabs.

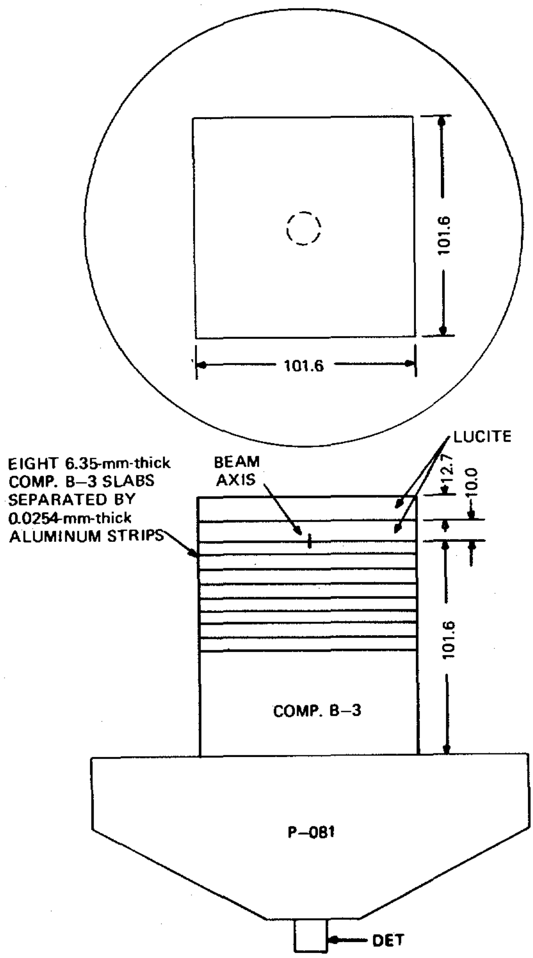


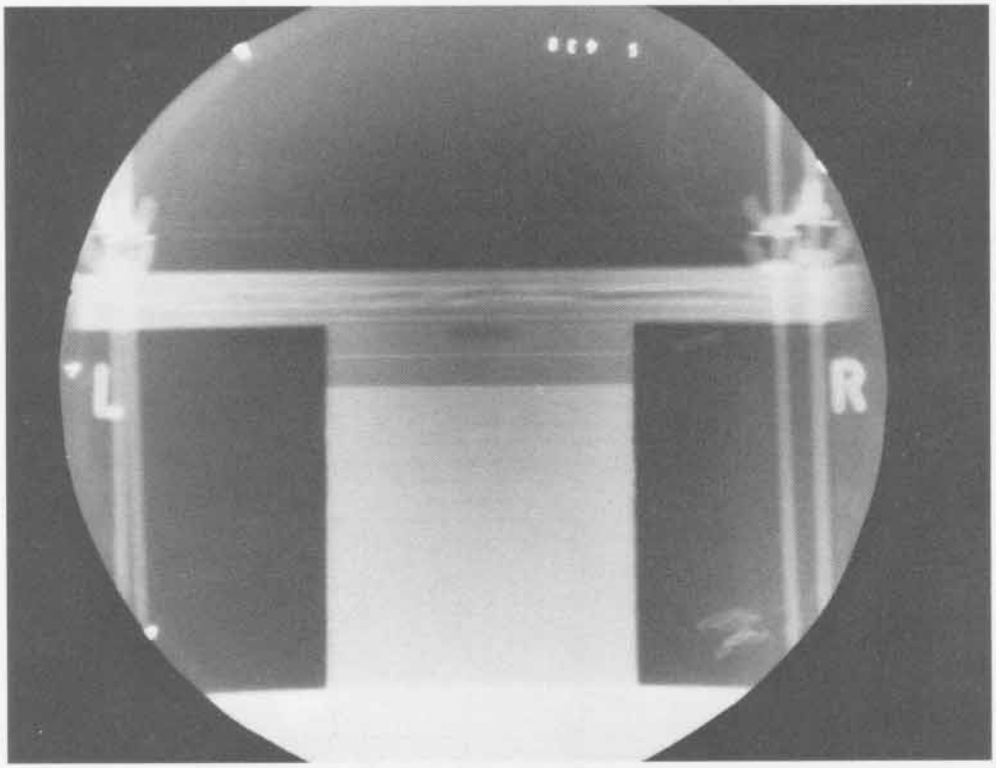


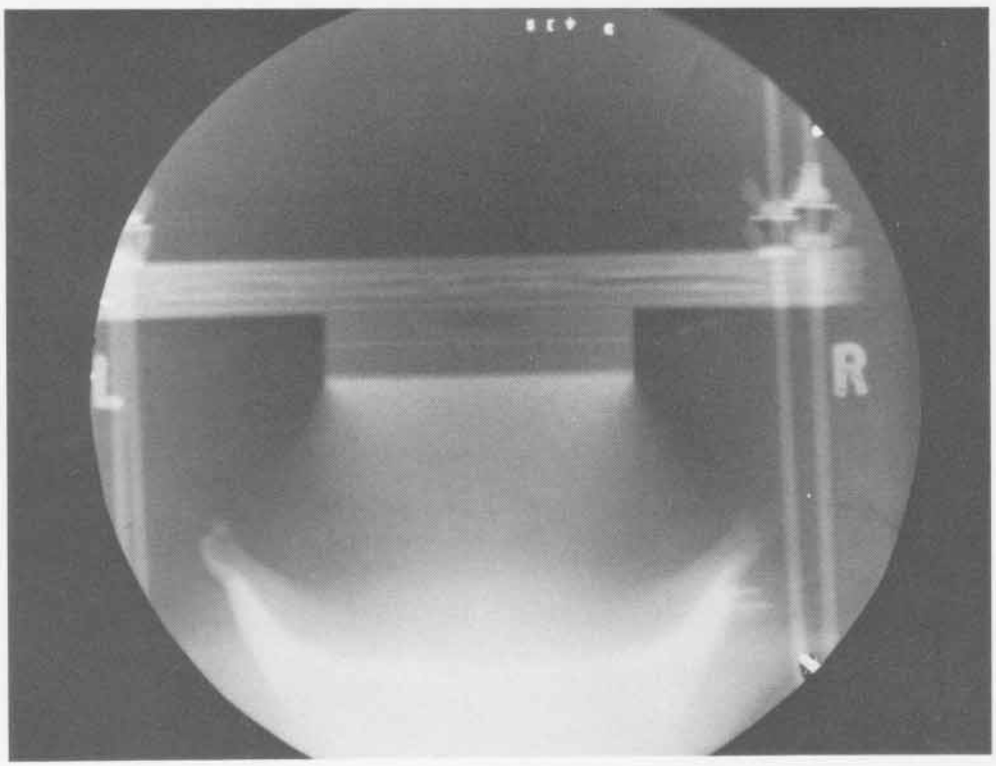


SHOT 438: **Composition B-3 with Aluminum Strips**
Date: May 22, 1968
Experimenter: Douglas Venable
Radiographic Time: 35.24 μs

Eight slabs of 6.35-mm-thick Composition B-3 separated around the edges by 0.0254-mm-thick aluminum strips 6.35 mm wide were initiated by 50.8 mm of Composition B-3 and a P-081 lens.

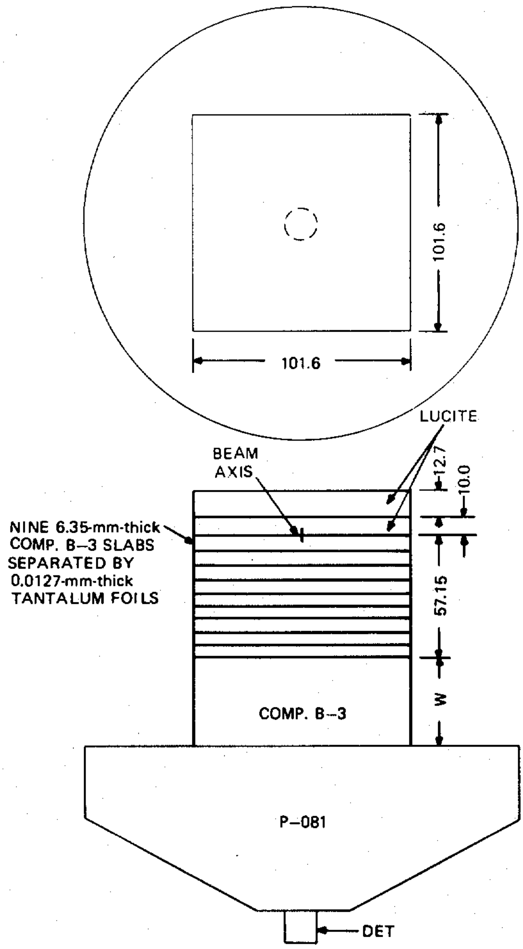


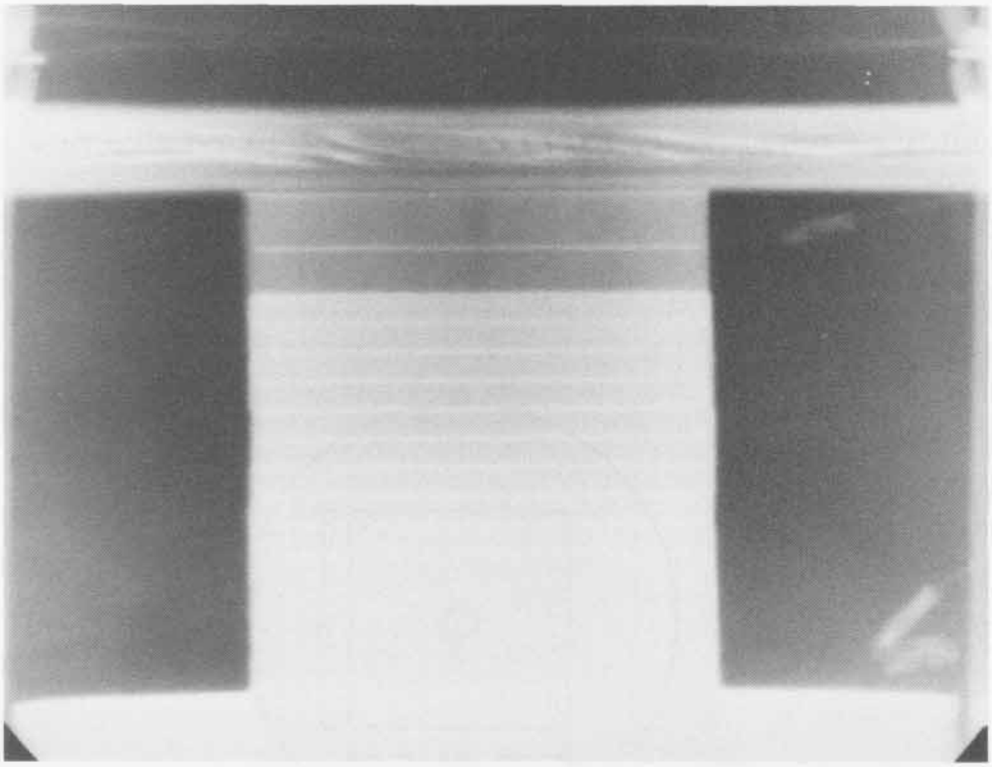

L
R

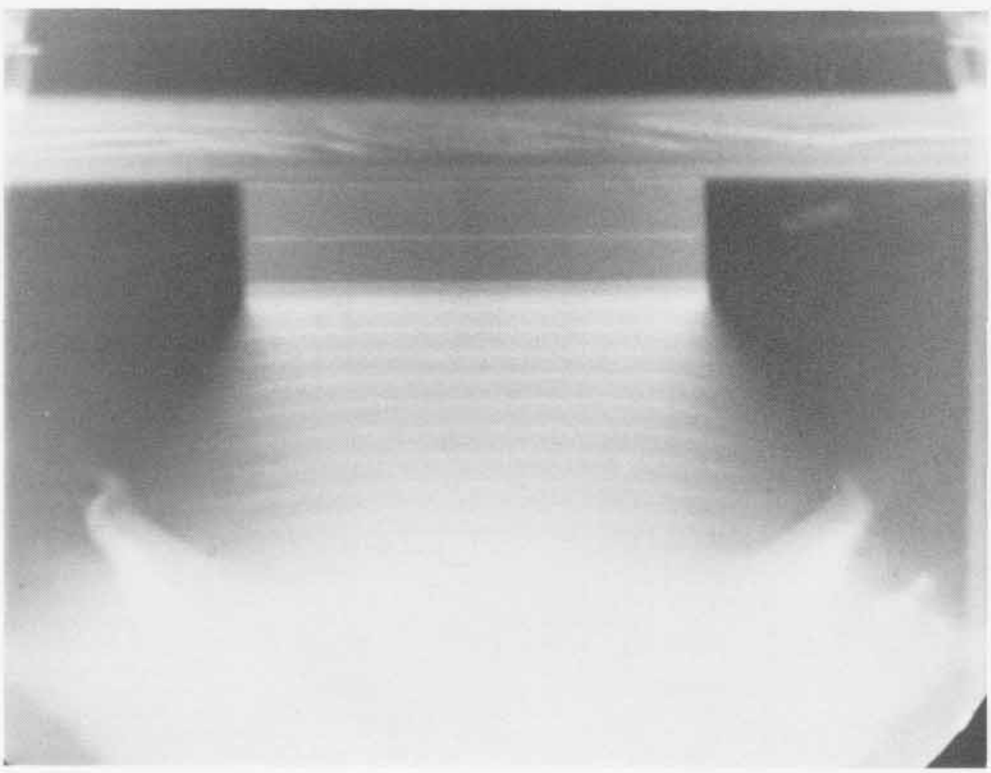

R

SHOT 439: **Composition B-3 with Embedded Tantalum Foils**
Date: May 21, 1968
Experimenter: Douglas Venable
Radiographic Time: 33.6 μs
References: Davis and Venable, 1970; Rivard et al., 1970

Nine slabs of 6.35-mm-thick Composition B-3 separated by 0.0127-mm-thick tantalum foils were initiated by 31.75 mm, W, of Composition B-3 and a P-081 lens.

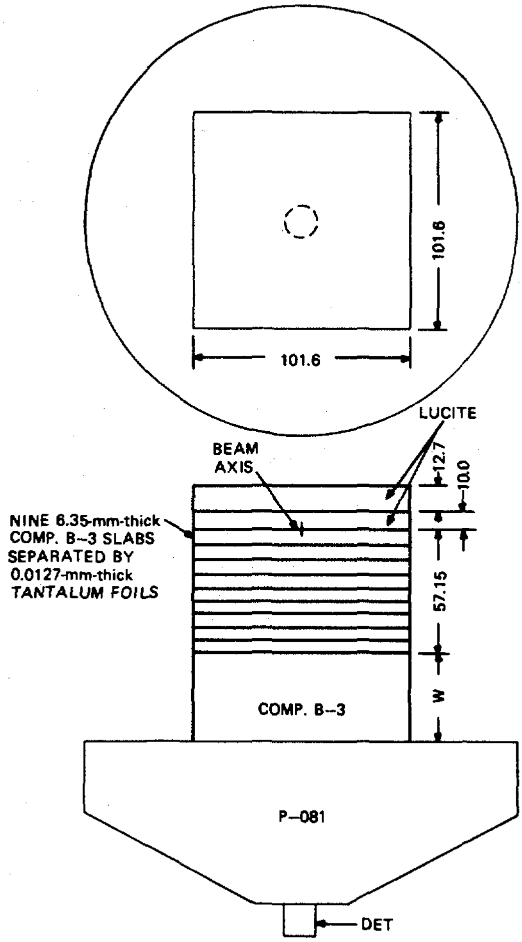


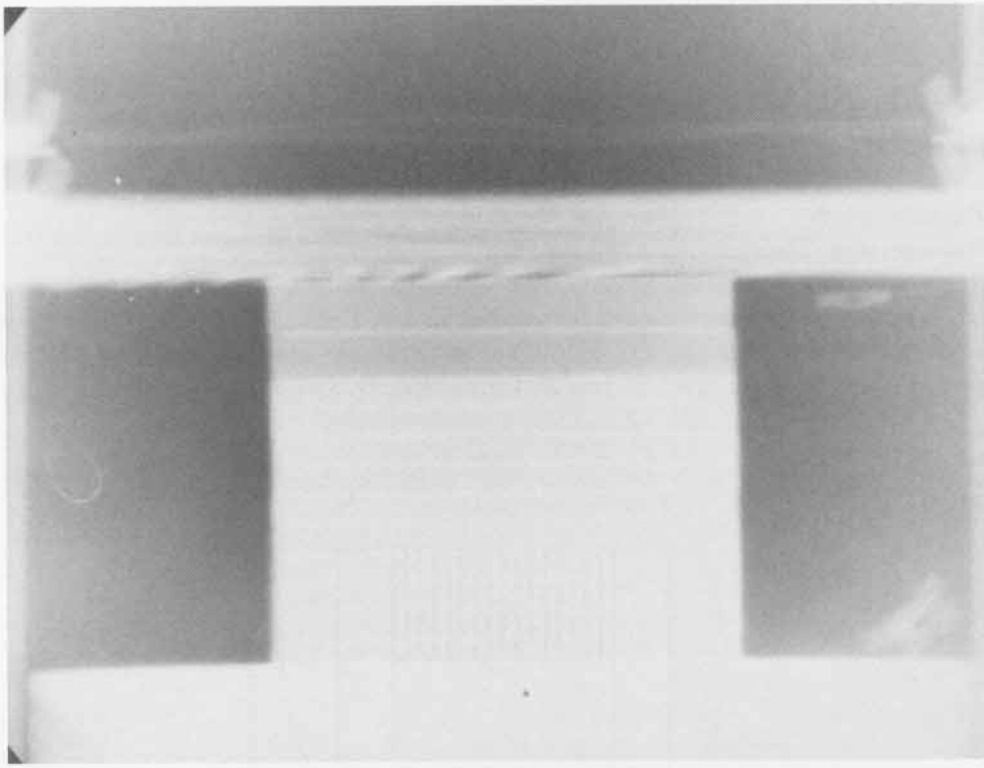


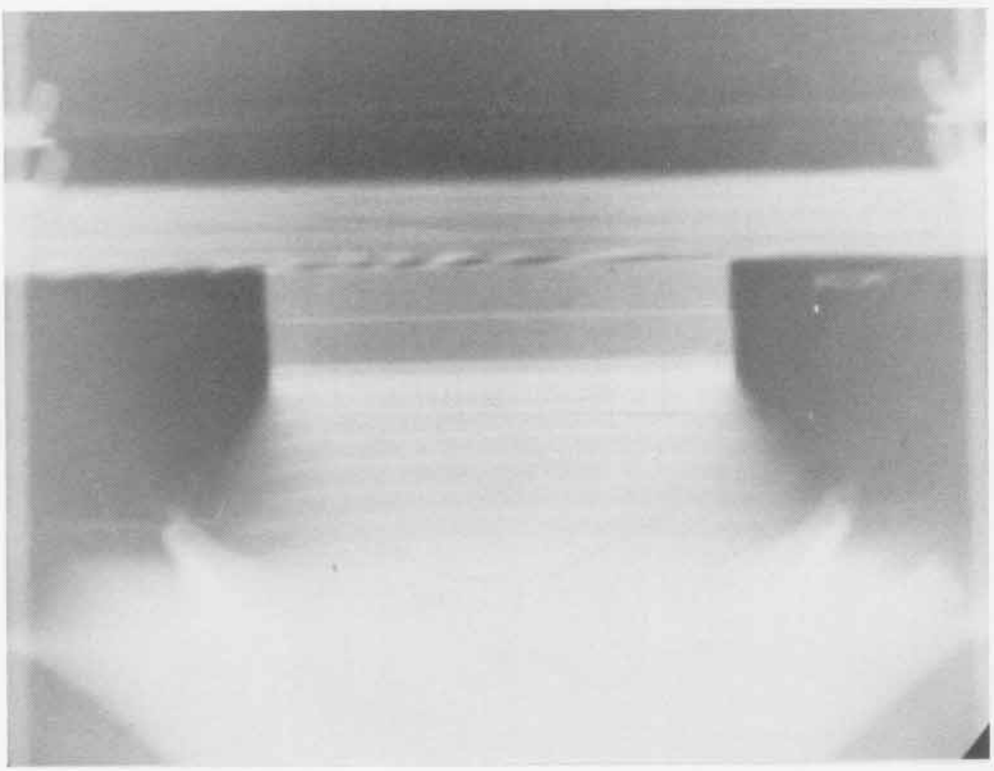


SHOT 442:	**Composition B-3 with Embedded Tantalum Foils**
Date:	May 29, 1968
Experimenter:	Douglas Venable
Radiographic Time:	30.43 μs
References:	Davis and Venable, 1970; Rivard et al., 1970

Nine slabs of 6.35-mm-thick Composition B-3 separated by 0.0127-mm-thick tantalum foils were initiated by 6.35 mm, W, of Composition B-3 and a P-081 lens.

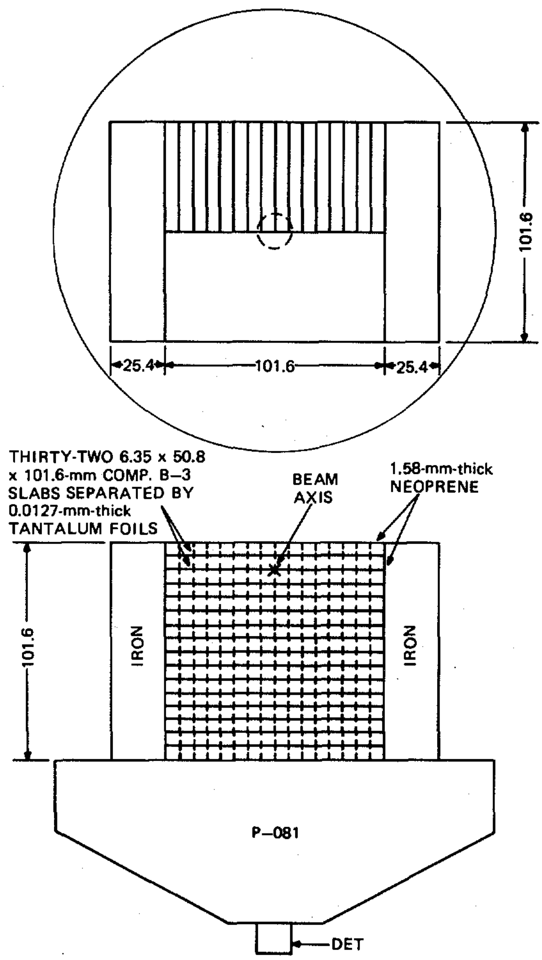


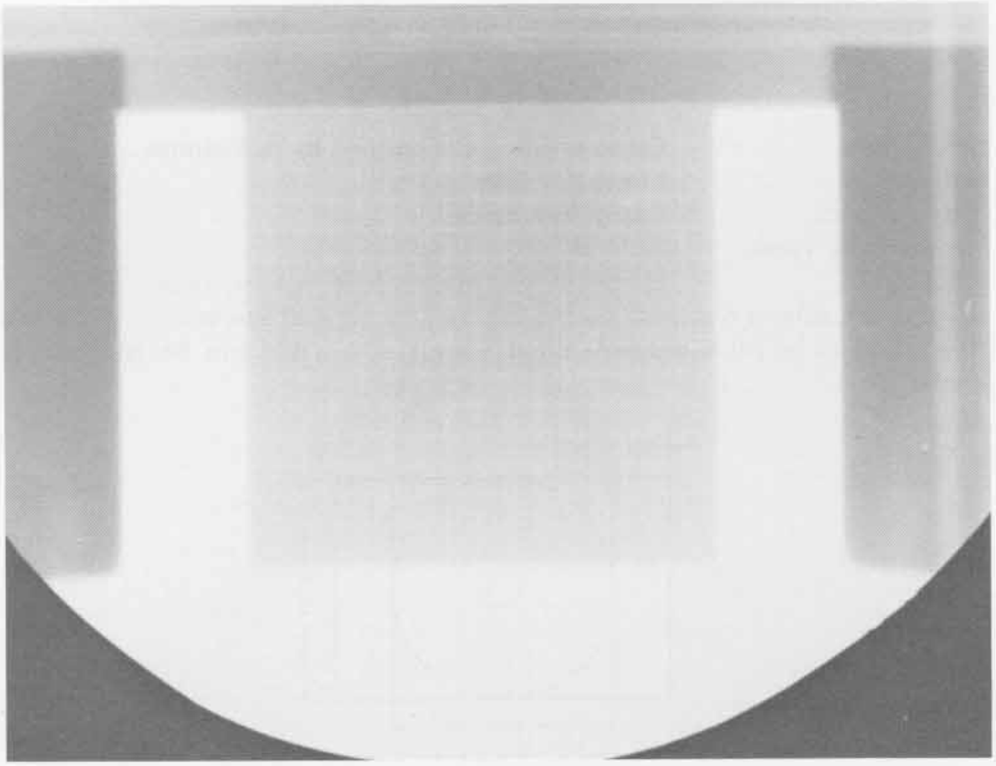


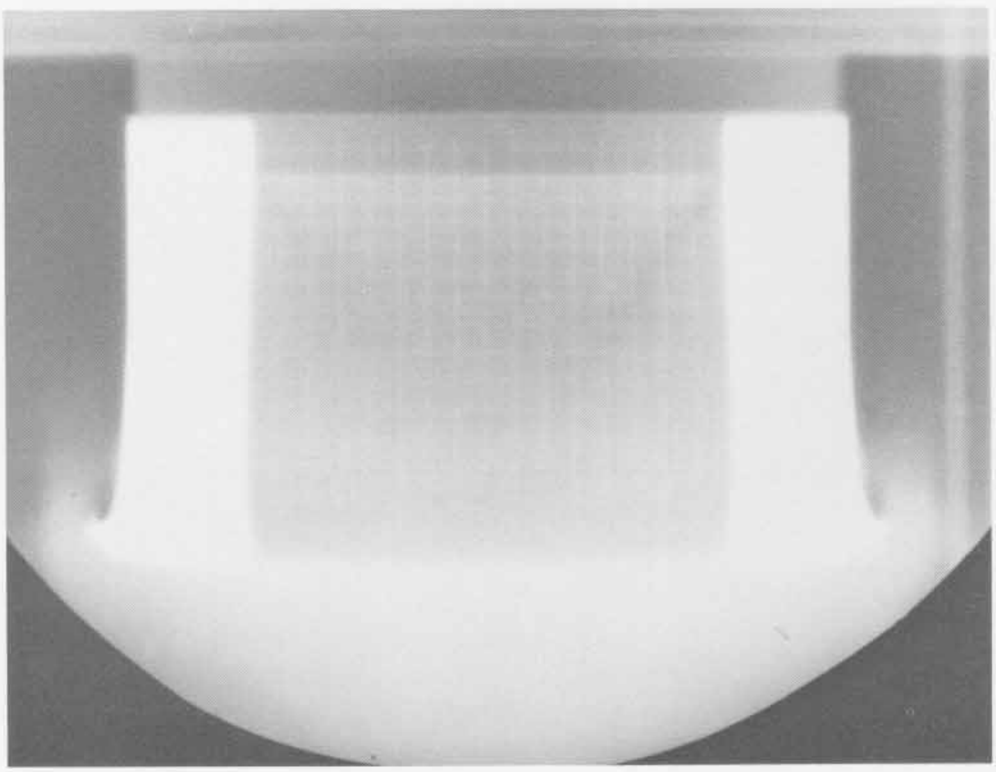


SHOT 450: **Composition B-3 with Embedded Tantalum Foils**
Date: August 19, 1970
Experimenter: Douglas Venable
Radiographic Time: 34.08 μs

Sixteen 6.35 by 50.8 by 101.6-mm Composition B-3 slabs separated by 0.0127-mm-thick tantalum foils were placed perpendicular to a P-081 lens. Sixteen more slabs were placed parallel to the lens and in contact with the first sixteen slabs. The explosive slabs were confined by two 25.4-mm-thick by 101.6-mm-wide iron plates.

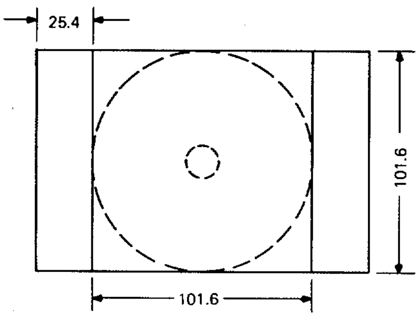


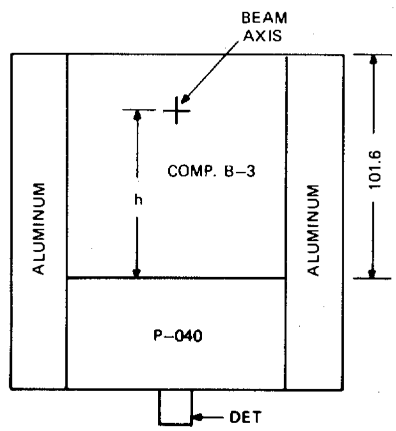


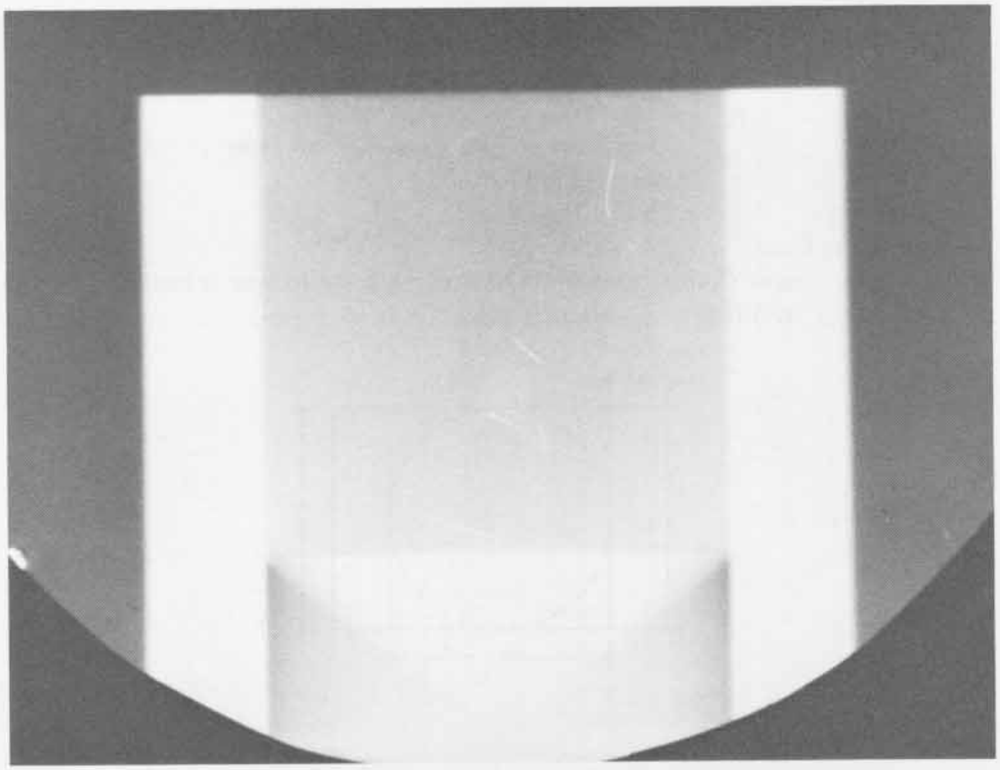


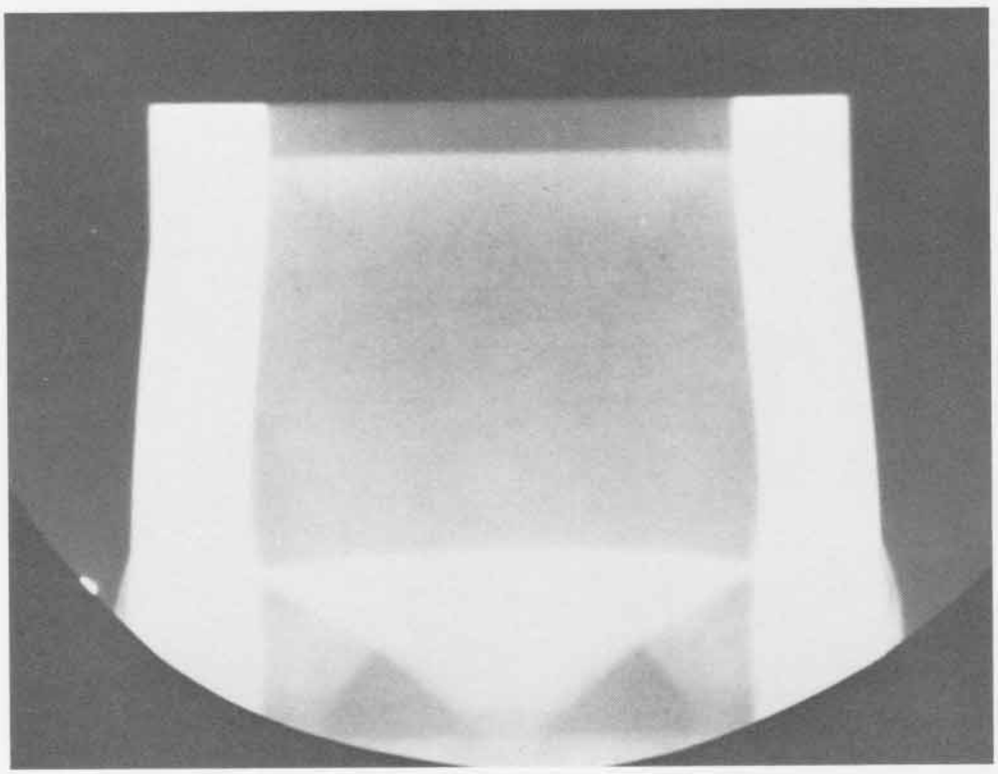
SHOT 459: **Composition B-3 Confined by Aluminum**
Date: March 16, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 24.74 μs
References: Mader, 1972b; Mader, 1974; Mader, 1979

A 101.6-mm cube of Composition B-3 initiated by a P-040 lens is confined by two 25.4-mm-thick by 101.6-mm-wide aluminum plates. h is 88.9 mm. See Shot 474 for a later time.



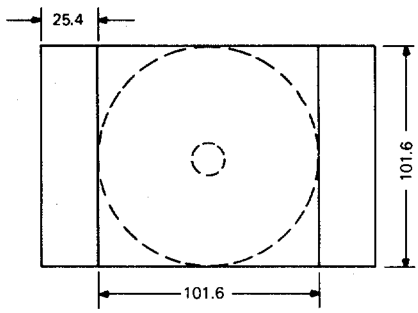


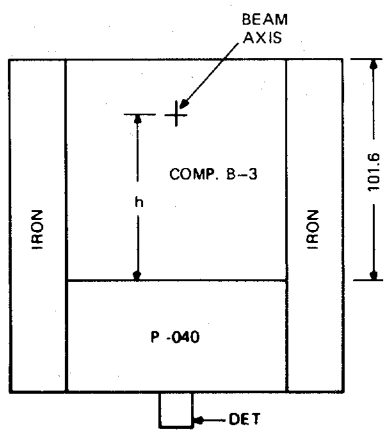


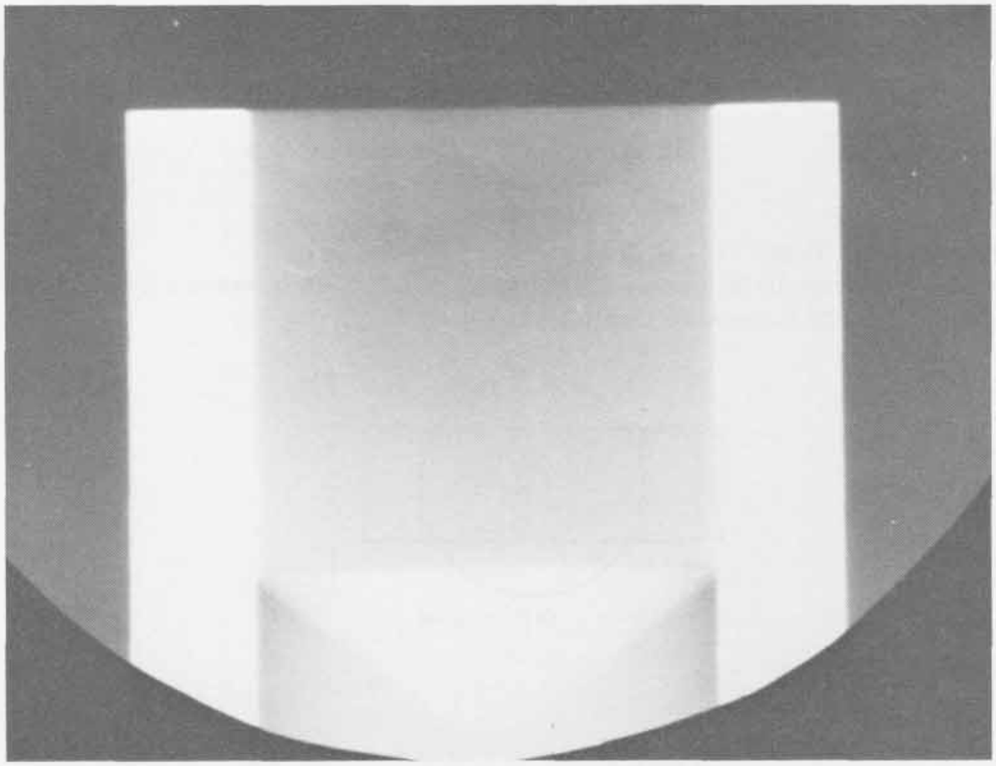


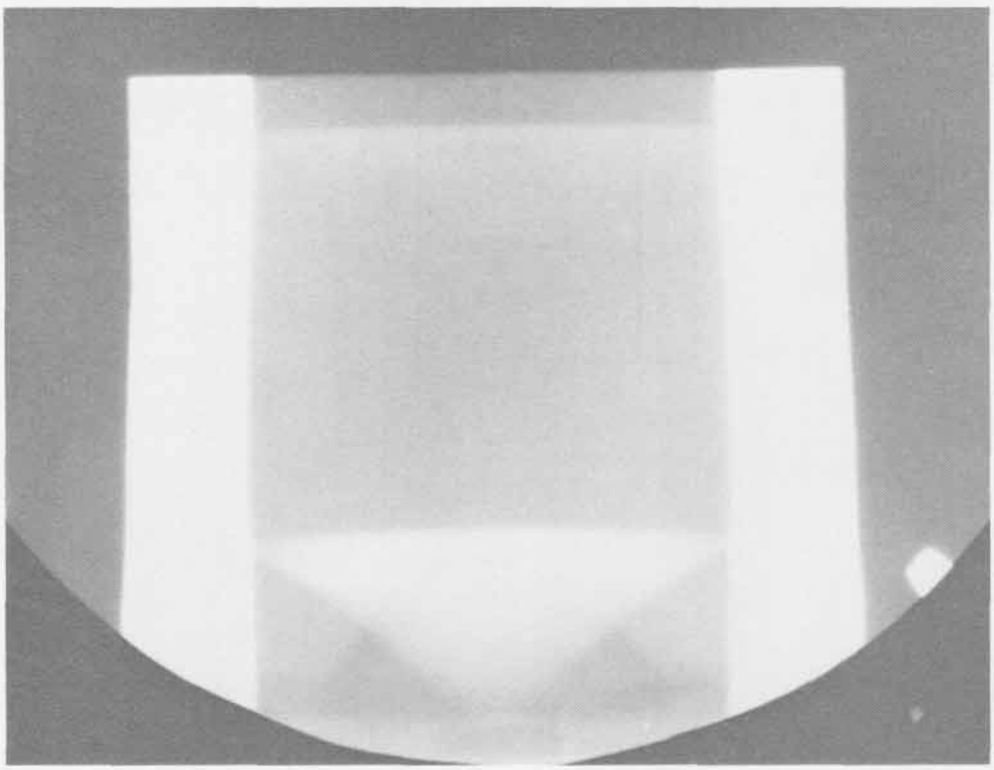
SHOT 460: **Composition B-3 Confined by Iron**
Date: March 17, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 24.73 μs

A 101.6-mm cube of Composition B-3 initiated by a P-040 lens is confined by two 25.4-mm-thick by 101.6-mm-wide iron plates. h is 88.9 mm.



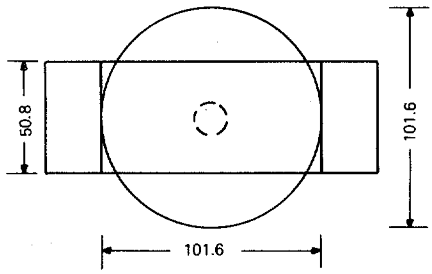


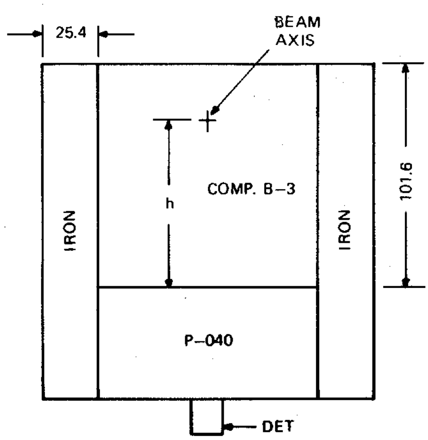


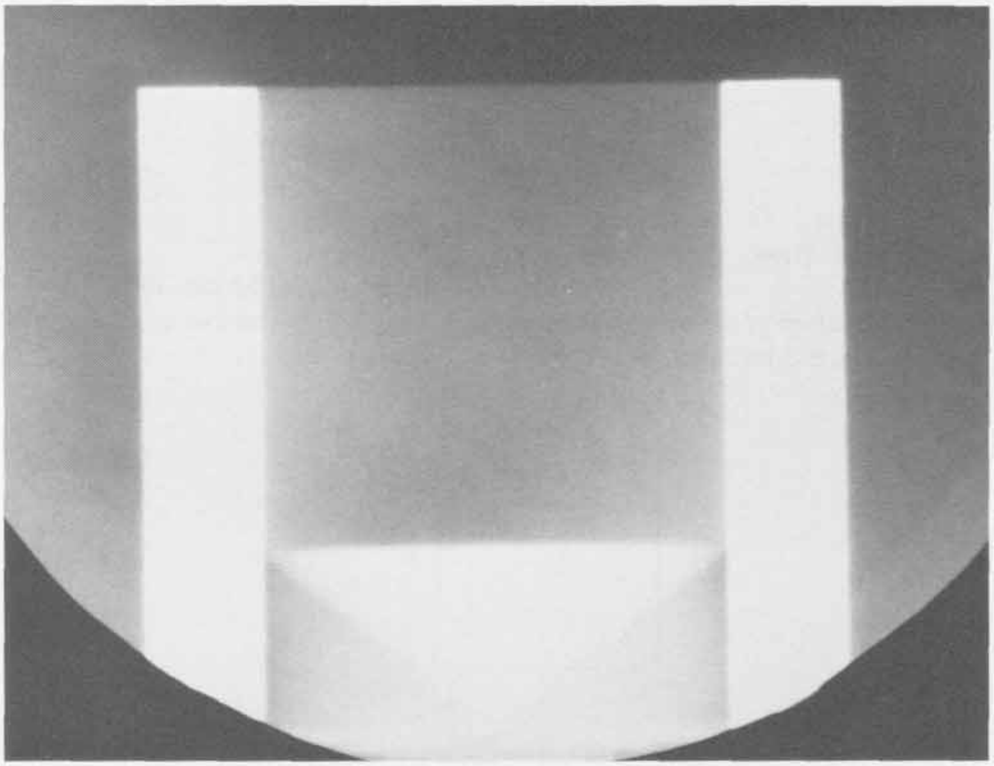


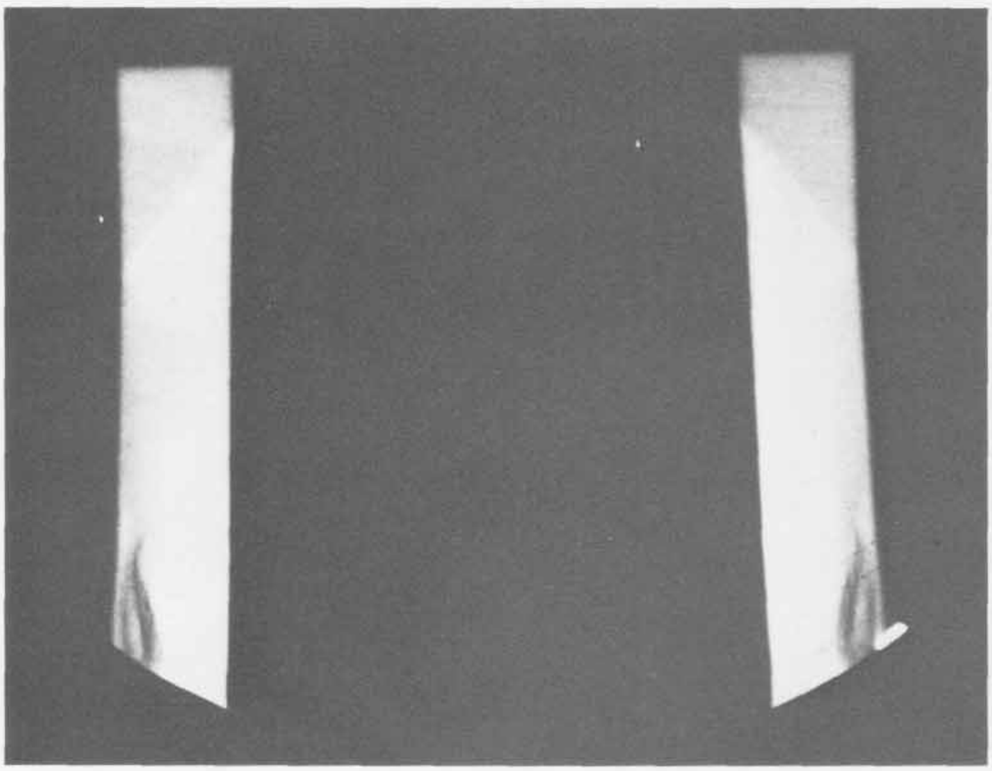
SHOT 461: **Composition B-3 Confined by Iron**
Date: March 17, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 24.73 μs

A 101.6-mm-high by 50.8-mm-wide Composition B-3 block is confined by two 25.4-mm-thick by 50.8-mm-wide iron plates. h is 88.9 mm.



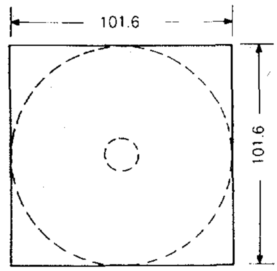


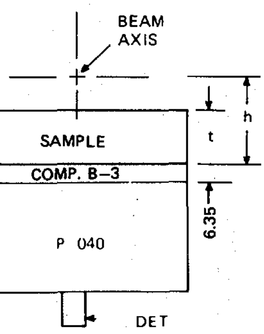


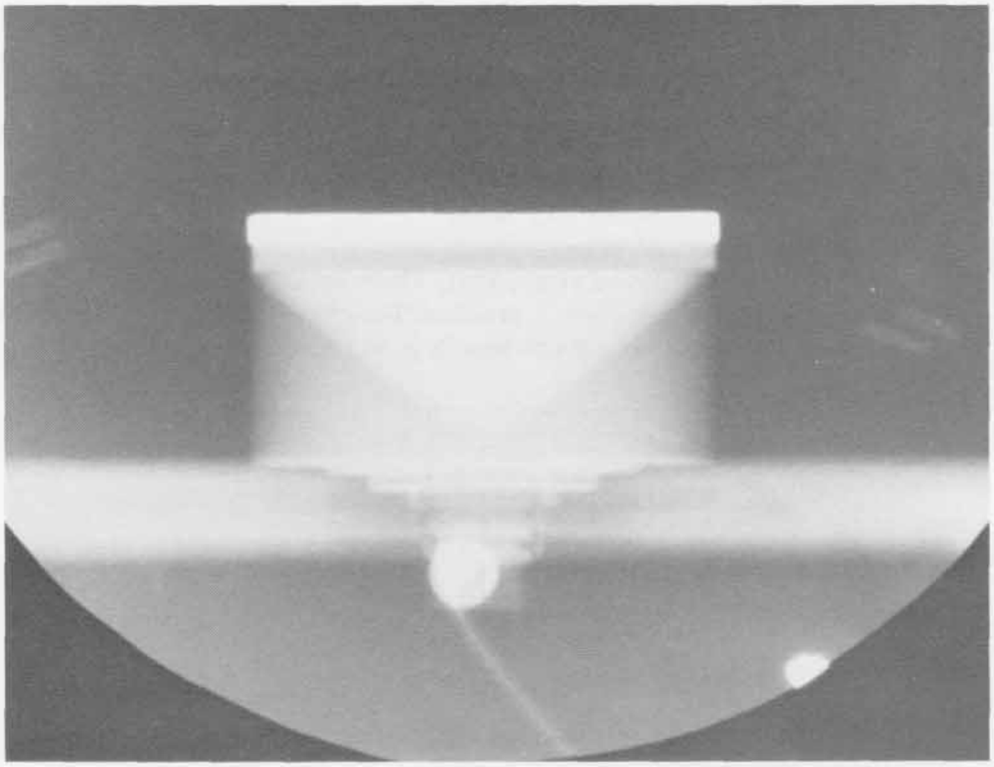


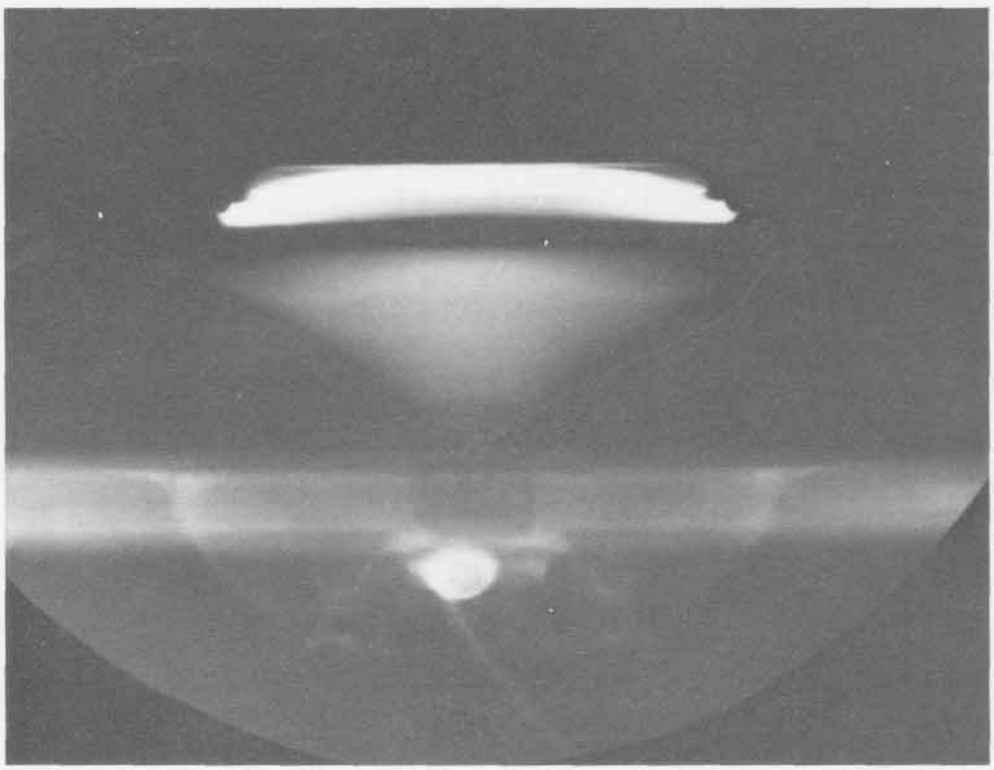
SHOT 462: **Dynamic Fracture of Copper**
Date: March 1, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 23.4 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 6.0-mm-thick, t, copper. The plate is shocked by 6.35 mm of Composition B-3 initiated by a P-040 lens. h is 19.05 mm.









SHOT 463: **Dynamic Fracture of Uranium**

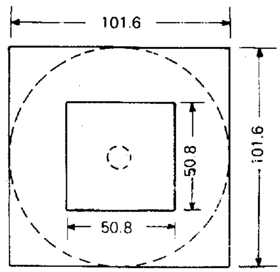
Date: February 24, 1966

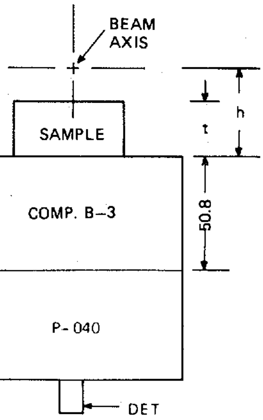
Experimenter: Benny Ray Breed

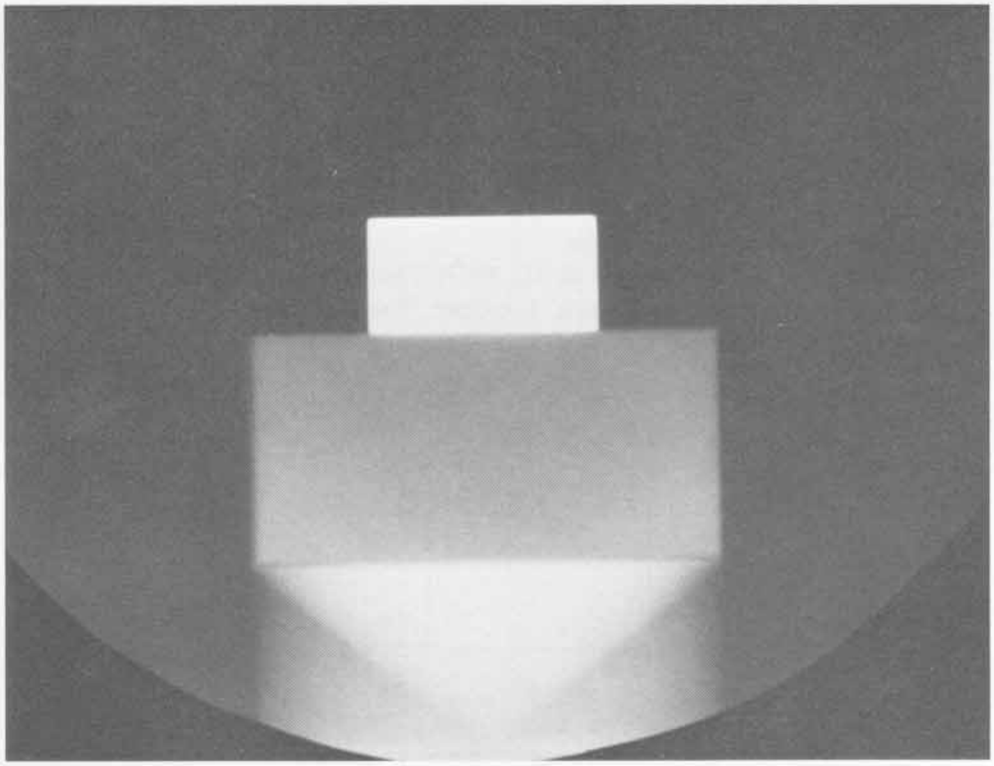
Radiographic Time: 33.76 μs

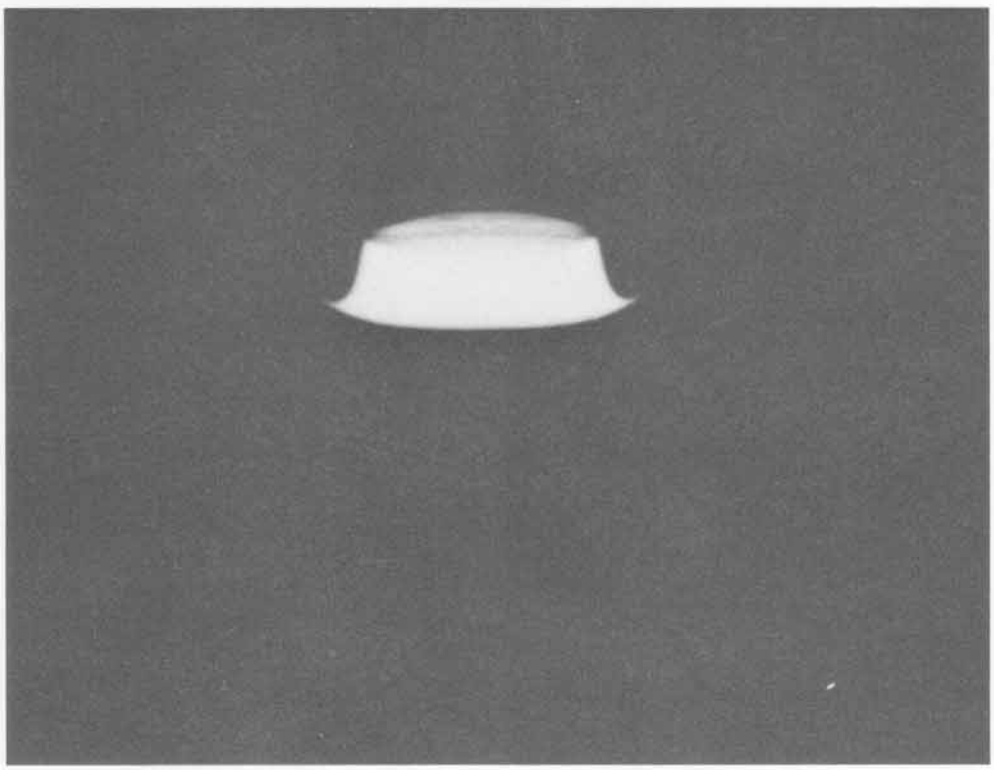
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, uranium. The plate is shocked by 50.8 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.



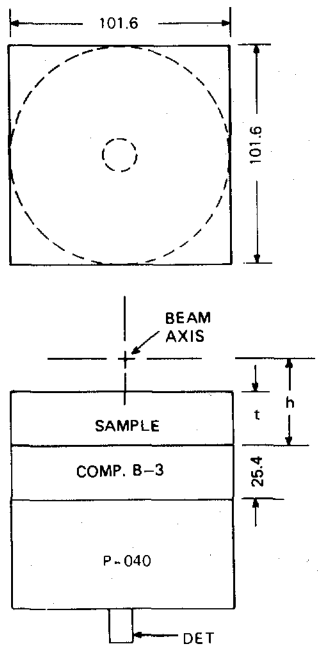


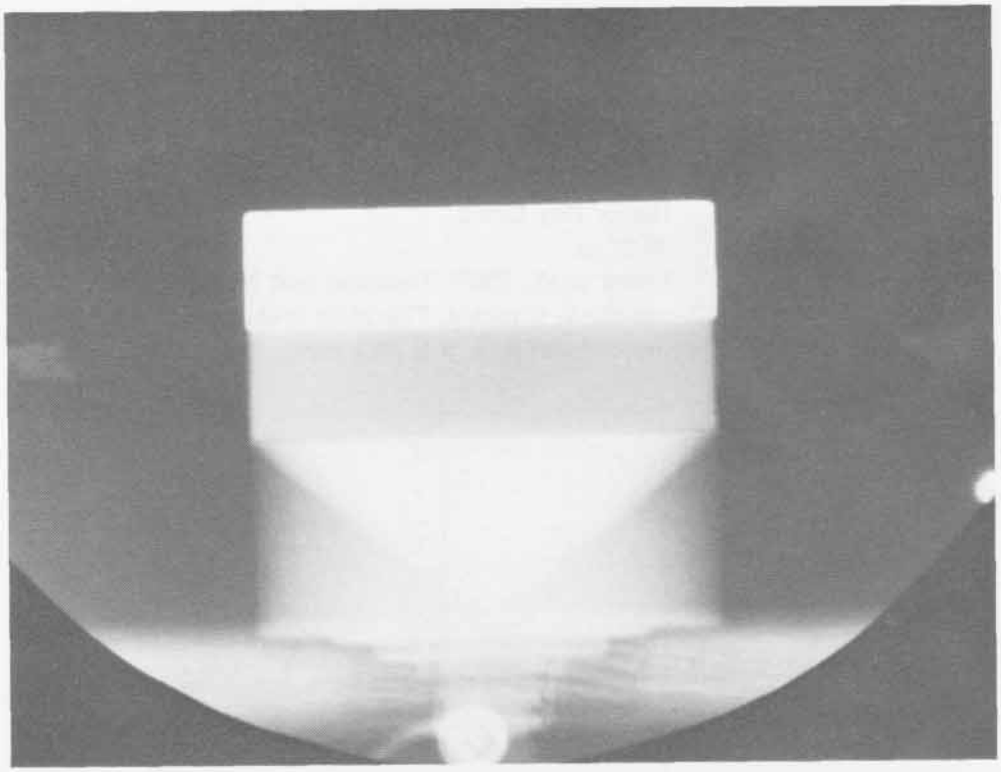


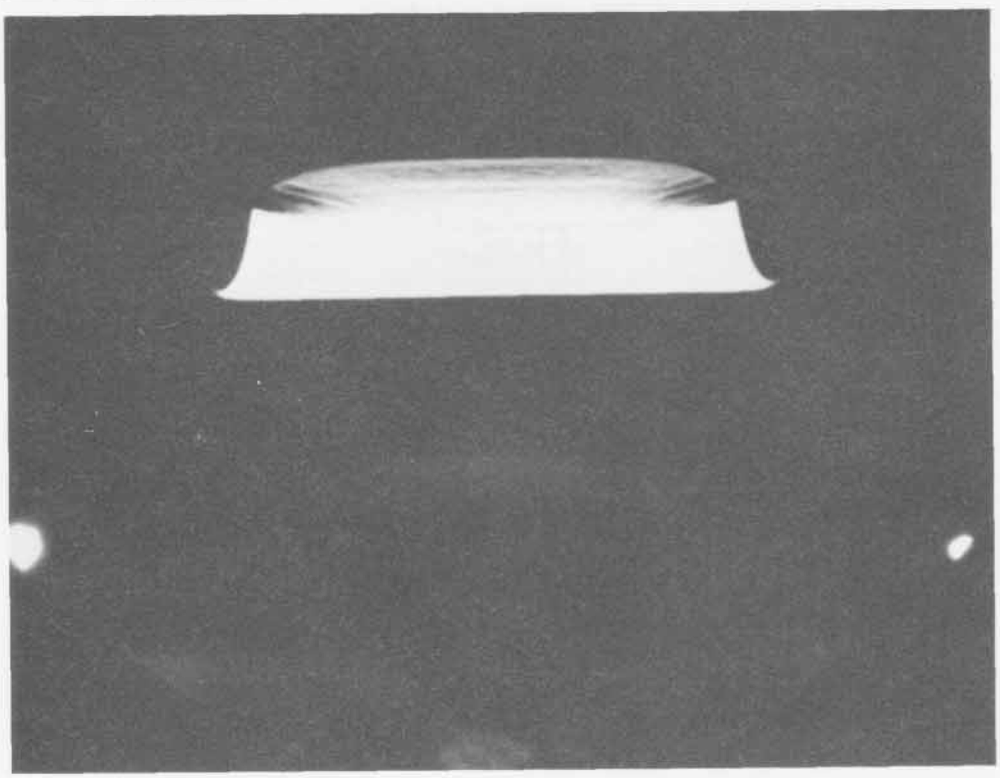


SHOT 464: **Dynamic Fracture of Copper**
Date: March 1, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 30.68 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, copper. The plate is shocked by 25.4 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

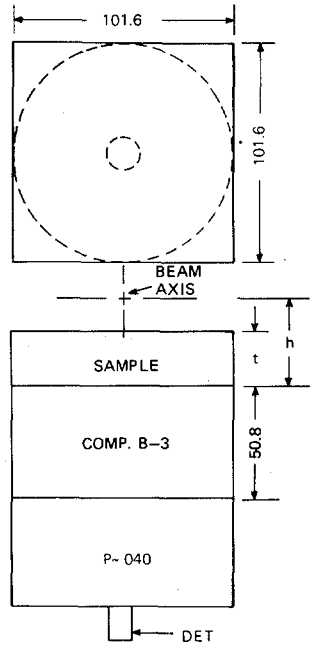


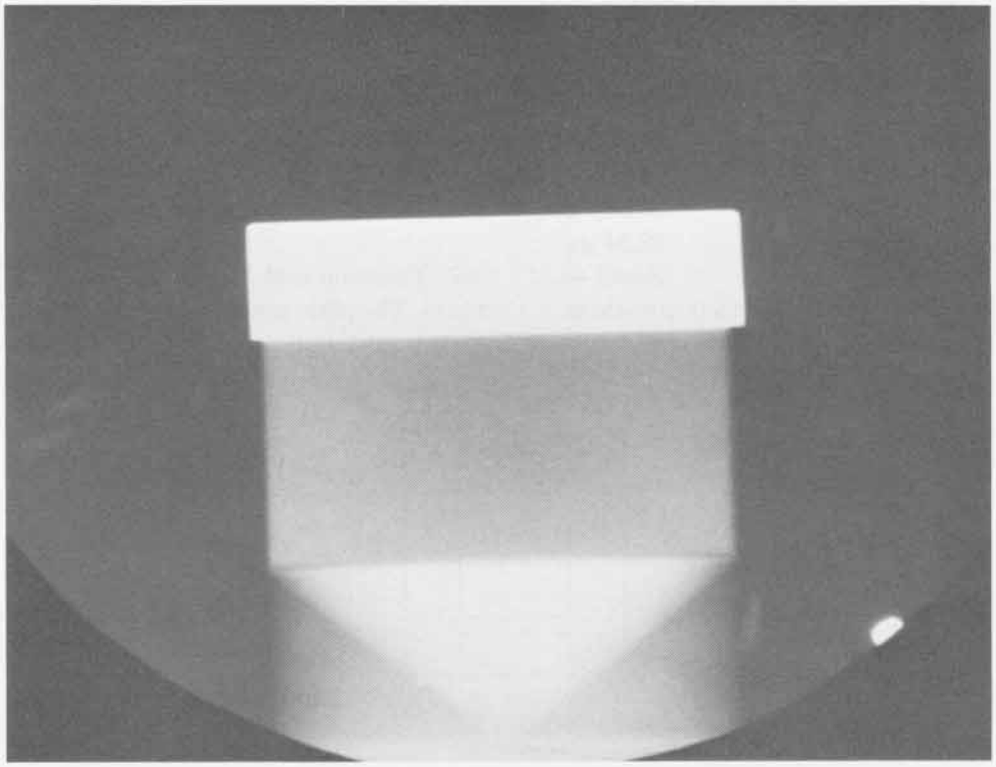


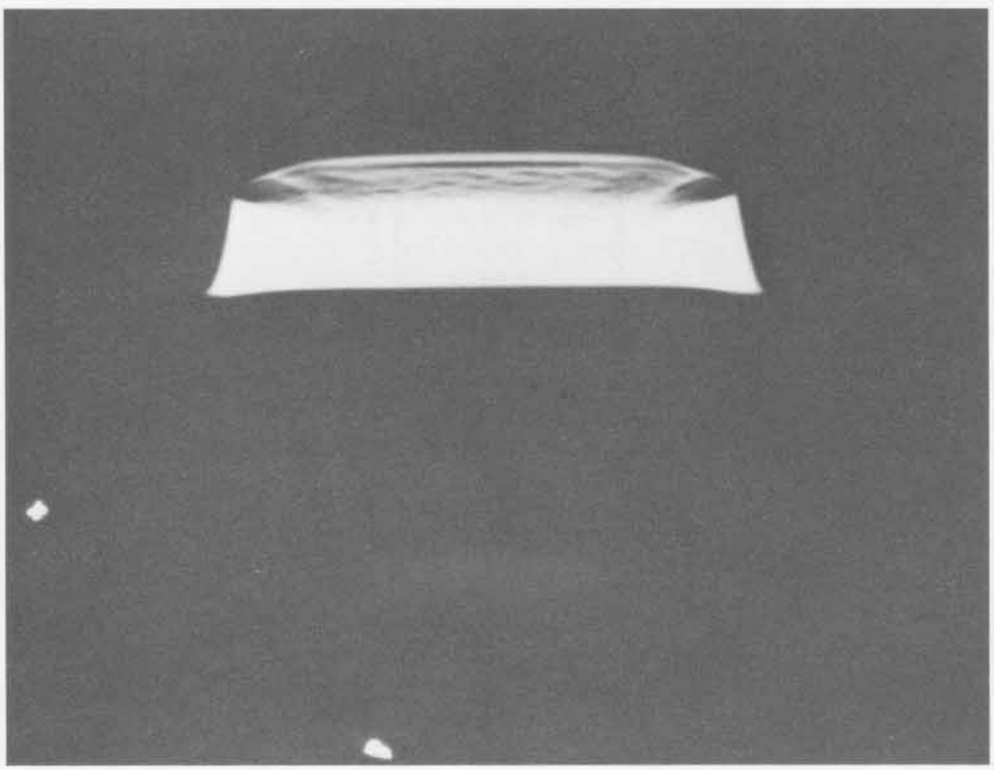


SHOT 465: **Dynamic Fracture of Nickel**
Date: March 1, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 32.07 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, nickel. The plate is shocked by 50.8 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

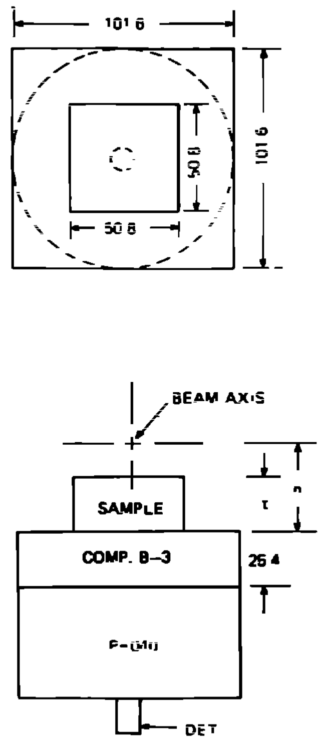


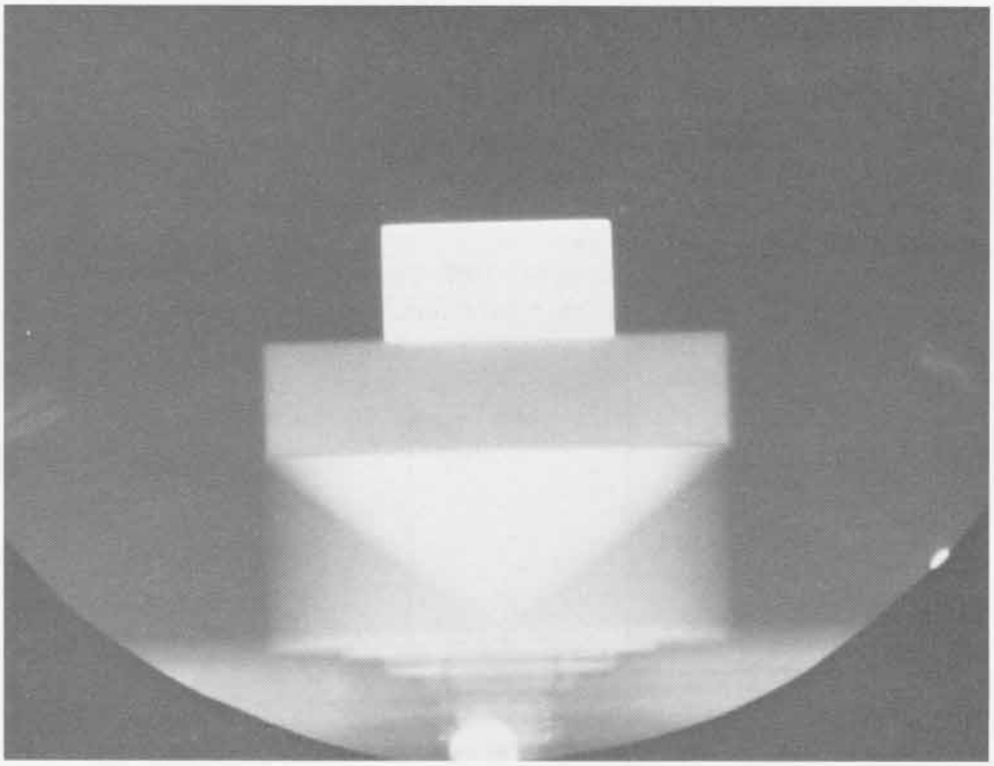


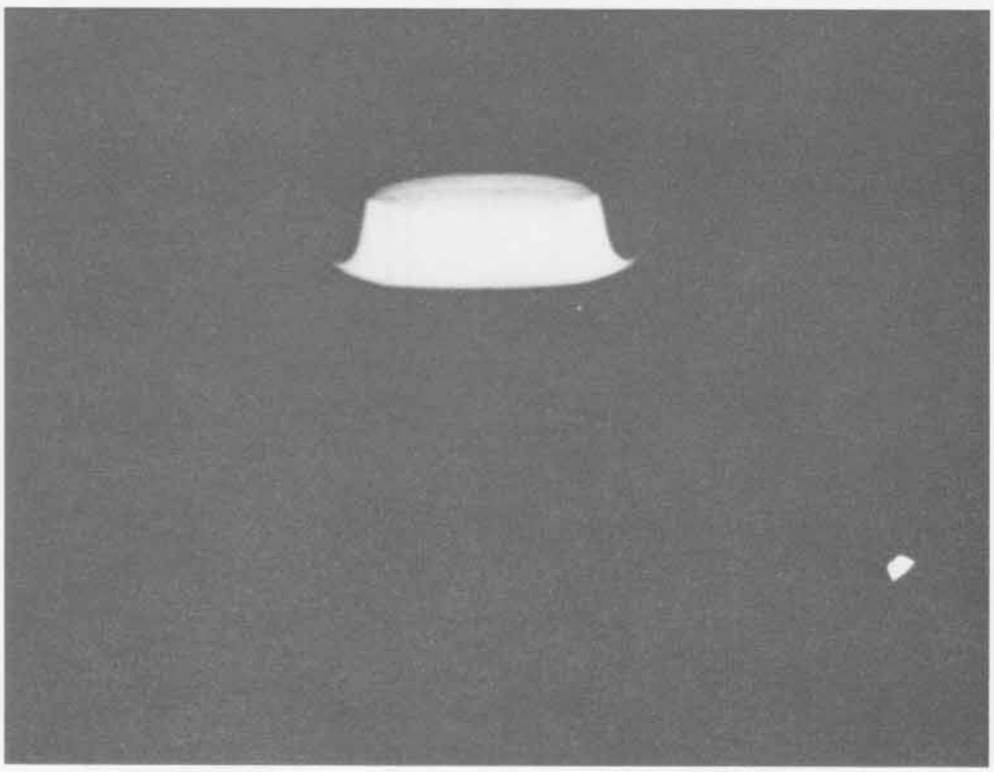


SHOT 466: **Dynamic Fracture of Uranium**
Date: March 1, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 32.54 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, uranium. The plate is shocked by 25.4 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

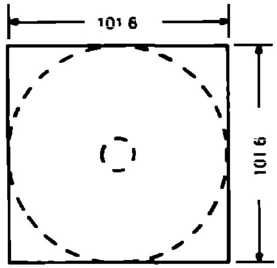


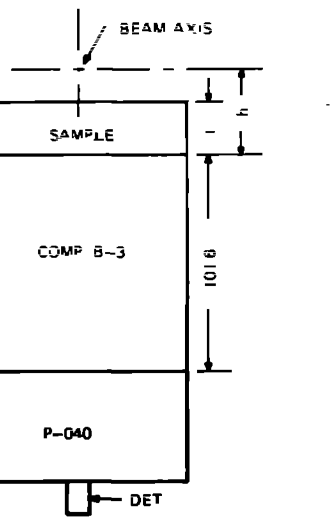


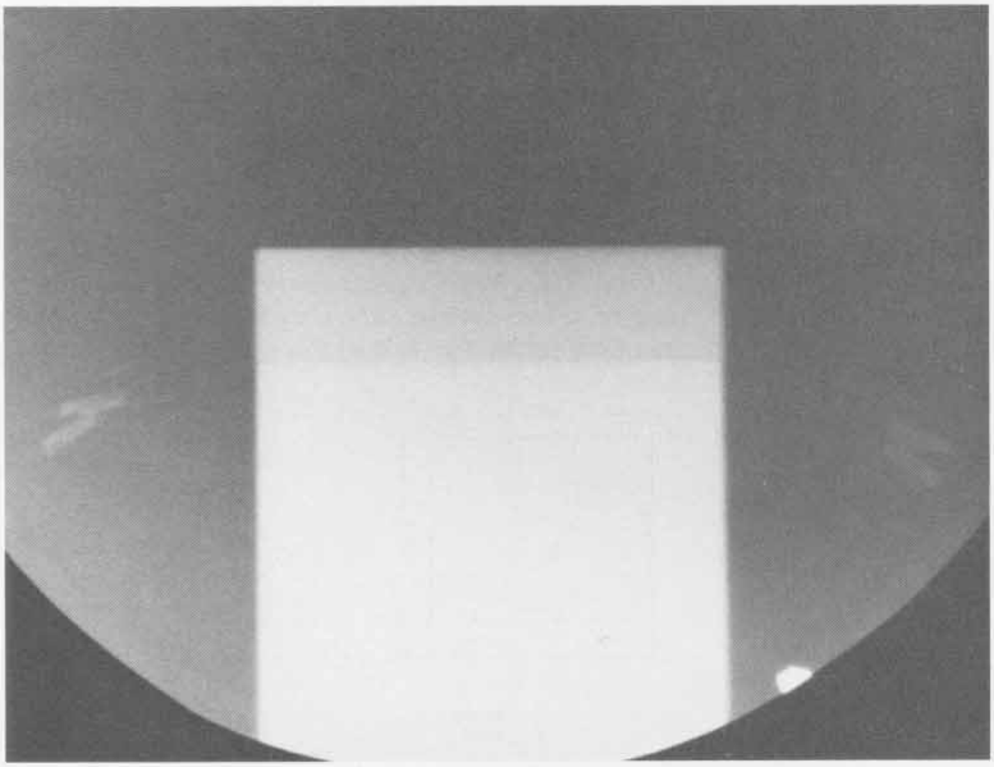


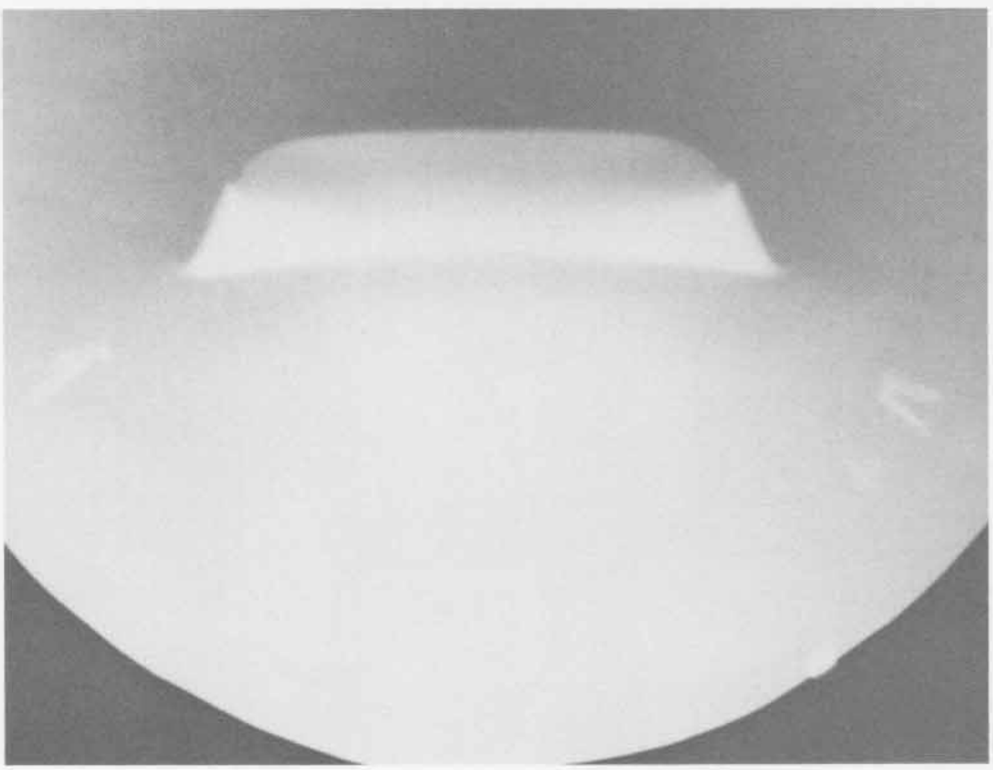
SHOT 467: **Dynamic Fracture of Beryllium**
Date: February 24, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 33.4 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, beryllium. The plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 41.275 mm.



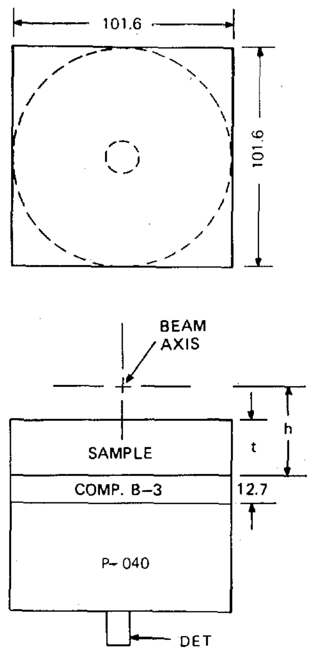


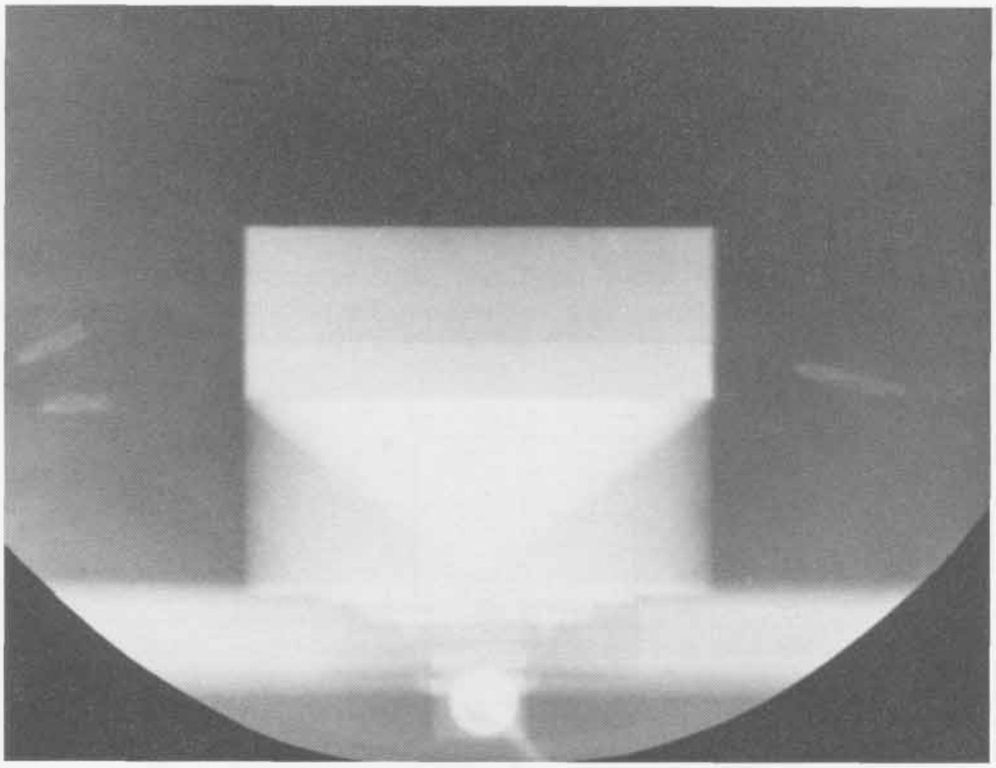


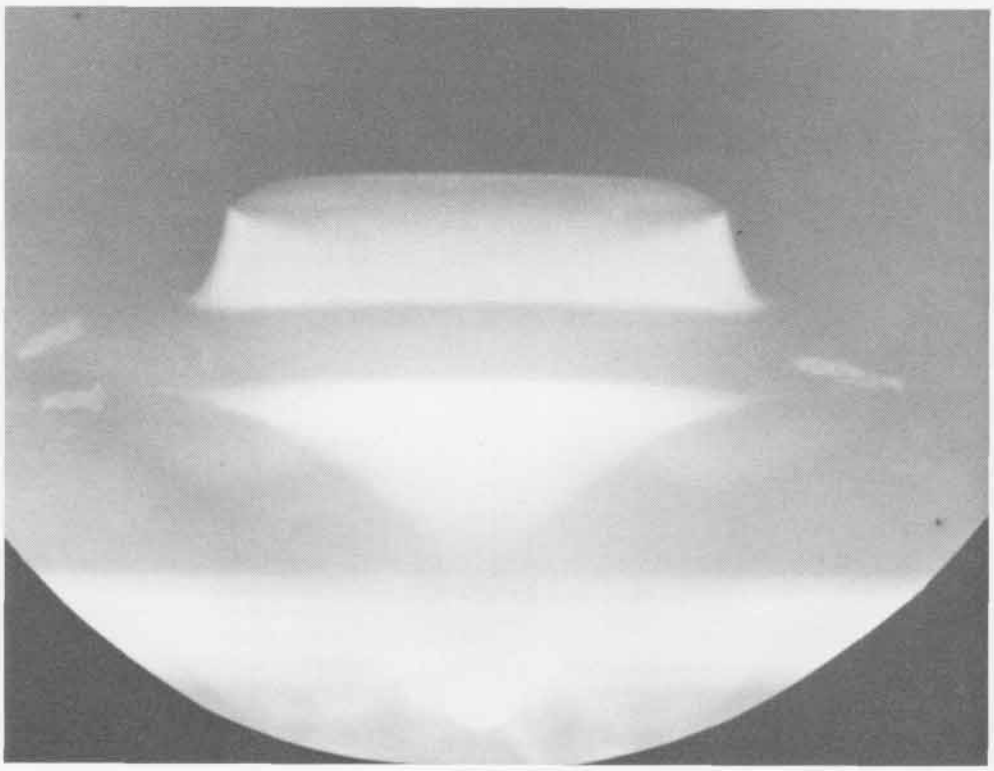


SHOT 468: **Dynamic Fracture of Beryllium**
Date: February 24, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 22.24 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, beryllium. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 41.275 mm.

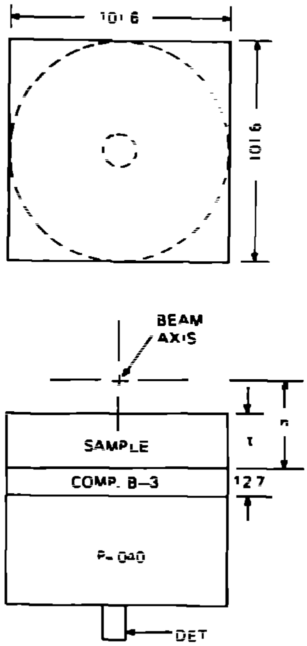


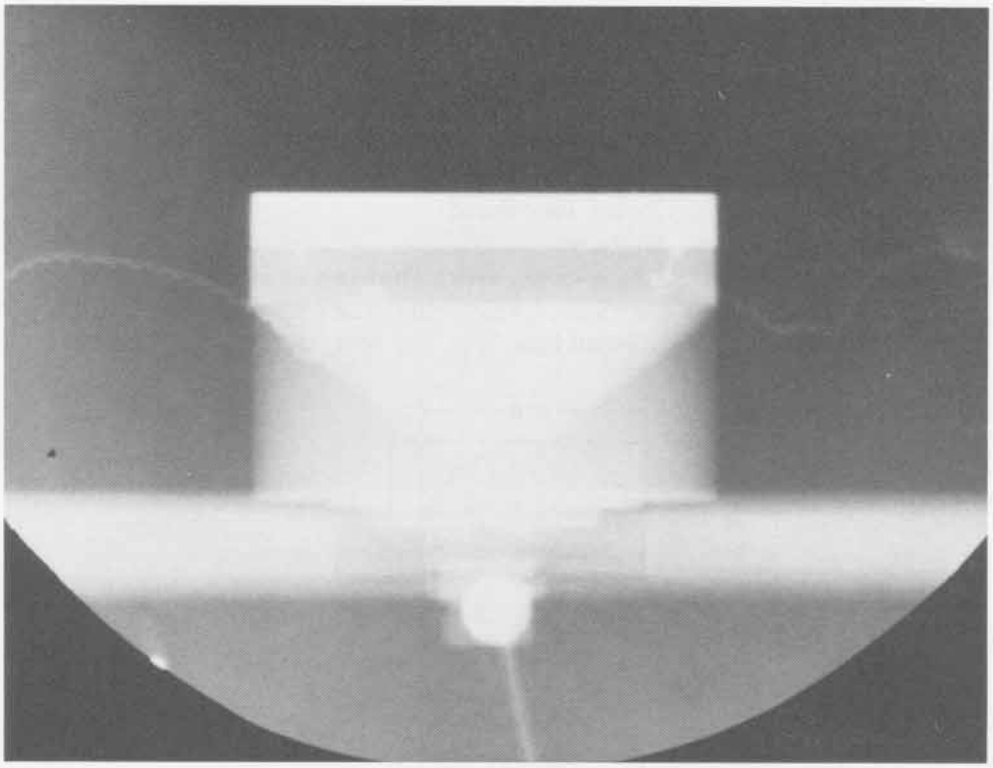


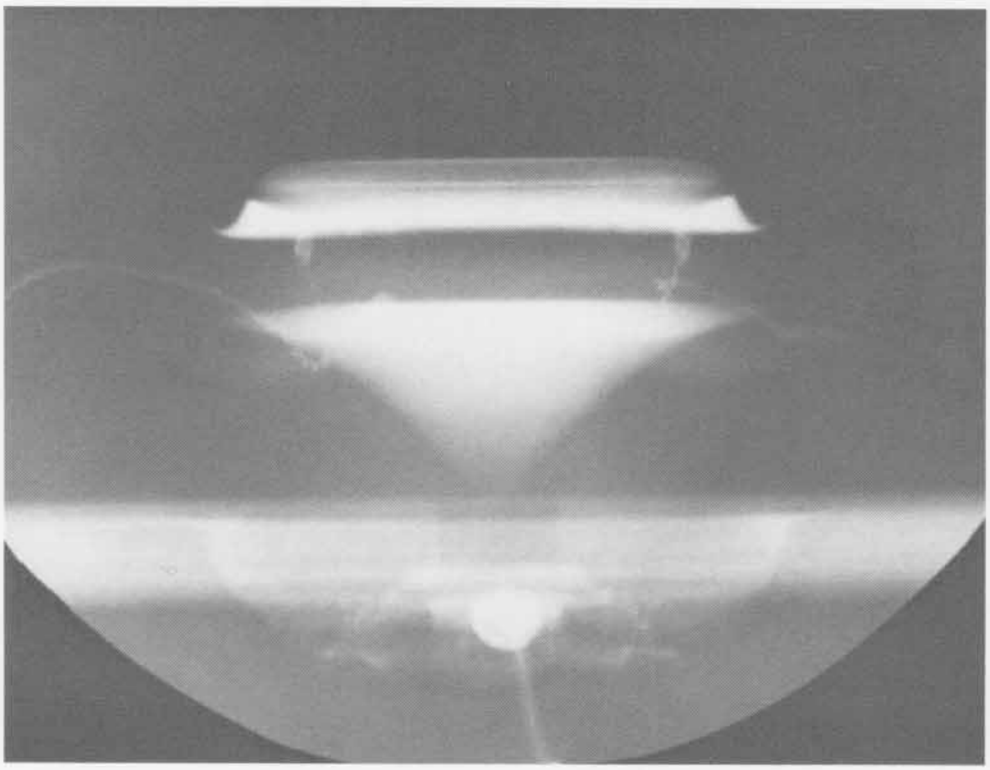


SHOT 469: **Dynamic Fracture of Aluminum**
Date: February 16, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 20.52 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 12.0-mm-thick, t, aluminum. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 25.4 mm.

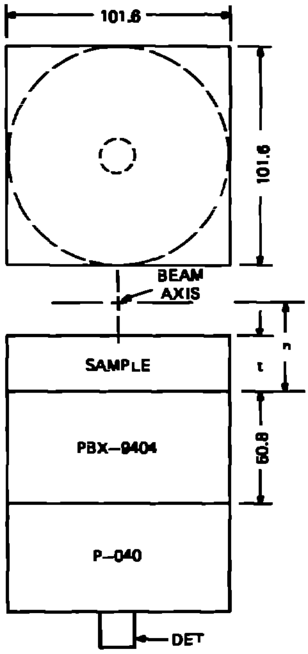


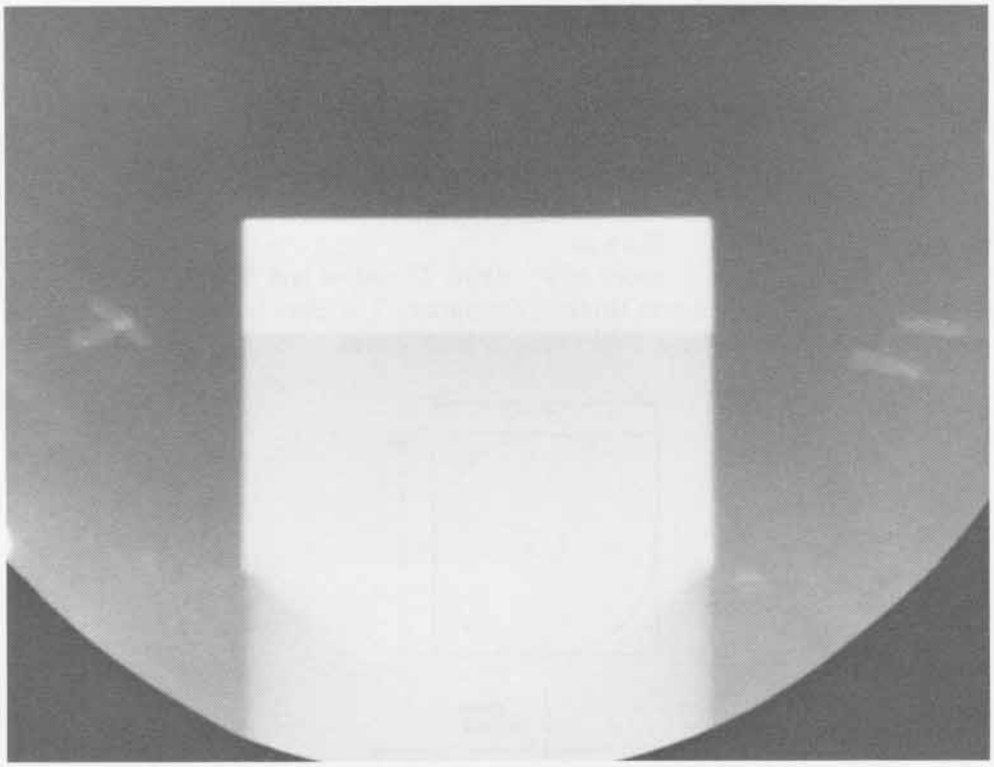


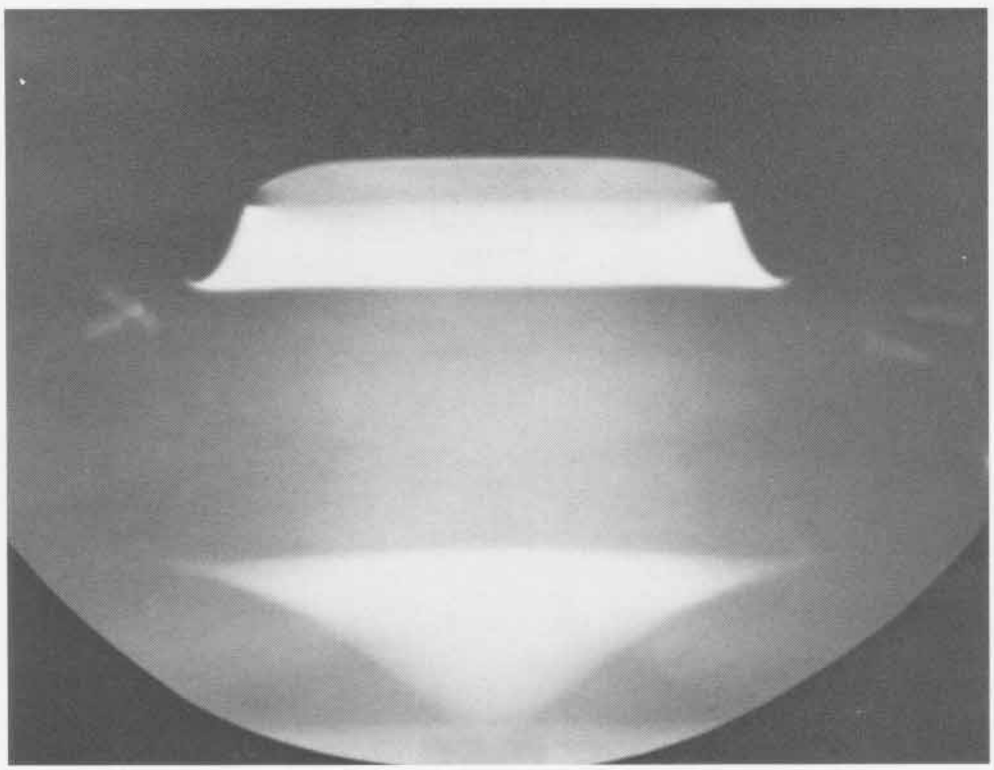


SHOT 470: **Dynamic Fracture of Aluminum**
Date: March 22, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 26.0 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, aluminum. The plate is shocked by 50.8 mm of PBX-9404 initiated by a P-040 lens. h is 38.1 mm.

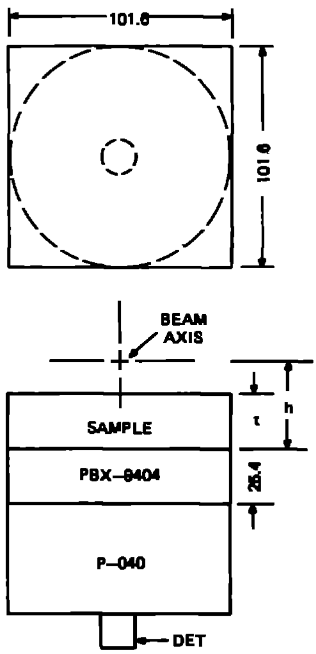


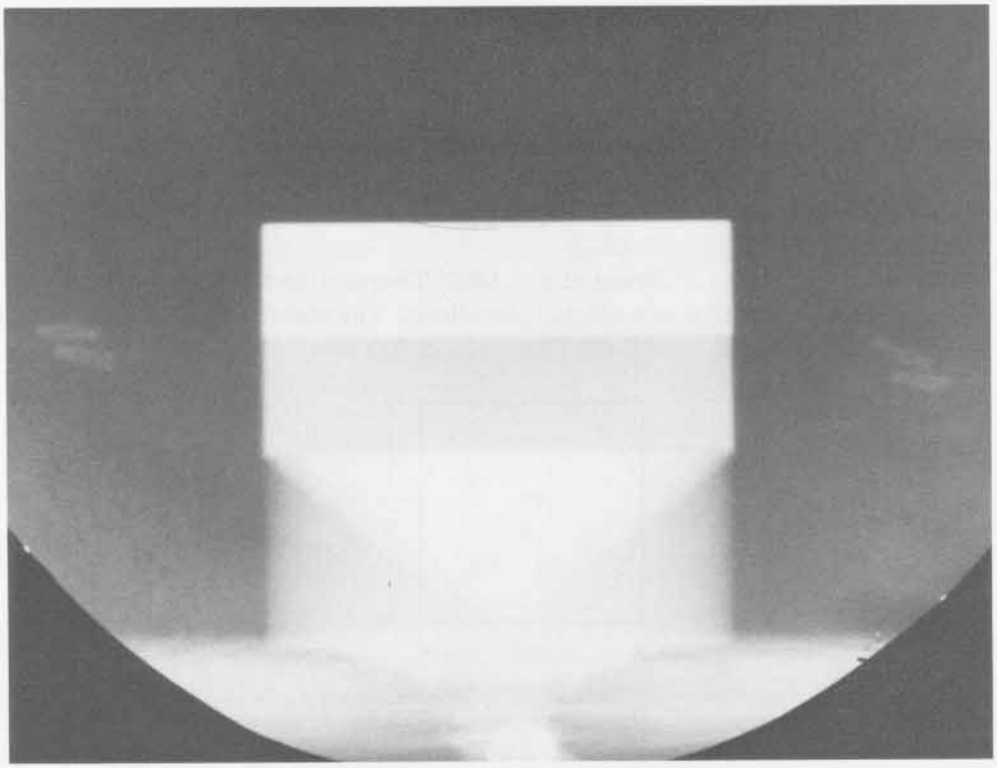


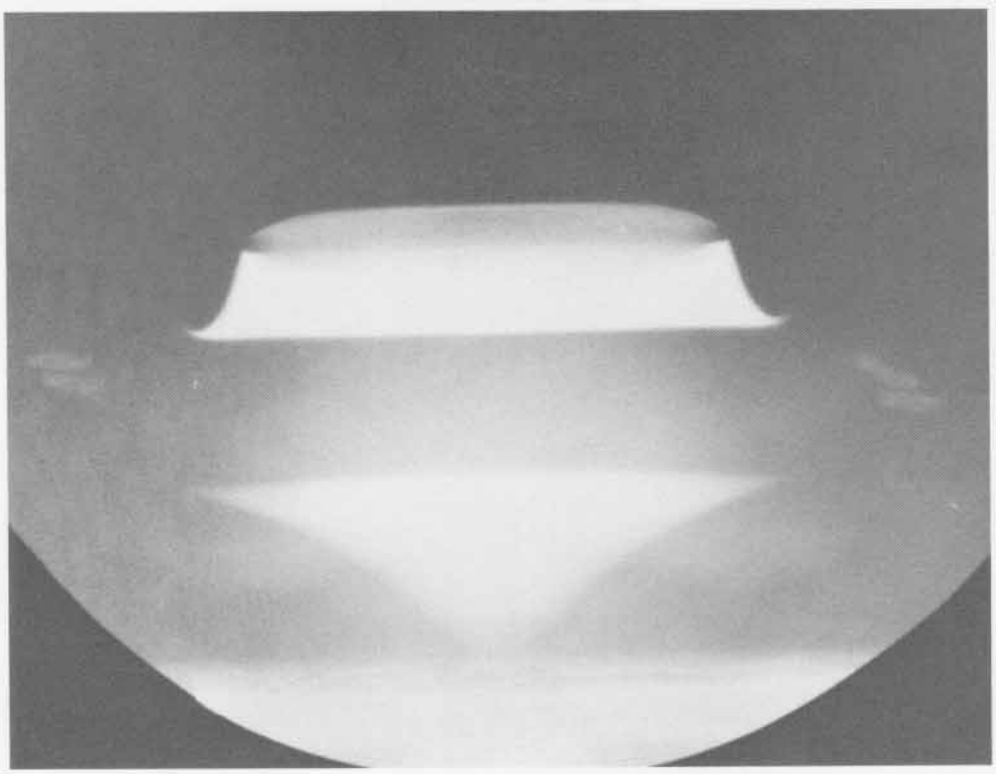


SHOT 471: **Dynamic Fracture of Aluminum**
Date: March 22, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 23.14 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, aluminum. The plate is shocked by 25.4 mm of PBX-9404 initiated by a P-040 lens. h is 38.1 mm.

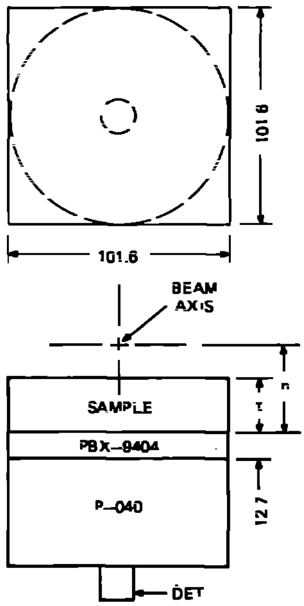


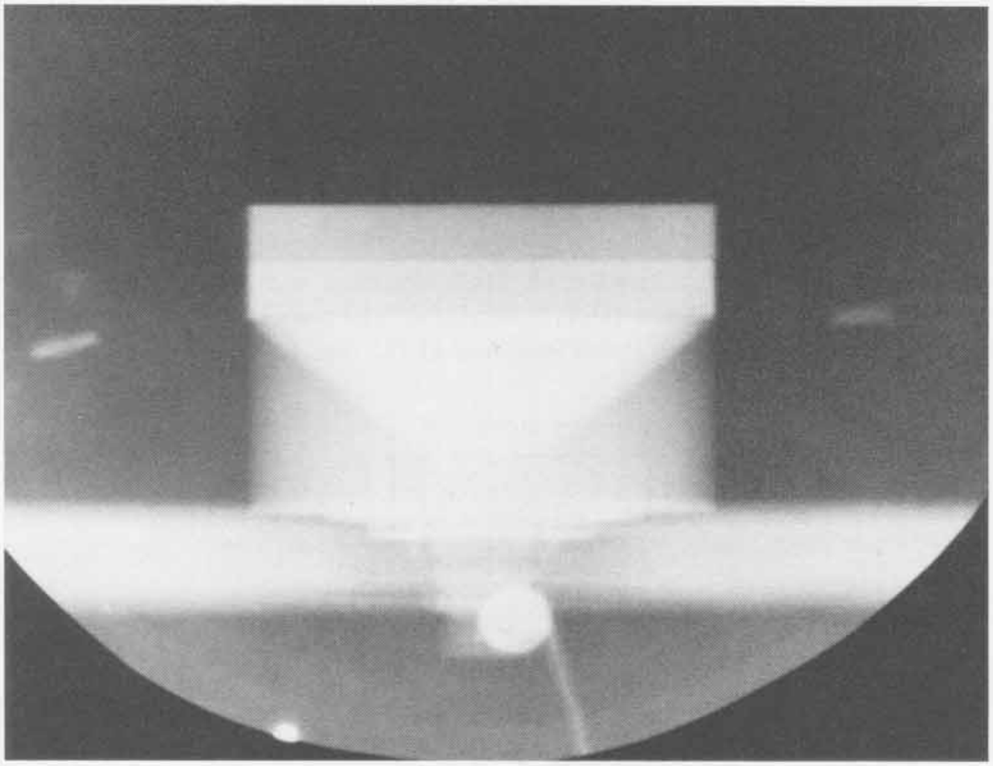


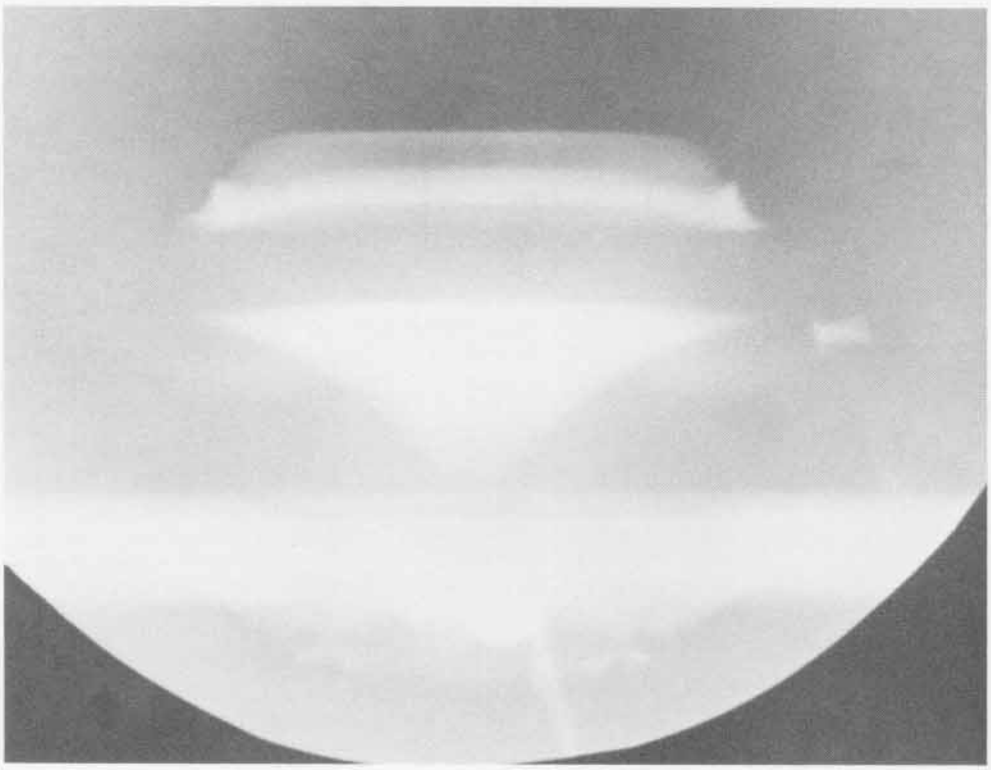


SHOT 472: **Dynamic Fracture of Beryllium**
Date: March 2, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 21.04 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 12.0-mm-thick, t, beryllium. The plate is shocked by 12.7 mm of PBX-9404 initiated by a P-040 lens. h is 28.575 mm.

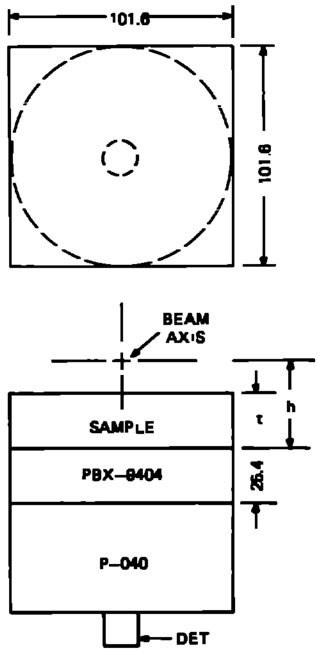


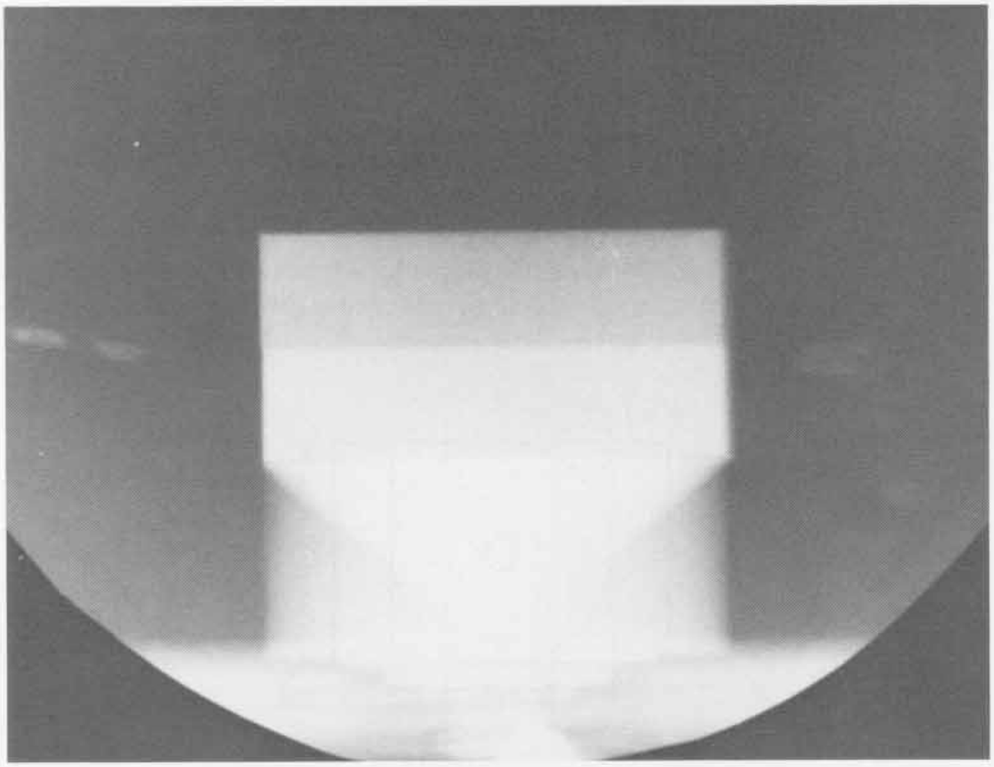


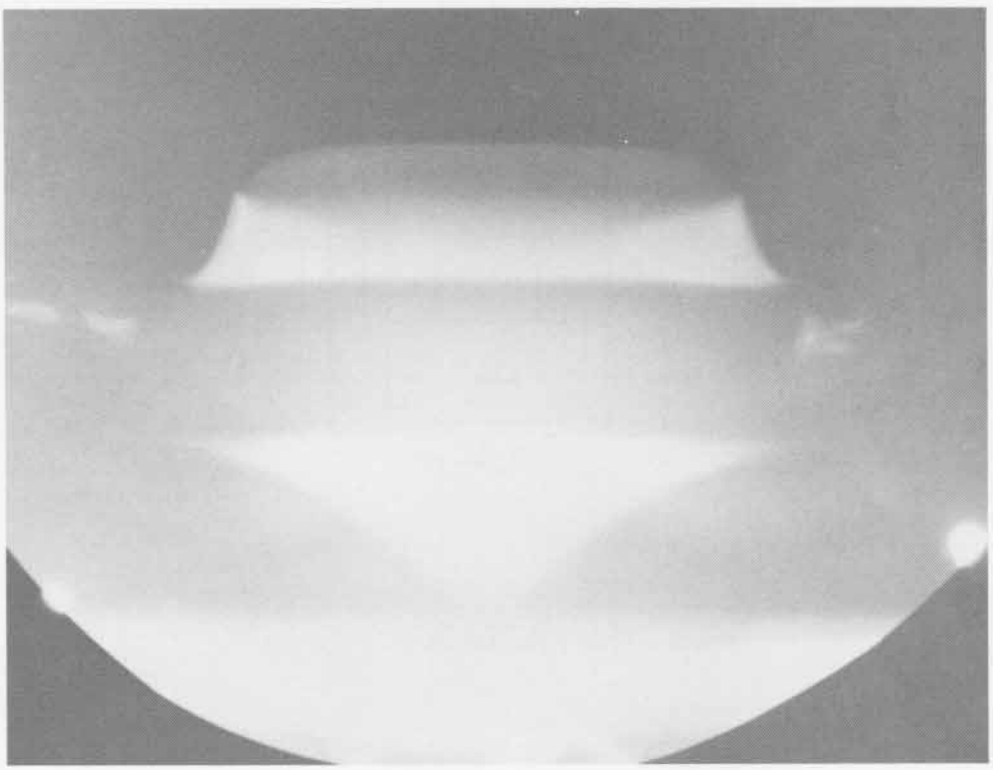


SHOT 473: **Dynamic Fracture of Beryllium**
Date: March 2, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 23.47 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, beryllium. The plate is shocked by 25.4 mm of PBX-9404 initiated by a P-040 lens. h is 41.275 mm.

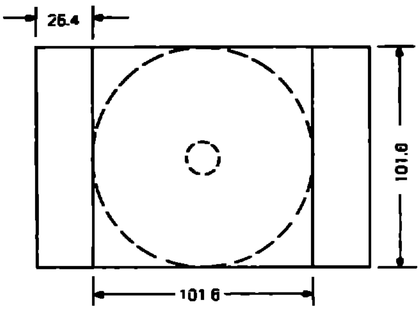


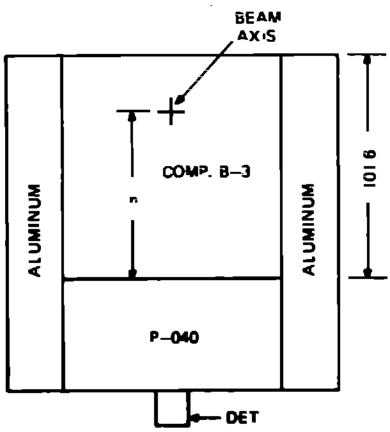


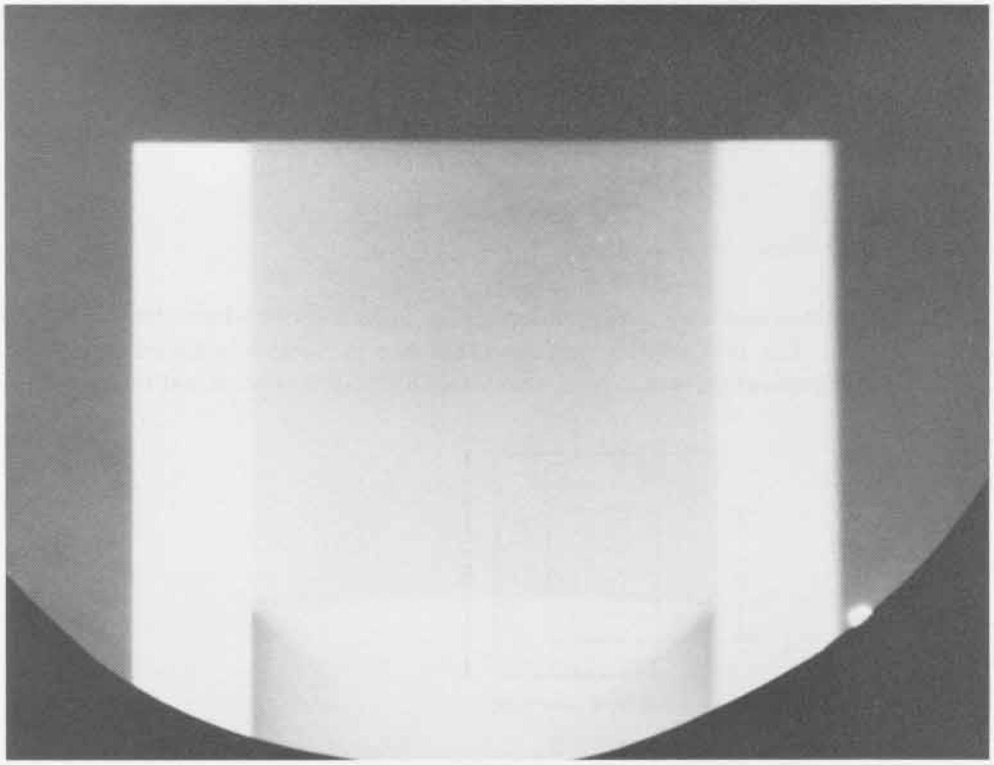


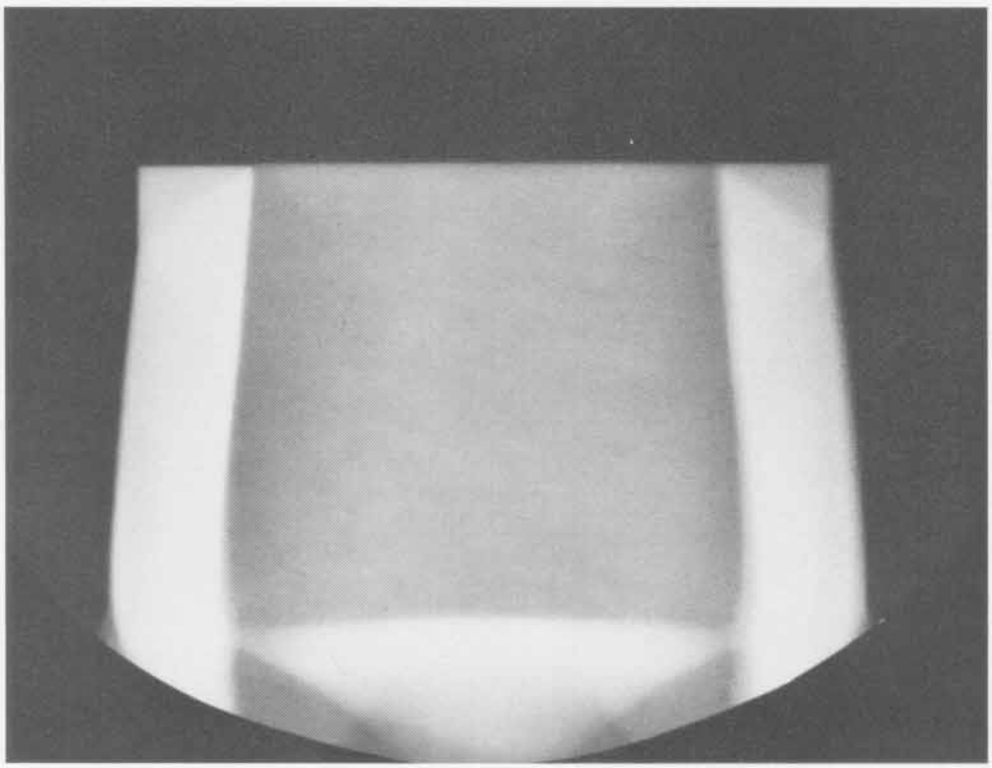
SHOT 474: **Composition B-3 Confined by Aluminum**
Date: February 2, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 26.24 μs

A 101.6-mm cube of Composition B-3 initiated by a P-040 lens is confined by two 25.4-mm-thick by 101.6-mm-wide aluminum plates. h is 101.6 mm. See Shot 459 for an earlier time.



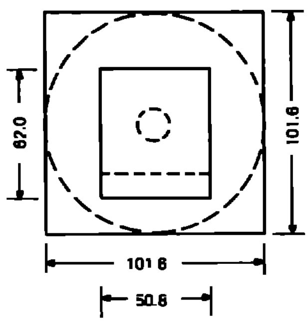


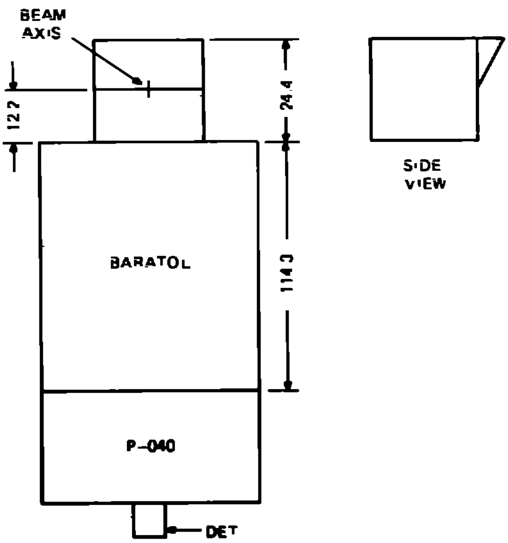


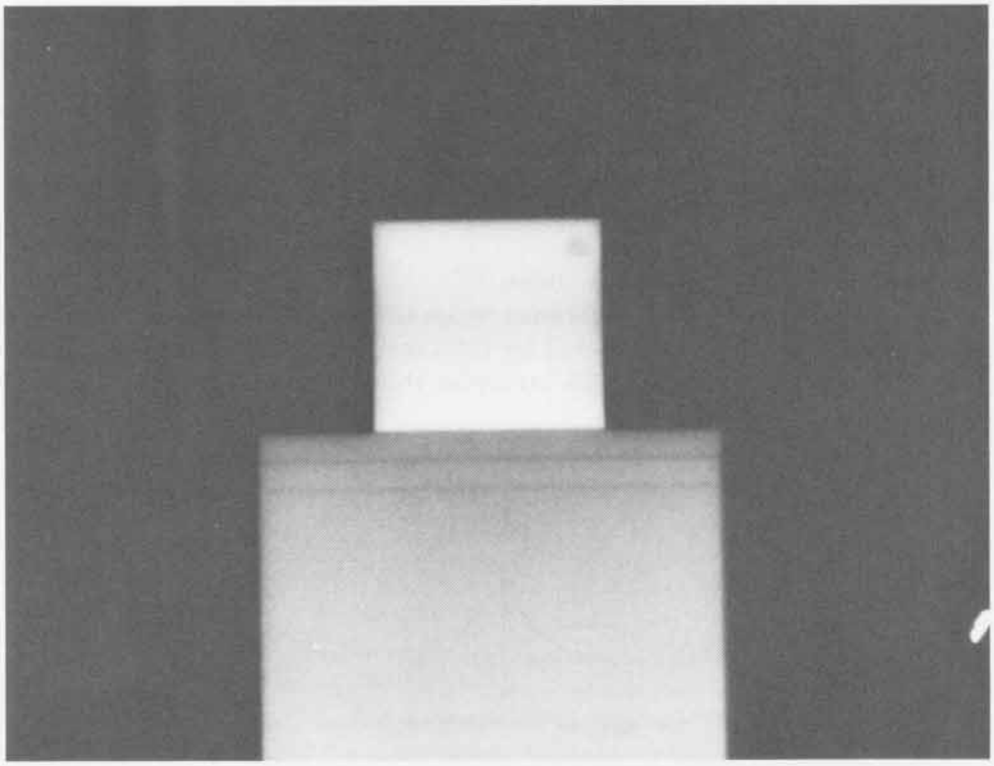


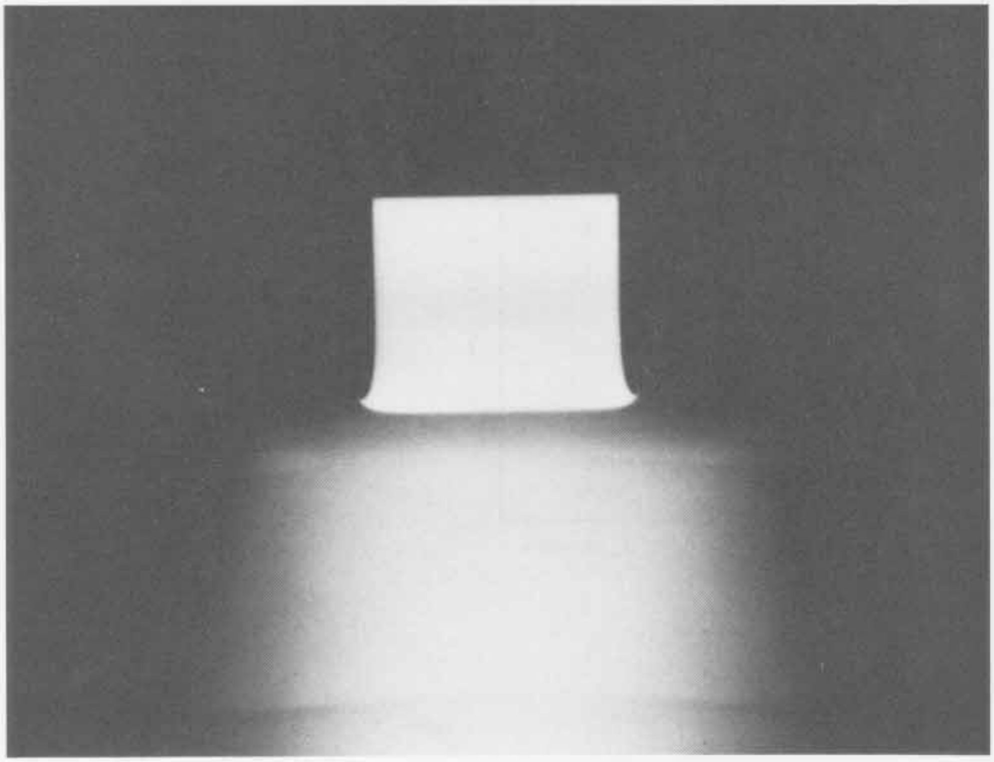
SHOT 475: **Iron Phase Change**
Date: March 17, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 40.83 μs
Reference: Mader, 1966b

A block of Armco iron with a calibration wedge placed above where the shock front was expected. The iron was shocked by 114.3 mm of Baratol initiated by a P-040 lens. The magnification was 1.225; otherwise, this shot was identical to Shot 476.



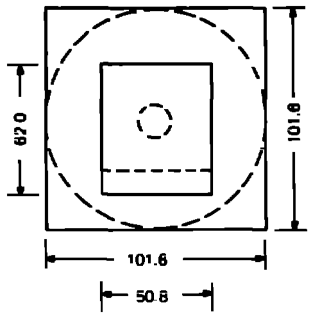


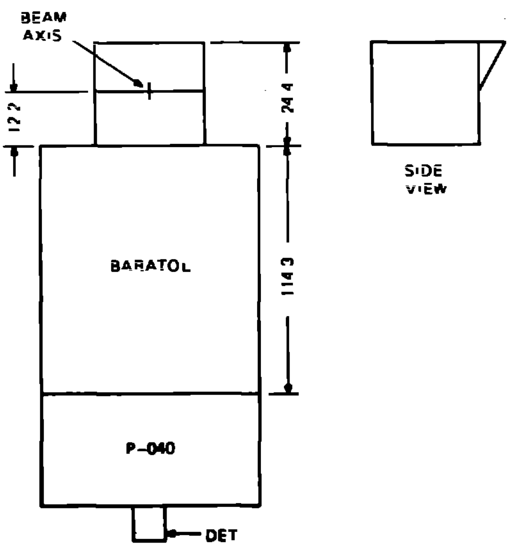


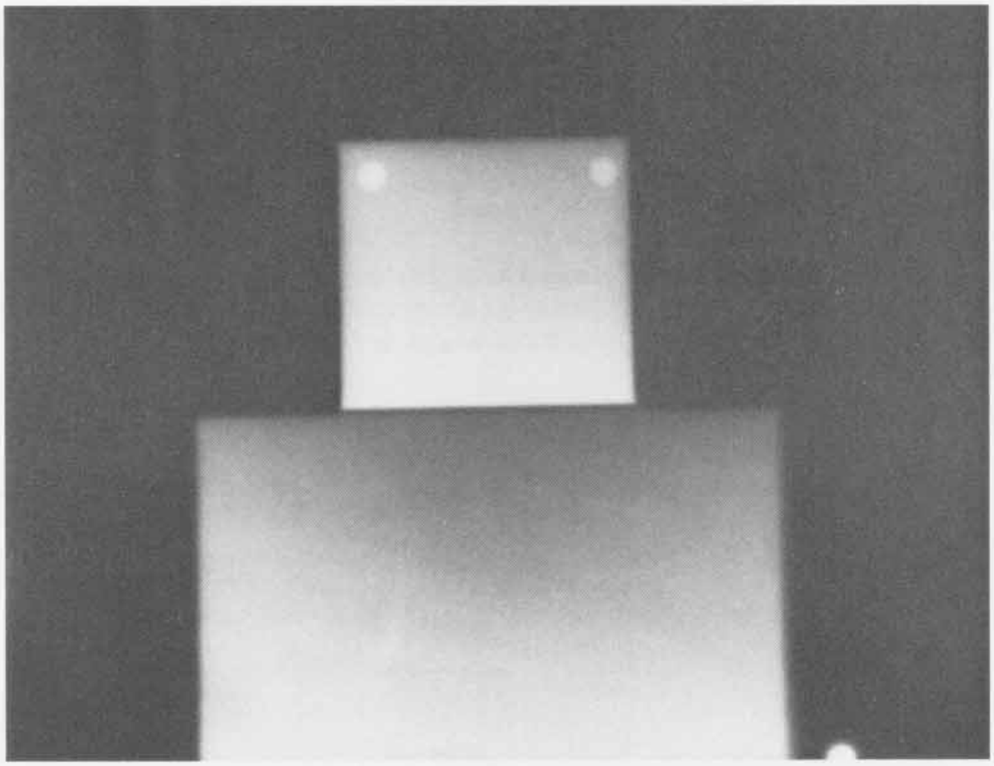


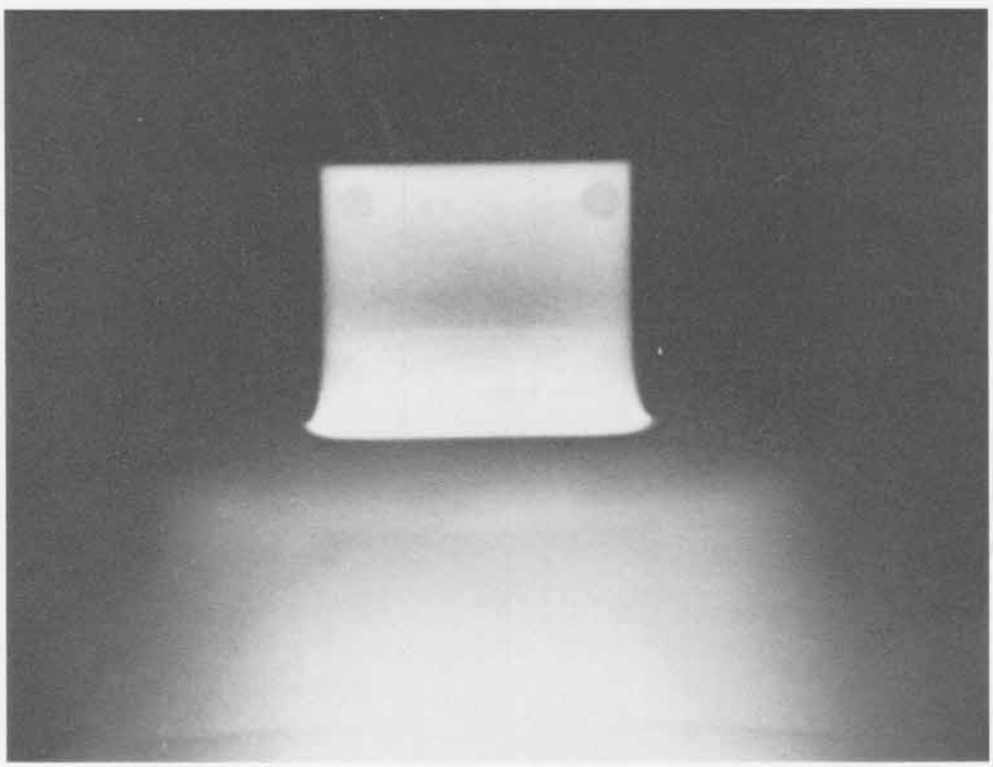
SHOT 476: **Iron Phase Change**
Date: March 23, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 40.82 μs
Reference: Mader, 1966b

A block of Armco iron with a calibration wedge placed above where the shock front was expected. The iron was shocked by 114.3 mm of Baratol initiated by a P-040 lens. The magnification was 1.5625; otherwise, this shot was identical to Shot 475.



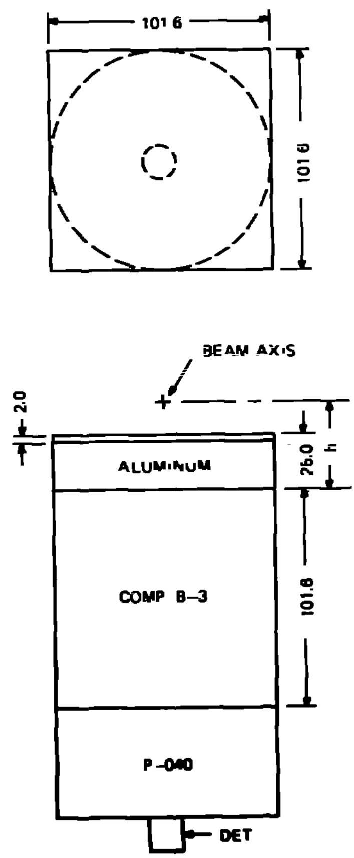


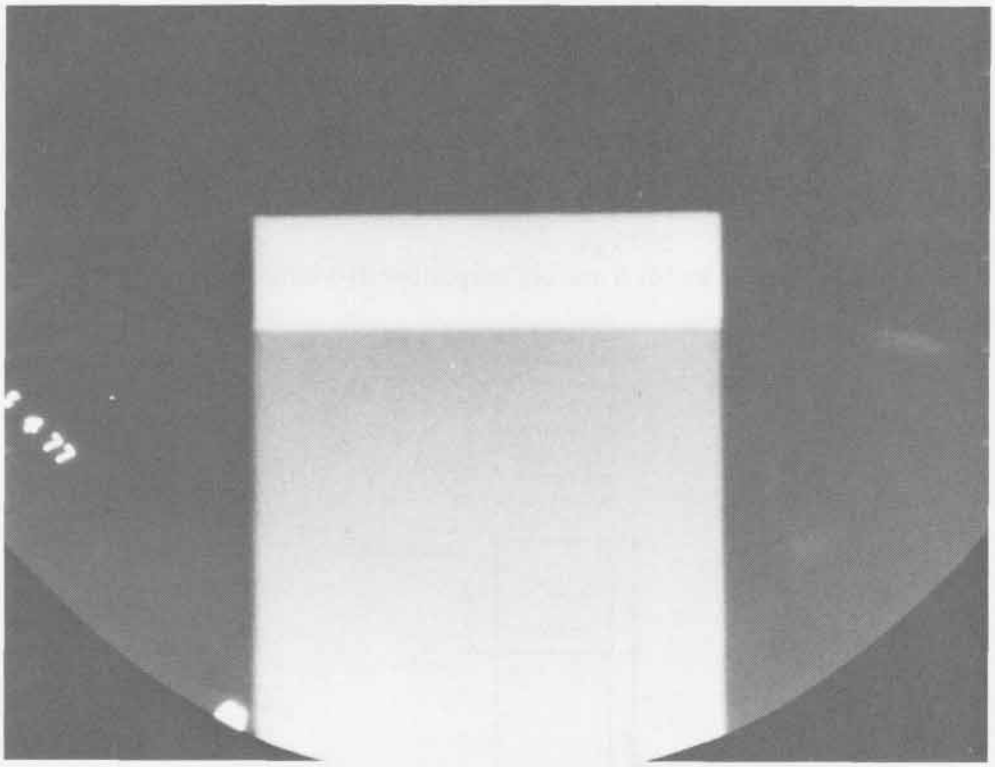


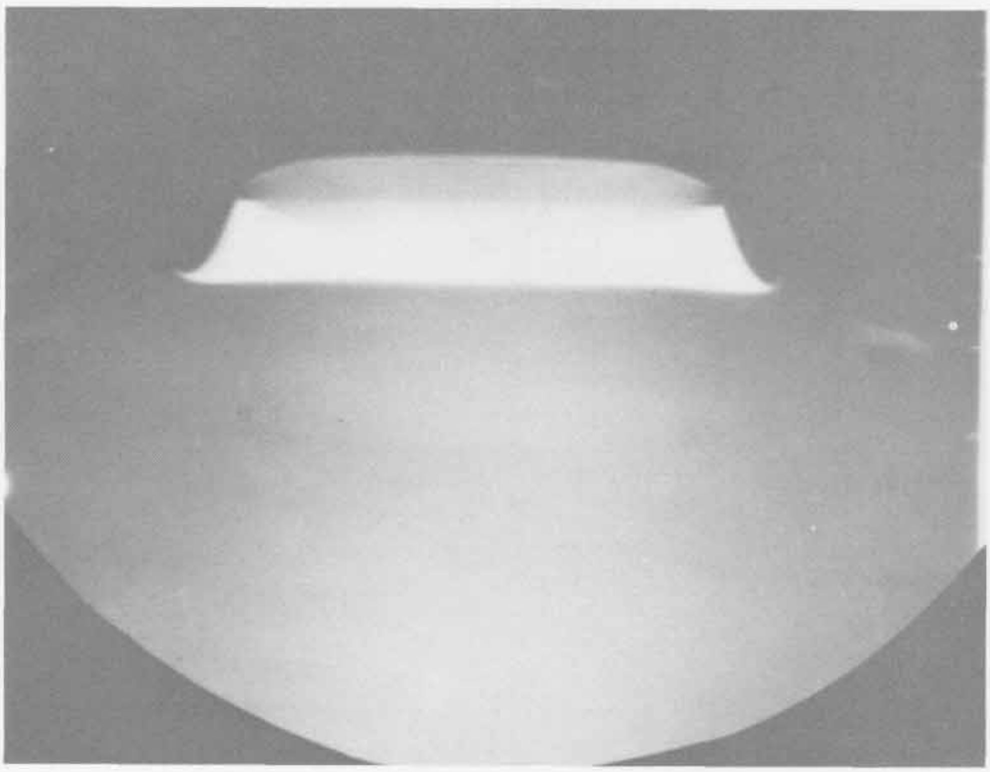


SHOT 477: **Fracture Resolution**
Date: March 23, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 33.29 μs

A study of the radiographic resolution of fracture thickness. A 2.0-mm-thick aluminum plate on top of a 23.0-mm-thick aluminum plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm. See Shot 505.

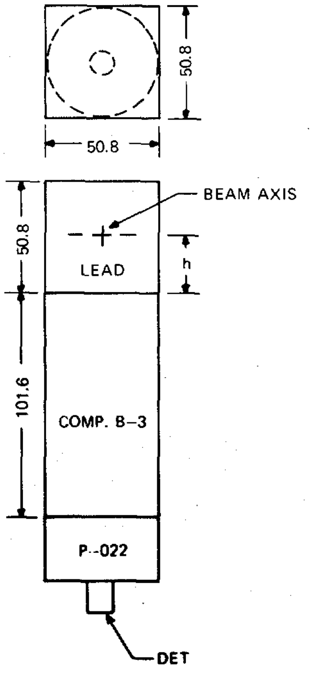


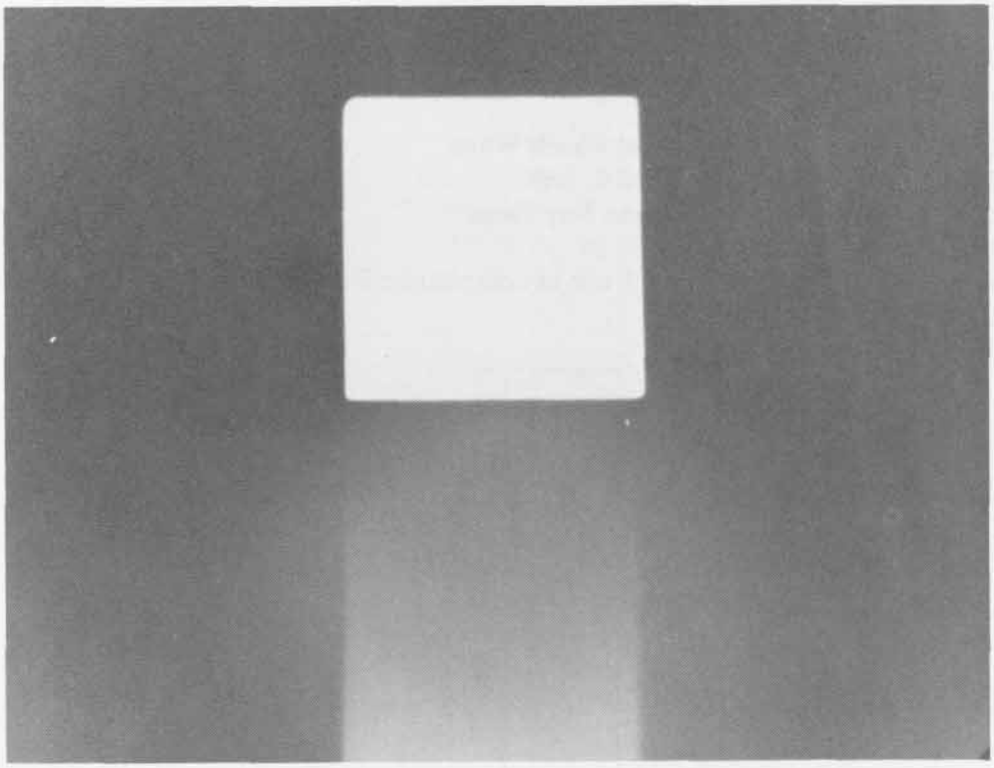


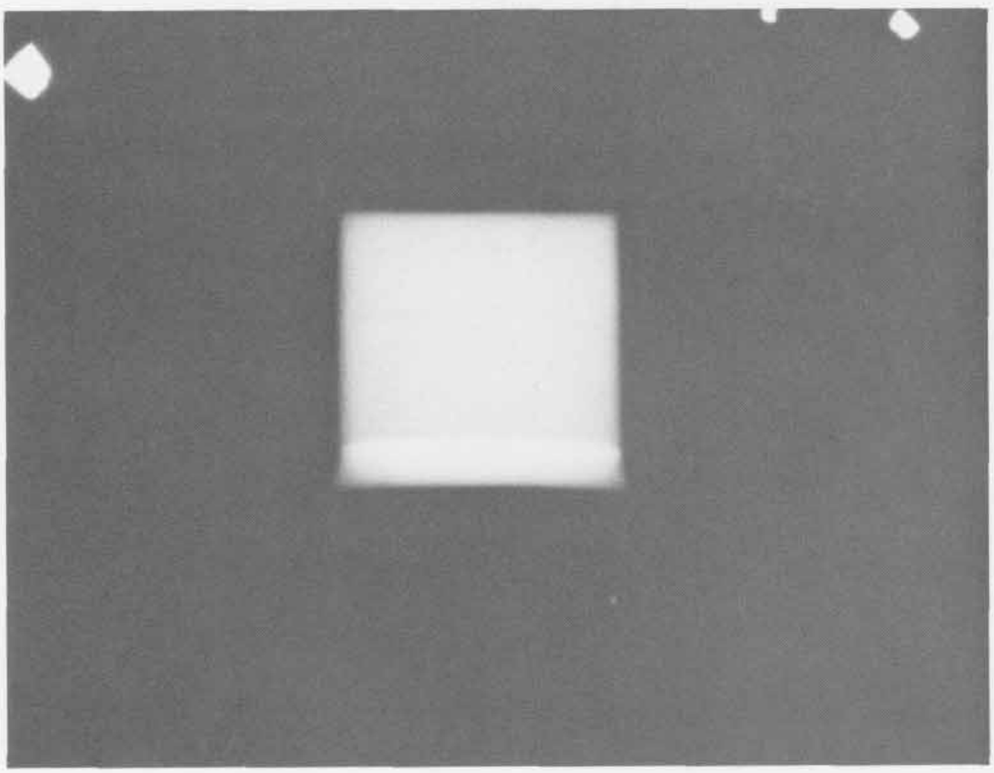


SHOT 478: **Lead Shock Wave**
Date: March 31, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 26.38 μs

A lead block is shocked by 101.6 mm of Composition B-3 initiated by a P-022 lens. h is 3.30 mm.

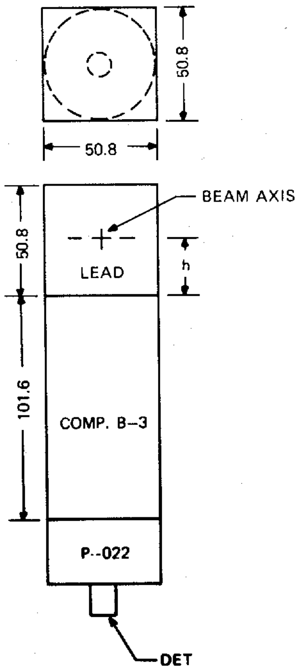


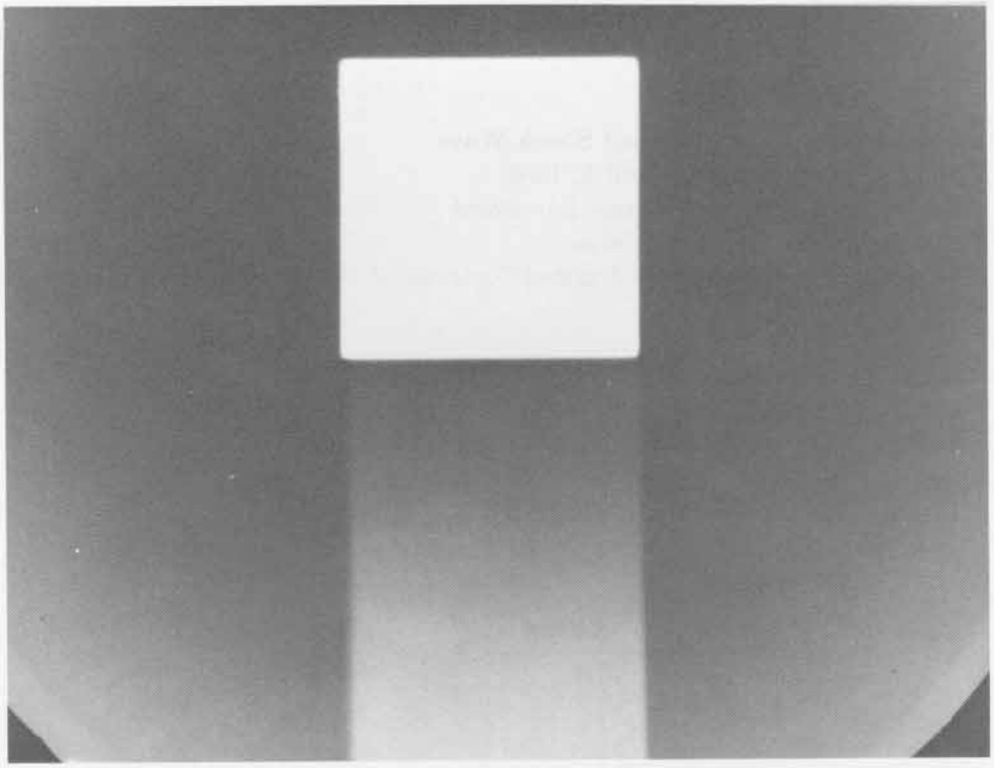


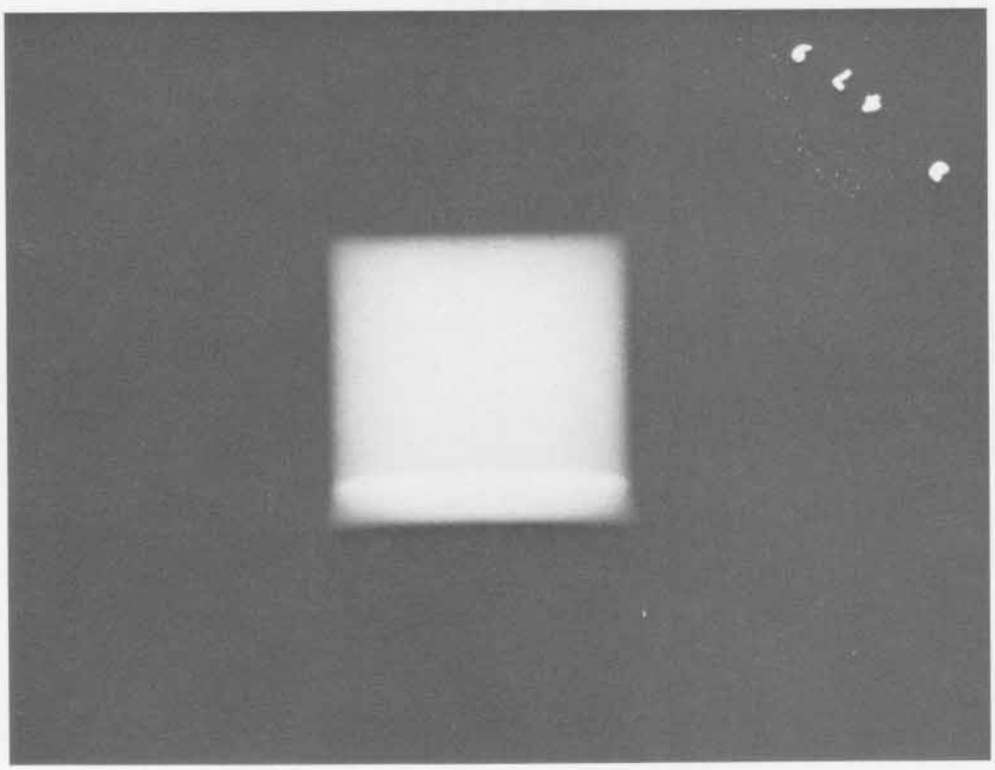


SHOT 479: **Lead Shock Wave**
Date: April 6, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 26.38 μs

A lead block is shocked by 101.6 mm of Composition B-3 initiated by a P-022 lens. h is 10.59 mm.

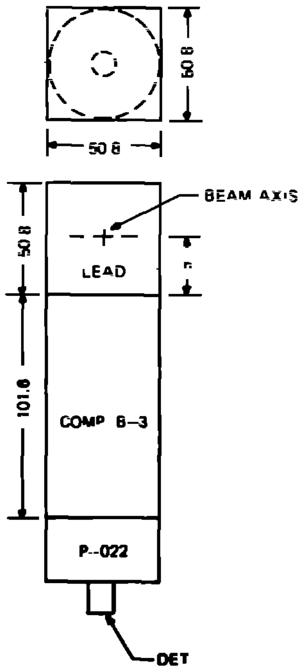


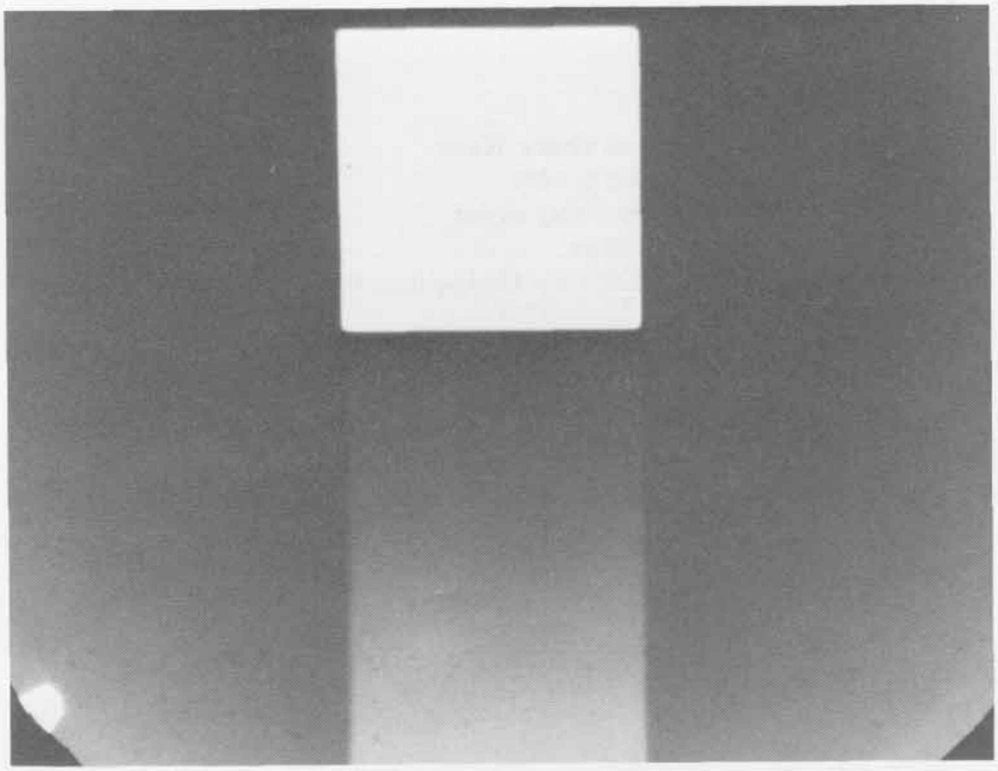


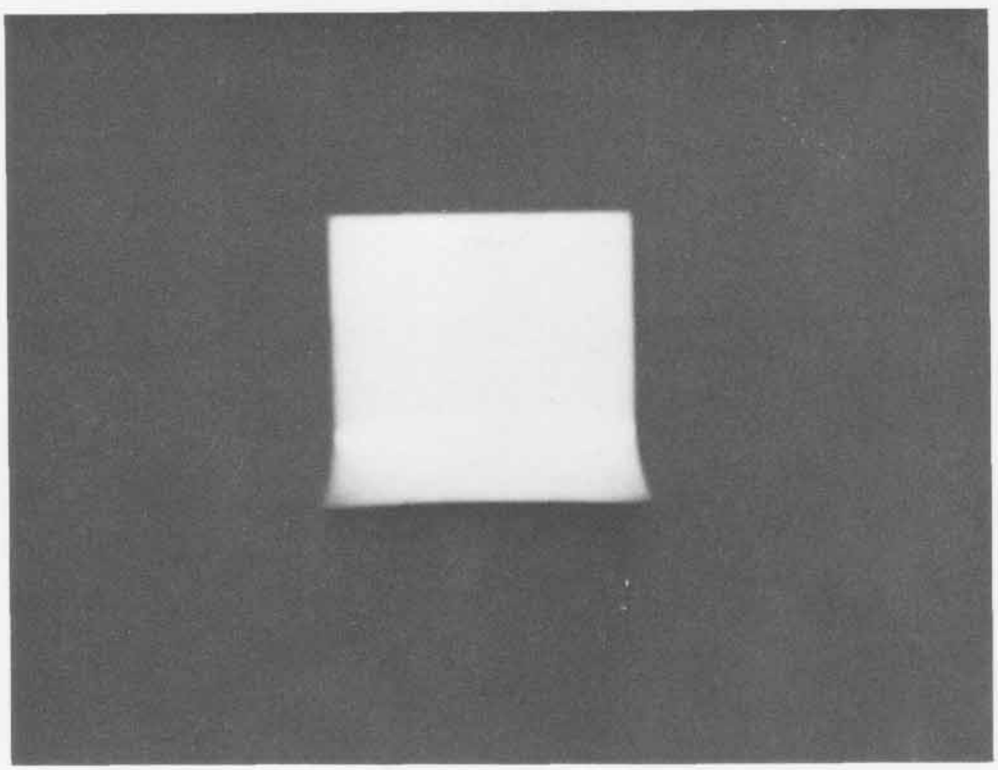


SHOT 480: **Lead Shock Wave**
Date: April 6, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 28.39 μs

A lead block is shocked by 101.6 mm of Composition B-3 initiated by a P-022 lens. h is 5.52 mm.

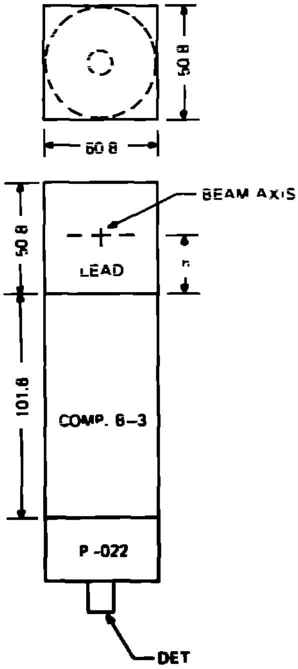


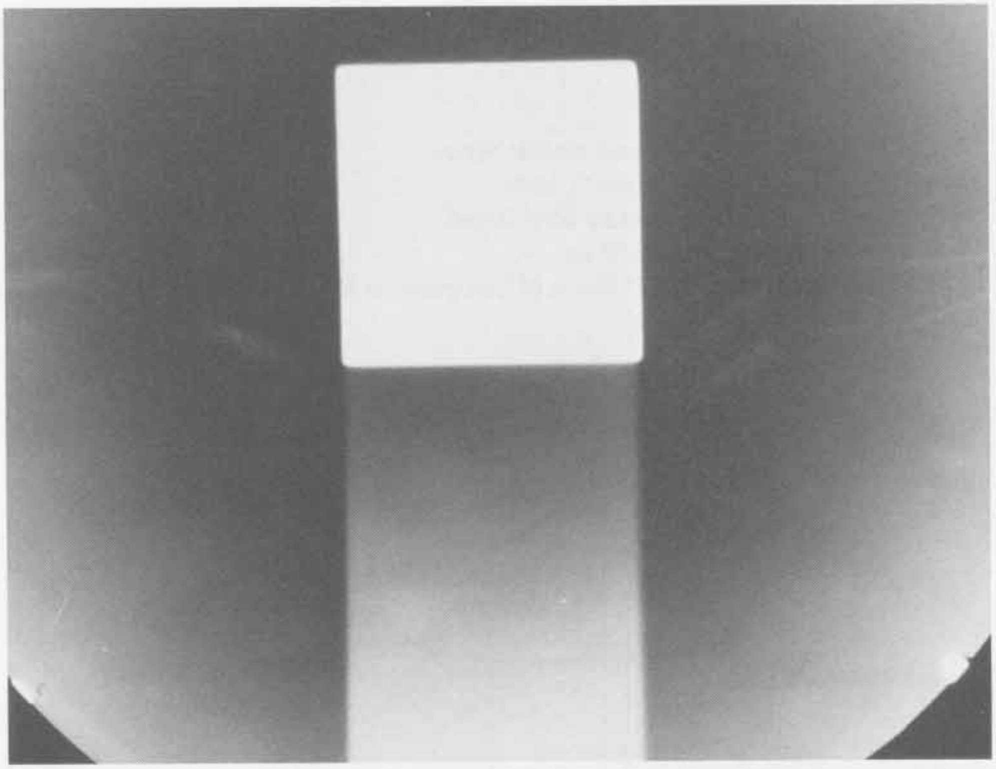


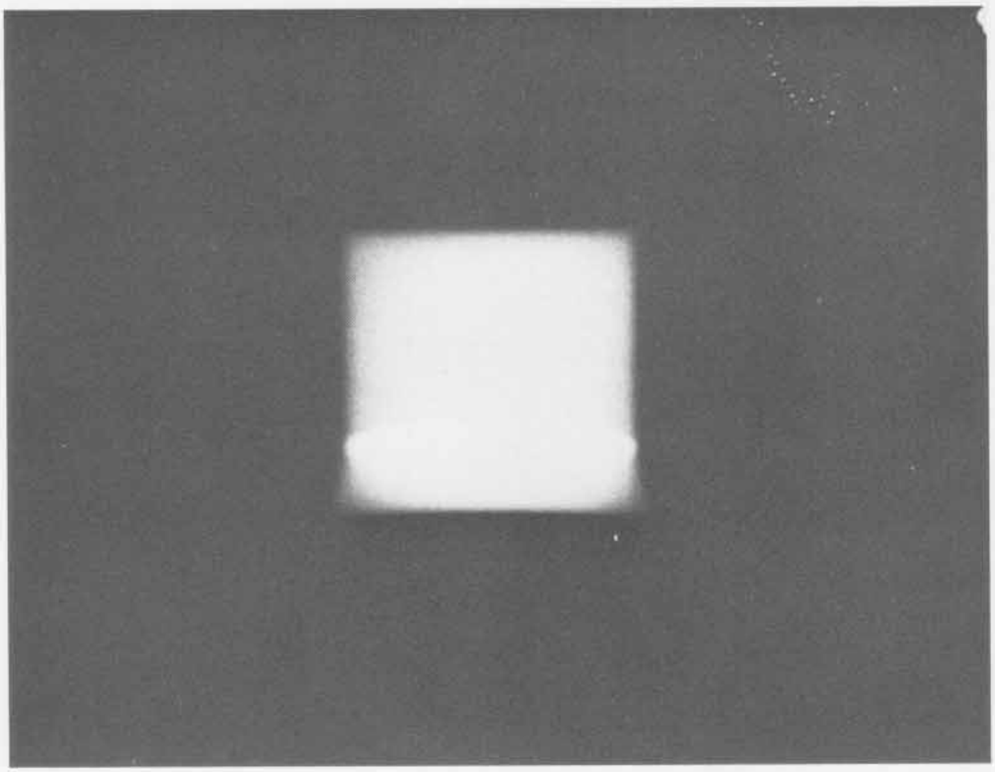


SHOT 481: **Lead Shock Wave**
Date: April 6, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 28.39 μs

A lead block is shocked by 101.6 mm of Composition B-3 initiated by a P-022 lens. h is 17.65 mm.

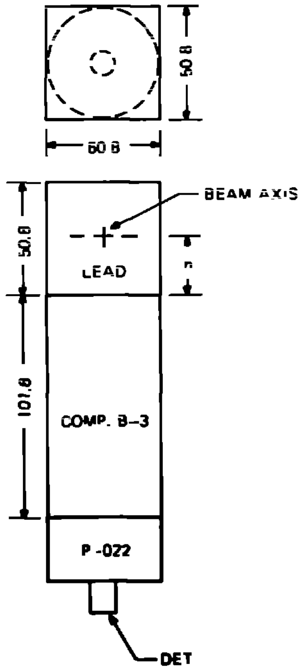


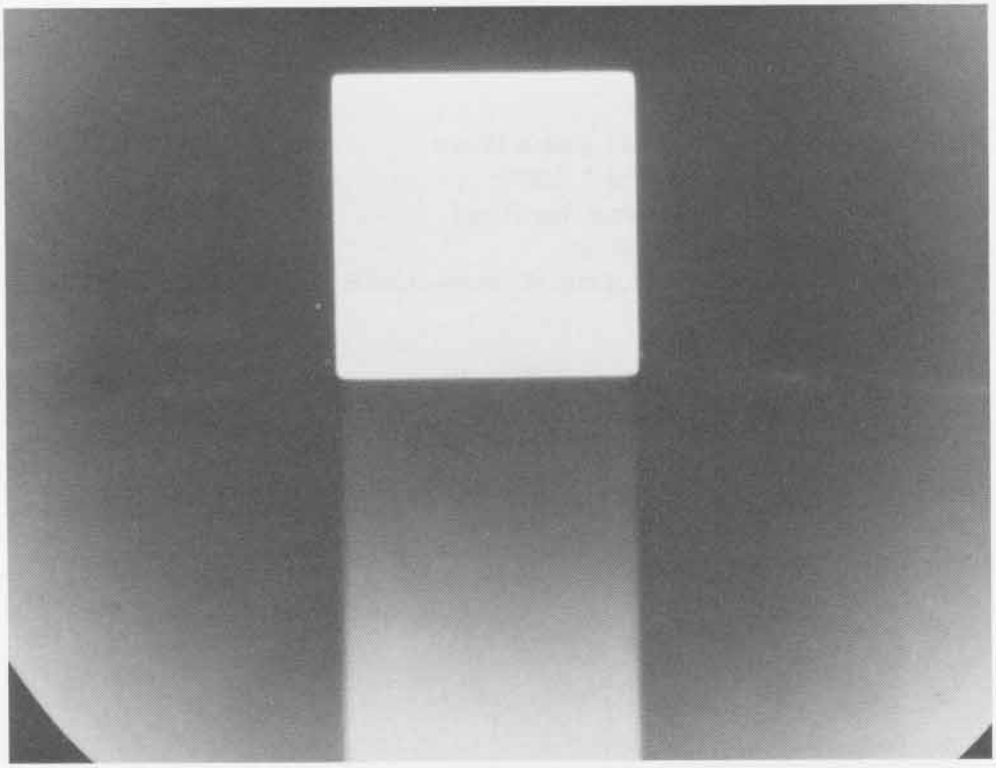


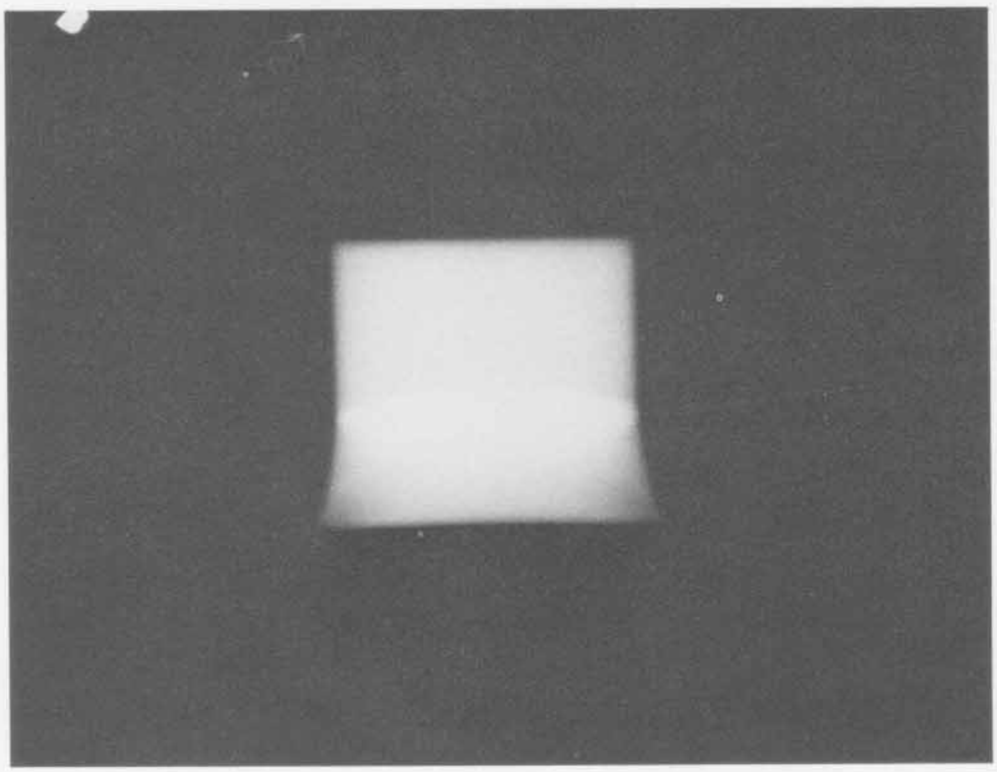


SHOT 482: **Lead Shock Wave**
Date: April 7, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 30.89 μs

A lead block is shocked by 101.6 mm of Composition B-3 initiated by a P-022 lens. h is 8.25 mm.

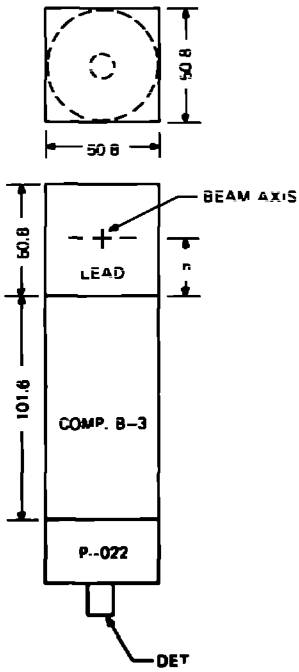


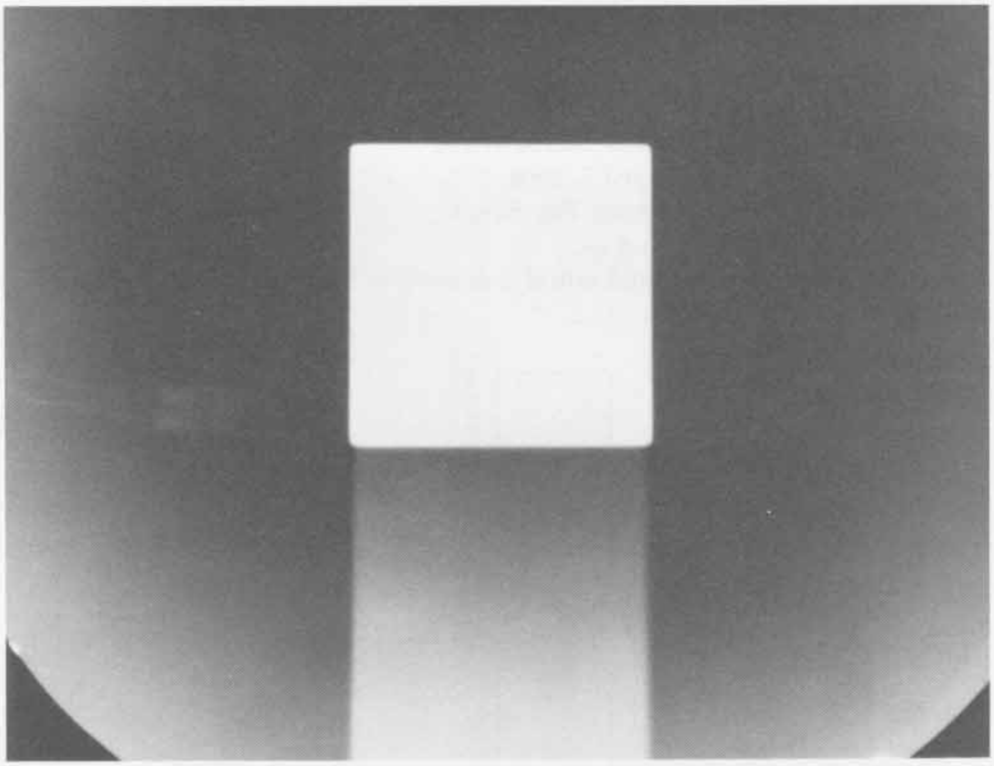


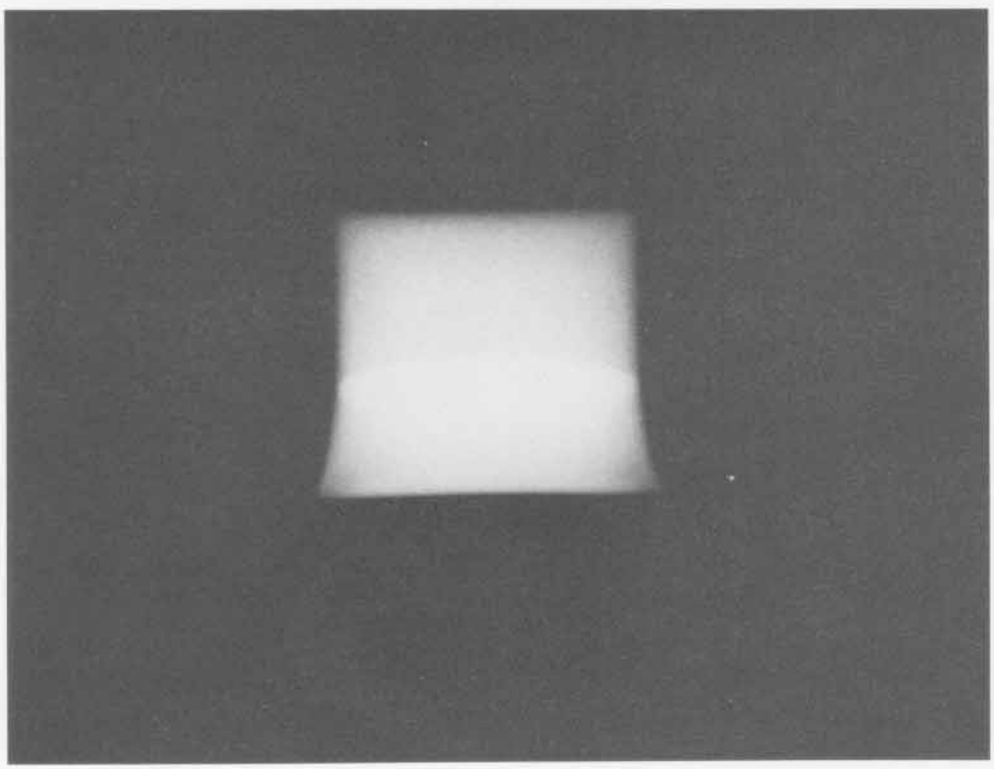


SHOT 483: **Lead Shock Wave**
Date: April 7, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 30.86 μs

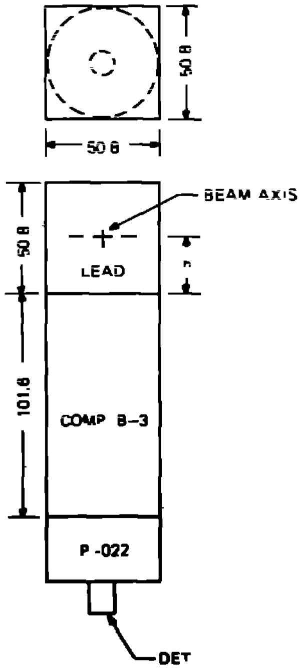
A lead block is shocked by 101.6 mm of Composition B-3 initiated by a P-022 lens. h is 26.41 mm.

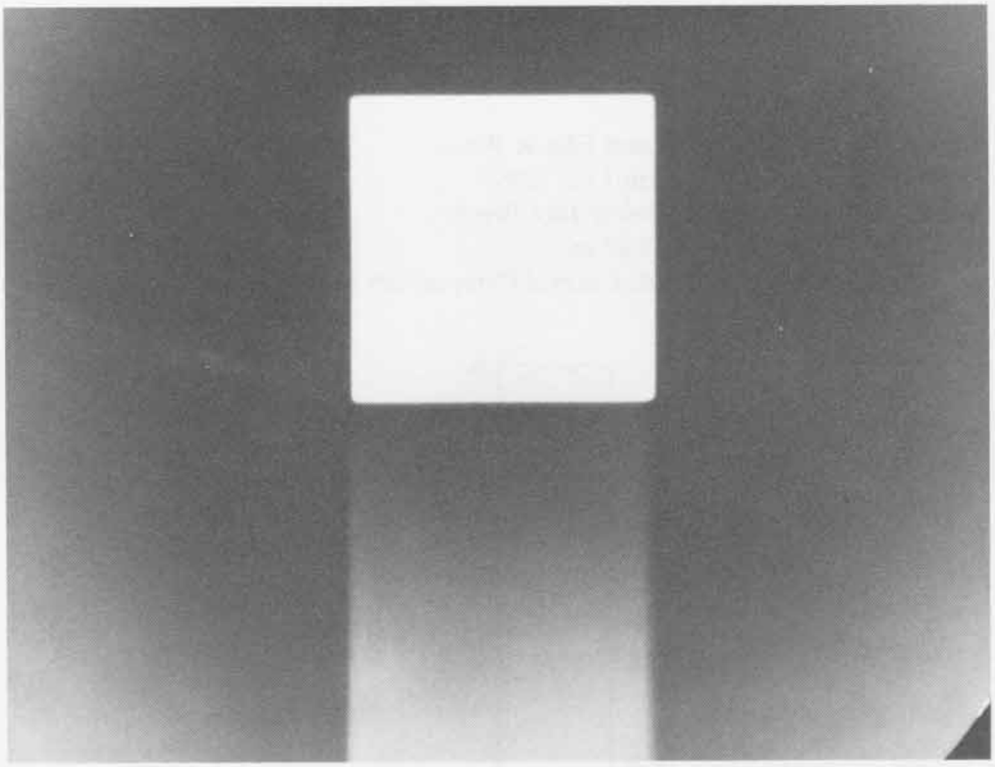


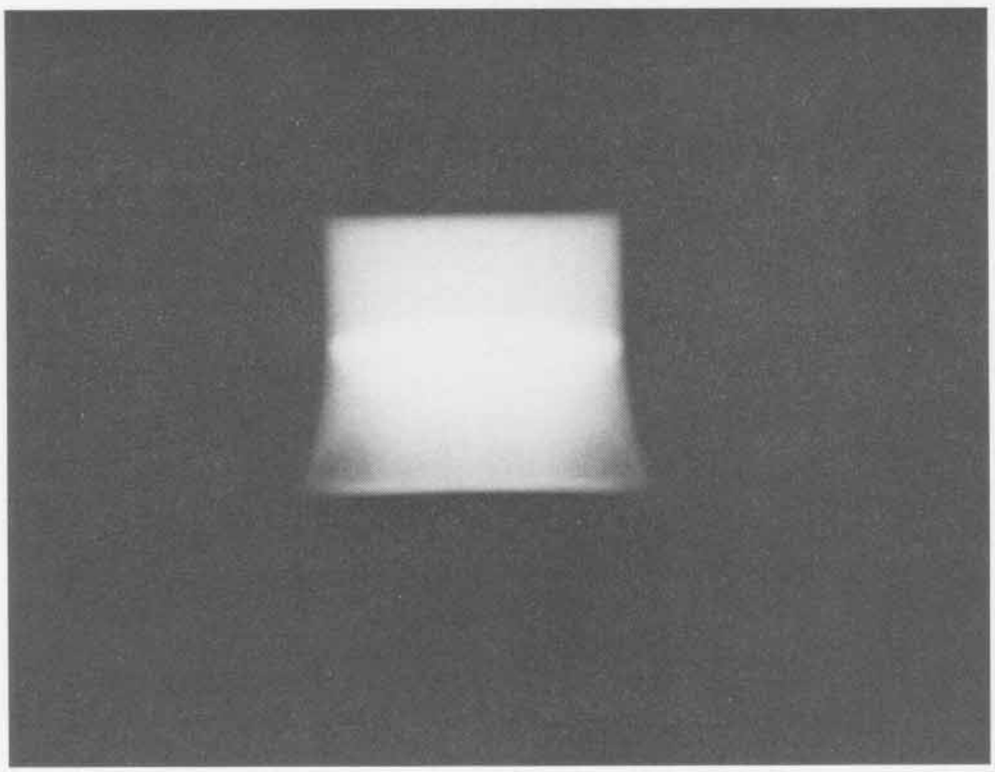




SHOT 484: **Lead Shock Wave**
Date: April 7, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 33.4 μs
A lead block is shocked by 101.6 mm of Composition B-3 initiated by a P-022 lens. h is 10.92 mm.

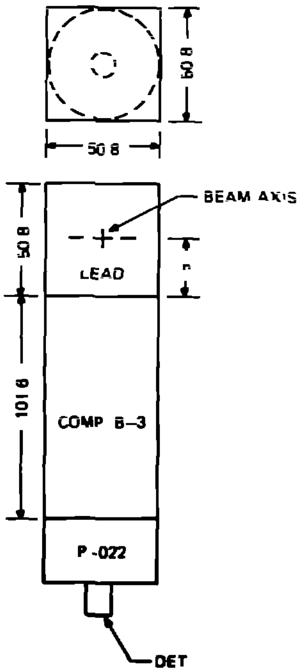


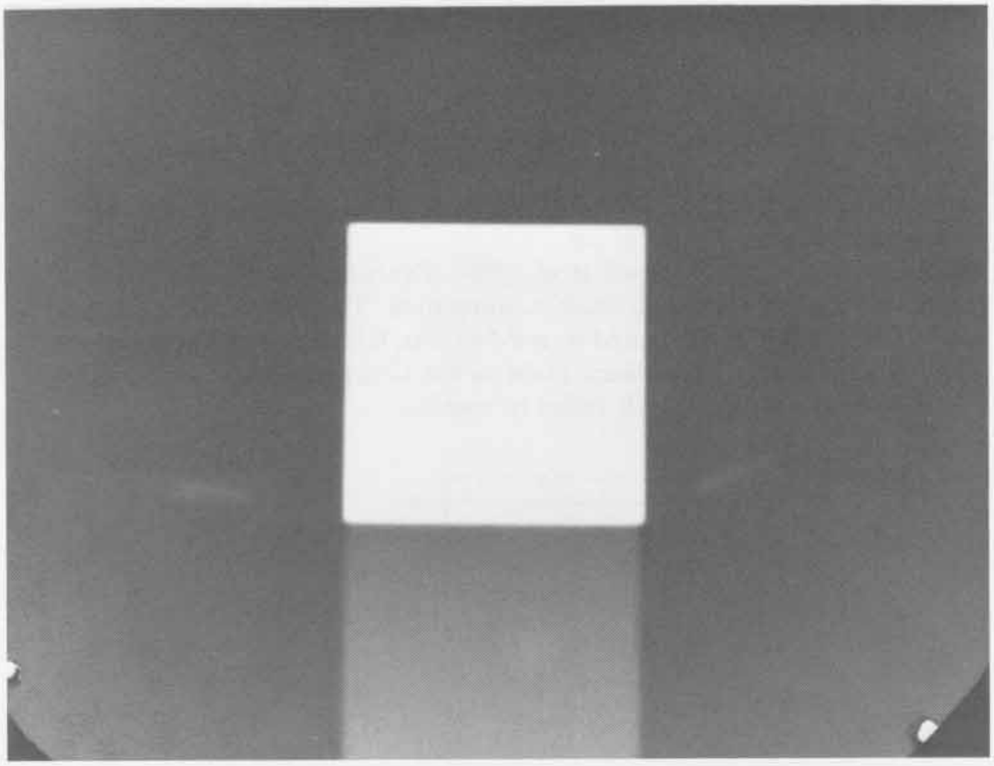


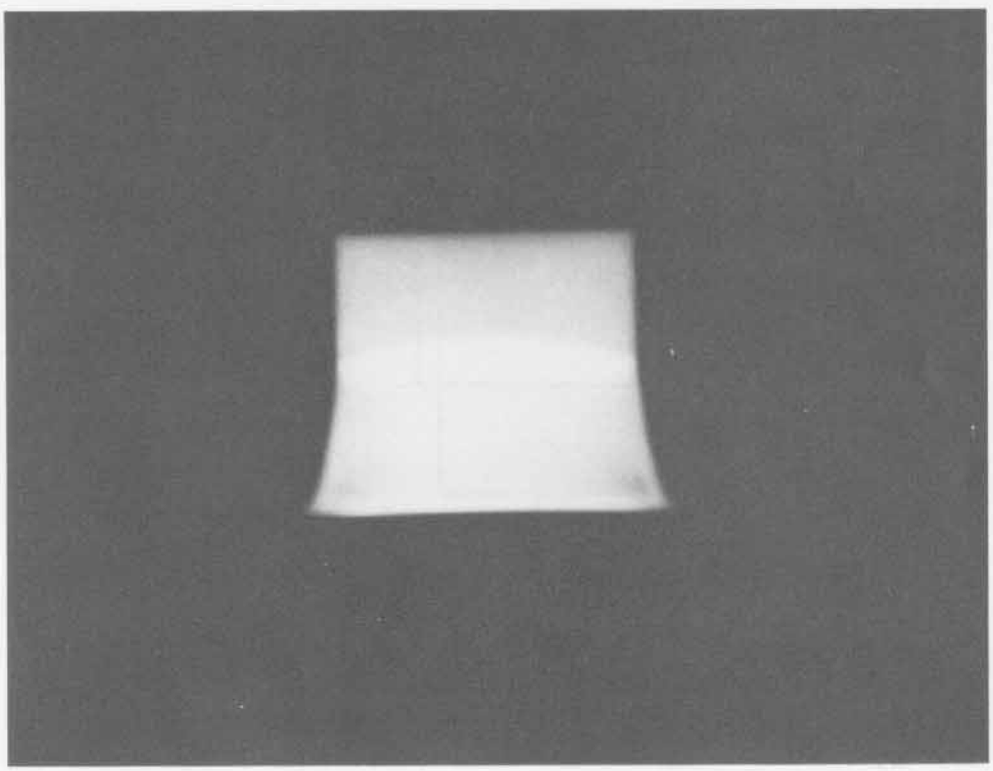


SHOT 485: **Lead Shock Wave**
Date: April 12, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 33.39 μs

A lead block is shocked by 101.6 mm of Composition B-3 initiated by a P-022 lens. h is 35.30 mm.

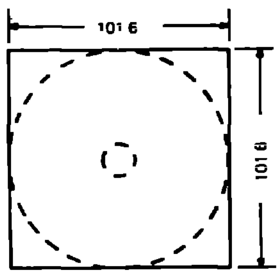


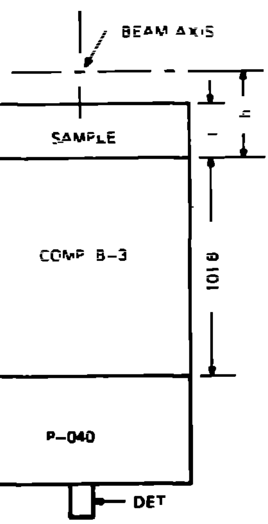


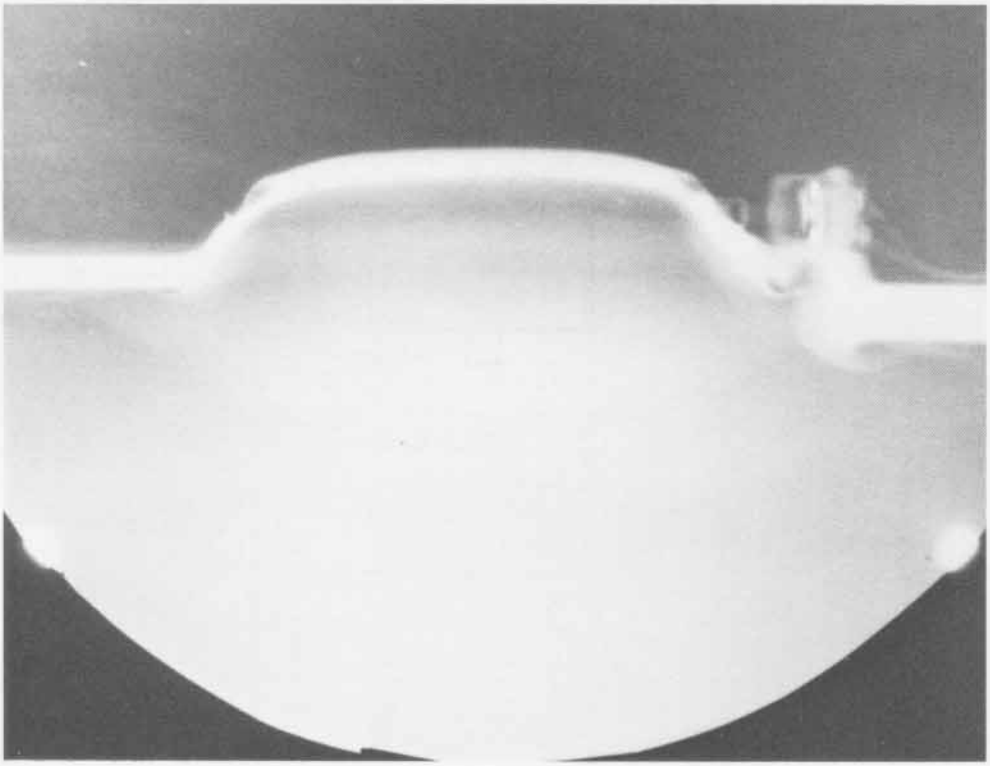


SHOT 486: **Dynamic Fracture of Aluminum**
Date: March 9, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 33.41 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 6.35-mm-thick, t, aluminum. The plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm. The apparatus for remotely placing a hot aluminum plate on the Composition B-3 is shown on the right side of the radiograph. It failed to operate.

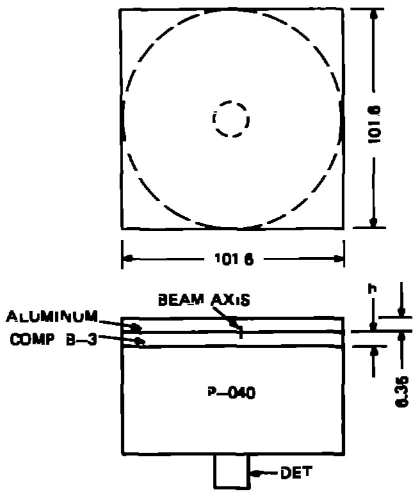


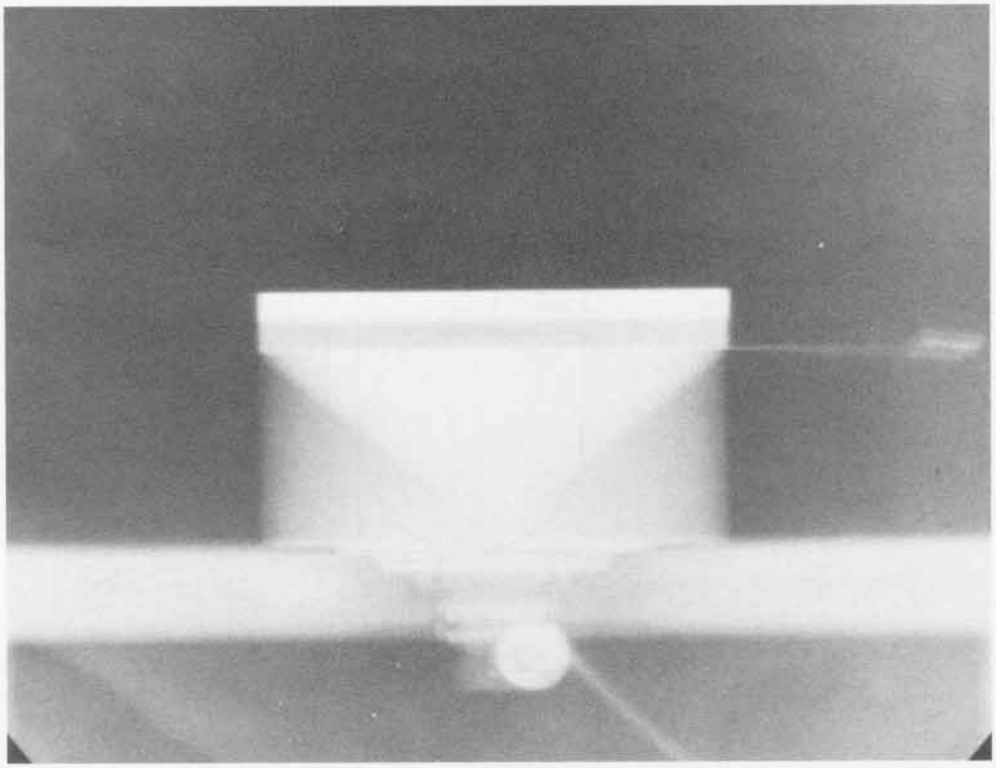


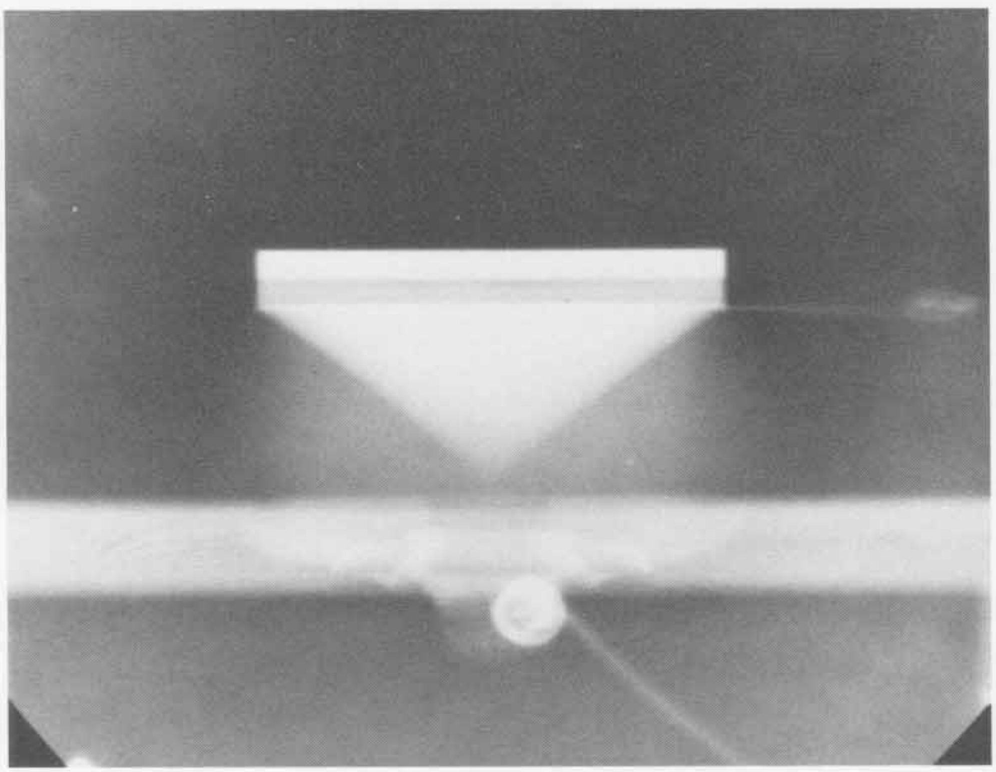


SHOT 487: **Baratol and Composition B-3 Interface**
Date: March 16, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 14.01 μs

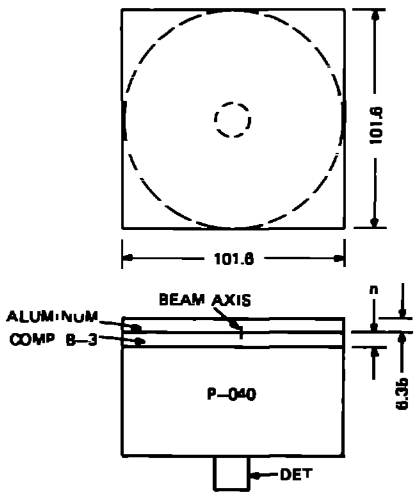
A 6.35-mm slab of Composition B-3 initiated by a P-040 lens. h is 0.0 mm.

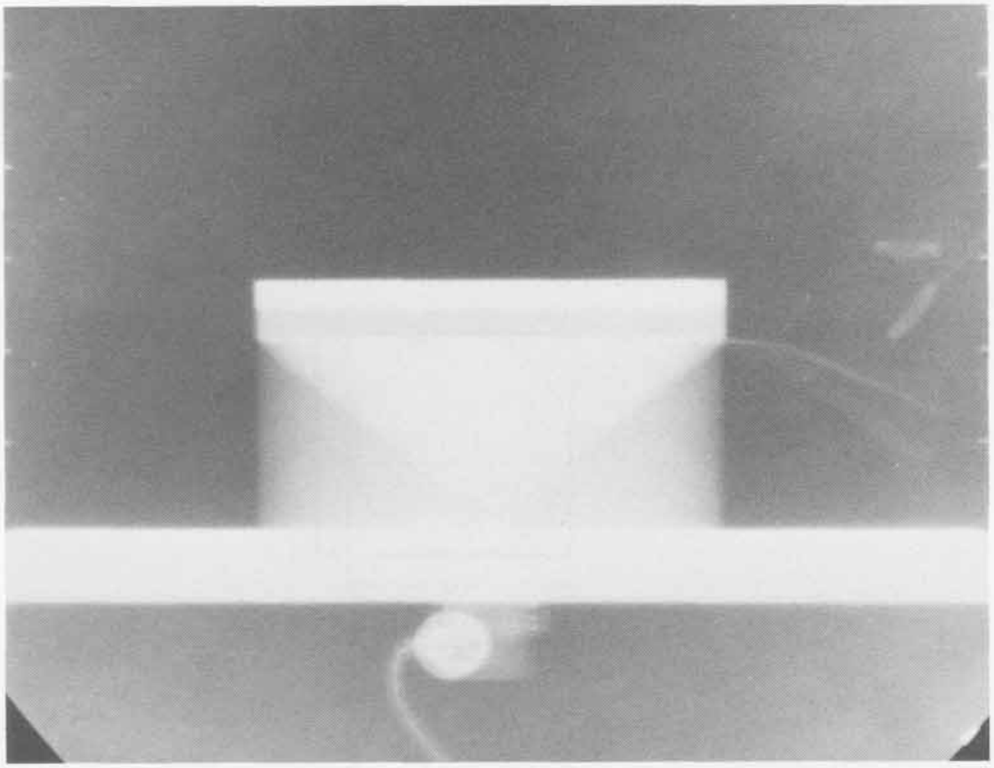


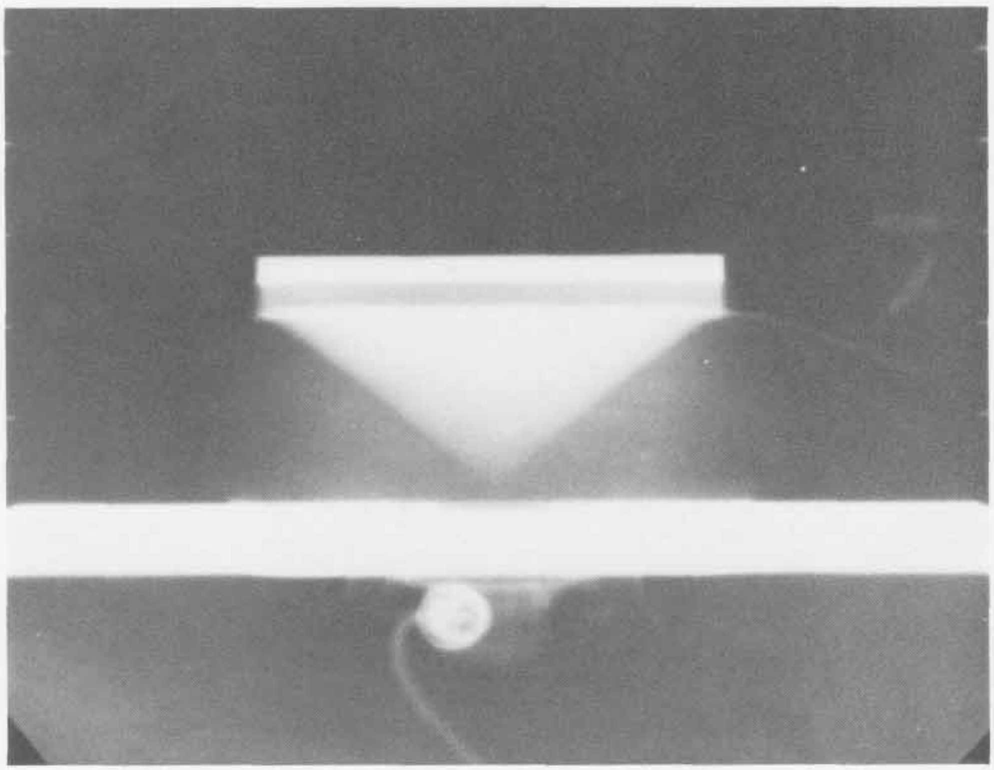




SHOT 488: **Baratol and Composition B-3 Interface**
Date: March 22, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 14.87 μs
A 6.35-mm slab of Composition B-3 initiated by a P-040 lens. h is 1.58 mm.

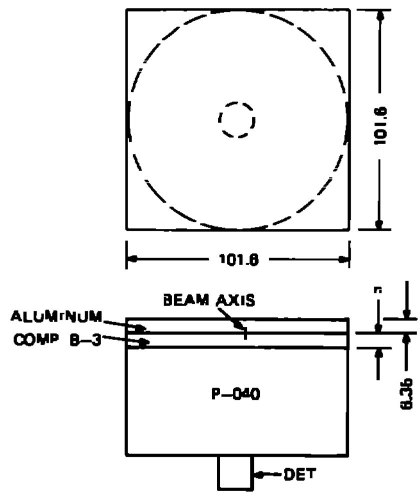


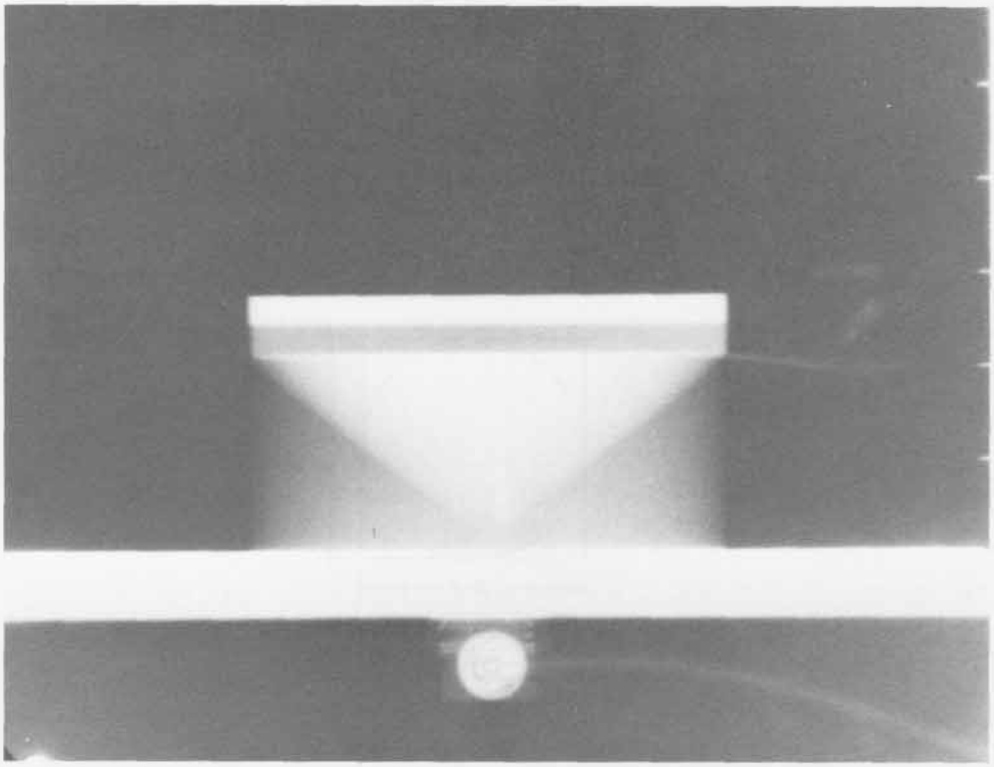


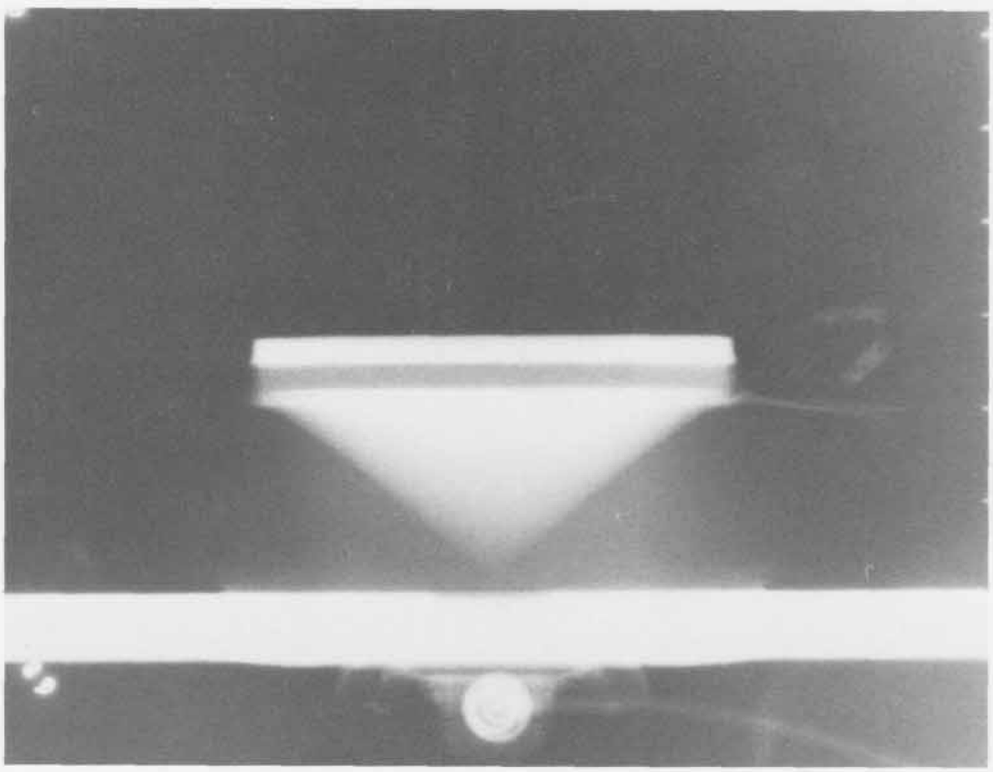


SHOT 489: **Baratol and Composition B-3 Interface**
Date: March 23, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 15.48 μs

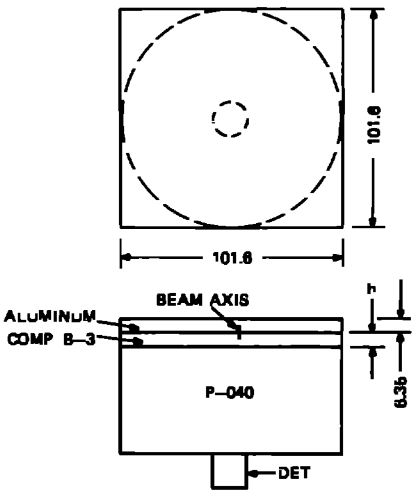
A 6.35-mm slab of Composition B-3 initiated by a P-040 lens. h is 1.58 mm.

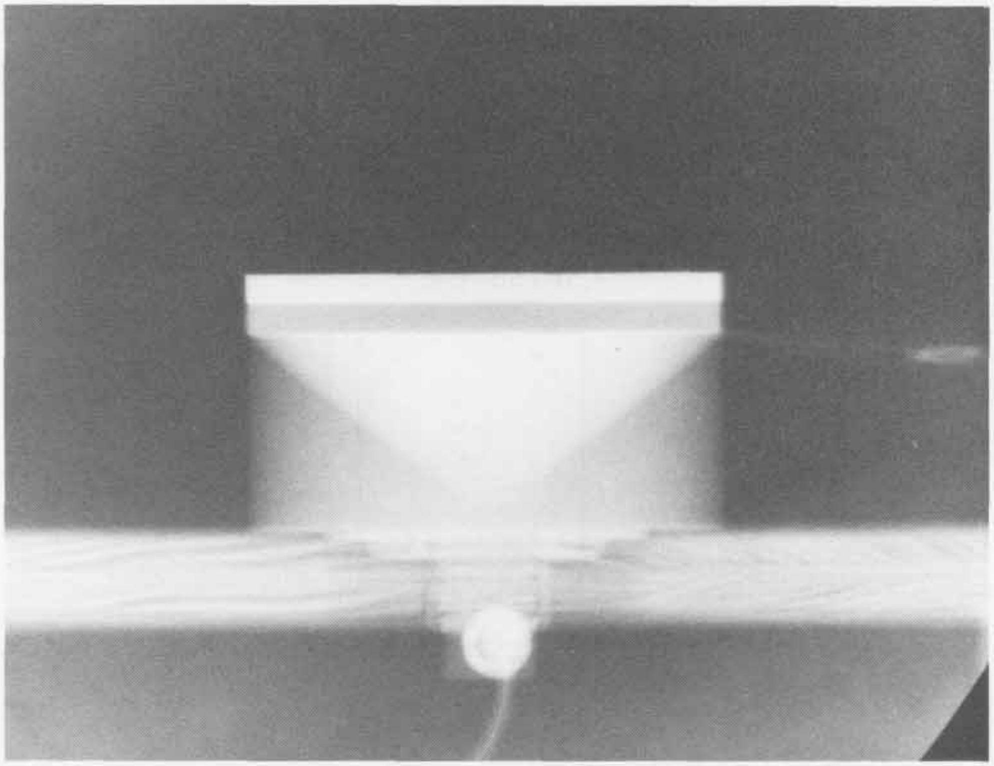


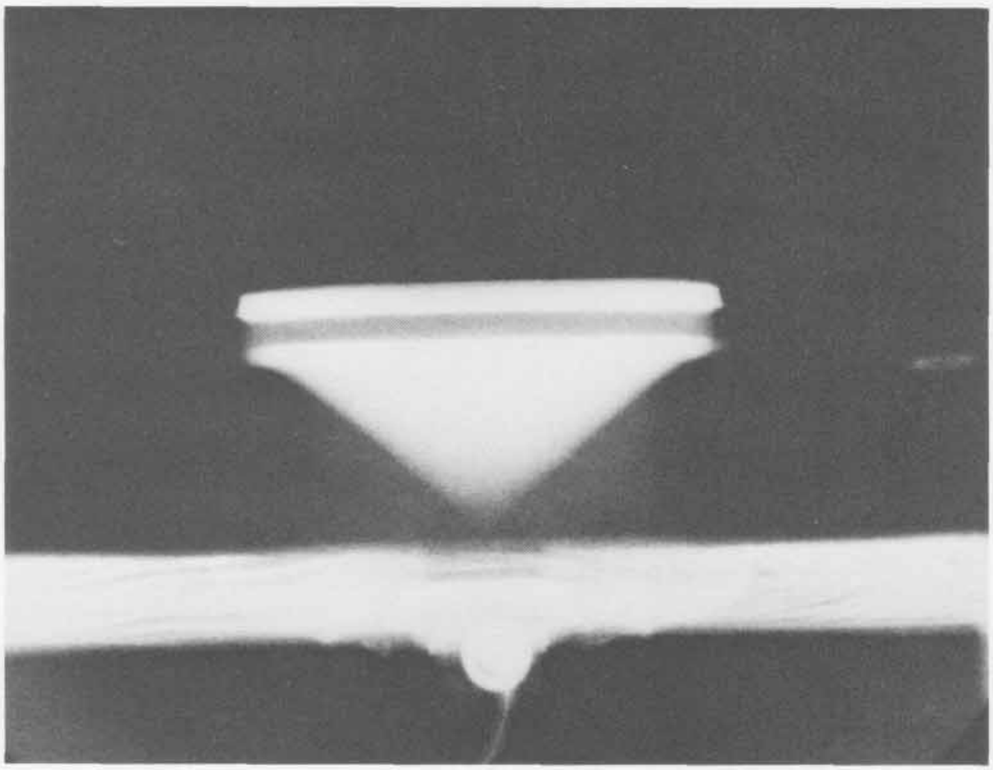




SHOT 490: **Baratol and Composition B-3 Interface**
Date: March 16, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 15.99 μs
A 6.35-mm slab of Composition B-3 initiated by a P-040 lens. h is 3.17 mm.

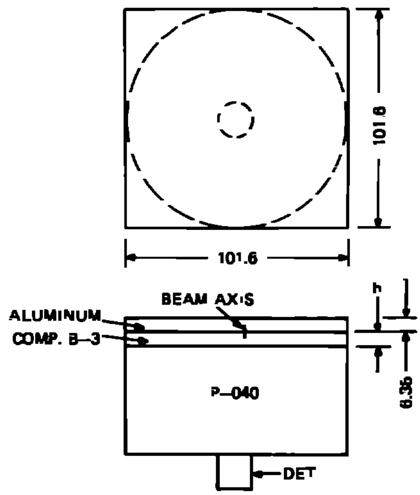


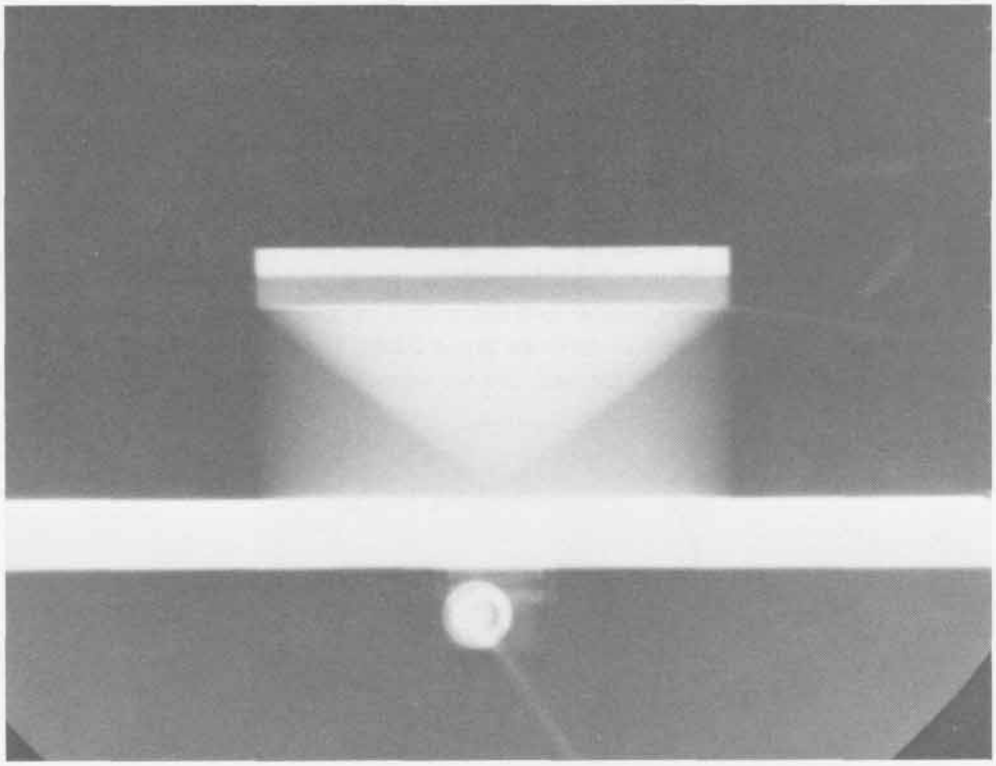


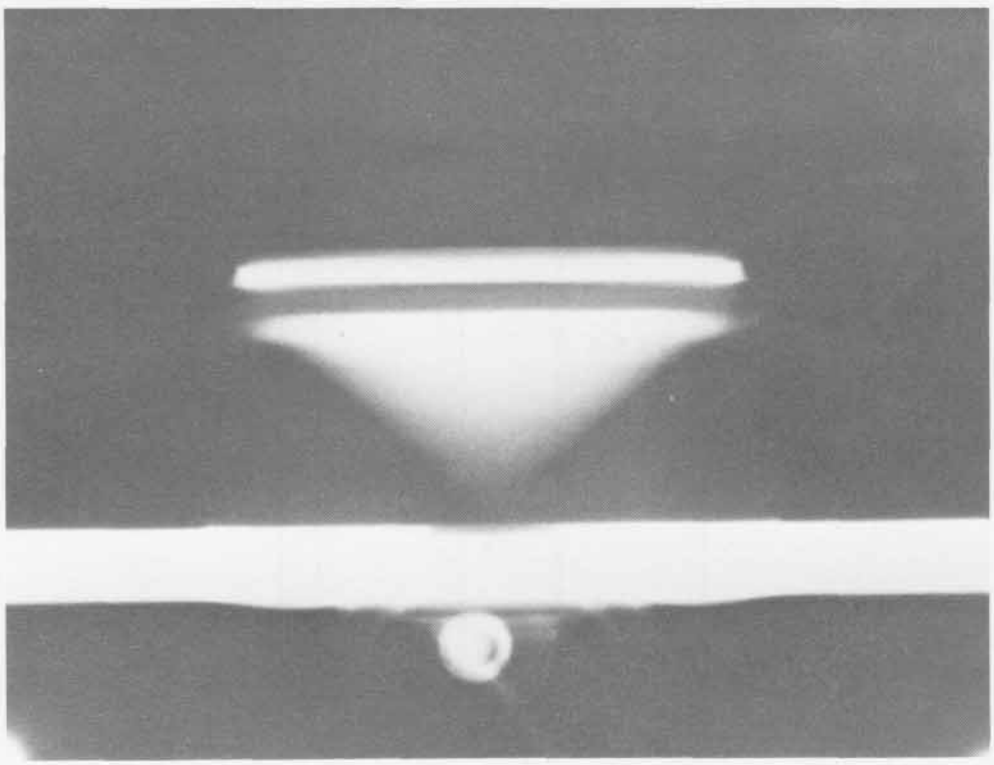


SHOT 491: **Baratol and Composition B-3 Interface**
Date: March 23, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 16.49 μs

A 6.35-mm slab of Composition B-3 initiated by a P-040 lens. h is 3.17 mm.

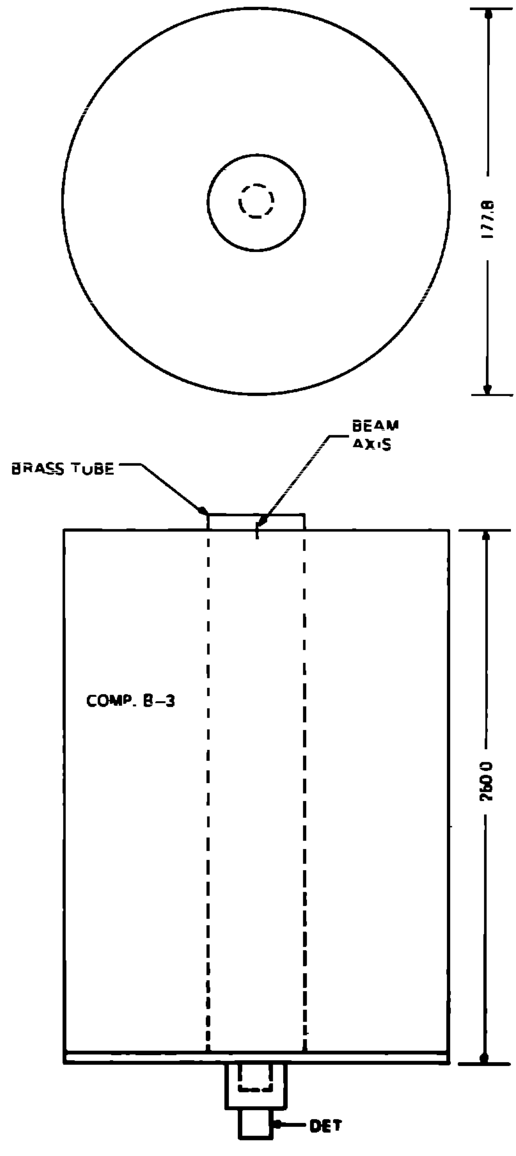


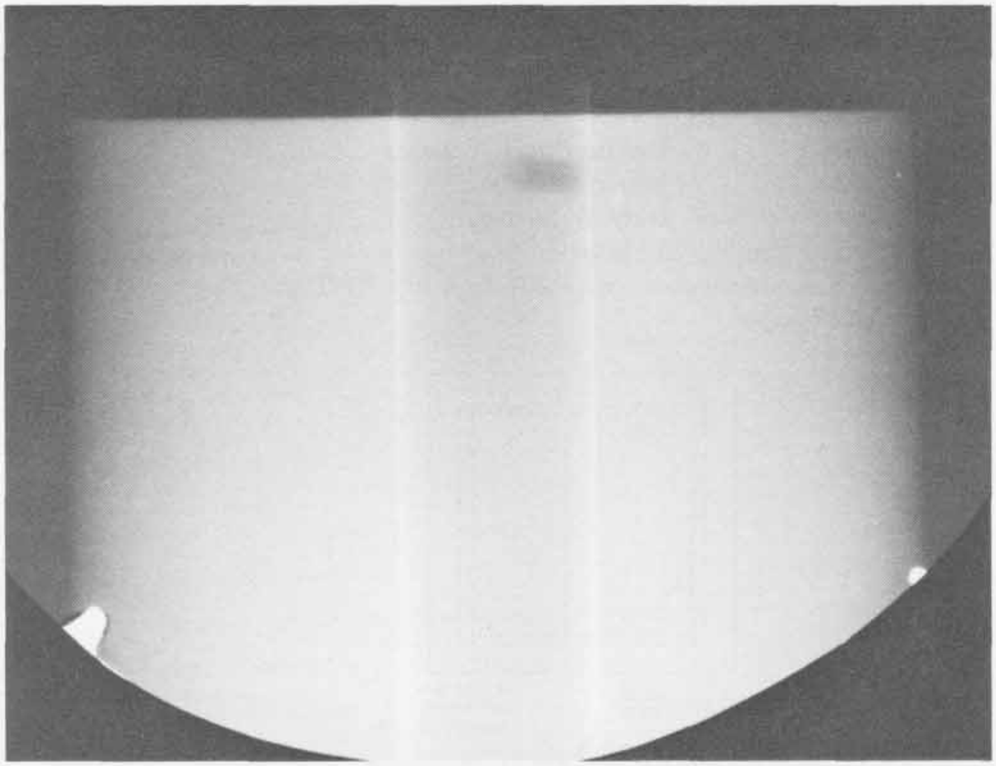


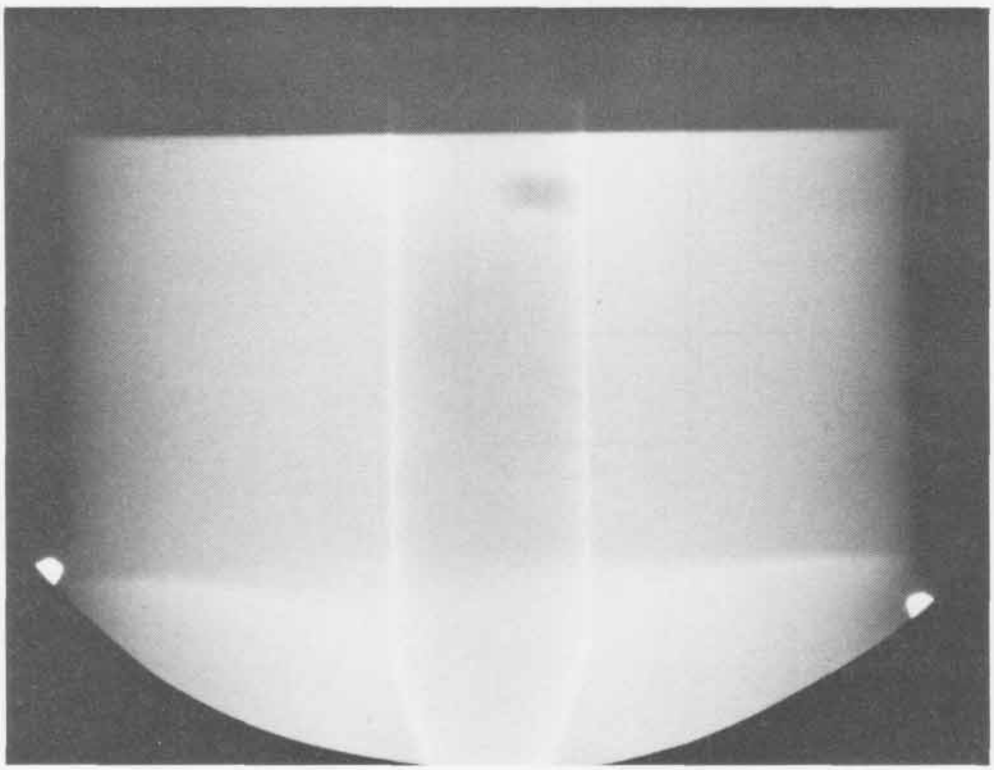


SHOT 492: **Cylindrical Implosion of a Brass Tube**
Date: April 19, 1966
Experimenter: Douglas Venable
Radiographic Time: 36.21 μs

A 40.0-mm-diameter, 1.58-mm-thick brass tube was surrounded with a 177.8-mm-diameter Composition B-3 cylinder and detonated by a circular lens. The cylinder of Composition B-3 was used to drive an argon flash. The brass liner was added to study whether a jet would be formed. No jet was observed.

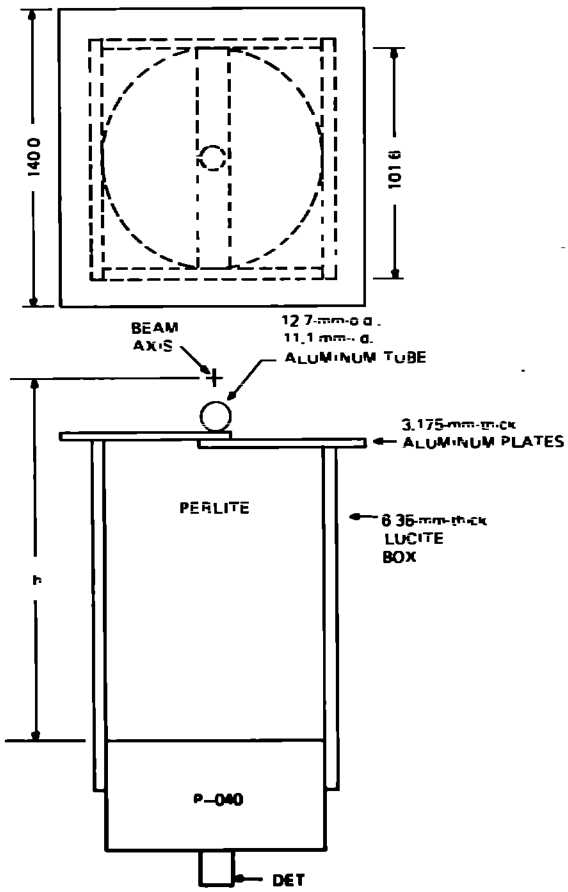


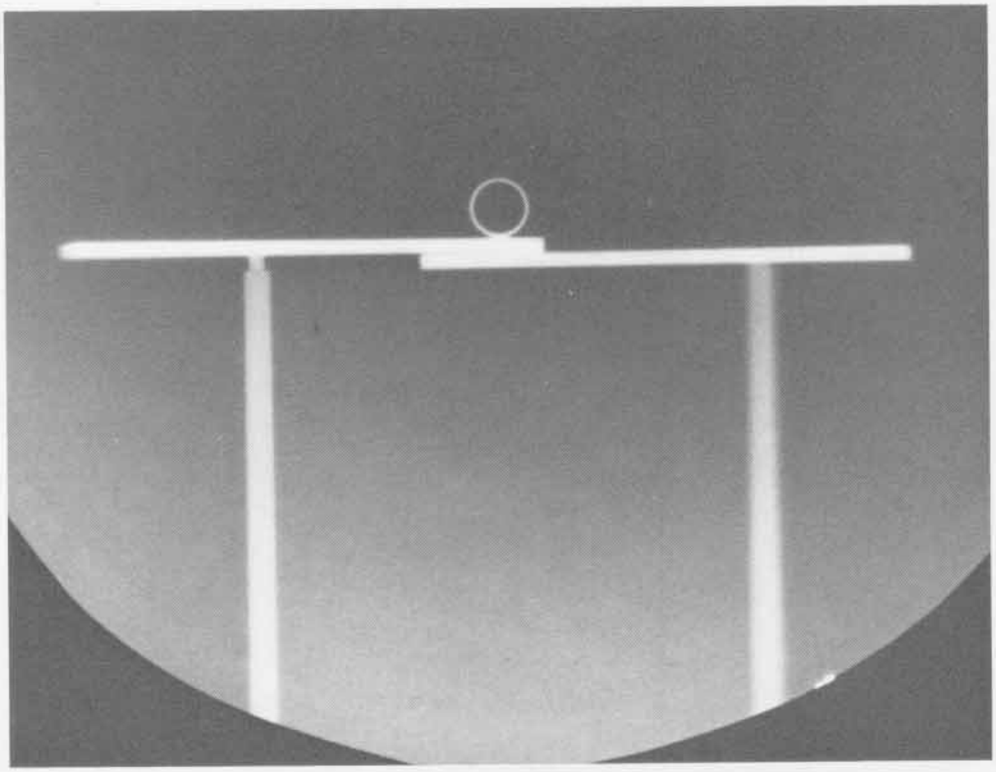


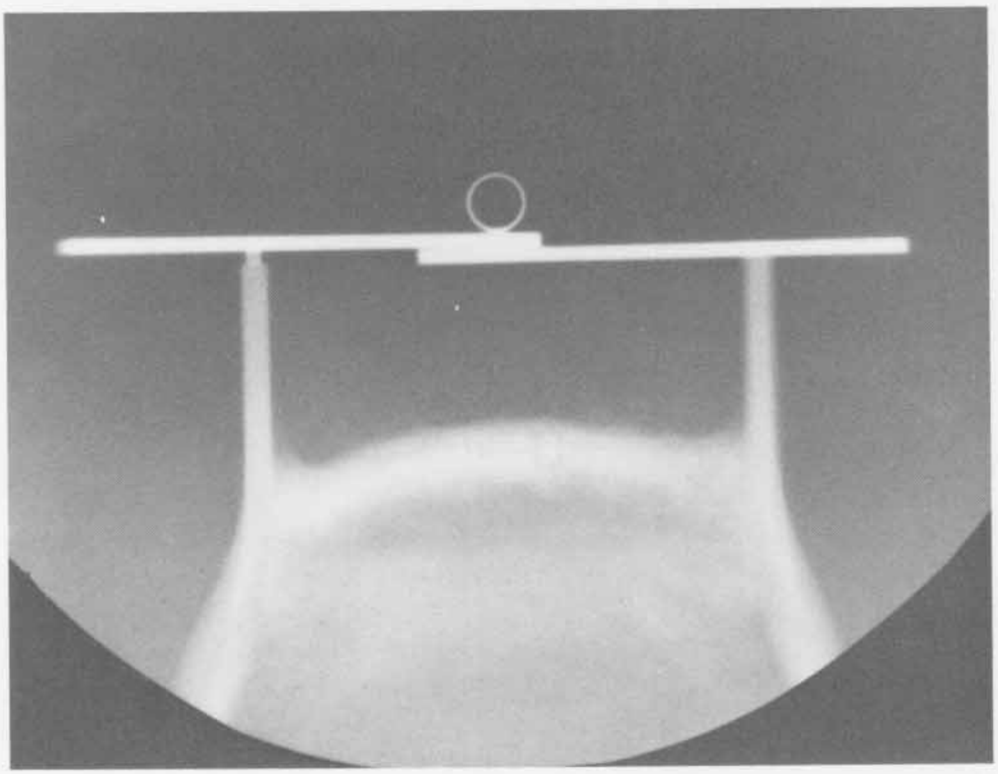


SHOT 493: **Perlite Shock Velocity**
Date: March 14, 1966
Experimenter: Gary W. Rodenz
Radiographic Time: 70.78 μs

Bulk-density perlite shocked by a P-040 lens. h is 158.7 mm. The shock wave was slower than expected.

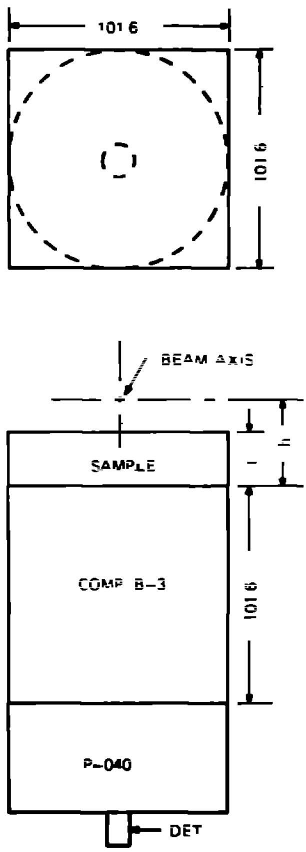


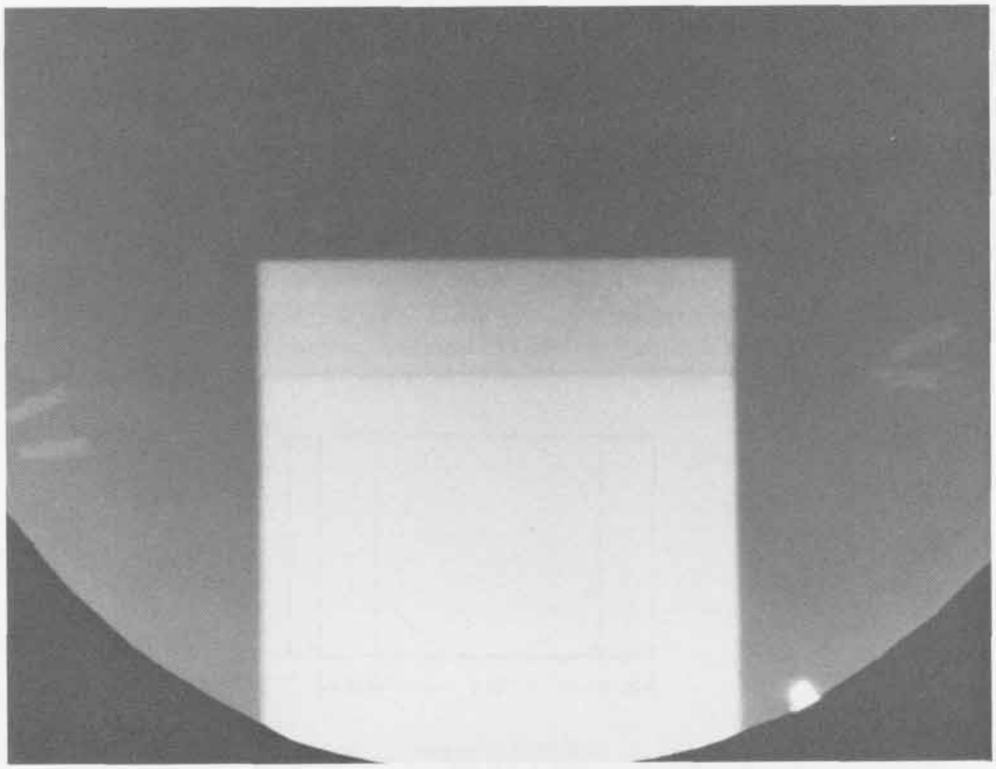


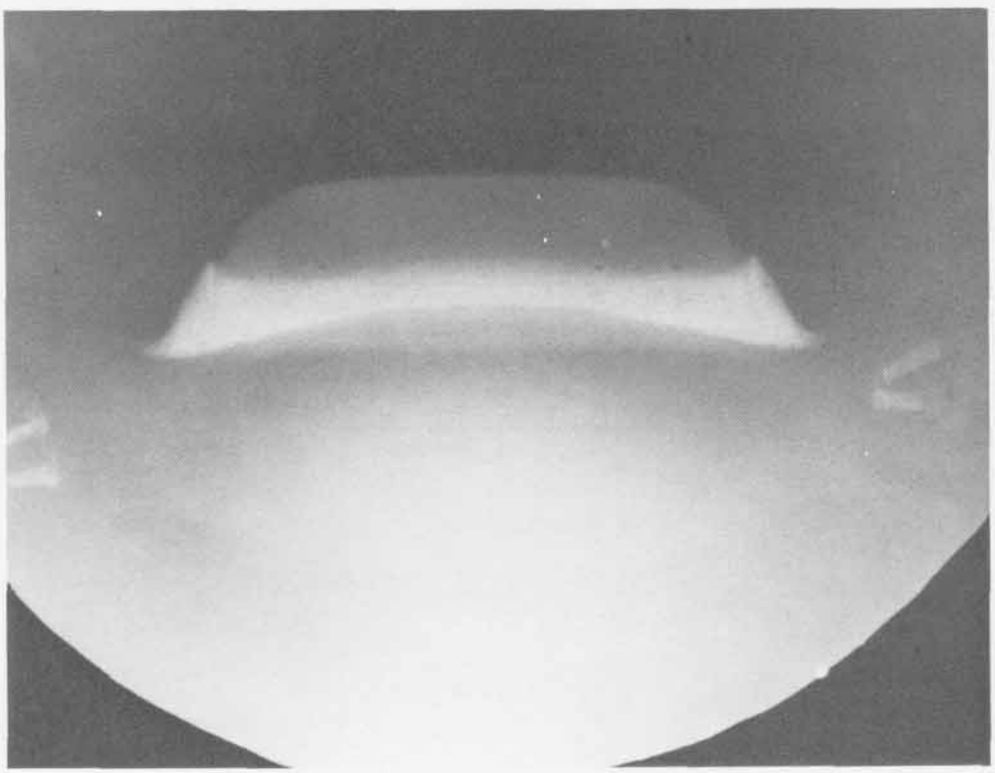


SHOT 494: **Dynamic Fracture of Beryllium**
Date: March 14, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 36.48 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, beryllium. The plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 50.8 mm.

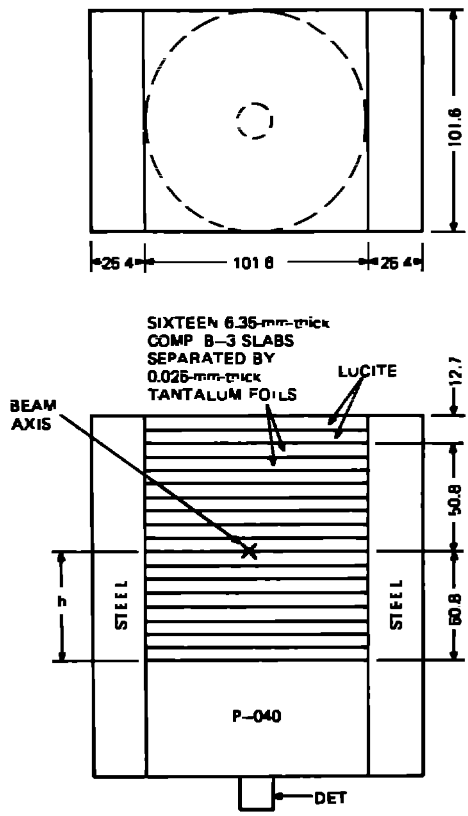


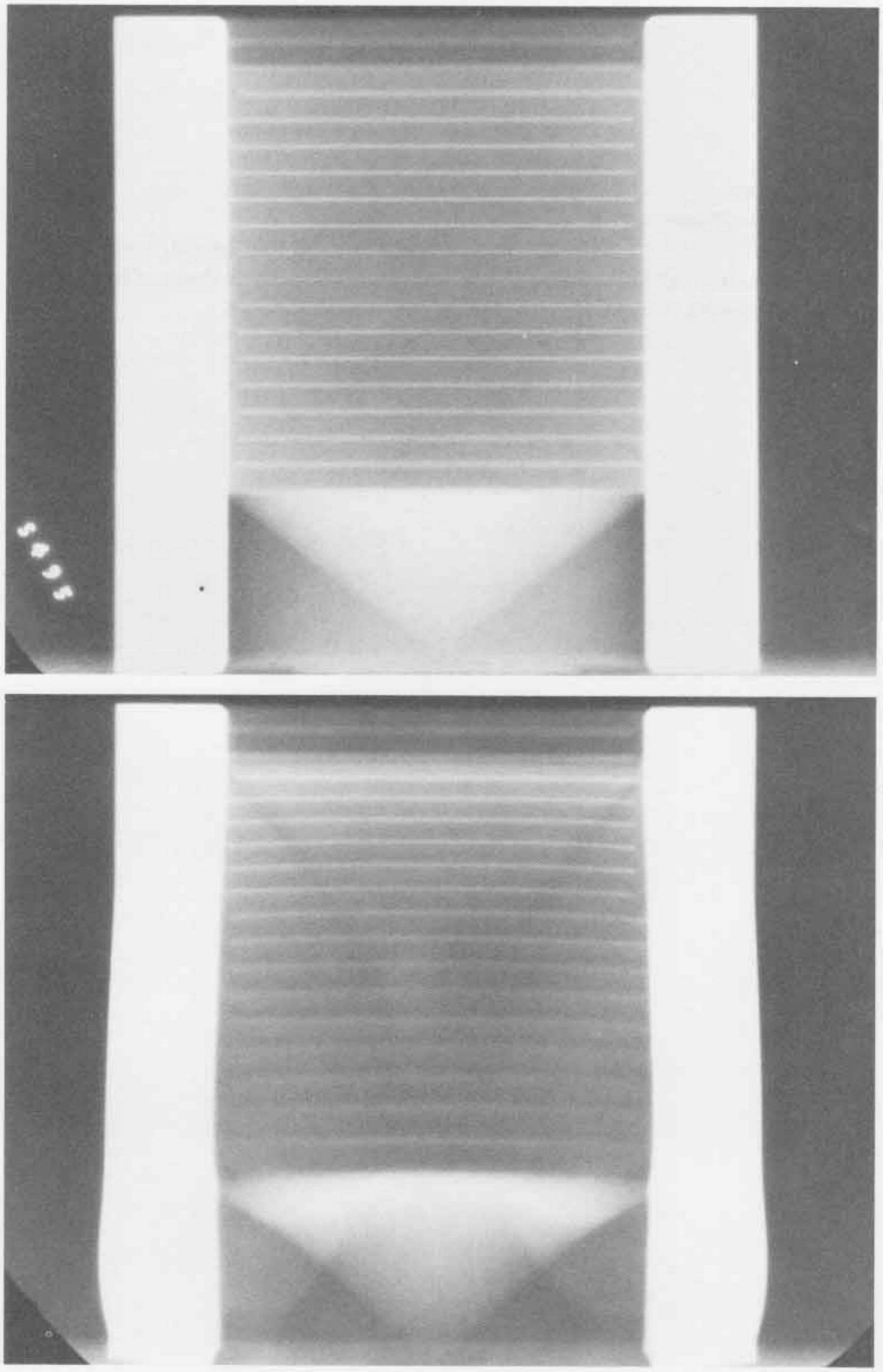




SHOT 495: **Composition B-3 with Embedded Tantalum Foils**
Date: March 16, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 26.4 μs

Sixteen slabs of 6.35-mm-thick Composition B-3 separated by 0.0254-mm-thick tantalum foils were initiated by a P-040 lens. The flow of the products confined by 25.4-mm-thick steel is shown. Two slabs of Lucite separated by tantalum foils were placed on top of the Composition B-3. h is 50.8 mm.





SHOT 496: **Dynamic Fracture of Aluminum**

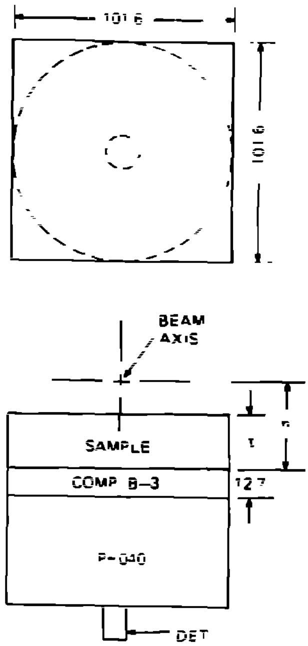
Date: March 16, 1966

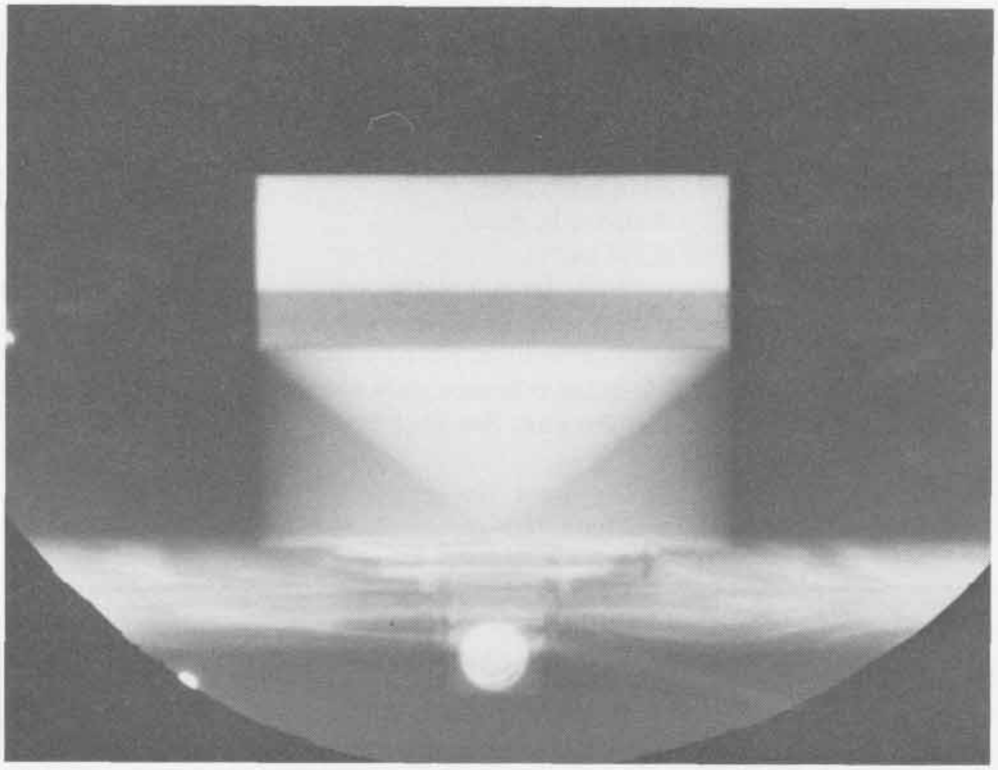
Experimenter: Benny Ray Breed

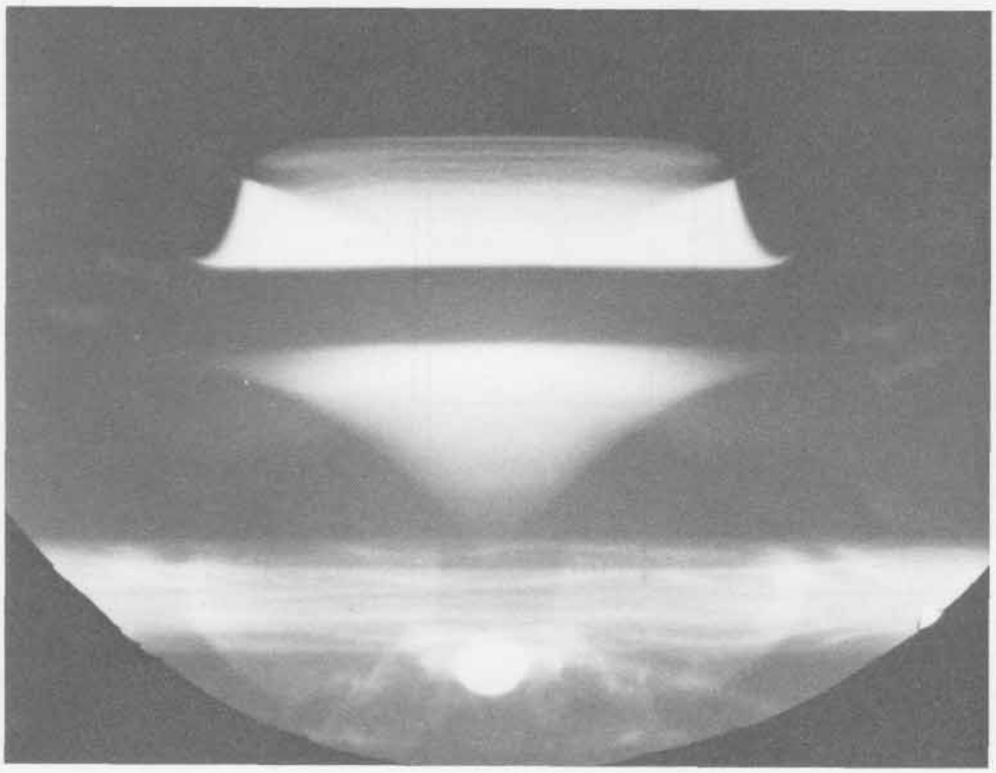
Radiographic Time: 23.52 μs

References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, aluminum. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 33.02 mm.

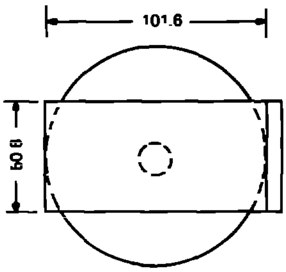


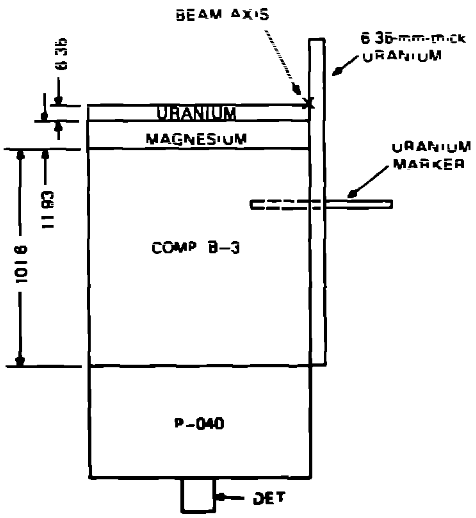


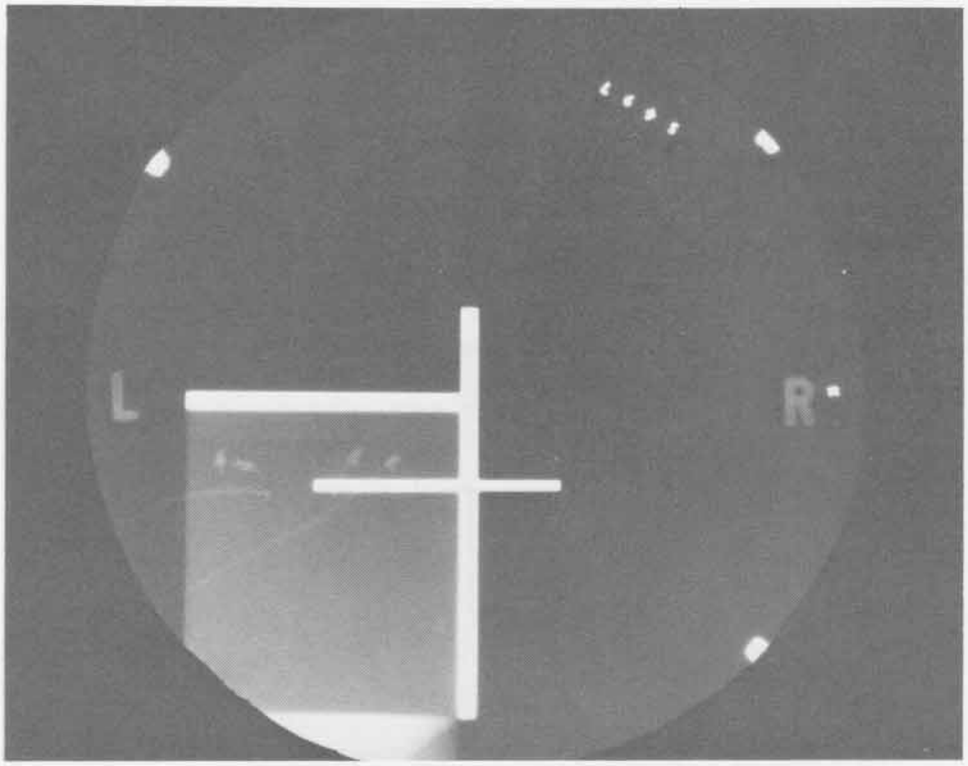


SHOT 497: **Metal Interface Motion**
Date: March 31, 1966
Experimenter: William R. Field
Radiographic Time: 30.33 μs

A study of the movement of shocked metal plates perpendicular to each other. An 11.93-mm-thick magnesium plate and a 6.35-mm-thick uranium plate are driven perpendicular to a 6.35-mm-thick uranium plate by 101.6 mm of Composition B-3 initiated by a P-040 lens. A uranium reference plate was located 25.4 mm below the magnesium plate and behind the shot. See Shot 510.



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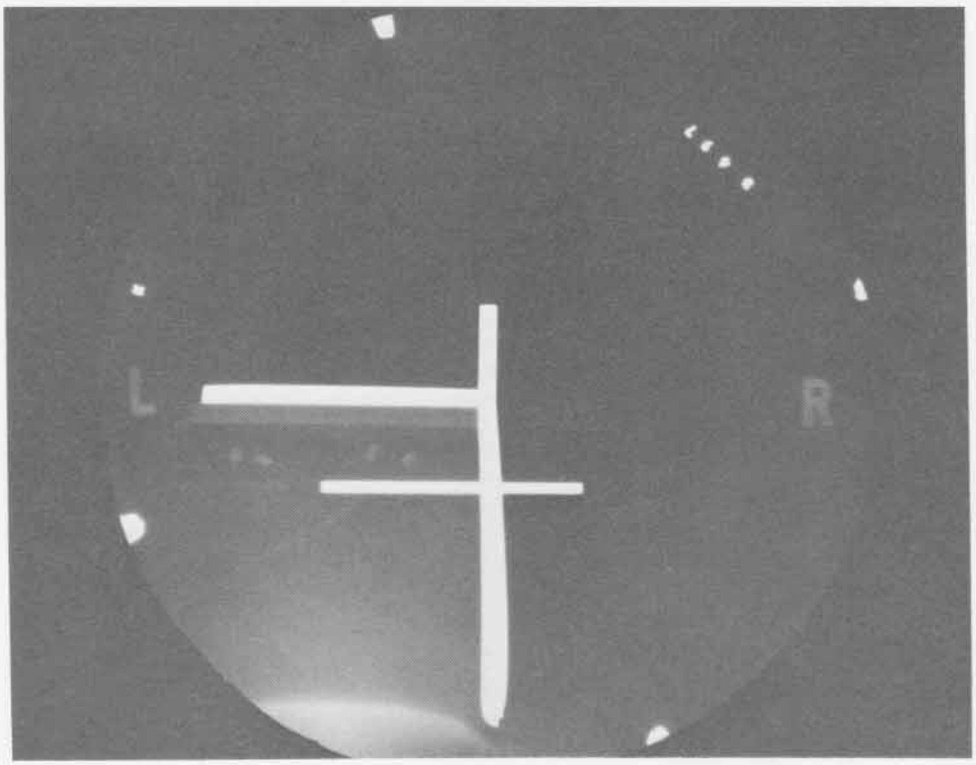
L
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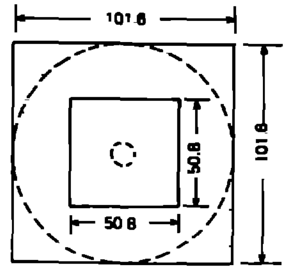
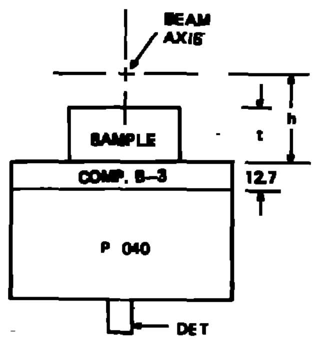
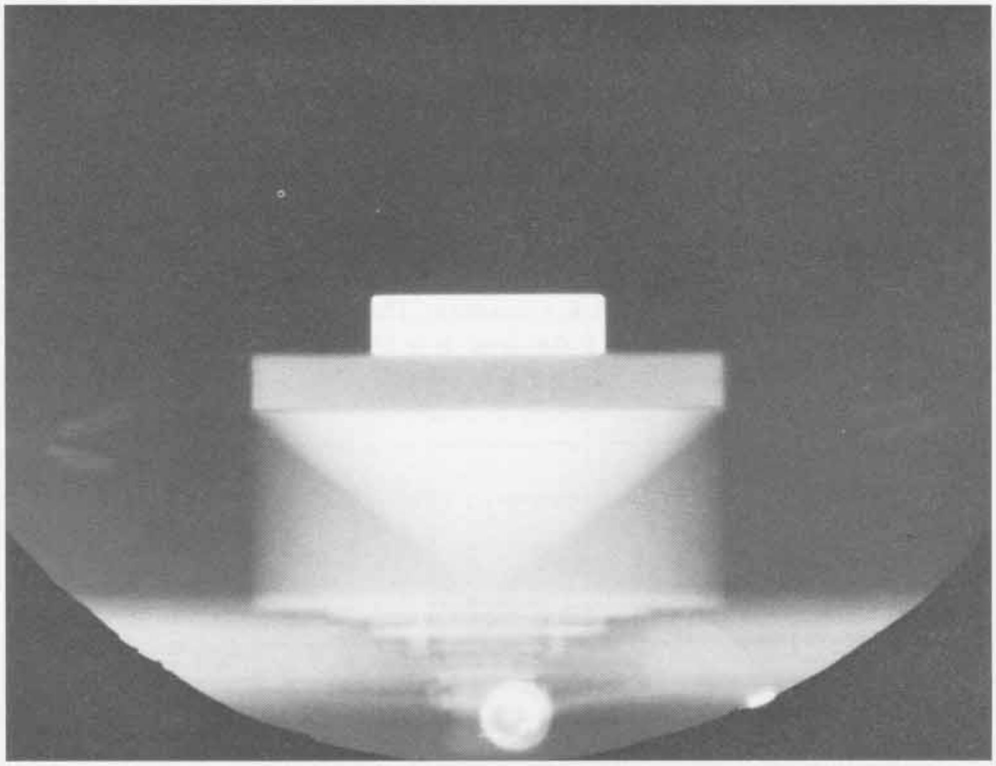
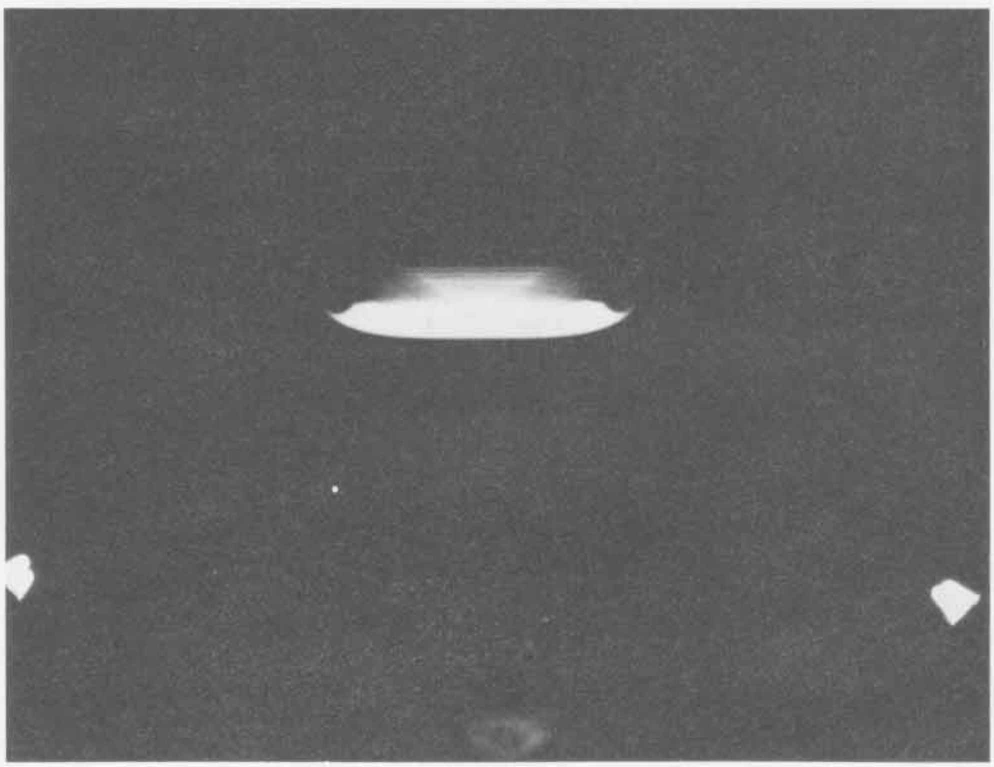
SHOT 498: **Dynamic Fracture of Thorium**
Date: March 21, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 26.46 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 12.0-mm-thick, t, thorium. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 41.275 mm.



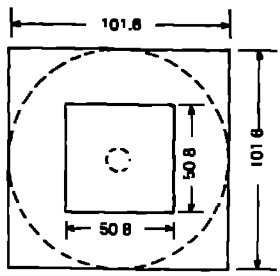


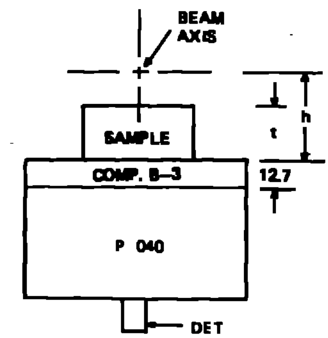


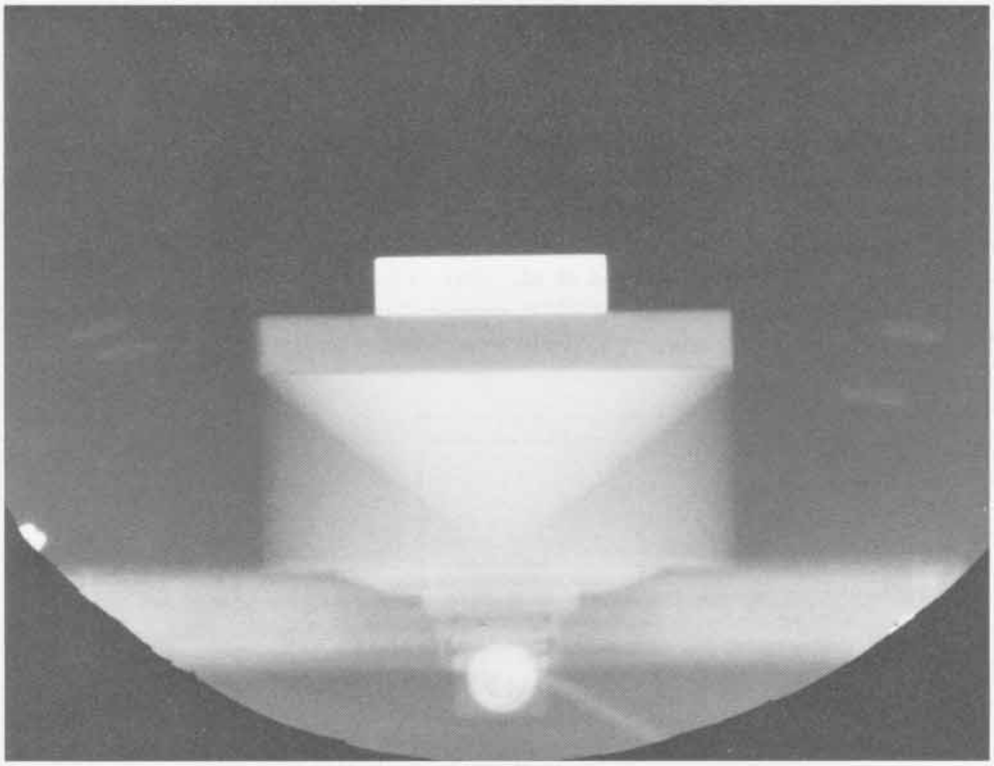


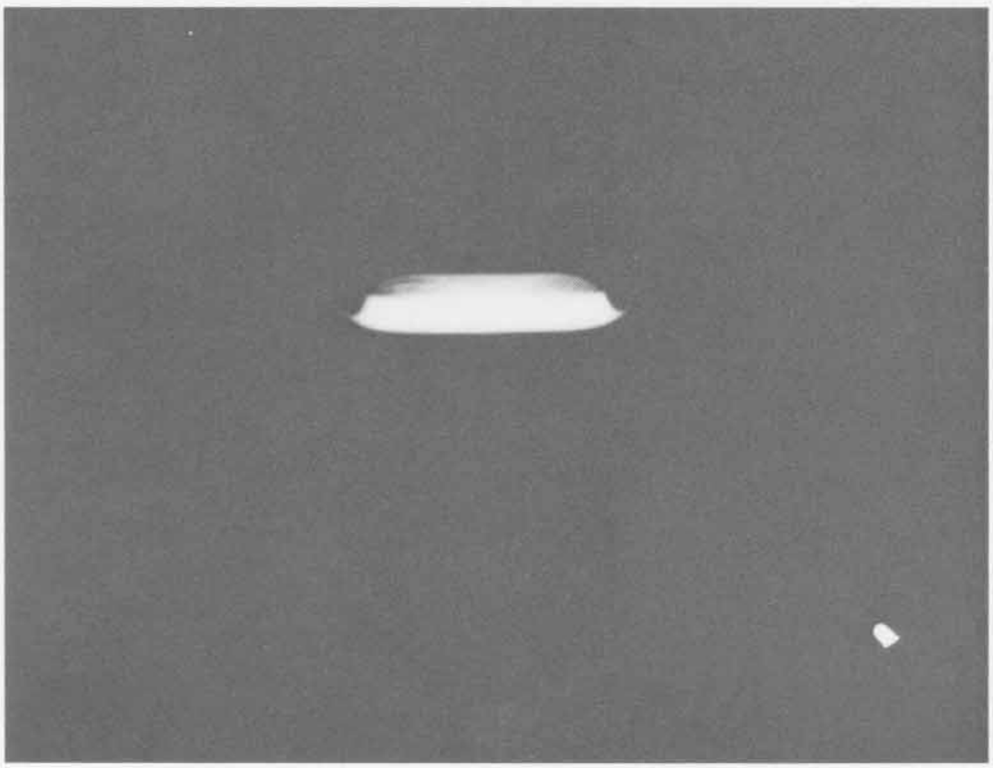
SHOT 499: **Dynamic Fracture of Uranium**
Date: March 21, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 26.39 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 12.0-mm-thick, t, uranium. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.



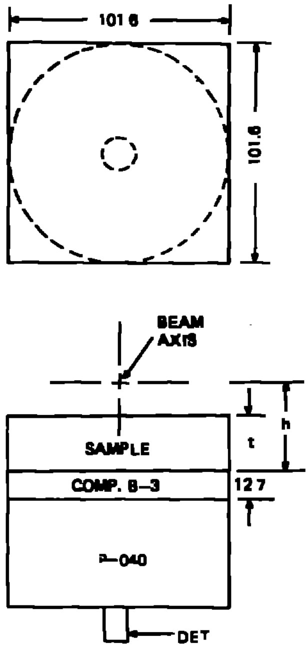


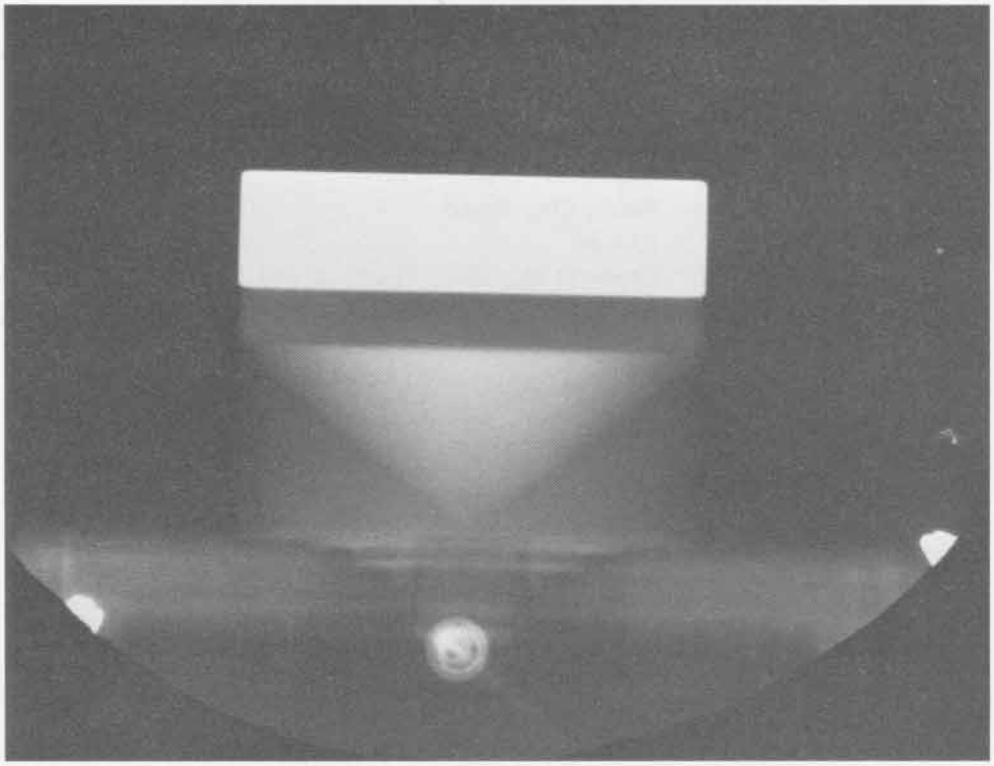


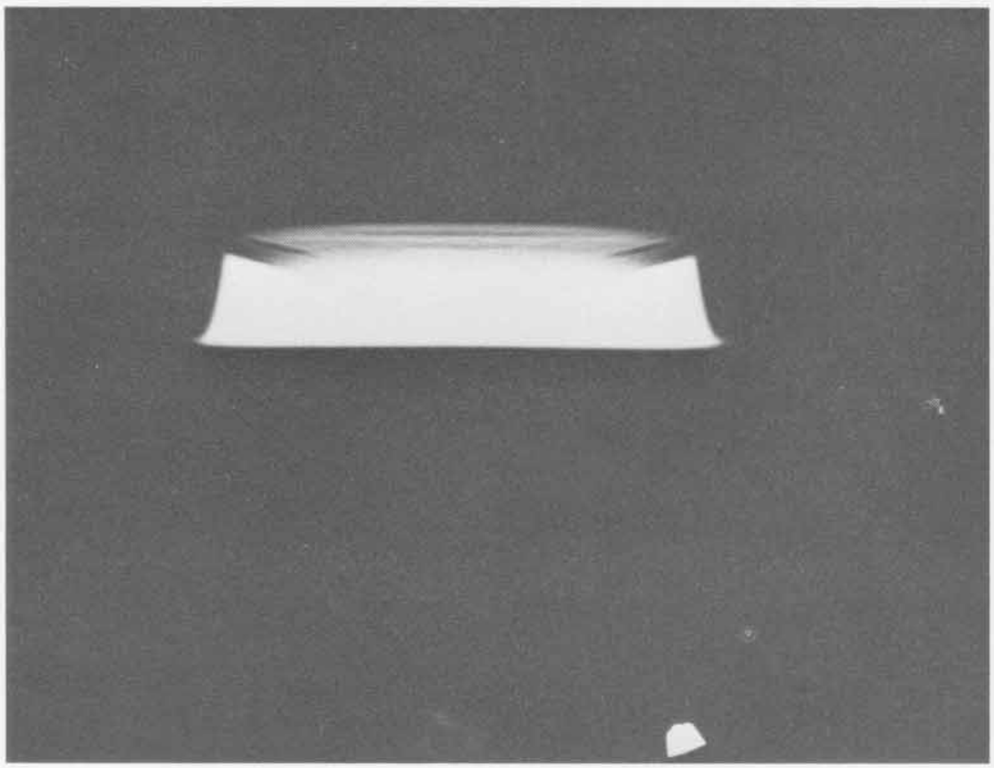


SHOT 500:	**Dynamic Fracture of Copper**
Date:	March 21, 1966
Experimenter:	Benny Ray Breed
Radiographic Time:	27.59 μs
References:	Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, copper. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

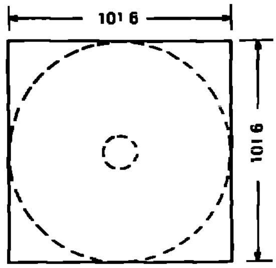


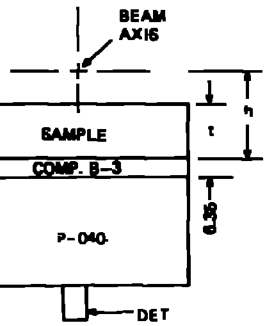


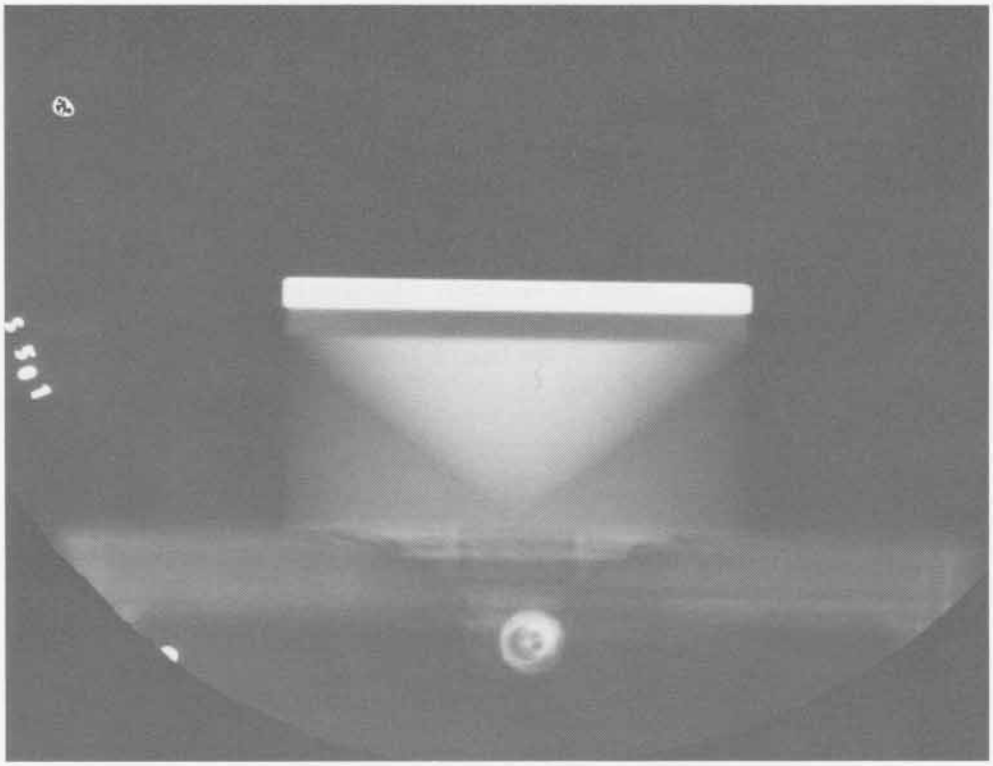


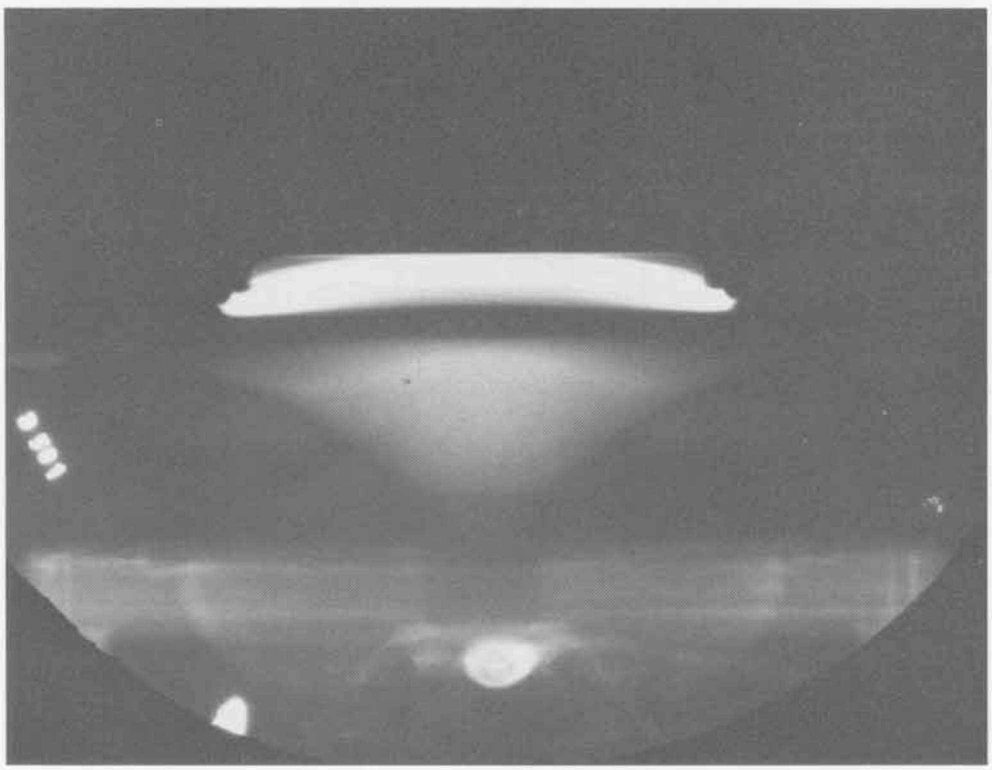
SHOT 501: **Dynamic Fracture of Copper**
Date: March 21, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 23.4 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 6.0-mm-thick, t, copper. The plate is shocked by 6.35 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.



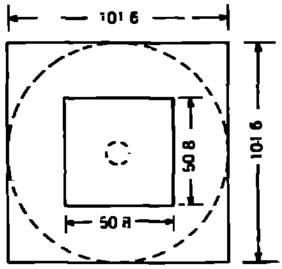


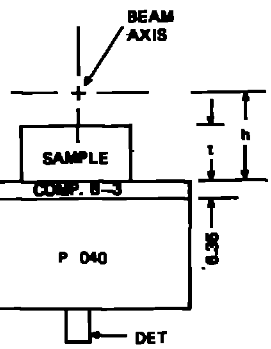


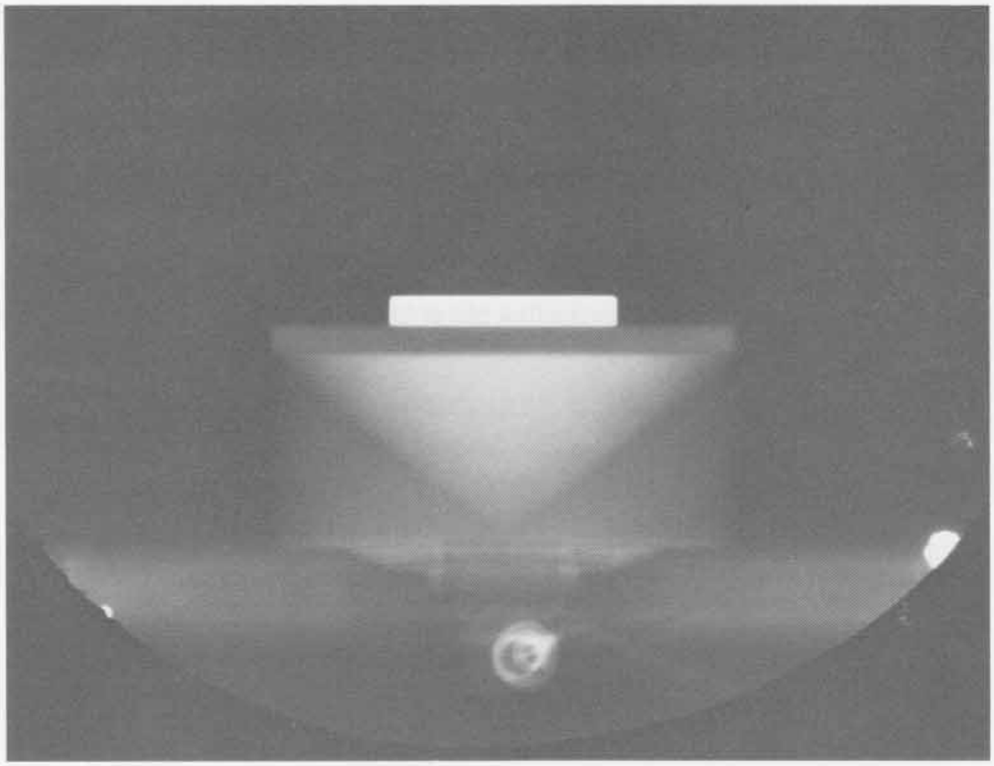


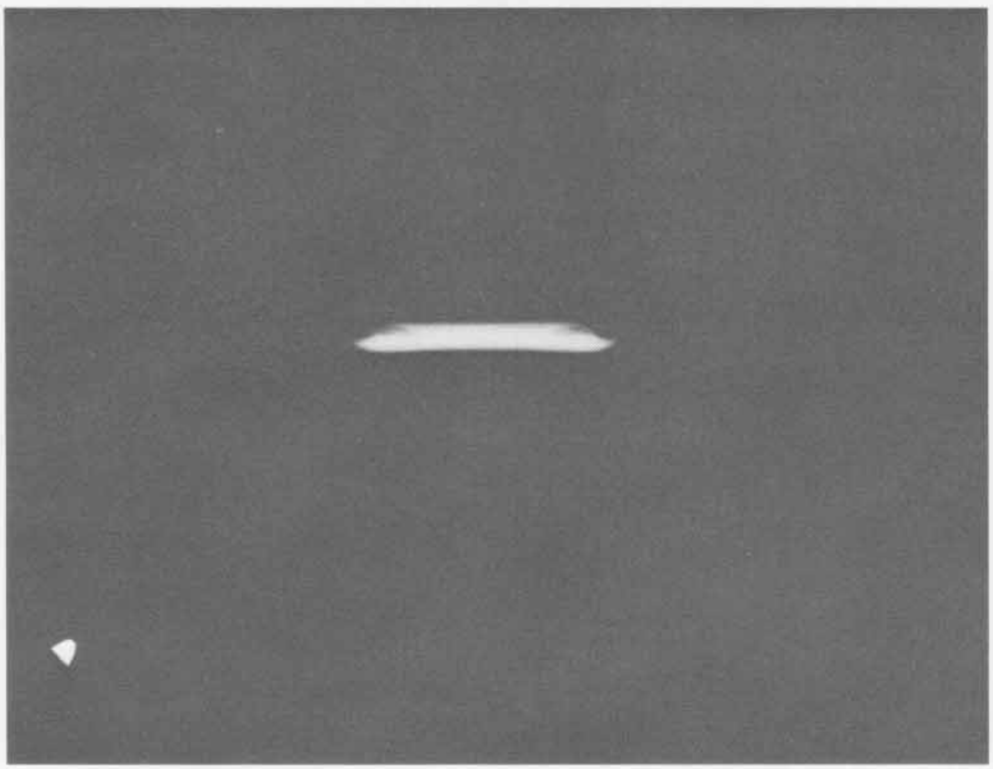
SHOT 502: **Dynamic Fracture of Uranium**
Date: March 22, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 23.97 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 6.0-mm-thick, t, uranium. The plate is shocked by 6.35 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.



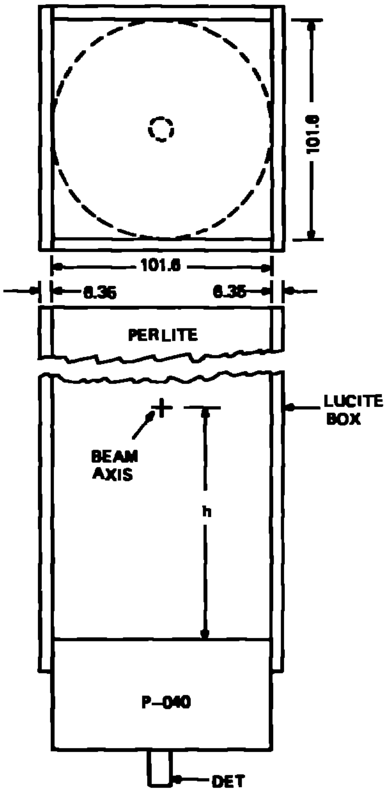


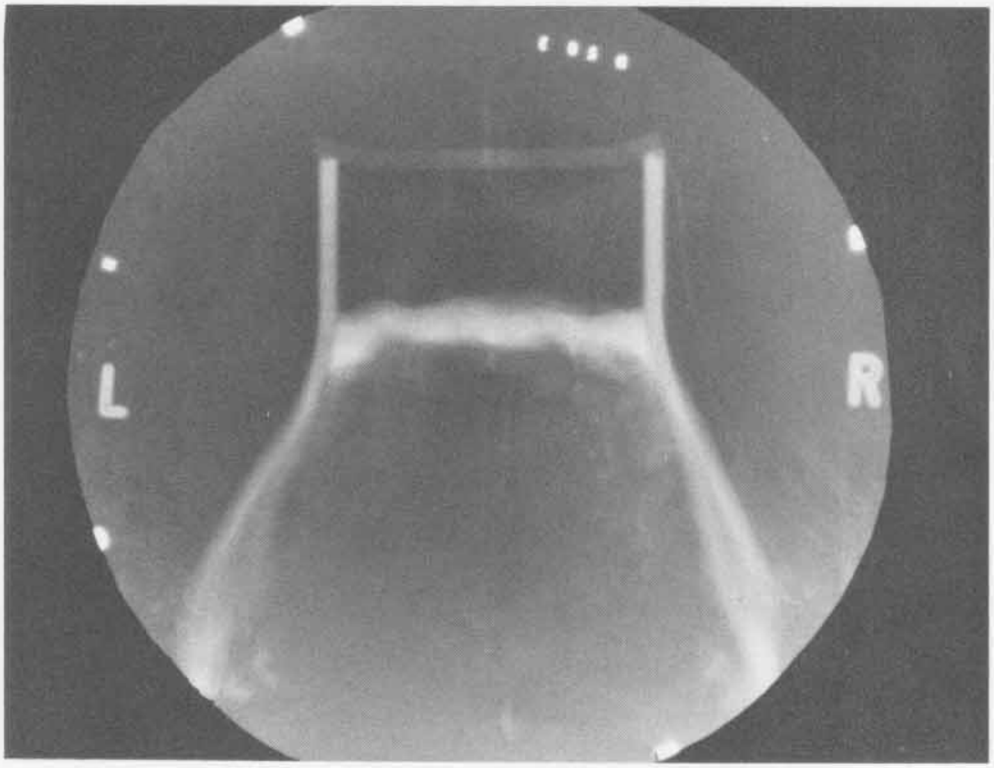




SHOT 503: **Perlite Shock Velocity**
Date: March 24, 1966
Experimenter: Gary W. Rodenz
Radiographic Time: 128.07 μs

Bulk-density perlite shocked by a P-040 lens. h is 133.35 mm. The pins in the array were spaced 20.0 mm apart, with the first pin at the P-040 and perlite interface. The pin times were 13.49, 20.77, 30.33, and 42.16 μs.

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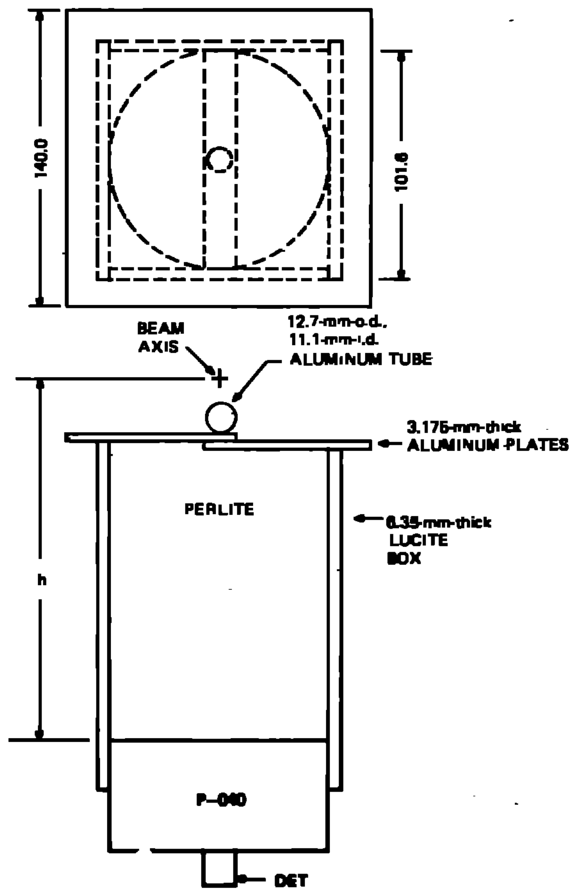
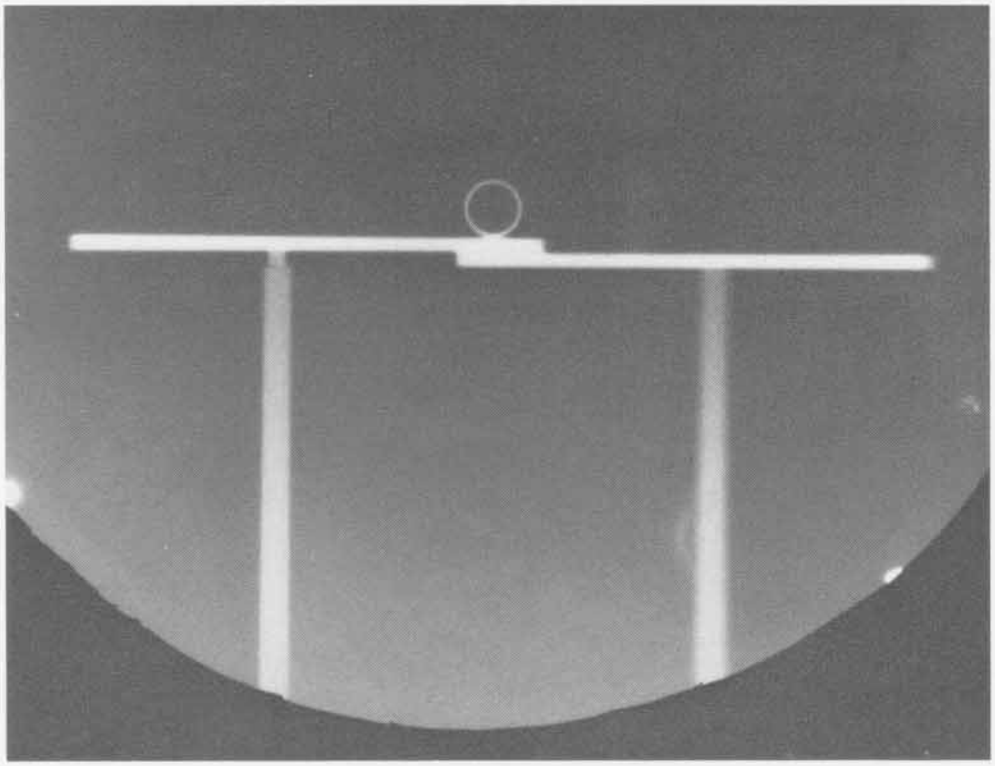
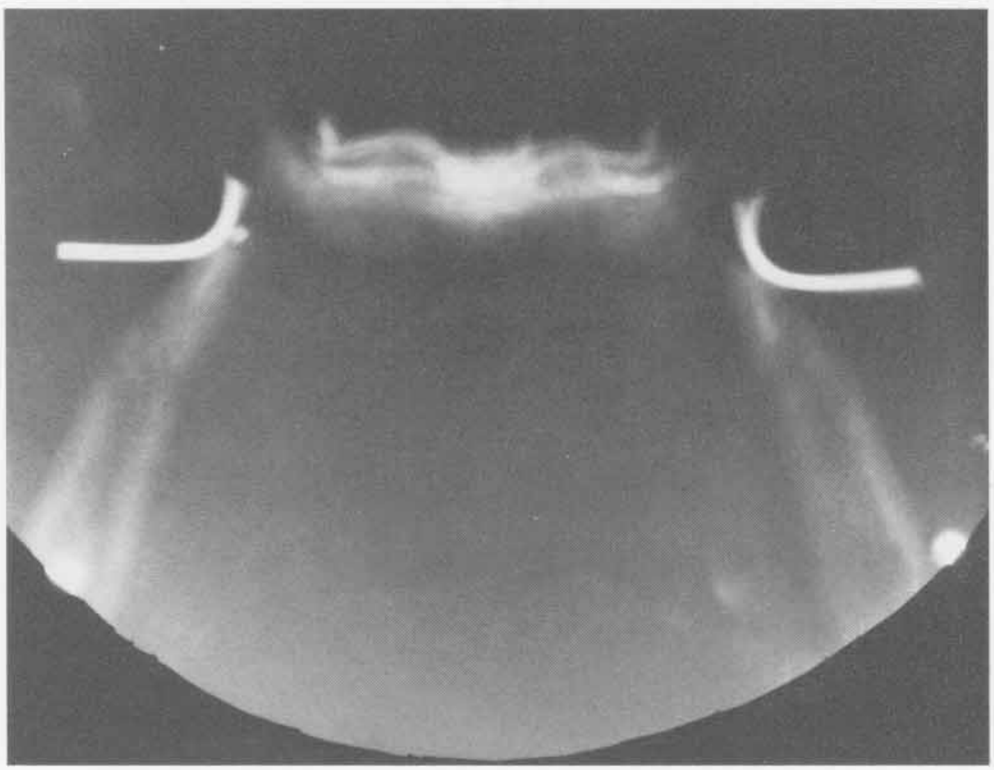
SHOT 504: Perlite Shock Interacting with Aluminum Plates
Date: March 29, 1966
Experimenter: Gary W. Rodenz
Radiographic Time: 140.09 μs

Bulk-density perlite shocked by a P-040 lens. h is 165.1 mm. See Shots 408 and 493.

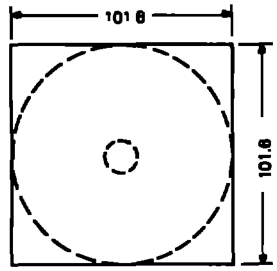


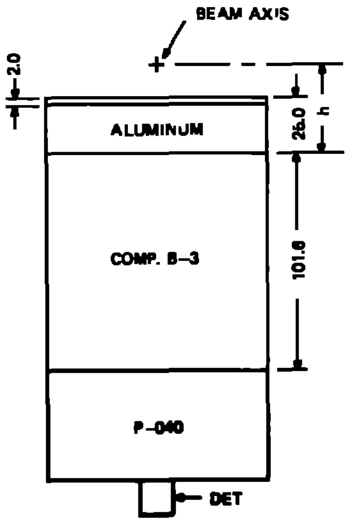


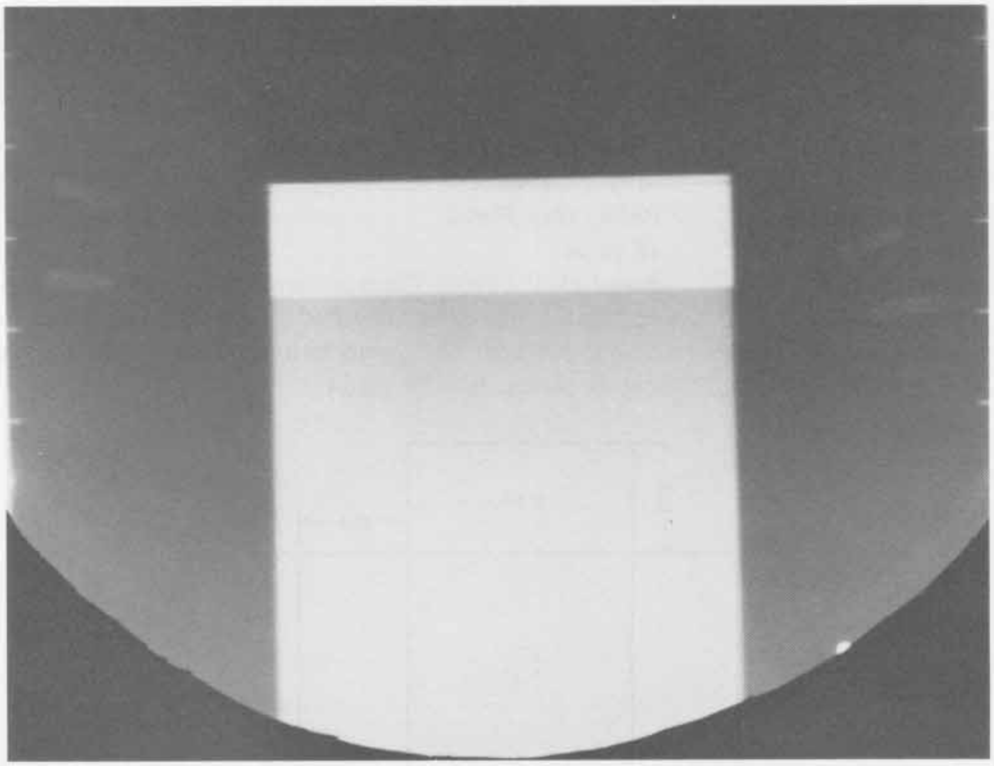


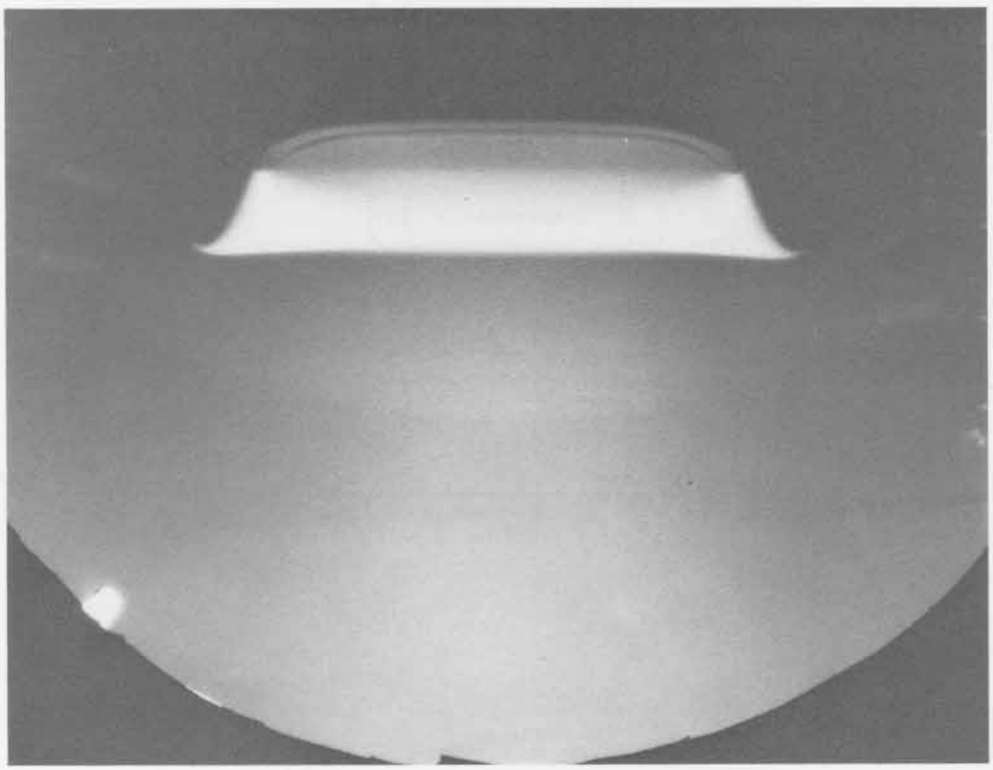
SHOT 505: **Fracture Resolution**
Date: April 5, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 33.3 μs

A study of the radiographic resolution of the fracture layer. A 2.0-mm-thick aluminum plate on top of a 23.0-mm-thick aluminum plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm. See Shot 477.



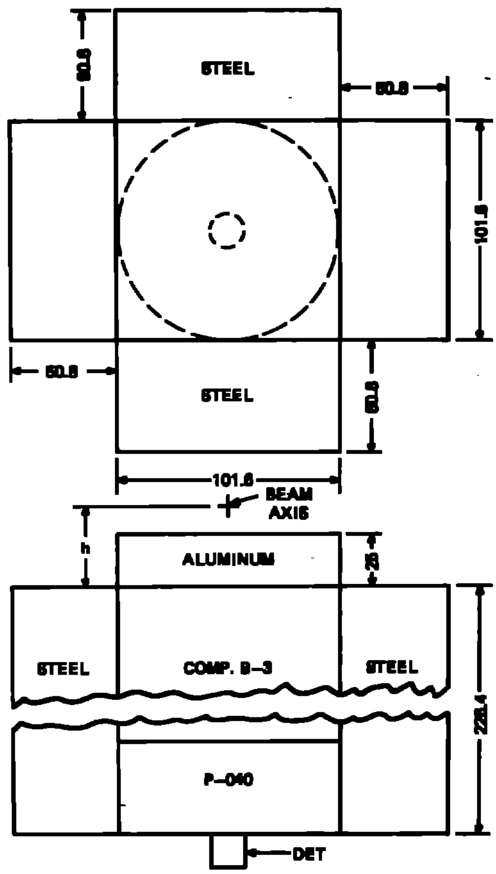


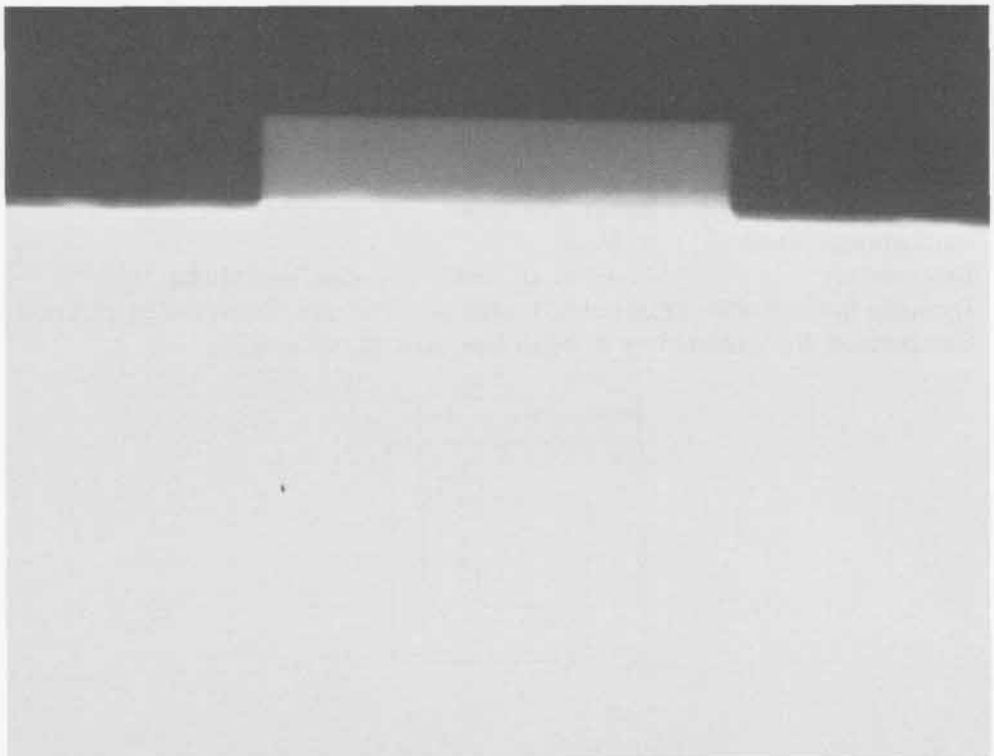


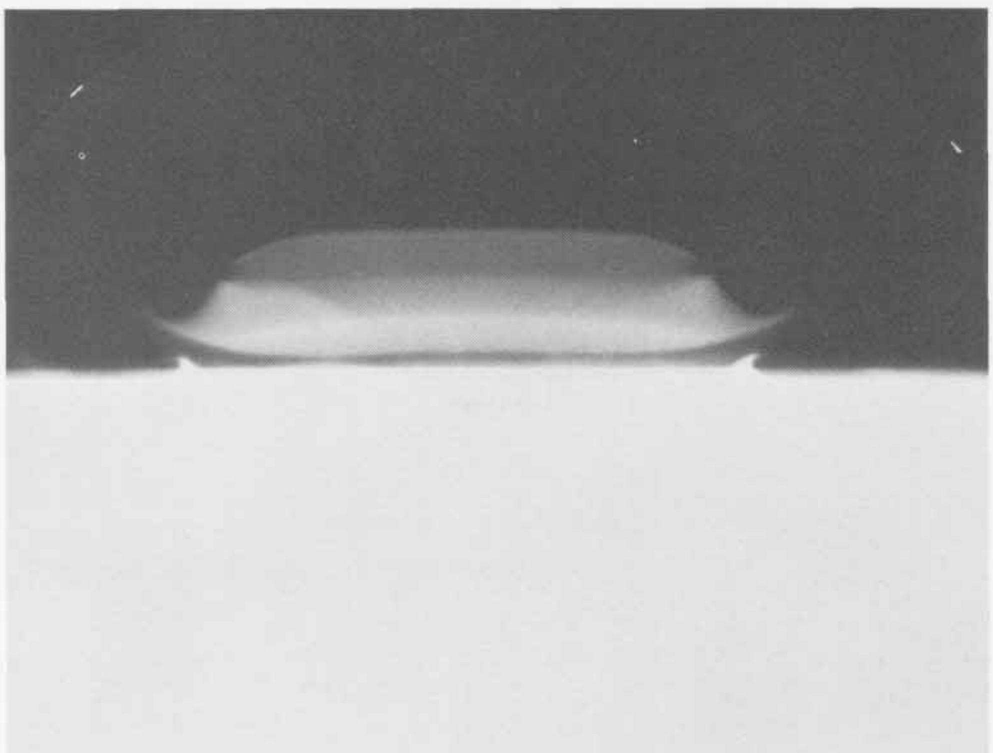


SHOT 506: **Dynamic Fracture of Aluminum**
Date: May 17, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 46.12 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, aluminum shocked by 203.2 mm of Composition B-3 that was initiated by a P-040 lens. The Composition B-3 and P-040 lens are confined by 50.8-mm-thick steel plates. h is 38.1 mm.

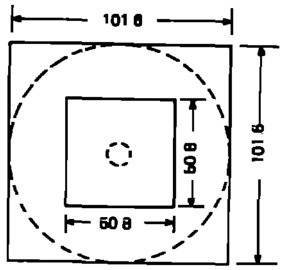


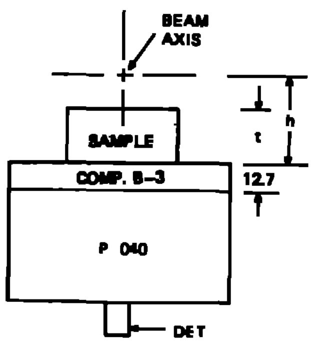


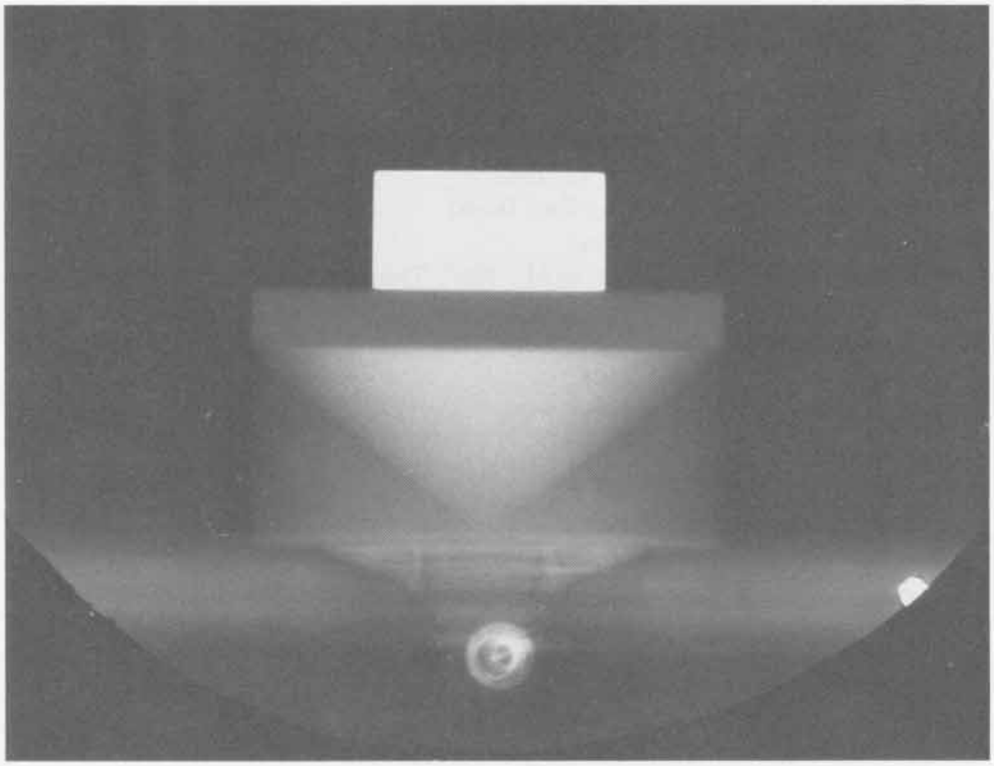


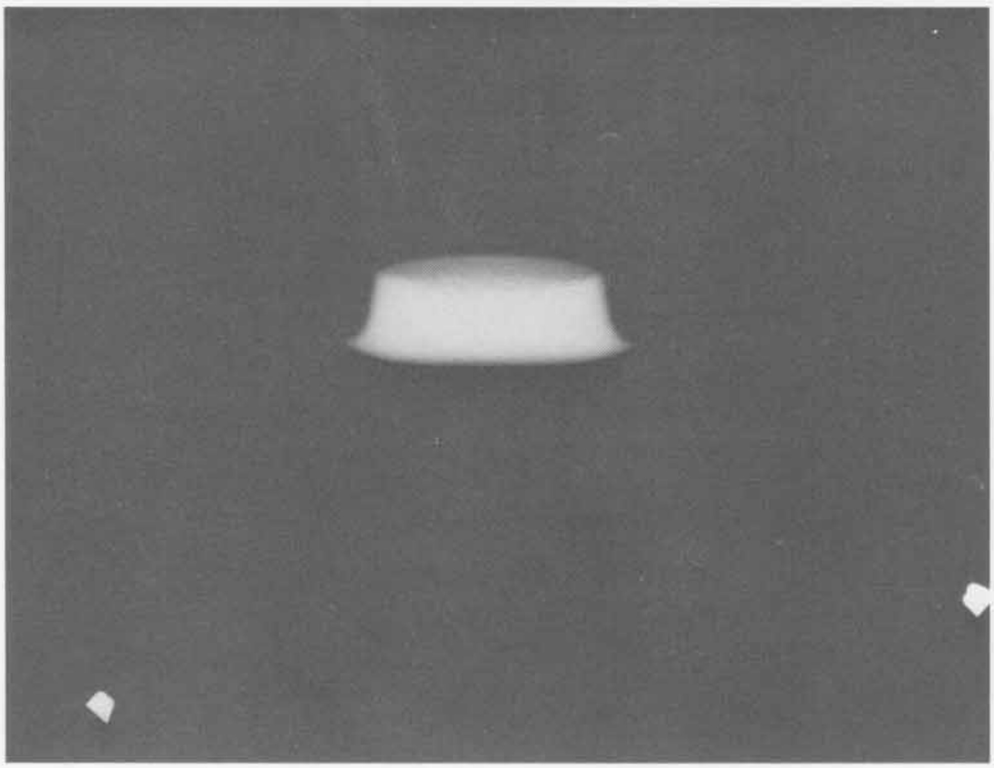
SHOT 507: **Dynamic Fracture of Uranium**
Date: April 13, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 31.95 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, uranium. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 41.275 mm.



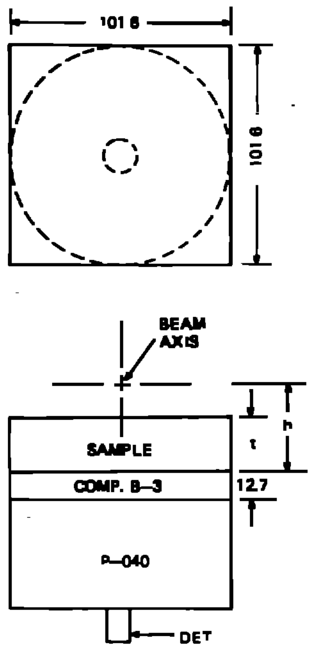


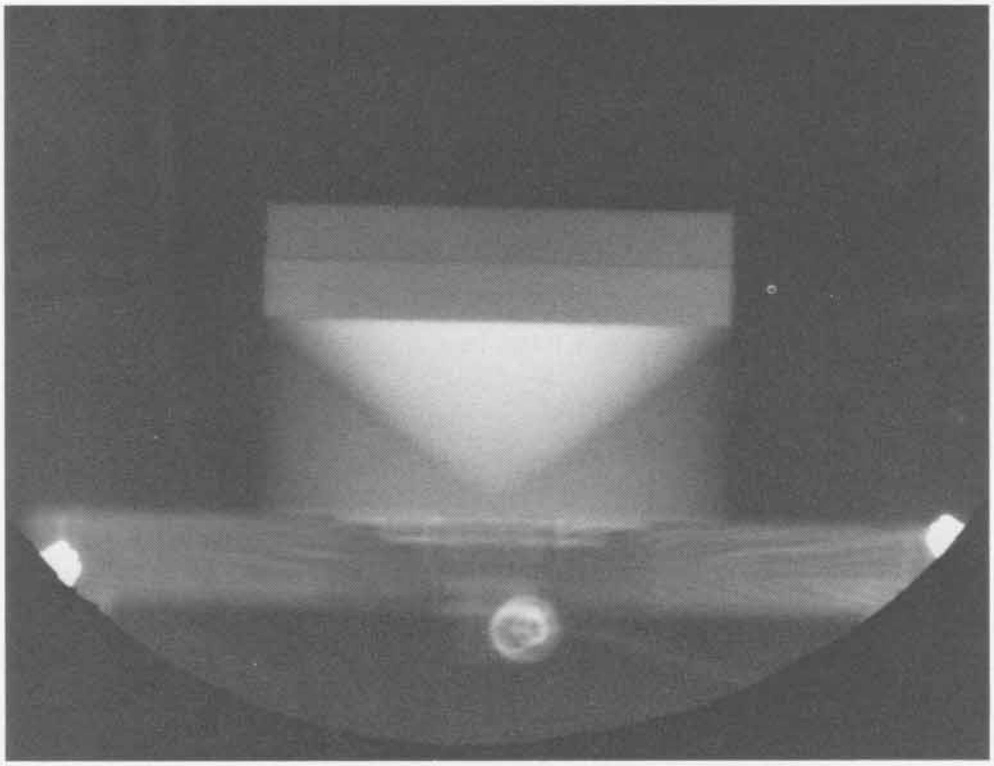




SHOT 508: **Dynamic Fracture of Beryllium**
Date: April 14, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 22.3 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

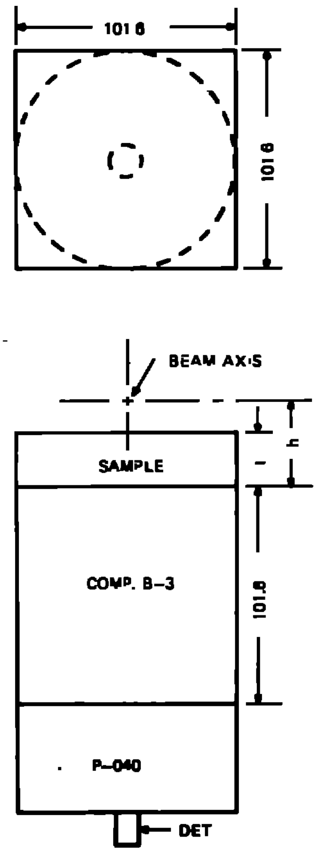
Dynamic fracture of 12.0-mm-thick, t, beryllium. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 31.75 mm.

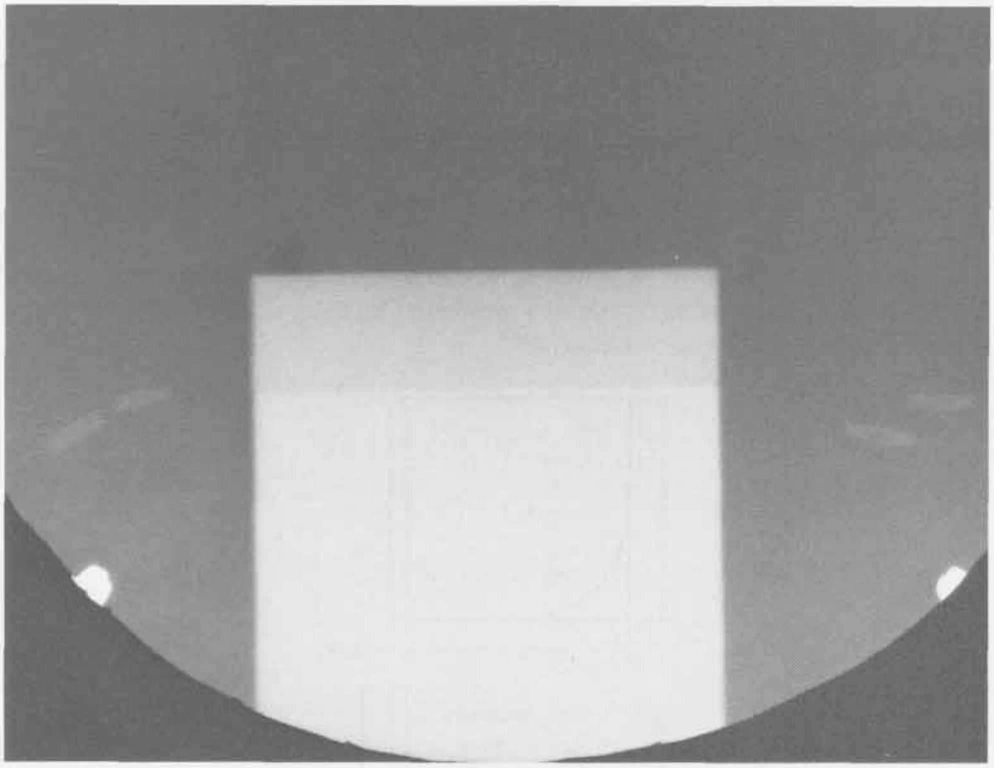




SHOT 509: **Dynamic Fracture of Beryllium**
Date: April 14, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 36.75 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

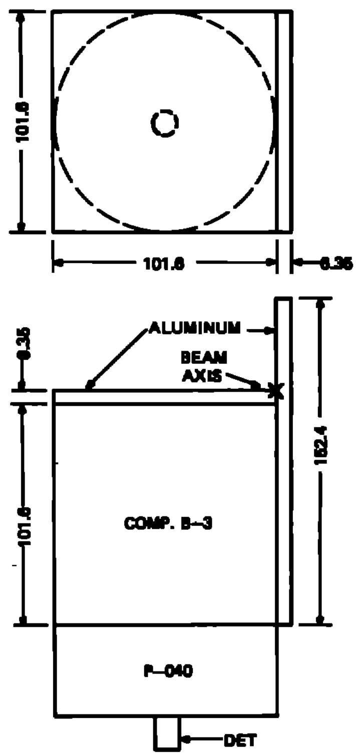
Dynamic fracture of 25.0-mm-thick, t, beryllium. The plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 53.975 mm.

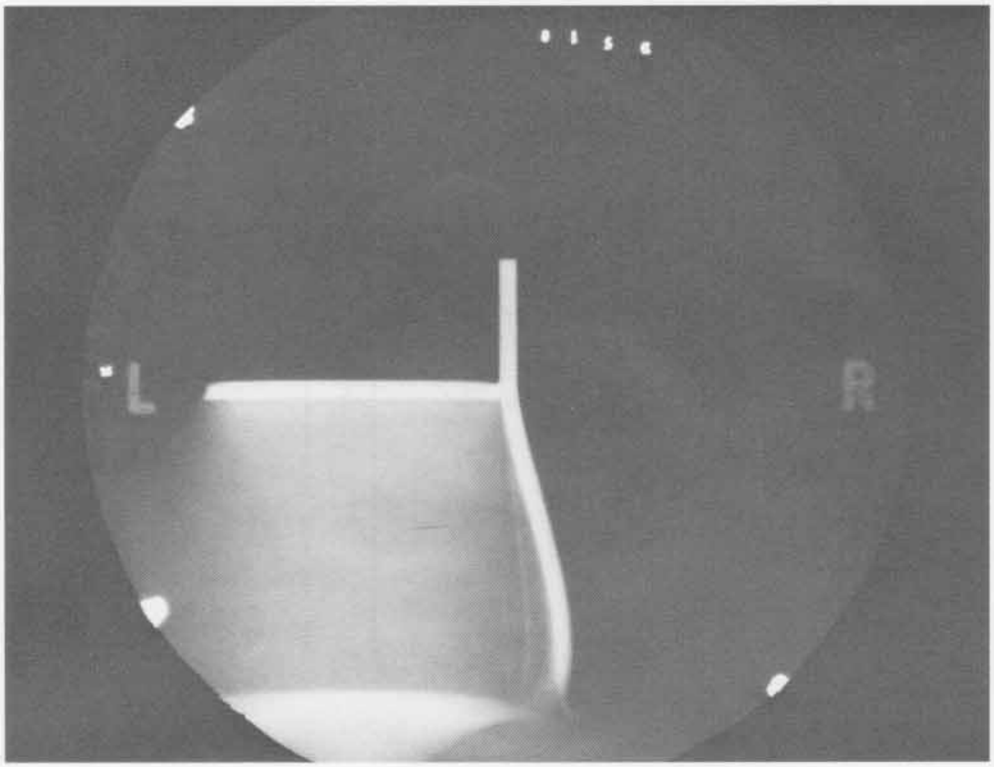




SHOT 510: **Metal Interface Motion**
Date: April 6, 1966
Experimenter: William R. Field
Radiographic Time: 27.63 μs

A study of the movement of shocked 6.35-mm-thick aluminum plates moving perpendicular to each other. The plates are driven by 101.6 mm of Composition B-3 initiated by a P-040 lens. See Shot 497.

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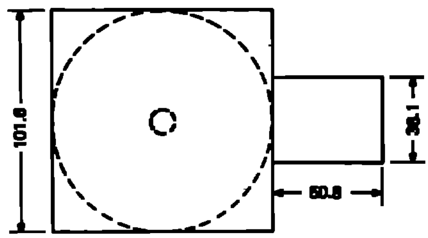
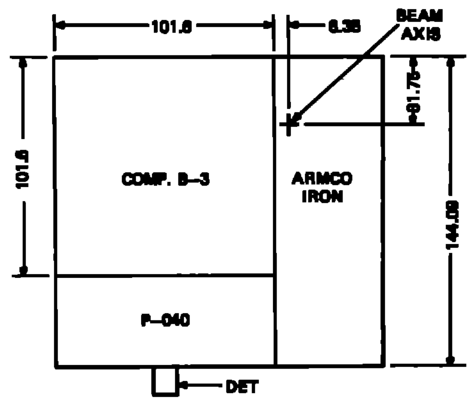
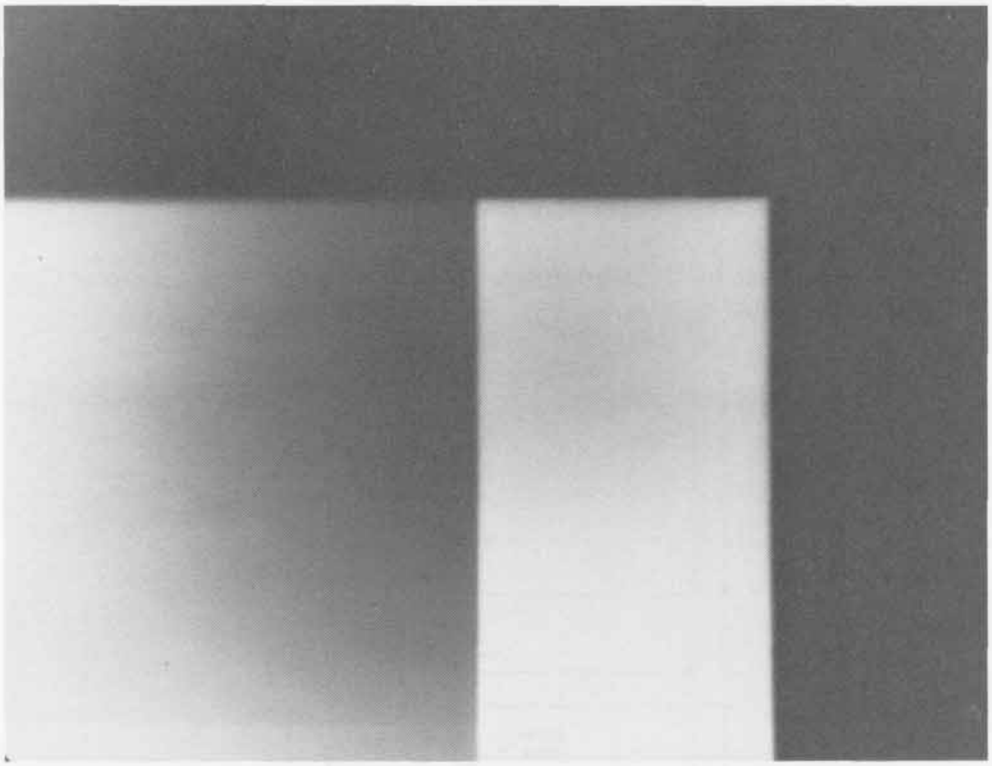
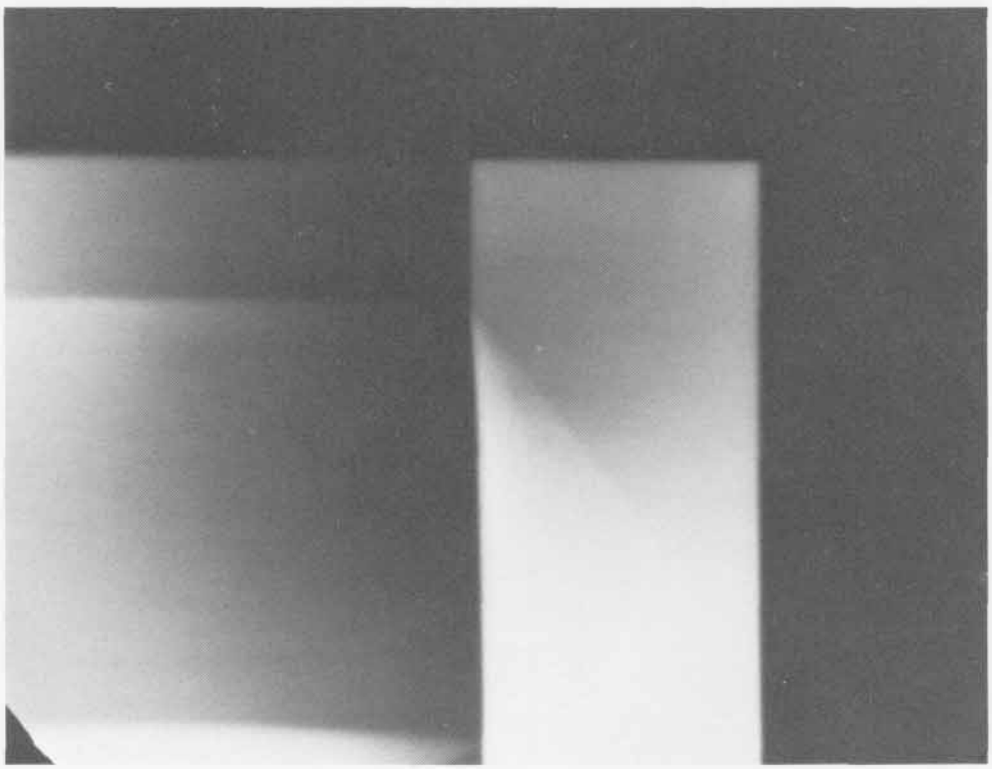
SHOT 511: **Iron Phase Change**
Date: May 26, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 23.14 μs

A 50.8 by 38.1 by 144.0-mm block of Armco iron was shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. The detonation wave proceeds perpendicular to the iron plate. The iron phase change causes formation of two shocks in the iron at the intersection of the detonation wave front and the iron plate. These shocks spread apart as they travel into the plate.



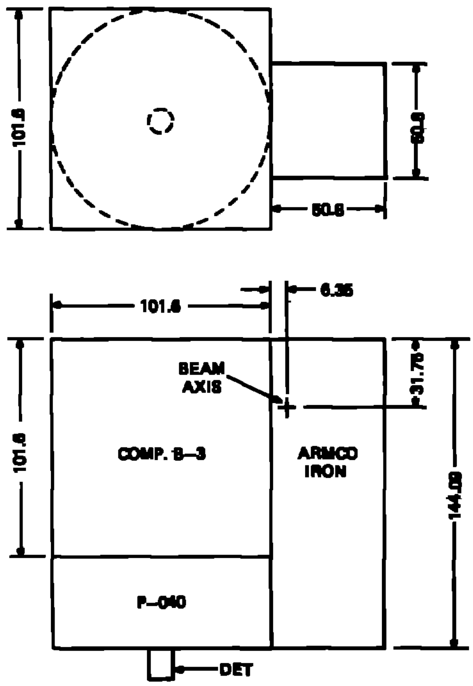


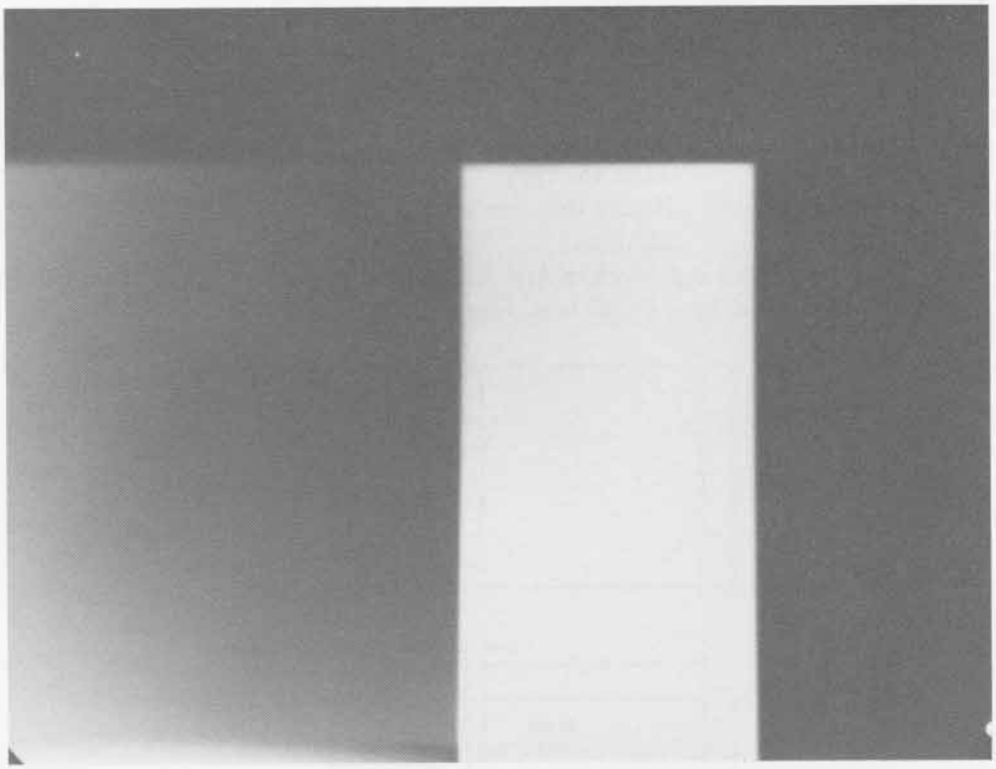


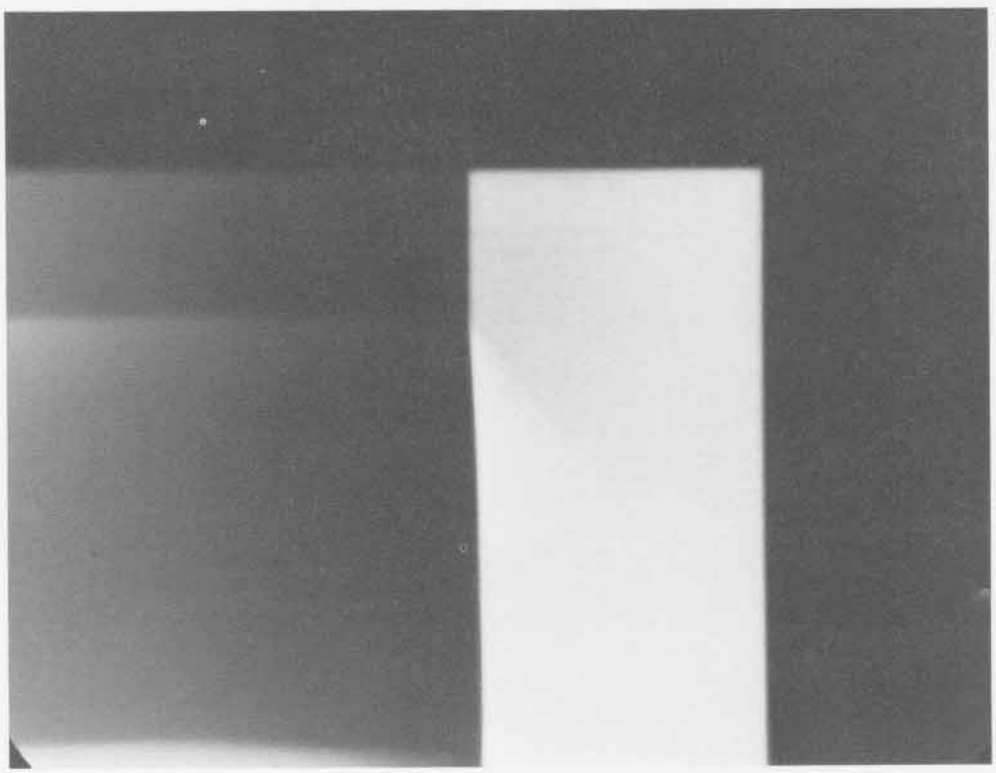


SHOT 513: **Iron Phase Change**
Date: June 14, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 23.08 μs

A 50.8 by 50.8 by 144.0-mm block of Armco iron was shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. See Shots 511 and 514.

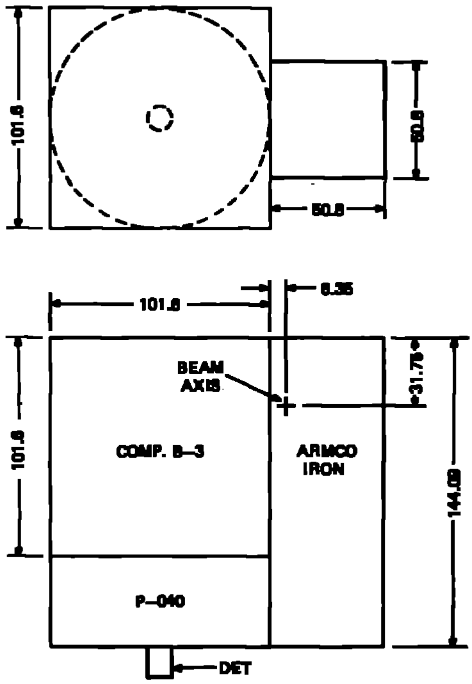


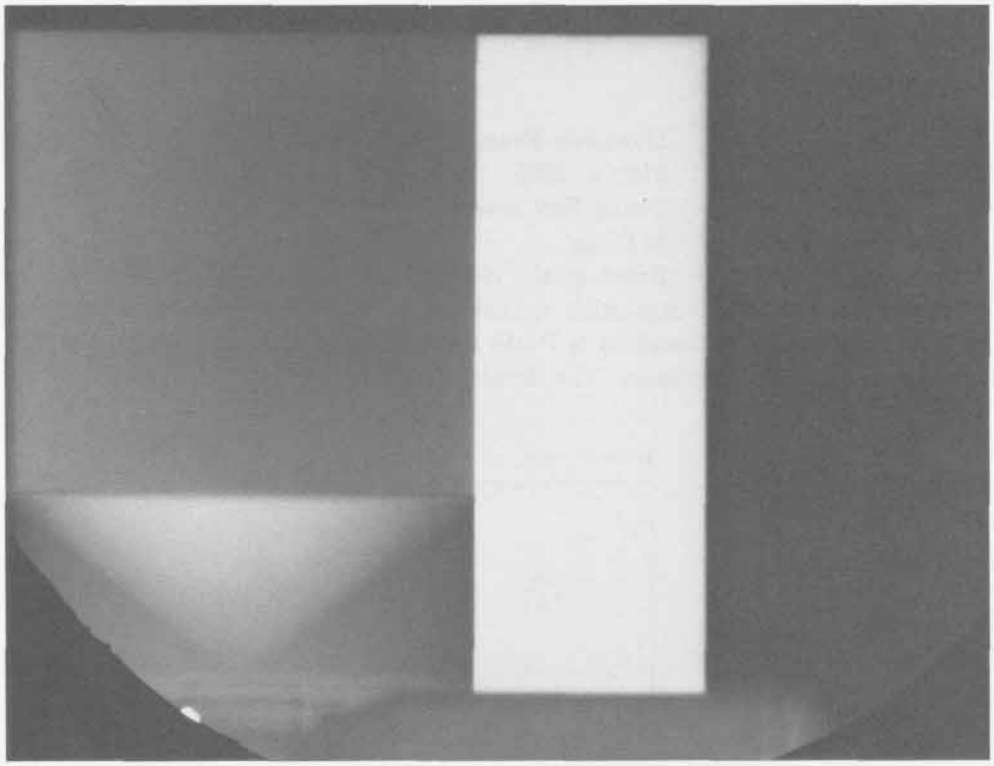


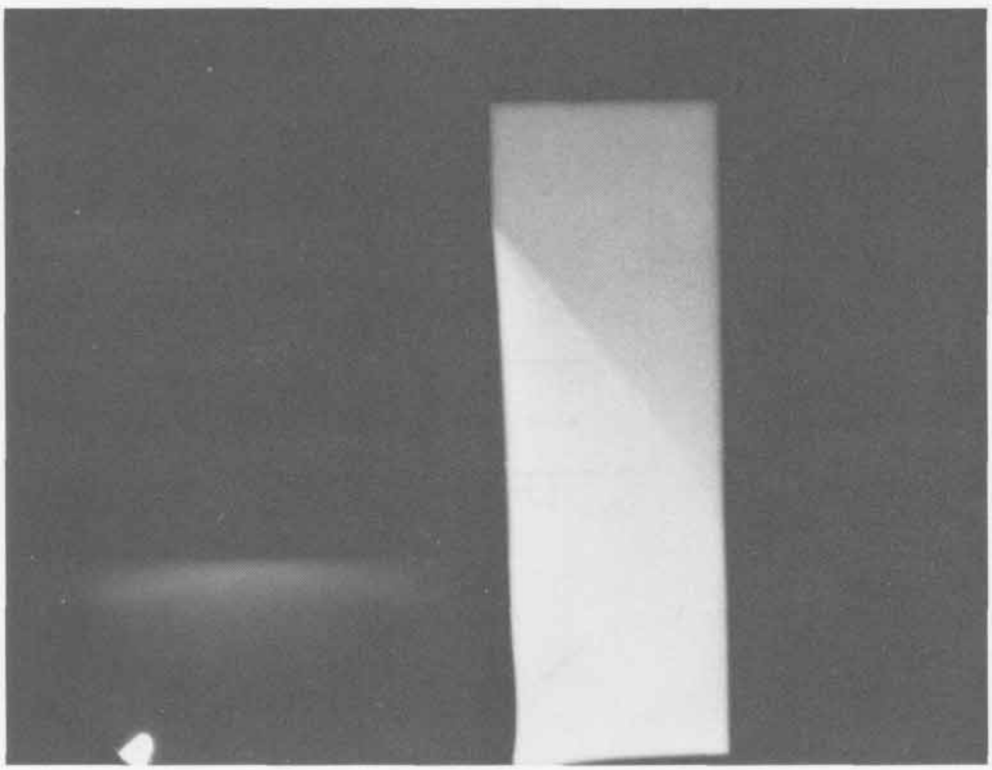


SHOT 514: **Iron Phase Change**
Date: June 15, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 23.12 μs

A 50.8 by 50.8 by 144.0-mm block of Armco iron was shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. See Shots 511 and 513.

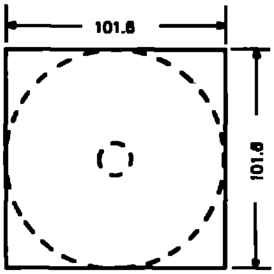


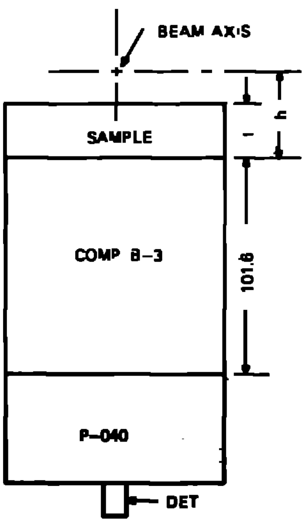


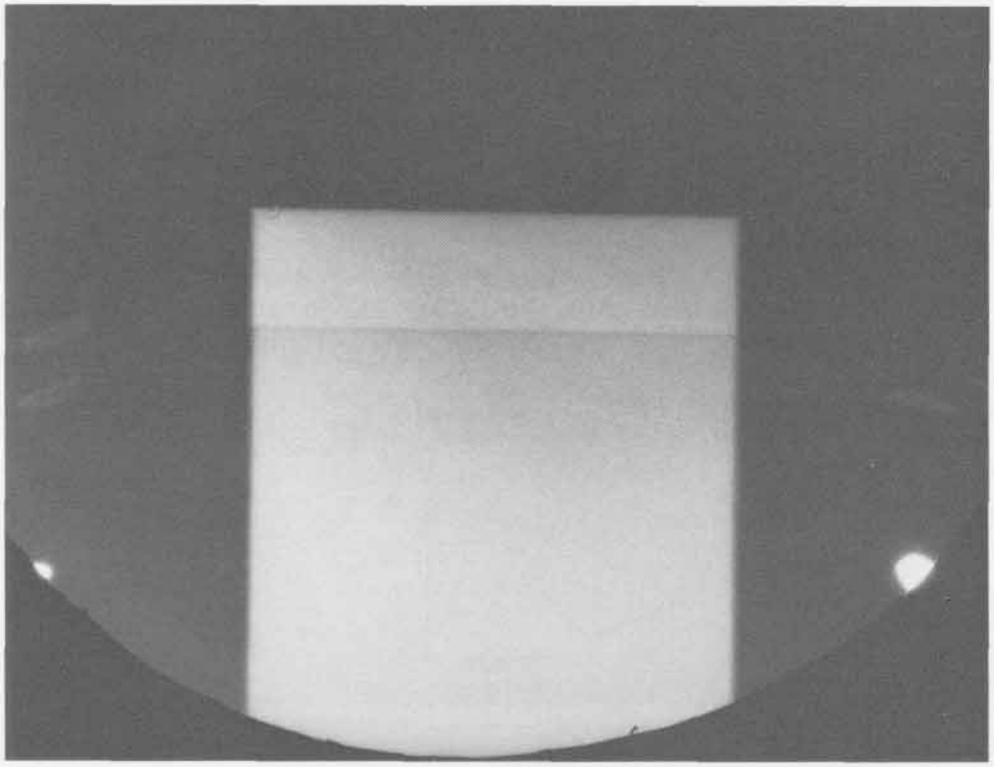


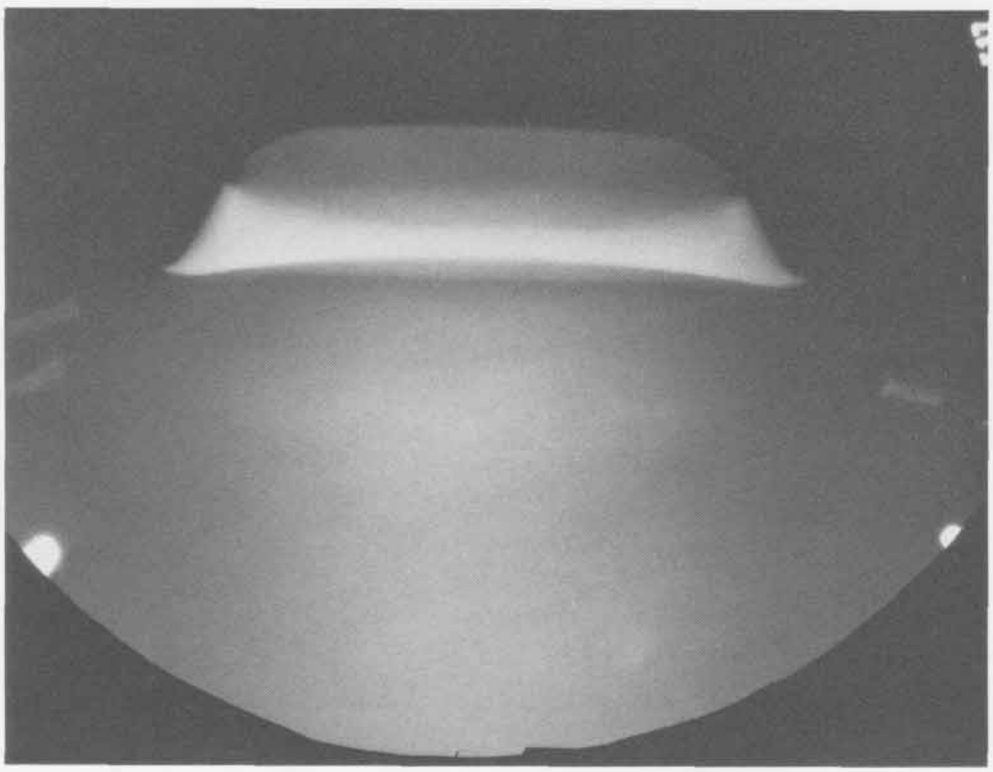
SHOT 517: **Dynamic Fracture of Lockalloy**
Date: May 3, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 34.02 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, Lockalloy. The plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 41.275 mm. Lockalloy is 38% aluminum and 62% beryllium. The density is 2.1 g/cm³.



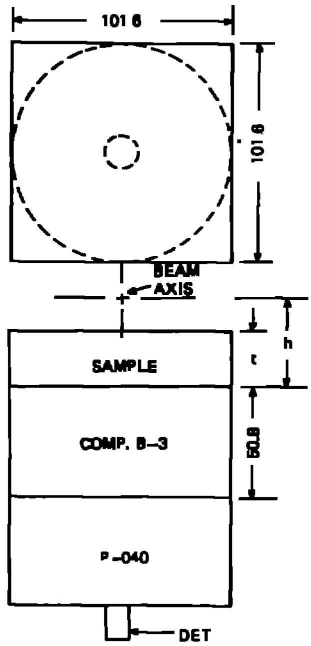


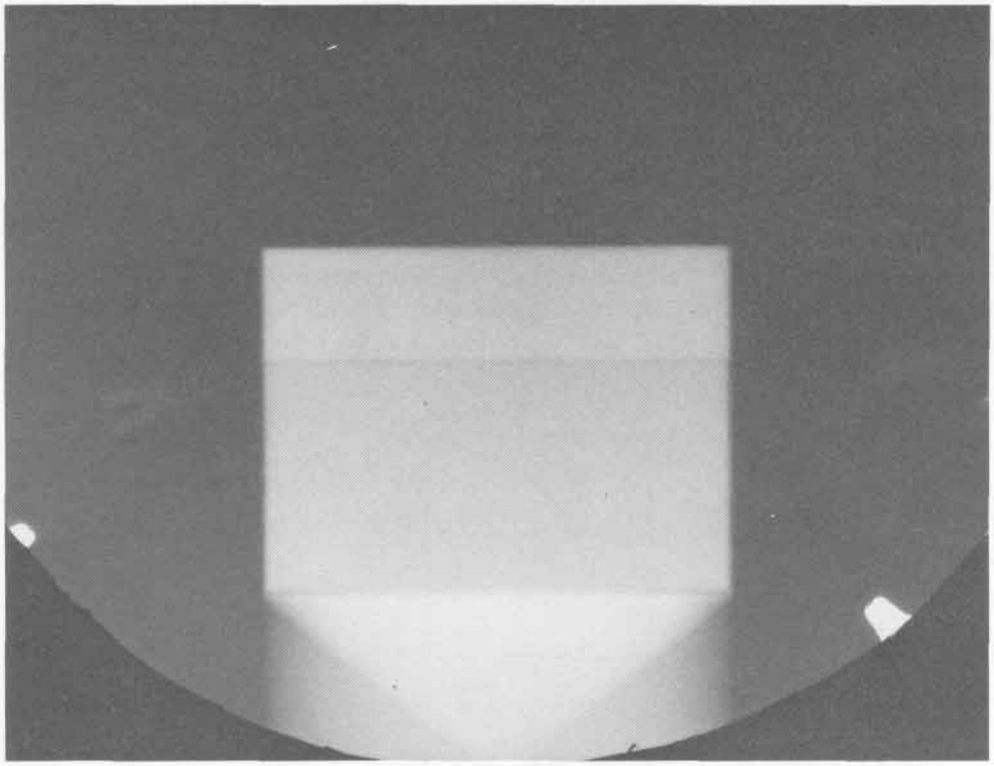


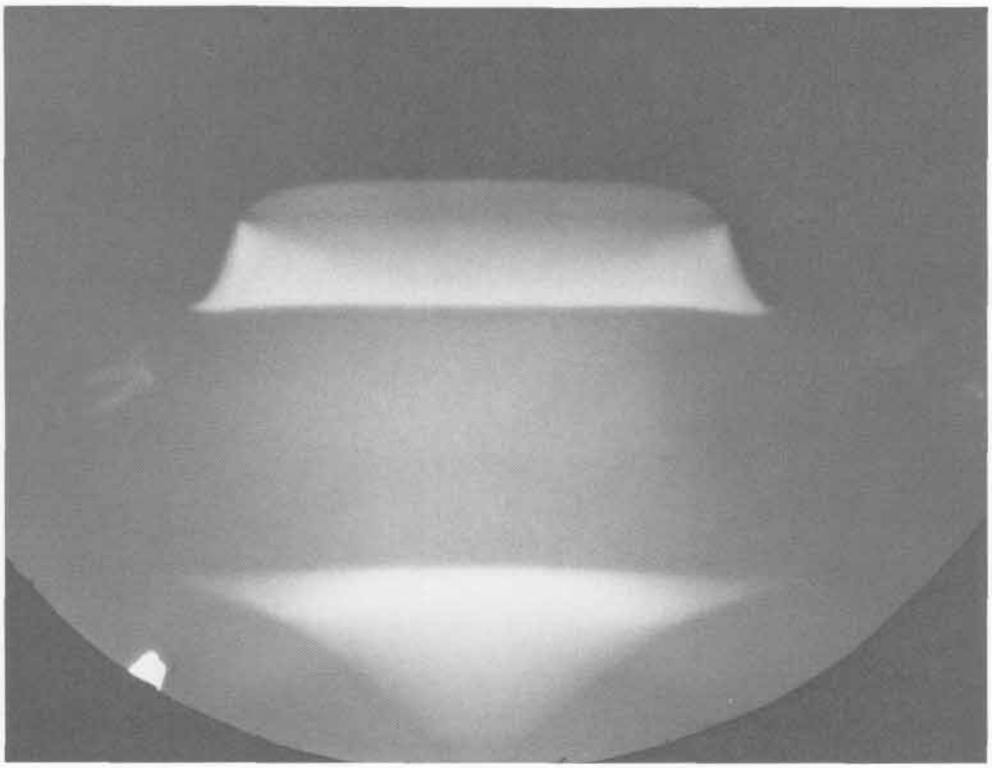


SHOT 518: **Dynamic Fracture of Lockalloy**
Date: May 4, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 26.2 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, Lockalloy. The plate is shocked by 50.8 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

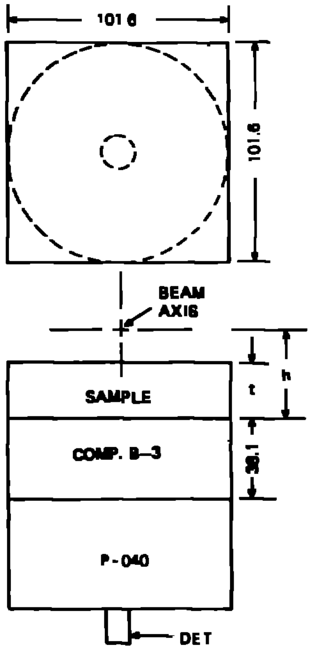


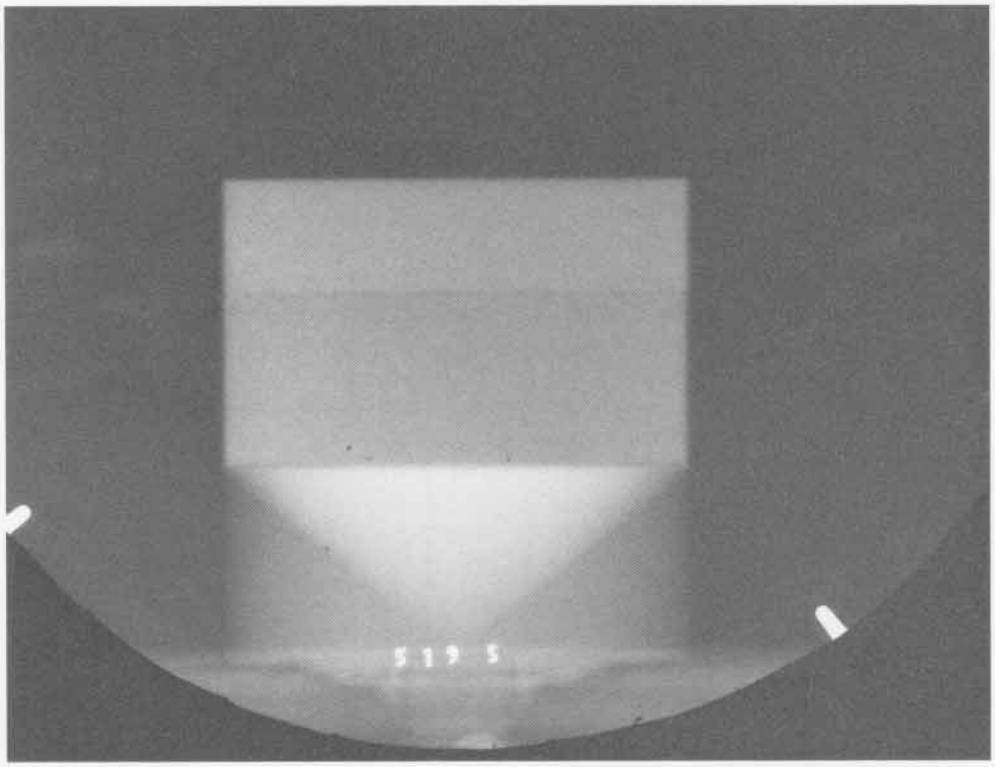


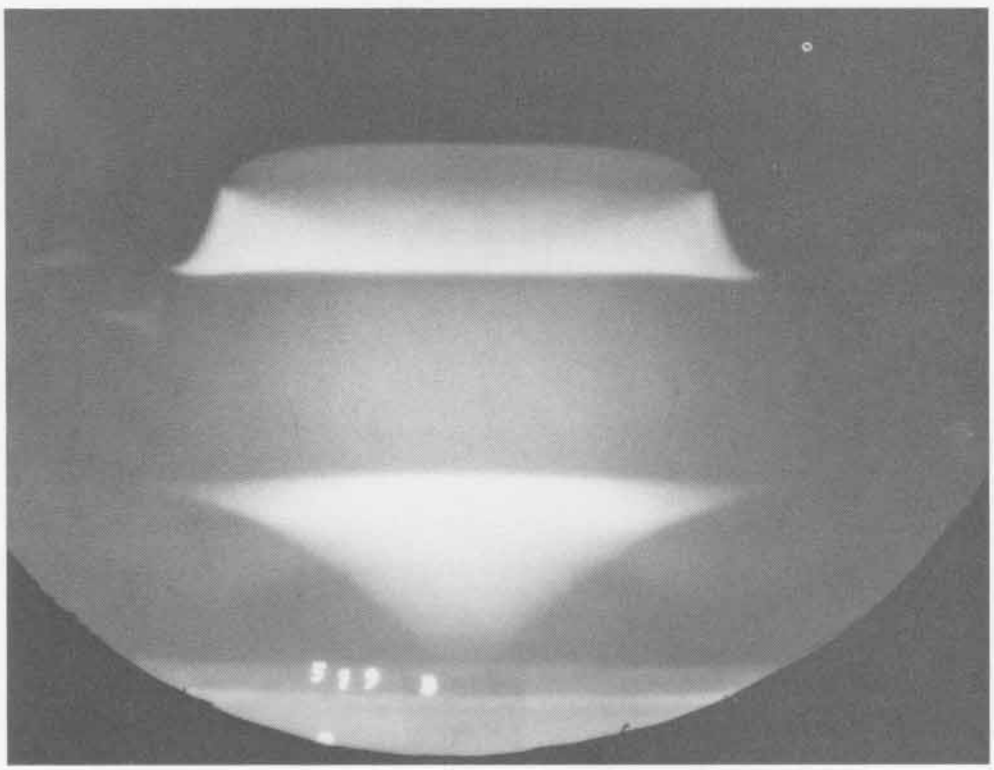


SHOT 519: **Dynamic Fracture of Lockalloy**
Date: May 4, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 24.99 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, Lockalloy. The plate is shocked by 38.1 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

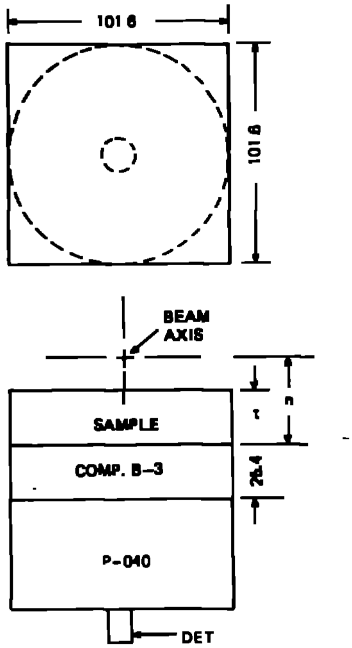


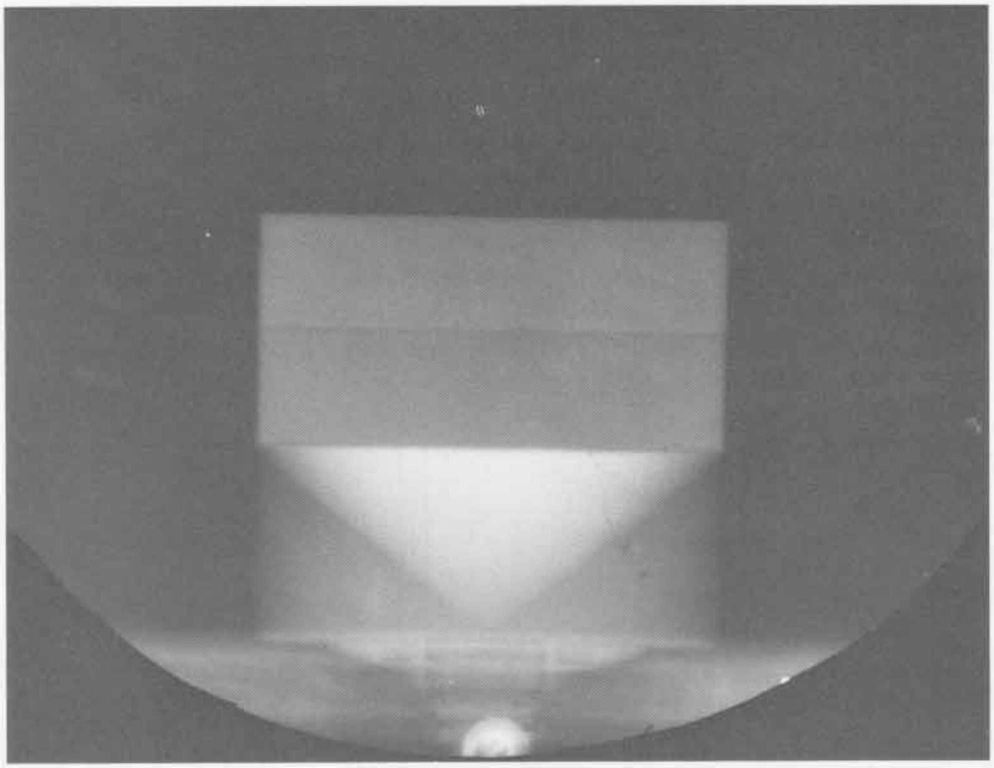


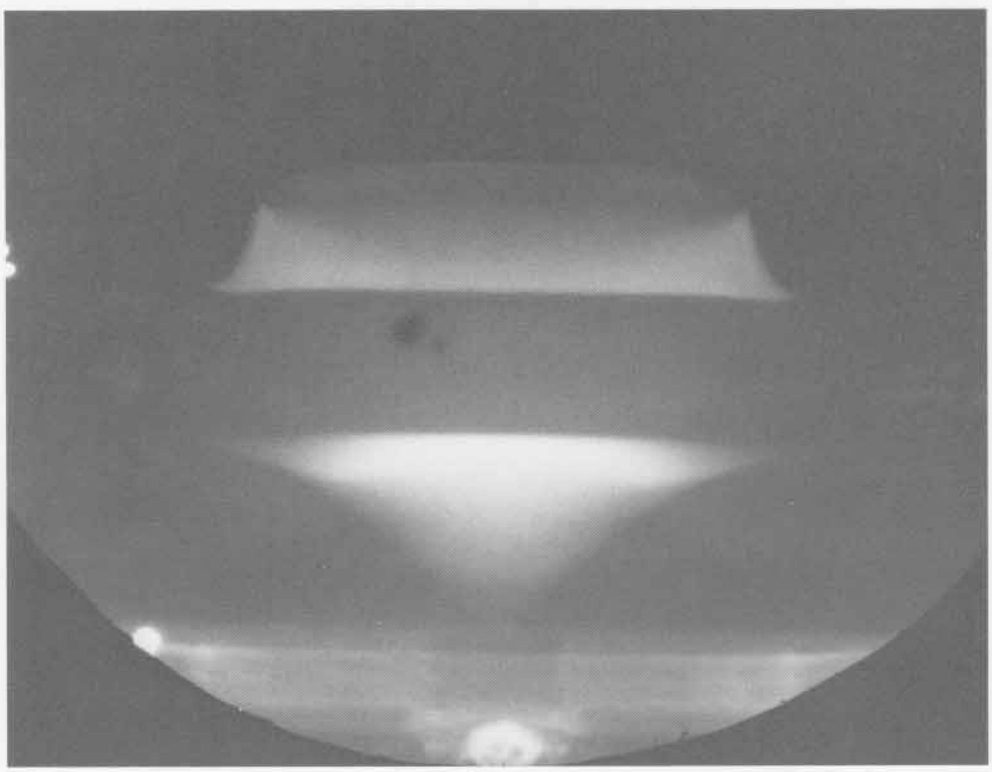


SHOT 520: **Dynamic Fracture of Lockalloy**
Date: May 9, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 23.71 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, Lockalloy. The plate is shocked by 25.4 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

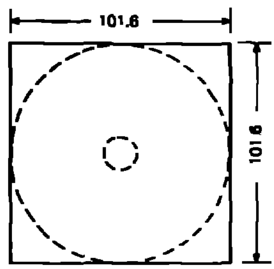


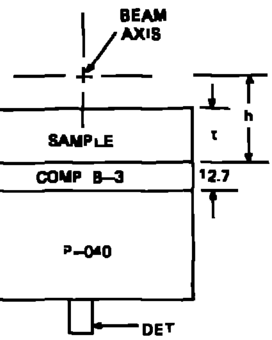


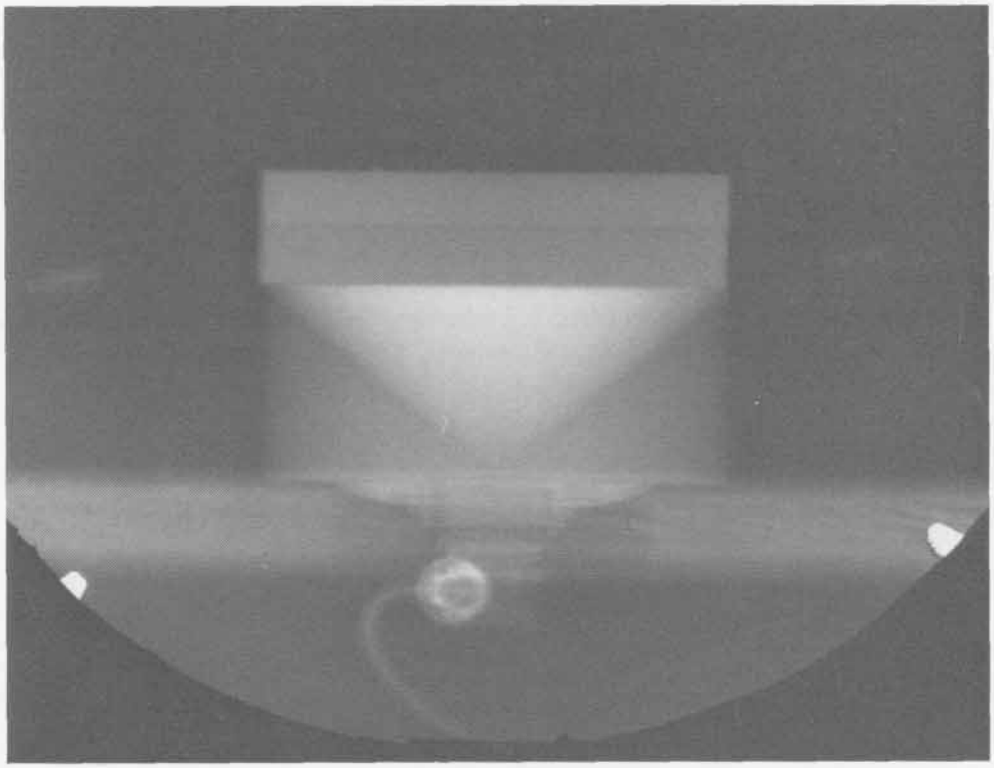


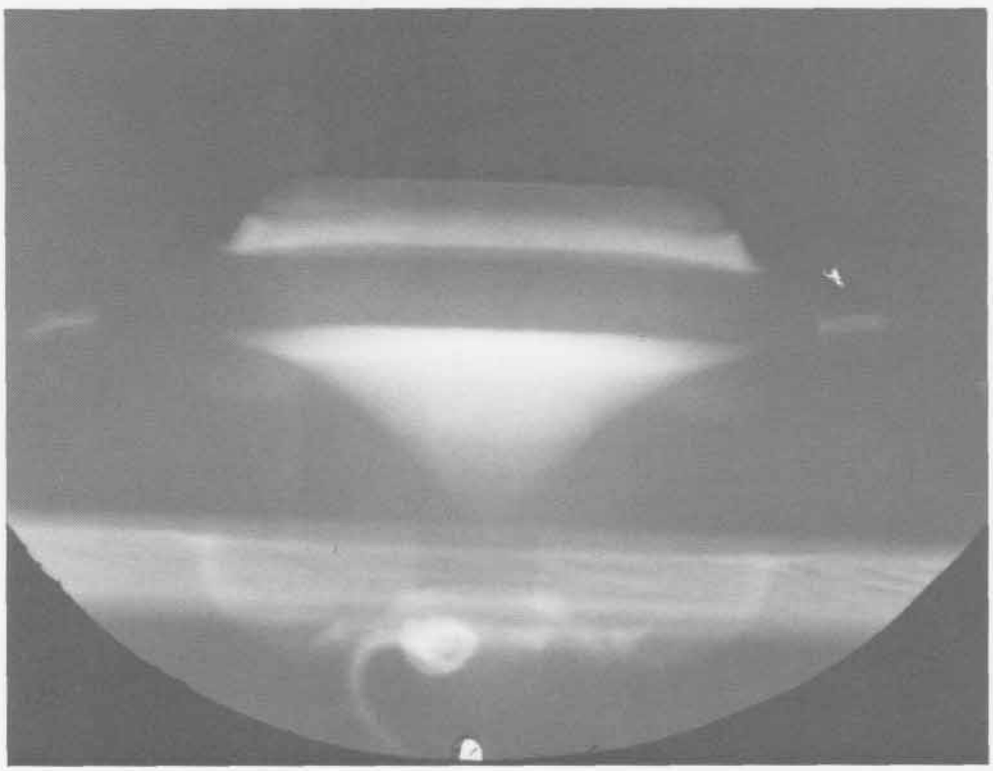
SHOT 521: **Dynamic Fracture of Lockalloy**
Date: May 10, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 20.51 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 12.0-mm-thick, t, Lockalloy. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 31.75 mm.



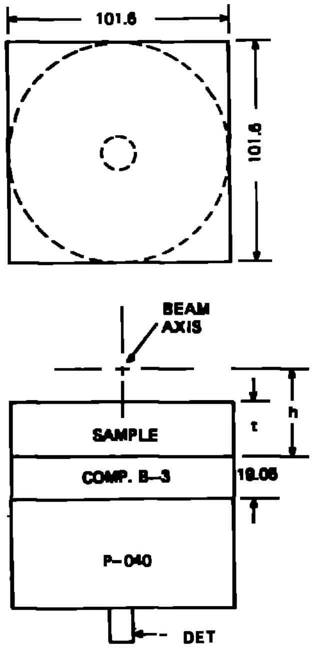


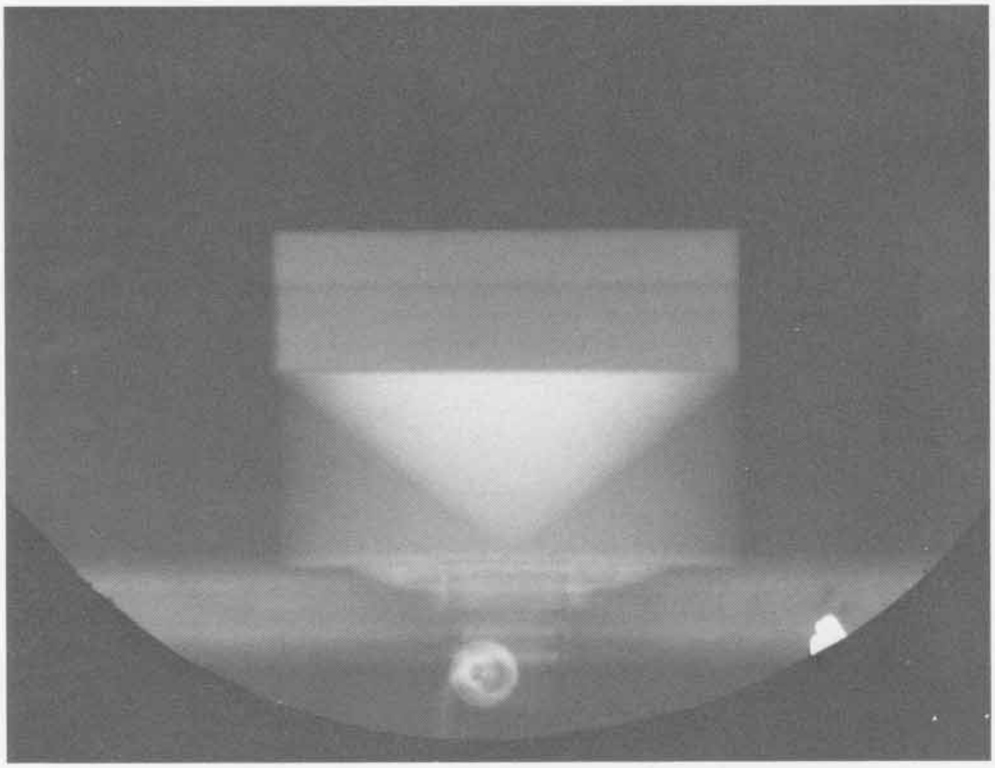


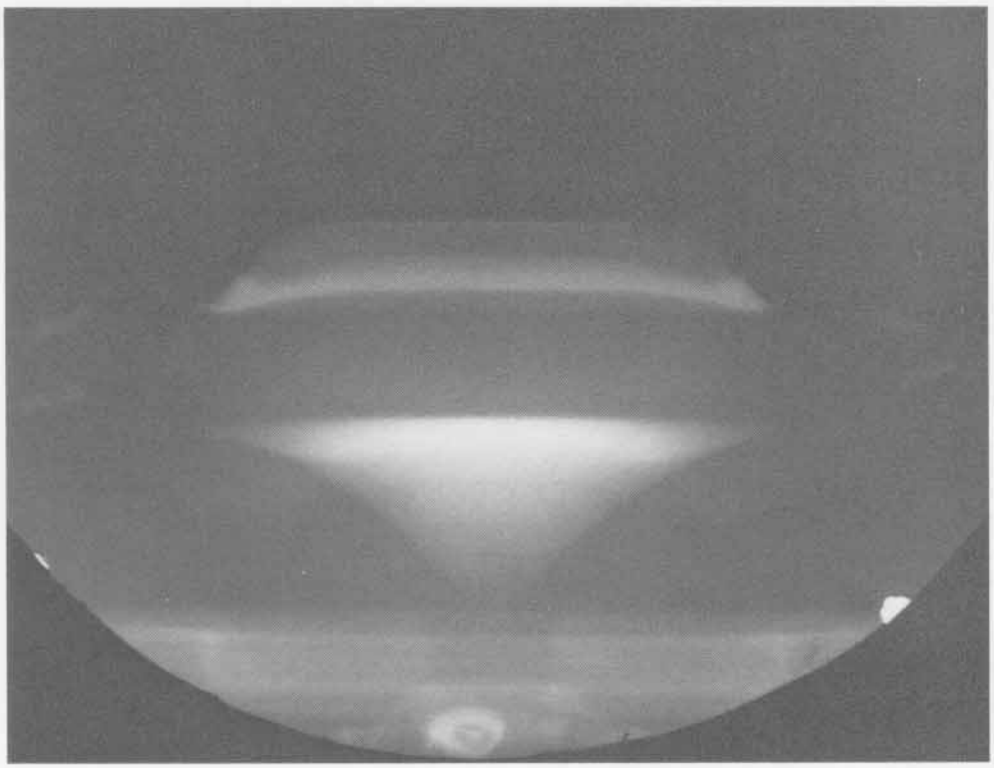


SHOT 522:	**Dynamic Fracture of Lockalloy**
Date:	May 11, 1966
Experimenter:	Benny Ray Breed
Radiographic Time:	22.35 μs
References:	Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 12.0-mm-thick, t, Lockalloy. The plate is shocked by 19.05 mm of Composition B-3 initiated by a P-040 lens. h is 41.275 mm.

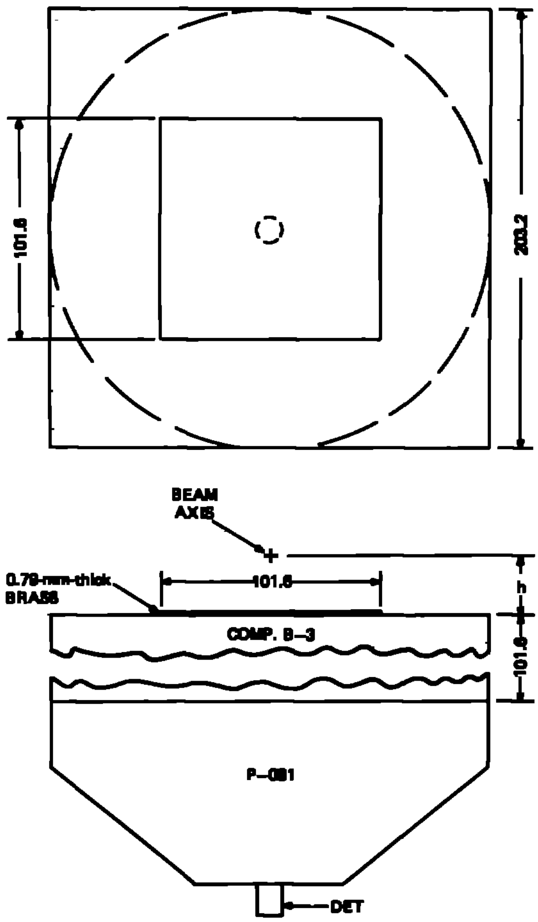


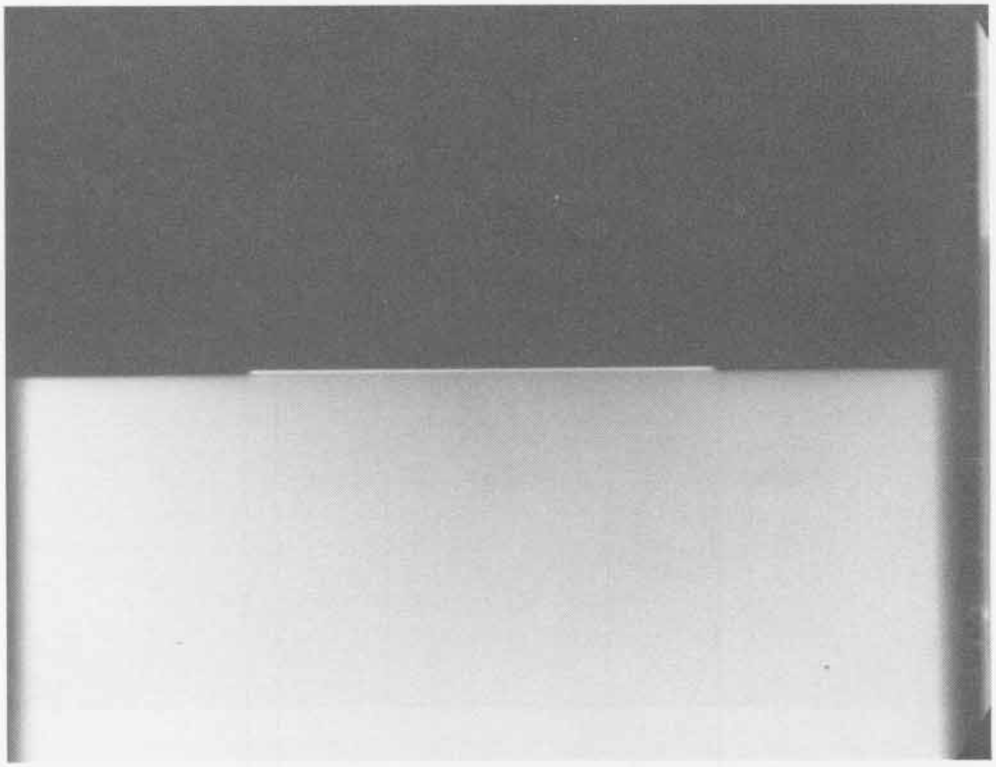


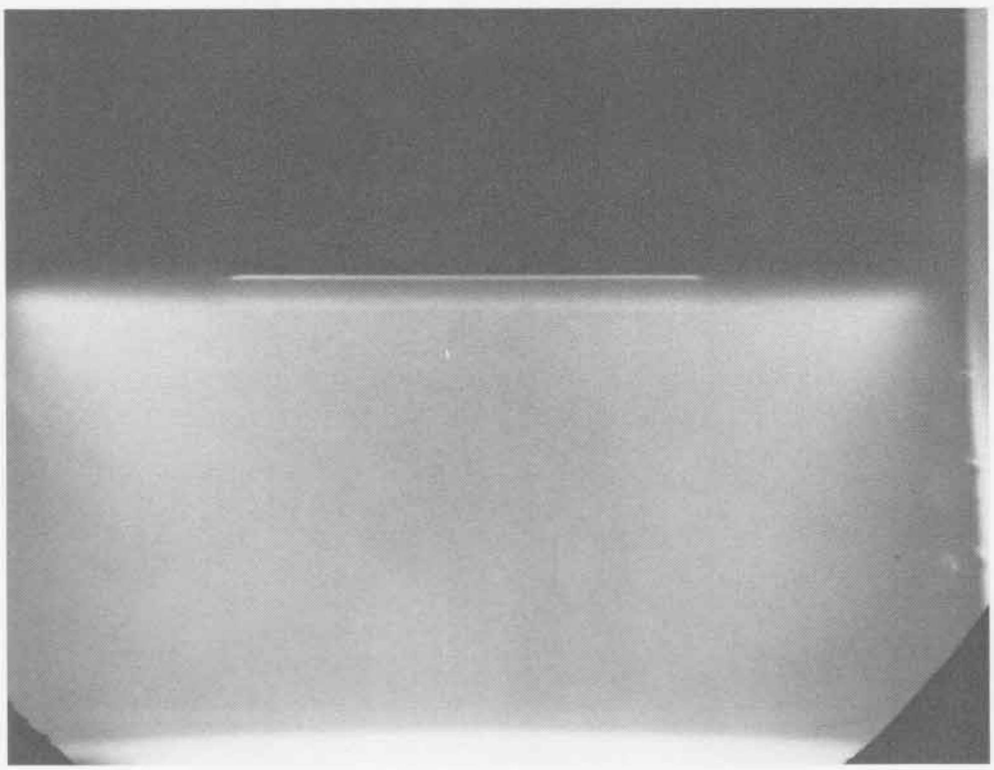


SHOT 523: **Brass Back Surface**
Date: May 5, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 36.16 μs

A 0.79-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 3.81 mm.

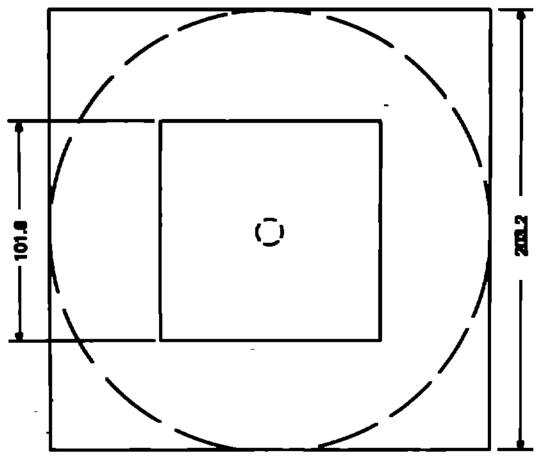


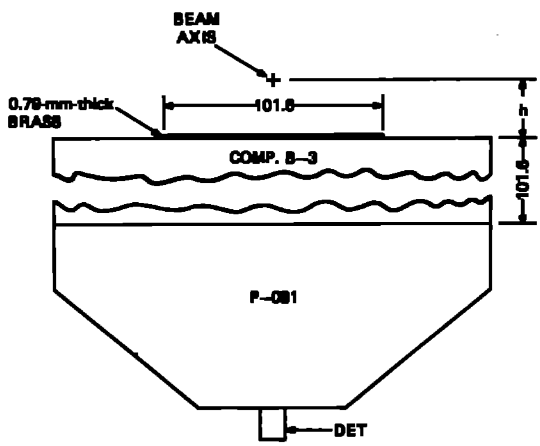


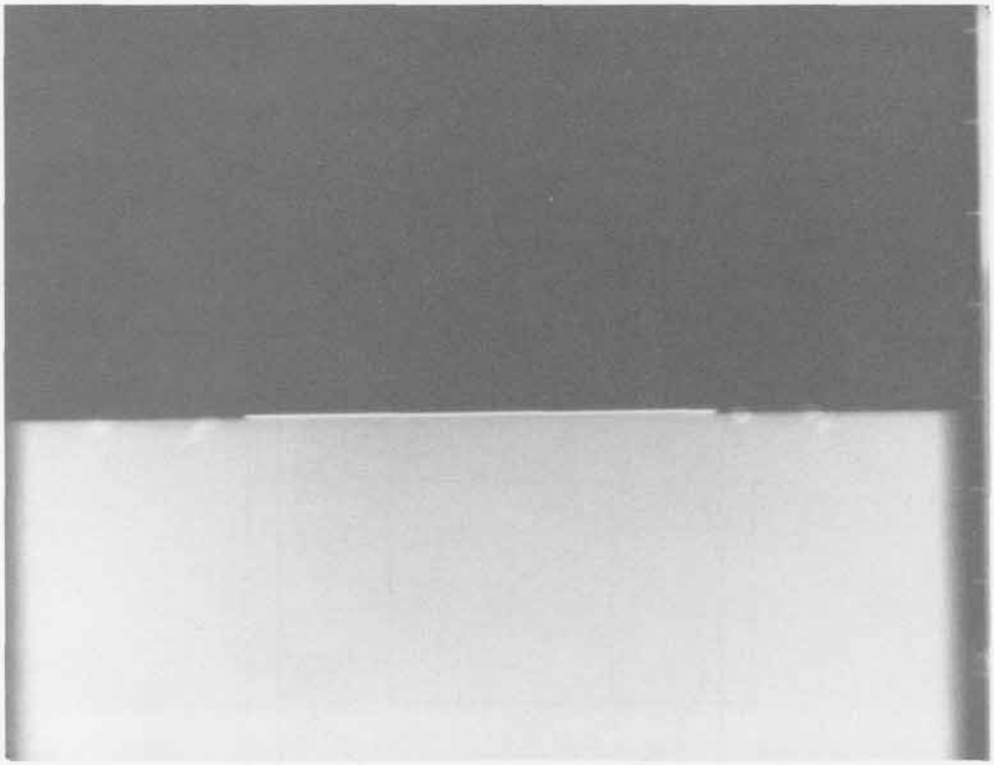


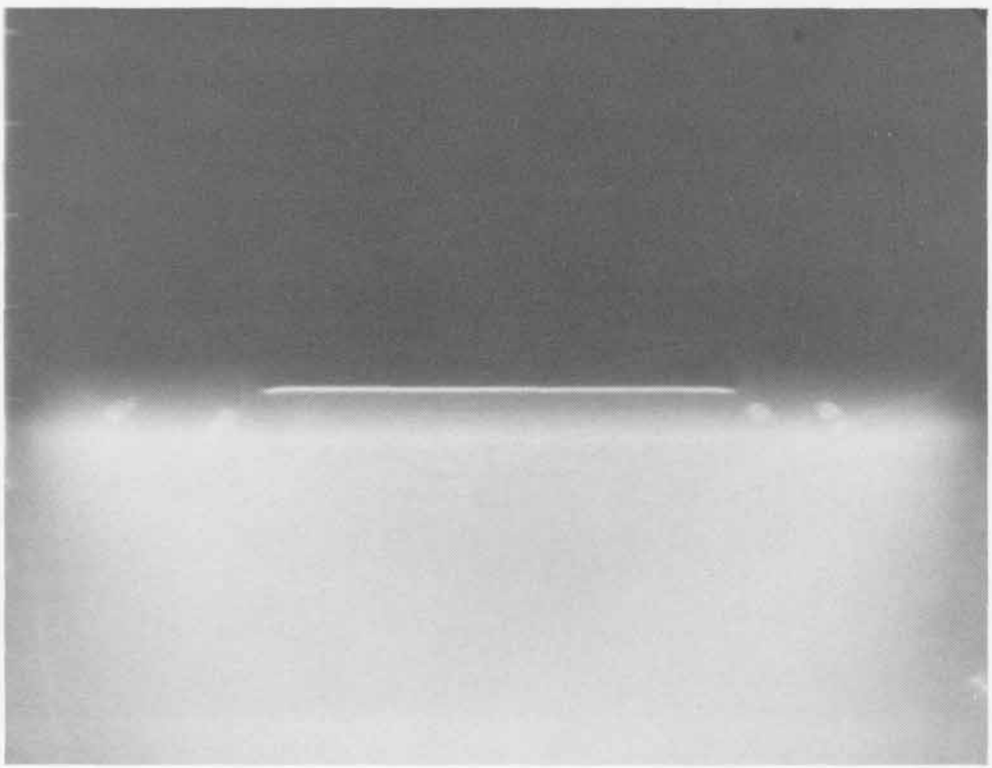
SHOT 524: **Brass Back Surface**
Date: June 9, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 36.66 μs

A 0.79-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 6.78 mm.



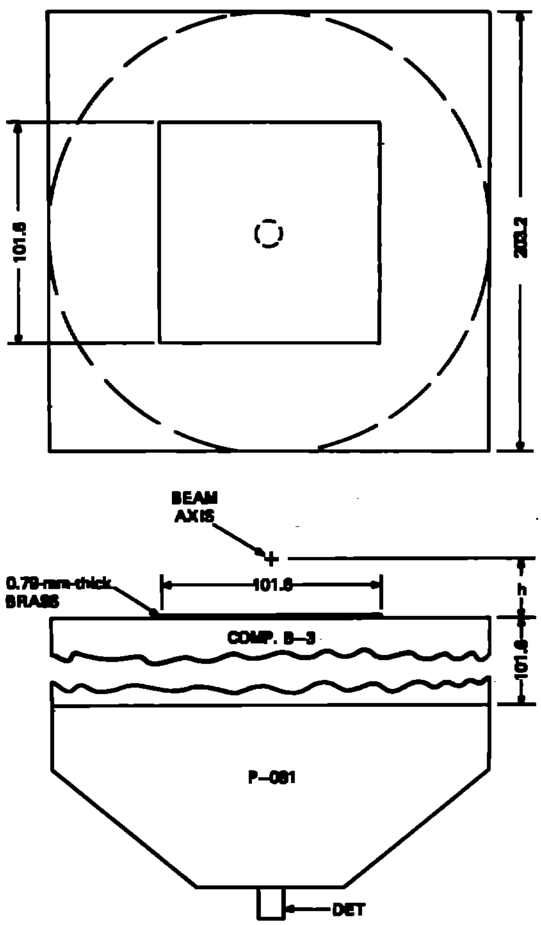


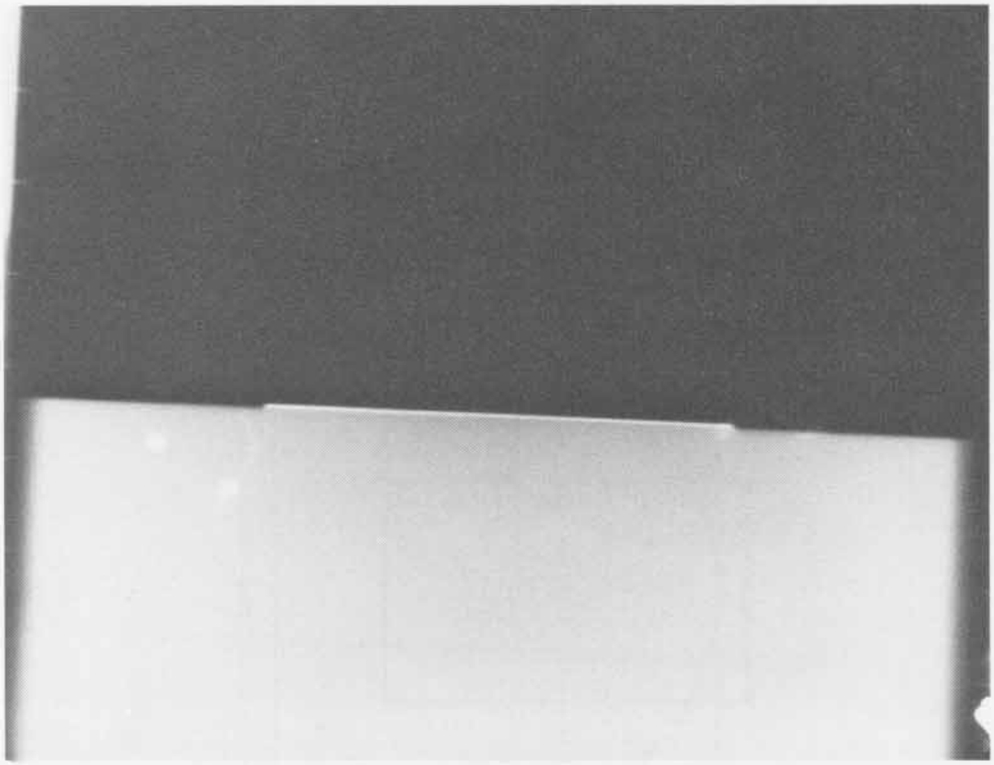


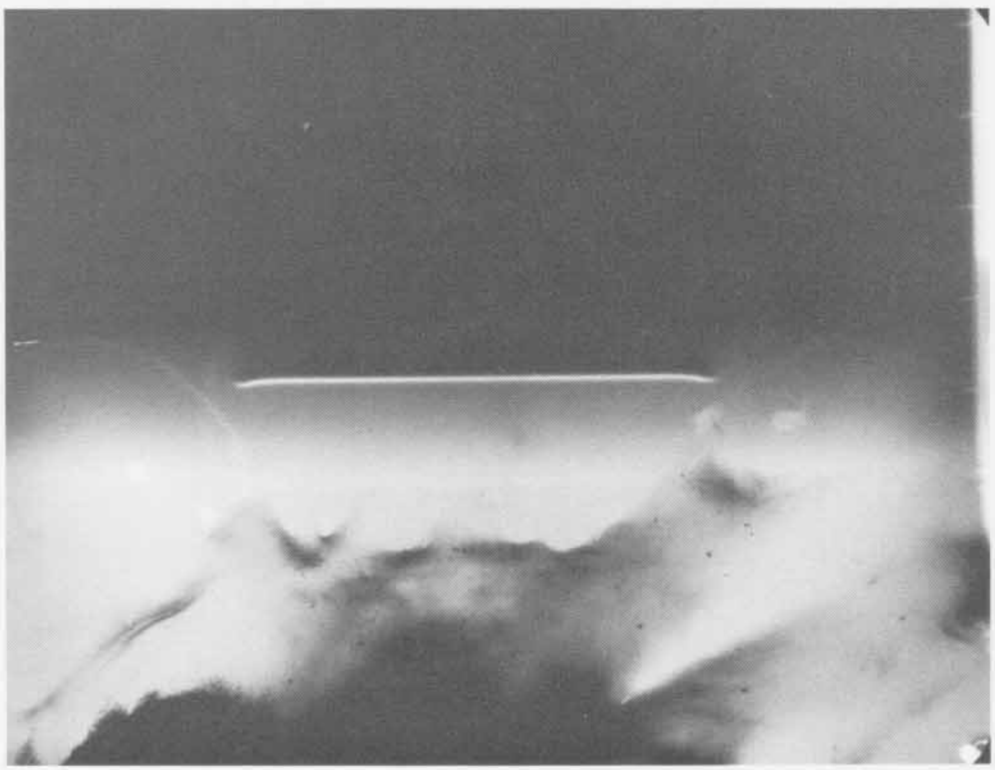


SHOT 525: **Brass Back Surface**
Date: June 16, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 37.93 μs

A 0.79-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 10.795 mm.

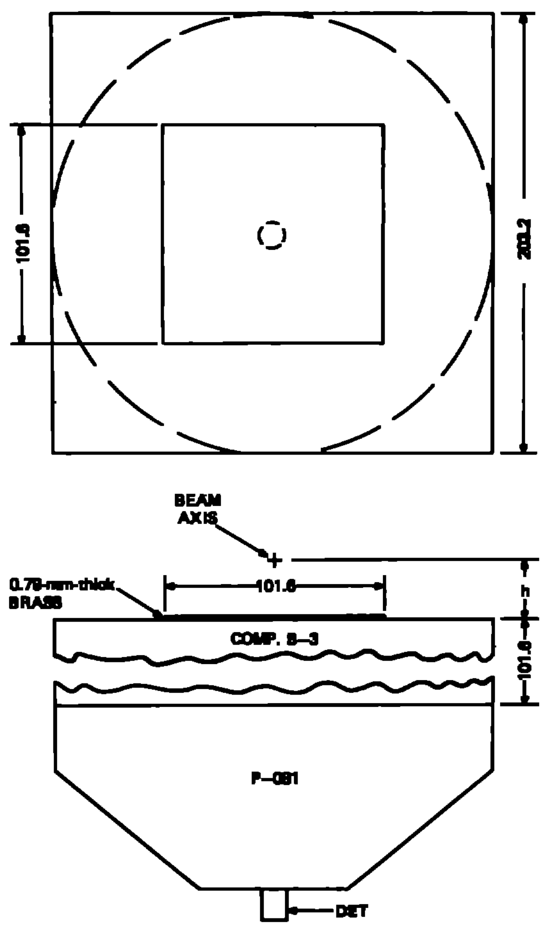


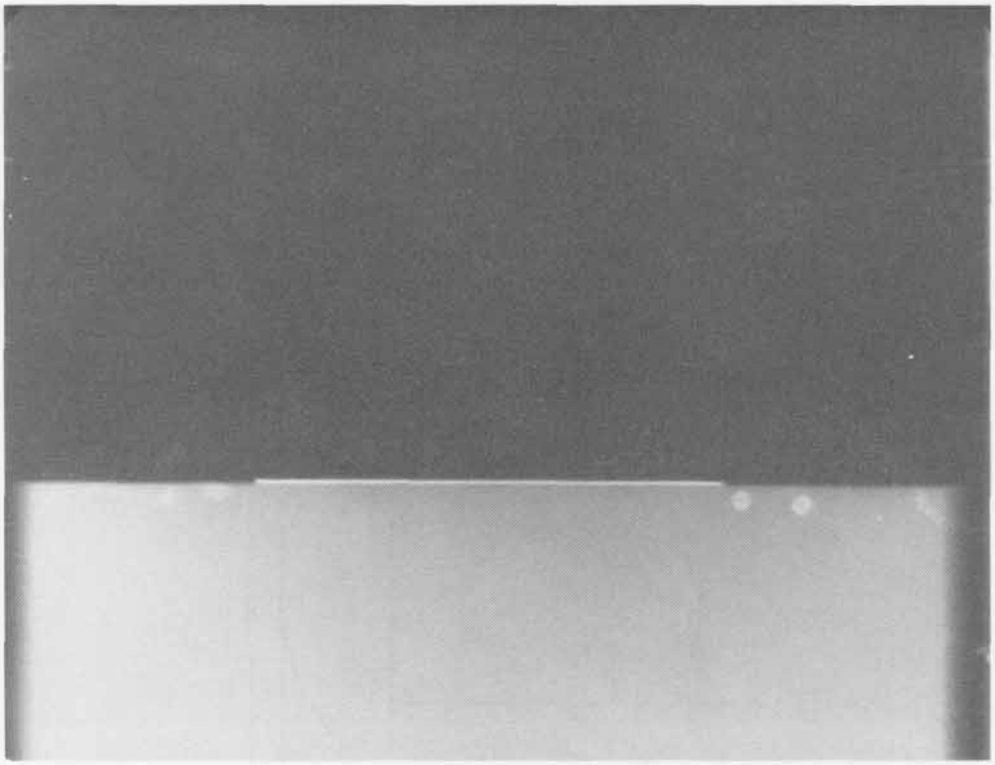


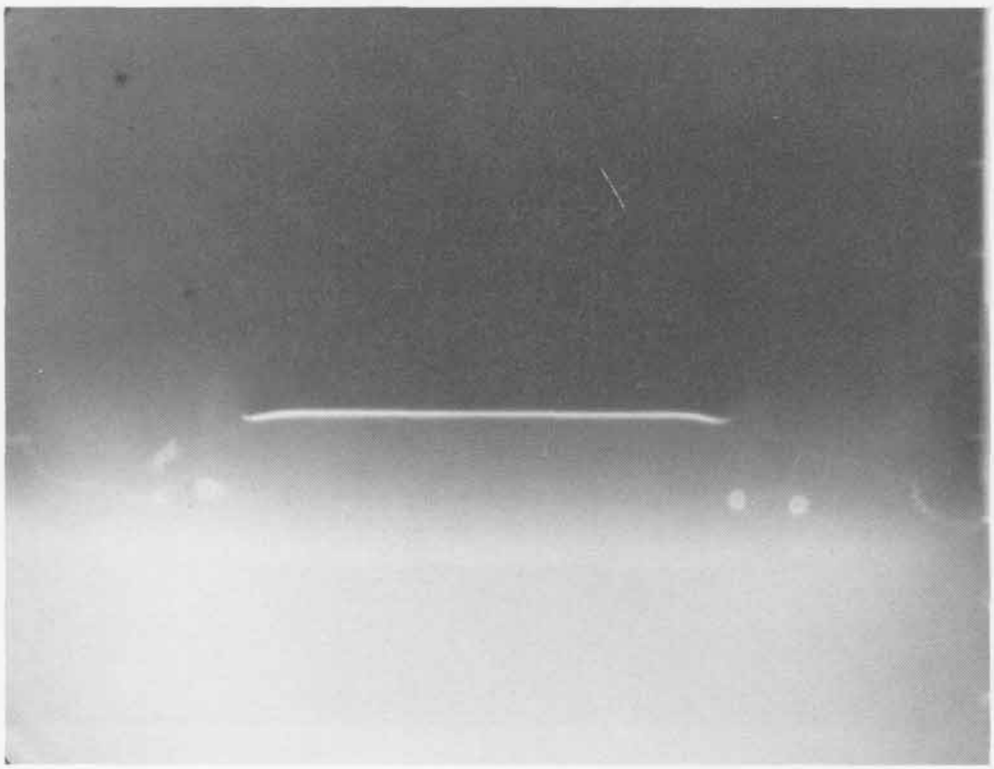


SHOT 526: **Brass Back Surface**
Date: August 2, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 38.95 μs

A 0.79-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 14.478 mm.

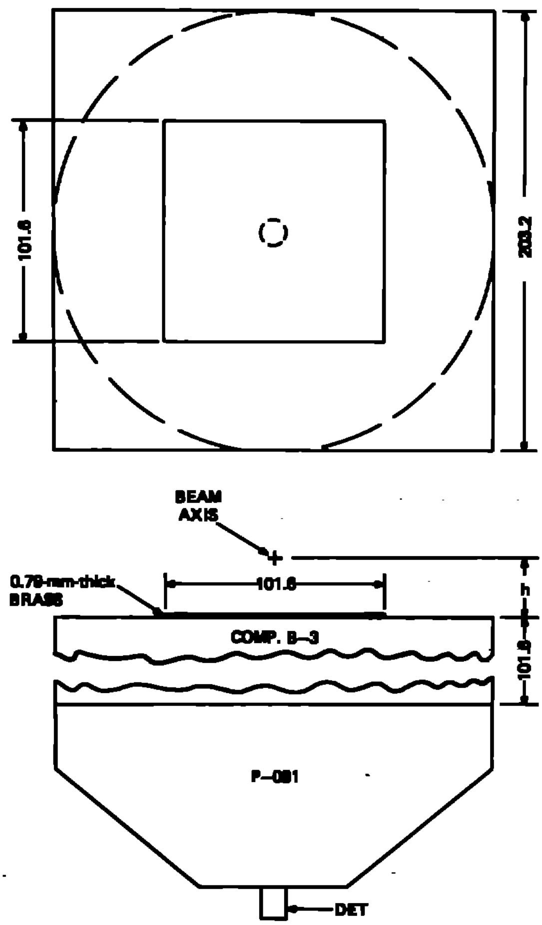


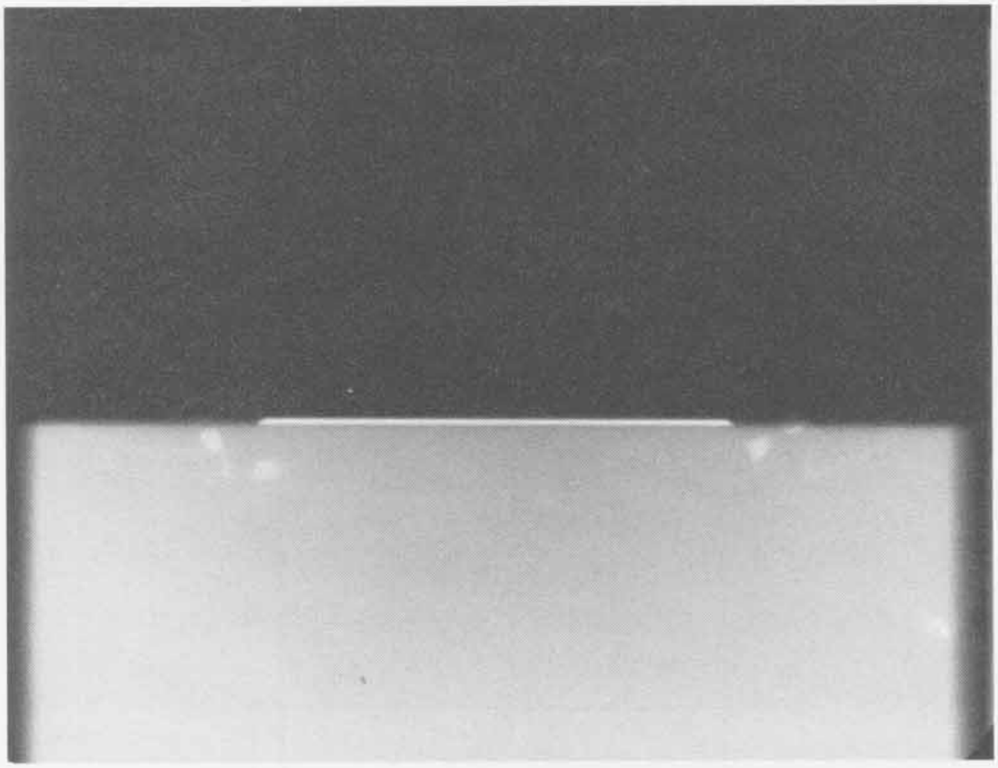


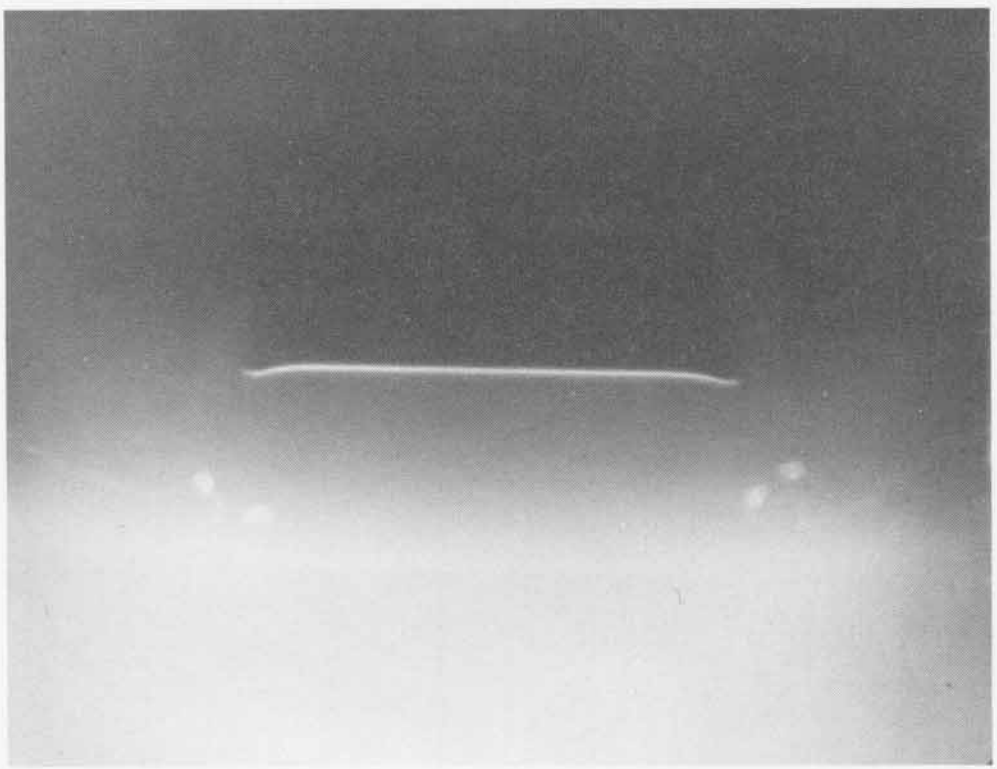


SHOT 527: **Brass Back Surface**
Date: August 3, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 40 μs

A 0.79-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 15.265 mm.

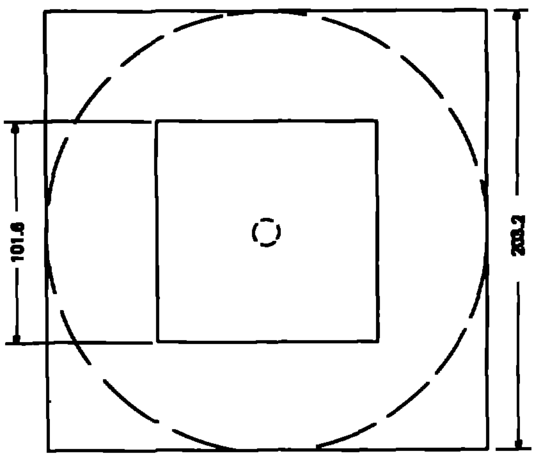


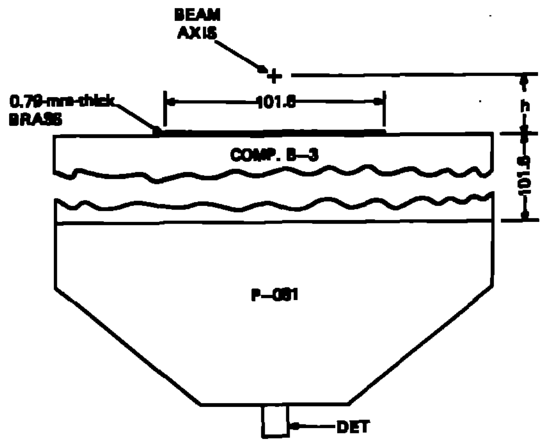


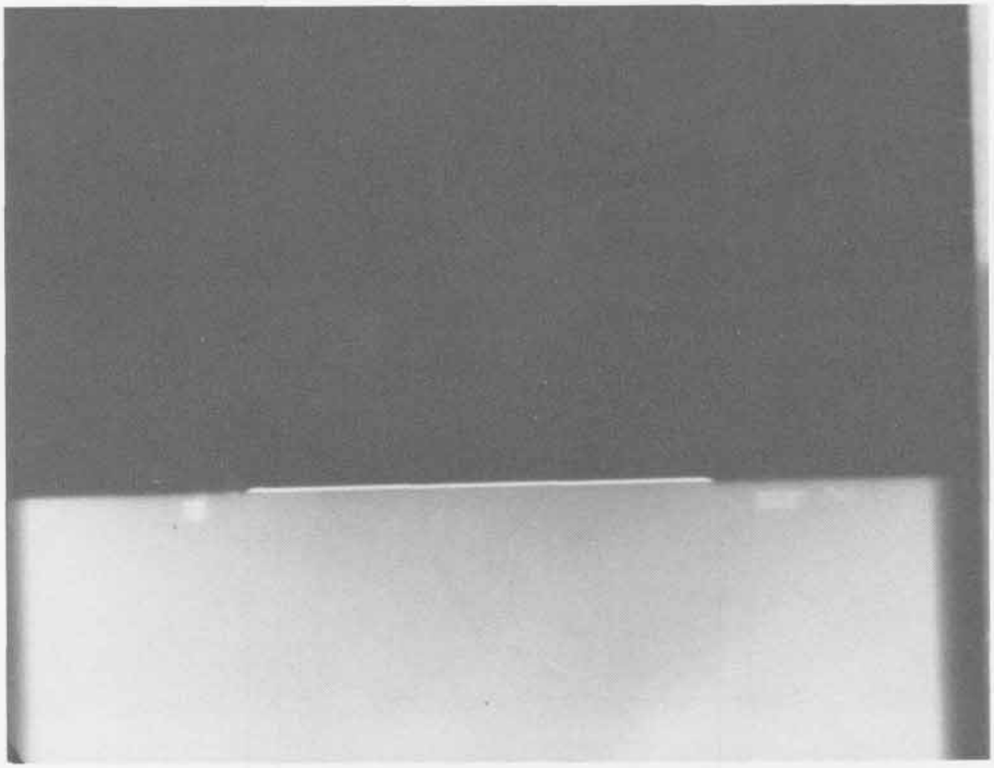


SHOT 528: **Brass Back Surface**
Date: August 4, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 41.30 μs

A 0.79-mm-thick brass plate is shocked by 101.6 mm of Compositon B-3 initiated by a P-081 lens. h is 19.786 mm.

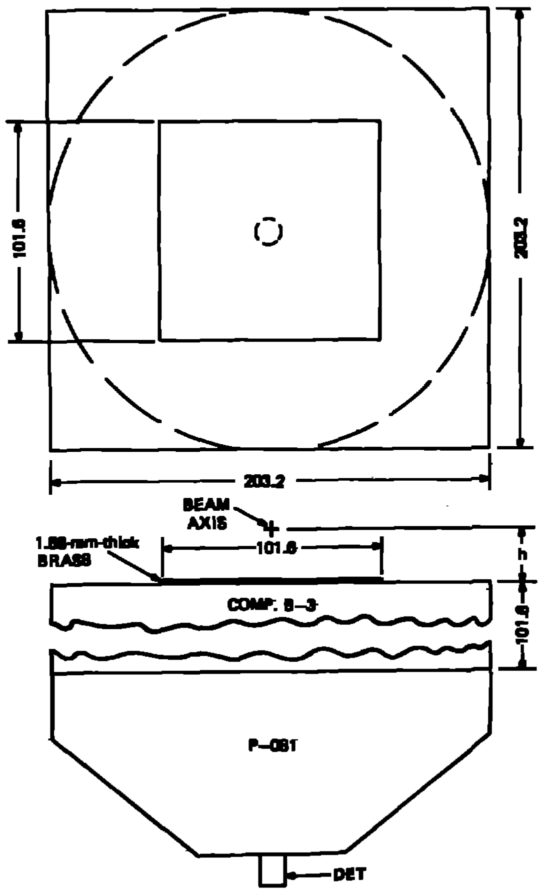


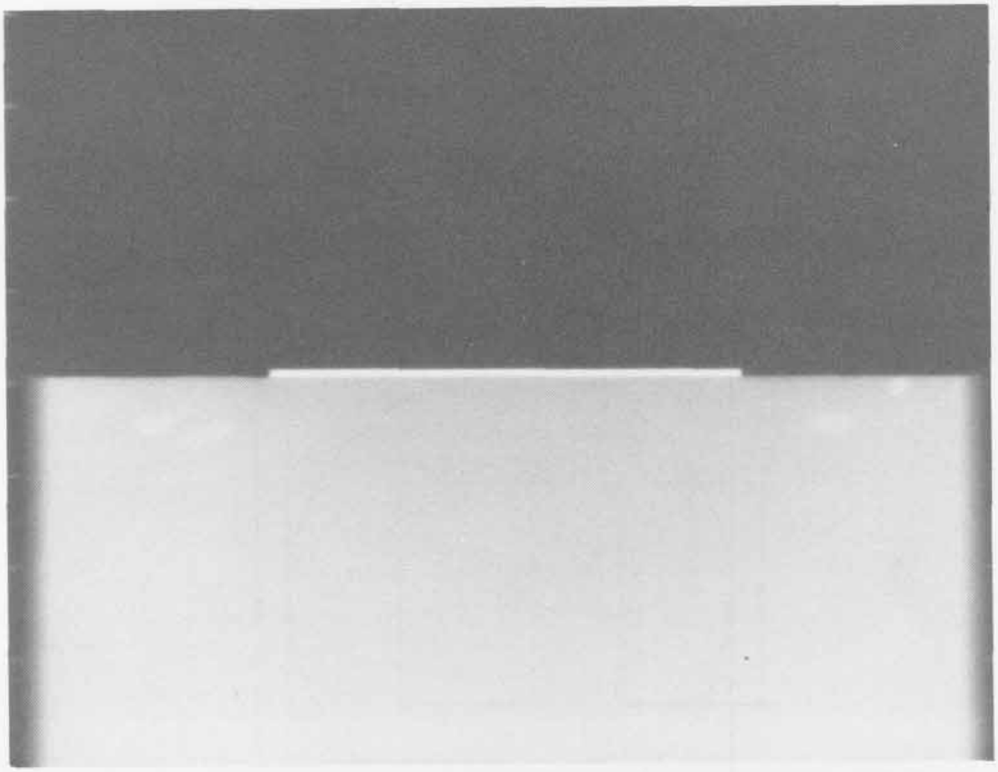


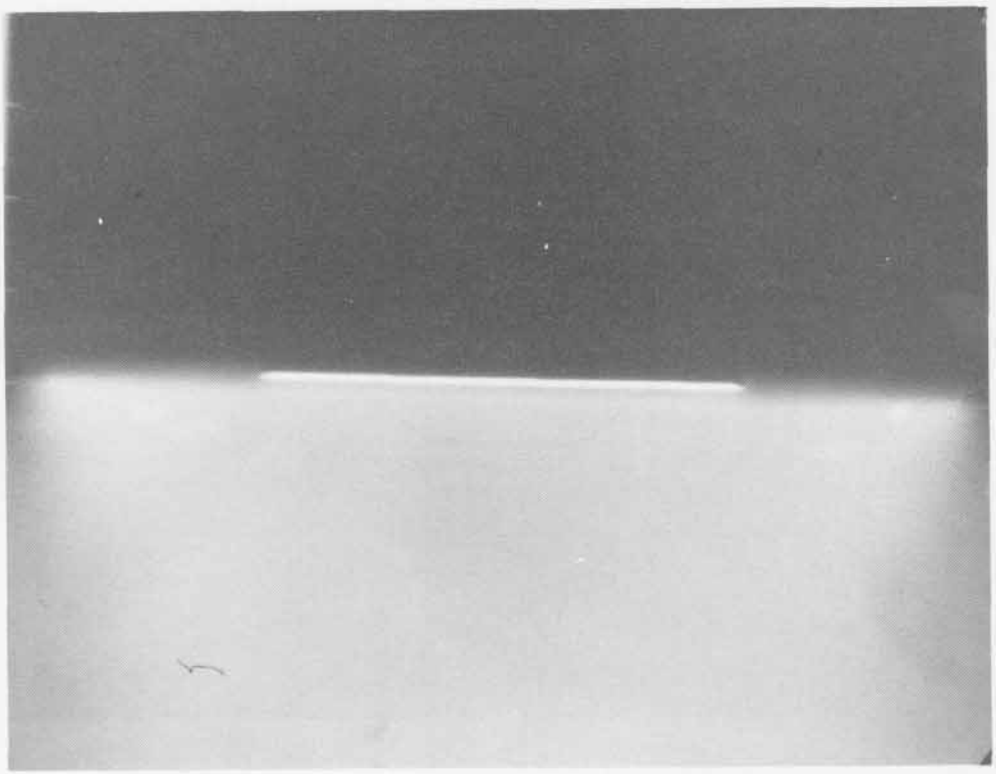


SHOT 529: **Brass Back Surface**
Date: September 7, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 35.99 μs

A 1.58-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 2.565 mm.

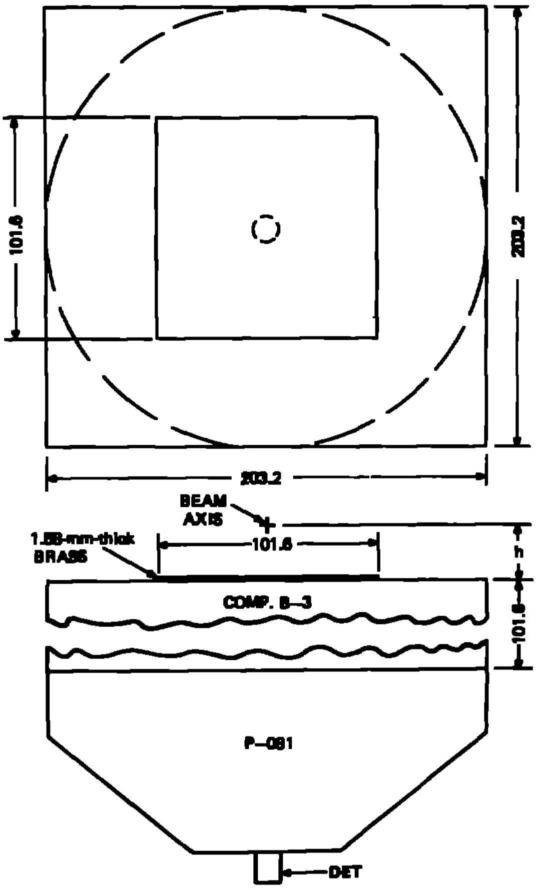


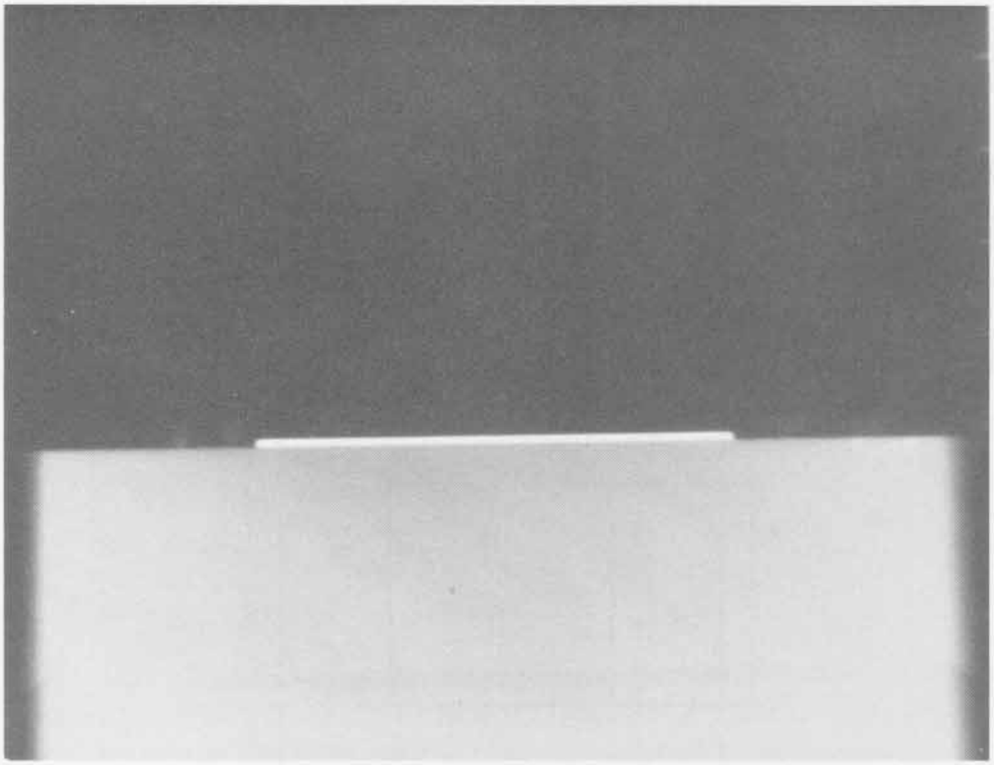


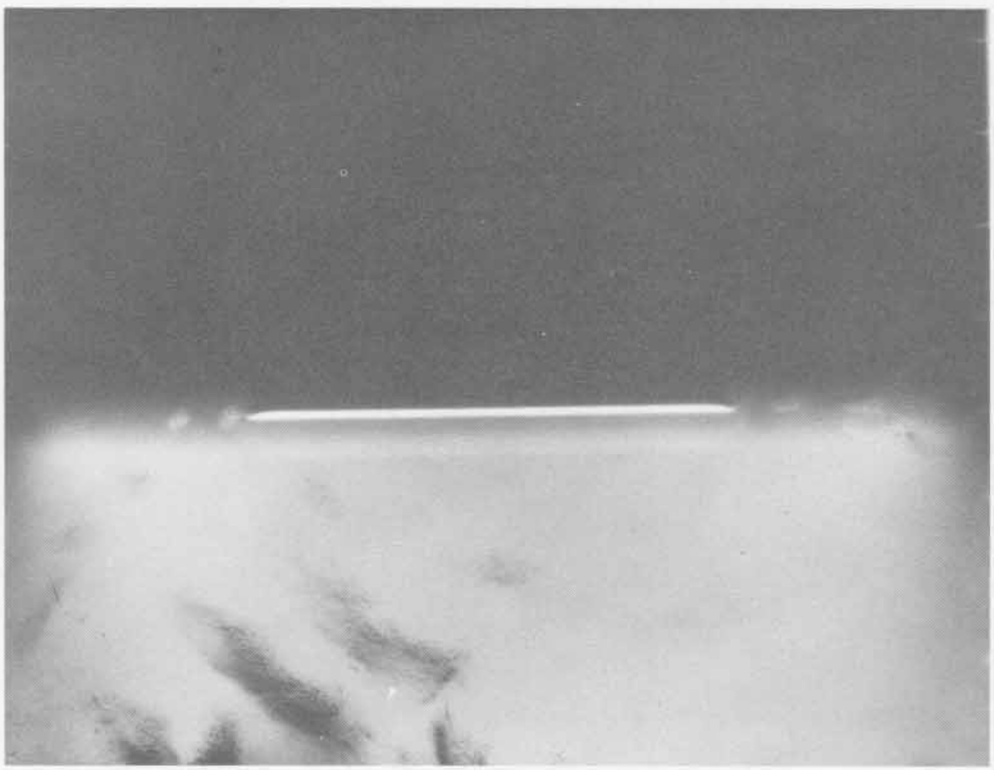


SHOT 530: **Brass Back Surface**
Date: March 1, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 36.70 μs

A 1.58-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 5.054. mm.

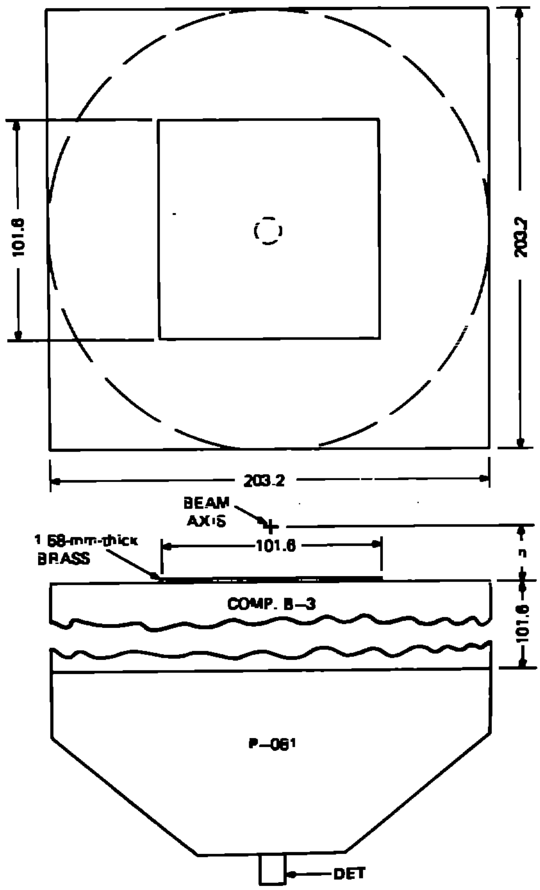


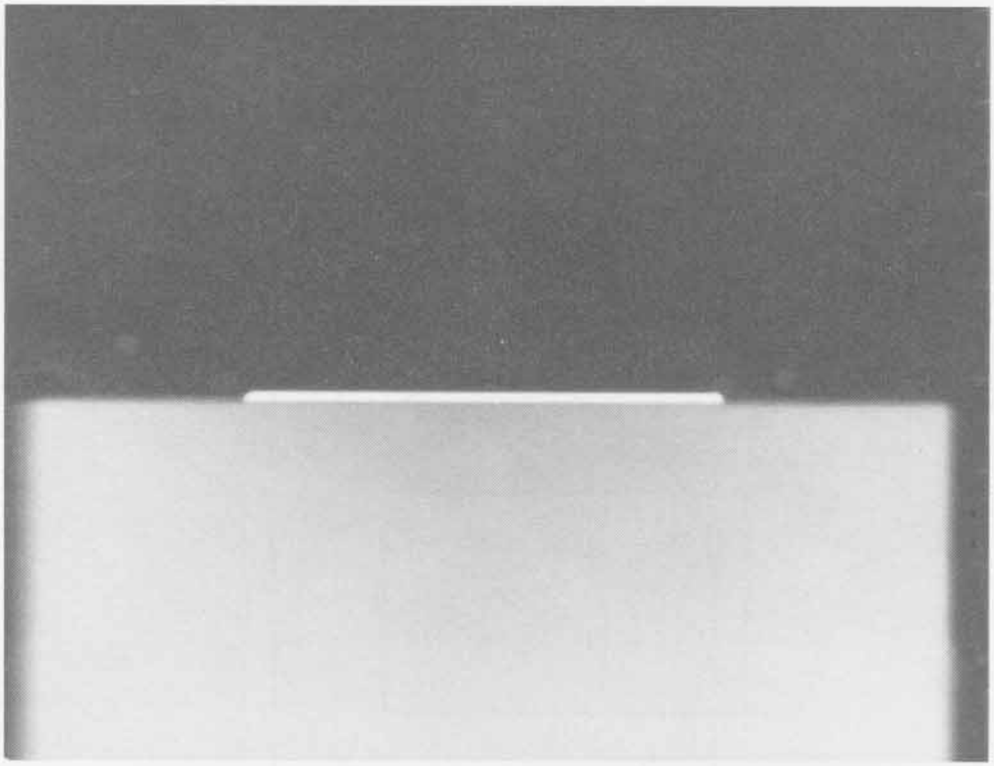


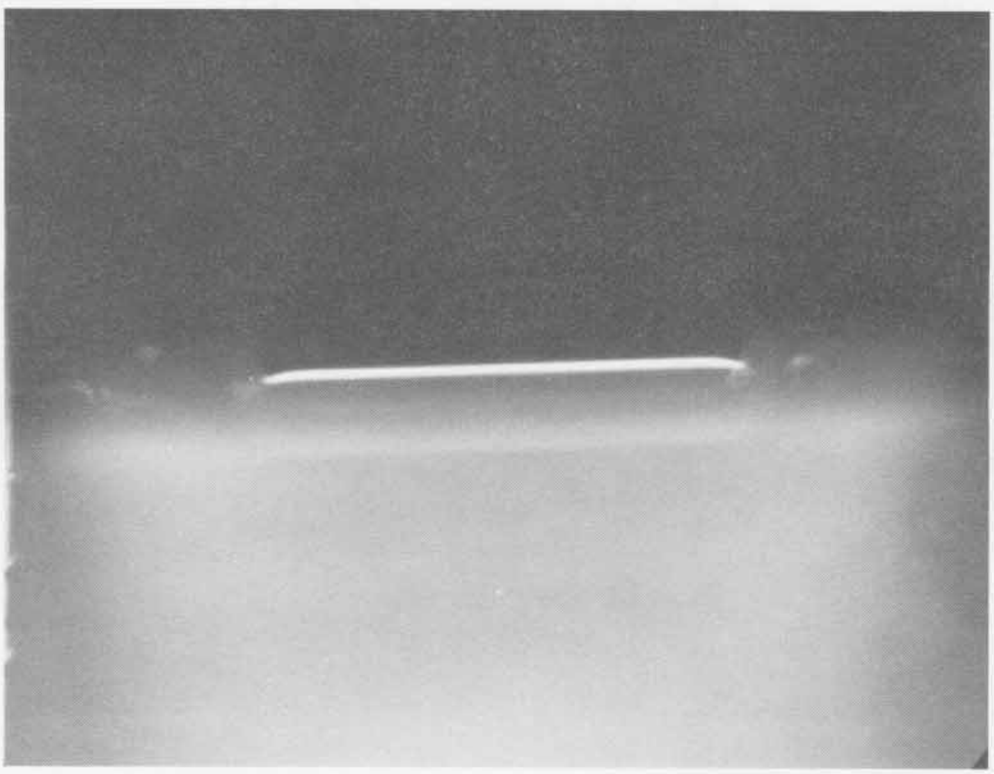


SHOT 531: **Brass Back Surface**
Date: March 1, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 37.73 μs

A 1.58-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 8.56 mm.

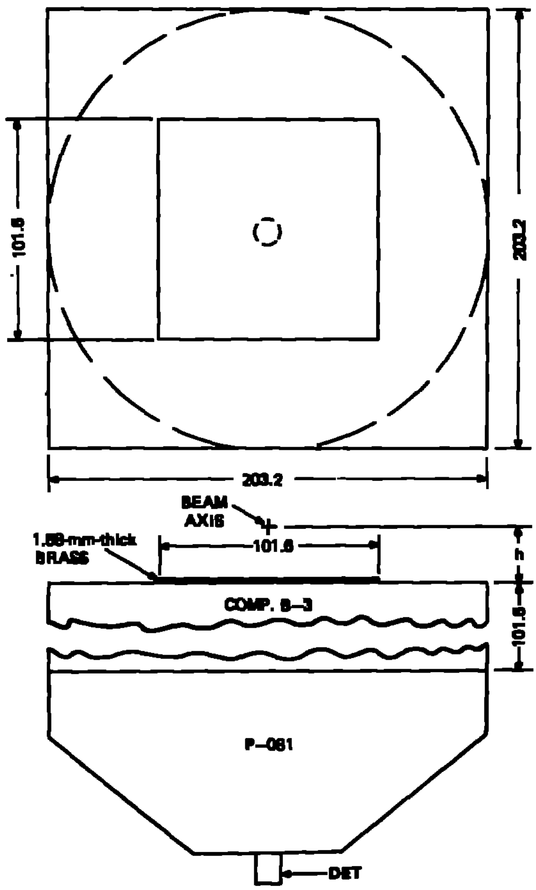


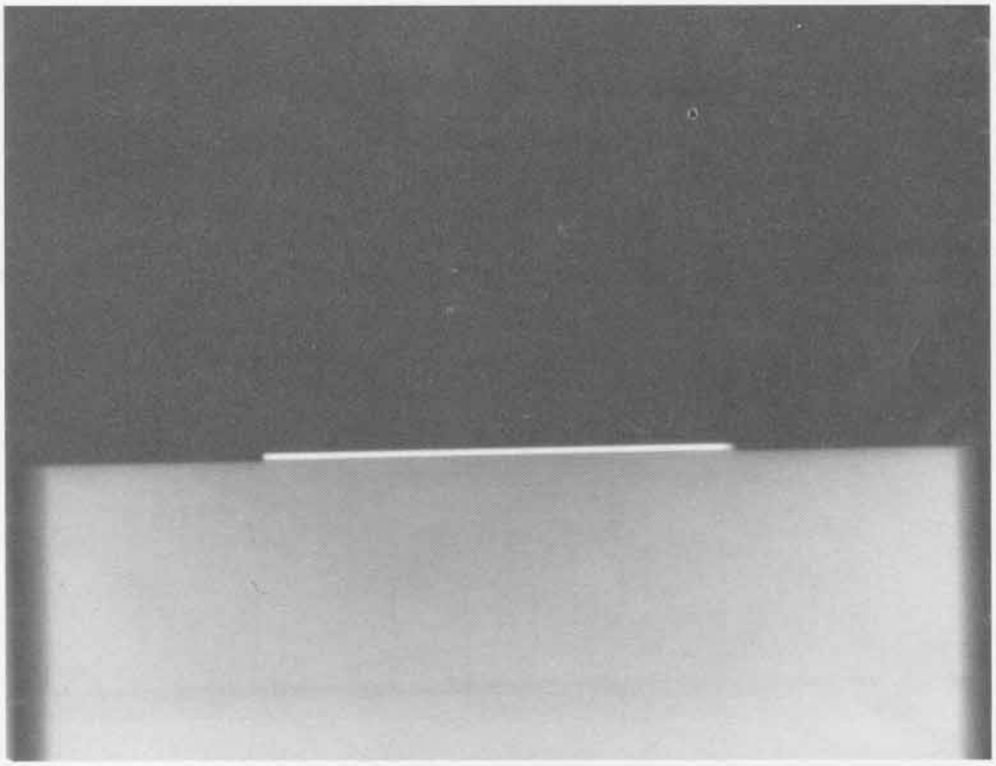


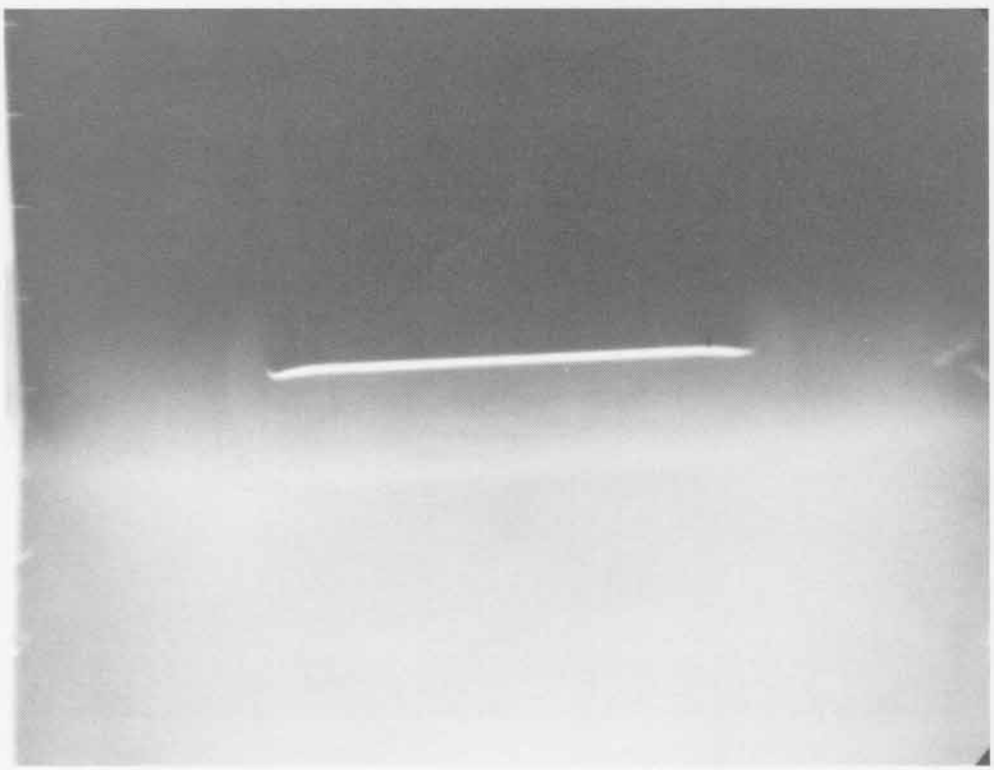


SHOT 532: **Brass Back Surface**
Date: March 21, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 38.62 μs

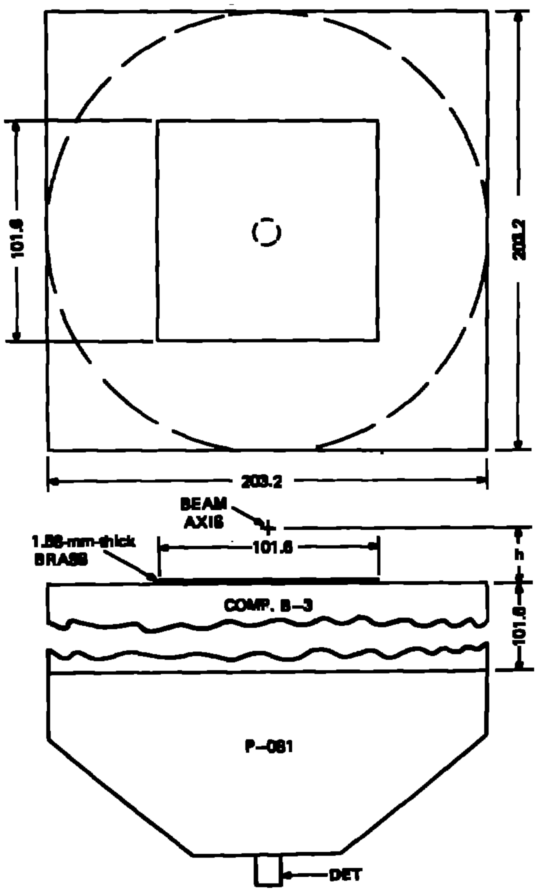
A 1.58-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 11.557 mm.

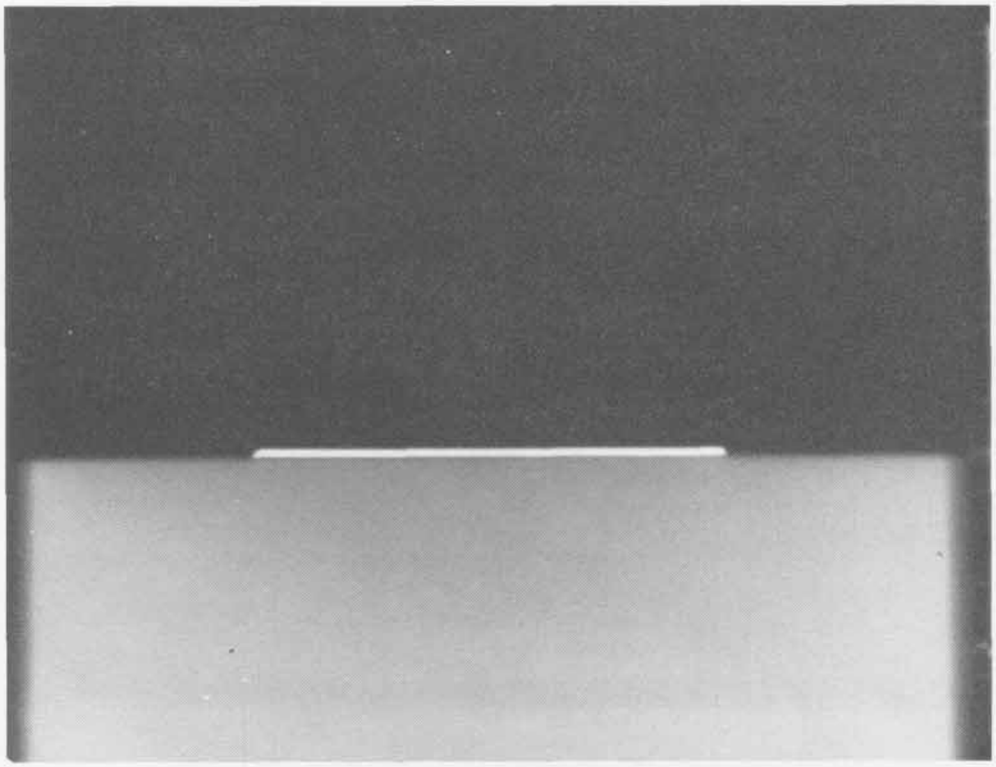


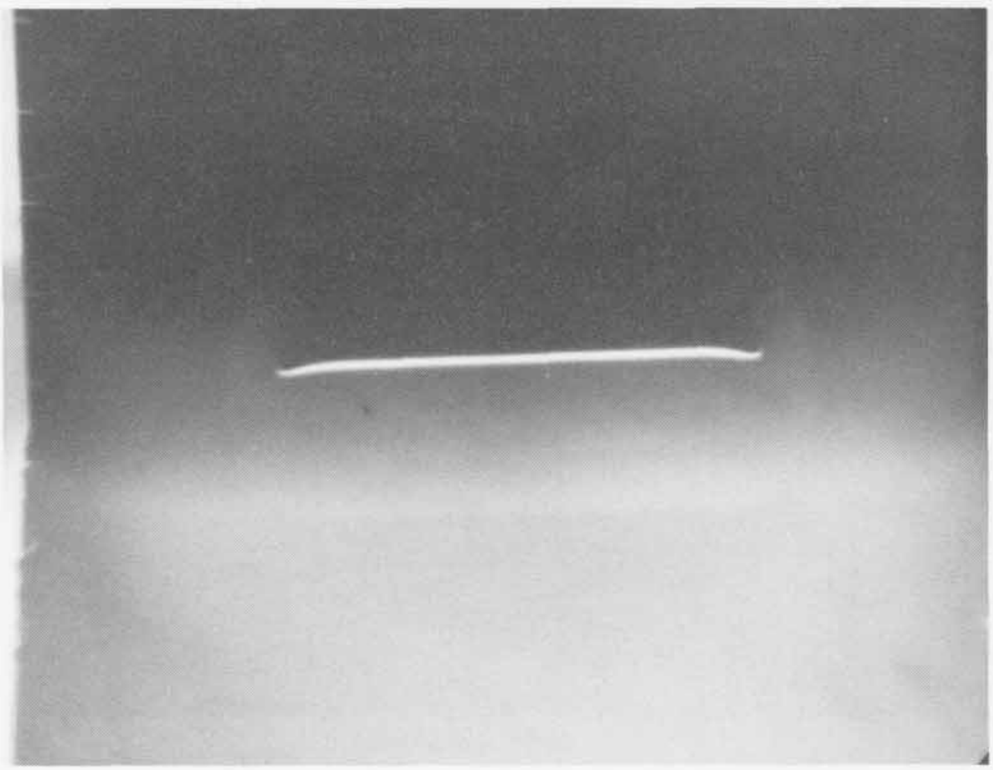




SHOT 533: **Brass Back Surface**
Date: March 21, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 39.61 μs
A 1.58-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 15.06 mm.

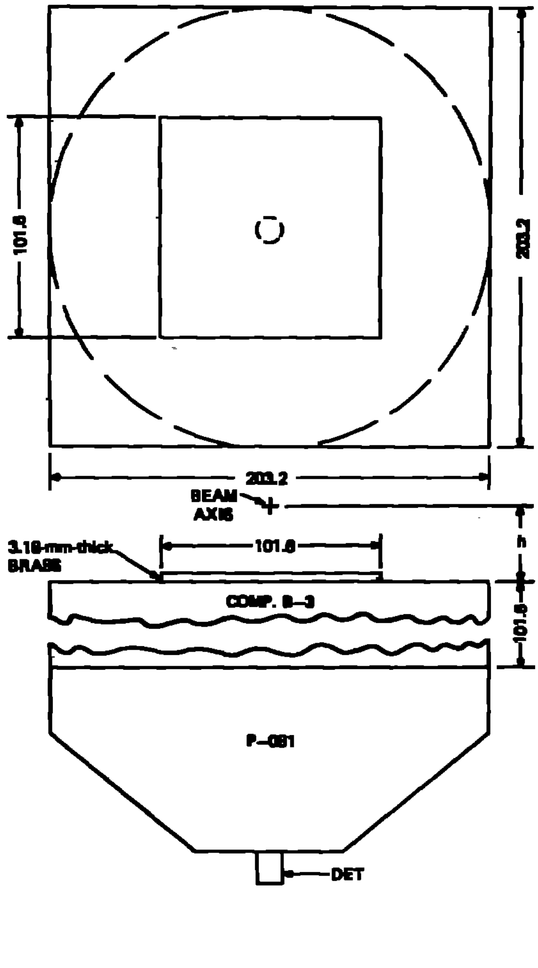


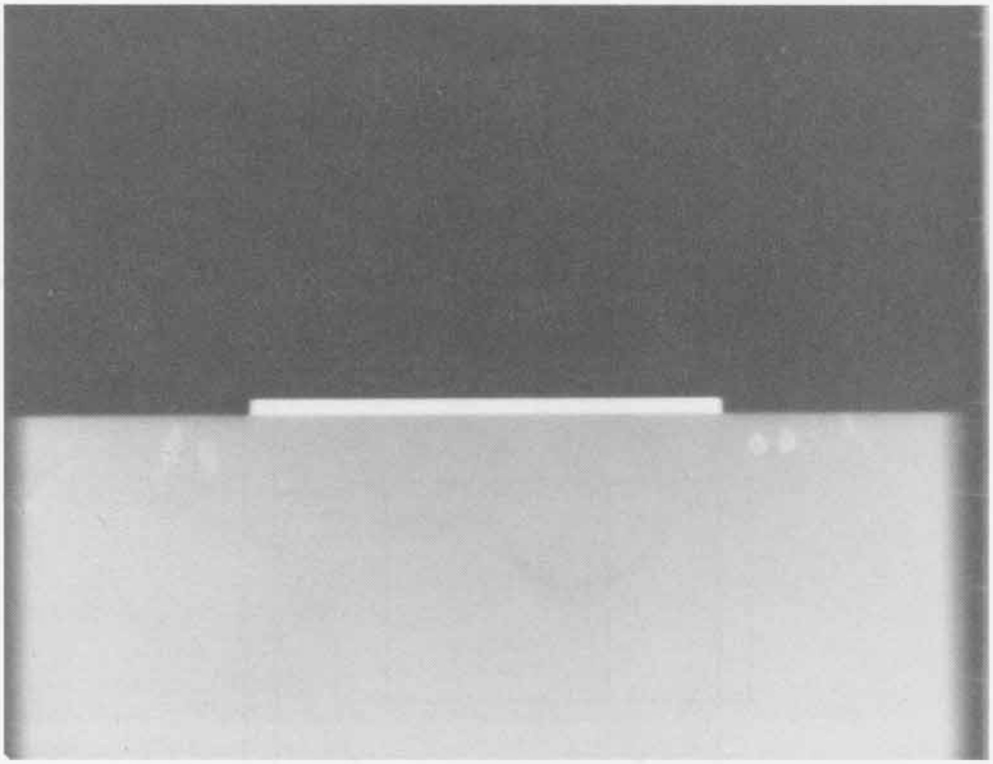


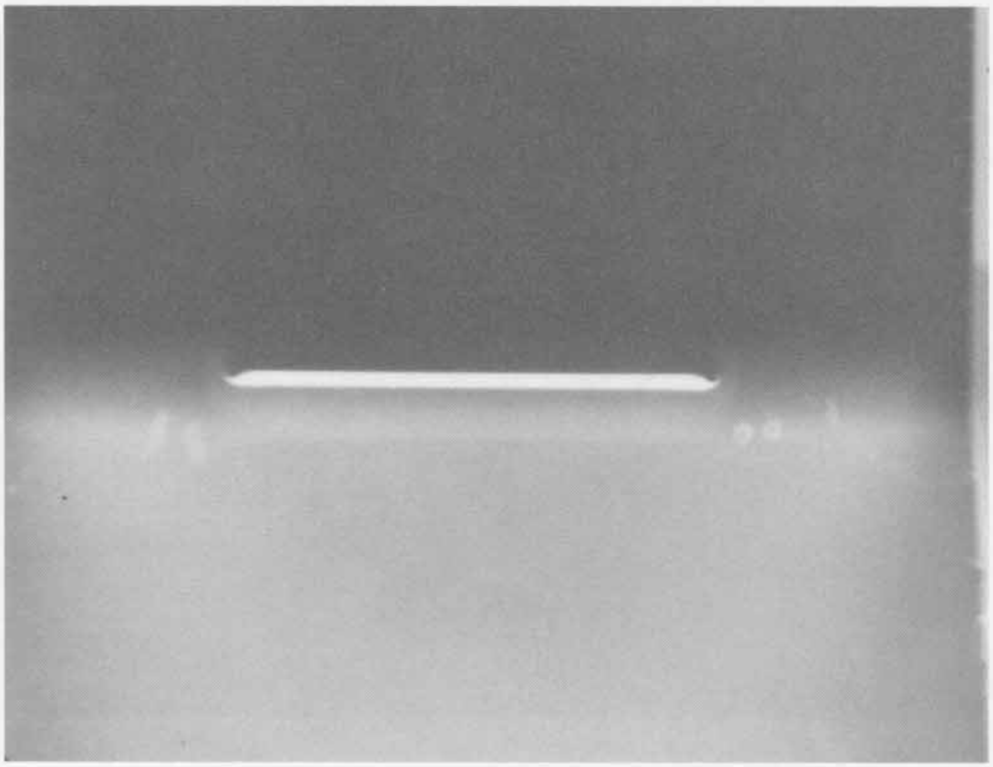


SHOT 535: **Brass Back Surface**
Date: September 8, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 37.15 μs

A 3.18-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 6.172 mm.

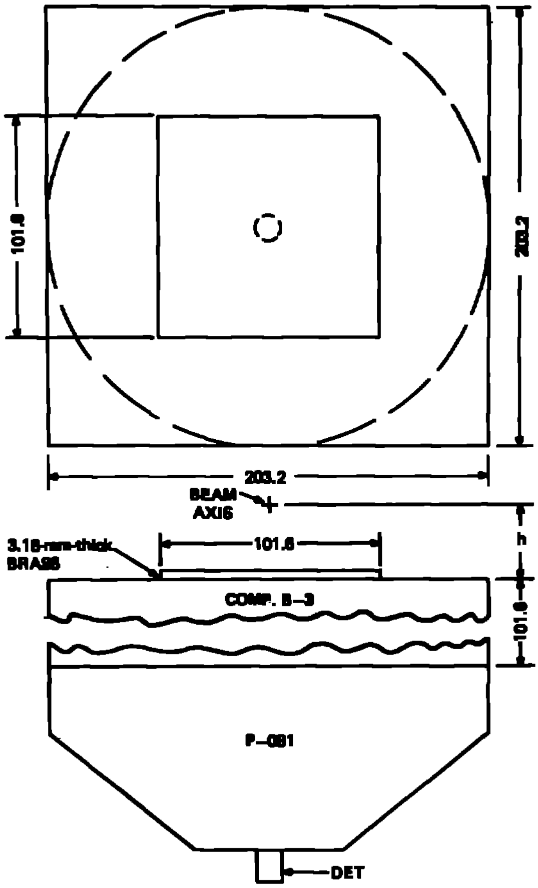


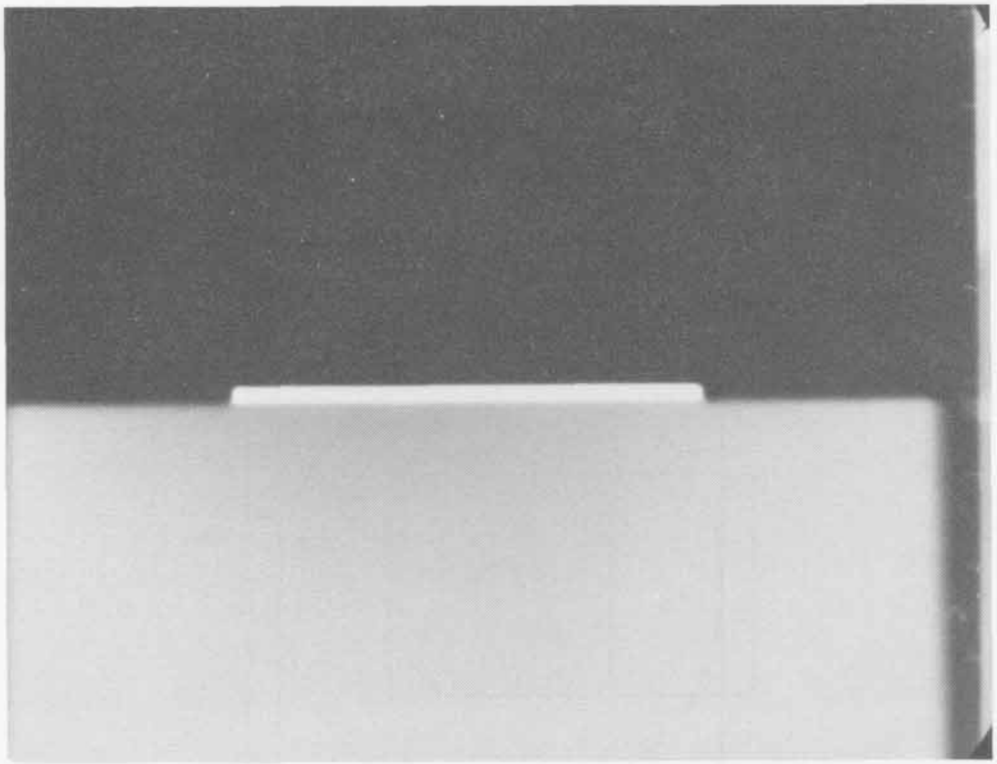


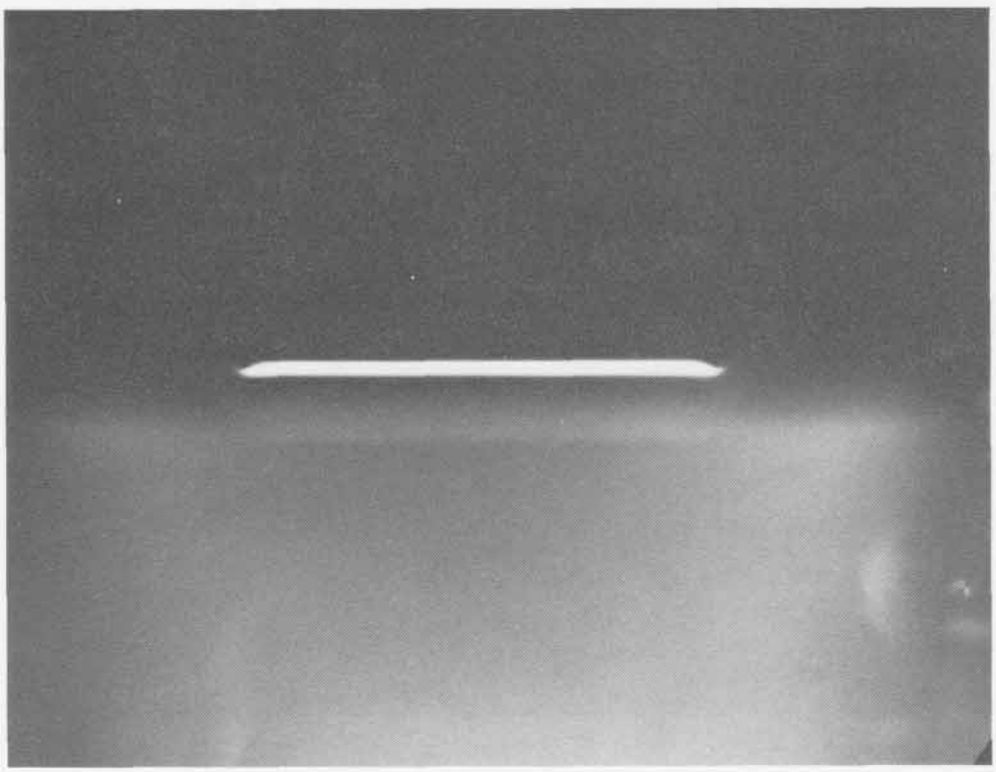


SHOT 536:	**Brass Back Surface**
Date:	August 1, 1967
Experimenter:	Roger W. Taylor
Radiographic Time:	37.70 μs

A 3.18-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 7.67 mm.

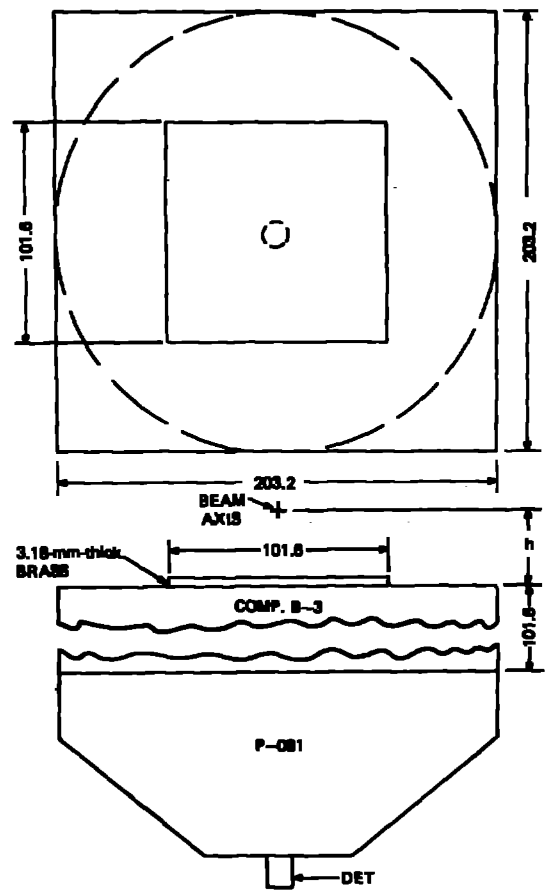


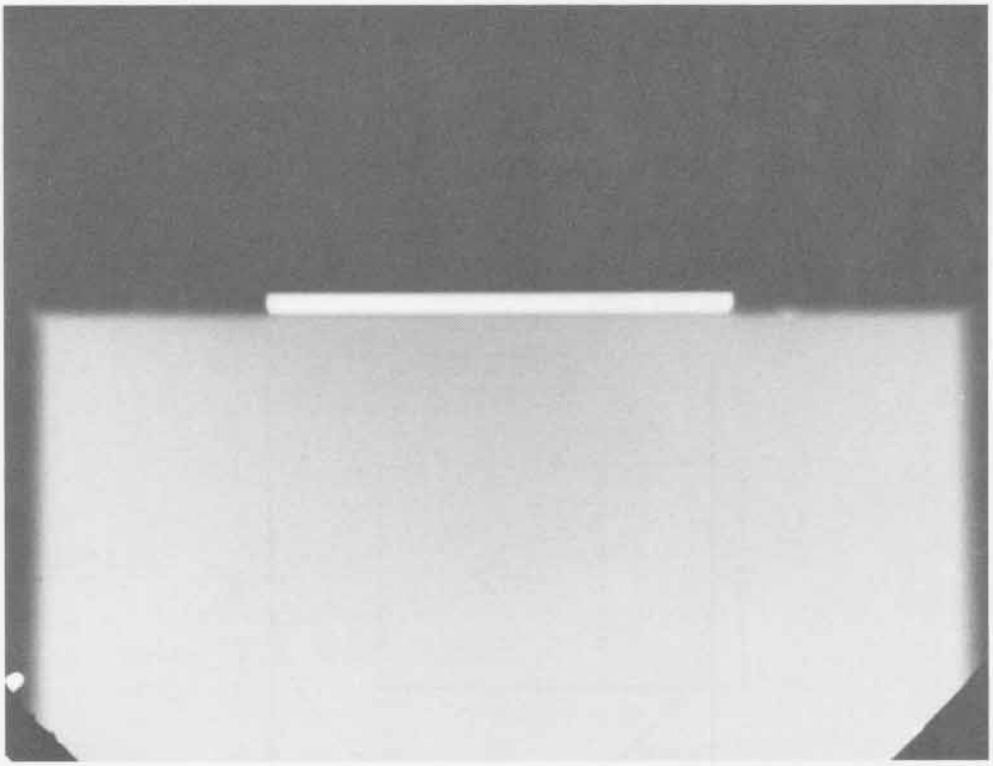


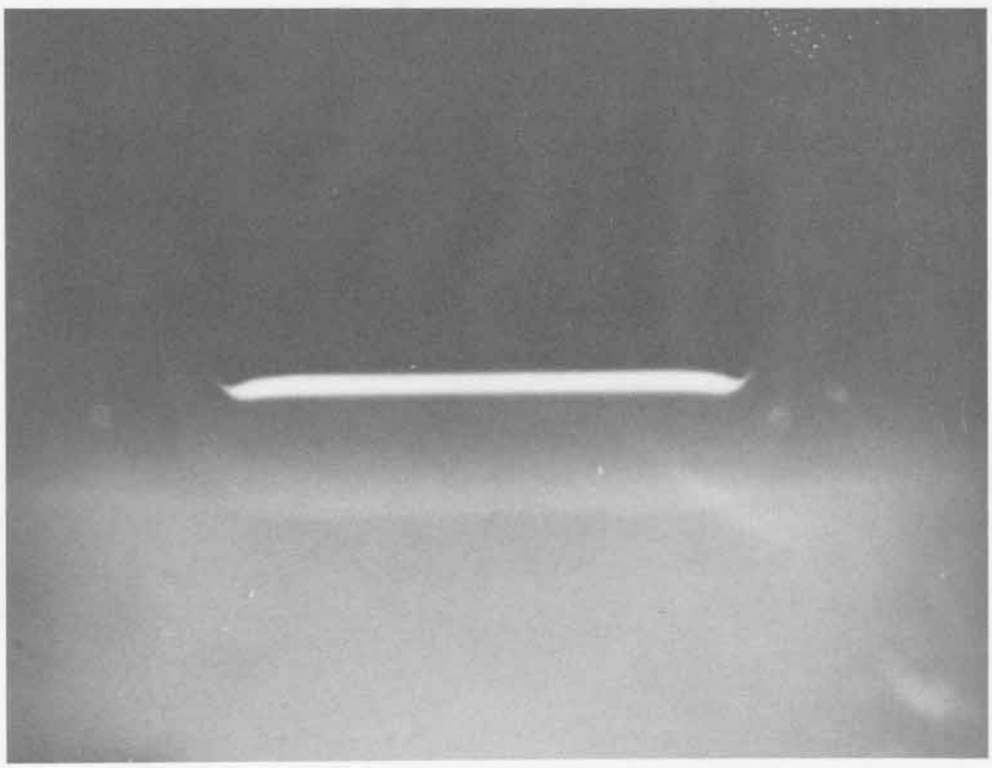


SHOT 537: **Brass Back Surface**
Date: August 3, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 39.24 μs

A 3.18-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 10.16 mm.

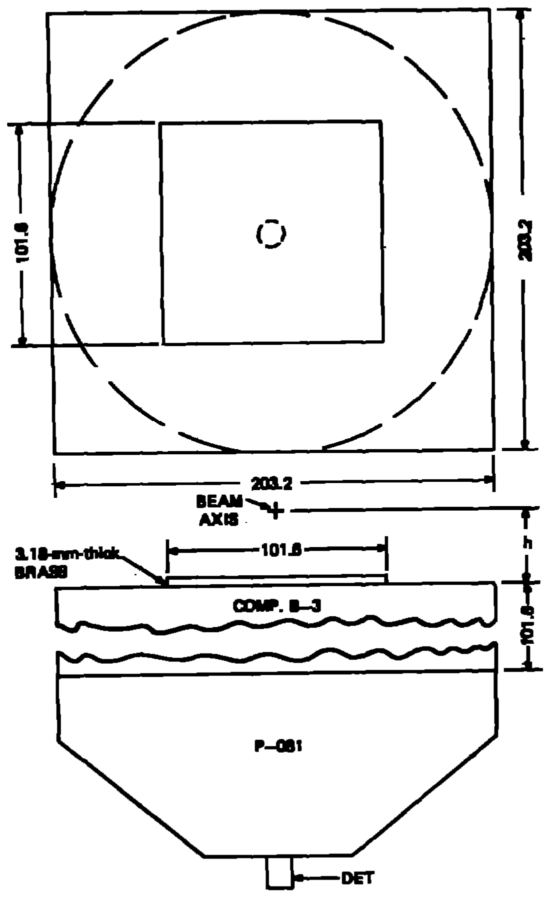


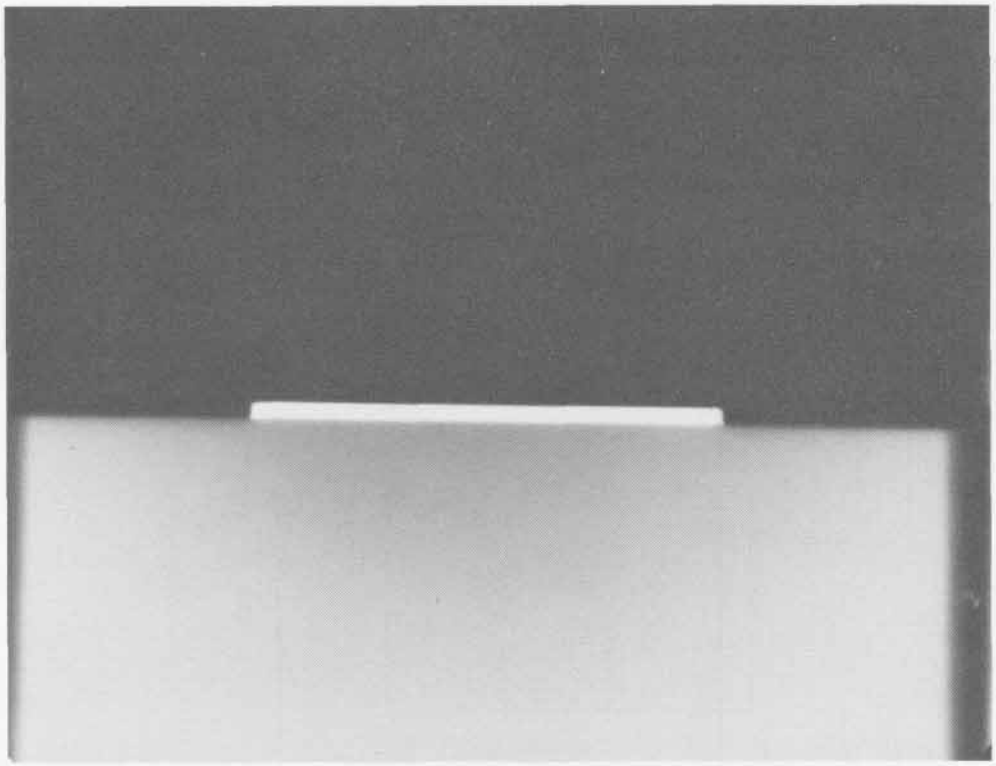


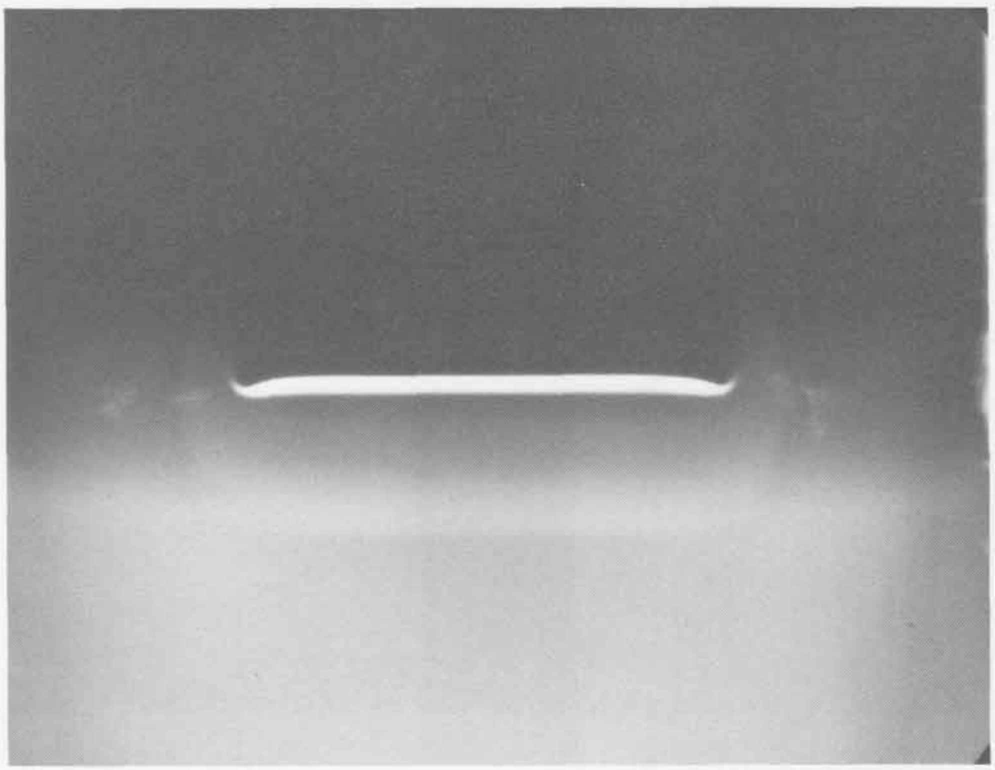


SHOT 538: **Brass Back Surface**
Date: August 16, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 39.88 μs

A 3.18-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 13.182 mm.

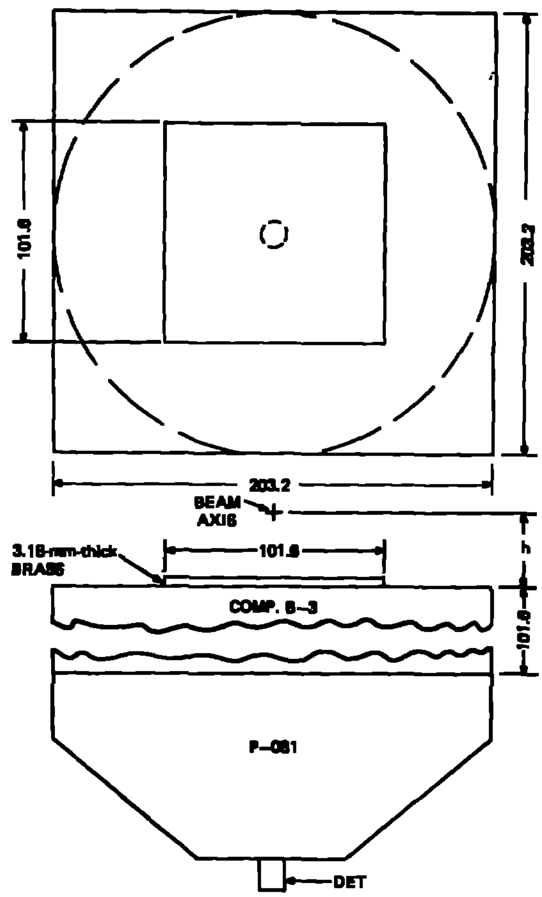


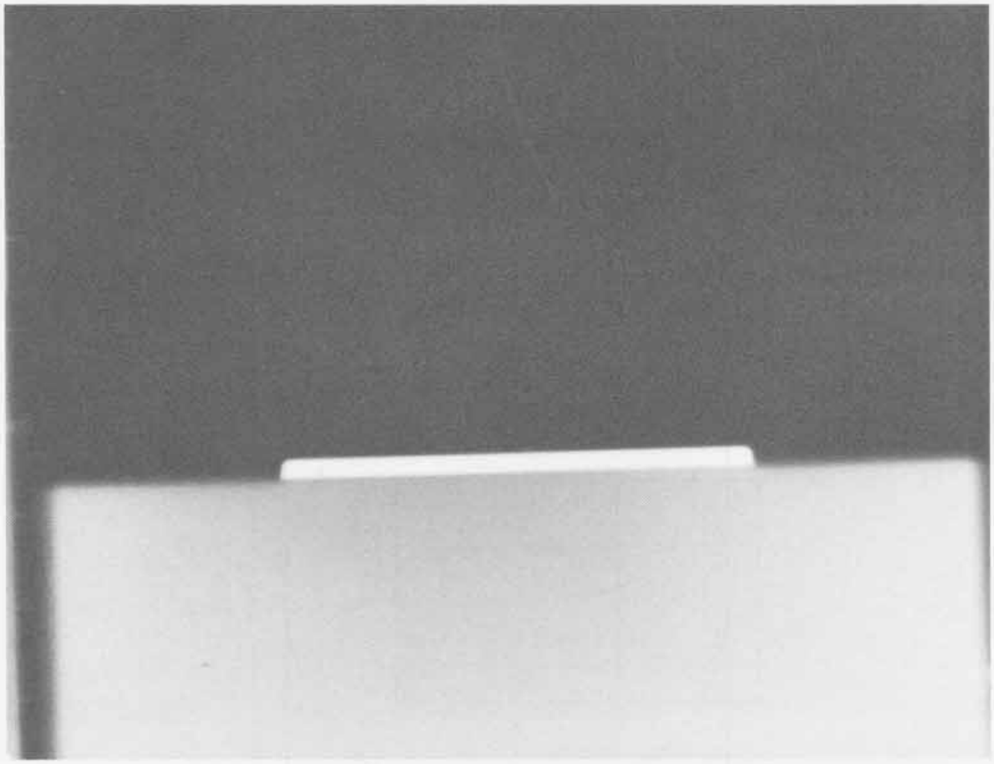


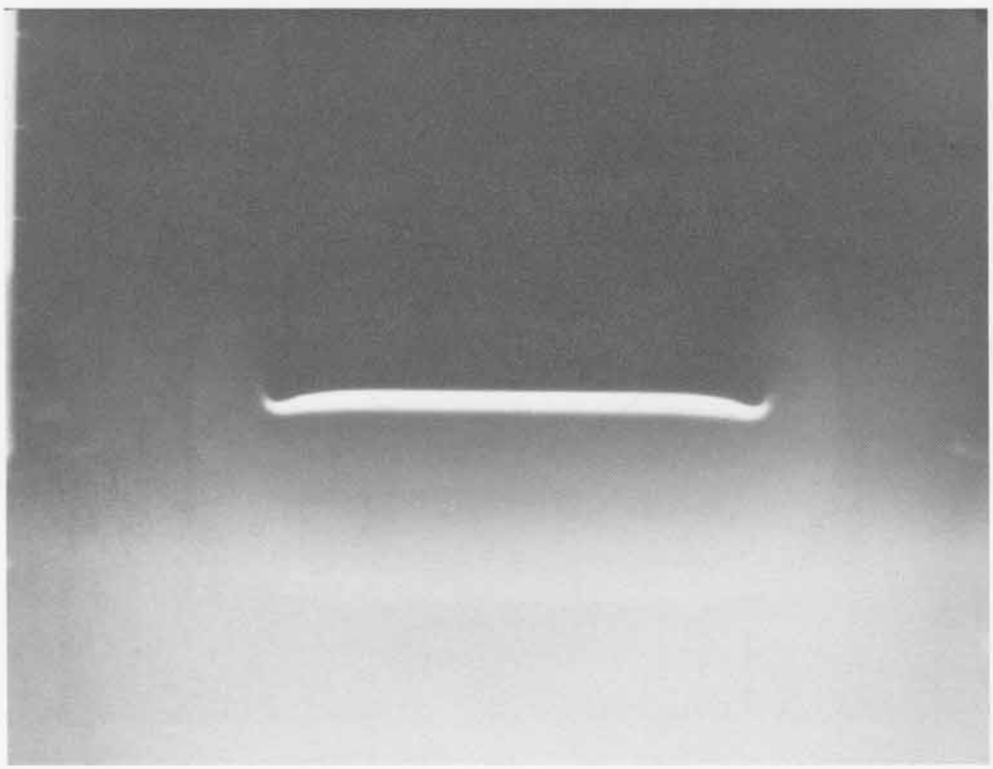


SHOT 539: **Brass Back Surface**
Date: August 10, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 41.20 μs

A 3.18-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 16.66 mm.

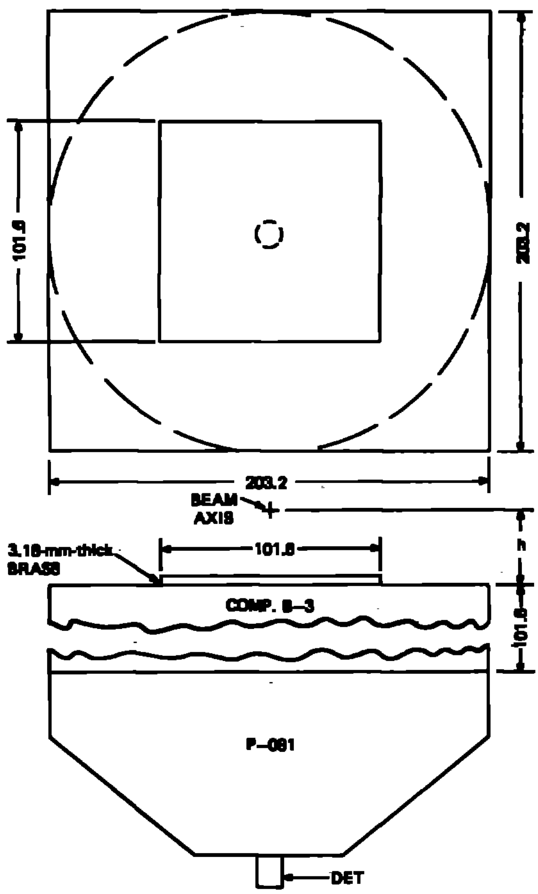


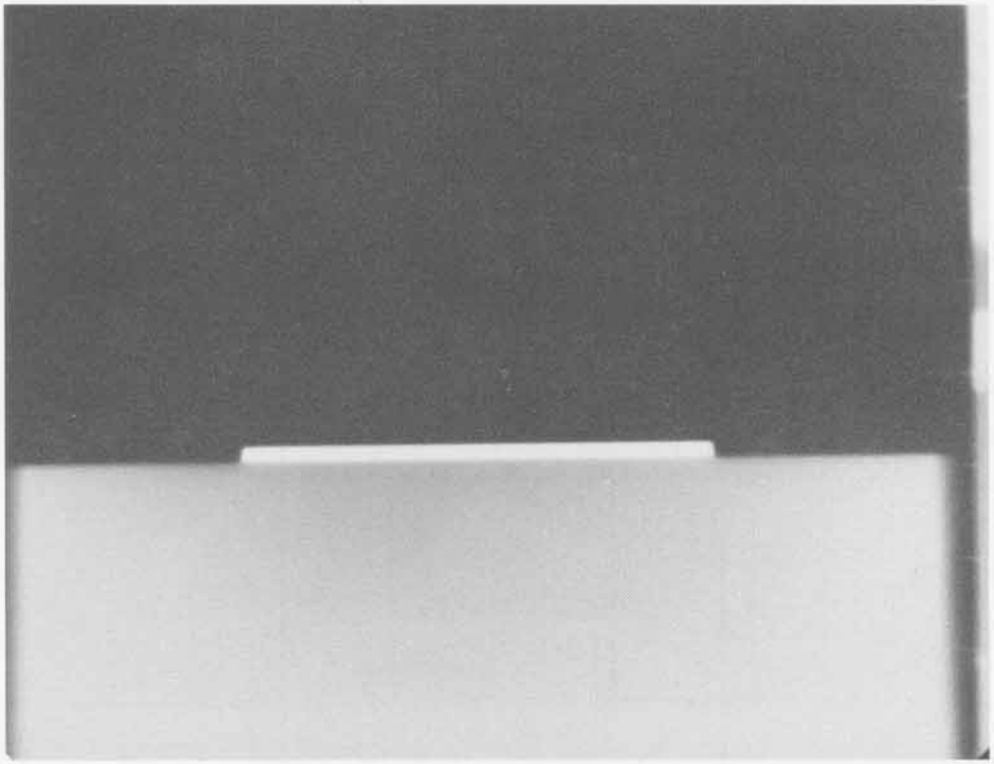


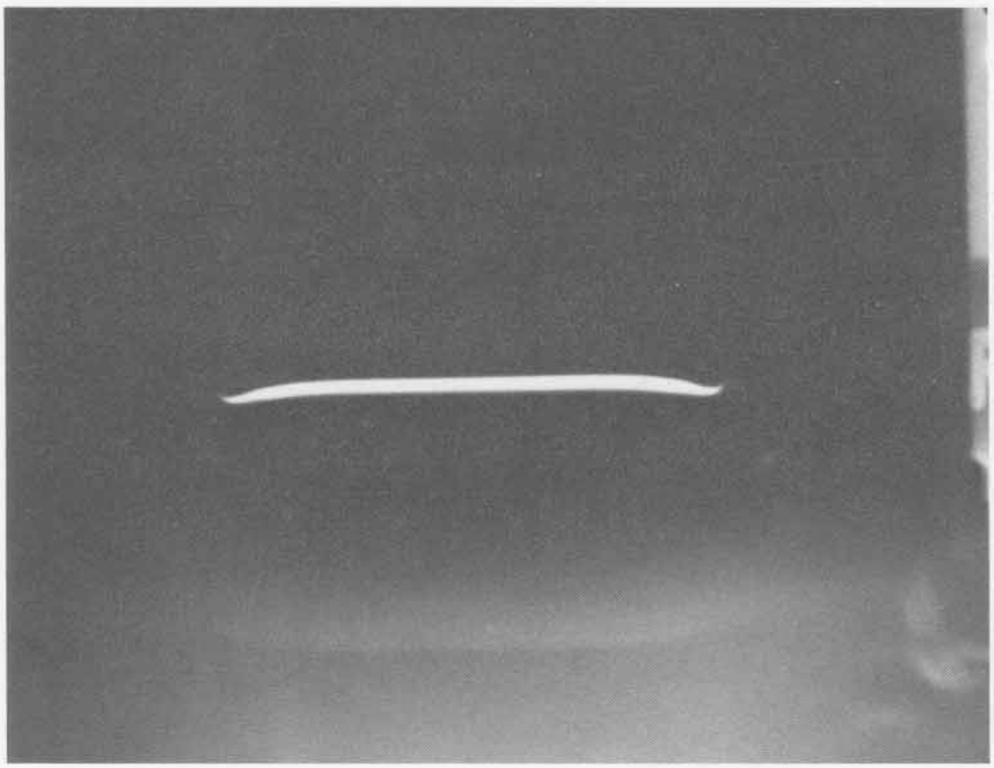


SHOT 540:	**Brass Back Surface**
Date:	September 1, 1967
Experimenter:	Roger W. Taylor
Radiographic Time:	42.70 μs

A 3.18-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 20.65 mm.

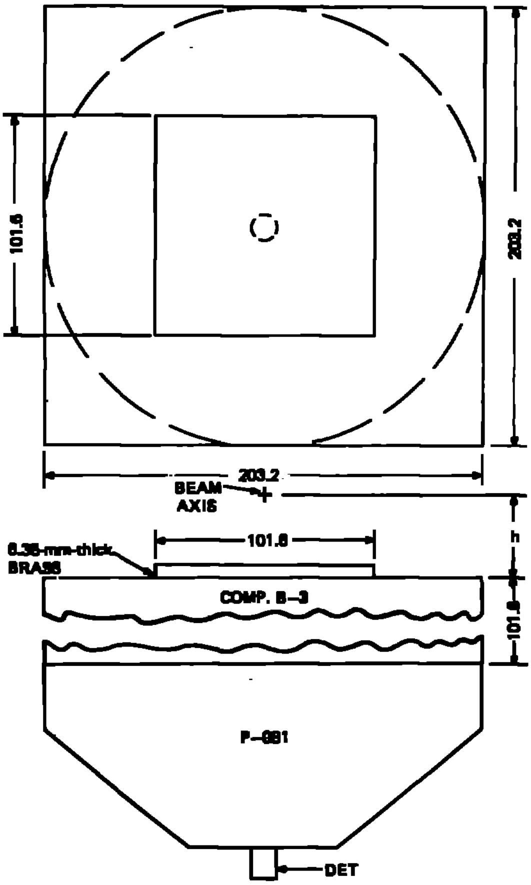


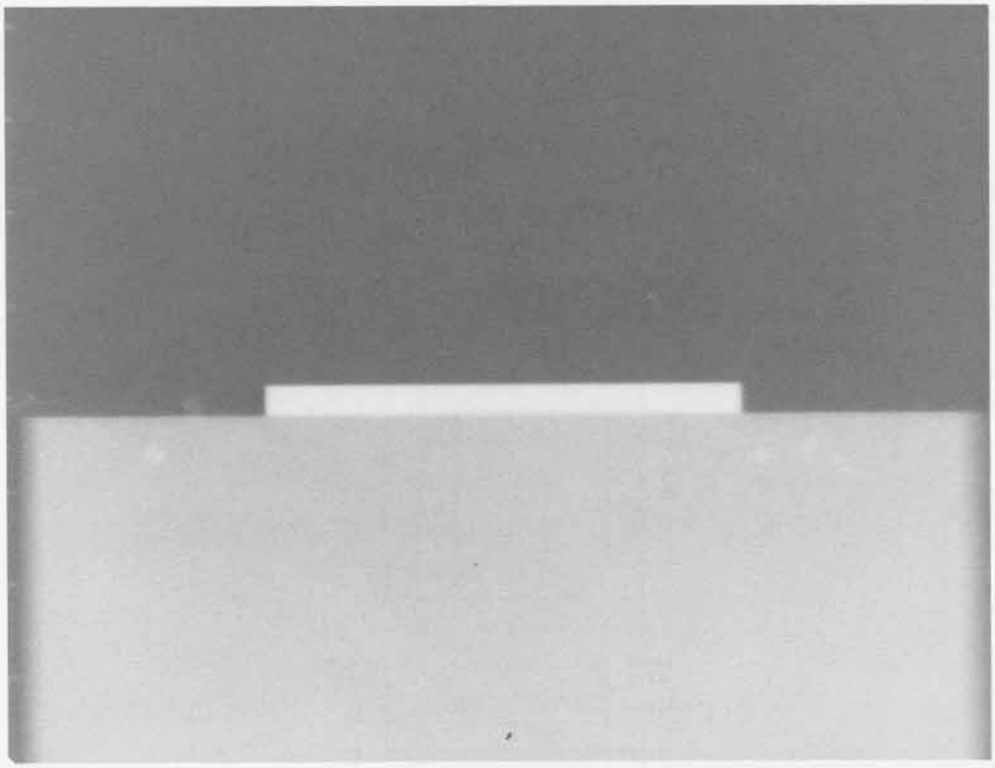


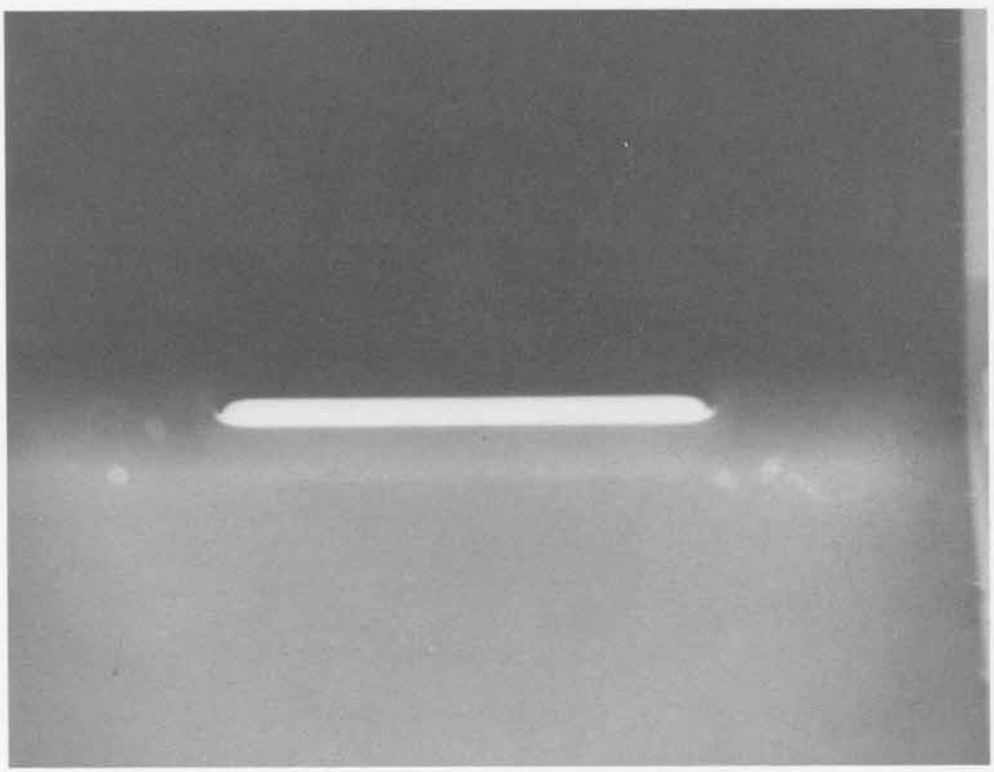


SHOT 541: **Brass Back Surface**
Date: September 14, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 37.43 μs

A 6.35-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 7.85 mm.

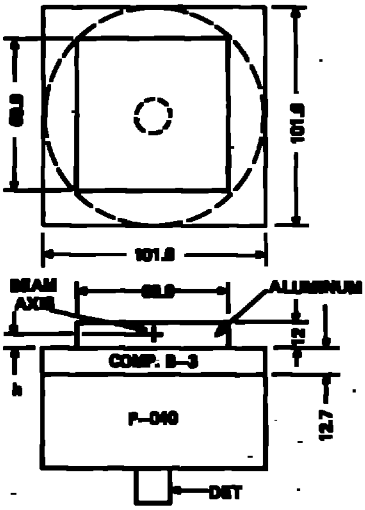


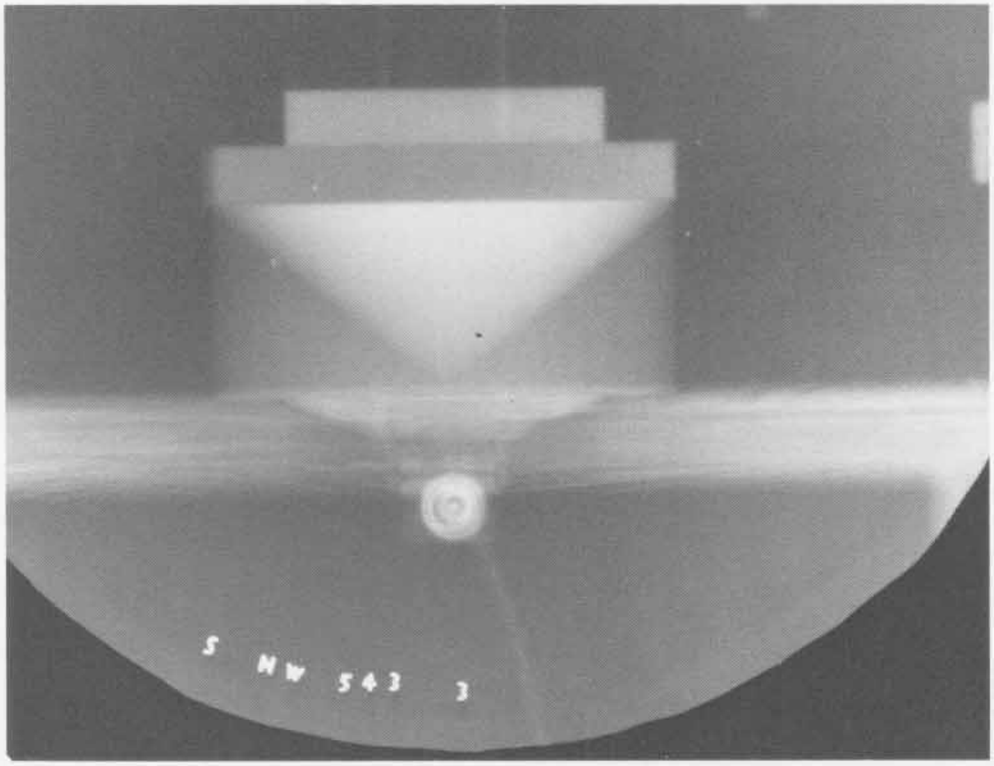


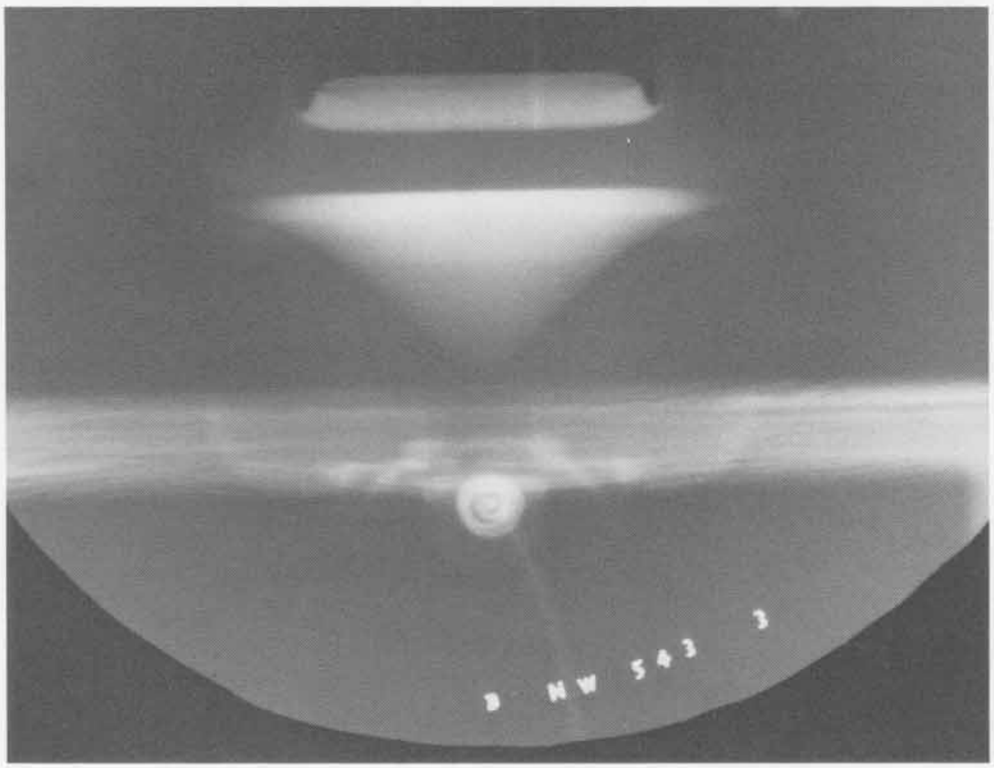


SHOT 543: Aluminum Back Surface
Date: February 20, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 18.17 μs

A 12.0-mm-thick aluminum plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 4.19 mm.

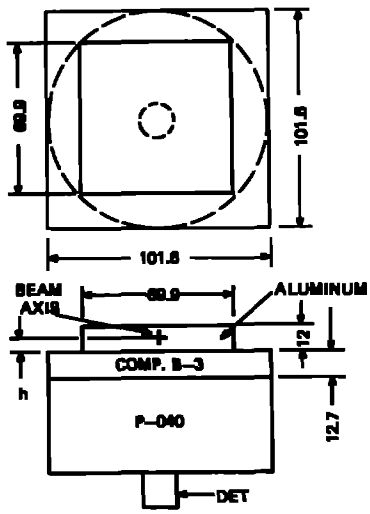


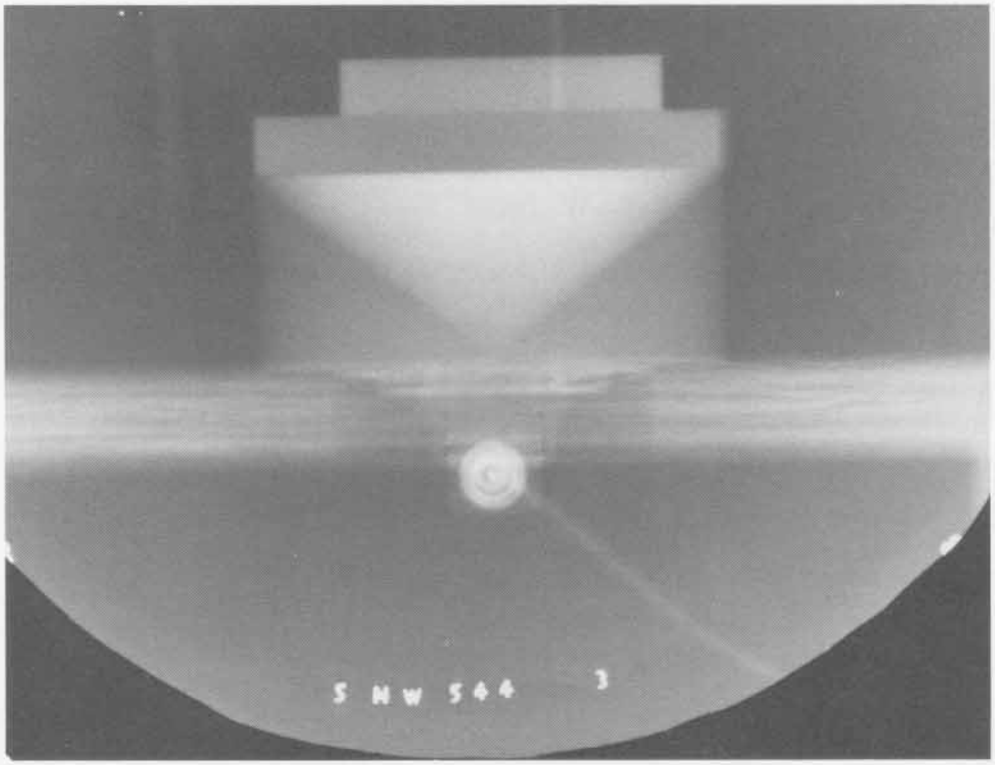

S NW 543 3

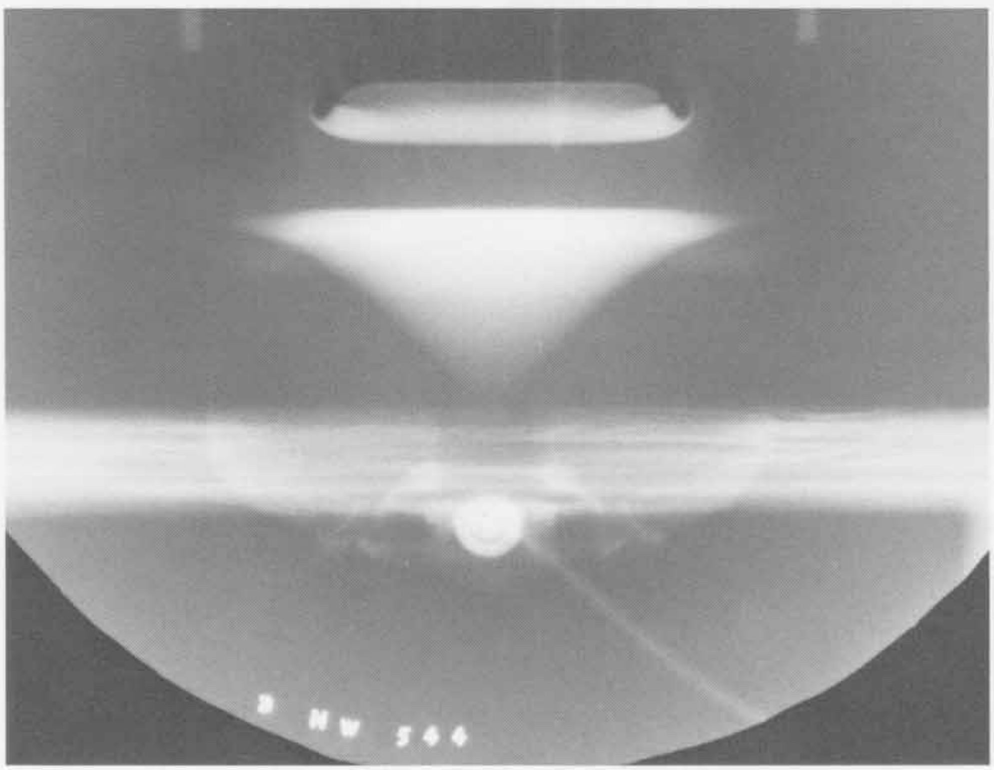

3 NW 543 3

SHOT 544: **Aluminum Back Surface**
Date: February 20, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 19.17 μs

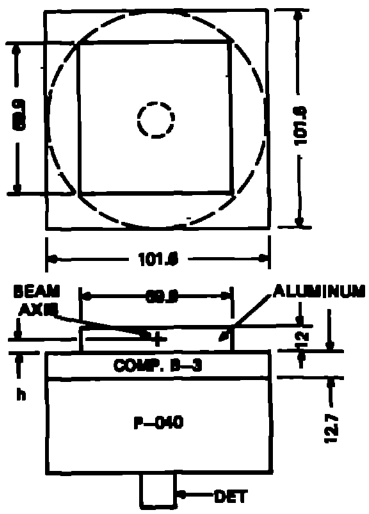
A 12.0-mm-thick aluminum plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 5.41 mm.

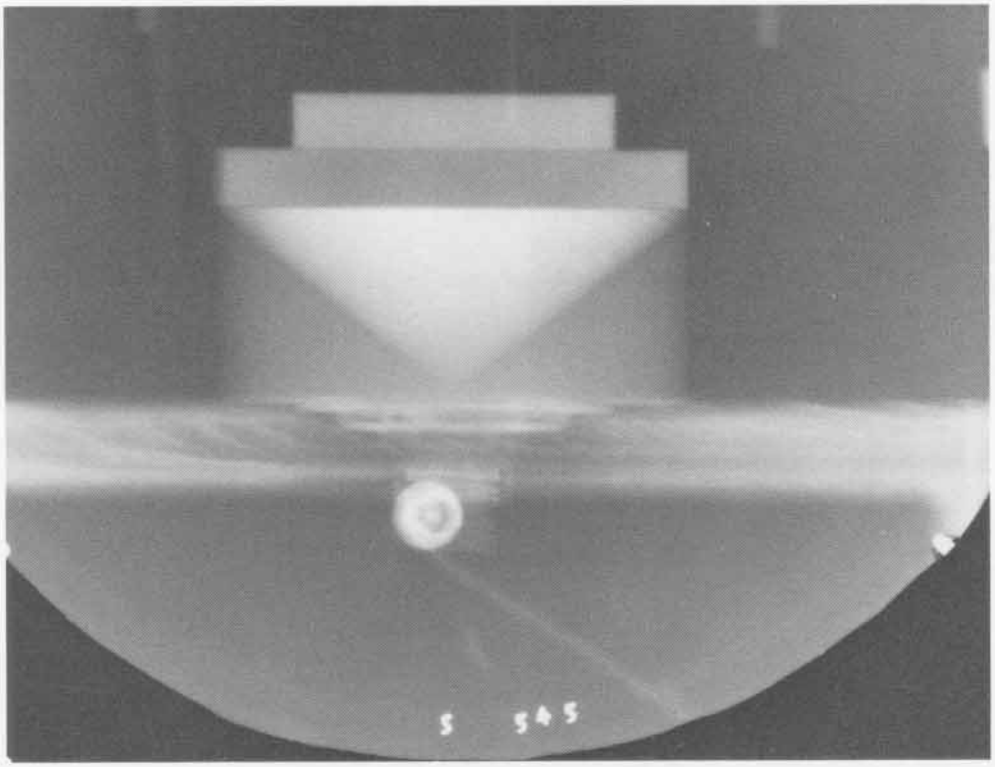


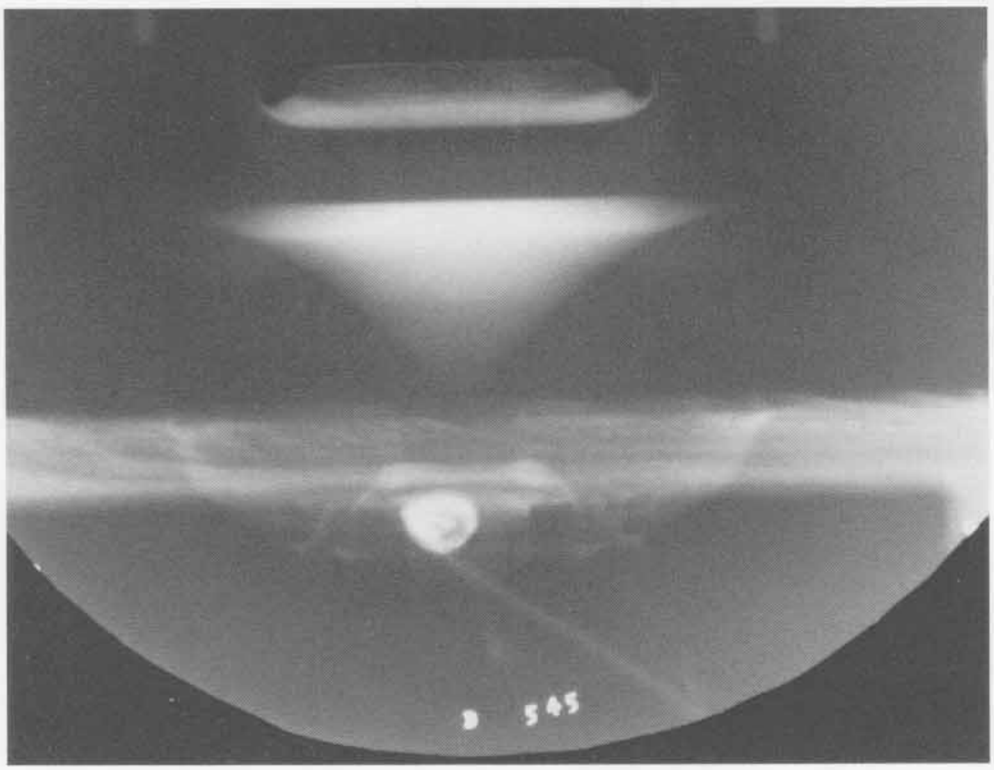

5 NW 544 3


NW 544

SHOT 545: **Aluminum Back Surface**
Date: February 20, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 20.20 μs
A 12.0-mm-thick aluminum plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 6.50 mm.

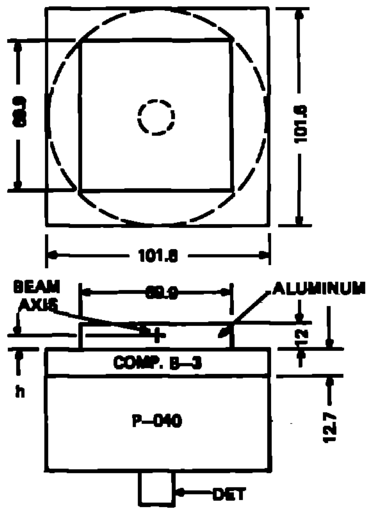


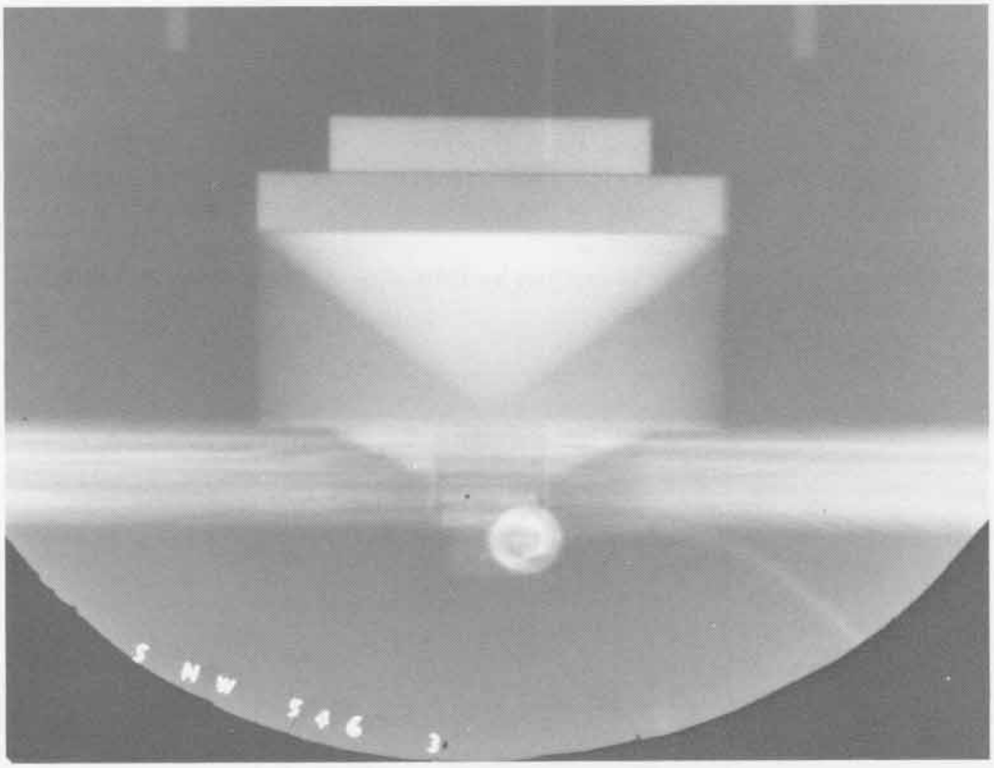


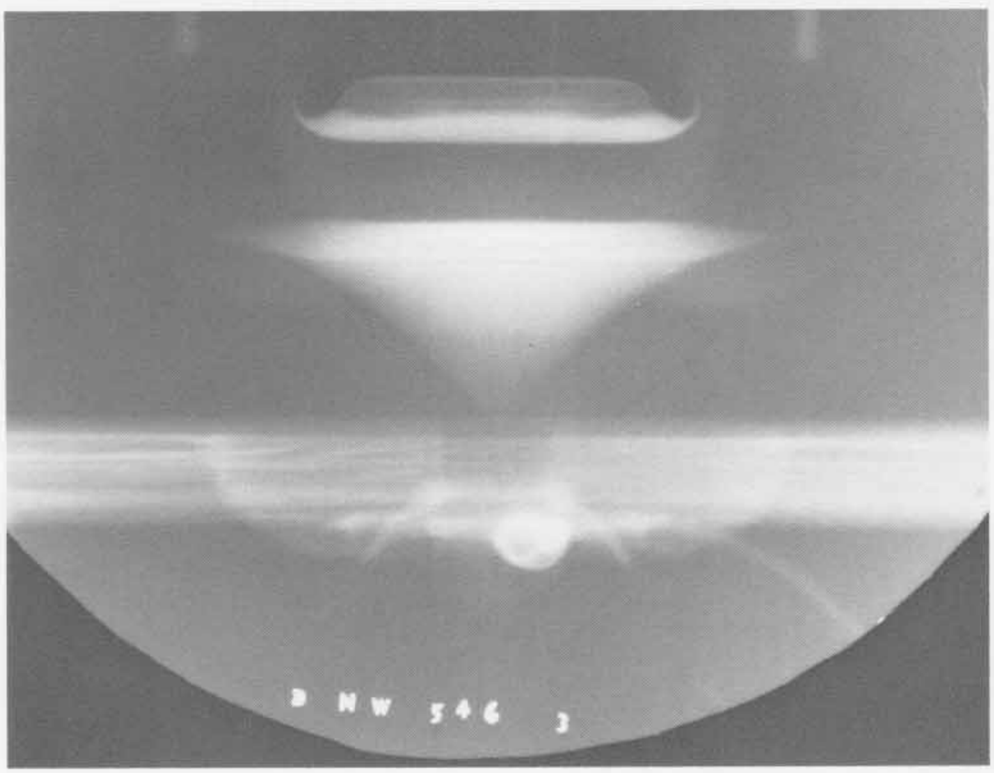


SHOT 546: **Aluminum Back Surface**
Date: February 25, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 21.10 μs

A 12.0-mm-thick aluminum plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 8.0 mm.

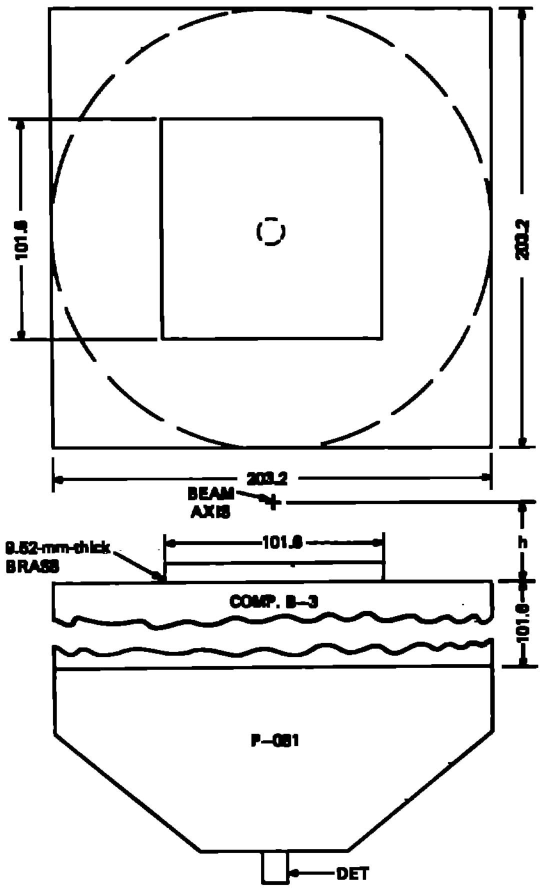


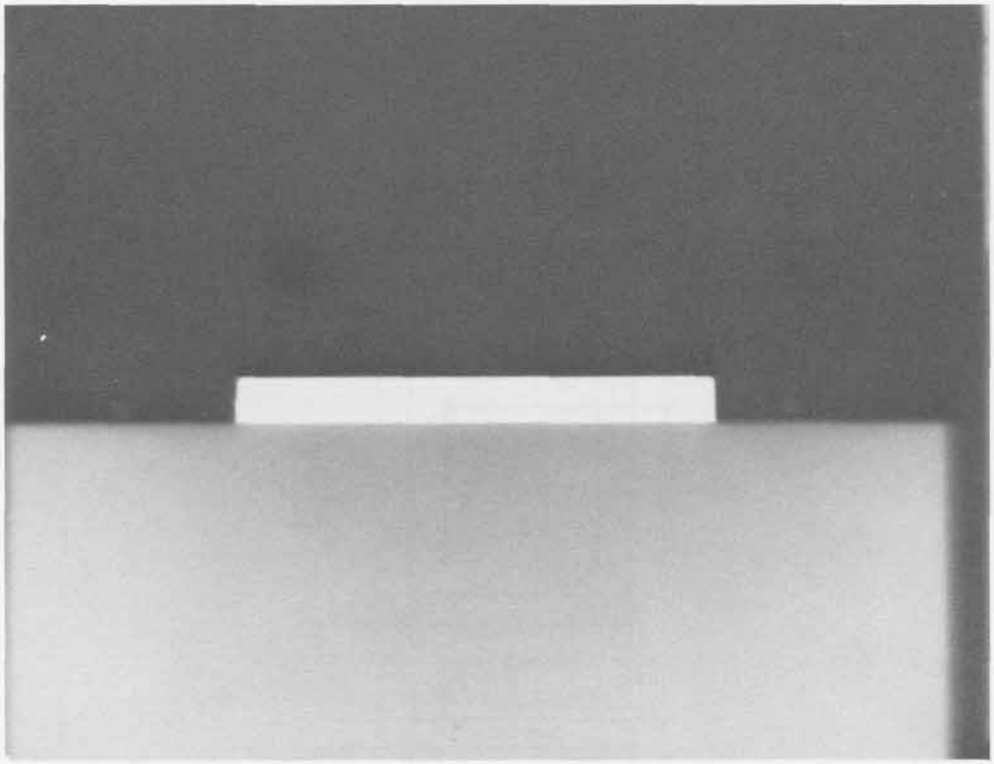


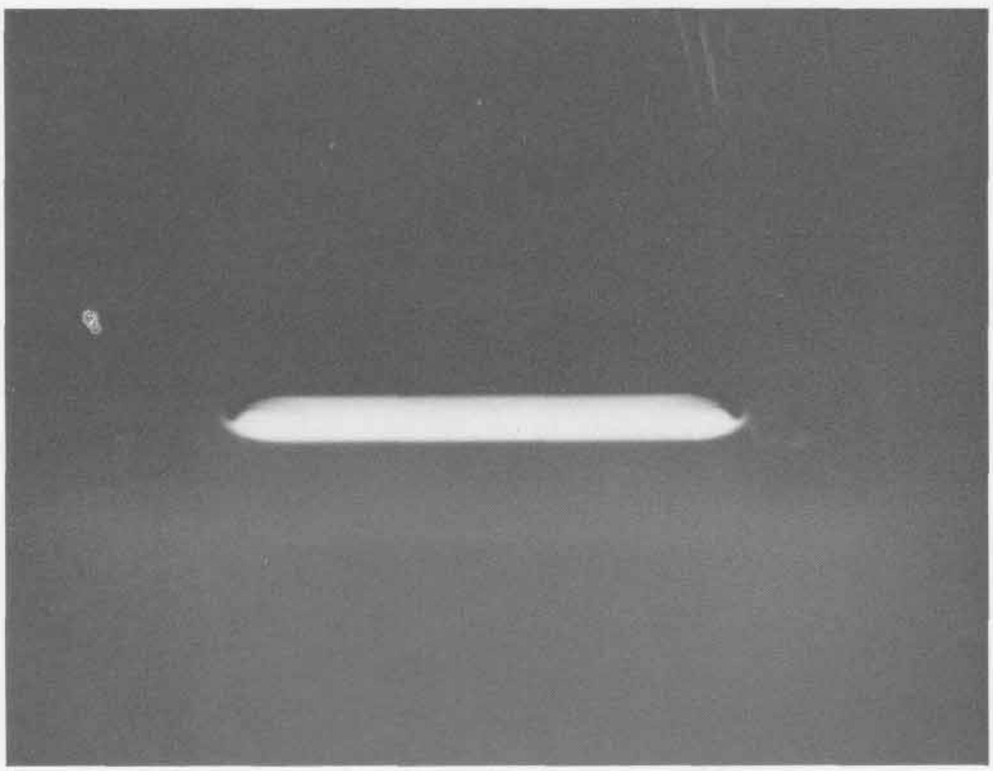


SHOT 547: **Brass Back Surface**
Date: May 12, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 38.94 μs

A 9.52-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 12.52 mm.

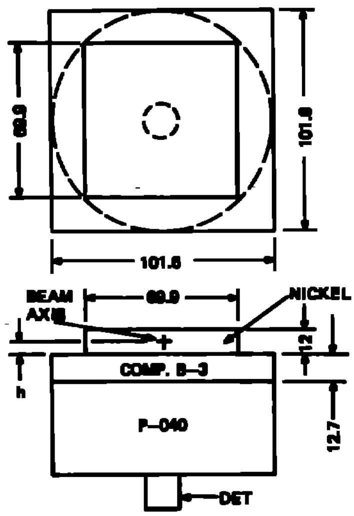


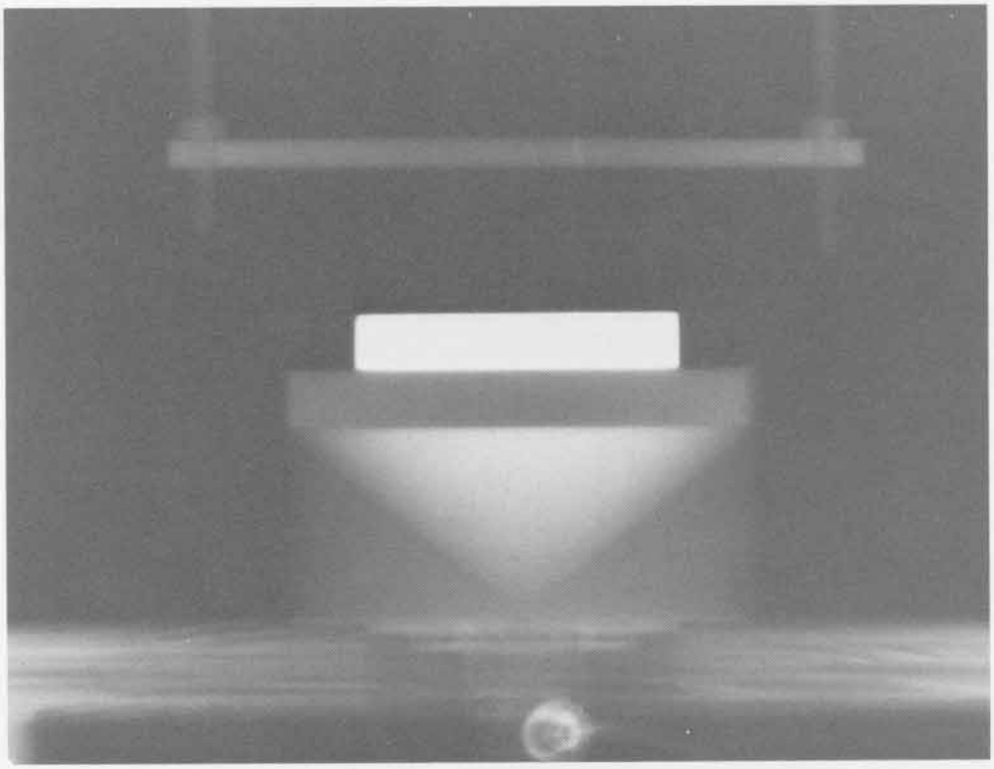


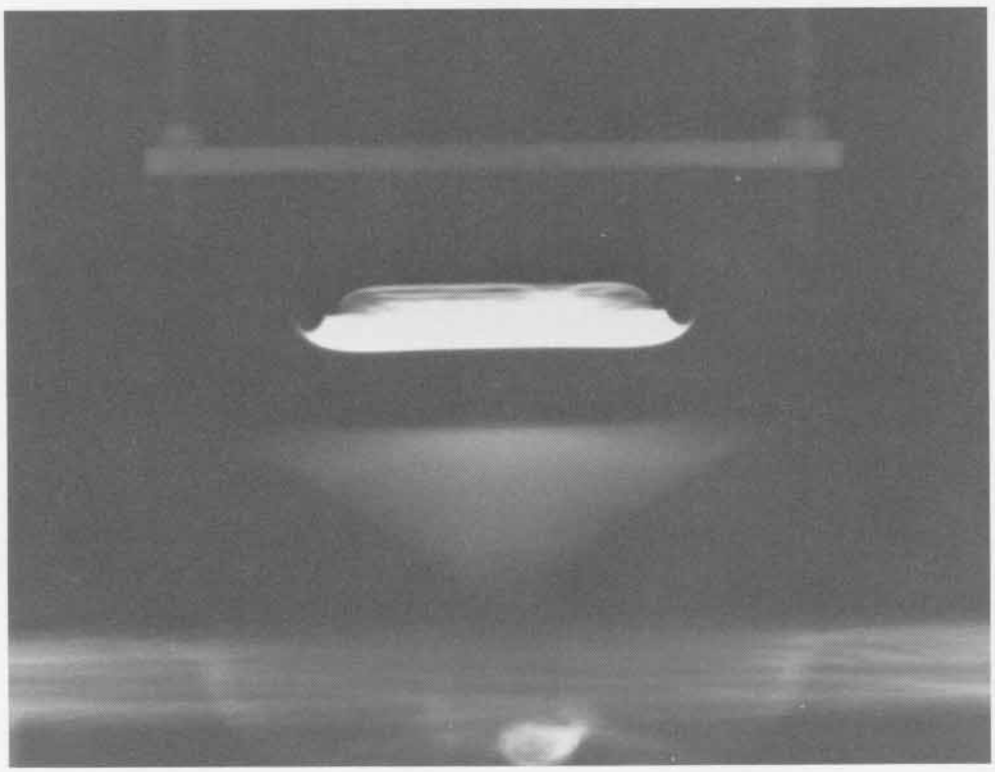


SHOT 550: **Nickel Back Surface**
Date: March 6, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 24.08 μs

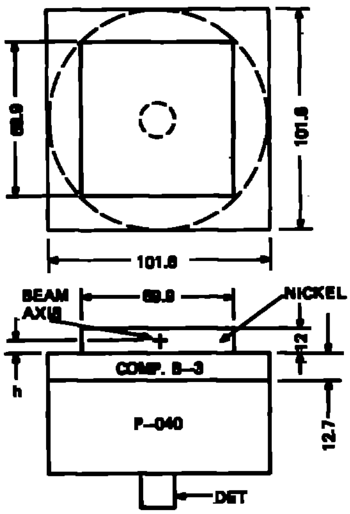
A 12.0-mm-thick nickel plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 2.79 mm. A reference bar is shown above the shot.

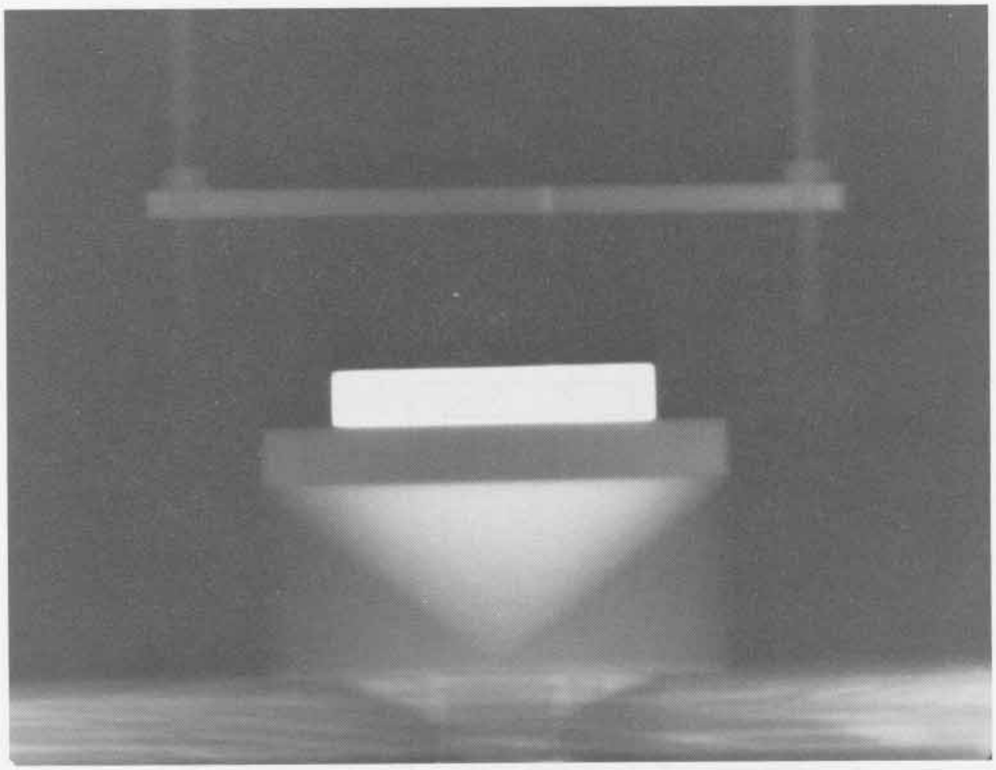


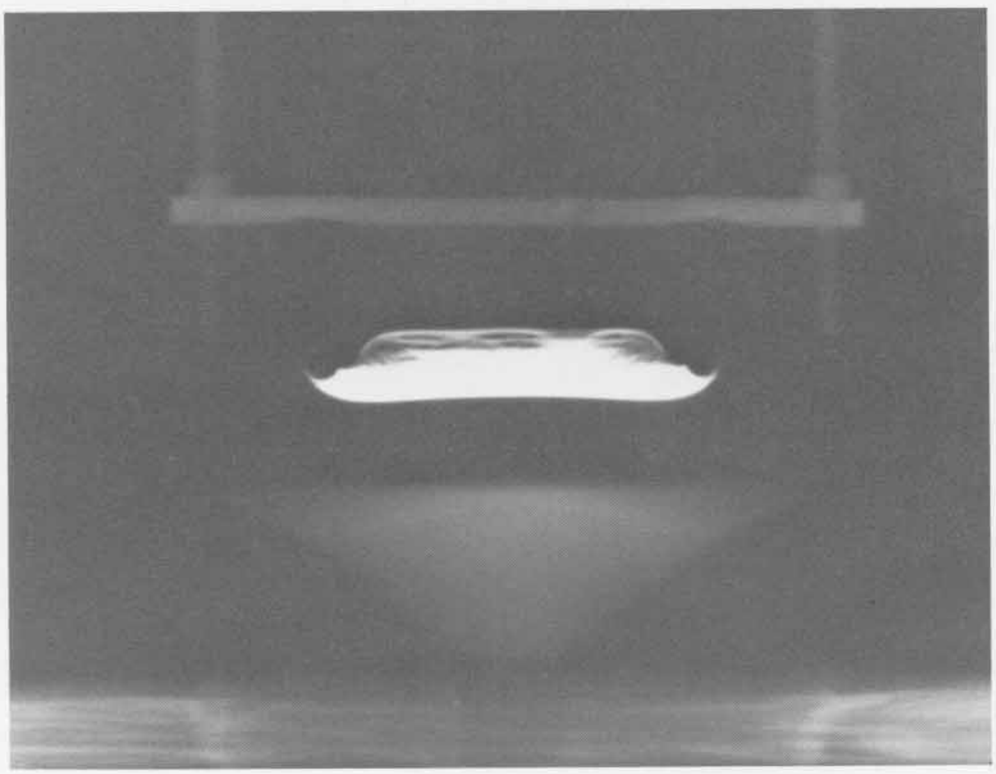




SHOT 551: **Nickel Back Surface**
Date: March 18, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 27.11 μs
A 12.0-mm-thick nickel plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 6.70 mm. A reference bar is shown above the shot.

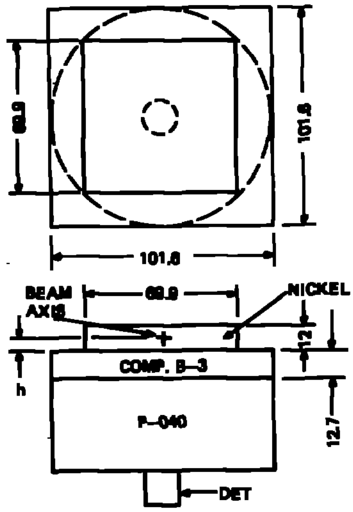


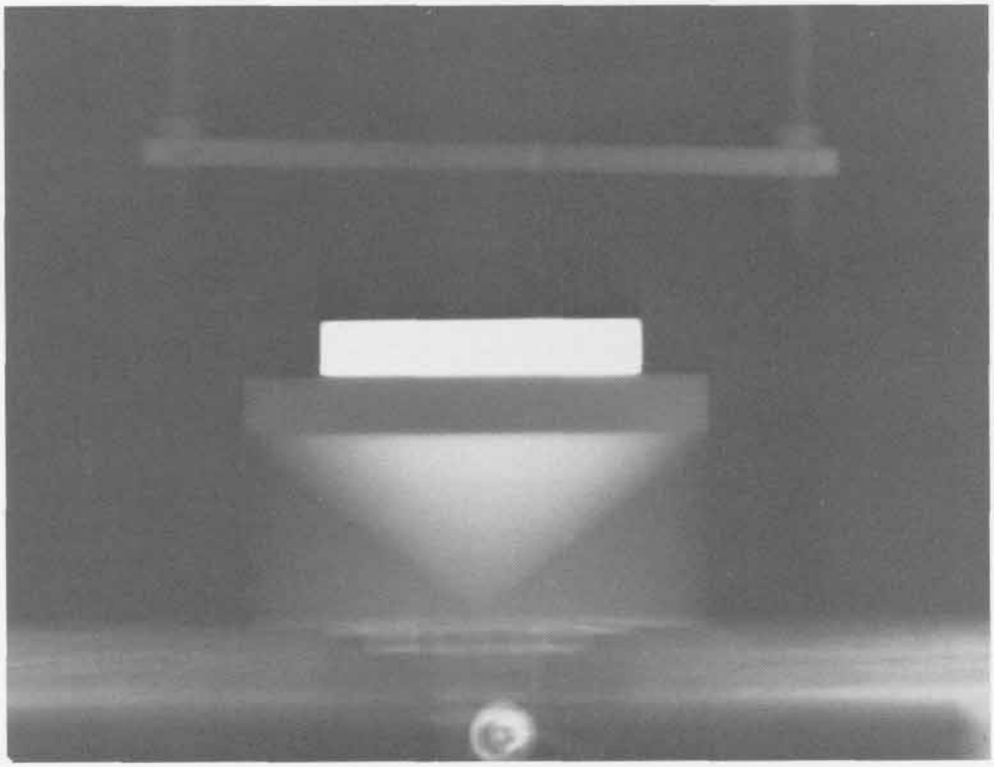


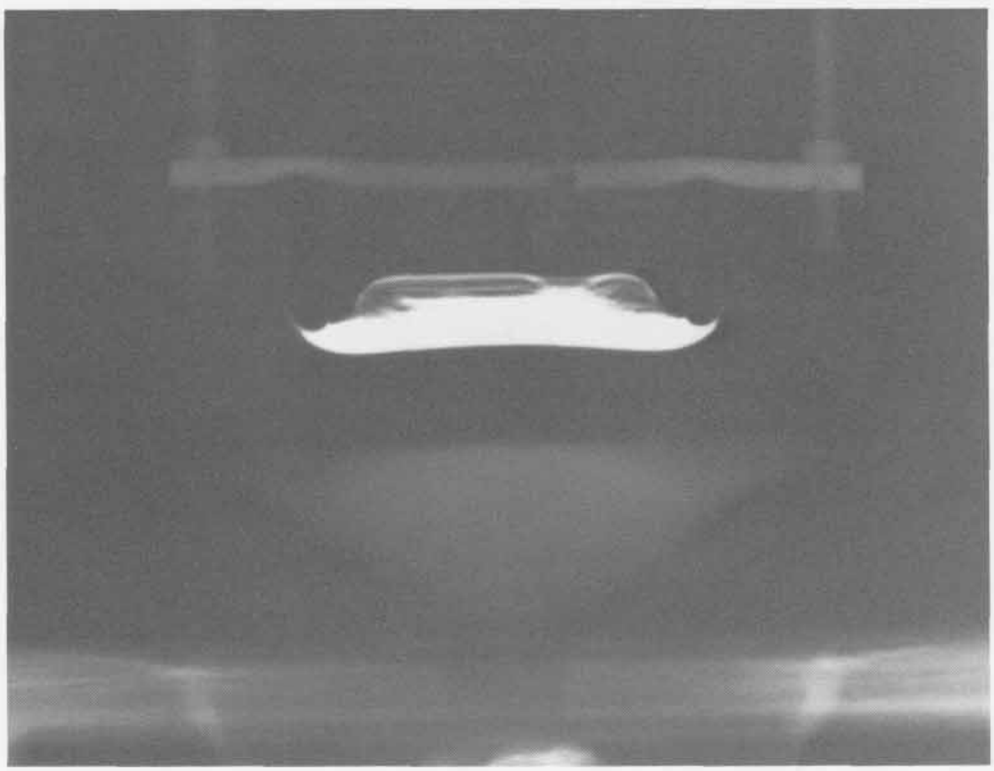


SHOT 552: **Nickel Back Surface**
Date: March 19, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 30.15 μs

A 12.0-mm-thick nickel plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 11.0 mm. A reference bar is shown above the shot.

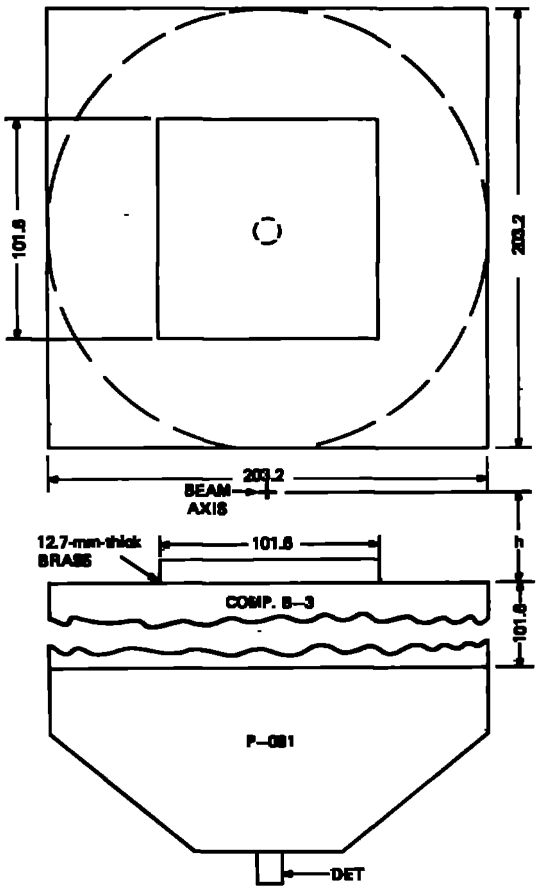


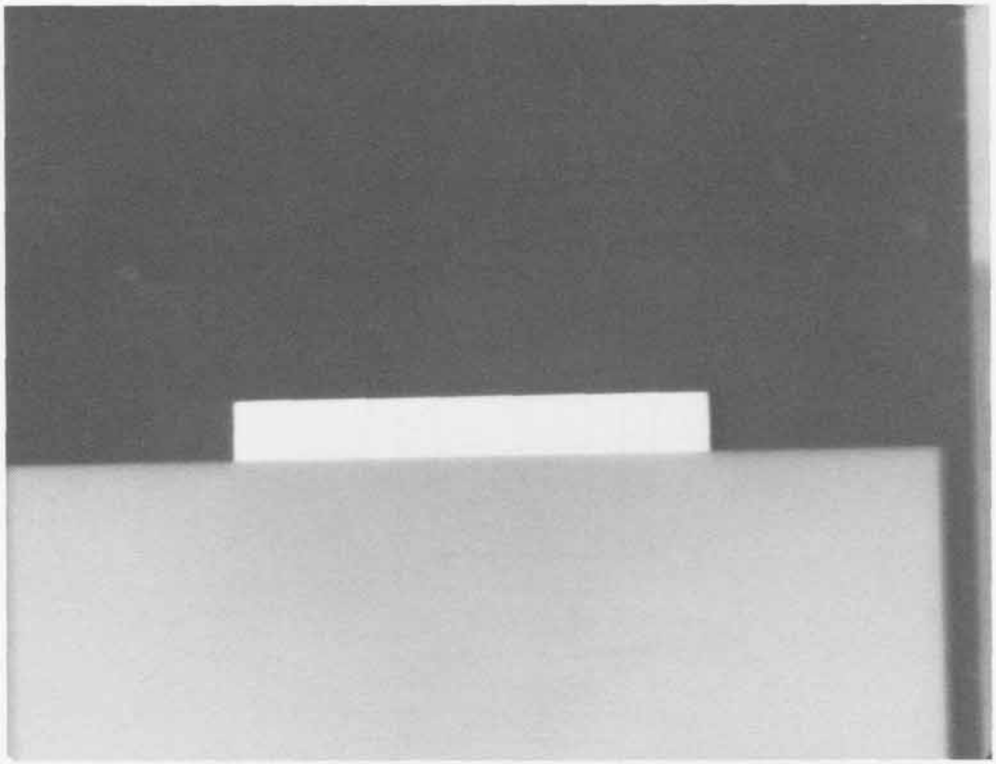


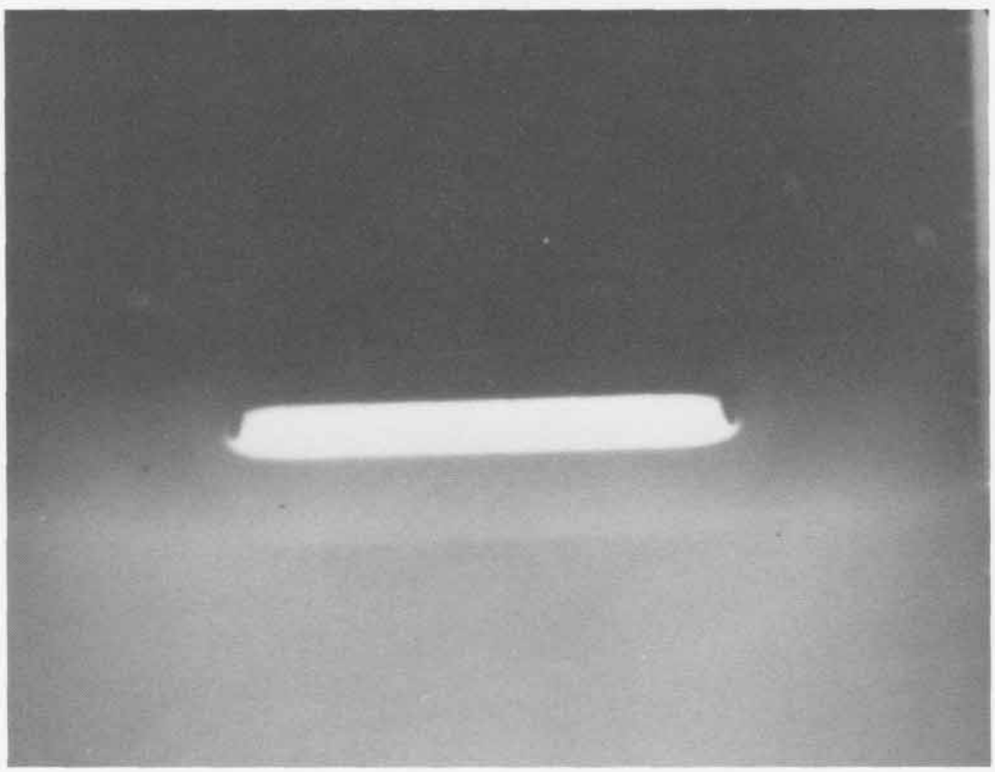


SHOT 553: **Brass Back Surface**
Date: April 28, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 38.70 μs

A 12.7-mm-thick brass plate is shocked by 101.6 mm of Composition B-3 initiated by a P-081 lens. h is 14.2 mm.

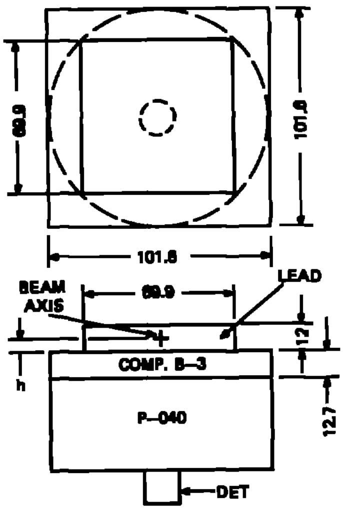


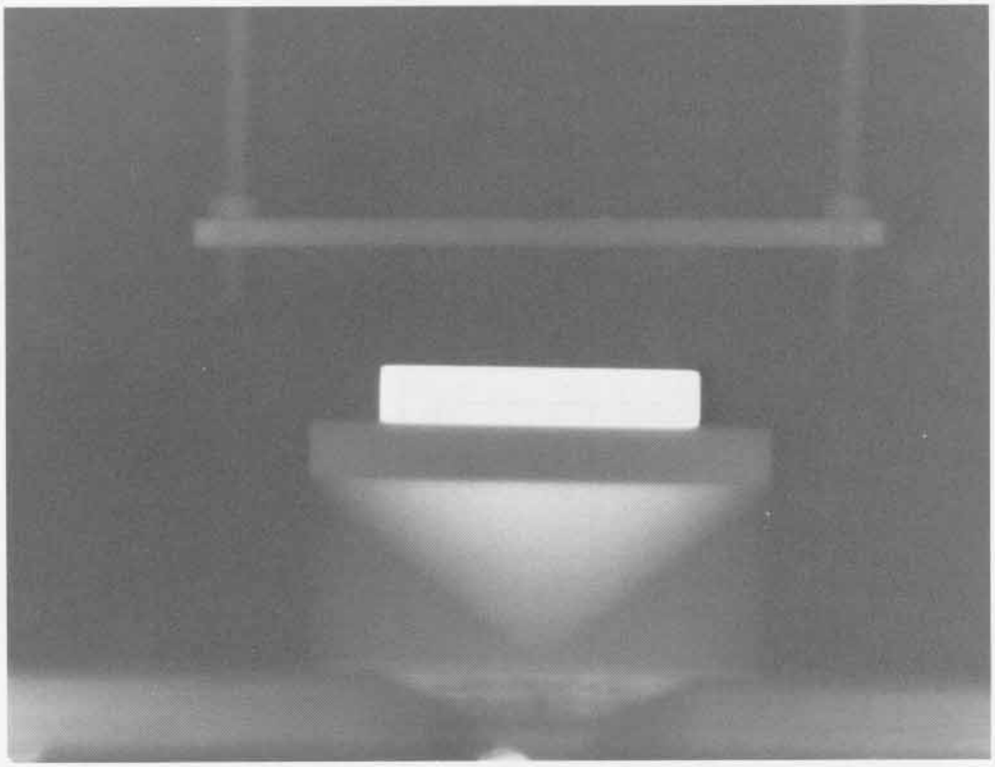


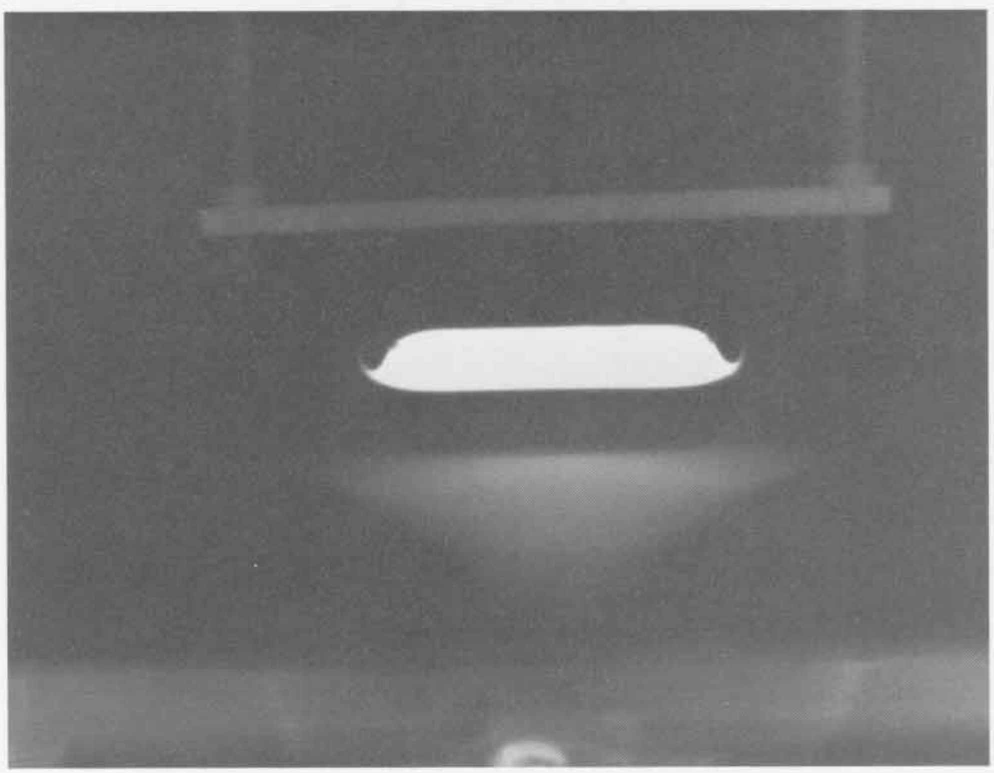


SHOT 557: **Lead Back Surface**
Date: February 25, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 22.59 μs

A 12.0-mm-thick lead plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 3.40 mm. A reference bar is shown above the shot.

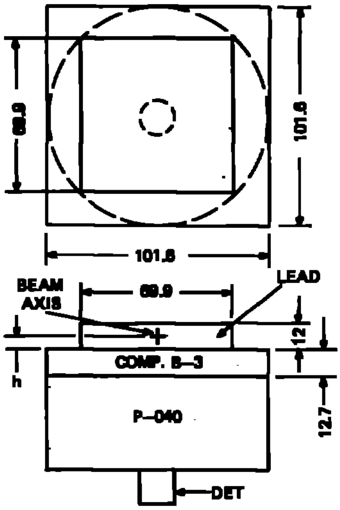


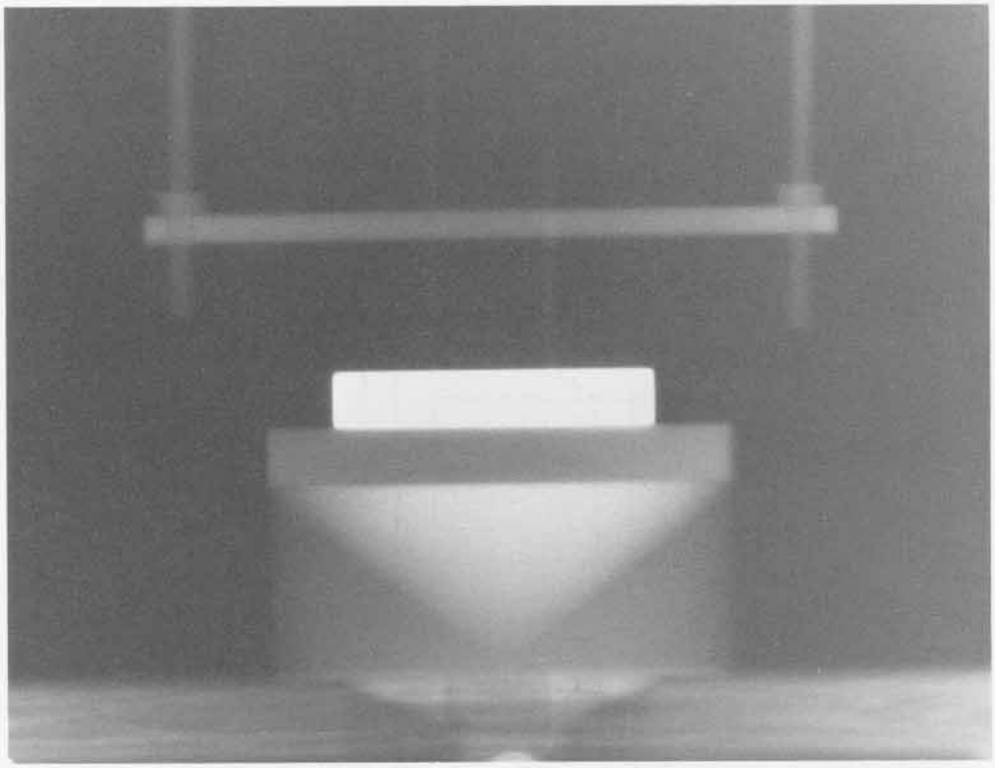


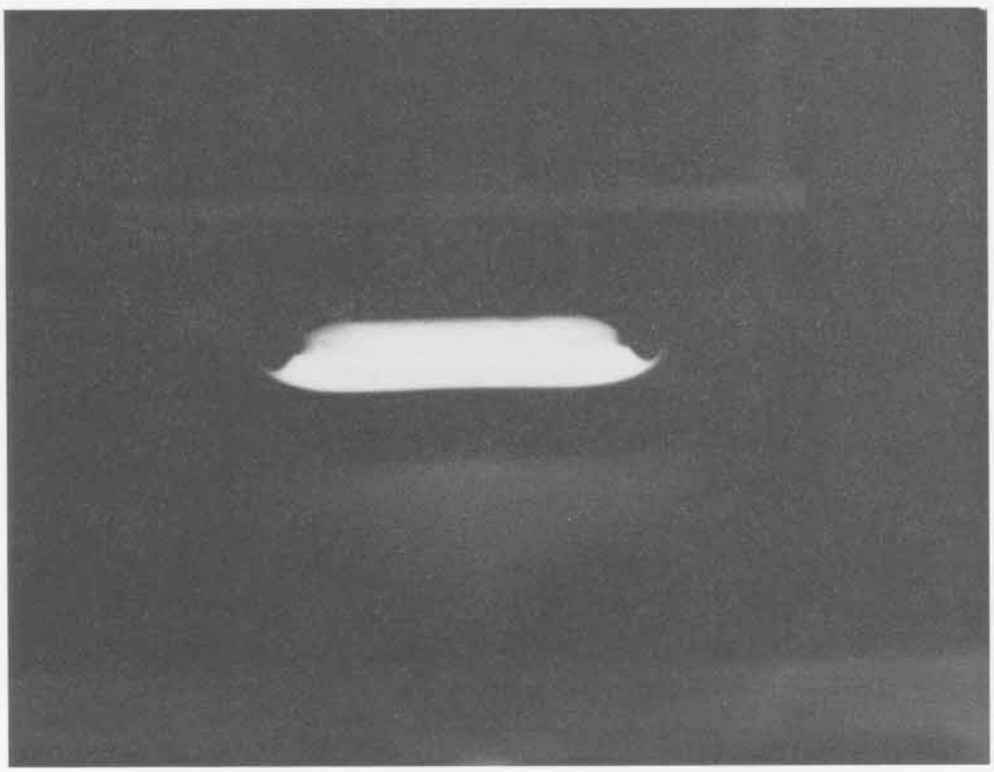


SHOT 558:	**Lead Back Surface**
Date:	February 25, 1969
Experimenter:	Roger W. Taylor
Radiographic Time:	25.05 μs

A 12.0-mm-thick lead plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 5.10 mm. A reference bar is shown above the shot.

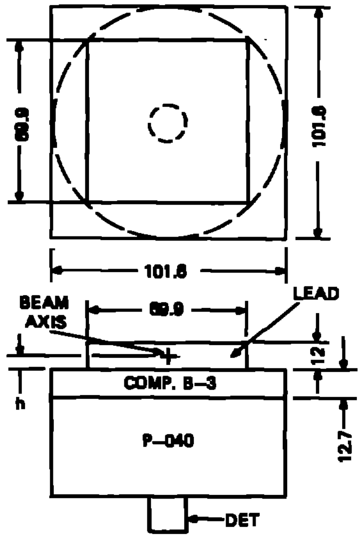


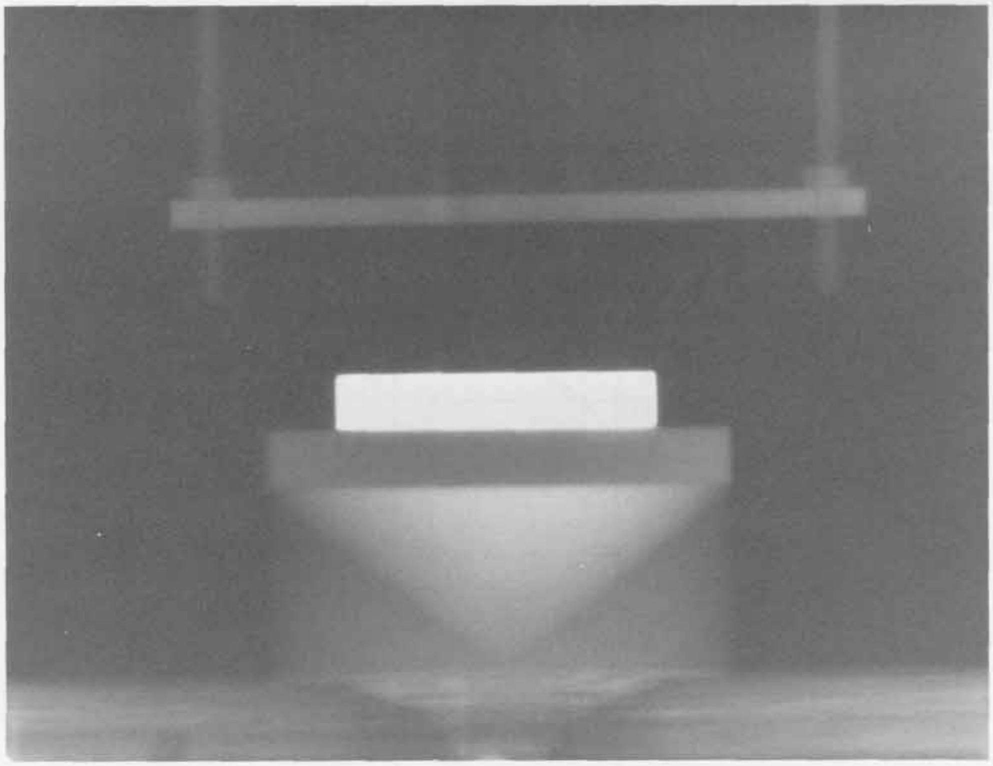


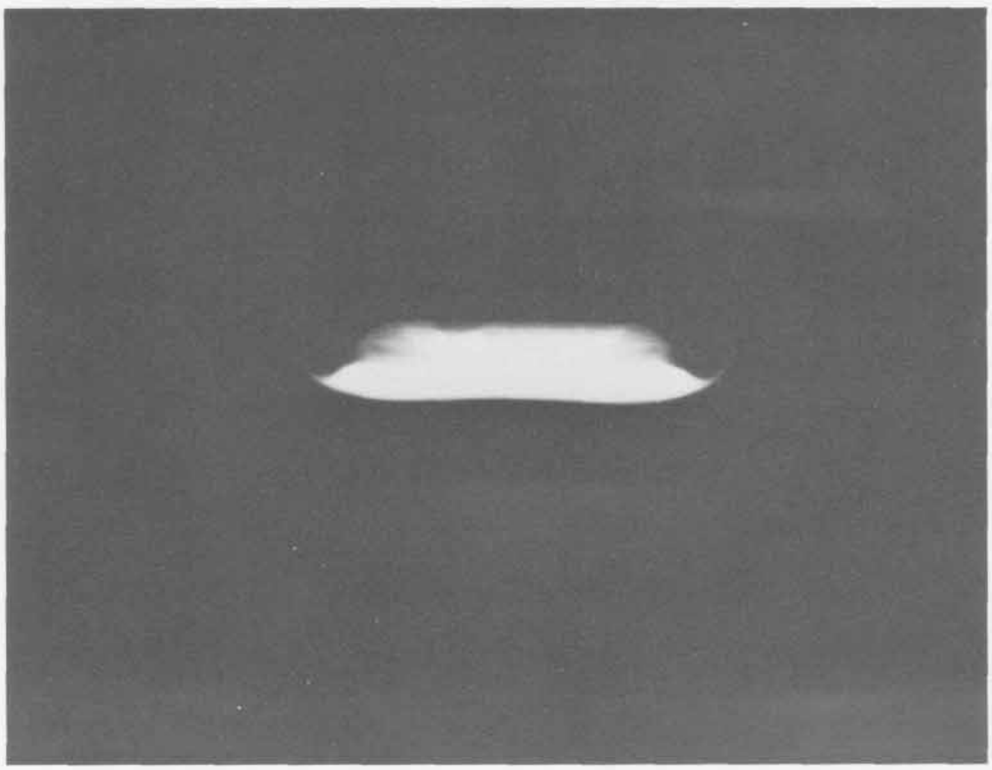


SHOT 559: **Lead Back Surface**
Date: February 26, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 27.56 μs

A 12.0-mm-thick lead plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 7.80 mm. A reference bar is shown above the shot.

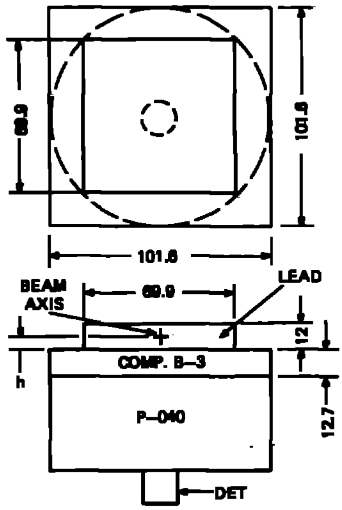


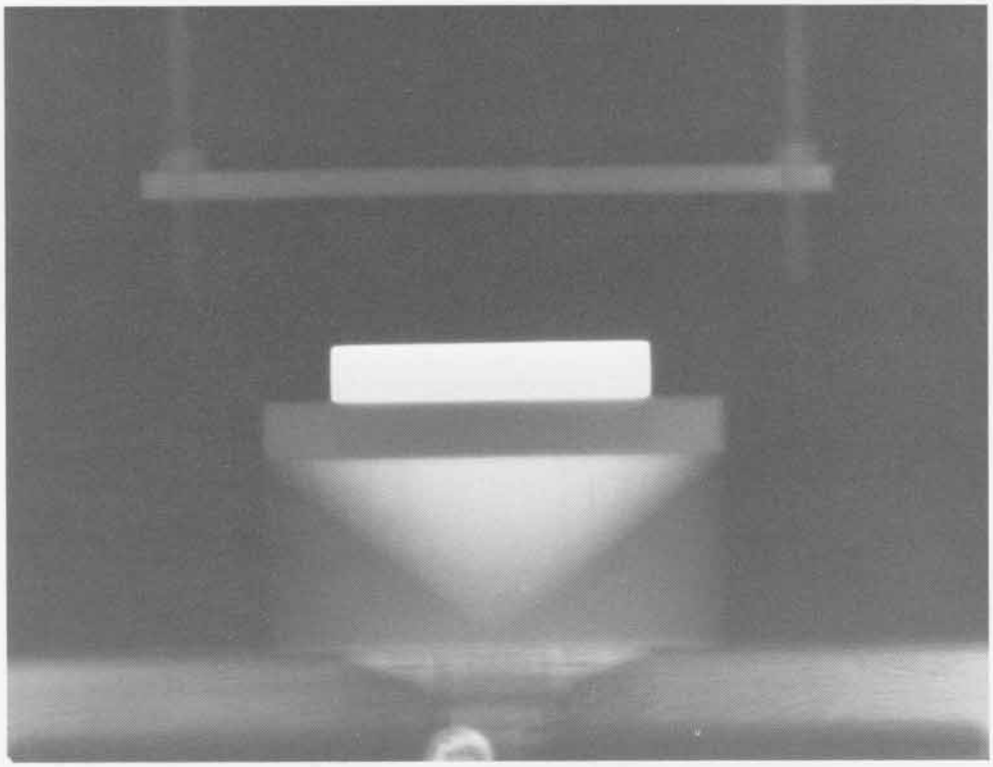


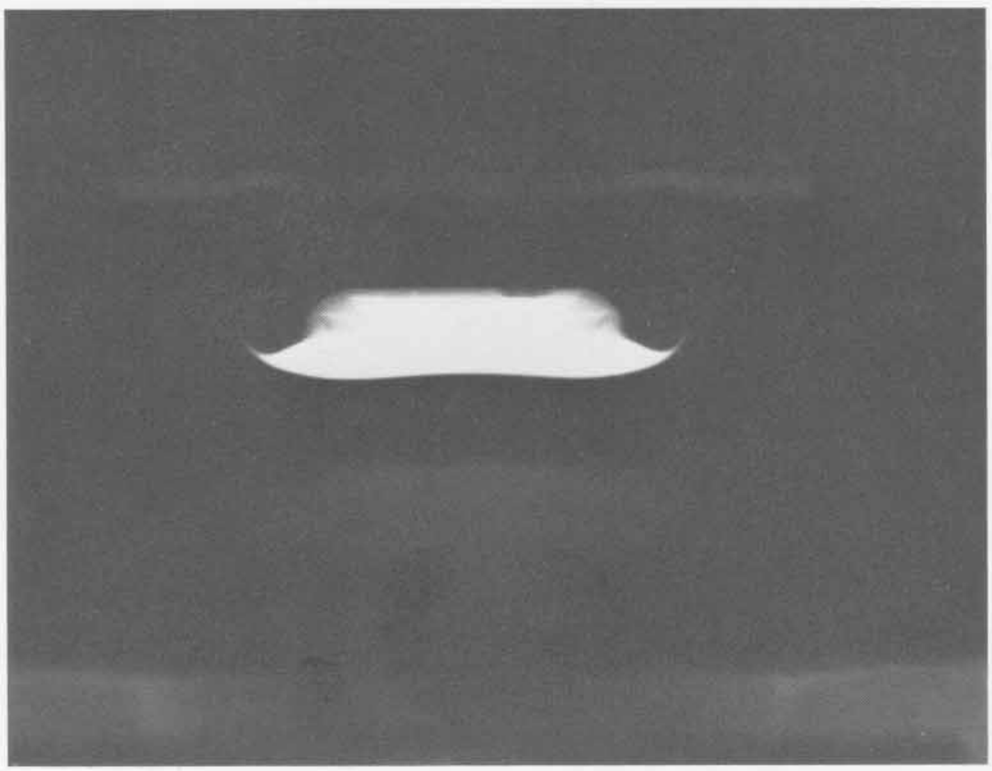


SHOT 560: **Lead Back Surface**
Date: March 6, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 30.09 μs

A 12.0-mm-thick lead plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 11.61 mm. A reference bar is shown above the shot.

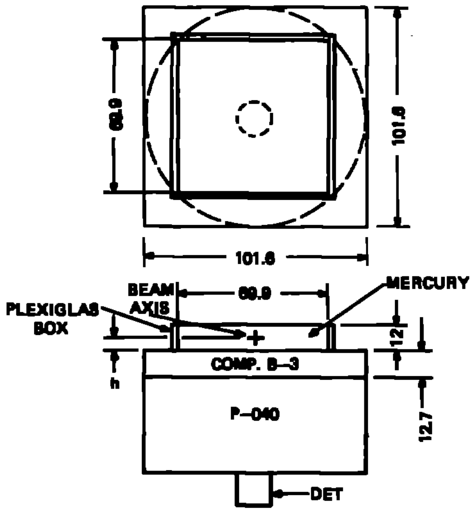


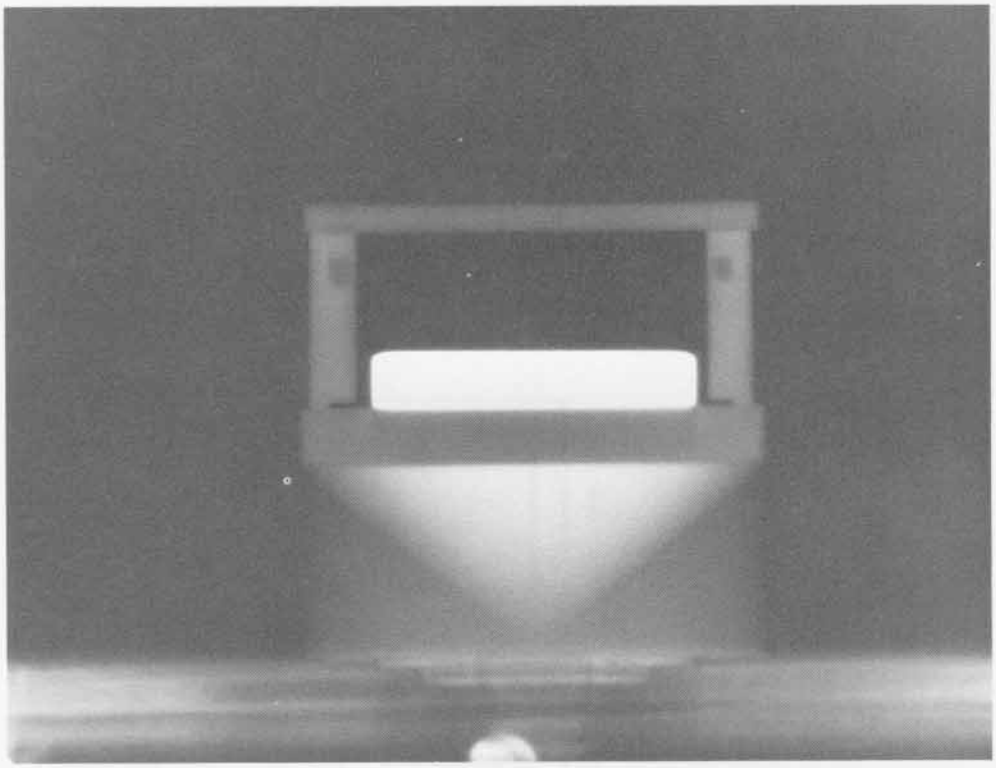


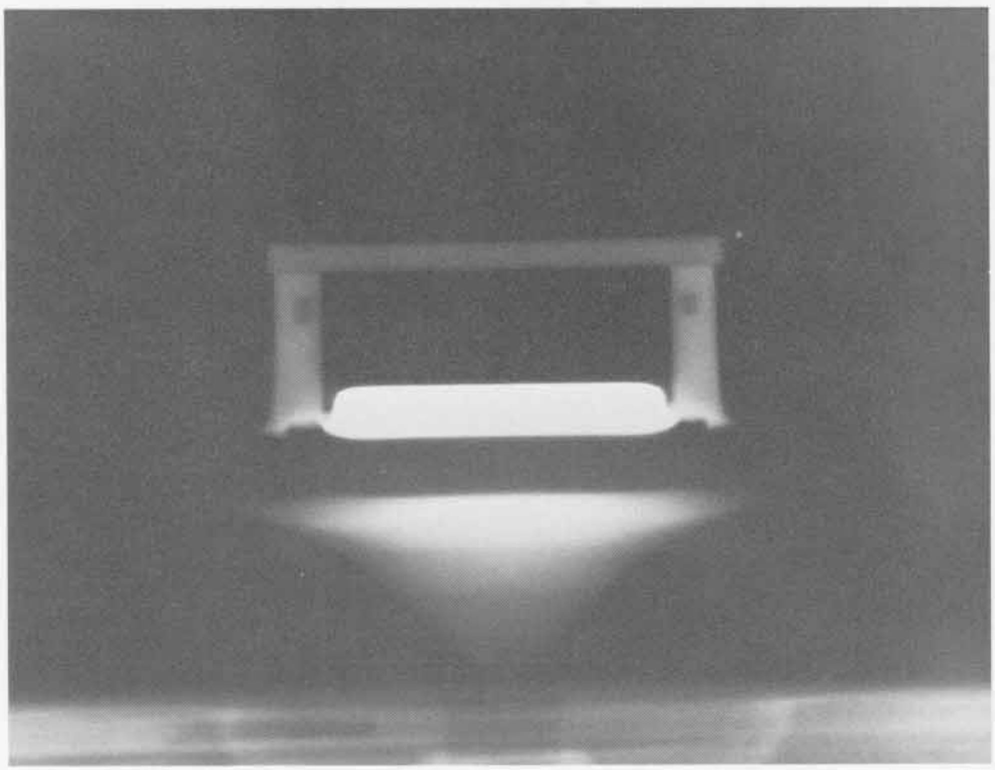


SHOT 562: **Mercury Back Surface**
Date: May 13, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 20.11 μs

Twelve mm of mercury in a Plexiglas box is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 2.59 mm. A reference bar and its holder also are shown.

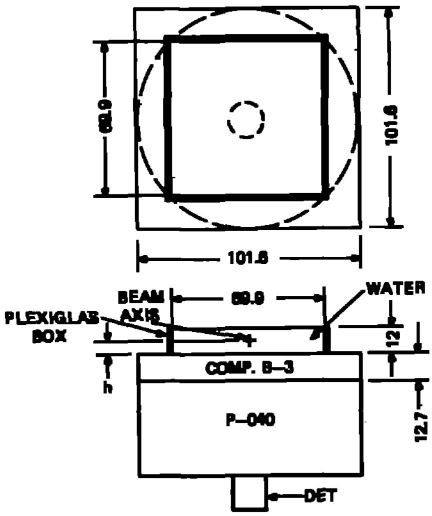


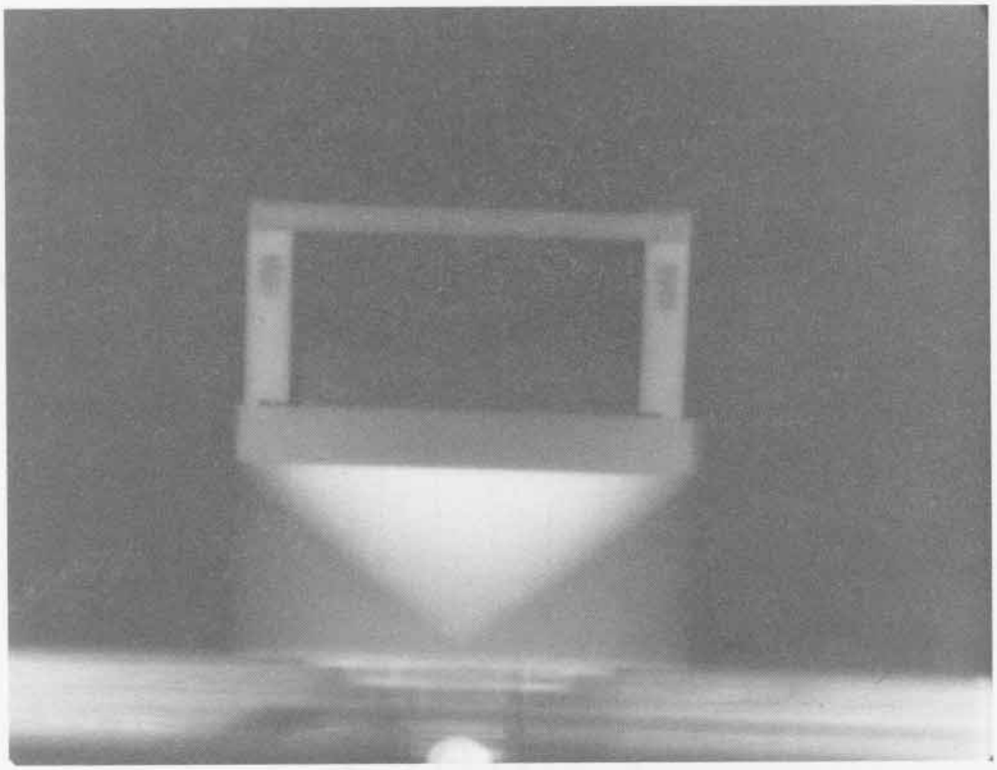


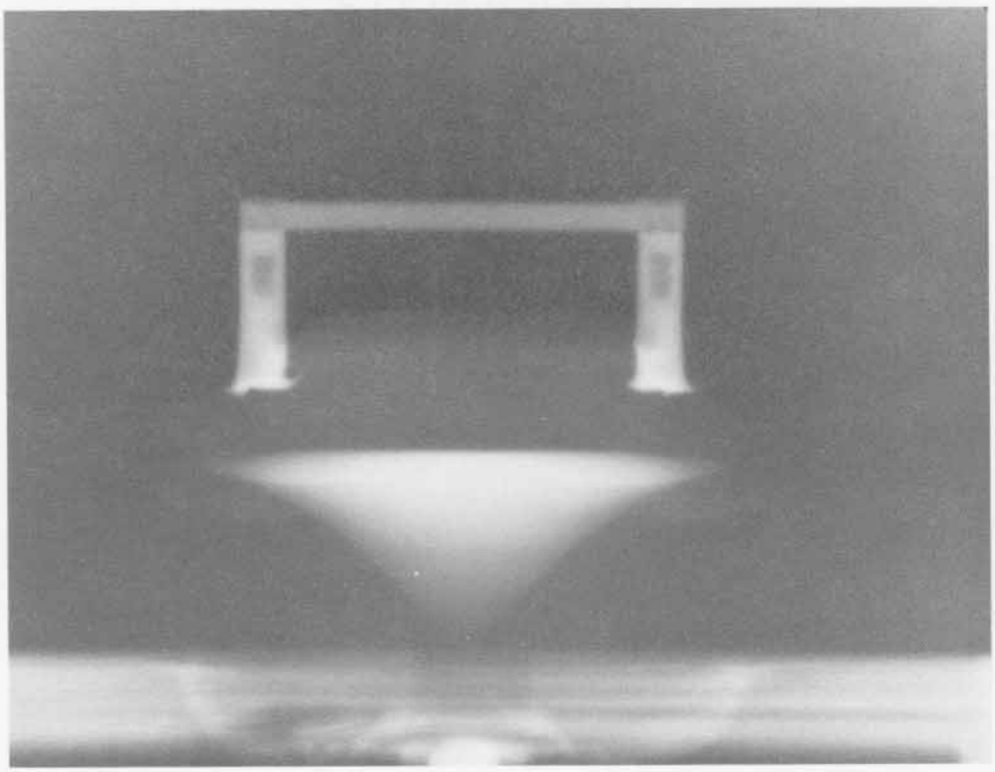


SHOT 569: **Water Back Surface**
Date: May 13, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 19.59 μs

Twelve mm of water in a Plexiglas box is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 8.30 mm. A reference bar and its holder also are shown.

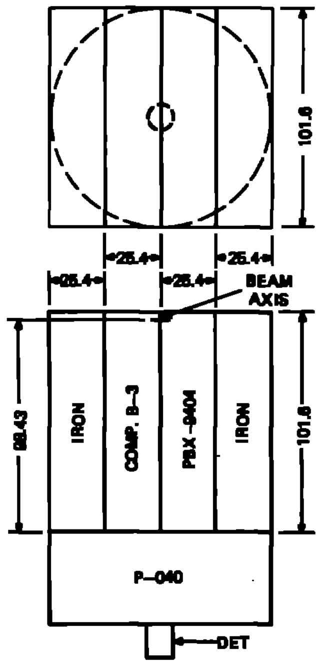


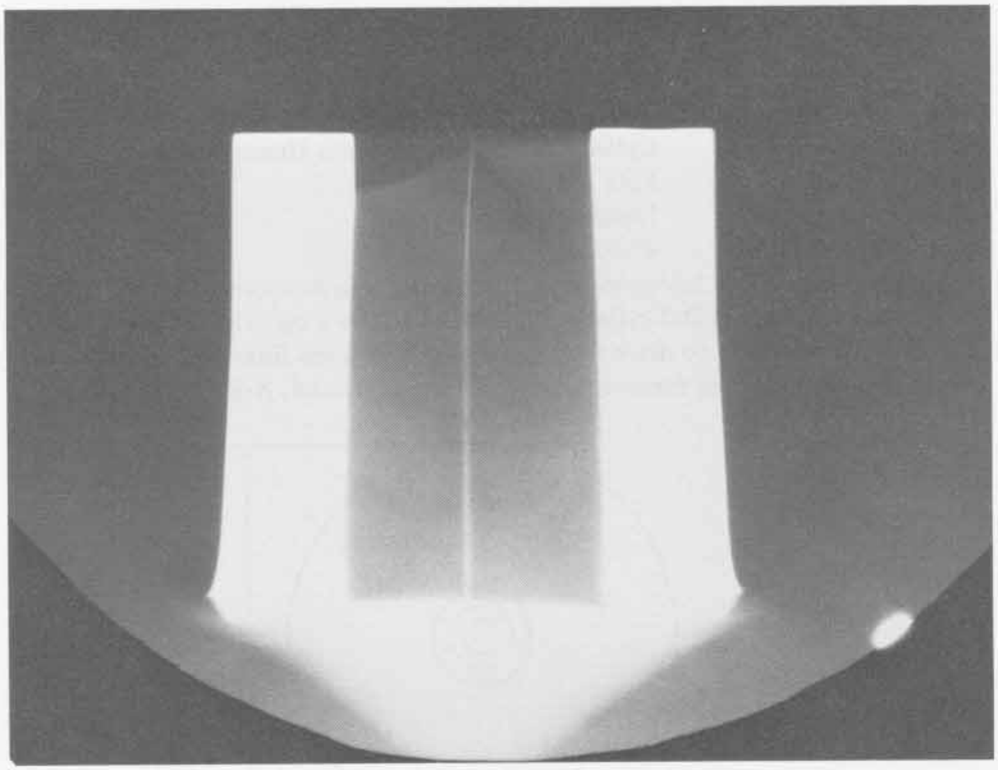


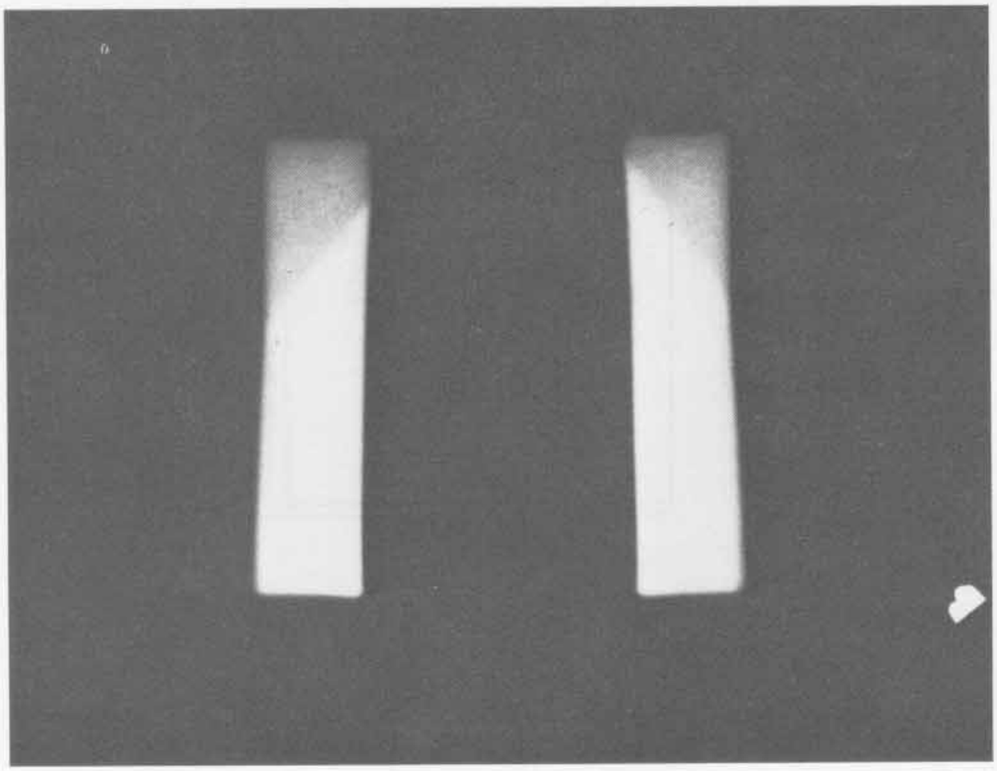


SHOT 573: **Oblique PBX-9404 and Composition B-3 Detonations**
Date: April 20, 1966
Experimenter: Douglas Venable
Radiographic Time: 24.68 μs

This experiment was performed to examine overdriving of Composition B-3 by PBX-9404 in an oblique geometry.

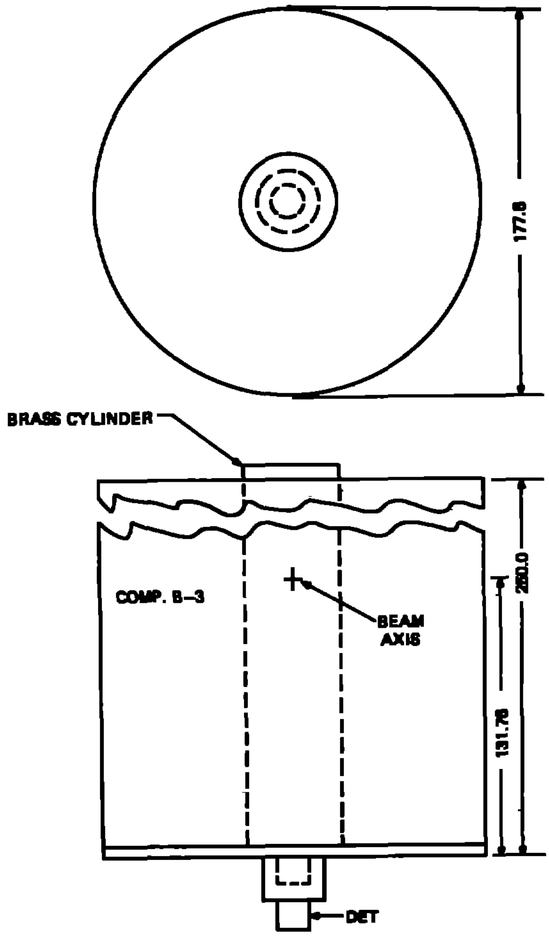


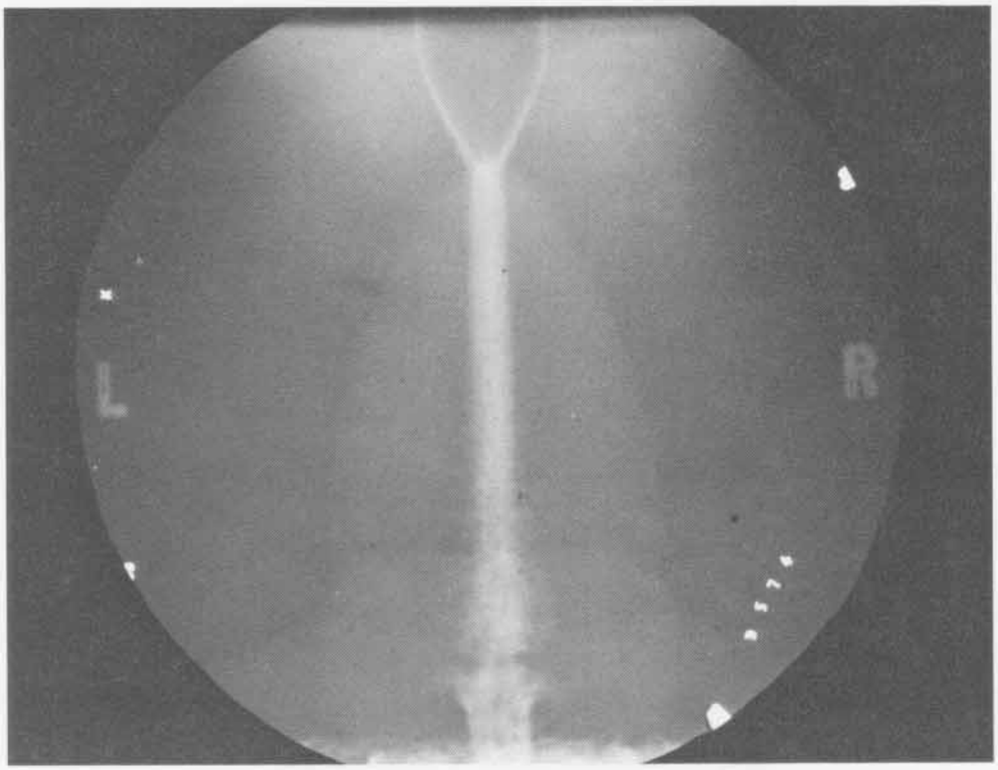




SHOT 574: **Cylindrical Implosion of a Brass Tube**
Date: May 5, 1965
Experimenter: Douglas Venable
Radiographic Time: 47.60 μs

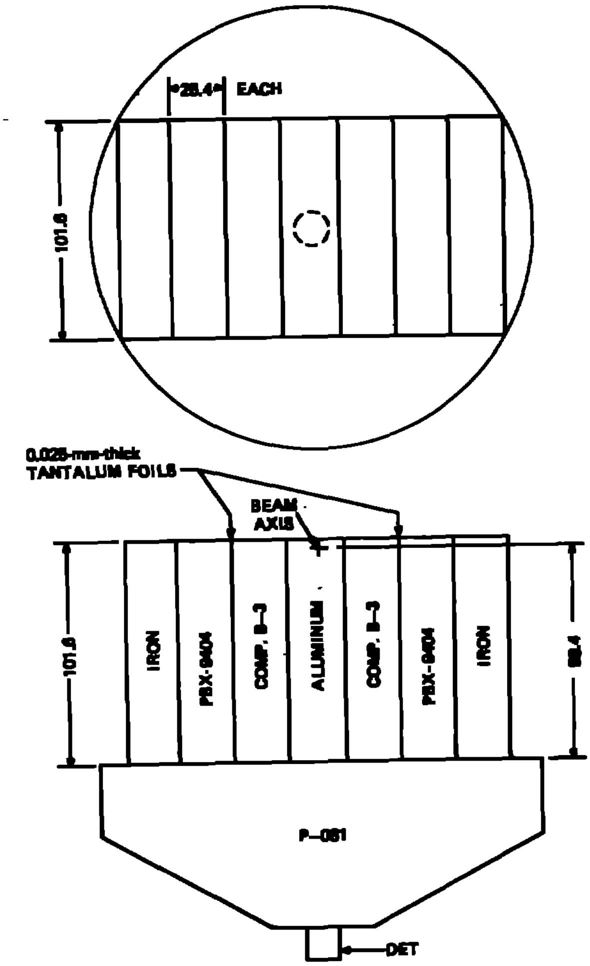
A 40.0-mm-diameter, 1.58-mm-thick brass tube was surrounded by a 177.8-mm-diameter Composition B-3 cylinder and detonated by a cylindrical lens. The Composition B-3 was used to drive an argon flash. The brass liner was added to study whether a jet would be formed, but no jet was observed. See Shot 492.

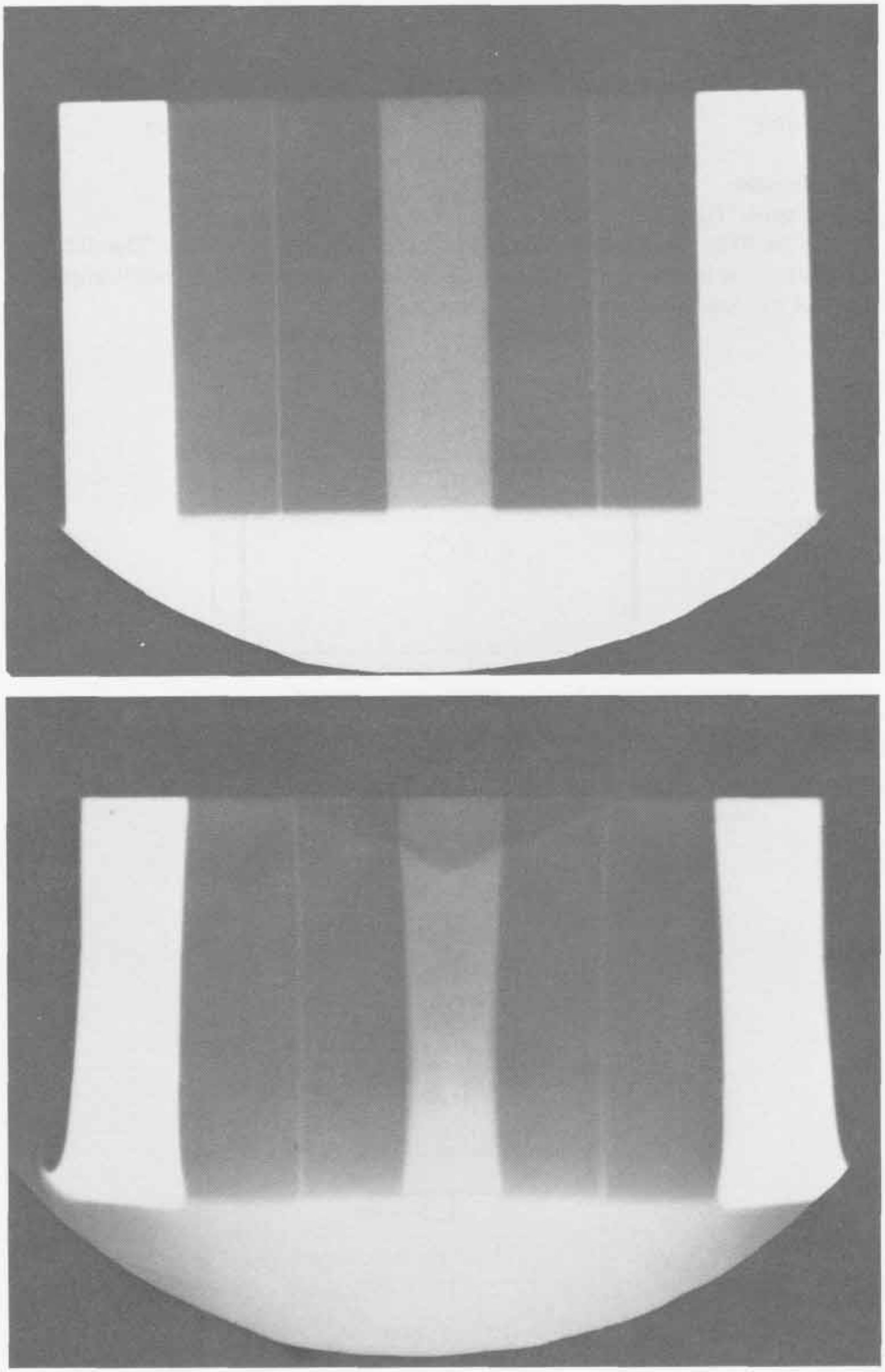



L
R

SHOT 575: **Oblique PBX-9404 and Composition B-3 Detonations**
Date: May 12, 1966
Experimenter: Douglas Venable
Radiographic Time: 33.85 μs

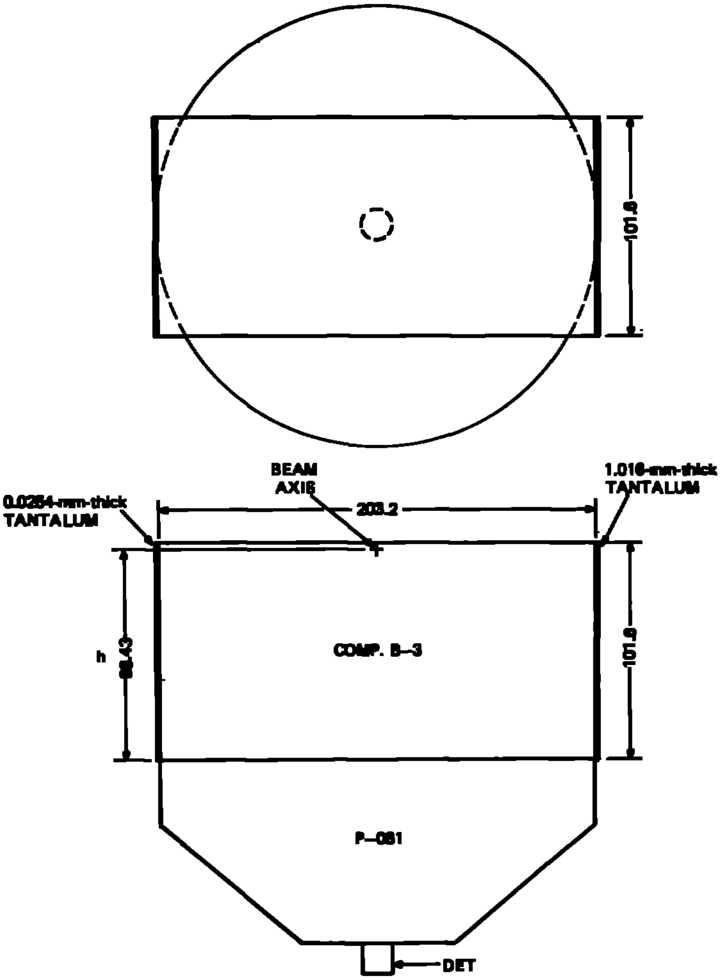
This experiment was performed to examine how PBX 9404 overdrives Composition B-3 in an oblique geometry. Aluminum and 1020 steel also could be examined to determine their Hugoniot data. The experiment was radiographed when the detonation wave was almost at the upper end of the PBX-9404. A Mach wave interaction in the aluminum is shown.

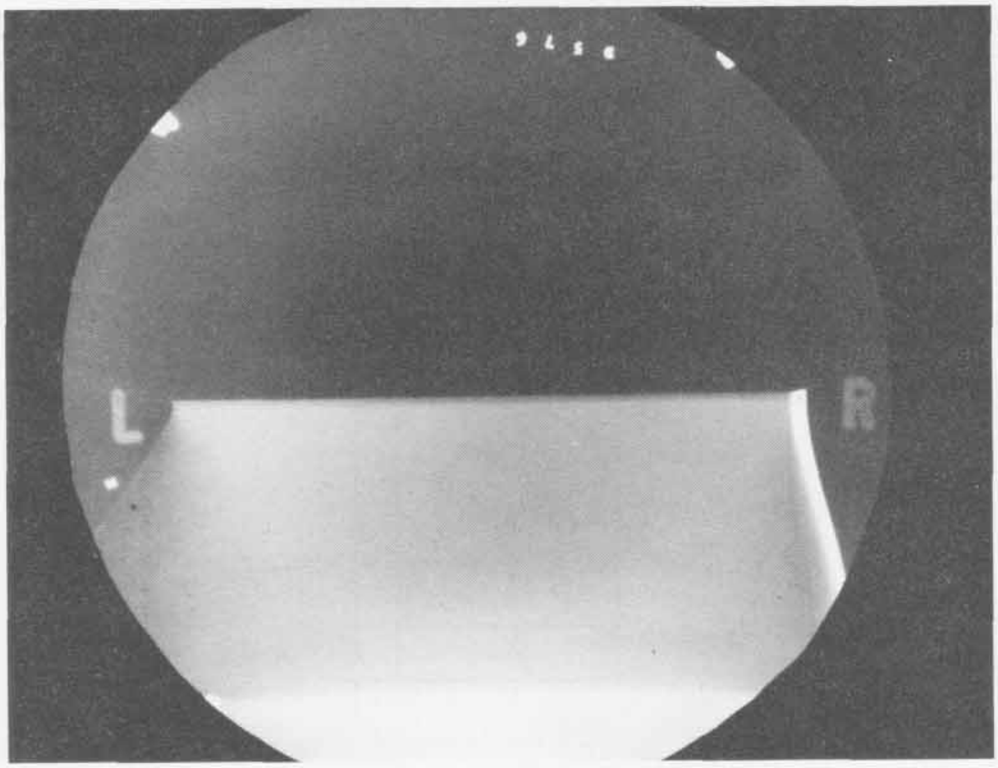




SHOT 576: **Composition B-3 Confined by Tantalum**
Date: May 12, 1966
Experimenter: Douglas Venable
Radiographic Time: 34.97 μs

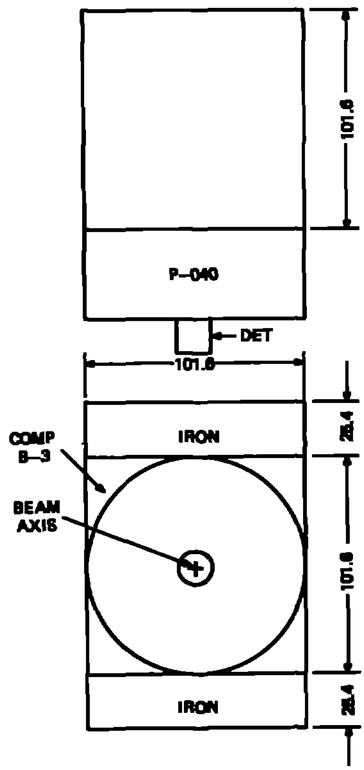
A 101.6- by 203.2-mm Composition B-3 slab initiated by a P-081 lens. The slab ends are confined by 0.0254- and 1.016-mm-thick tantalum plates. Designed to study the effect of varying lateral rarefaction magnitude.

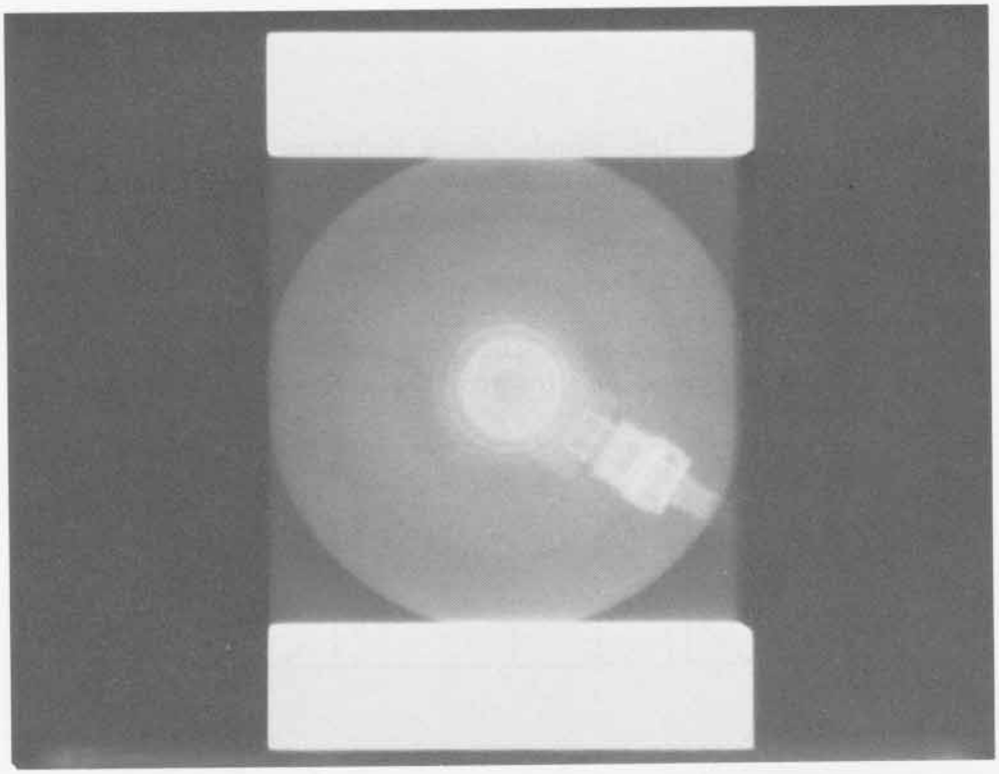


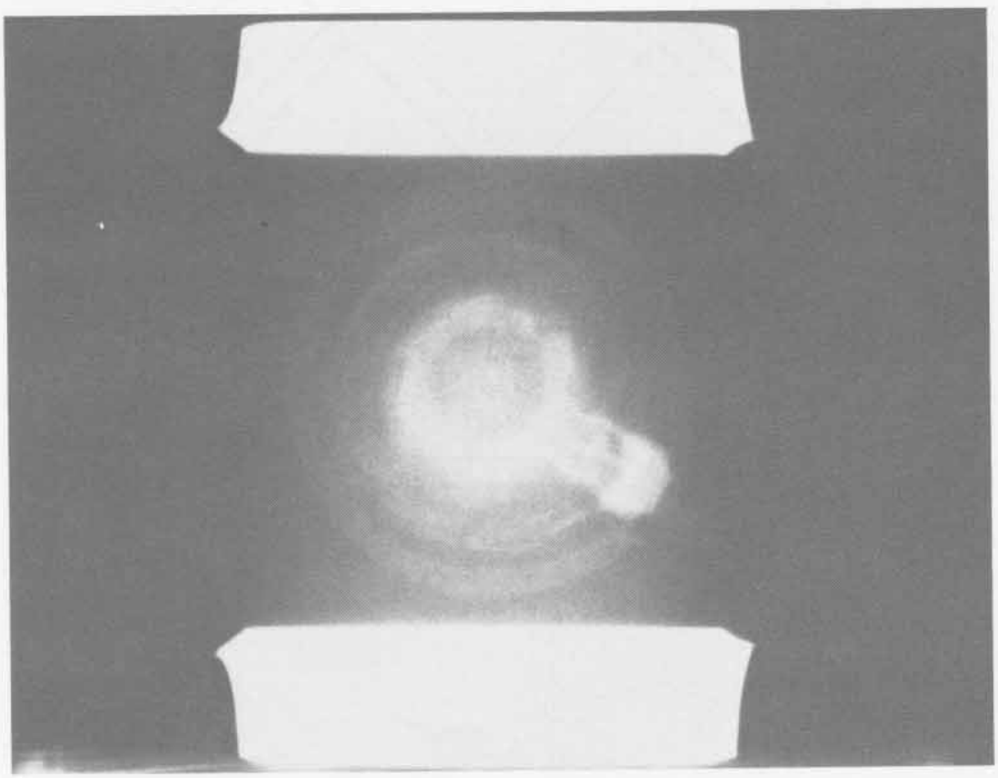

L
R

SHOT 578: **Composition B-3 Confined by Iron**
Date: May 17, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 26.32 μs

A 101.6-mm-high by 101.6-mm-wide Composition B-3 block is confined by two 25.4-mm-thick by 101.6-mm-wide iron plates. The Composition B-3 is initiated by a P-040 lens. The beam axis is coincident with that of the P-040 lens.

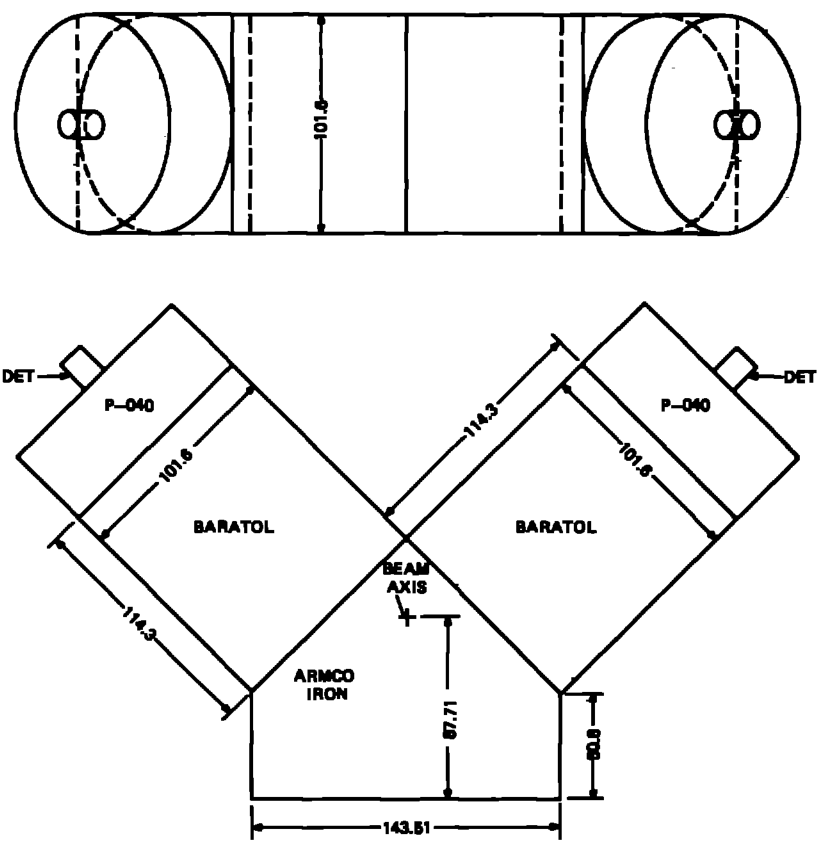


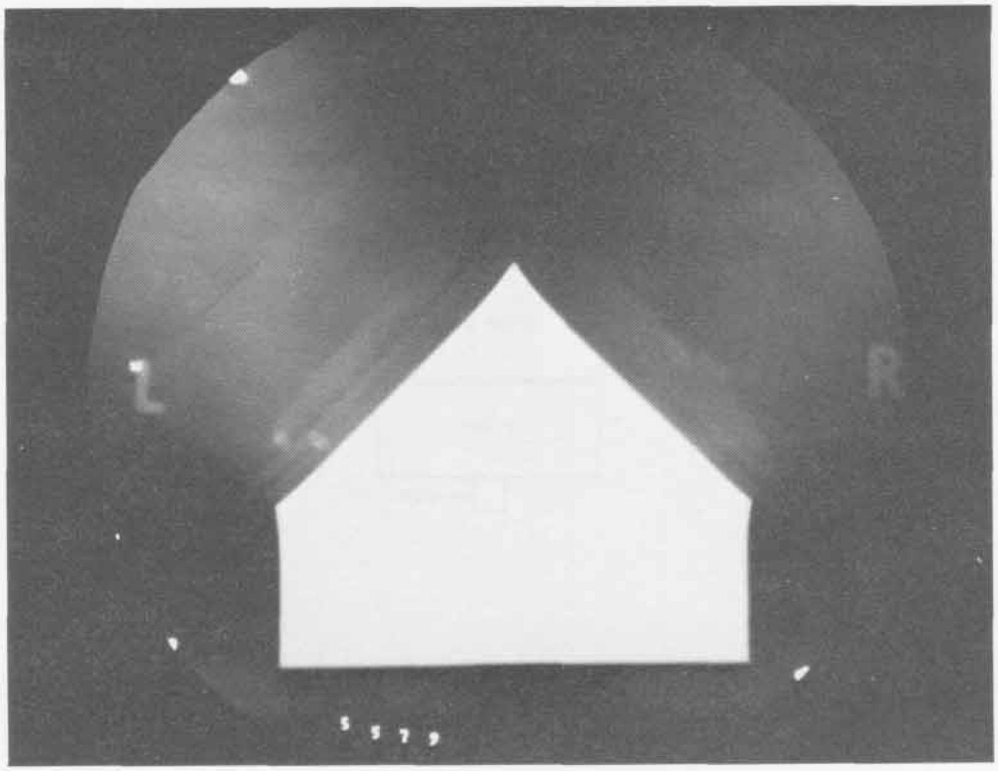




SHOT 579: **Iron Regular Shock Reflection**
Date: August 16, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 43.30 μs

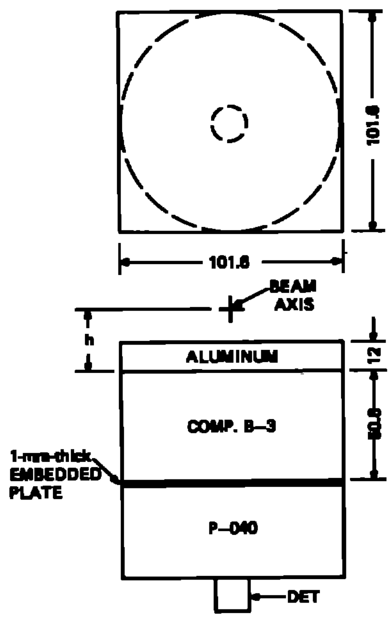
Two 114.3-mm-high Baratol blocks in contact with an Armco iron wedge were initiated simultaneously by P-040 lenses. Regular reflection of the two iron shock waves occurs at a 45° collision angle. The experiment was an attempt to observe collision of the double shocks from the iron phase change.

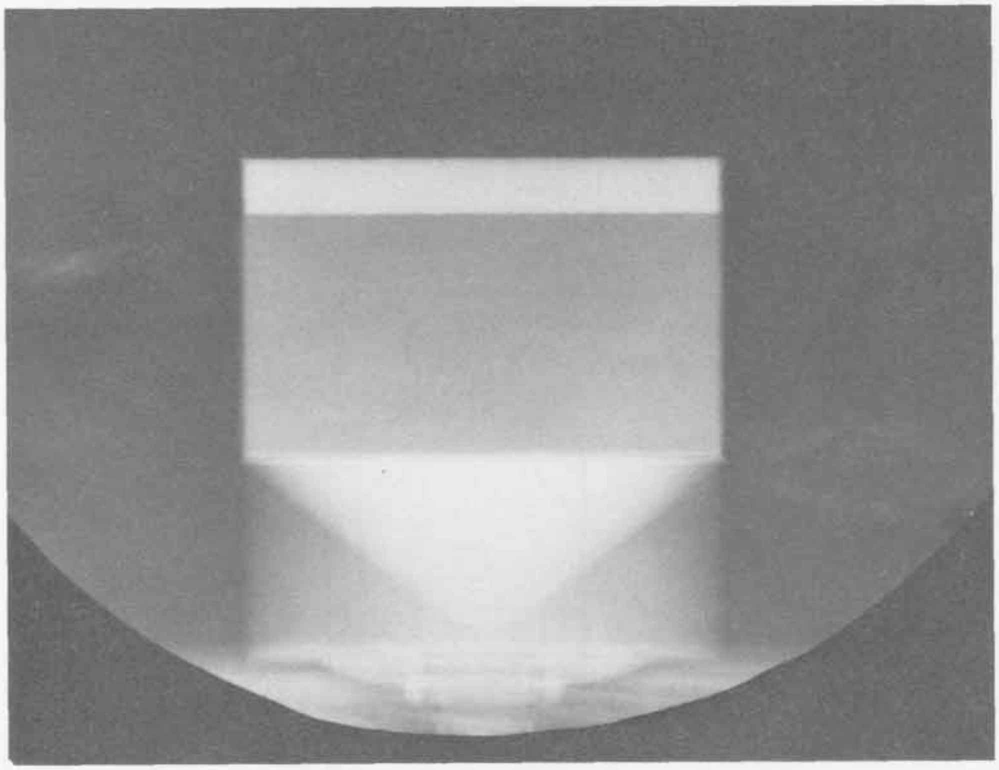


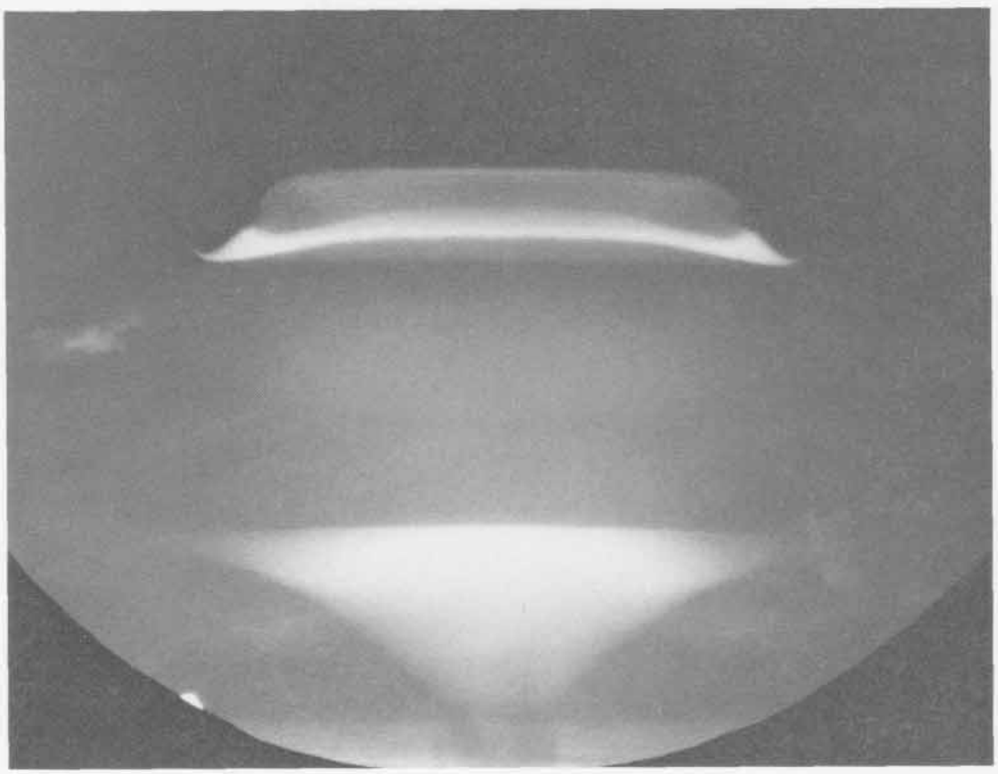

L
R

SHOT 580: **Composition B-3 with an Embedded Aluminum Plate**
Date: May 10, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 26.65 μs

A 1.0-mm-thick aluminum plate is embedded between a P-040 lens and 50.8 mm of Composition B-3 that shocks 12.0 mm of aluminum. h is 28.575 mm.

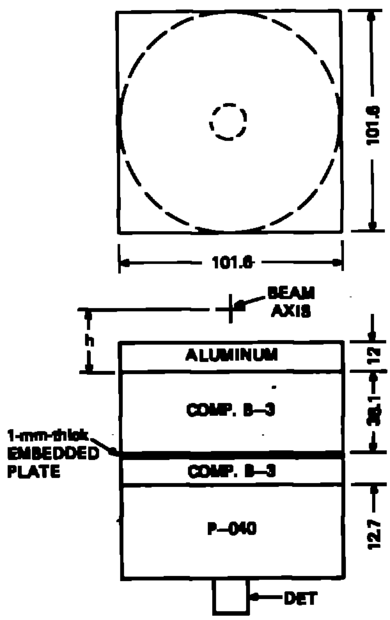


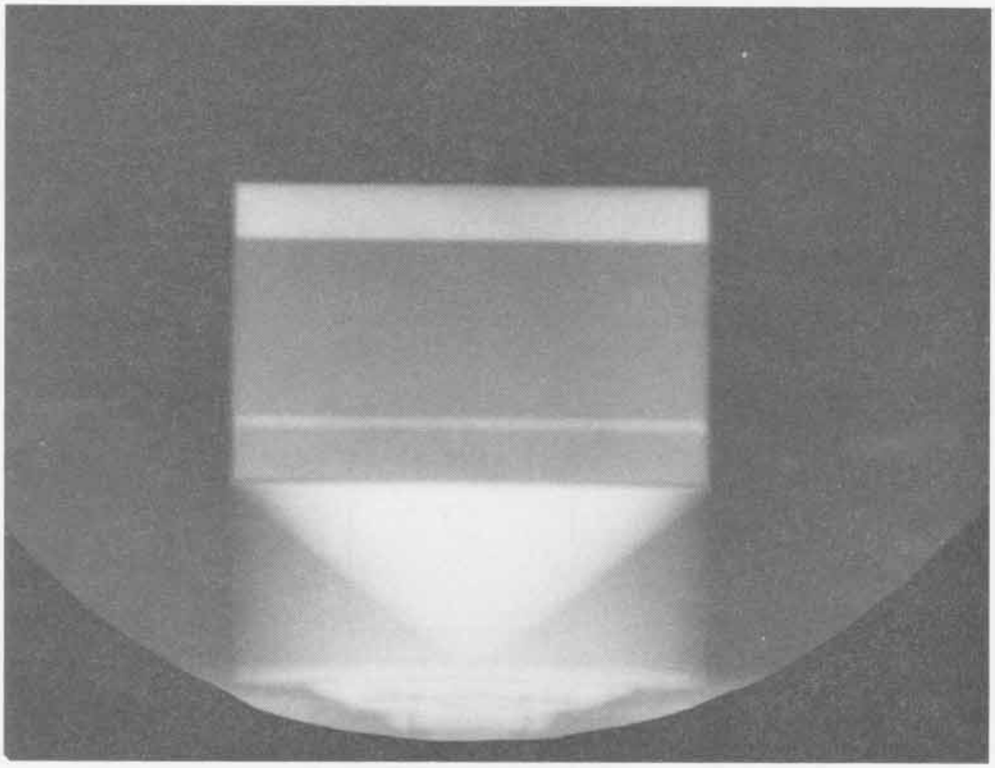


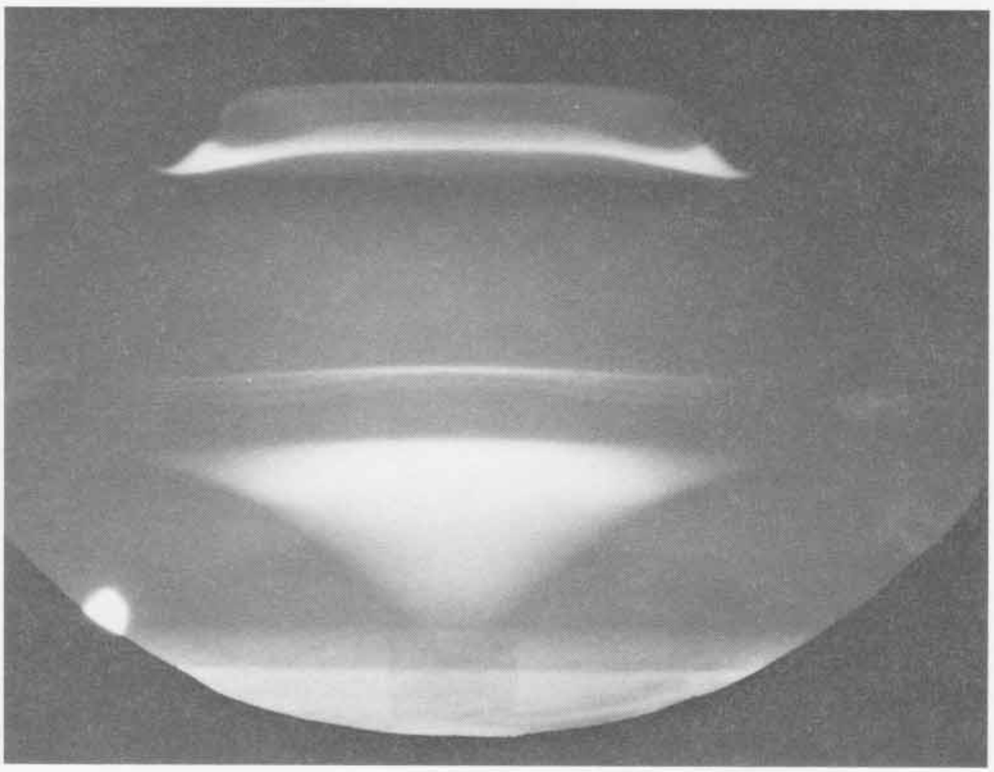


SHOT 581: **Composition B-3 with an Embedded Aluminum Plate**
Date: May 18, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 26.67 μs

A 1.0-mm-thick aluminum plate is embedded between a 38.1-mm-thick Composition B-3 slab and a 12.7-mm-thick Composition B-3 slab plus a P-040 lens. The system shocks 12.0 mm of aluminum. h is 28.575 mm.

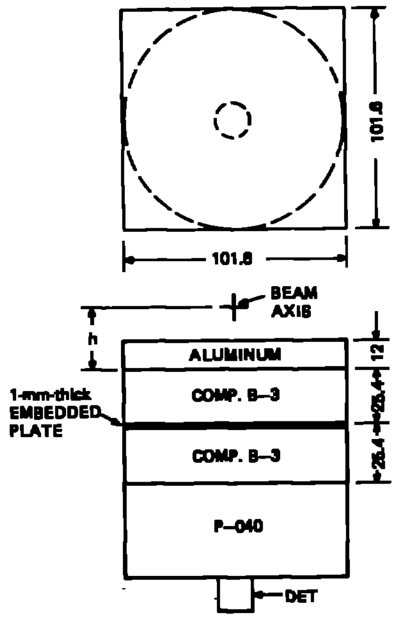


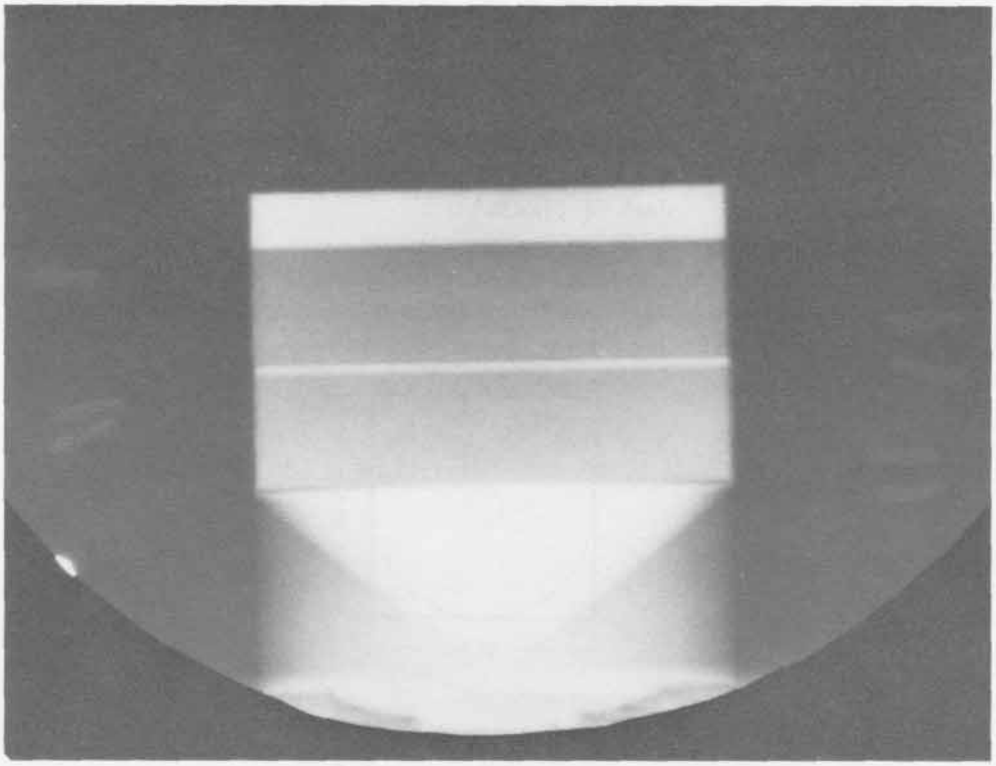


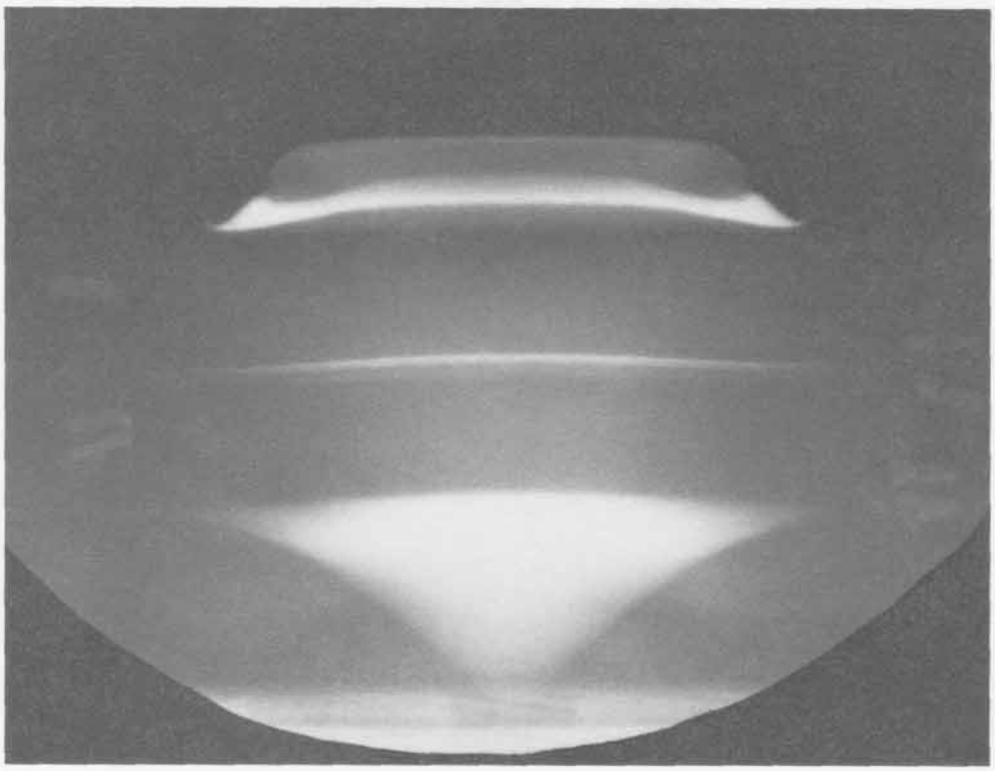


SHOT 582: **Composition B-3 with an Embedded Aluminum Plate**
Date: May 18, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 26.66 μs

A 1.0-mm-thick aluminum plate is embedded between a 25.4-mm-thick Composition B-3 slab and another 25.4-mm-thick Composition B-3 slab plus a P-040 lens. The system shocks 12.0 mm of aluminum. h is 28.575 mm.

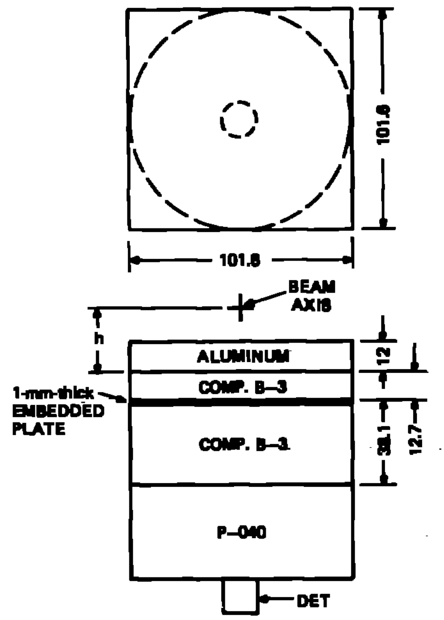


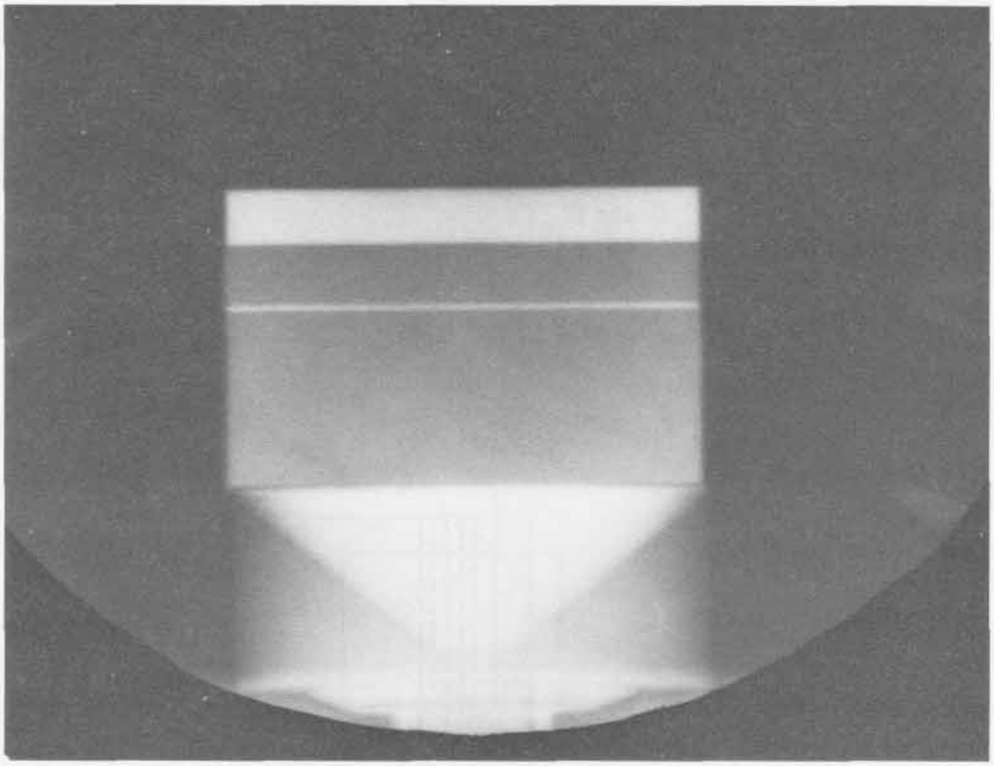


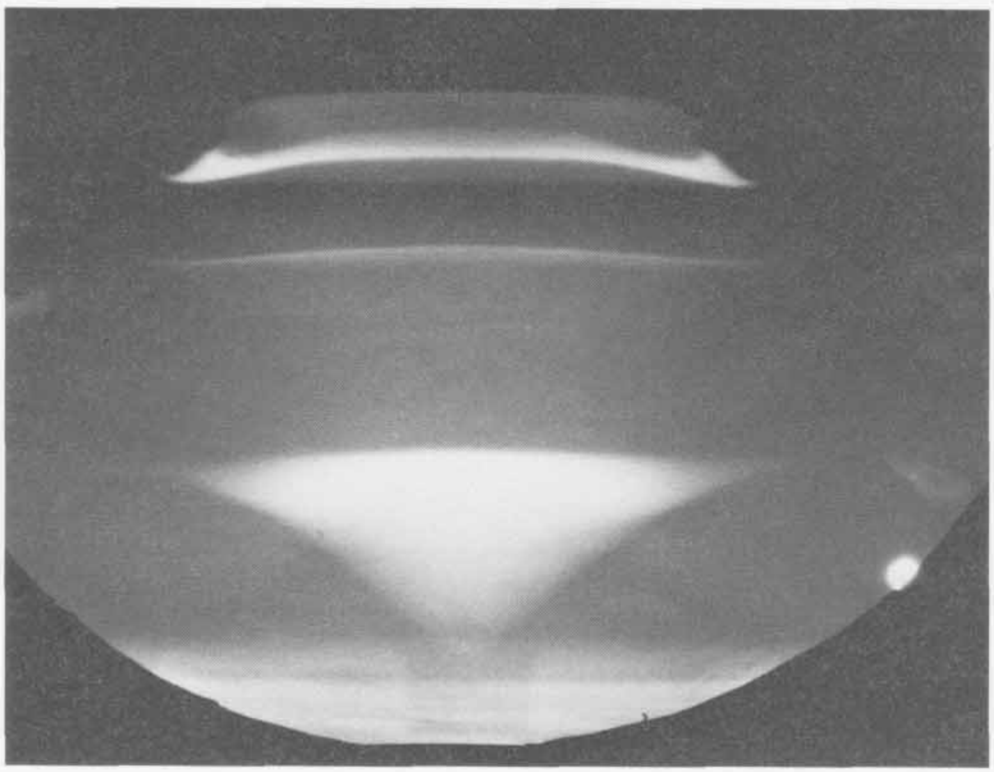


SHOT 583: **Composition B-3 with an Embedded Aluminum Plate**
Date: May 19, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 26.68 μs

A 1.0-mm-thick aluminum plate is embedded between a 12.7-mm-thick Composition B-3 slab and a 38.1-mm-thick Composition B-3 slab plus a P-040 lens. The system shocks 12.0 mm of aluminum. h is 28.575 mm.

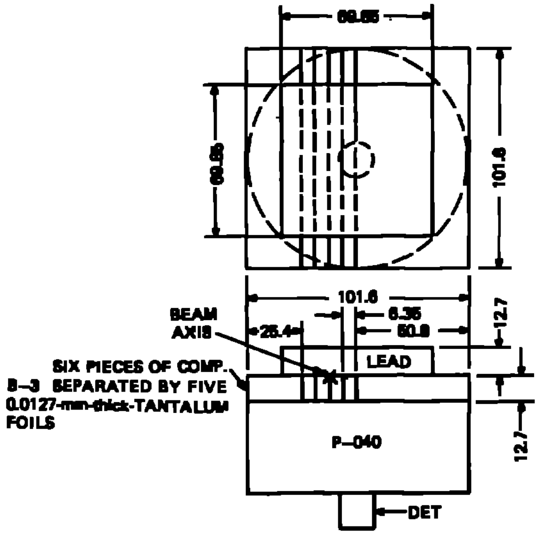


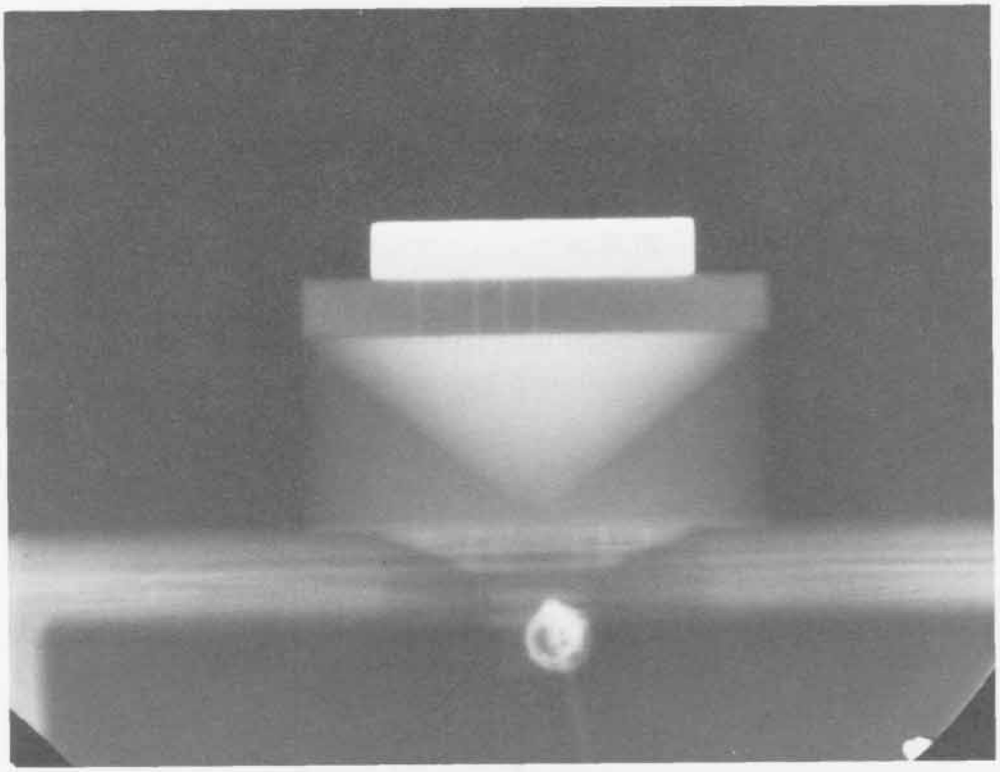


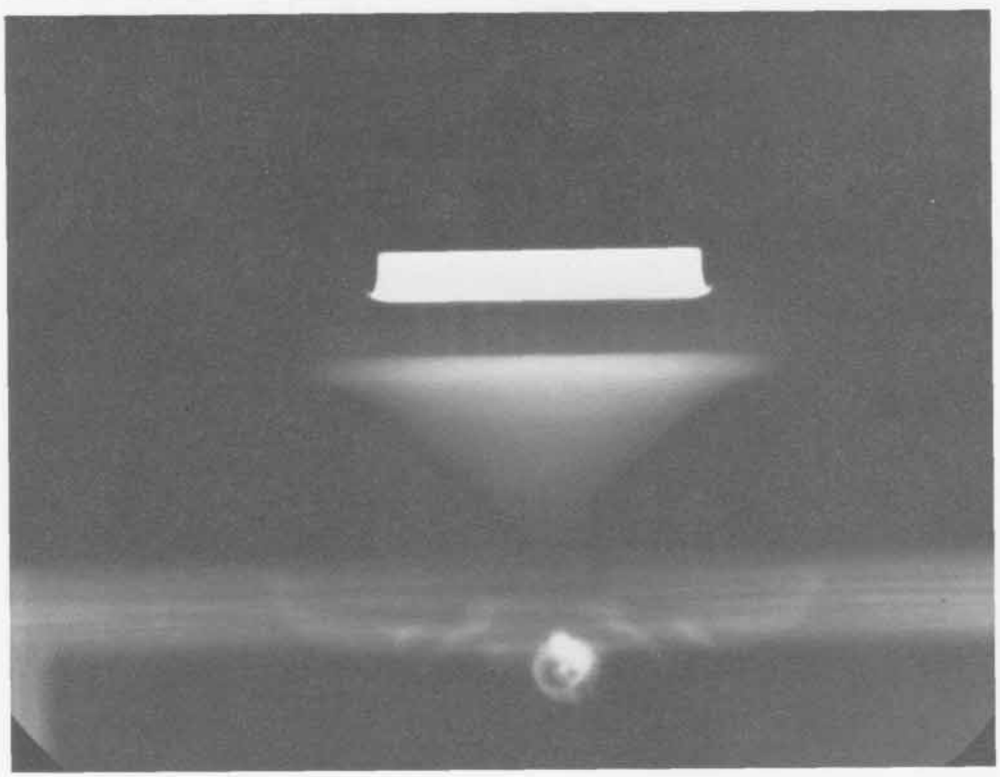


SHOT 586: **Lateral Flow in Confined Composition B-3**
Date: April 23, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 17.64 μs

Five 0.0127-mm-thick tantalum foils are embedded parallel to the detonation wave in a 12.7-mm-thick slab of Composition B-3 initiated by a P-040 lens. The detonation wave interacts with a 12.7-mm-thick lead plate. The objective was to study the lateral flow in confined Composition B-3 detonation products. See Shots 587 and 592-594.

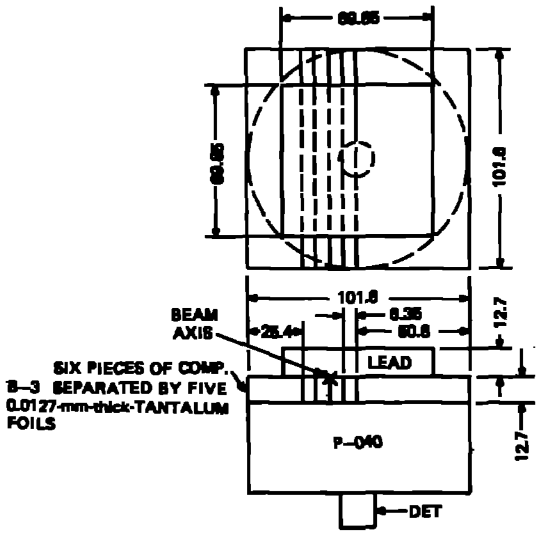


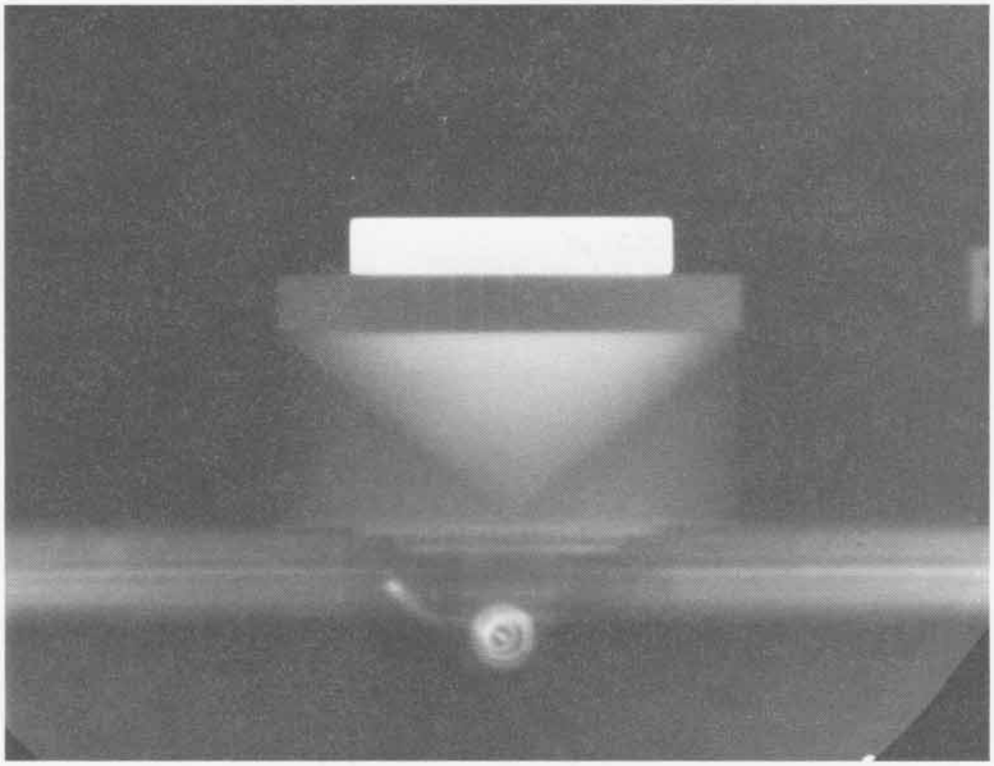


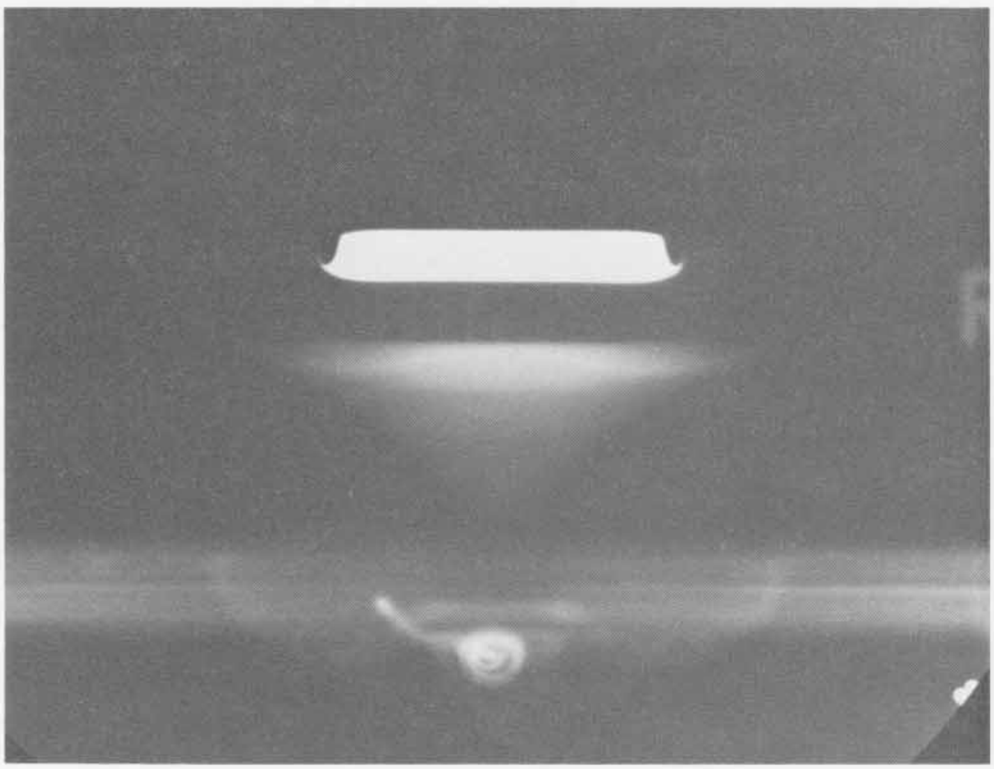


SHOT 587: **Lateral Flow in Confined Composition B-3**
Date: April 23, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 20.10 μs

Five 0.0127-mm-thick tantalum foils are embedded parallel to the detonation wave in a 12.7-mm-thick slab of Composition B-3 initiated by a P-040 lens. The detonation wave interacts with a 12.7-mm-thick lead plate. The objective was to study the lateral flow in confined Composition B-3 detonation products. See Shots 586 and 592-594.

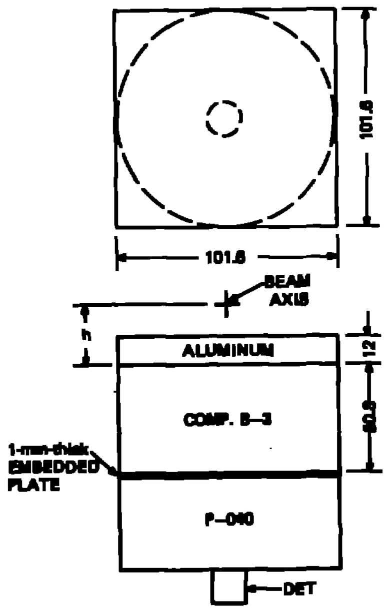


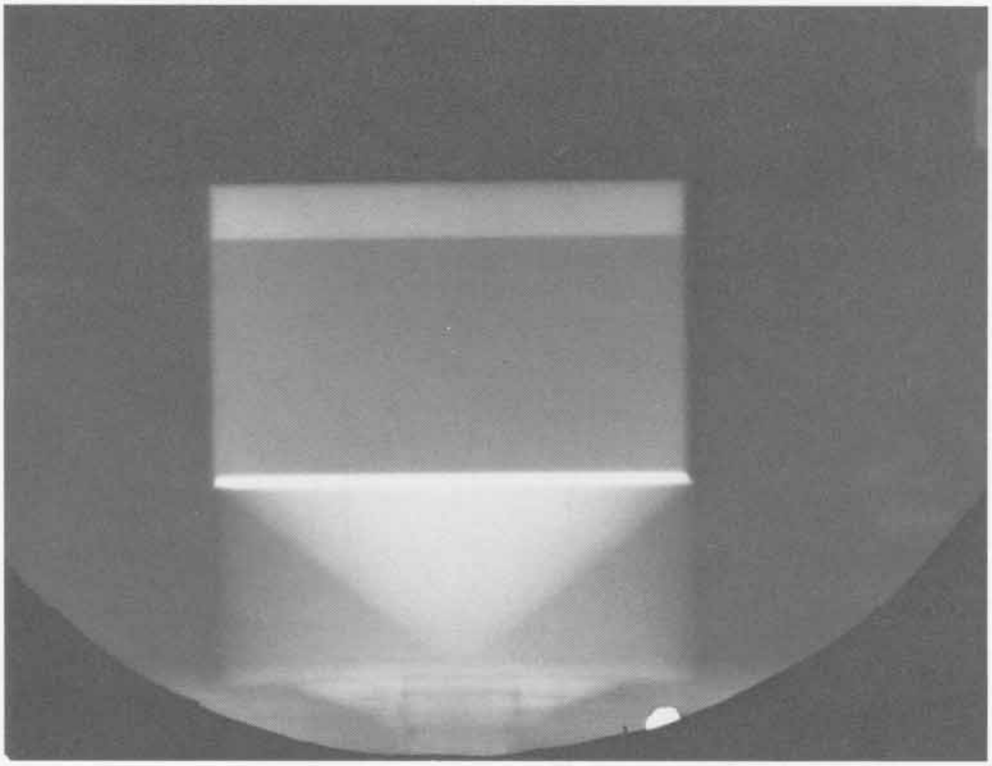


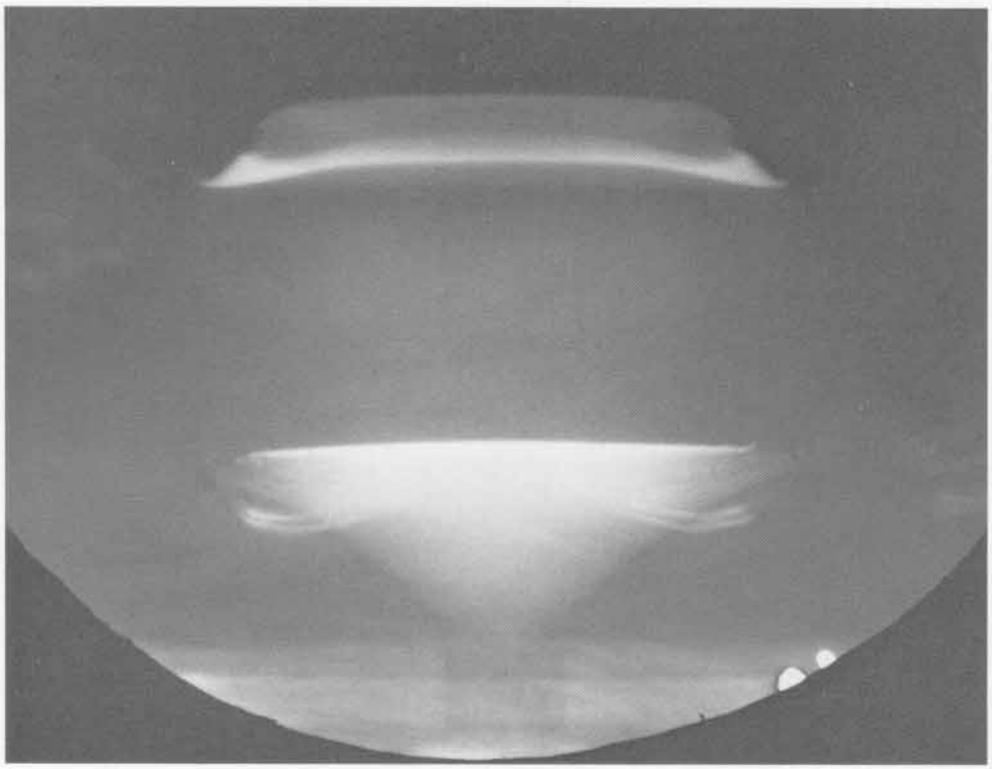


SHOT 588: **Composition B-3 with an Embedded Iron Plate**
Date: August 2, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 26.70 μs

A 1.0-mm-thick iron plate is embedded between a P-040 lens and 50.8 mm of Composition B-3 that shocks 12.0 mm of aluminum. h is 28.575 mm.

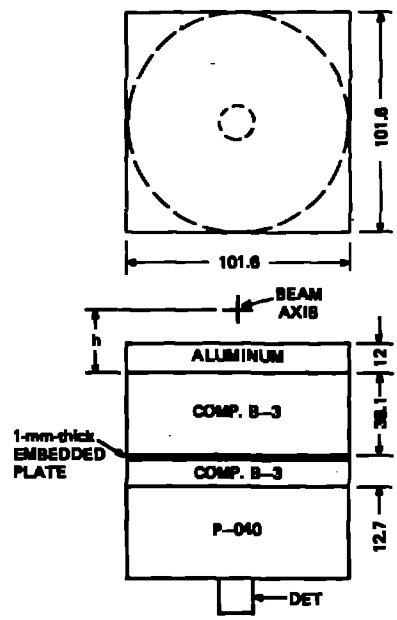


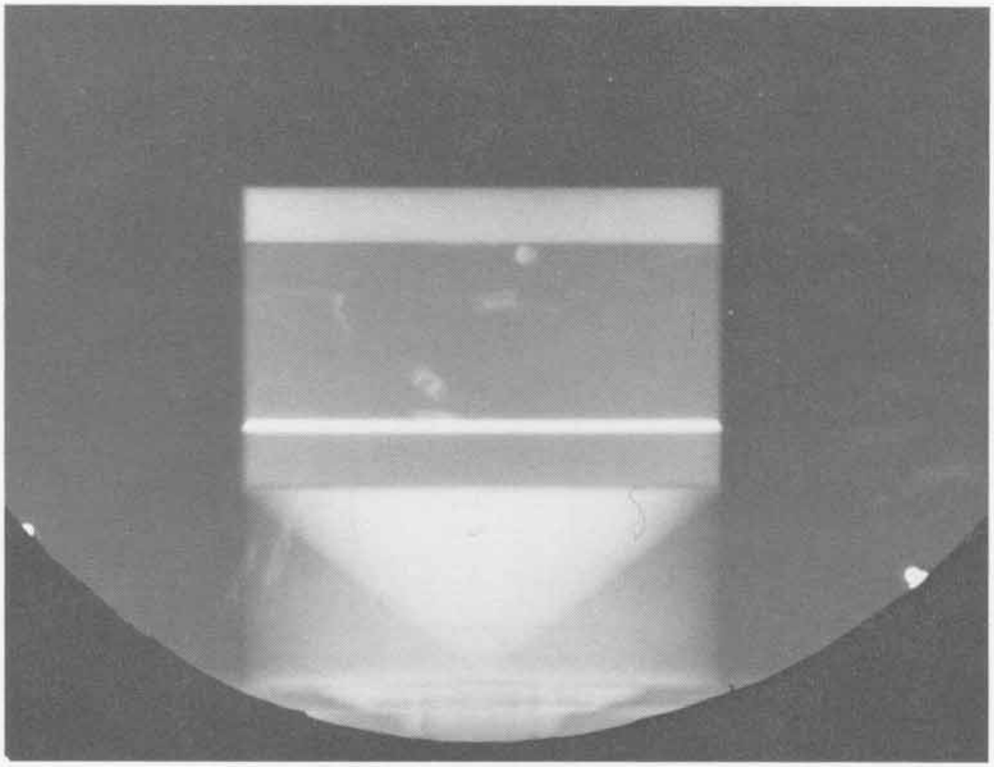


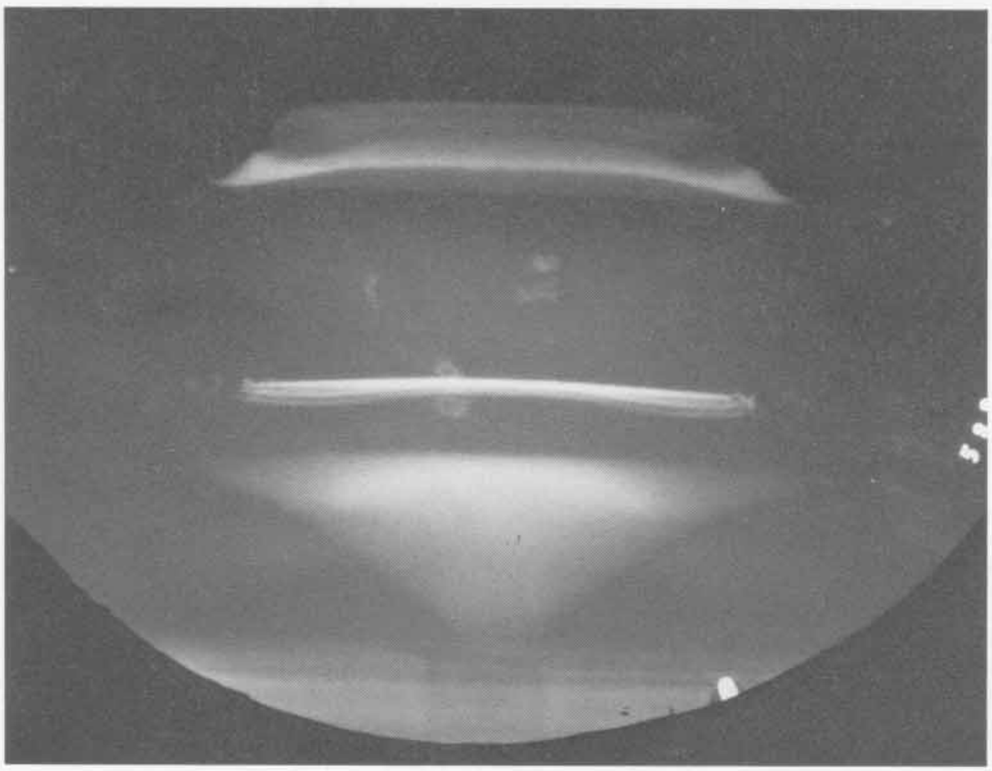


SHOT 589: **Composition B-3 with an Embedded Iron Plate**
Date: August 16, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 26.72 μs

A 1.0-mm-thick iron plate is embedded between a 38.1-mm-thick Composition B-3 slab and a 12.7-mm-thick Composition B-3 slab plus a P-040 lens. The system shocks 12.0 mm of aluminum. h is 28.575 mm.

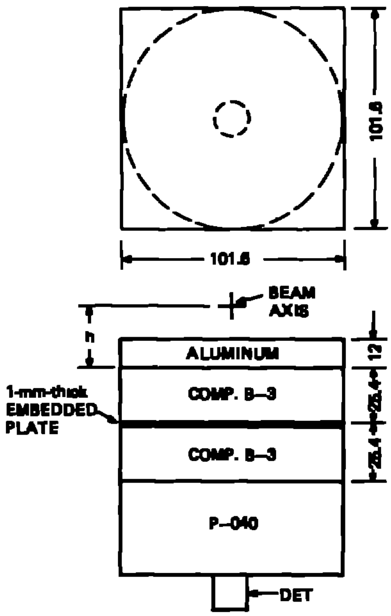


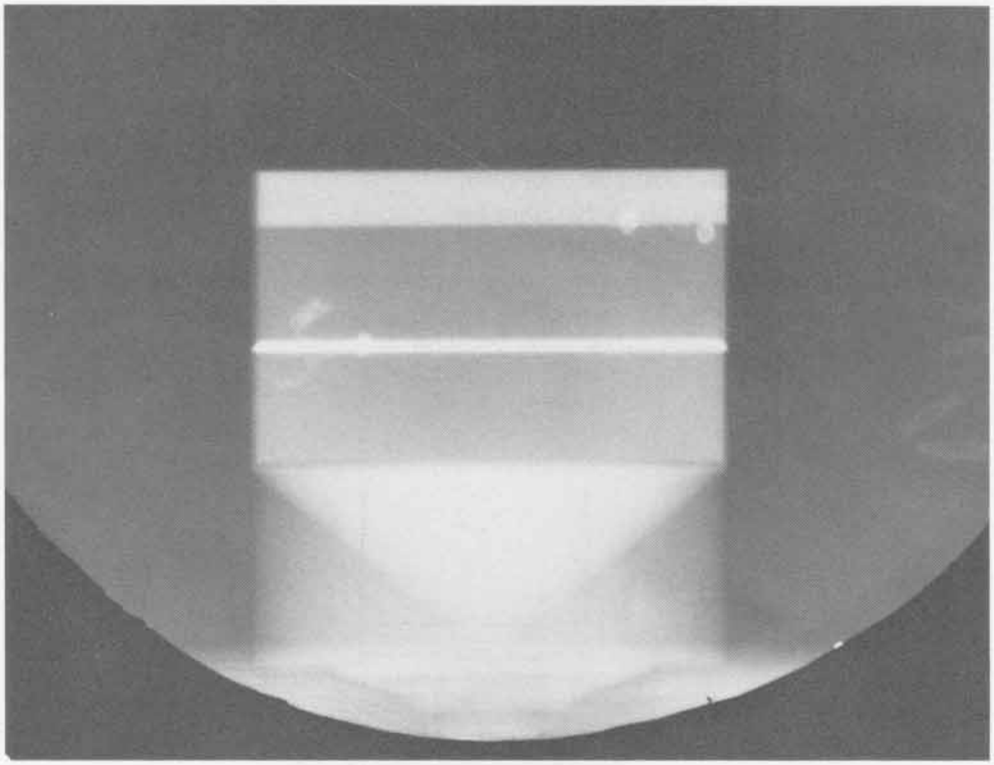


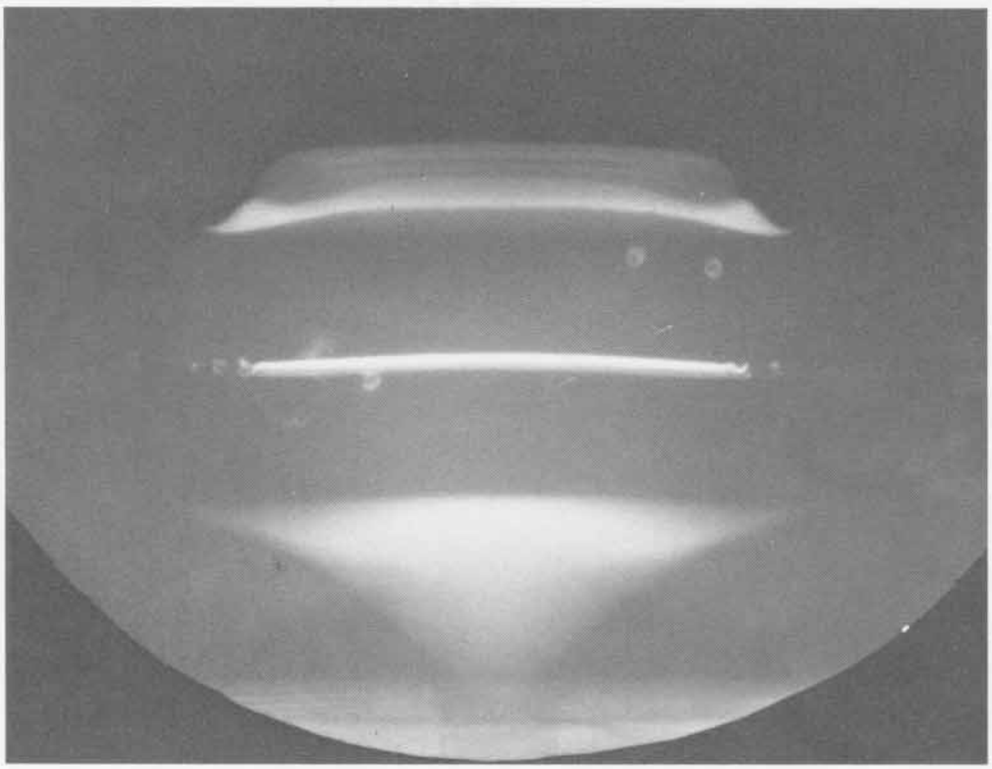


SHOT 590: **Composition B-3 with an Embedded Iron Plate**
Date: August 18, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 26.71 μs

A 1.0-mm-thick iron plate is embedded between a 25.4-mm-thick Composition B-3 slab and another 25.4-mm-thick Composition B-3 slab plus a P-040 lens. The system shocks 12.0 mm of aluminum. h is 28.575 mm.

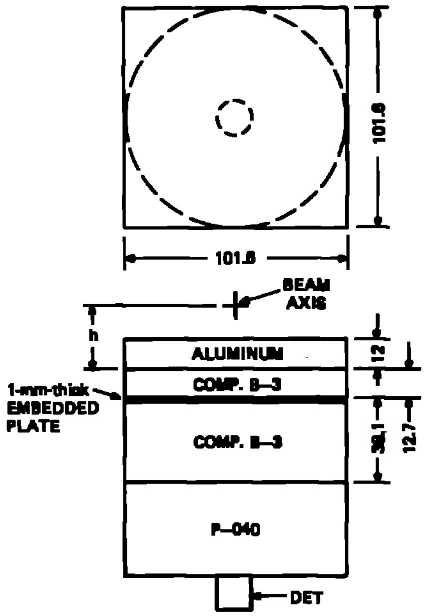


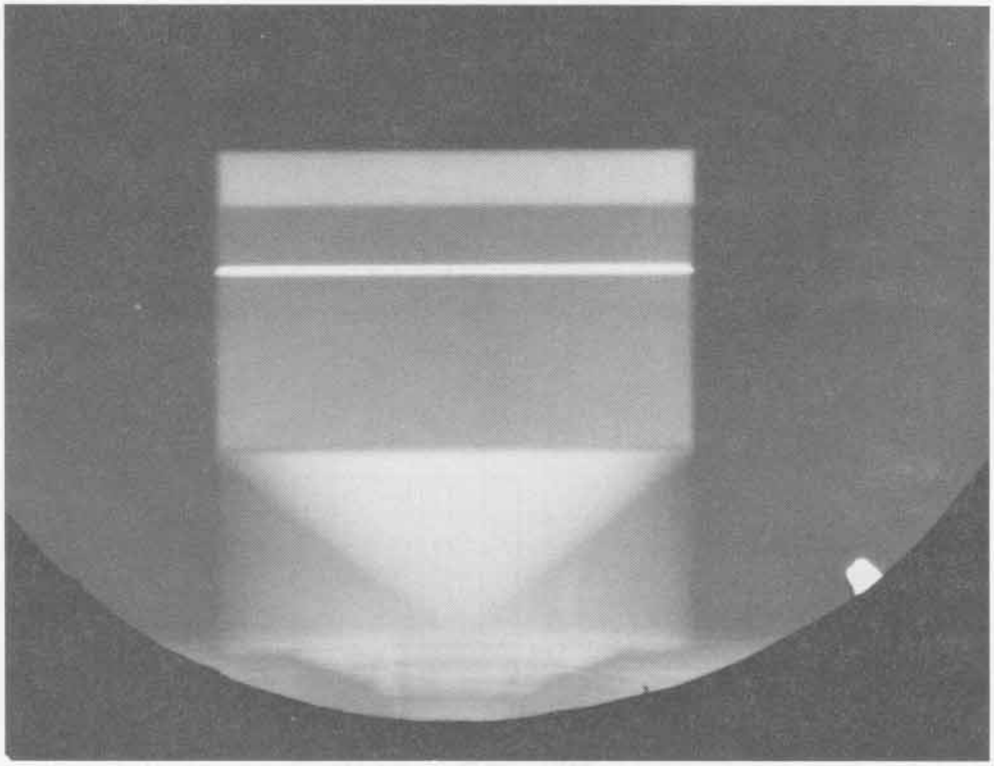


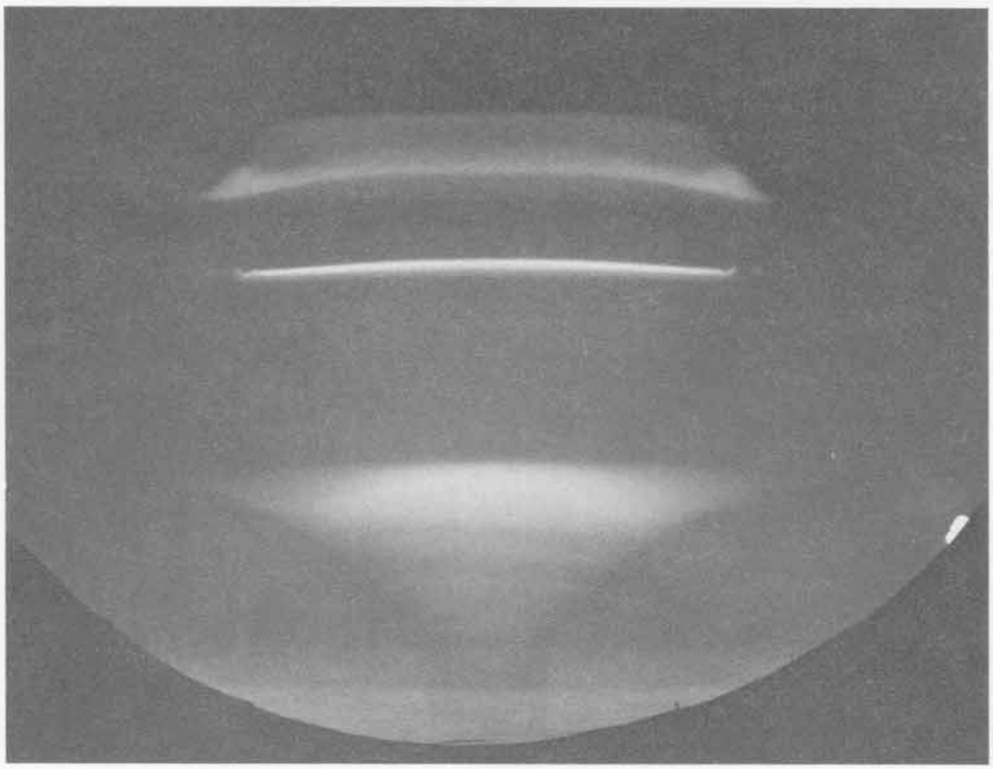


SHOT 591: **Composition B-3 with an Embedded Iron Plate**
Date: August 18, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 26.71 μs

A 1.0-mm-thick iron plate is embedded between a 12.7-mm-thick Composition B-3 slab and a 38.1-mm-thick Composition B-3 slab plus a P-040 lens. The system shocks 12.0 mm of aluminum. h is 28.575 mm.







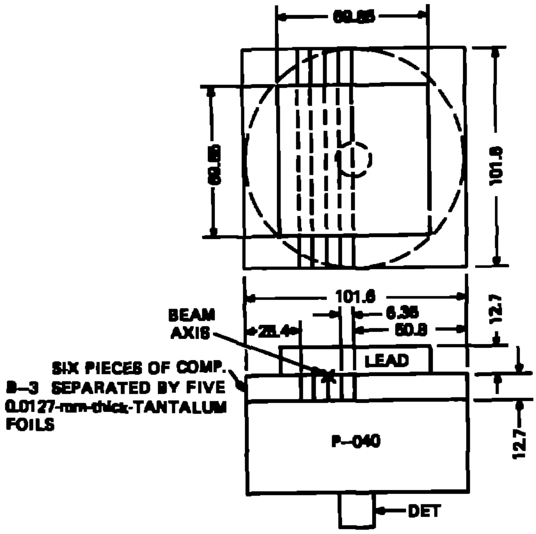
SHOT 592: **Lateral Flow in Confined Composition B-3**

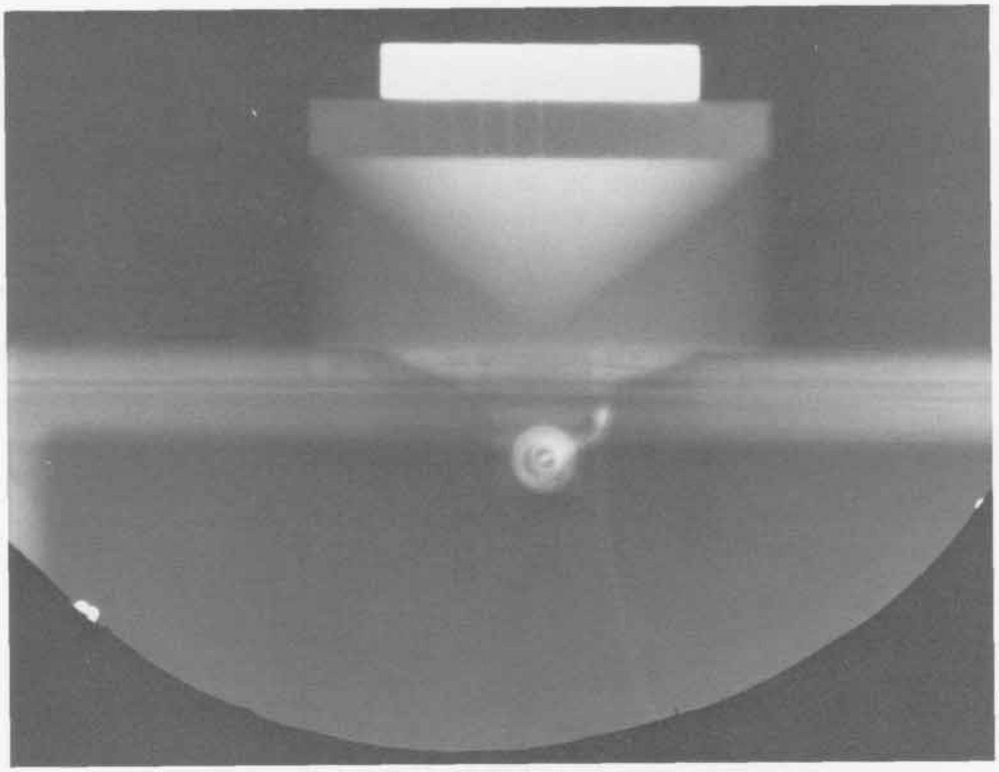
Date: April 24, 1969

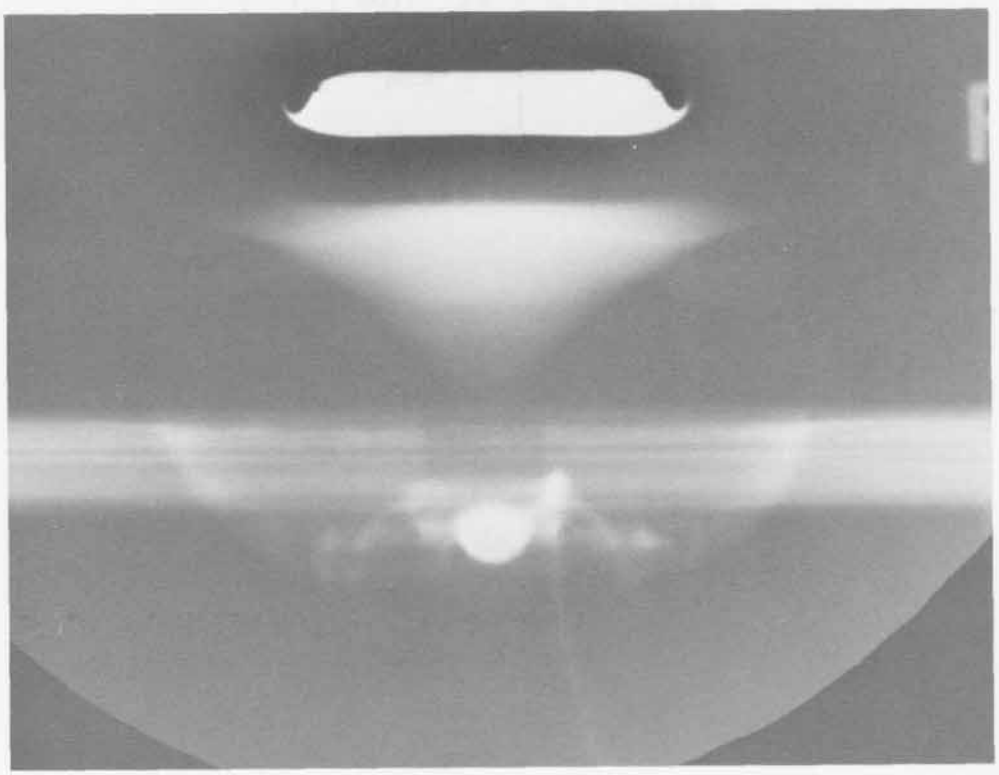
Experimenter: Roger W. Taylor

Radiographic Time: 22.63 μs

Five 0.0127-mm-thick tantalum foils are embedded parallel to the detonation wave in a 12.7-mm-thick slab of Composition B-3 initiated by a P-040 lens. The detonation wave interacts with a 12.7-mm-thick lead plate. See Shots 586, 587, 593, and 594.







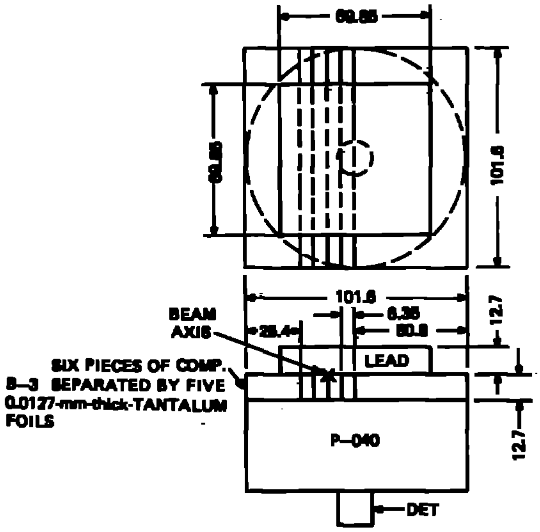
SHOT 593: **Lateral Flow in Confined Composition B-3**

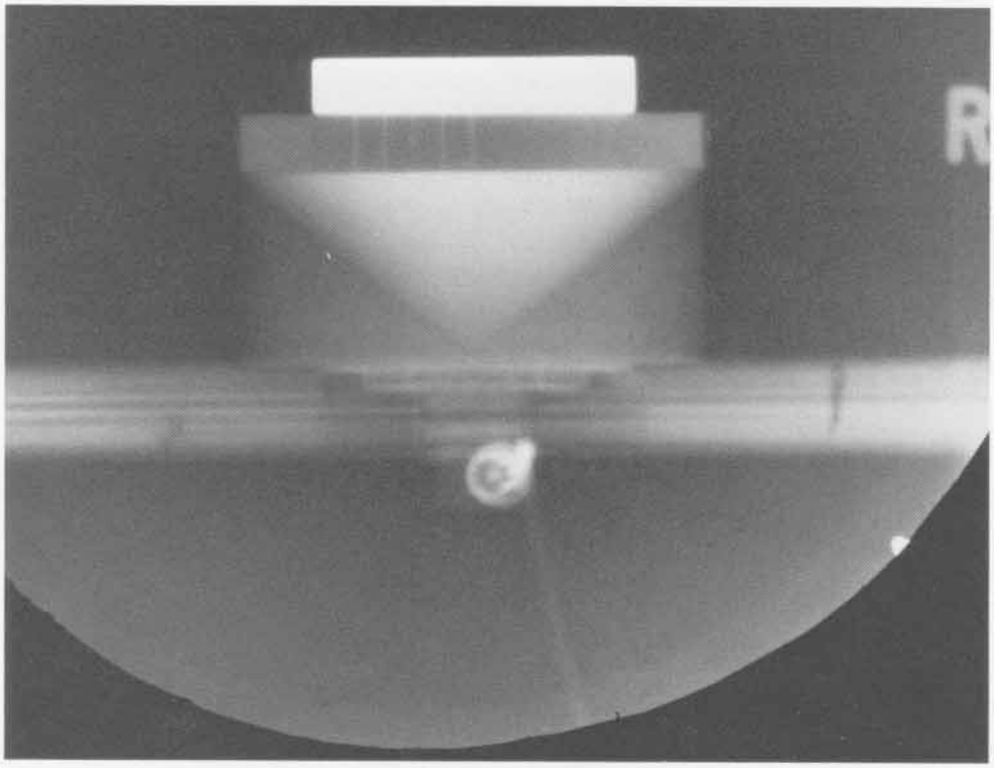
Date: April 24, 1969

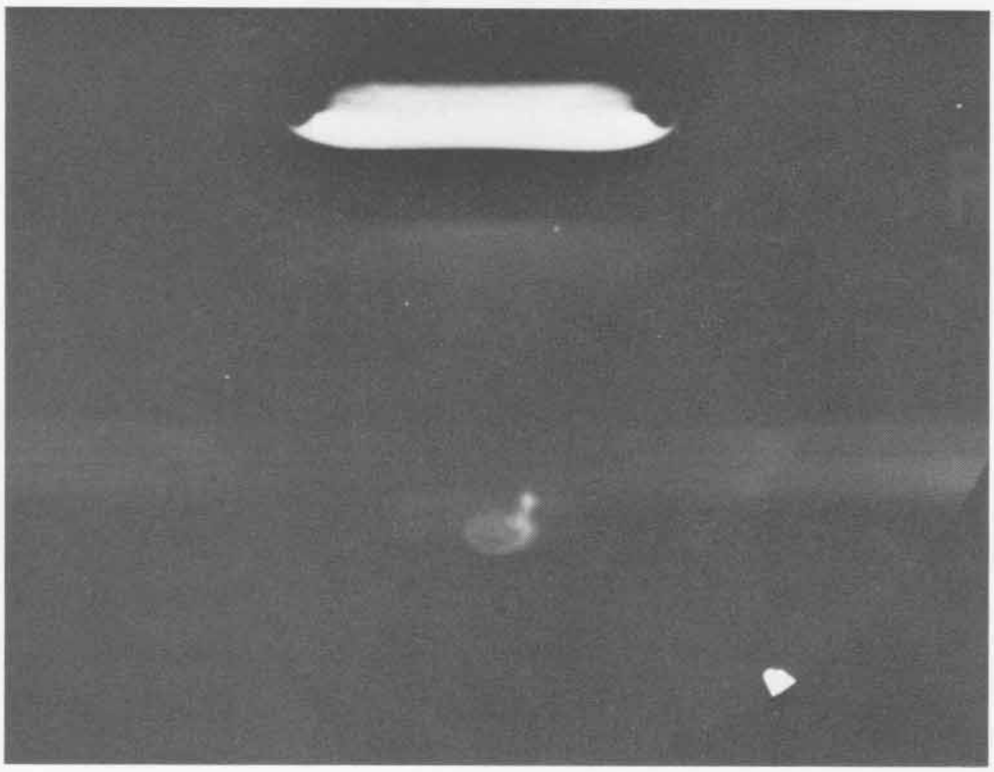
Experimenter: Roger W. Taylor

Radiographic Time: 25.14 μs

Five 0.0127-mm-thick tantalum foils are embedded parallel to the detonation wave in a 12.7-mm-thick slab of Composition B-3 initiated by a P-040 lens. The detonation wave interacts with a 12.7-mm-thick lead plate. See Shots 586, 587, 592, and 594.

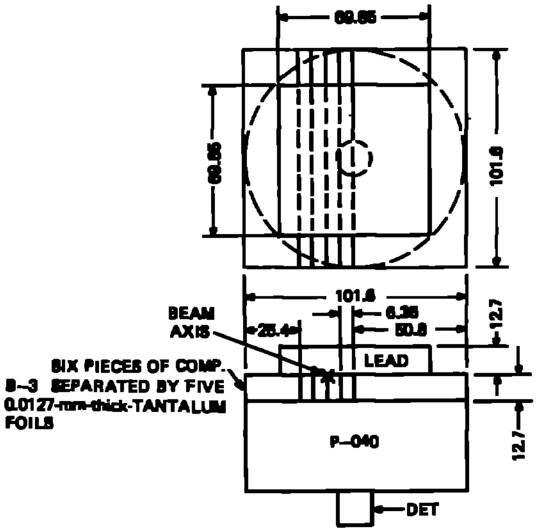


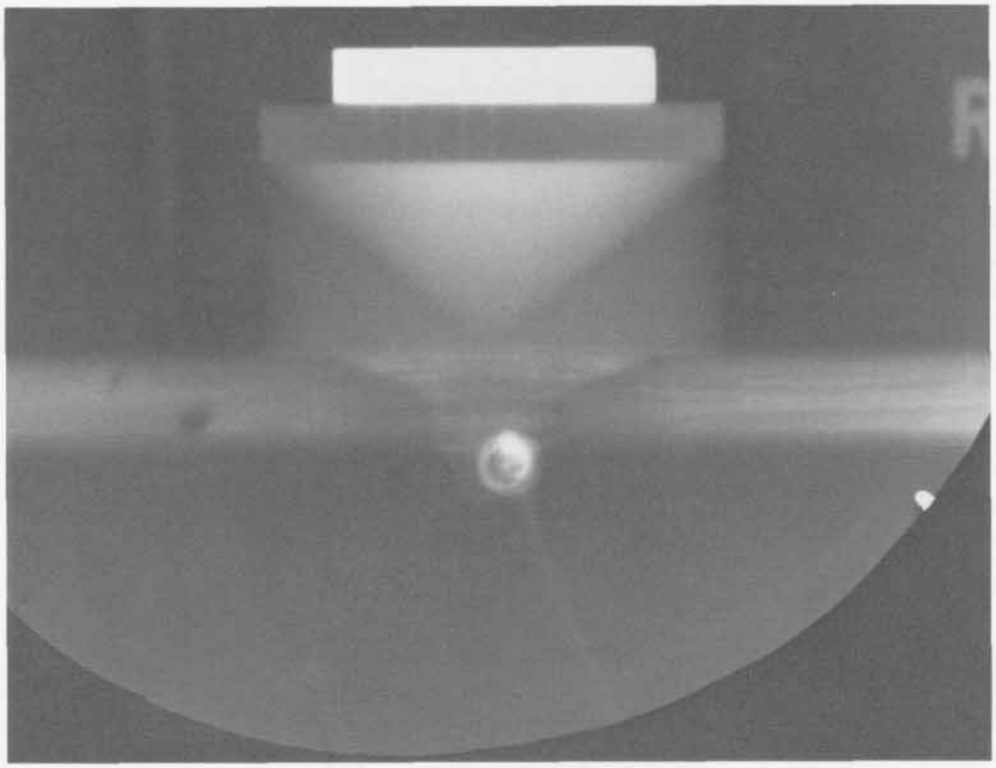


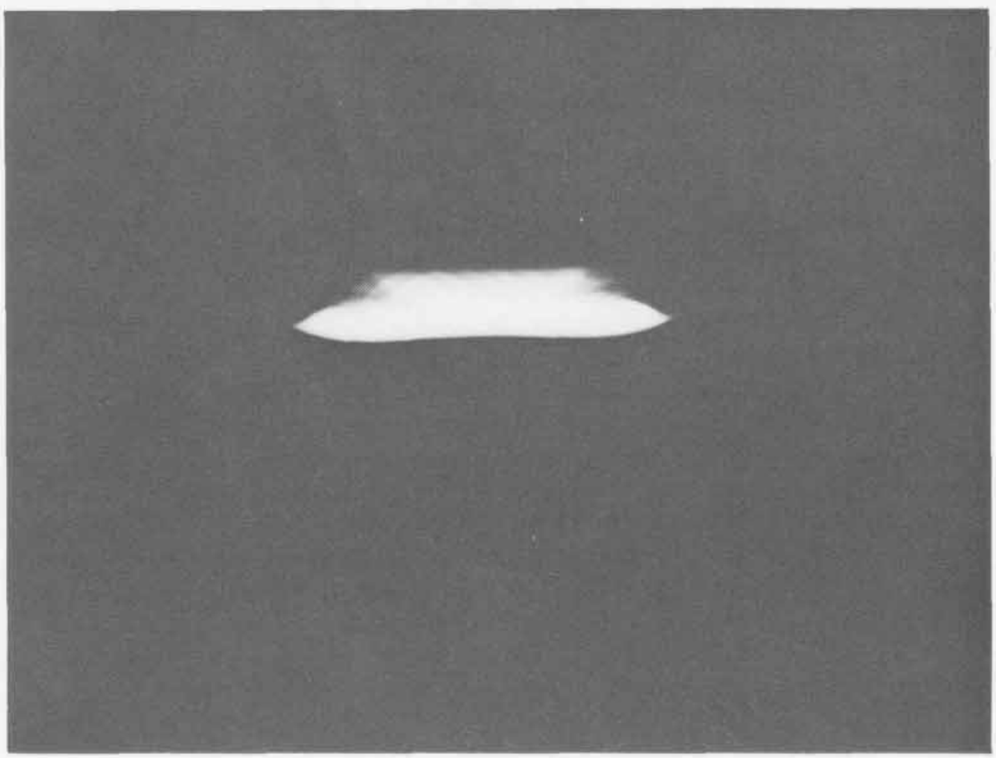


SHOT 594: **Lateral Flow in Confined Composition B-3**
Date: April 24, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 27.60 μs

Five 0.0127-mm-thick tantalum foils are embedded parallel to the detonation wave in a 12.7-mm-thick slab of Composition B-3 initiated by a P-040 lens. The detonation wave interacts with a 12.7-mm-thick lead plate. See Shots 586, 587, 592, and 593.

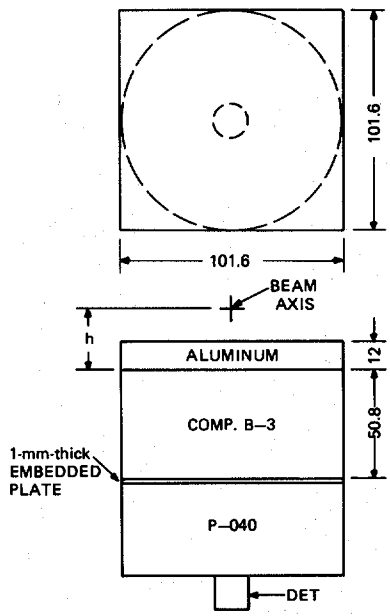


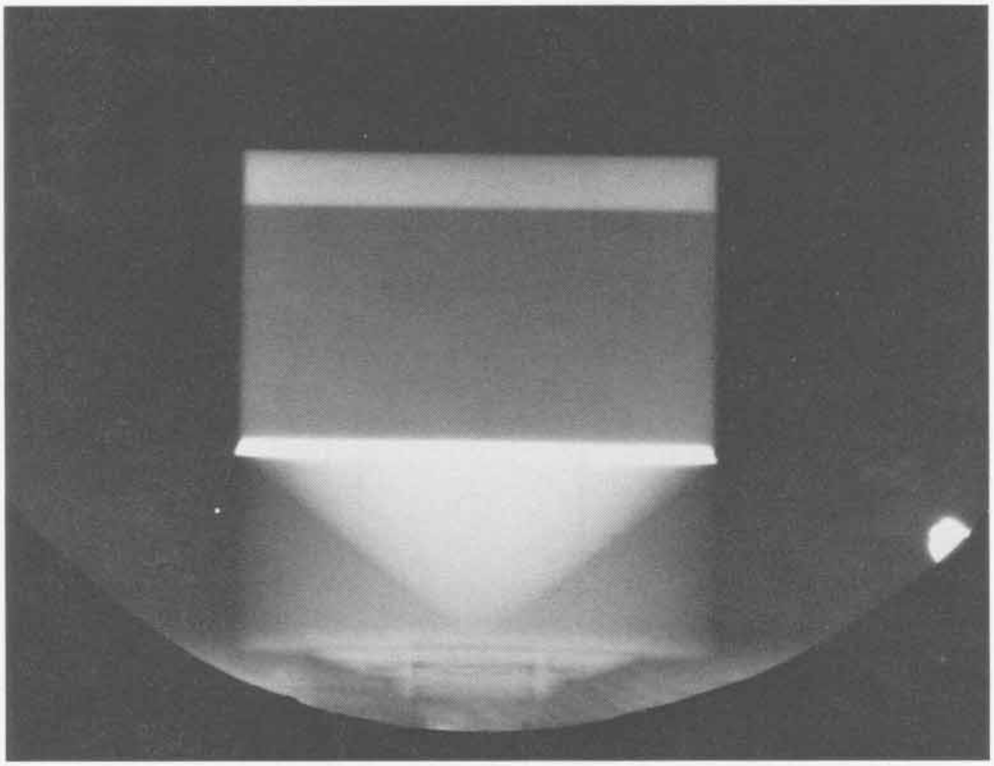


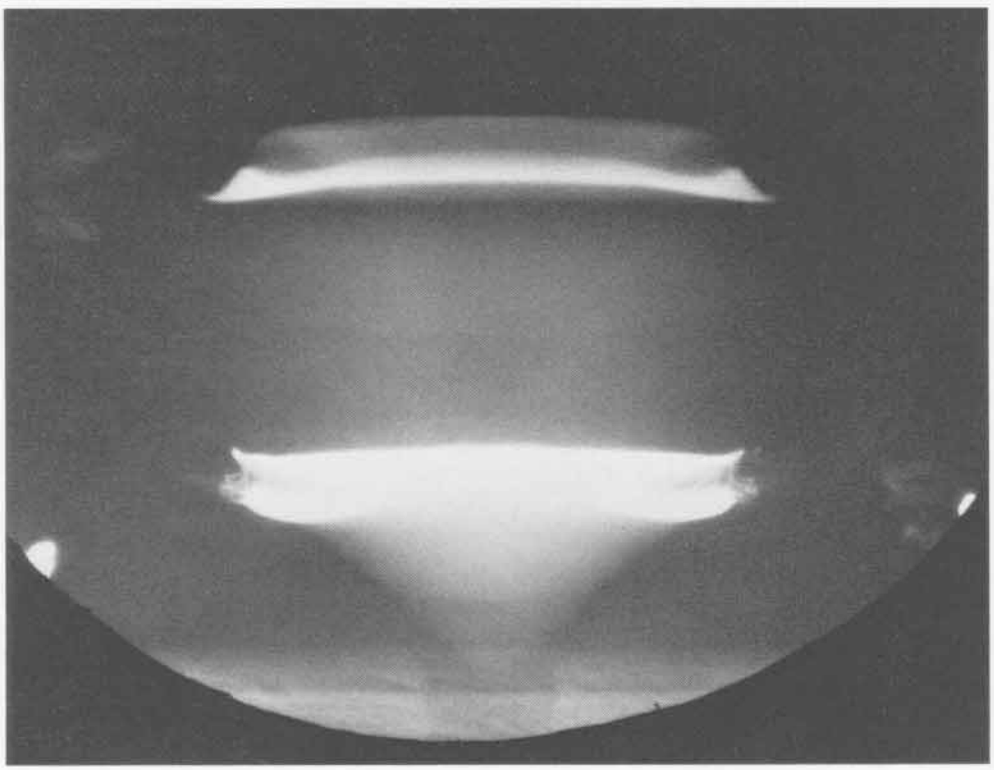


SHOT 596: **Composition B-3 with an Embedded Uranium Plate**
Date: May 10, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 26.81 μs

A 1.0-mm-thick uranium plate is embedded between a P-040 lens and 50.8 mm of Composition B-3 that shocks 12.0 mm of aluminum. h is 28.575 mm.

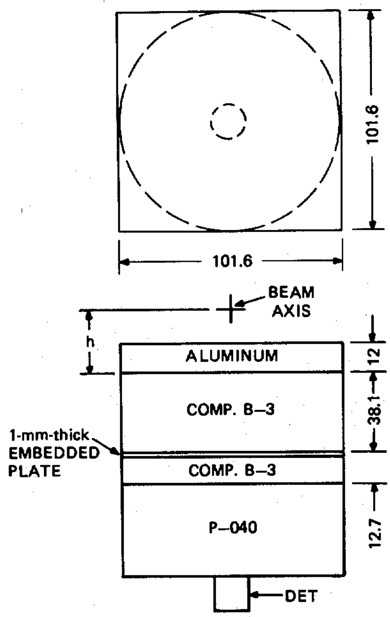


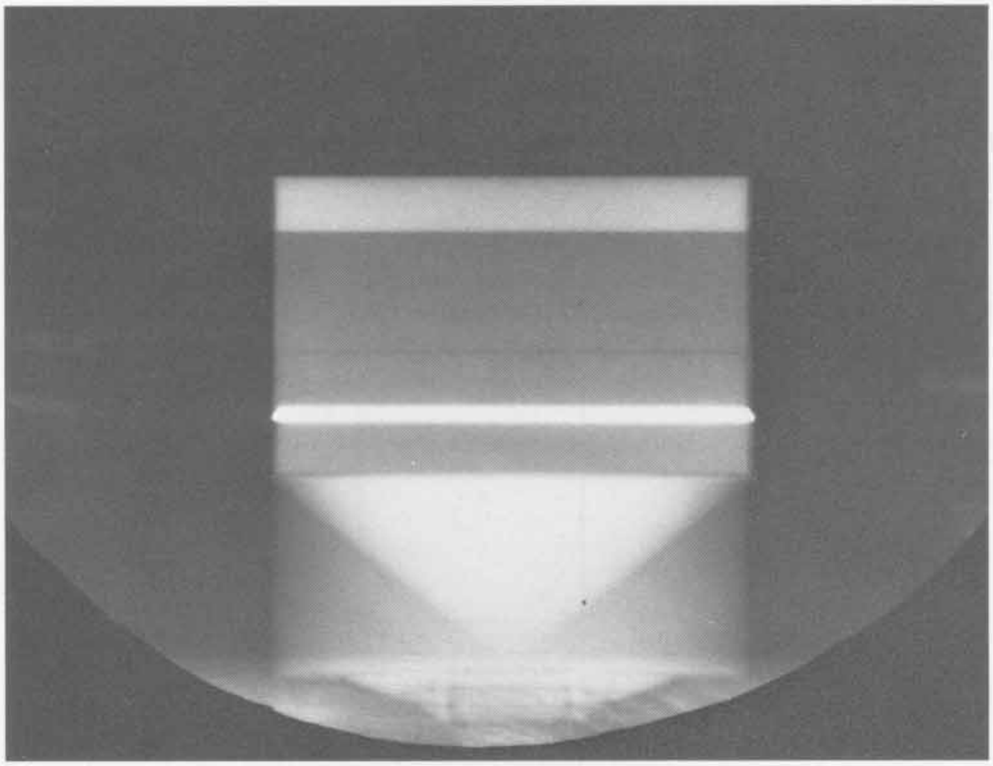


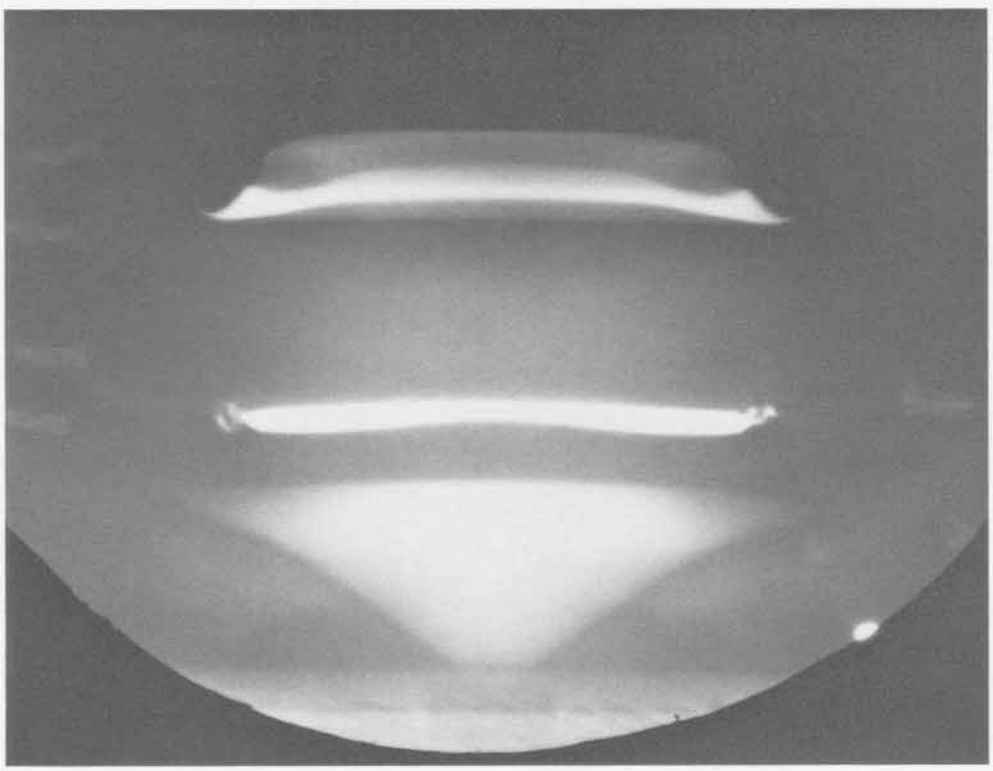


SHOT 597: **Composition B-3 with an Embedded Uranium Plate**
Date: May 19, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 26.82 μs

A 1.0-mm-thick uranium plate is embedded between a 38.1-mm-thick Composition B-3 slab and a 12.7-mm-thick Composition B-3 slab plus a P-040 lens. The system shocks 12.0 mm of aluminum. h is 28.575 mm.

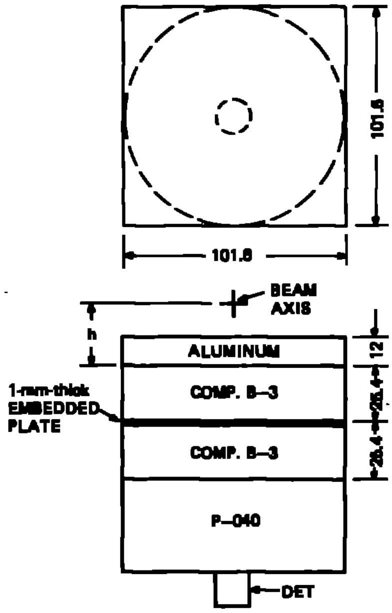


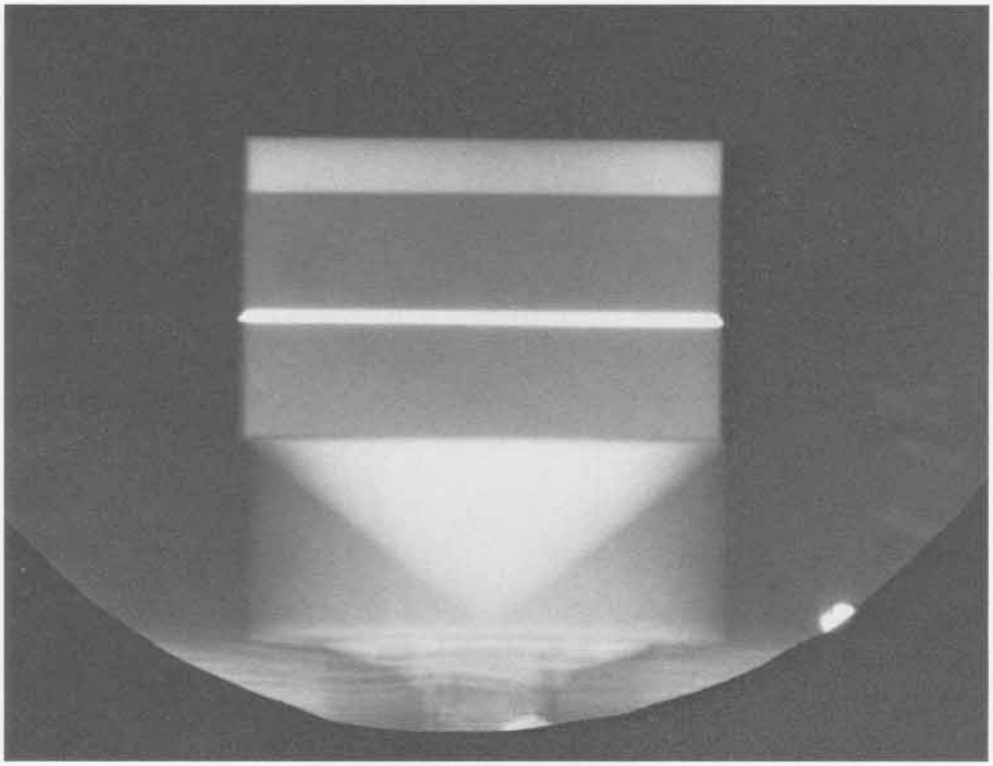


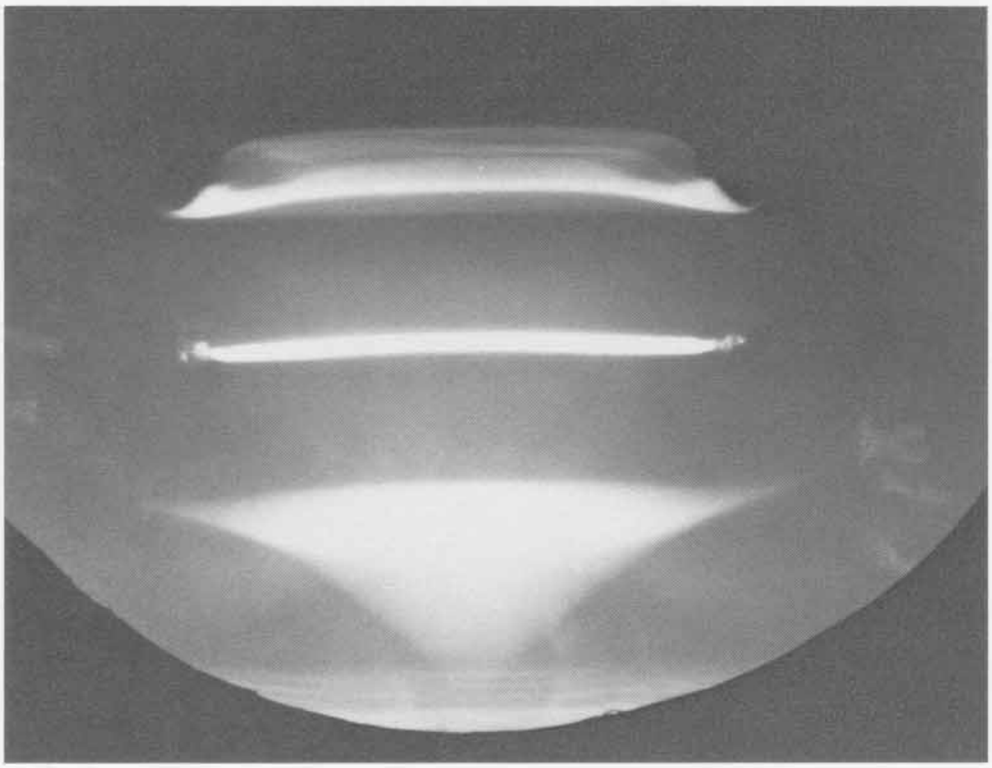


SHOT 598: **Composition B-3 with an Embedded Uranium Plate**
Date: May 19, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 26.83 μs

A 1.0-mm-thick uranium plate is embedded between a 25.4-mm-thick Composition B-3 slab and another 25.4-mm-thick Composition B-3 slab plus a P-040 lens. The system shocks 12.0 mm of aluminum. h is 28.575 mm. See Shot 651.

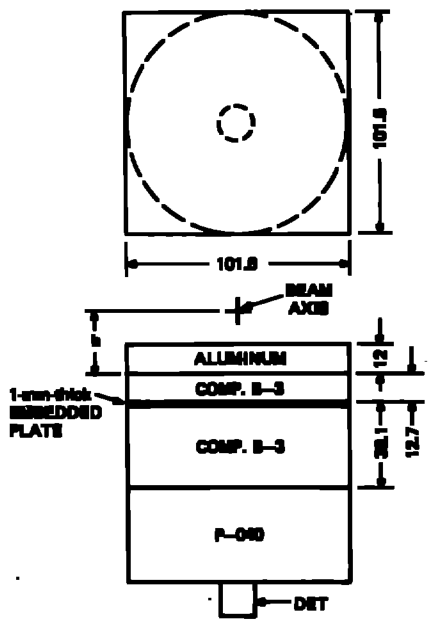


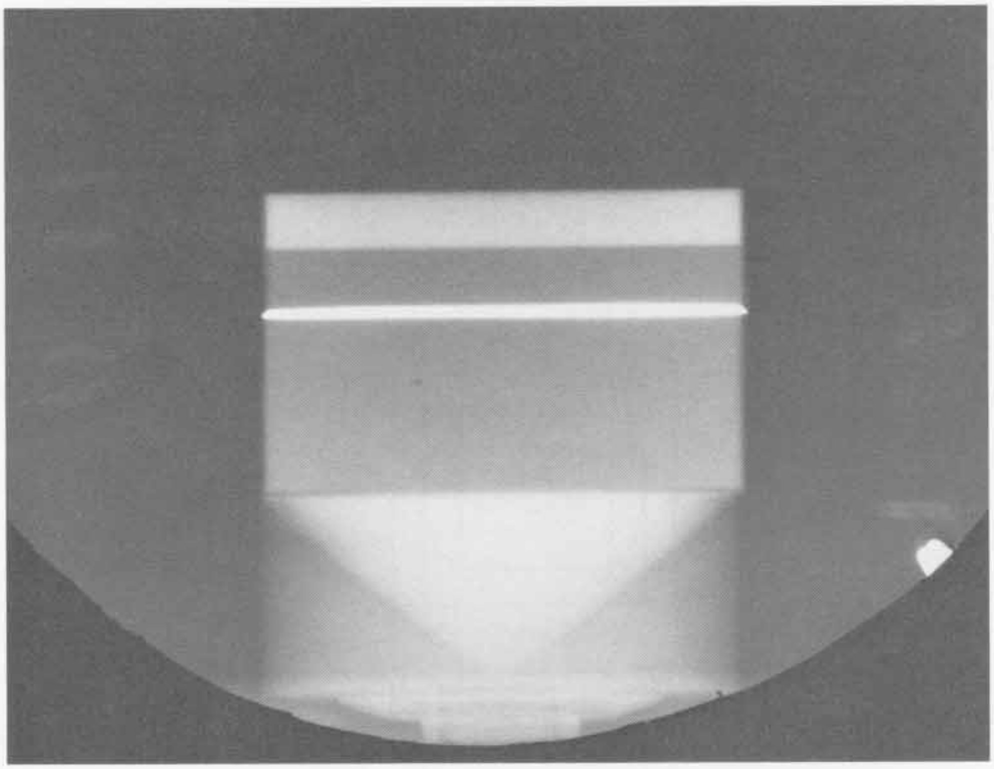


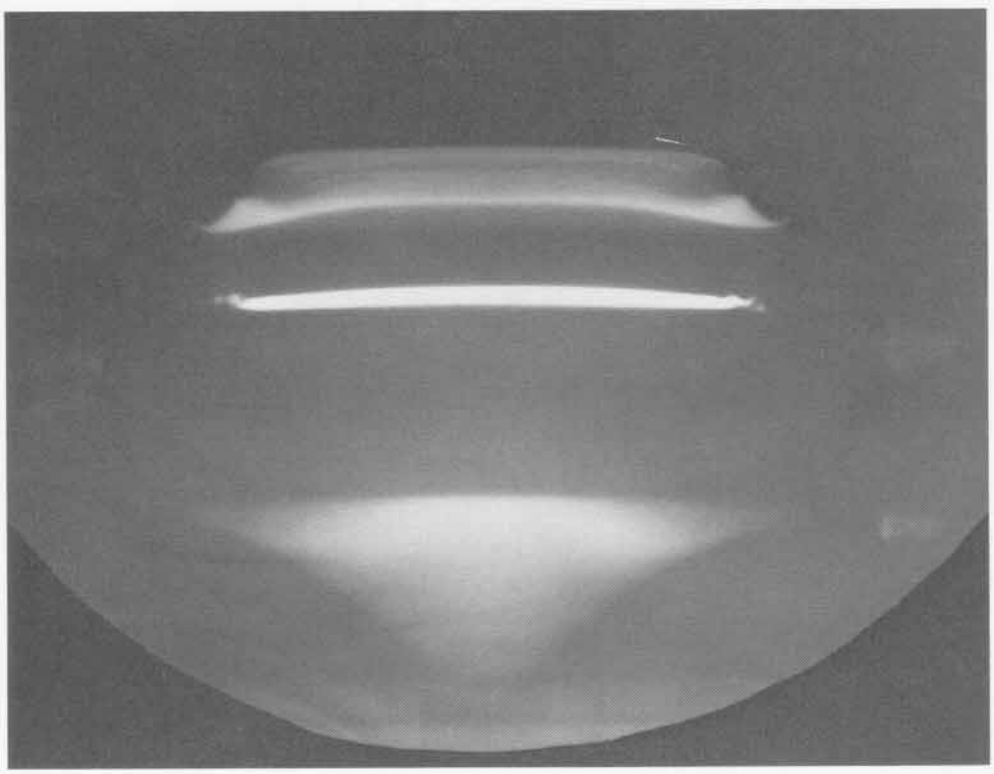


SHOT 599: **Composition B-3 with an Embedded Uranium Plate**
Date: May 19, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 26.83 μs

A 1.0-mm-thick uranium plate is embedded between a 12.7-mm-thick Composition B-3 slab and a 38.1-mm-thick Composition B-3 slab plus a P-040 lens. The system shocks 12.0 mm of aluminum. h is 28.575 mm.

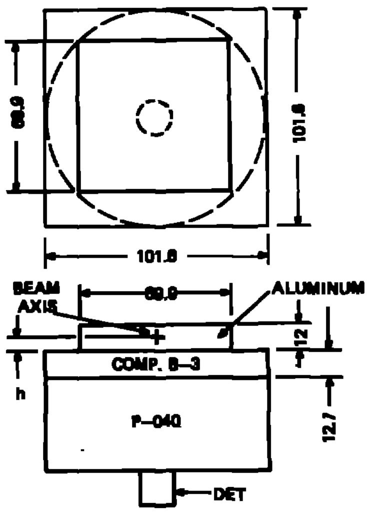


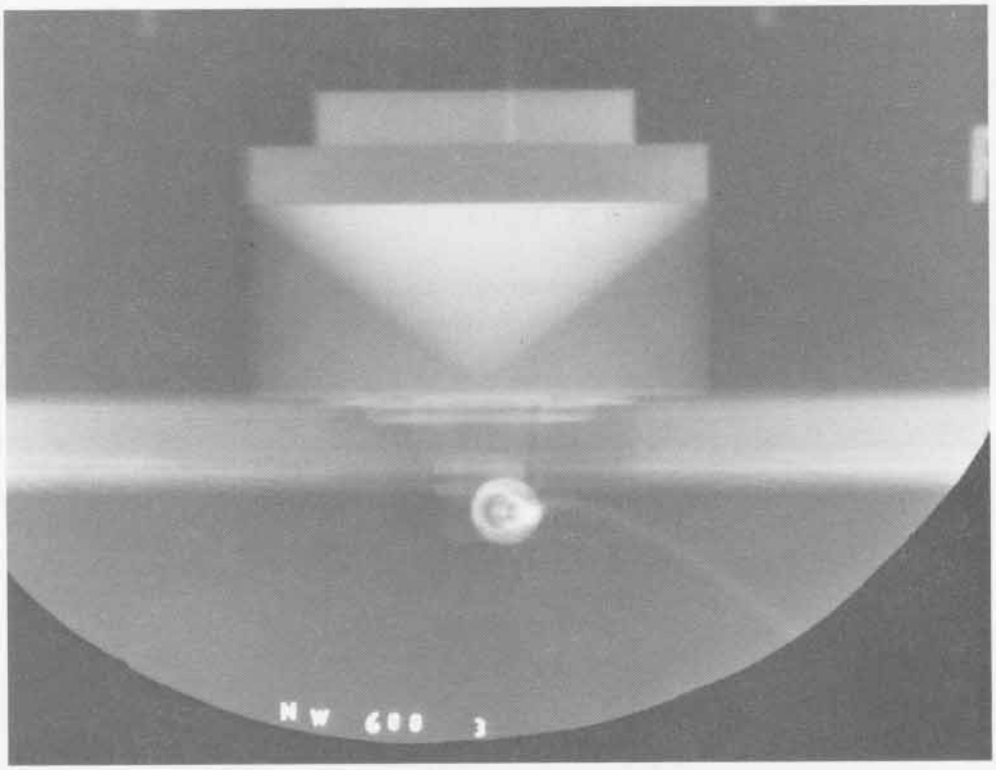


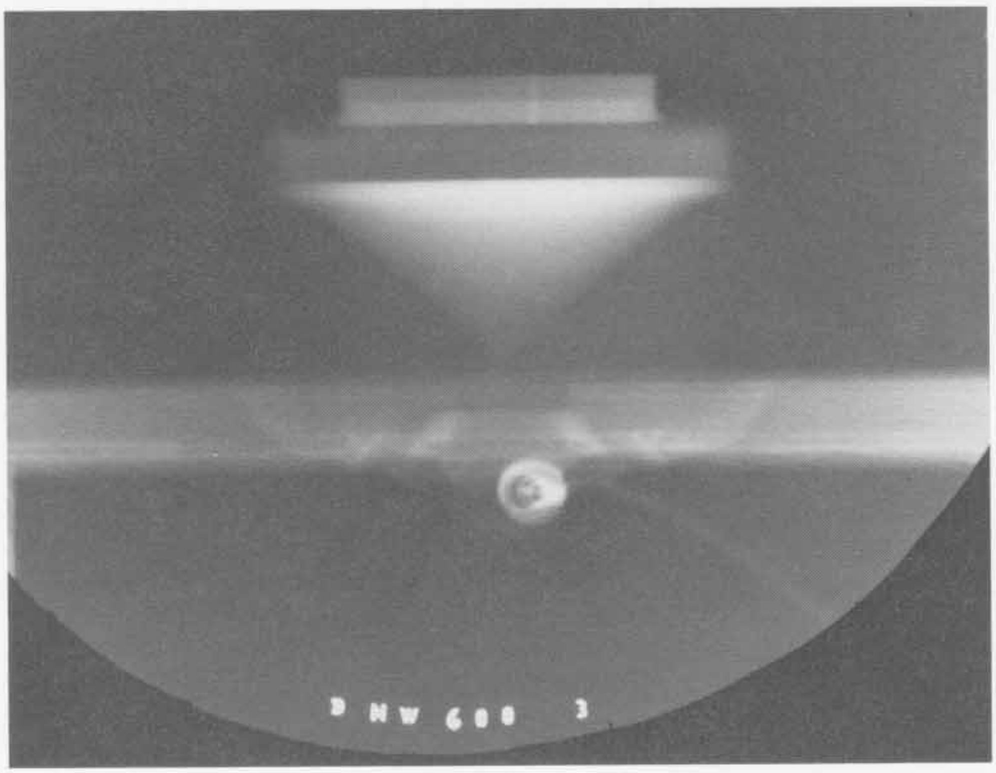


SHOT 600: **Aluminum Back Surface**
Date: March 26, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 16.16 μs

A 12.0-mm-thick aluminum plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 1.40 mm.

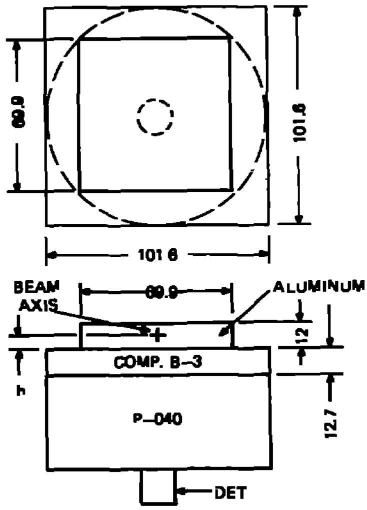


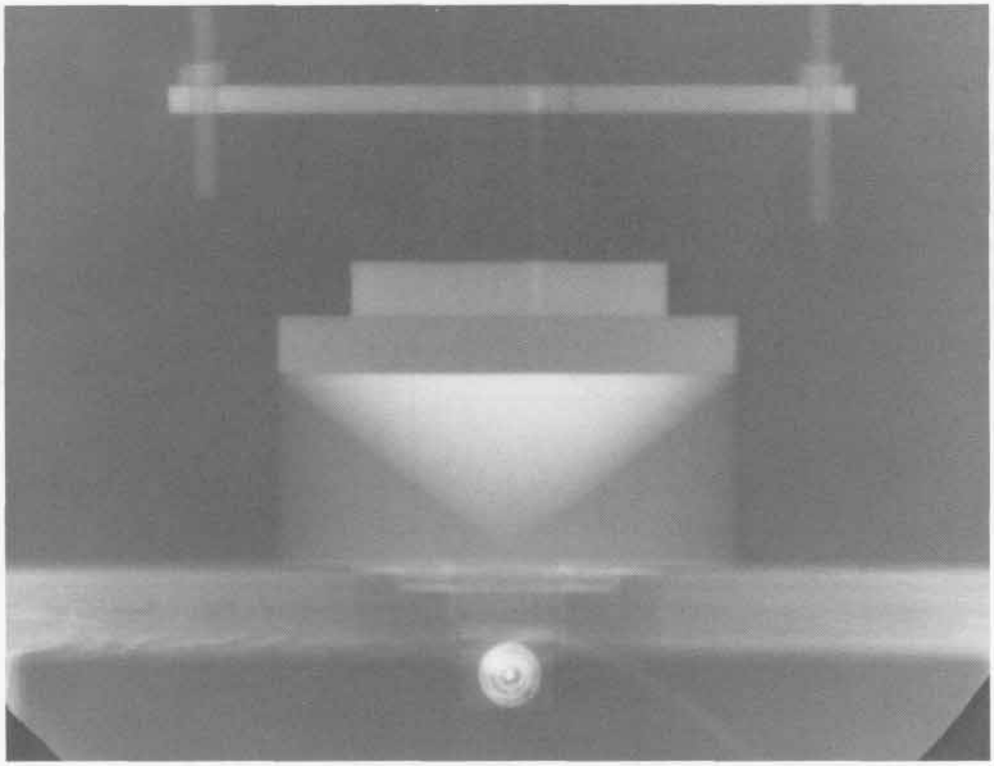


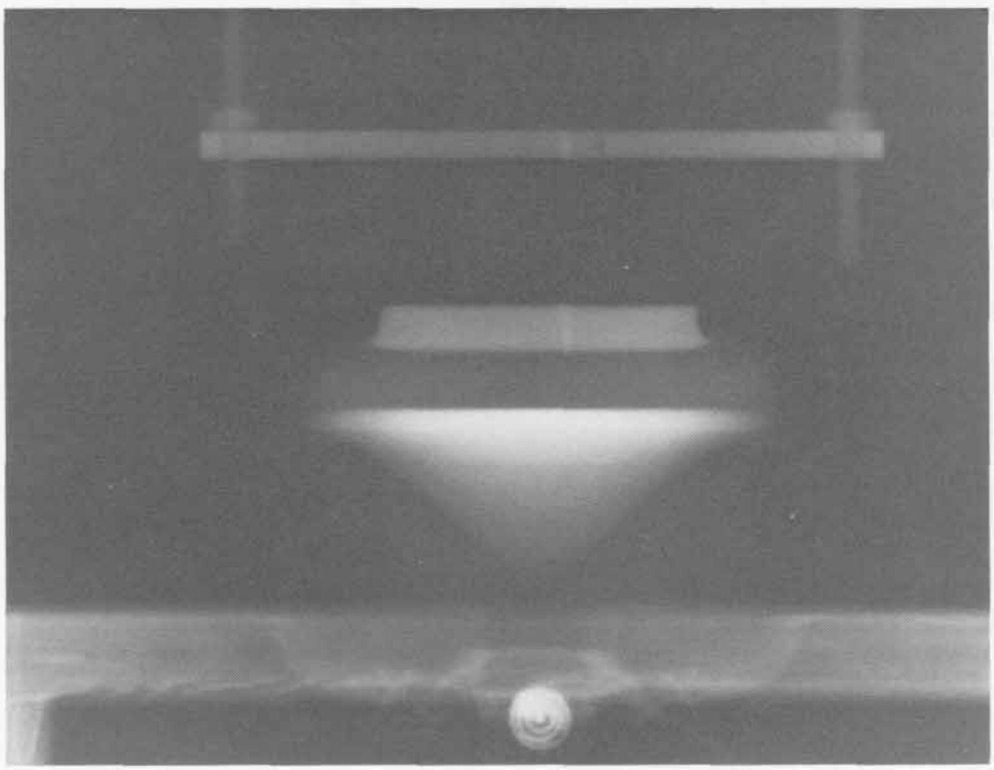


SHOT 601: **Aluminum Back Surface**
Date: March 27, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 17.07 μs

A 12.0-mm-thick aluminum plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 2.80 mm. A reference bar is shown above the shot.

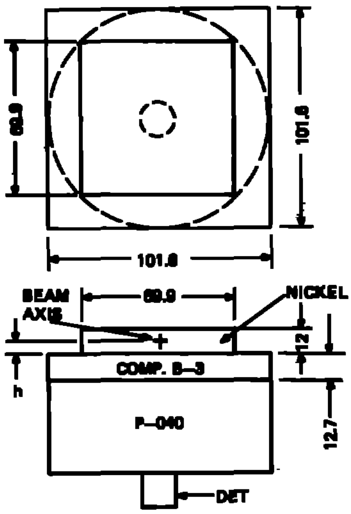


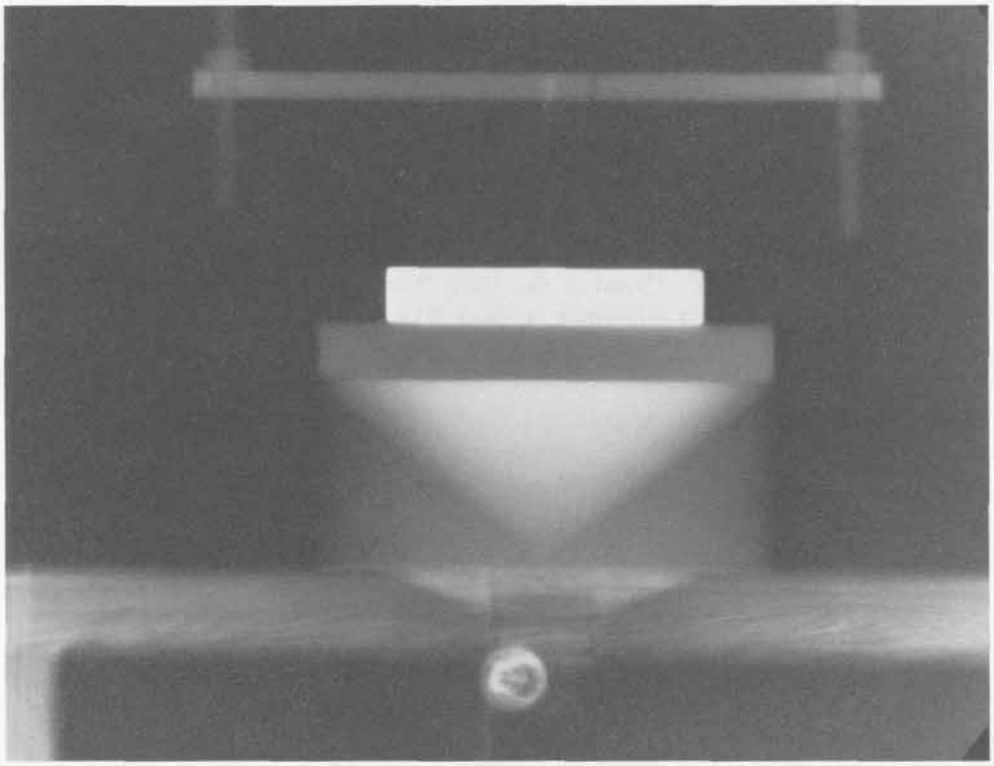


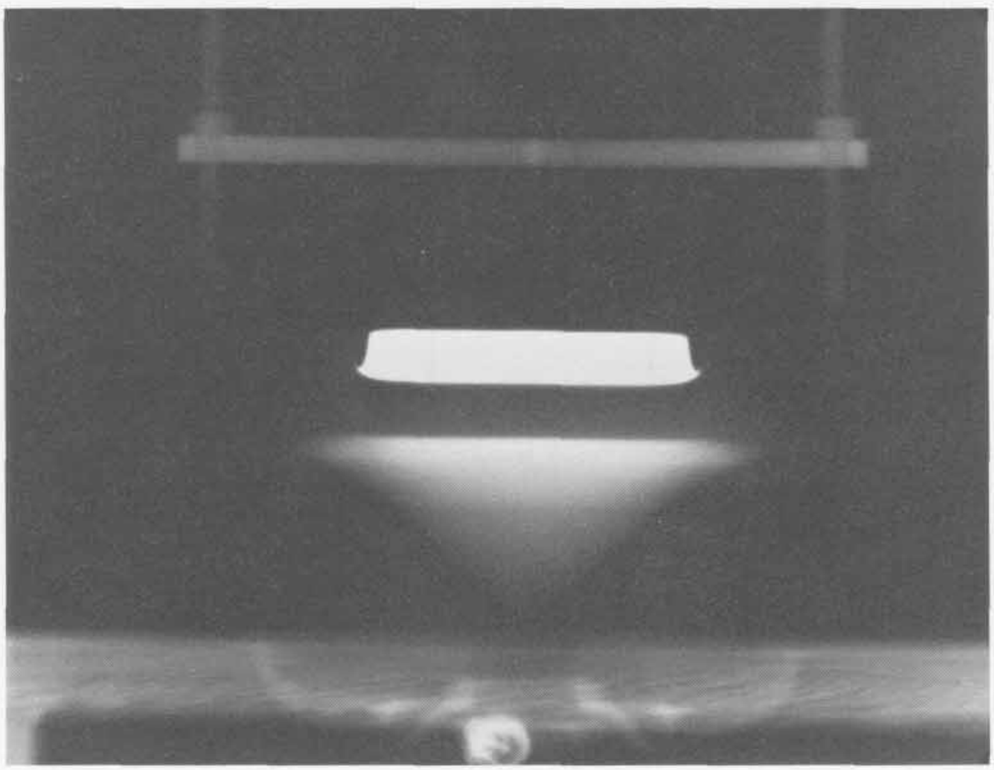


SHOT 602: **Nickel Back Surface**
Date: March 27, 1969
Experimenter: Roger W. Taylor
Radiographic Time: 18.10 μs

A 12.0-mm-thick nickel plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 1.40 mm. A reference bar is shown above the shot.

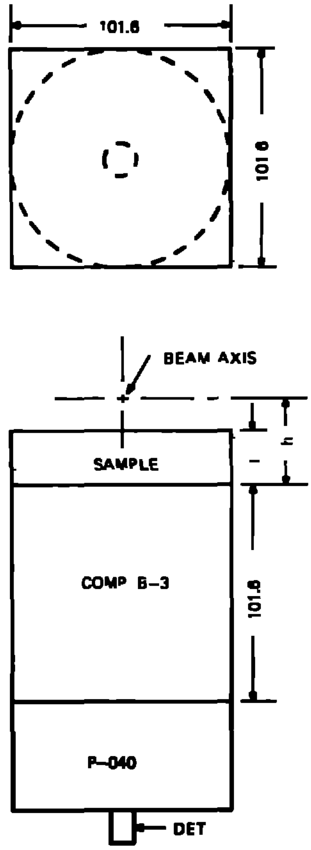


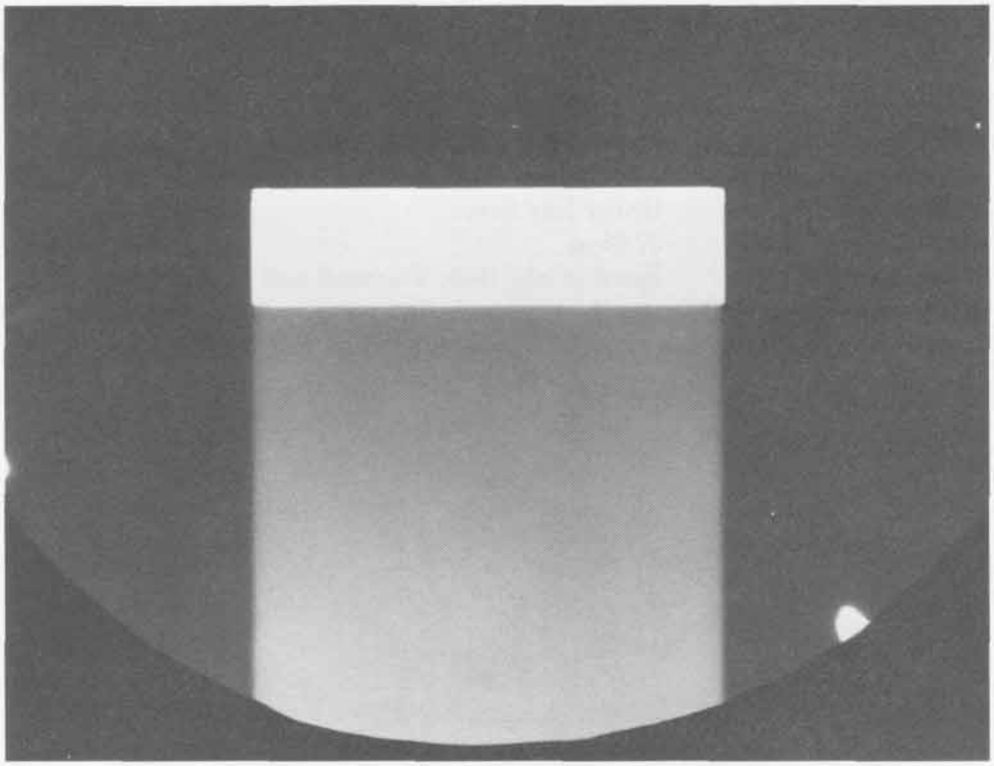


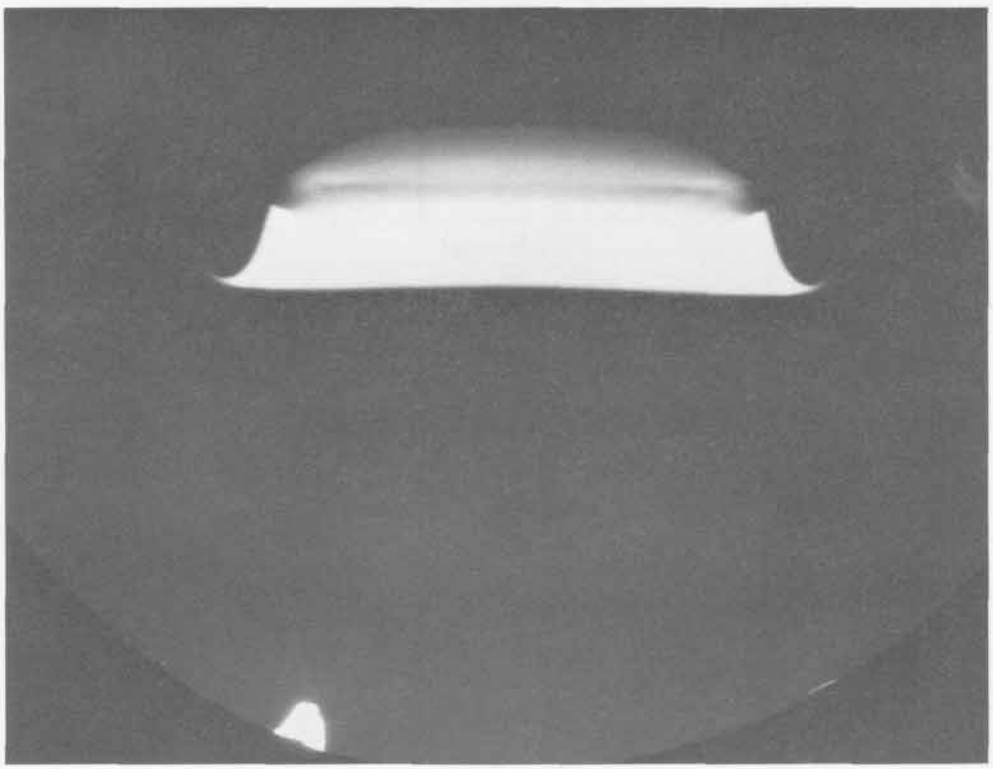


SHOT 604: **Dynamic Fracture of Lead**
Date: June 15, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 43.41 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, lead. The plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 44.45 mm.

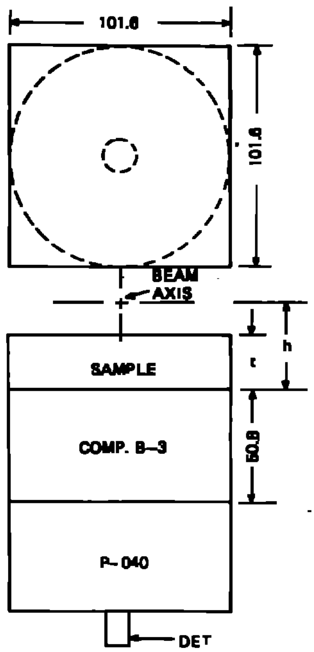


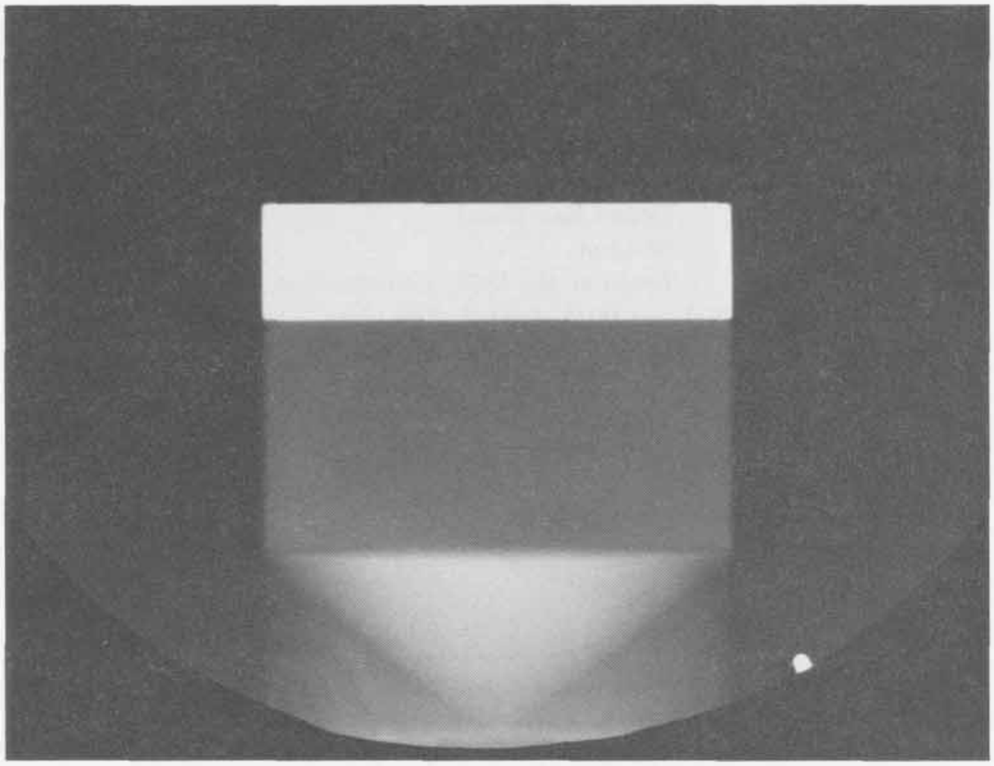


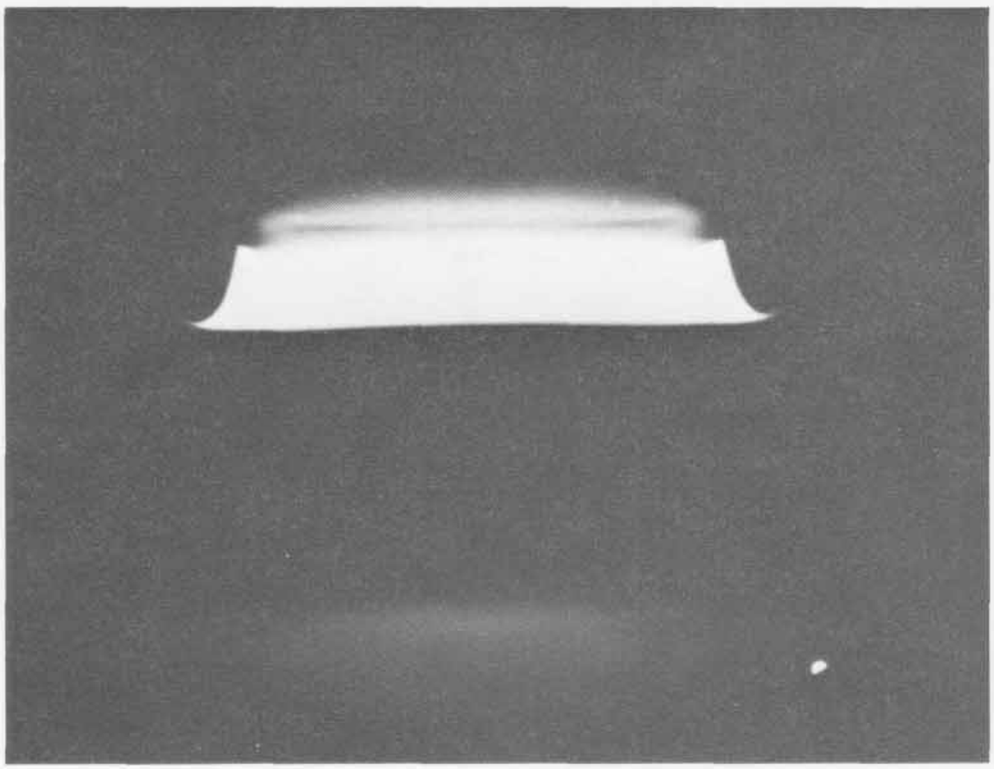


SHOT 605: **Dynamic Fracture of Lead**
Date: July 7, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 37.03 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, lead. The plate is shocked by 50.8 mm of Composition B-3 initiated by a P-040 lens. h is 44.45 mm.

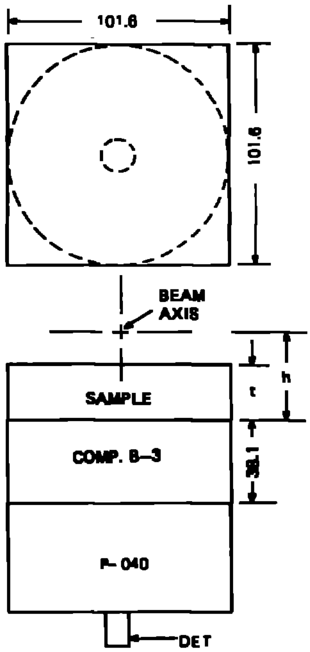


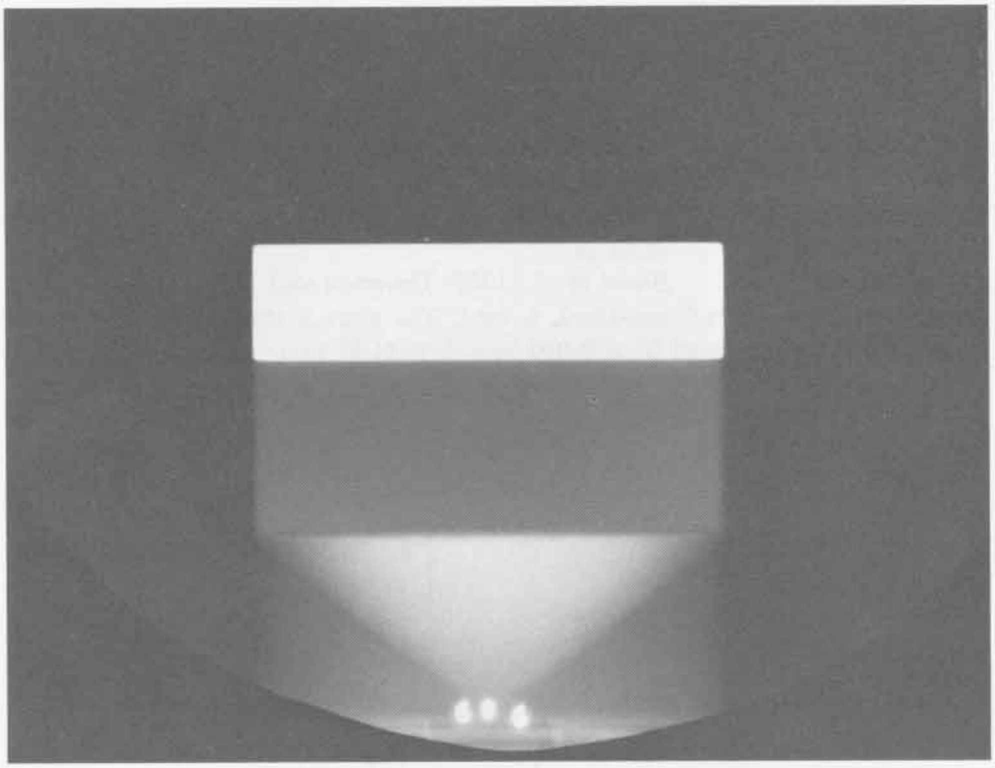


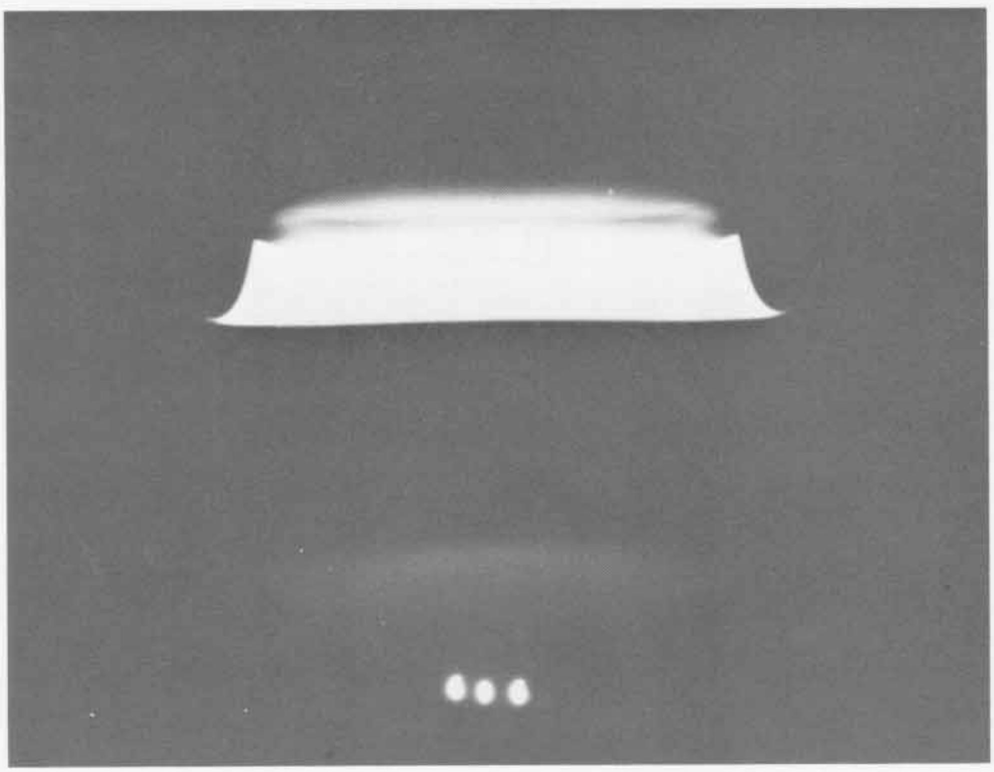


SHOT 606: **Dynamic Fracture of Lead**
Date: July 5, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 35.32 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, lead. The plate is shocked by 38.1 mm of Composition B-3 initiated by a P-040 lens. h is 44.45 mm.

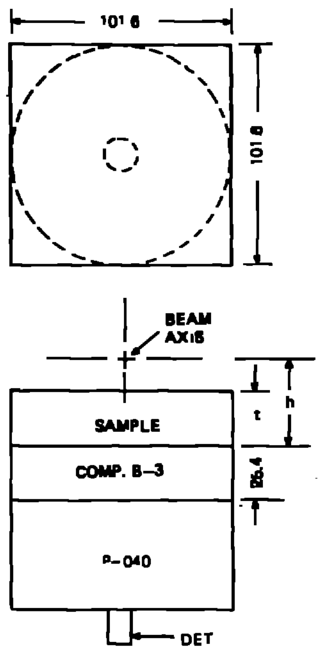


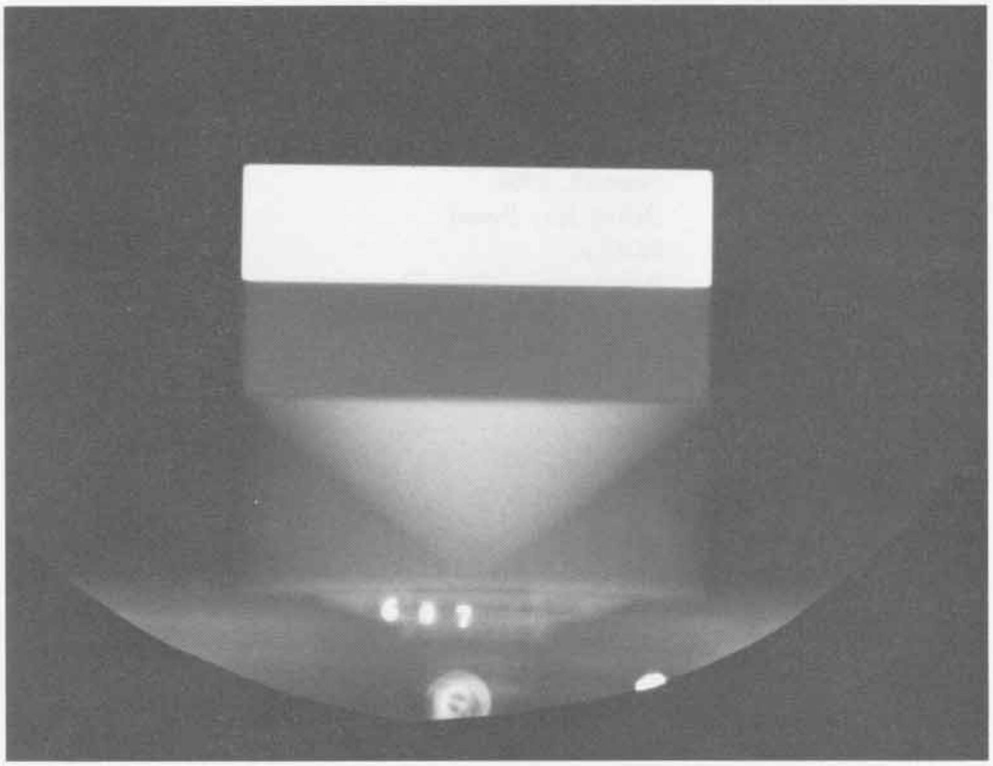


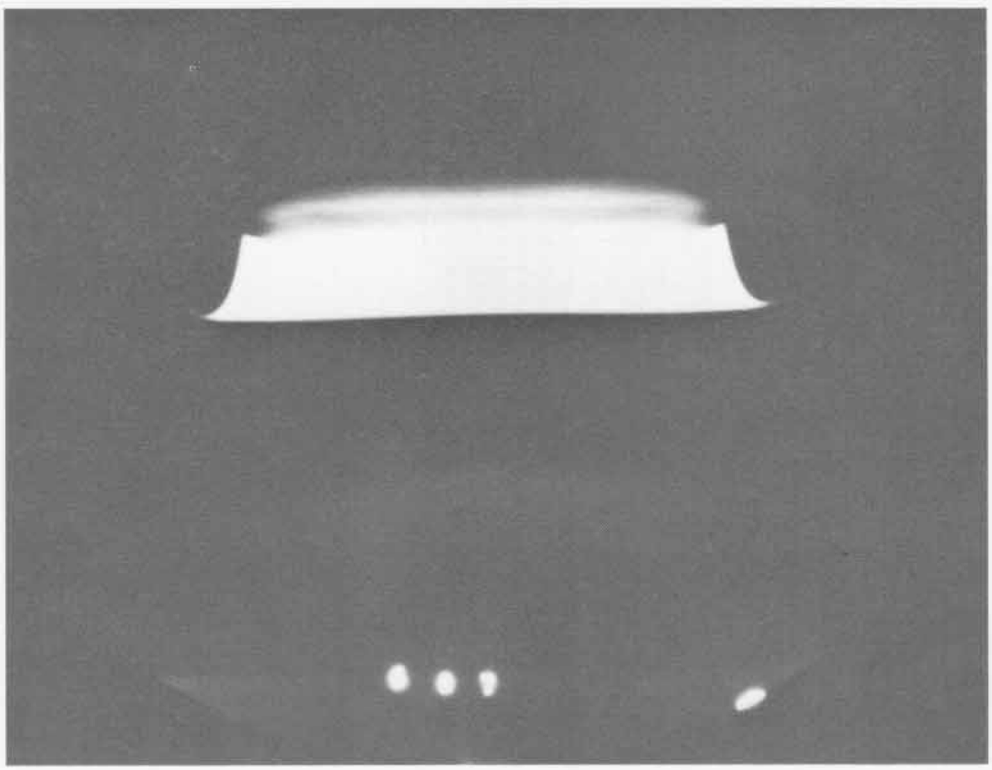


SHOT 607: **Dynamic Fracture of Lead**
Date: June 29, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 33.82 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, lead. The plate is shocked by 25.4 mm of Composition B-3 initiated by a P-040 lens. h is 44.45 mm.

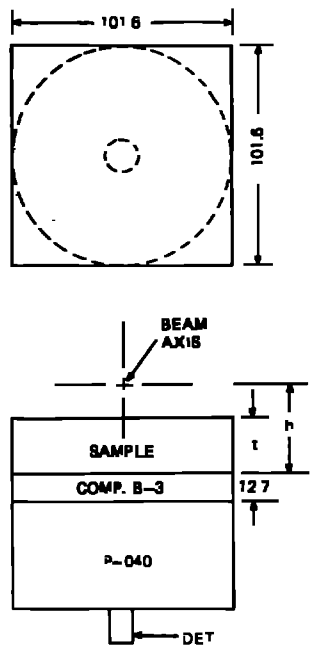


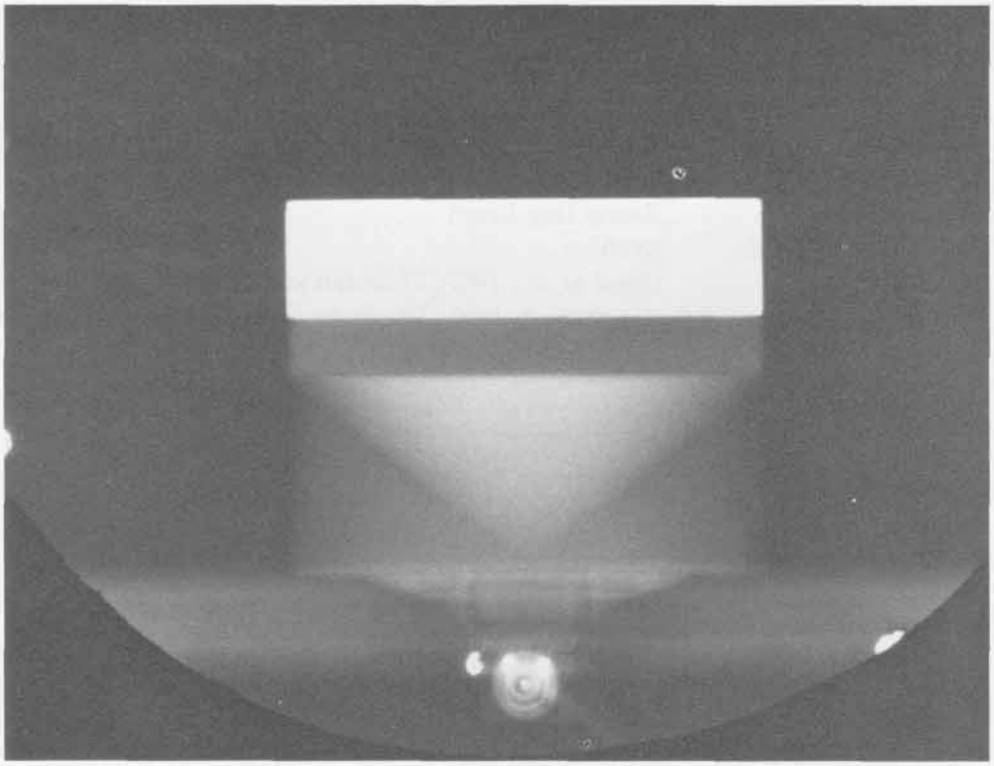


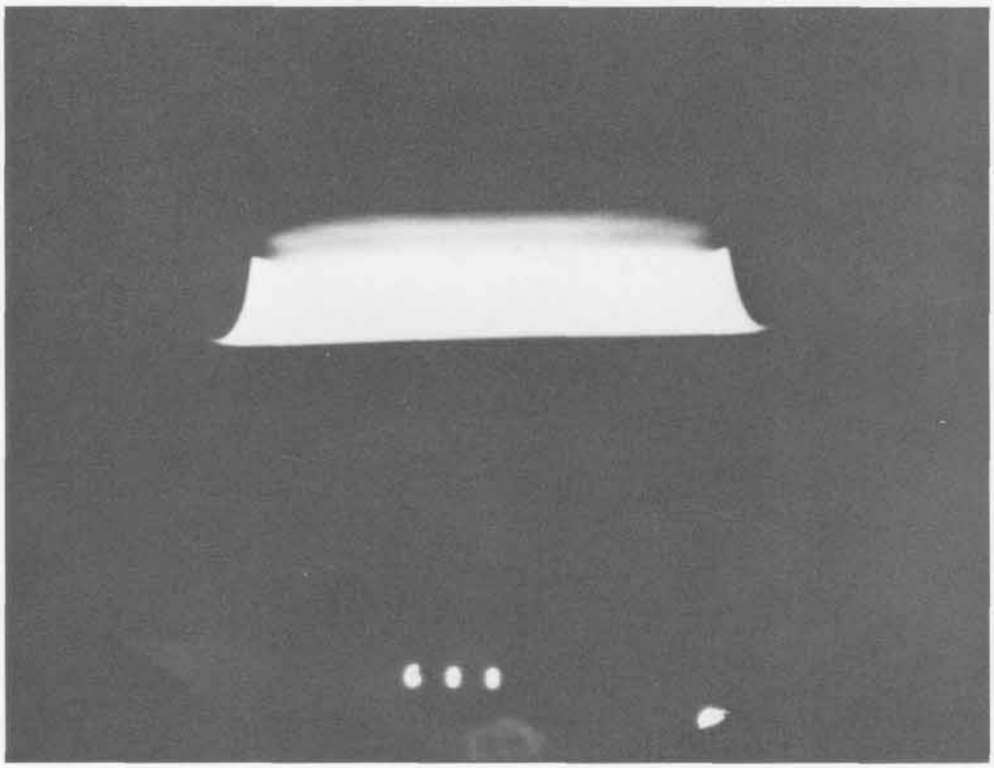


SHOT 608: **Dynamic Fracture of Lead**
Date: June 29, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 32.23 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, lead. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 44.45 mm.

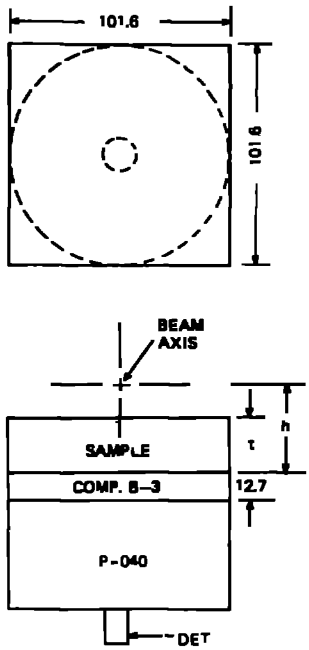


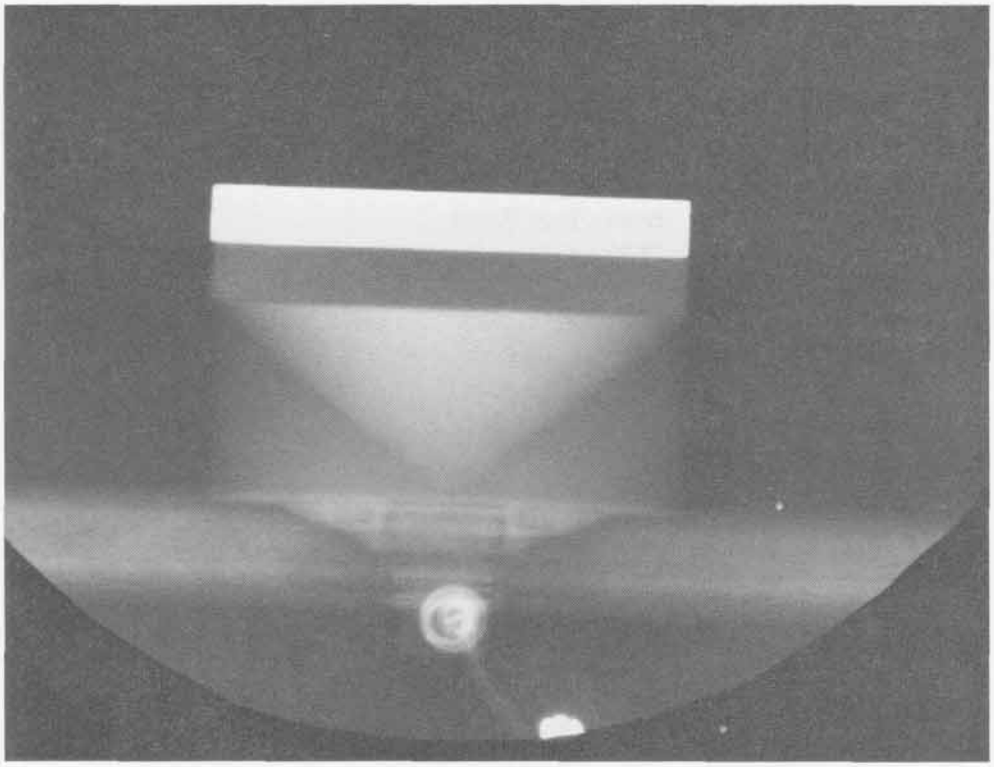


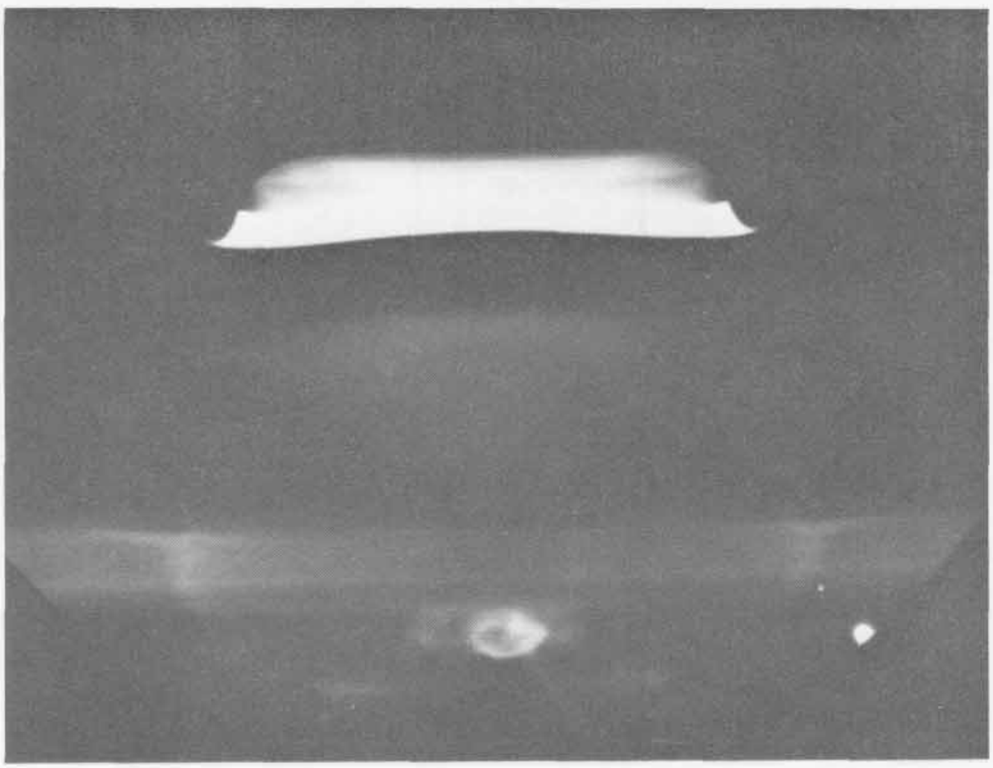


SHOT 609: **Dynamic Fracture of Lead**
Date: June 15, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 28.55 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 12.0-mm-thick, t, lead. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 31.75 mm.

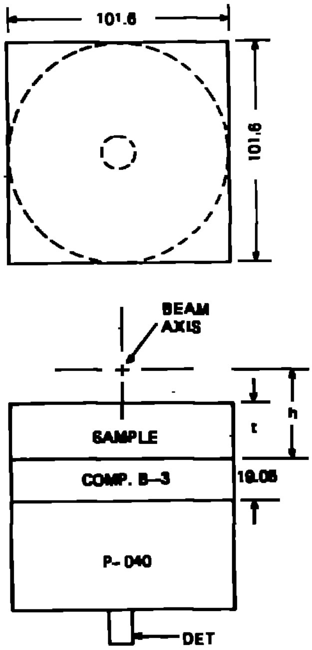


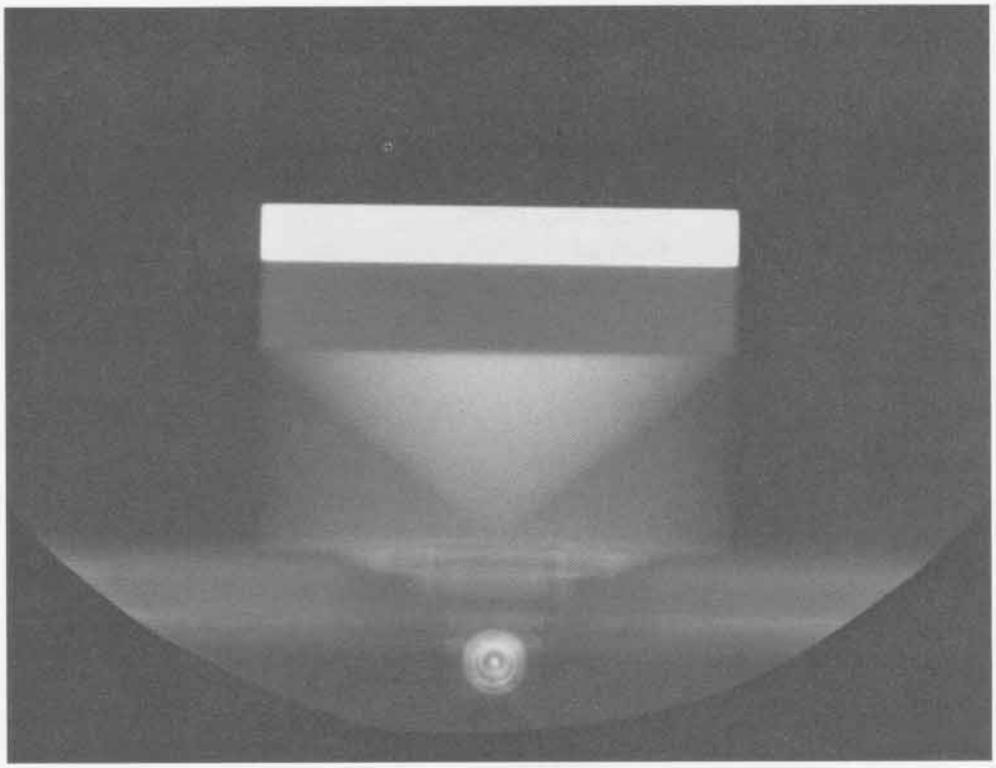


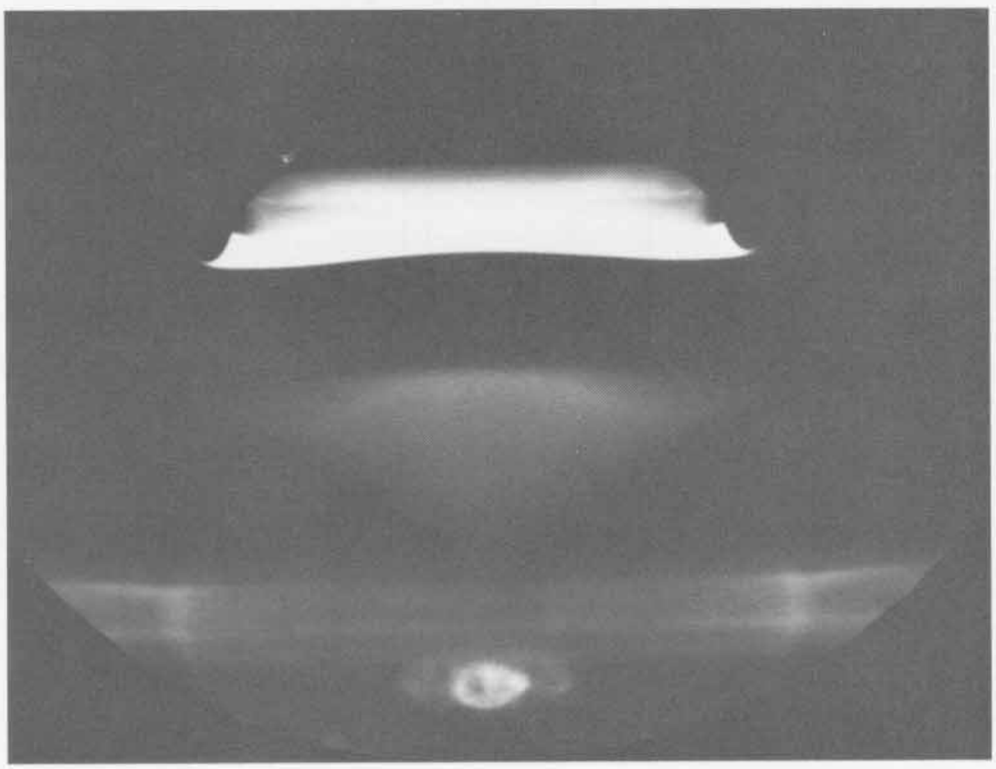


SHOT 610: **Dynamic Fracture of Lead**
Date: June 22, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 29.32 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 12.0-mm-thick, t, lead. The plate is shocked by 19.05 mm of Composition B-3 initiated by a P-040 lens. h is 31.75 mm.







SHOT 611: **Dynamic Fracture of Thorium**

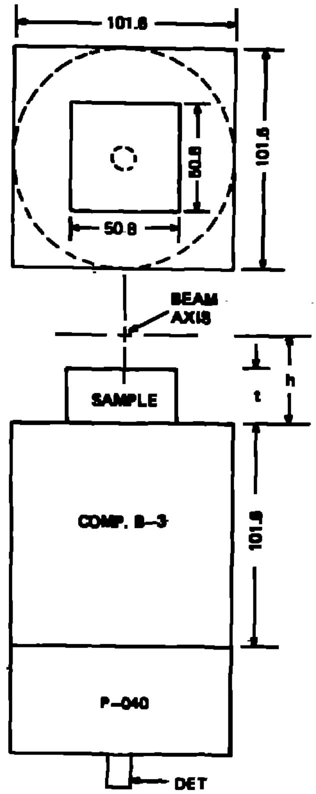
Date: May 11, 1966

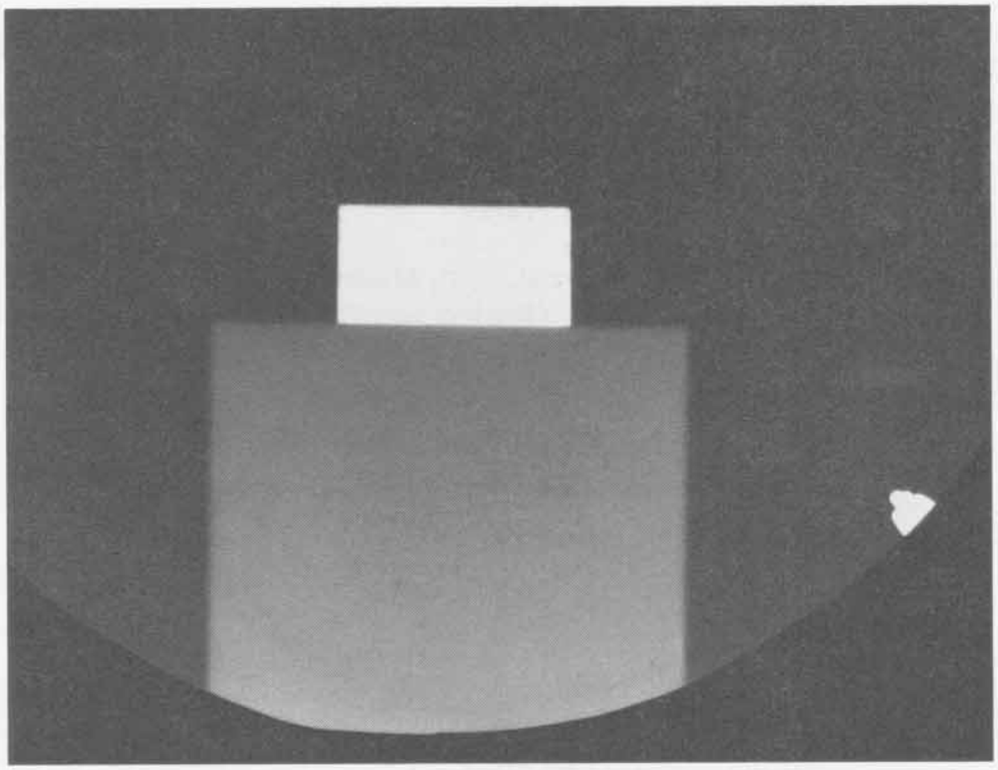
Experimenter: Benny Ray Breed

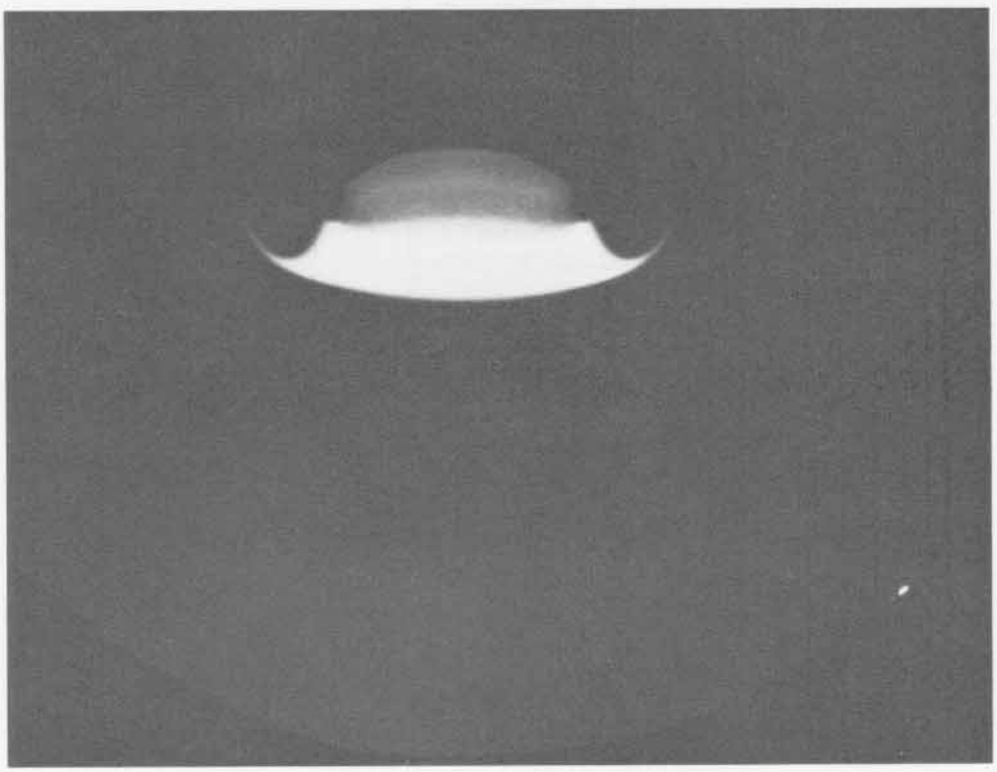
Radiographic Time: 43.36 μs

References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, thorium. The plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 44.45 mm.

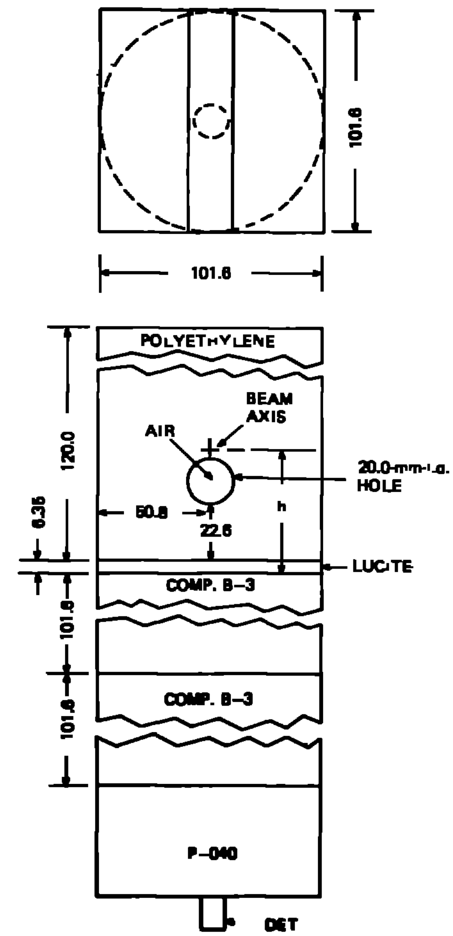


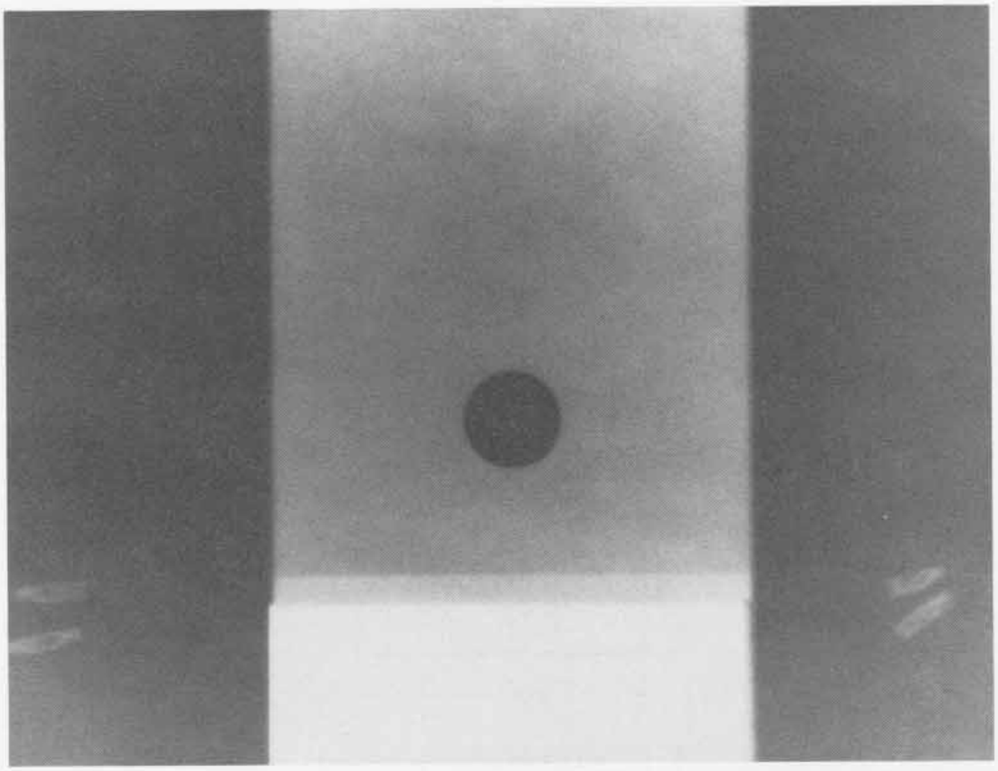


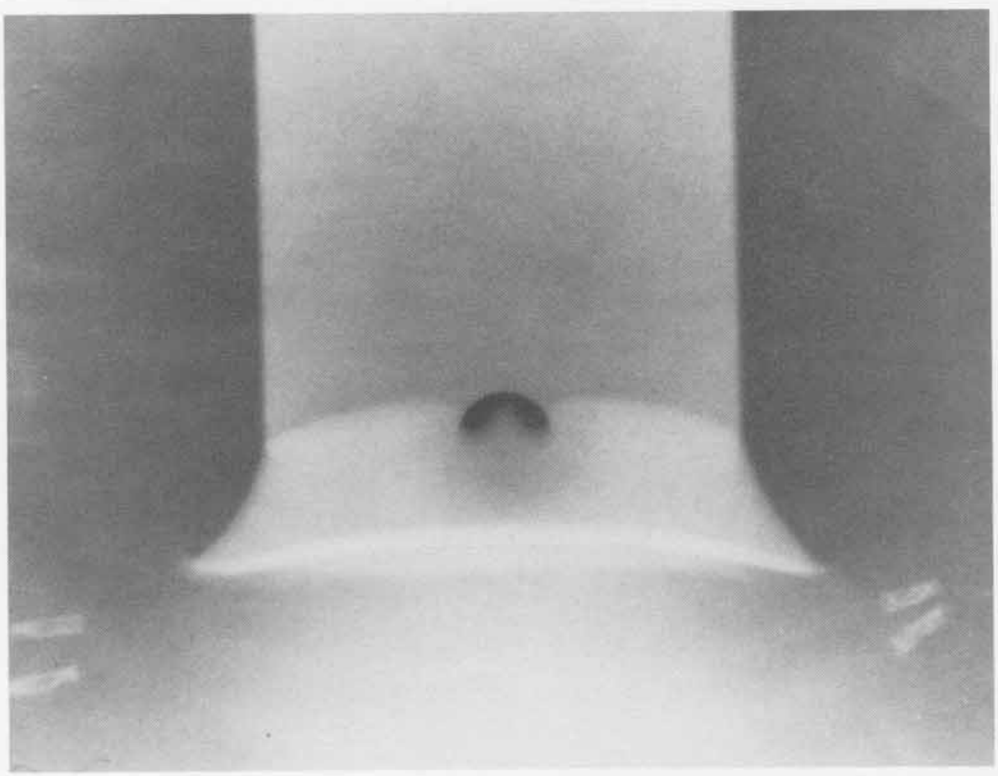


SHOT 612: **Cylindrical Hole in Polyethylene**
Date: May 17, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 46.23 μs
References: Mader et al., 1967; Mader and Kershner, 1972

Study of a 10-mm-radius hole in a block of polyethylene. The shock wave was generated by 203.2 mm of Composition B-3 interacting with 6.35 mm of Lucite. h is 46.03 mm. See Shots 314, 351, 409, and 613.

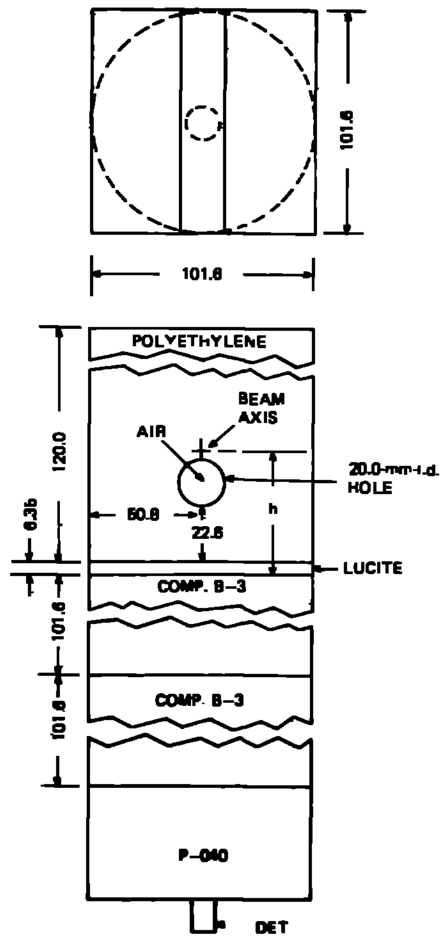


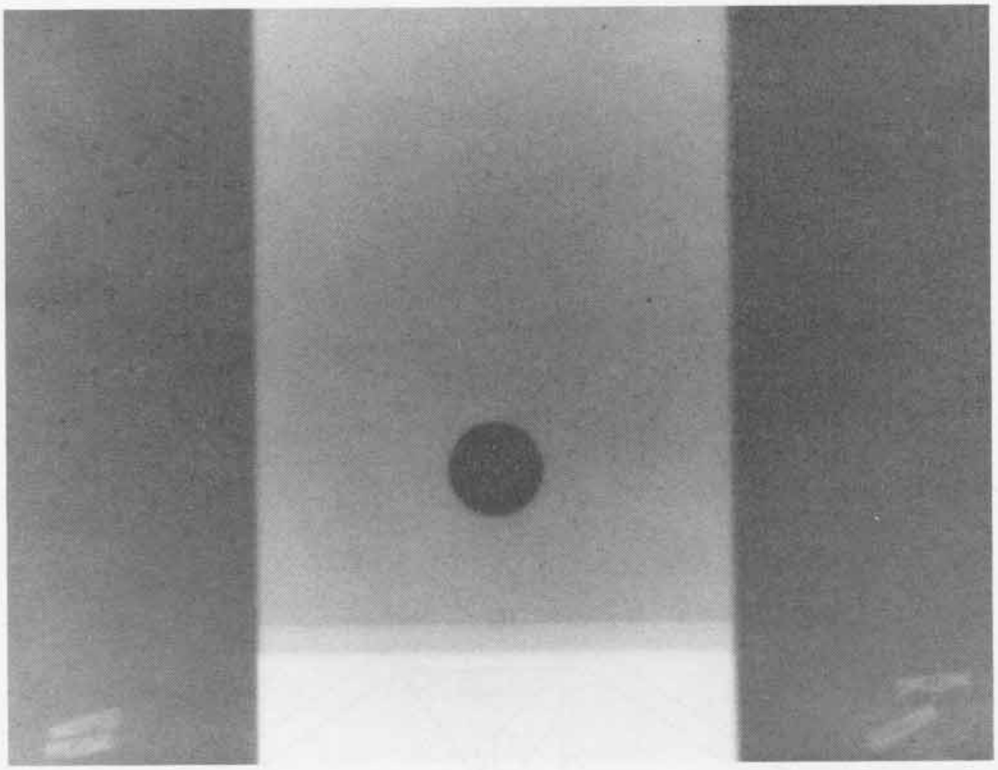


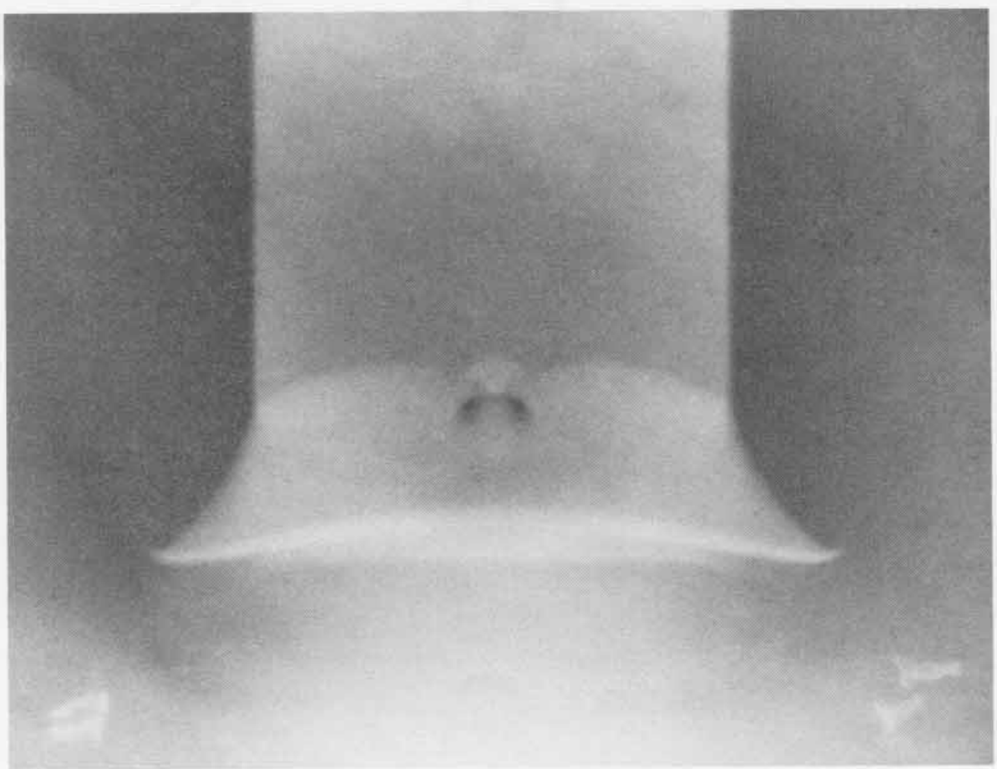


SHOT 613: **Cylindrical Hole in Polyethylene**
Date: May 17, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 47.73 μs
References: Mader et al., 1967; Mader and Kershner, 1972

Study of a 10-mm-radius hole in a block of polyethylene. The shock wave was generated by 203.2 mm of Composition B-3 interacting with 6.35 mm of Lucite. h is 53.97 mm.

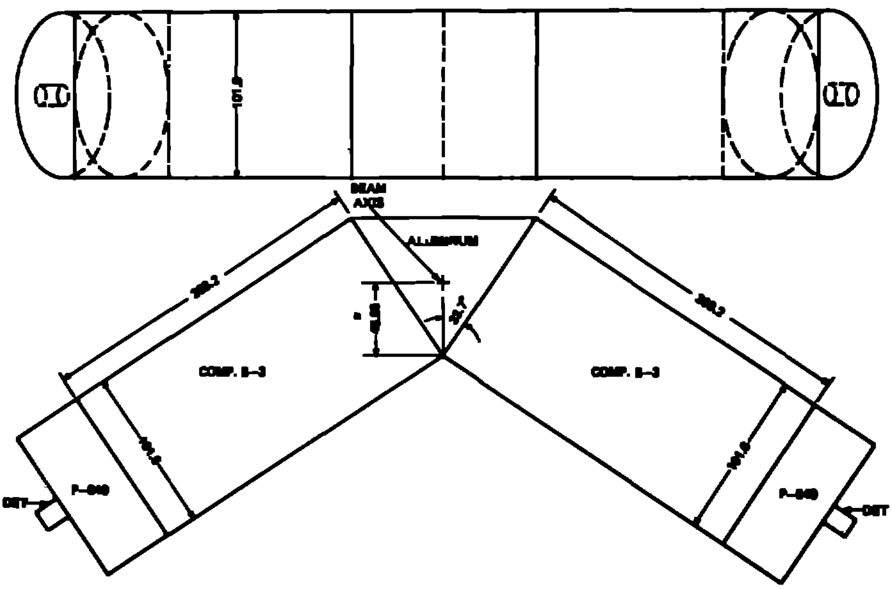


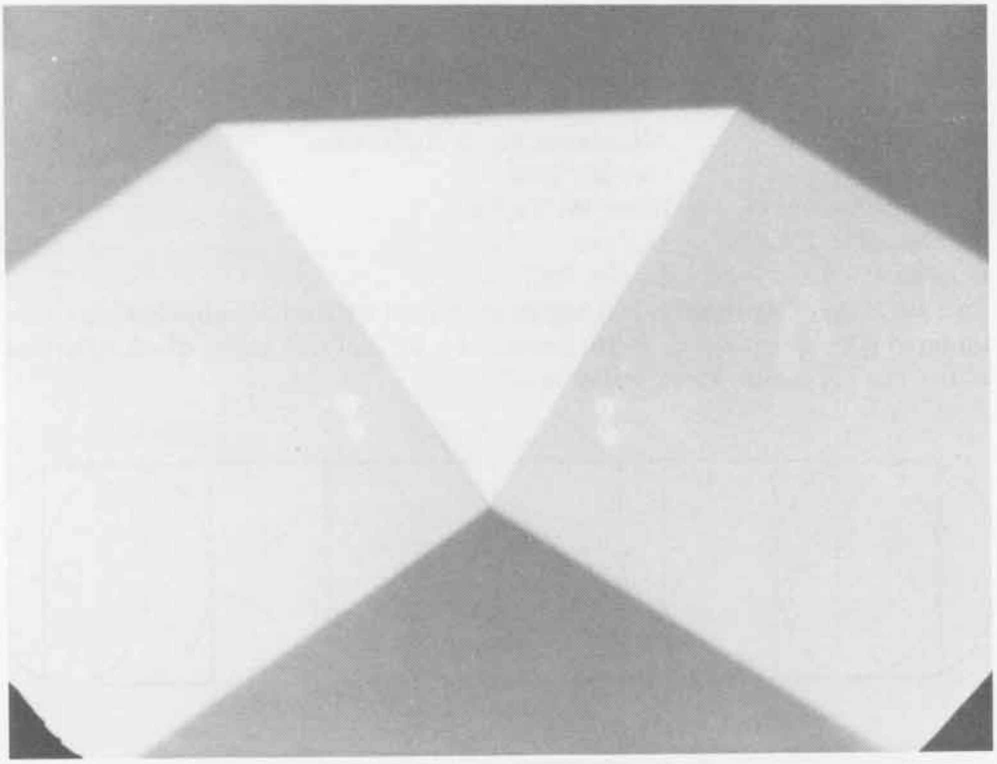


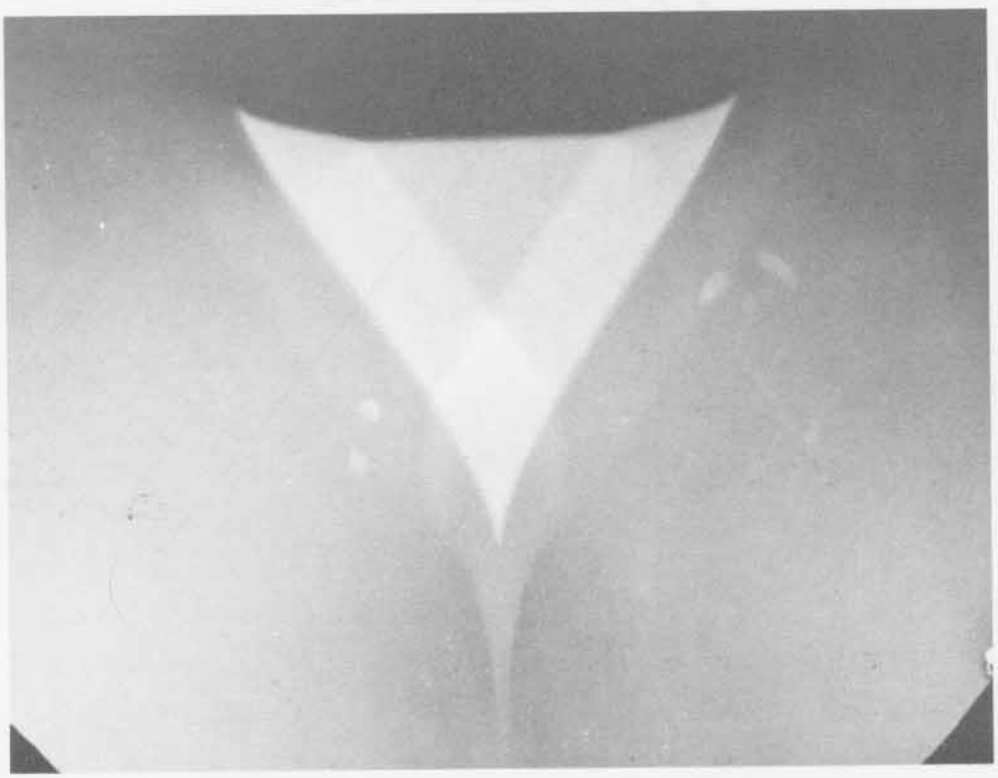


SHOT 614: **Aluminum Regular Shock Reflection**
Date: July 26, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 42.53 μs
Reference: Mader, 1967

Two 101.6-mm Composition B-3 blocks in contact with an aluminum wedge were initiated simultaneously by P-040 lenses. At a 33.70° collision angle, regular reflection of the two aluminum shock waves occurs.

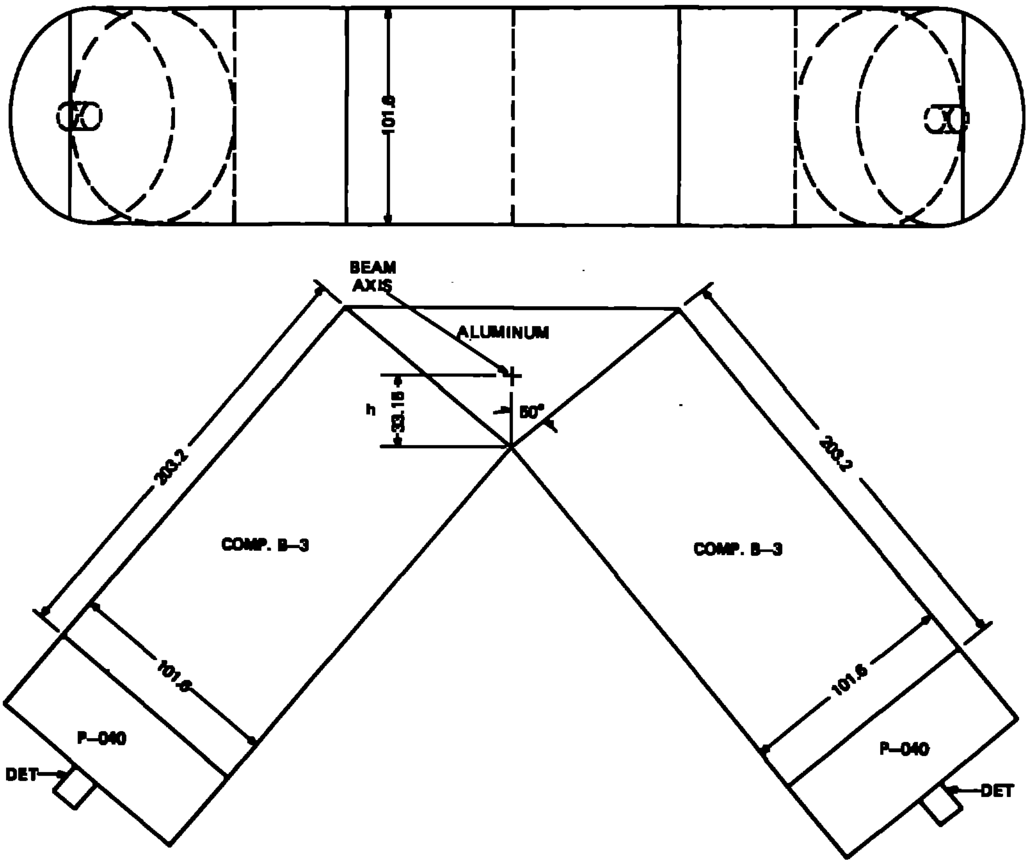


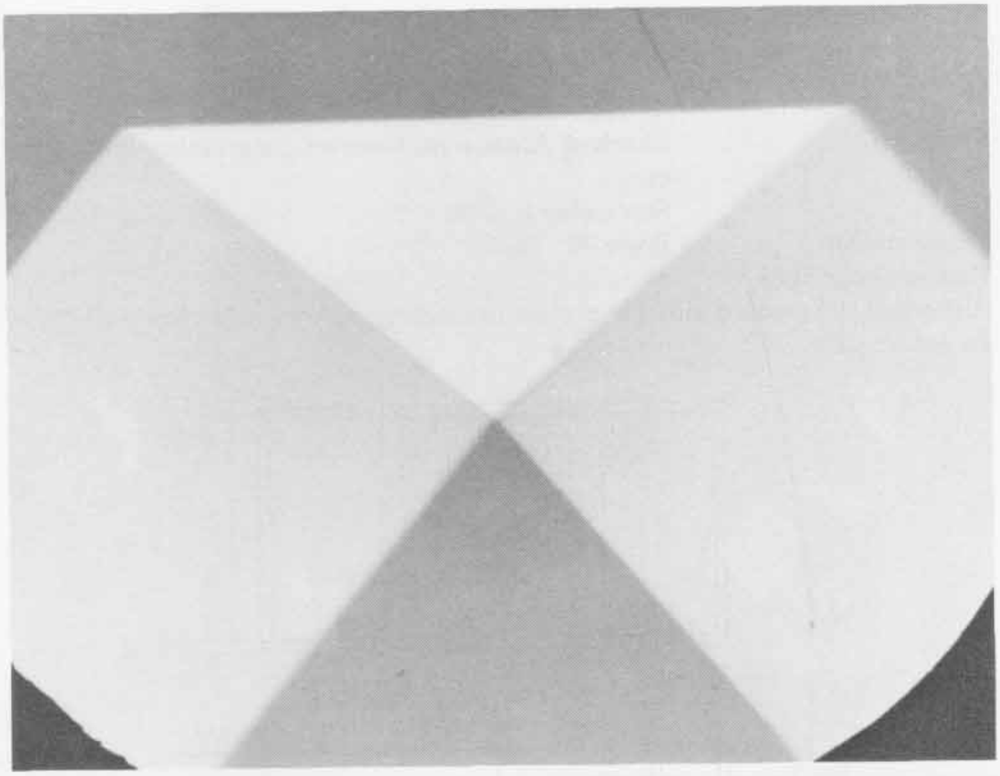


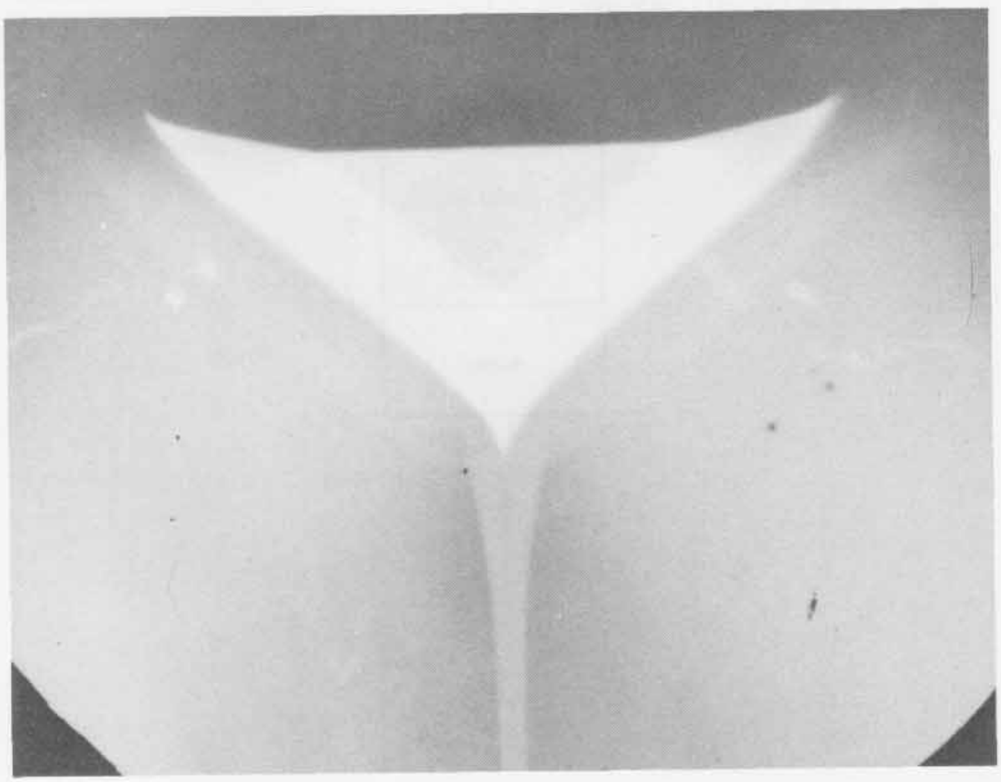


SHOT 615: **Aluminum Mach Reflection**
Date: July 27, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 42.53 μs
Reference: Mader, 1967

Two 101.6-mm Composition B-3 blocks in contact with an aluminum wedge were initiated simultaneously by P-040 lenses. At a 50° collision angle, Mach reflection of the two aluminum shock waves occurs.







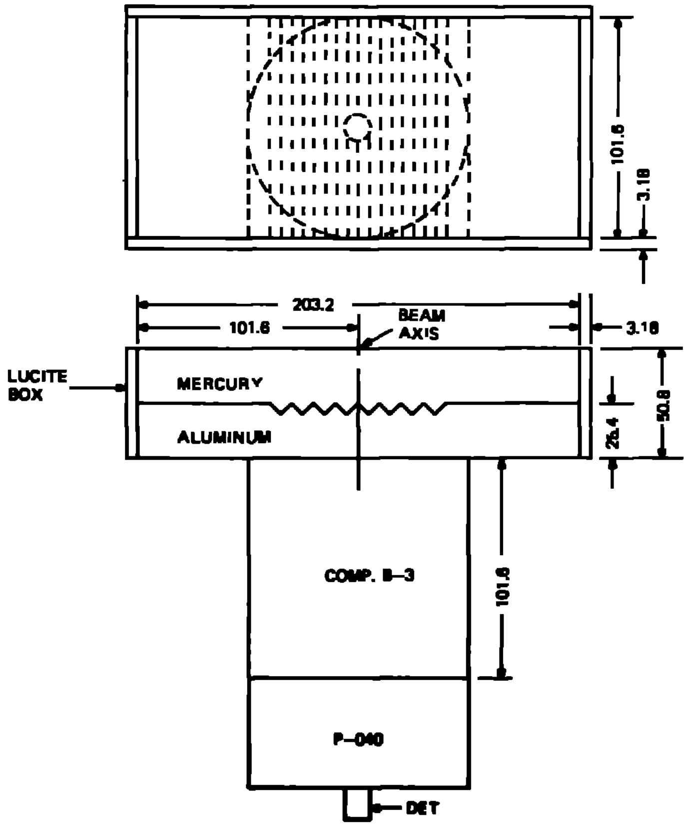
SHOT 617: **Shocked Aluminum Grooves Interacting with Mercury**

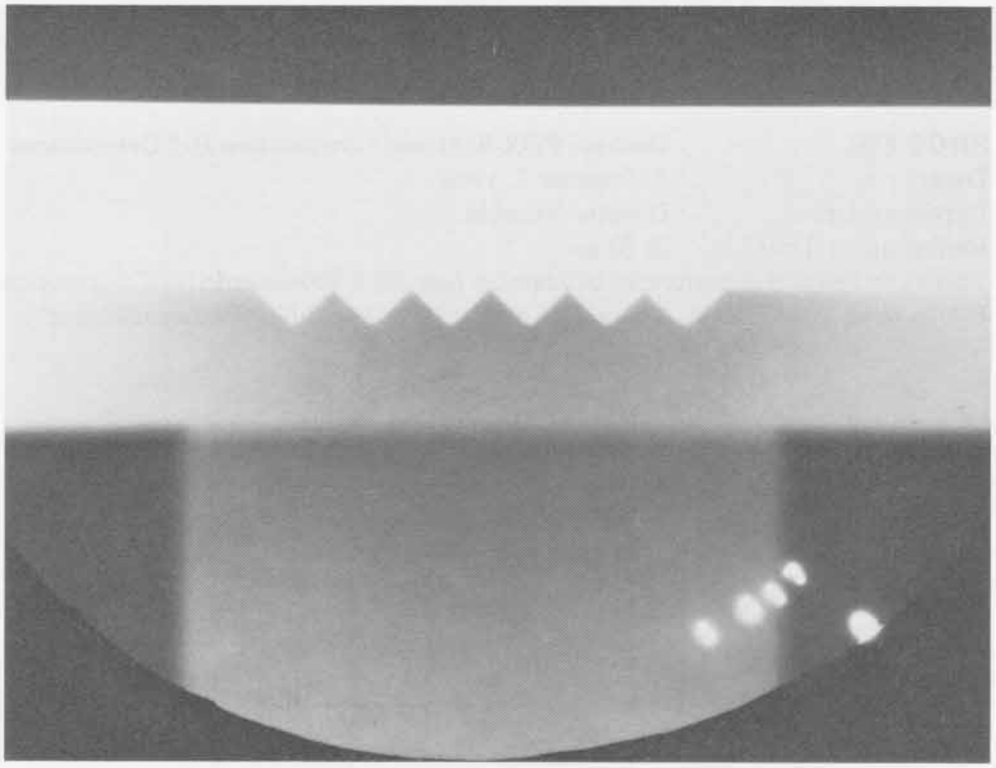
Date: September 8, 1966

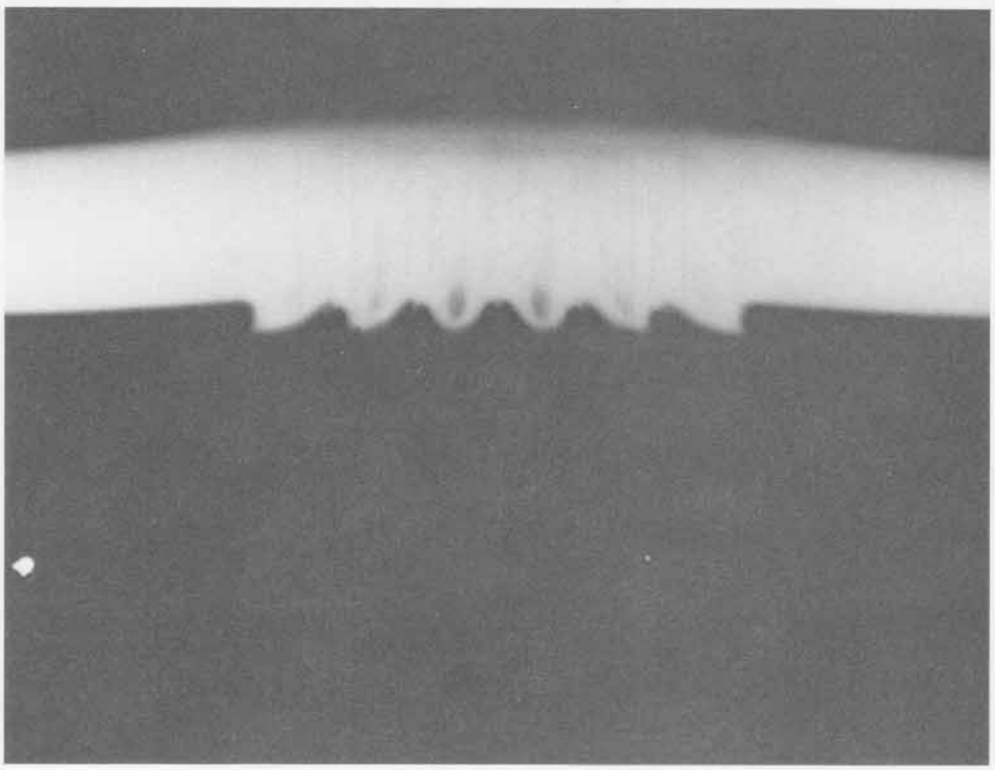
Experimenter: Roger W. Taylor

Radiographic Time: 47.55 μs

A shocked 90°-grooved aluminum plate interacting with mercury. See Shot 27 for an earlier time.

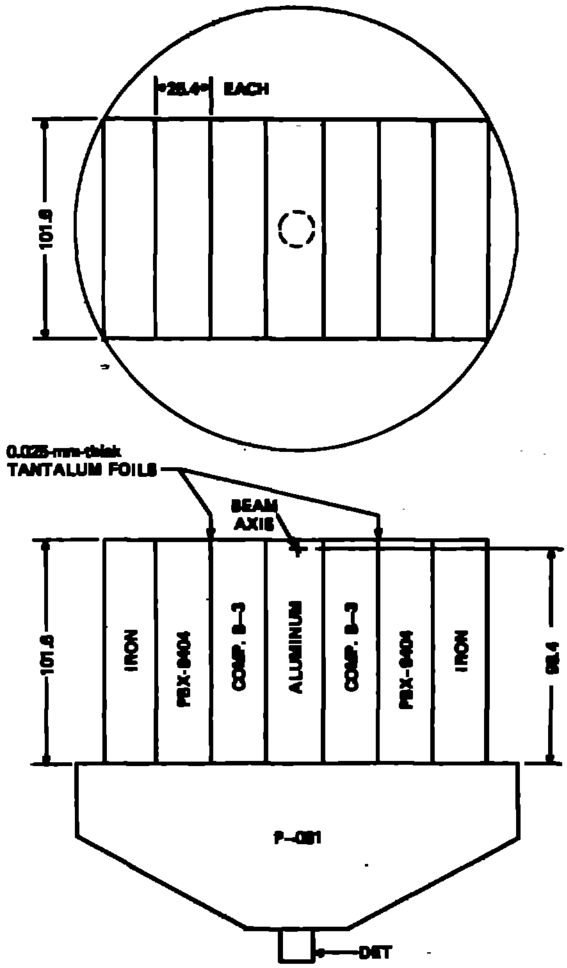


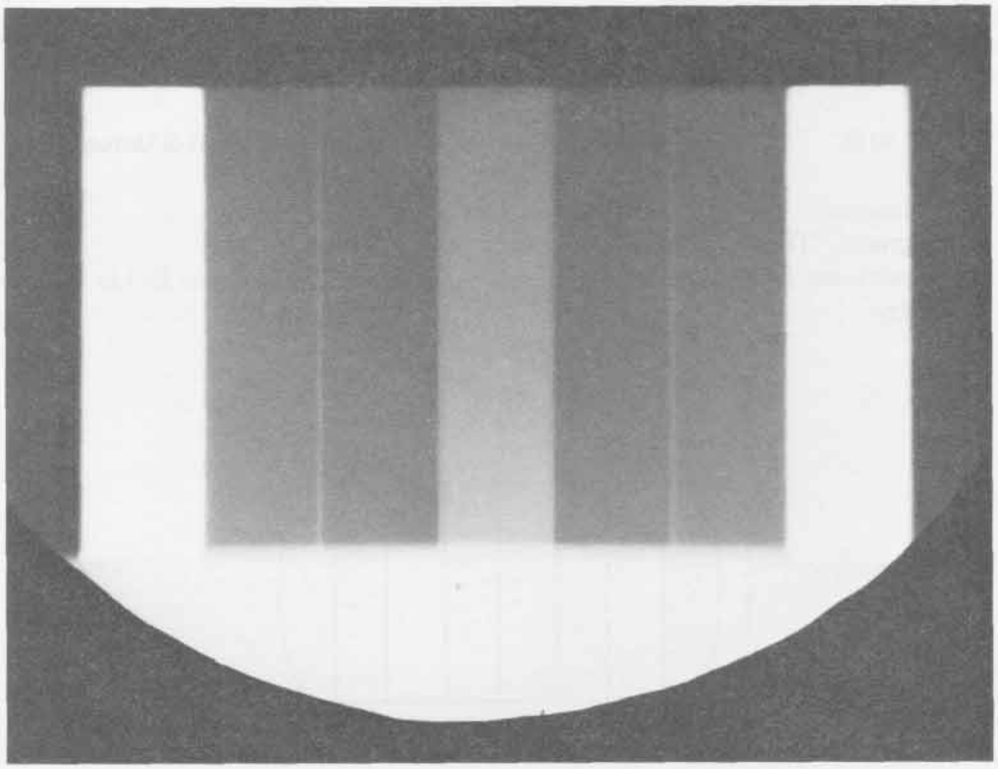


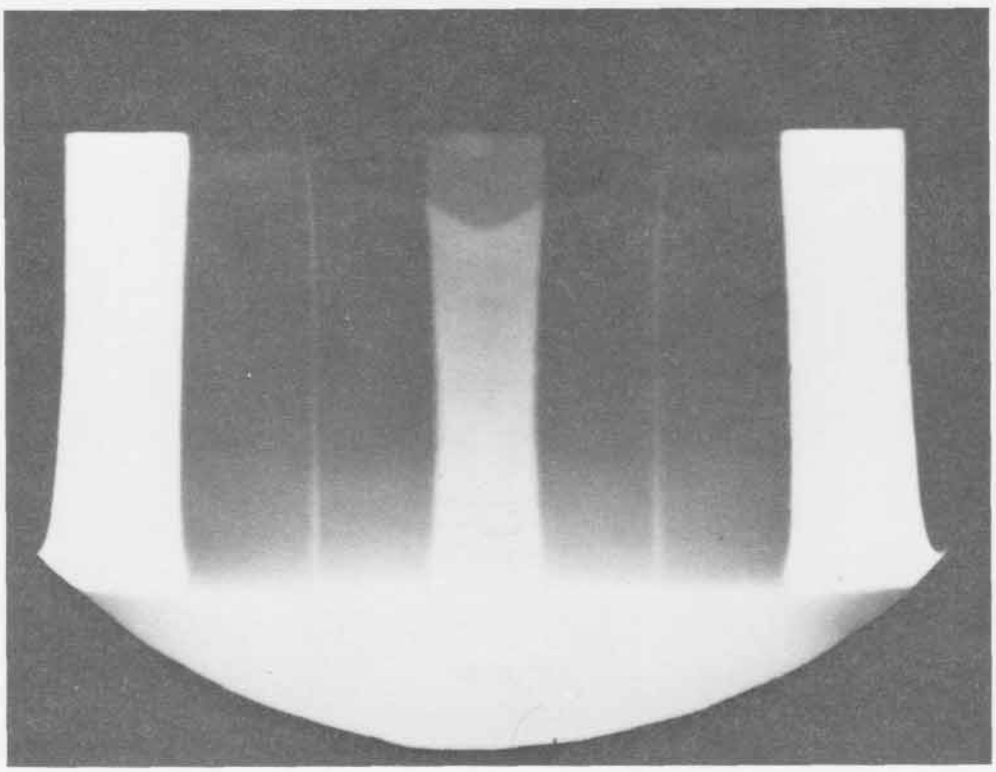


SHOT 618: **Oblique PBX-9404 and Composition B-3 Detonations**
Date: September 7, 1966
Experimenter: Douglas Venable
Radiographic Time: 33.83 μs

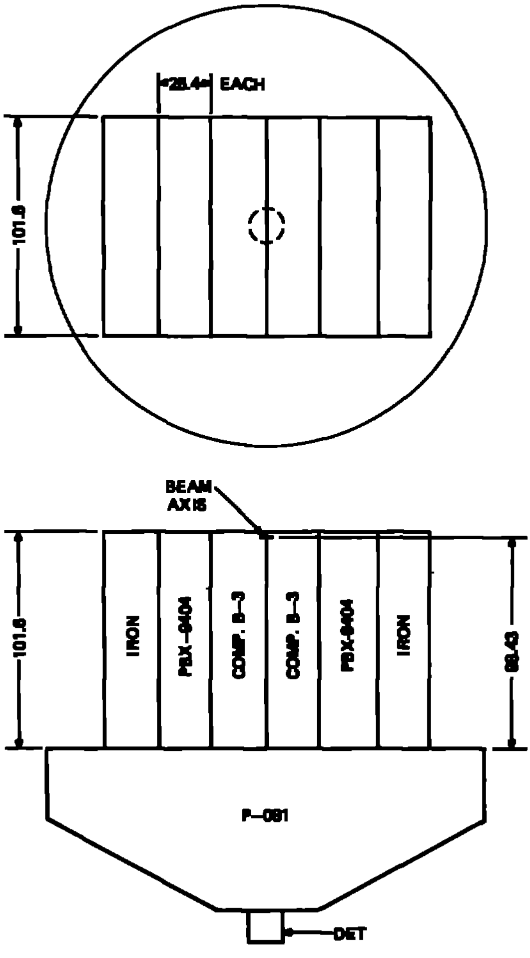
This experiment was performed to examine how PBX-9404 overdrives Composition B-3 in oblique geometry. A repeat of Shot 575 with a different magnification.

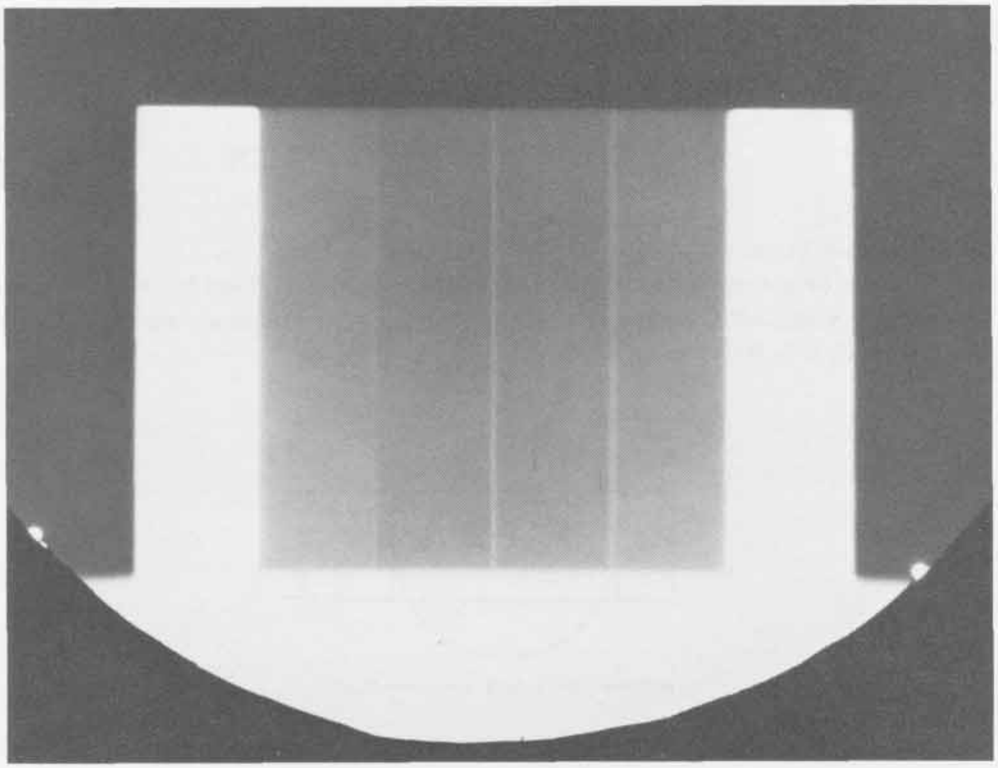


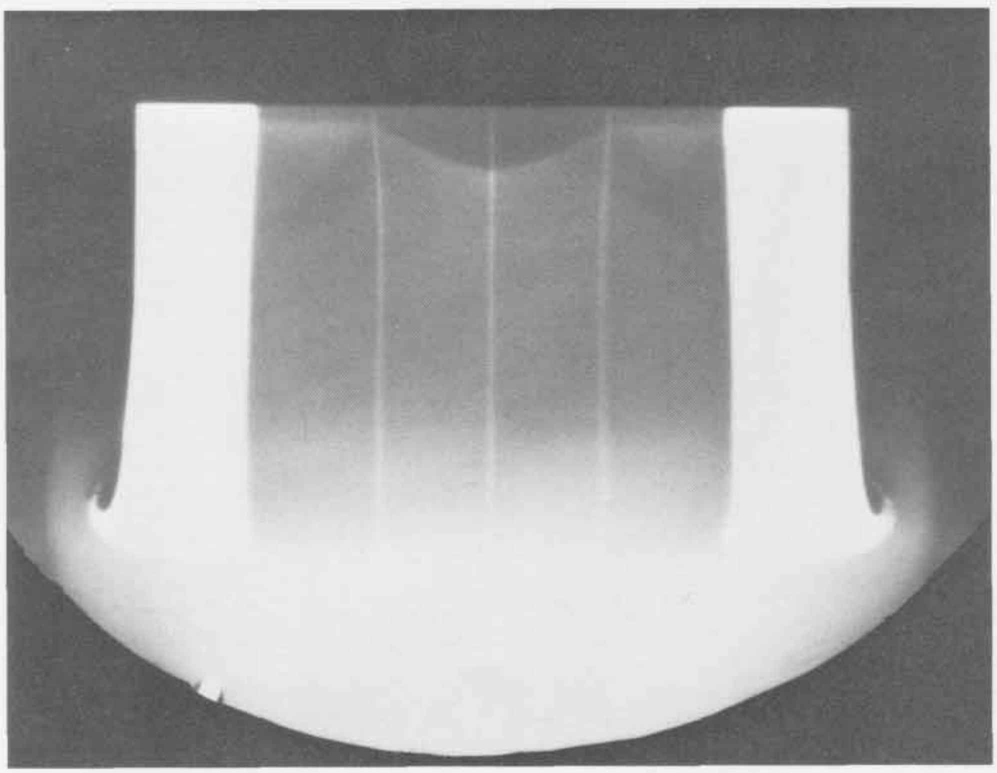




SHOT 619: **Oblique PBX-9404 and Composition B-3 Detonations**
Date: November 23, 1966
Experimenter: Douglas Venable
Radiographic Time: 33.80 μs
An experiment to examine how PBX-9404 overdrives Composition B-3 in oblique geometry.







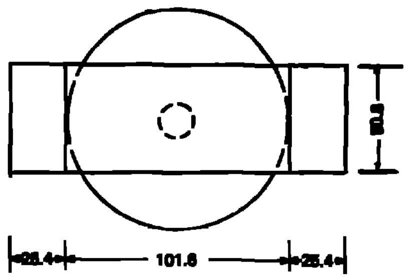
SHOT 620: **Composition B-3 Confined by Iron**

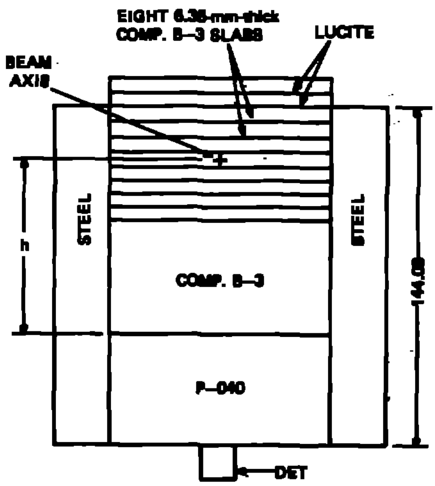
Date: August 2, 1966

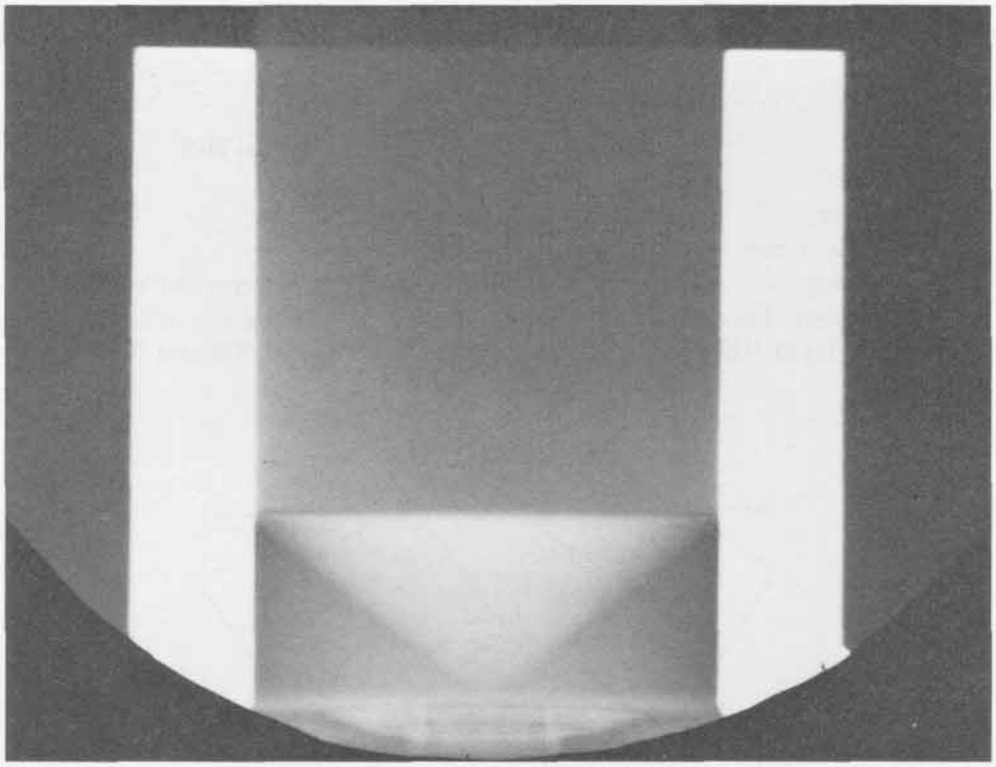
Experimenter: Roger W. Taylor

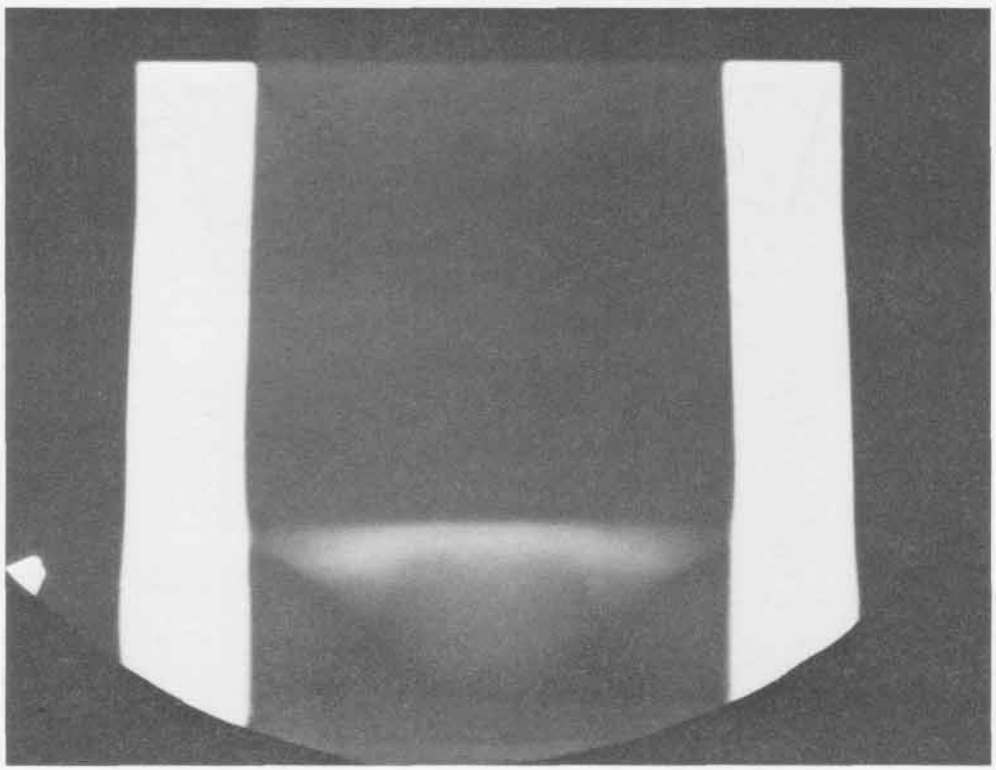
Radiographic Time: 26.30 μs

A 101.6-mm height of 50.8-mm-wide Composition B-3 is confined by two 25.4-mm-thick by 50.8-mm-wide iron plates. There is 12.7 mm of Lucite on top of the Composition B-3. h is 80.26 mm.



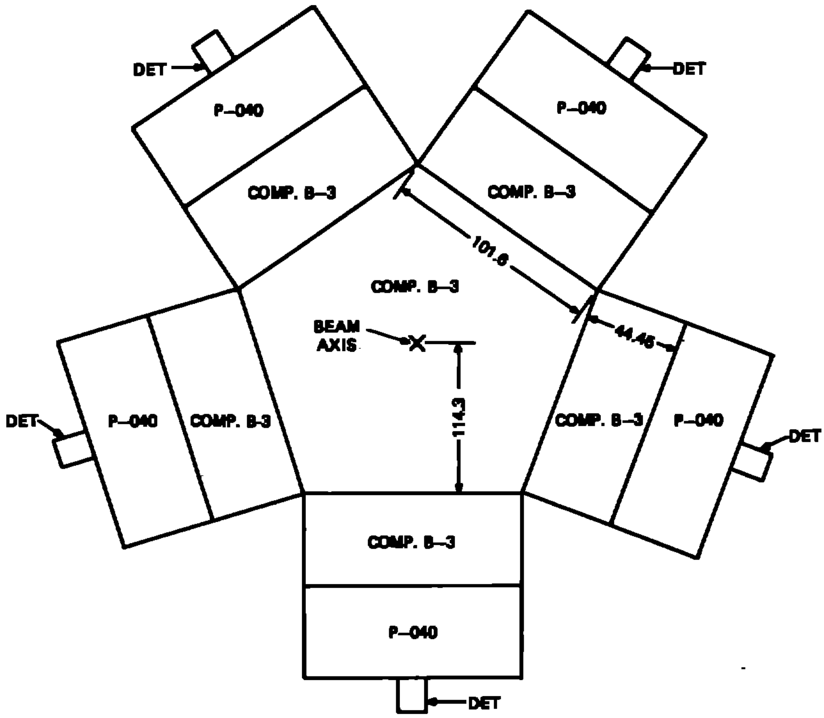


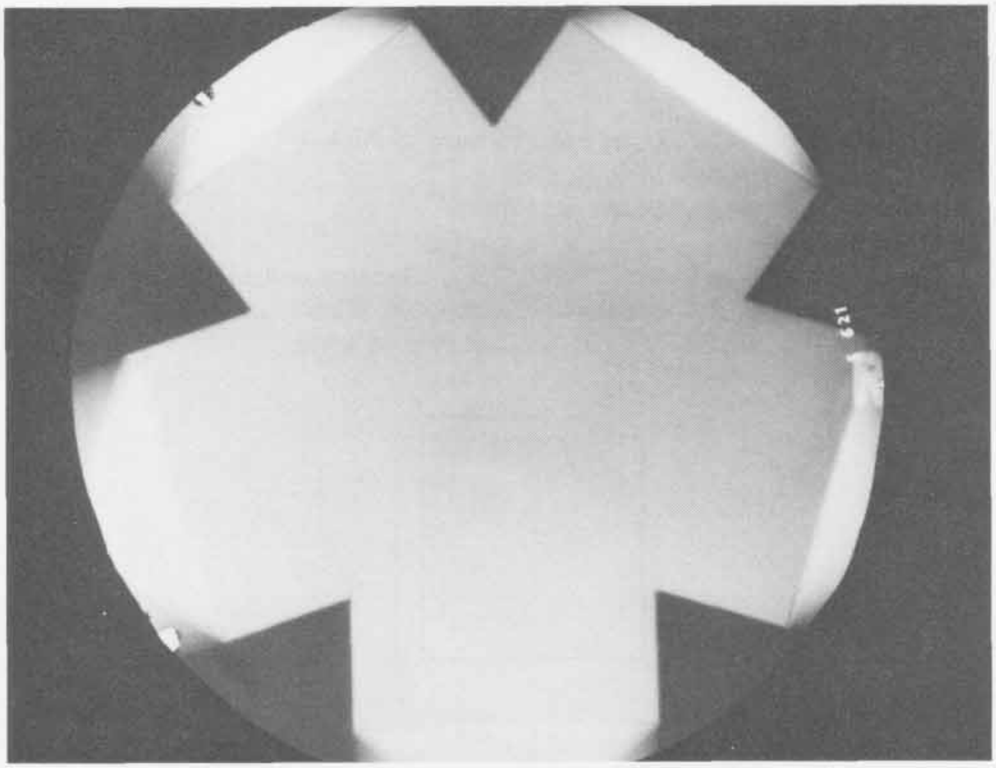


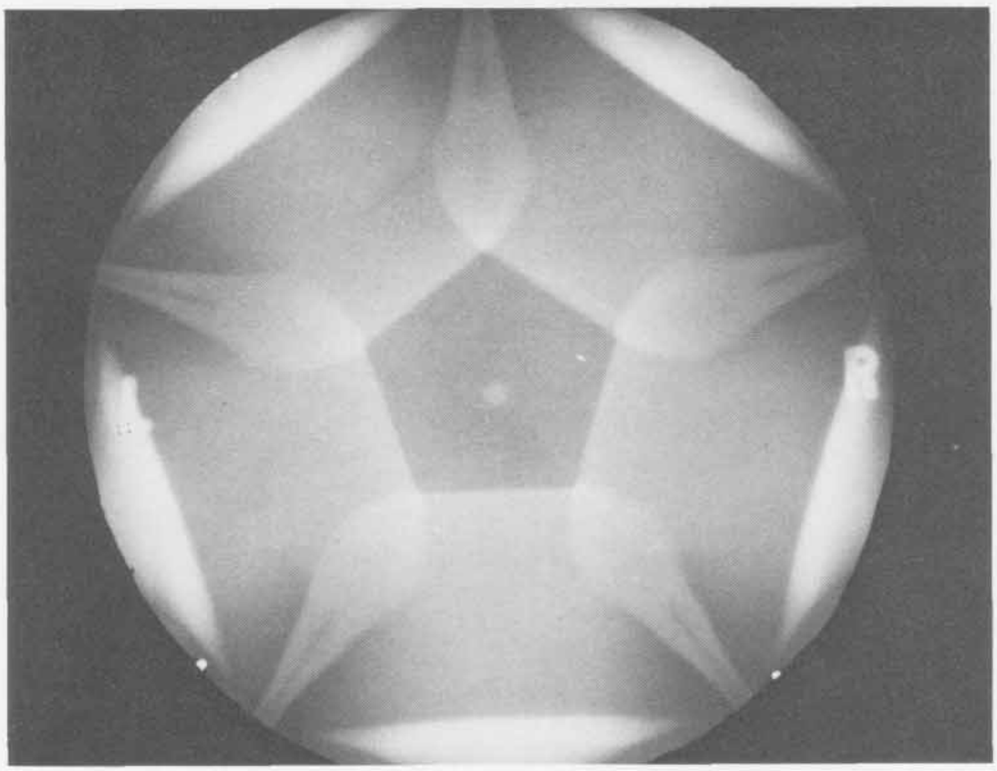


SHOT 621: **Mach Reflections in Composition B-3**
Date: June 9, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 23.41 μs

Five 44.45-mm-thick by 101.6-mm-square blocks of Composition B-3 are initiated by P-040 lenses. These blocks are placed in contact with the five 101.6-mm-wide sides of a "Hepta-HE-dron" of Composition B-3. See Shots 678 and 679 for later times.

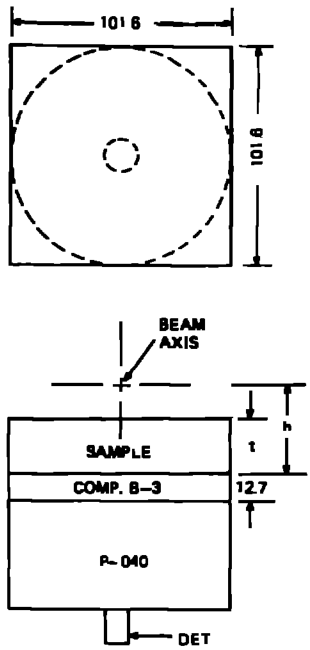


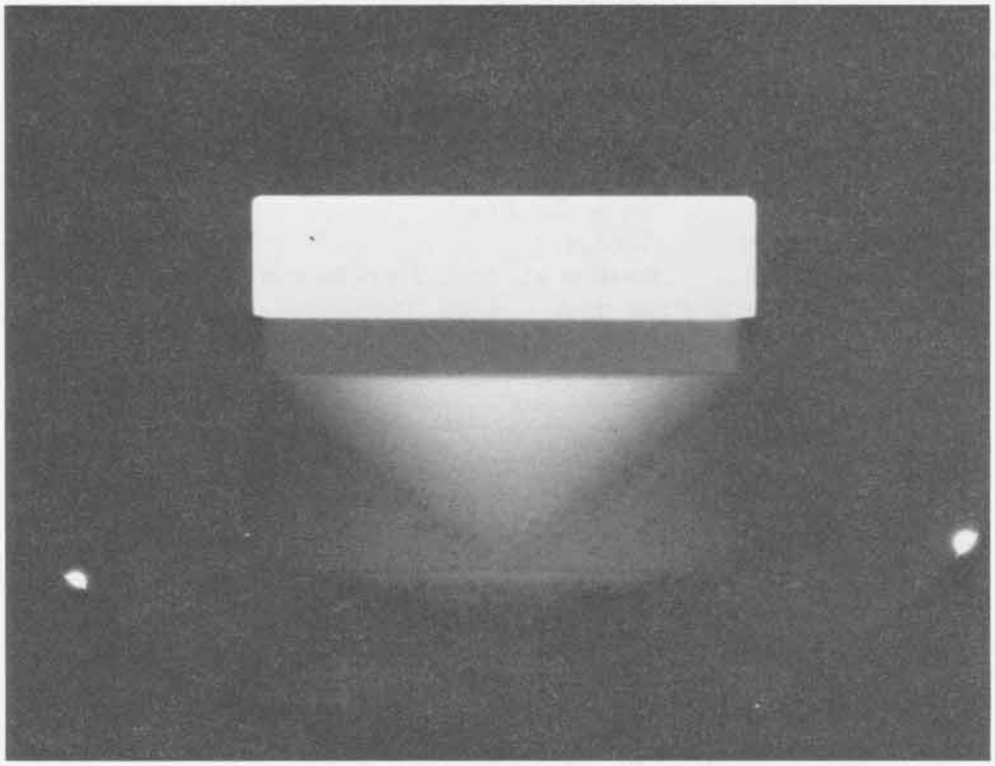


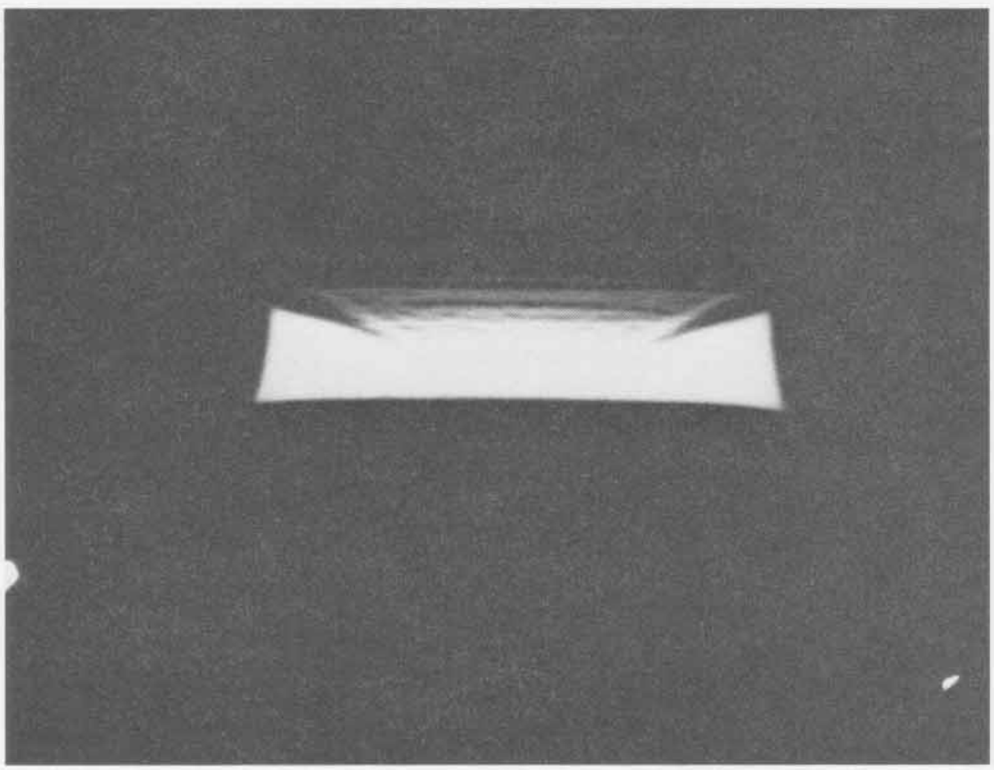


SHOT 624: **Dynamic Fracture of Nickel**
Date: May 24, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 27.32 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, nickel. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

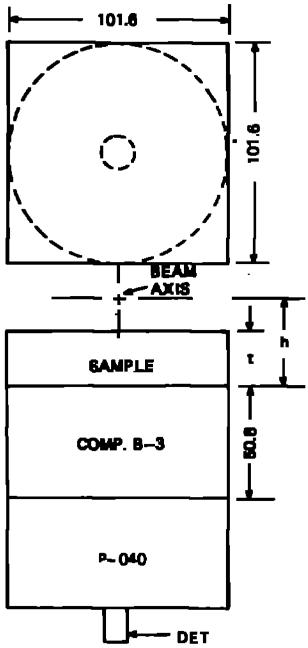


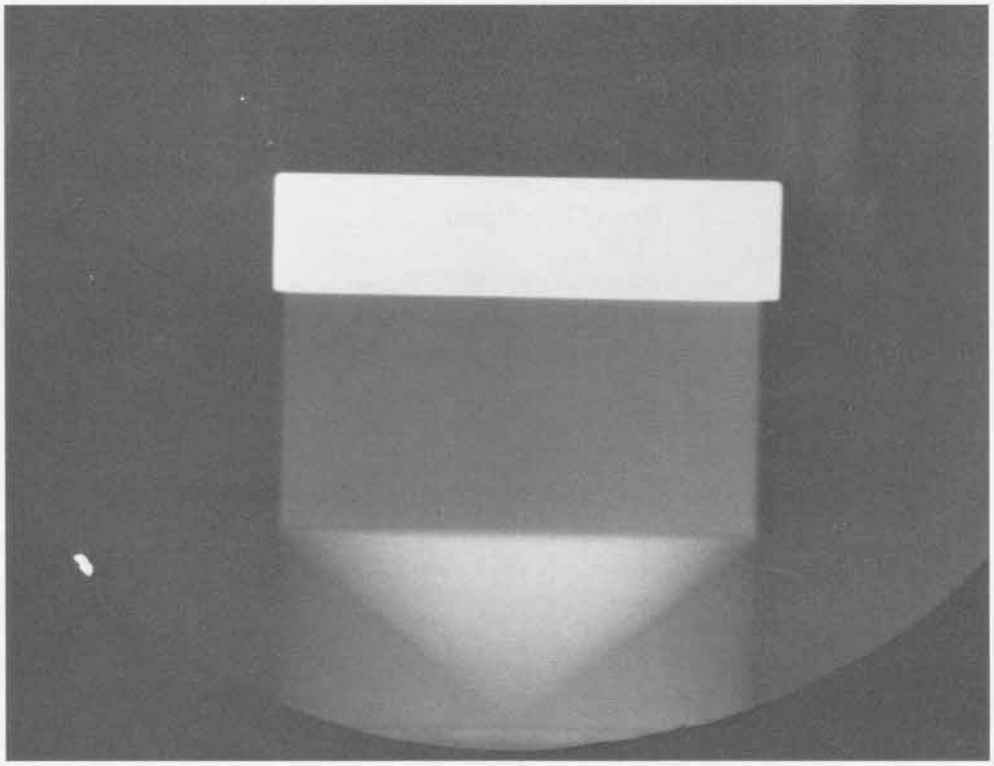


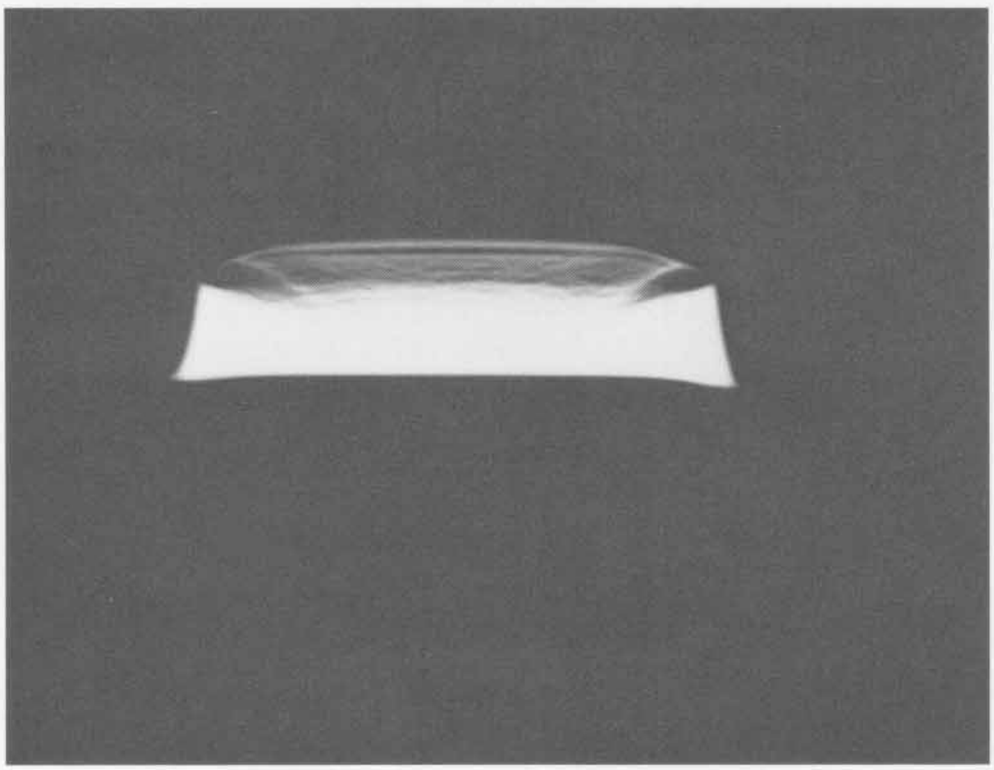


SHOT 625: **Dynamic Fracture of Nickel**
Date: May 25, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 32.10 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, nickel. The plate is shocked by 50.8 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

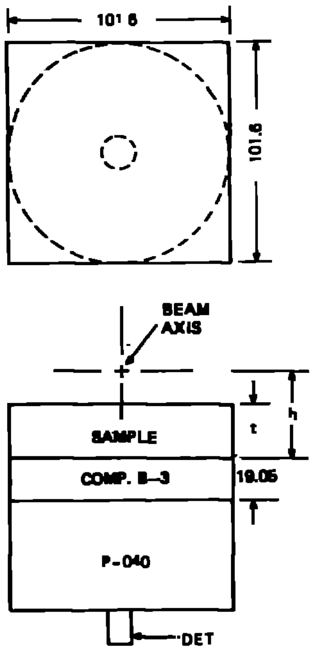


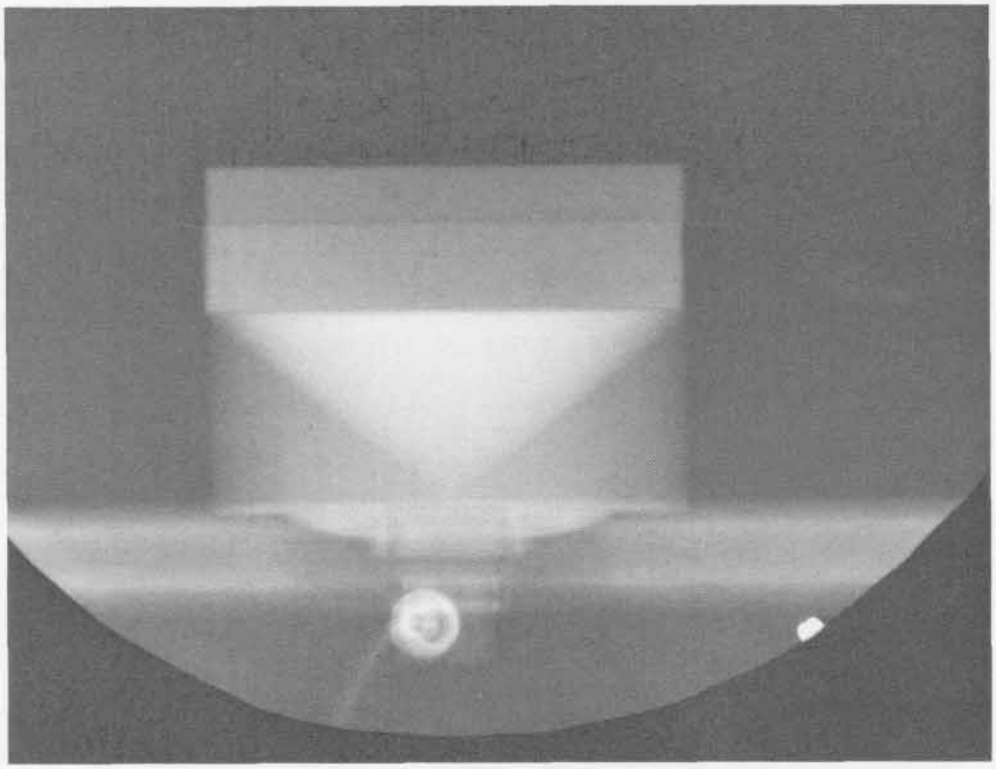


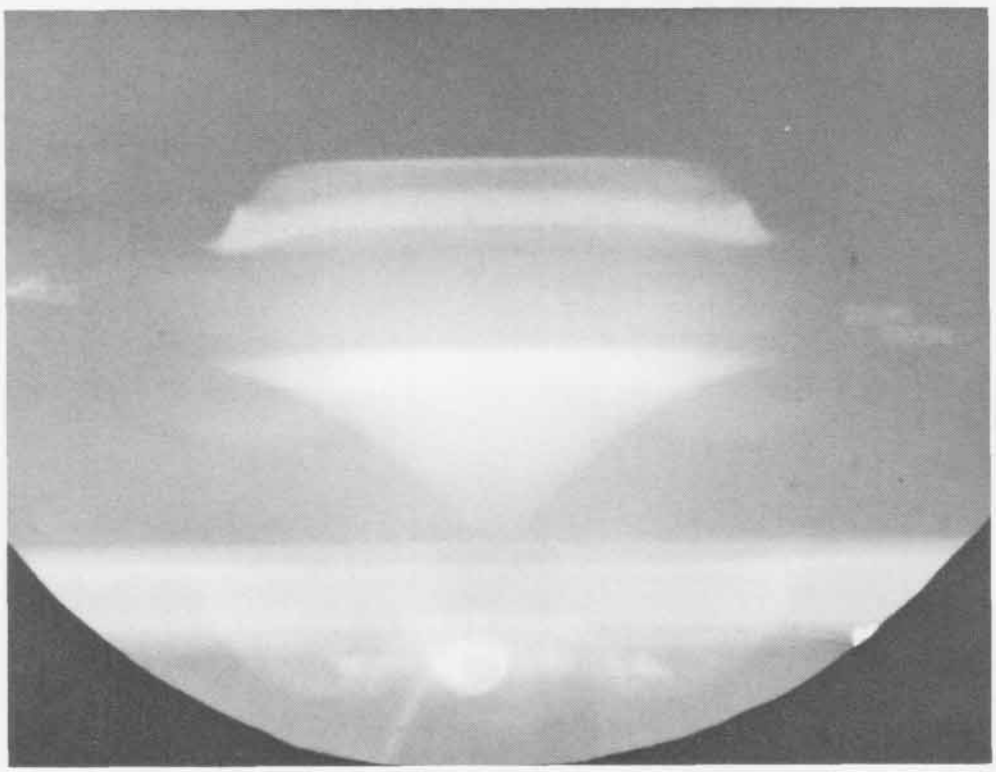


SHOT 626: **Dynamic Fracture of Beryllium**
Date: June 14, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 21.86 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 12.0-mm-thick, t, beryllium. The plate is shocked by 19.05 mm of Composition B-3 initiated by a P-040 lens. h is 31.75 mm.

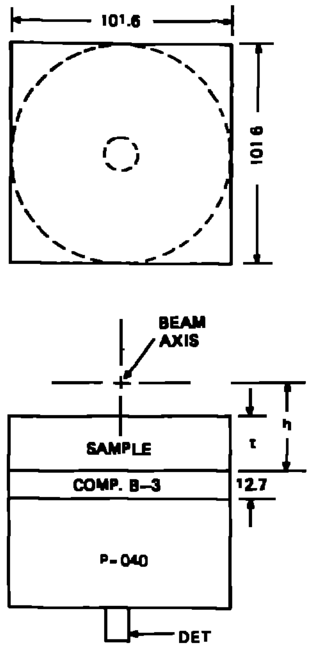


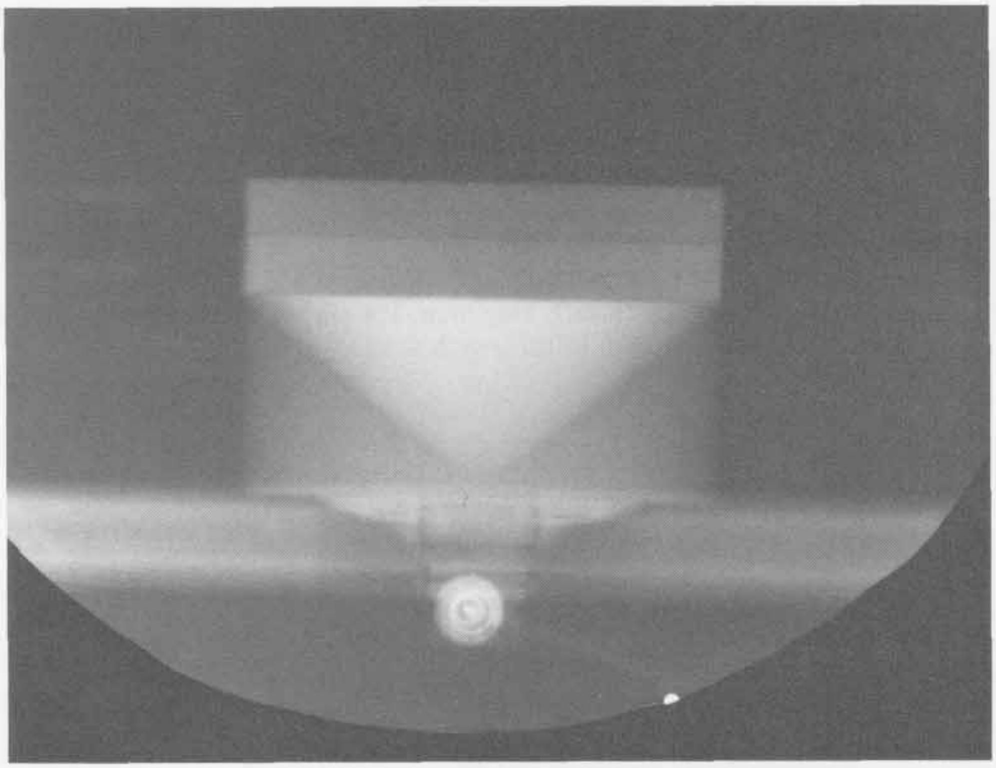




SHOT 627:	**Dynamic Fracture of Beryllium**
Date:	June 15, 1966
Experimenter:	Benny Ray Breed
Radiographic Time:	21.02 μs
References:	Breed et al., 1967; Thurston and Mudd, 1968

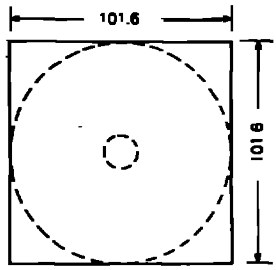
Dynamic fracture of 12.0-mm-thick, t, beryllium. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 28.575 mm.

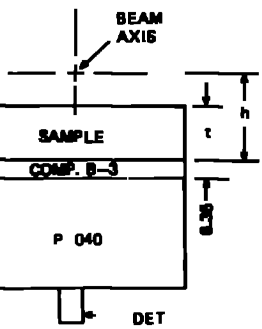


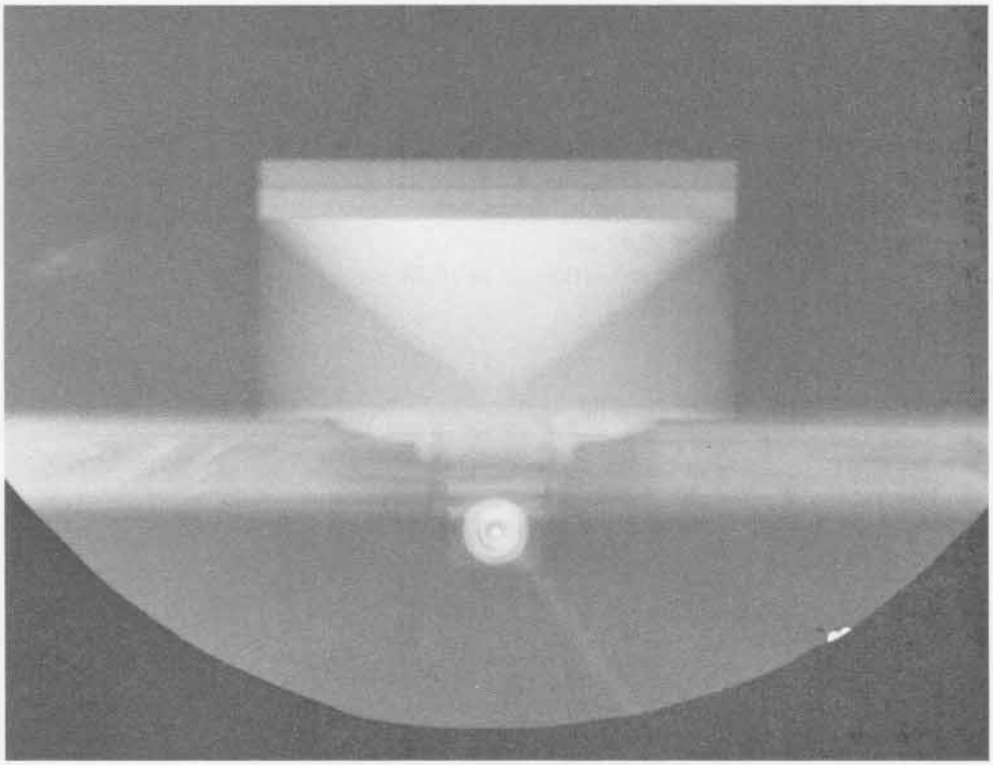


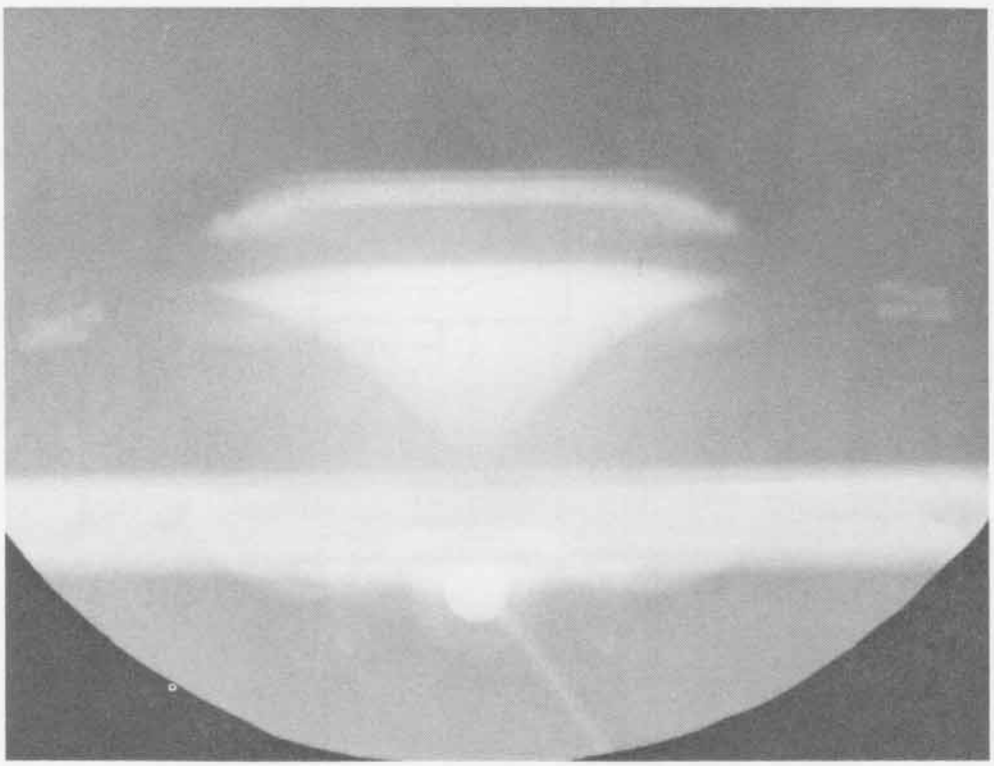
SHOT 628: **Dynamic Fracture of Beryllium**
Date: June 14, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 19.56 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 6.0-mm-thick, t, beryllium. The plate is shocked by 6.35 mm of Composition B-3 initiated by a P-040 lens. h is 22.22 mm.

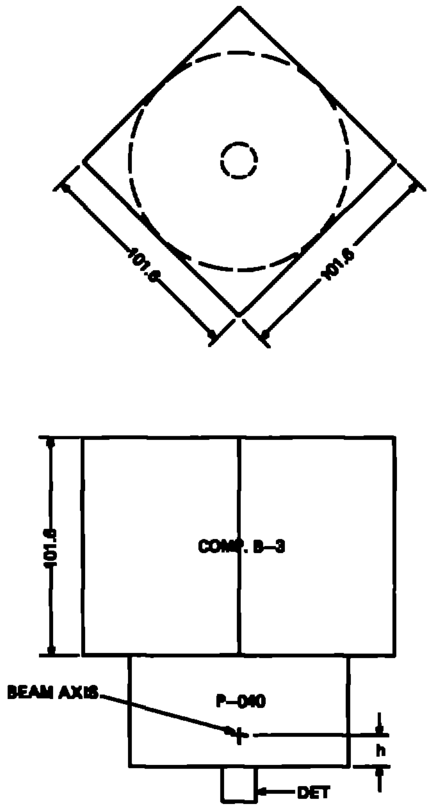


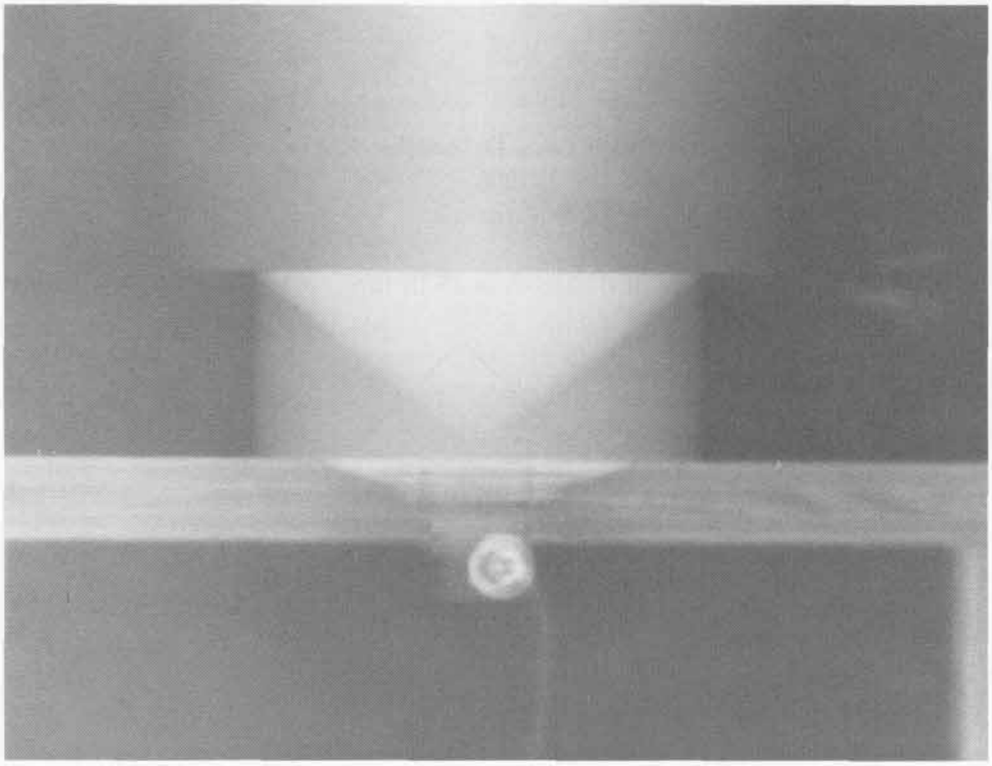


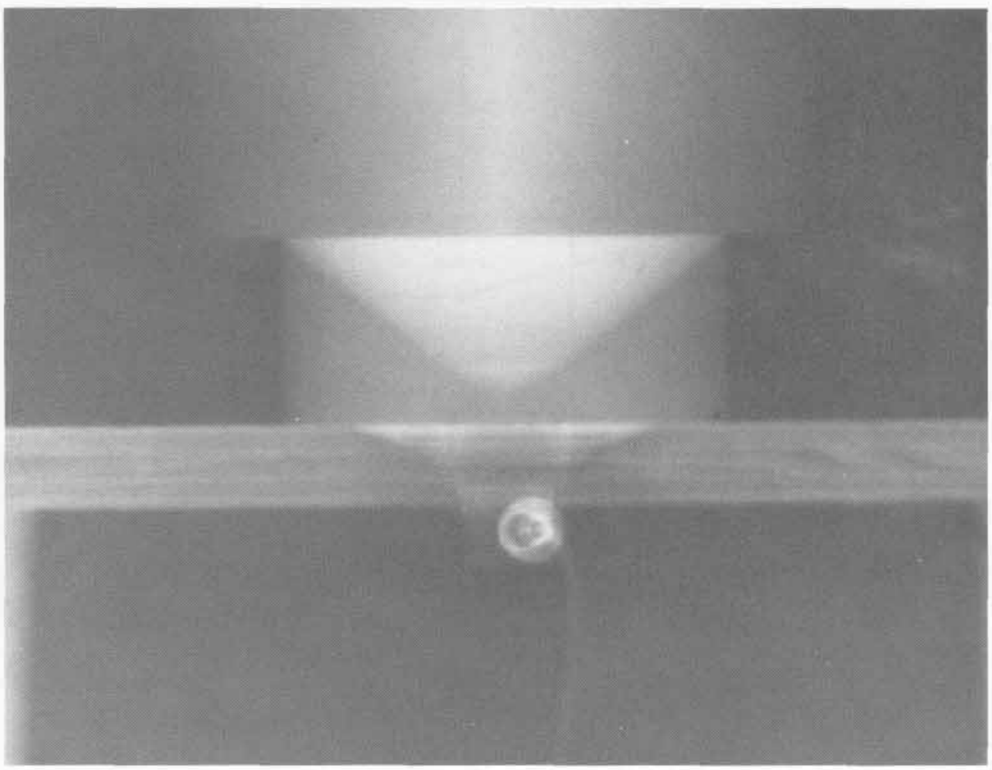




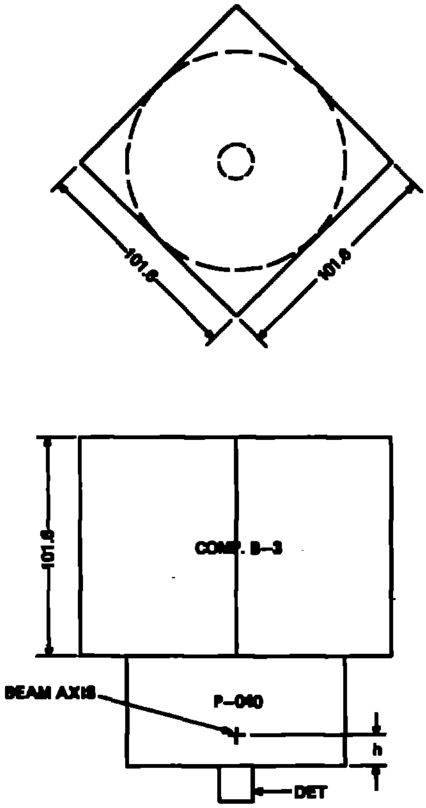
SHOT 630: **P-040 Lens Detonation Wave**
Date: August 3, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 7.49 μs
A P-040 lens 7.49 μs after initiation. h is 12.34 mm.

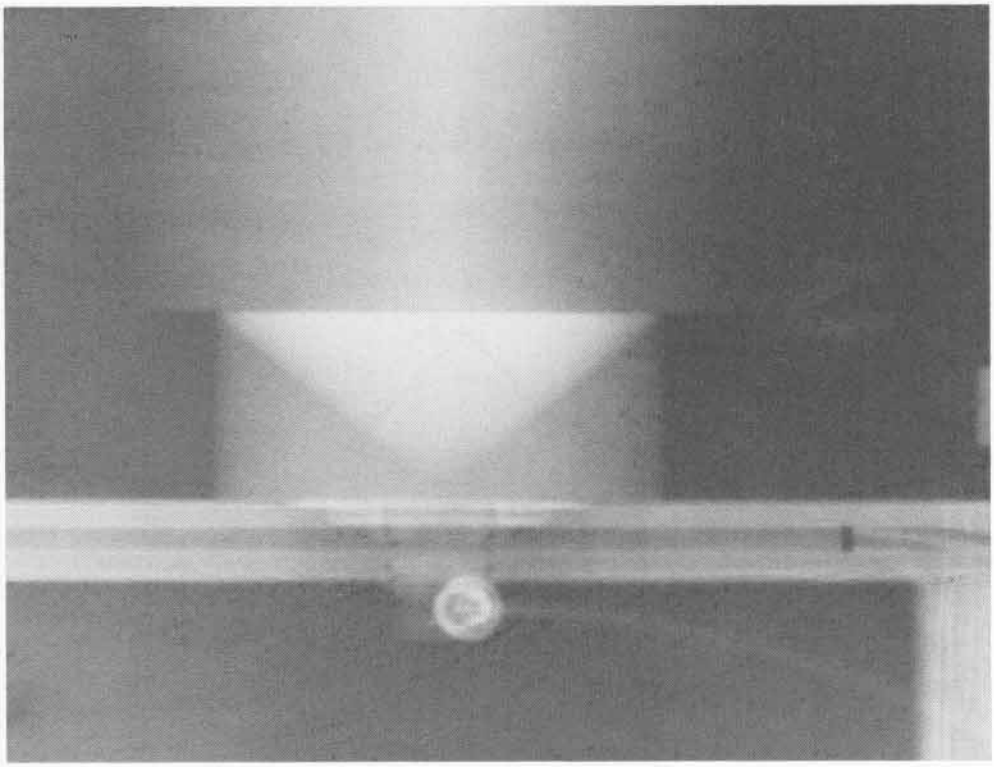


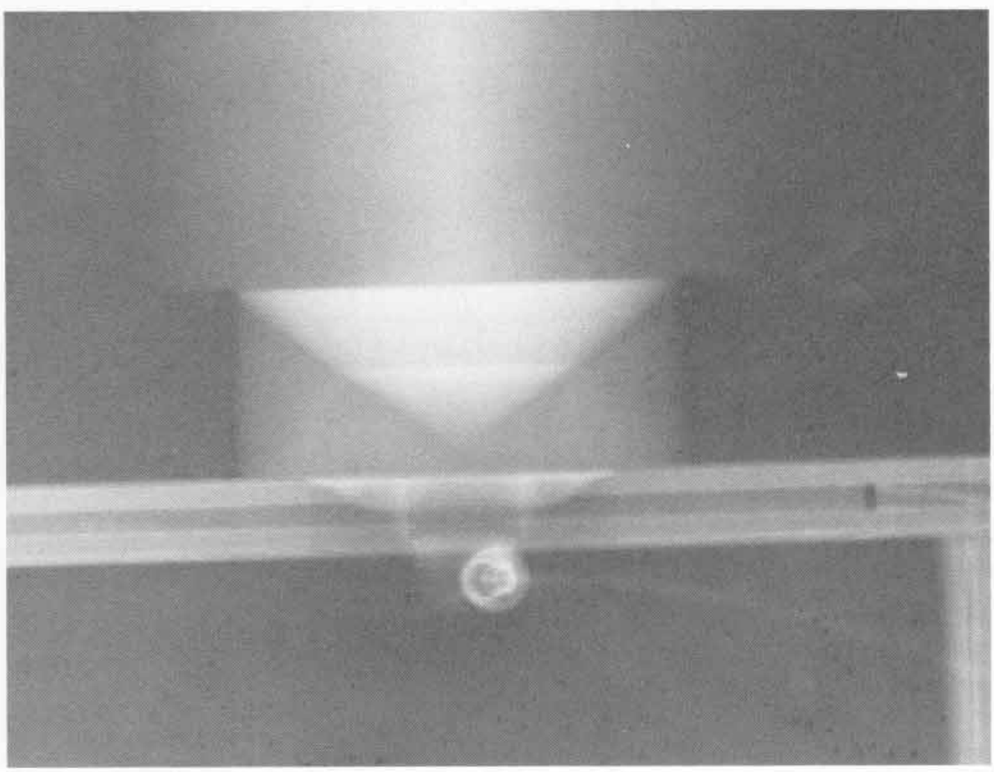




SHOT 631: **P-040 Lens Detonation Wave**
Date: August 3, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 9.59 μs
A P-040 lens 9.59 μs after initiation. h is 25.19 mm.

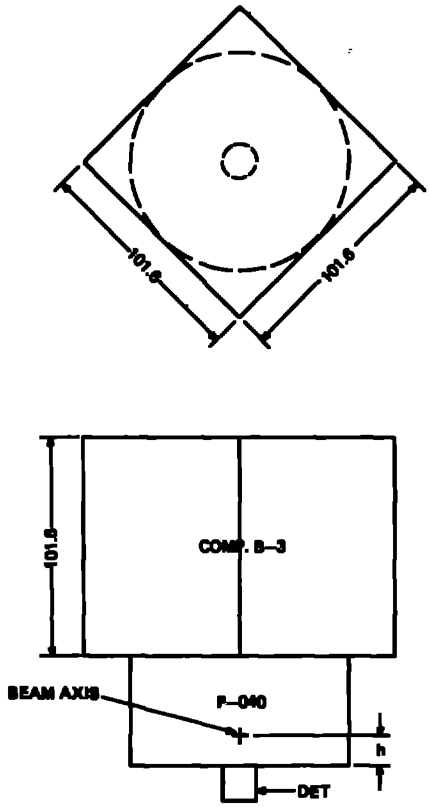


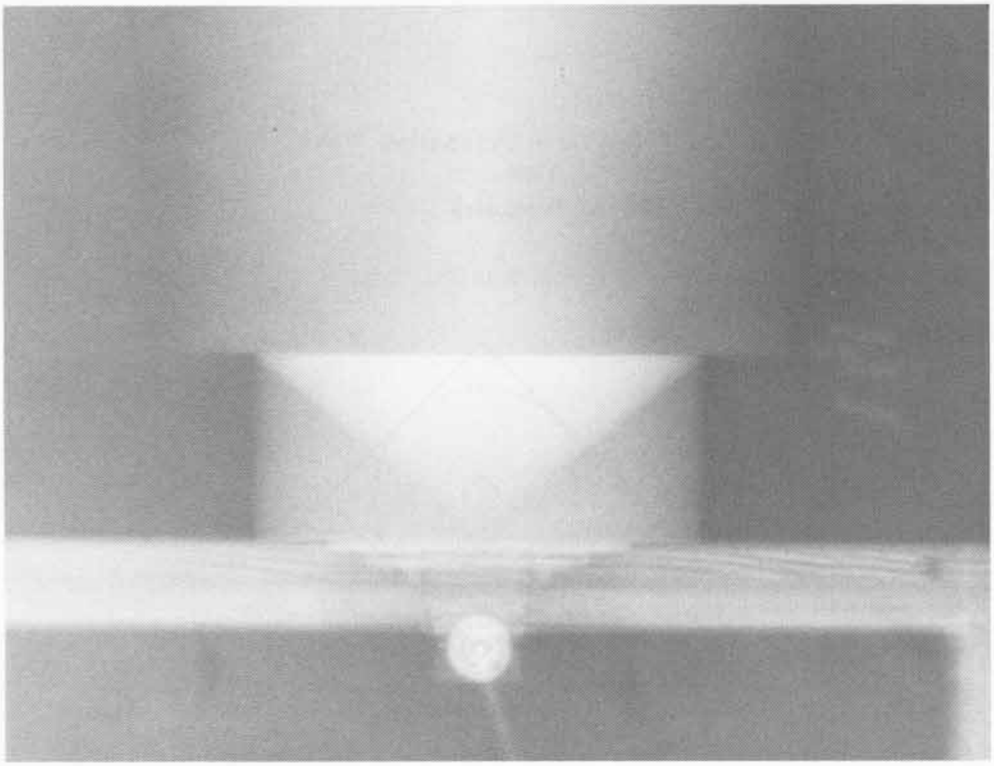


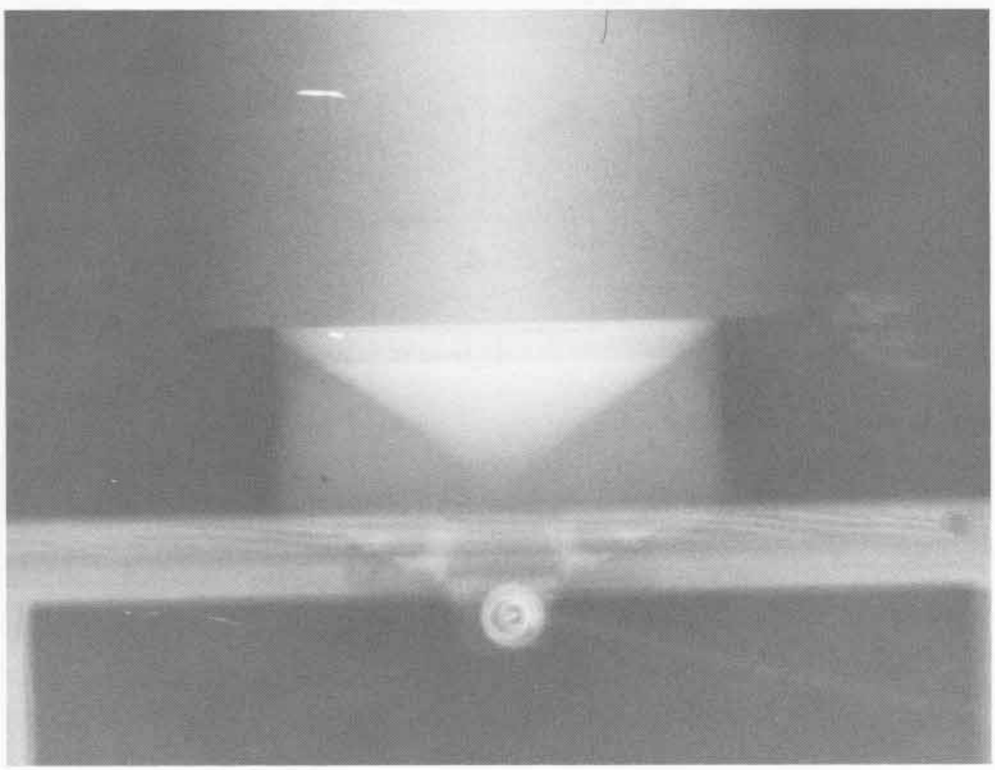


SHOT 632: **P-040 Lens Detonation Wave**
Date: August 4, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 11.67 μs

A P-040 lens 11.67 μs after initiation. h is 32.96 mm.

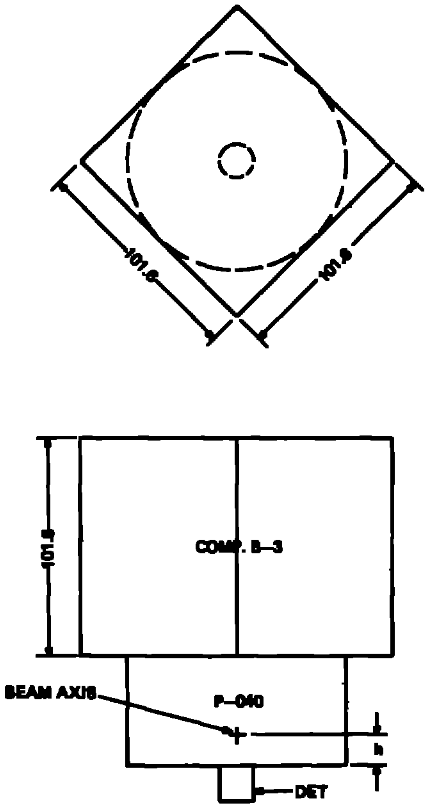


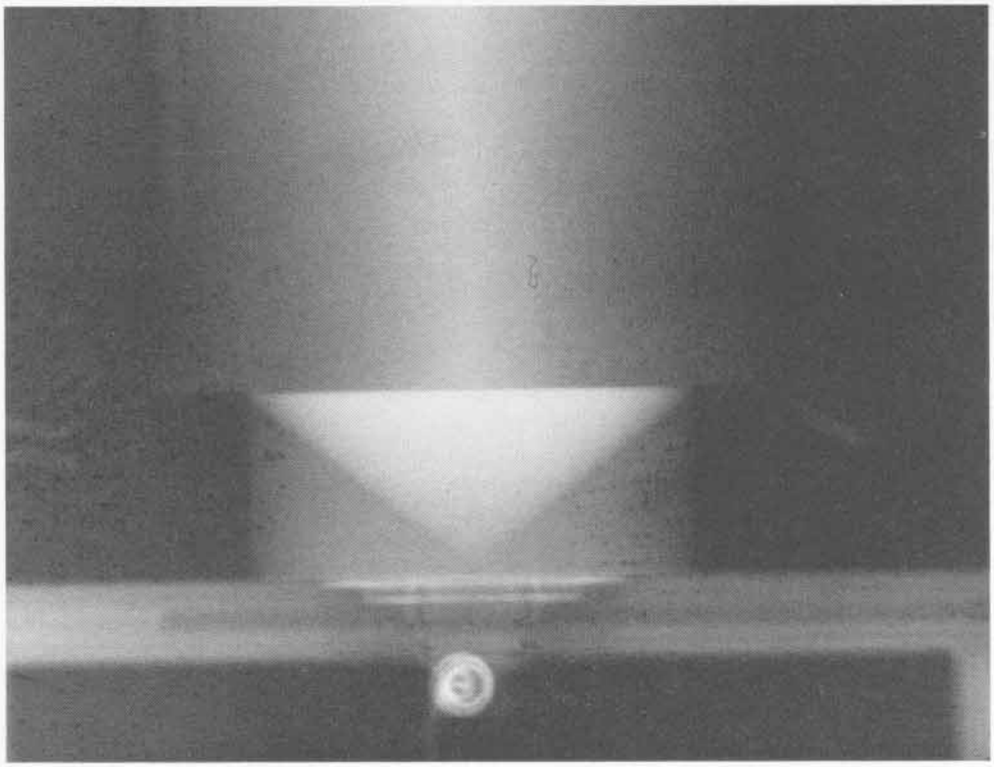


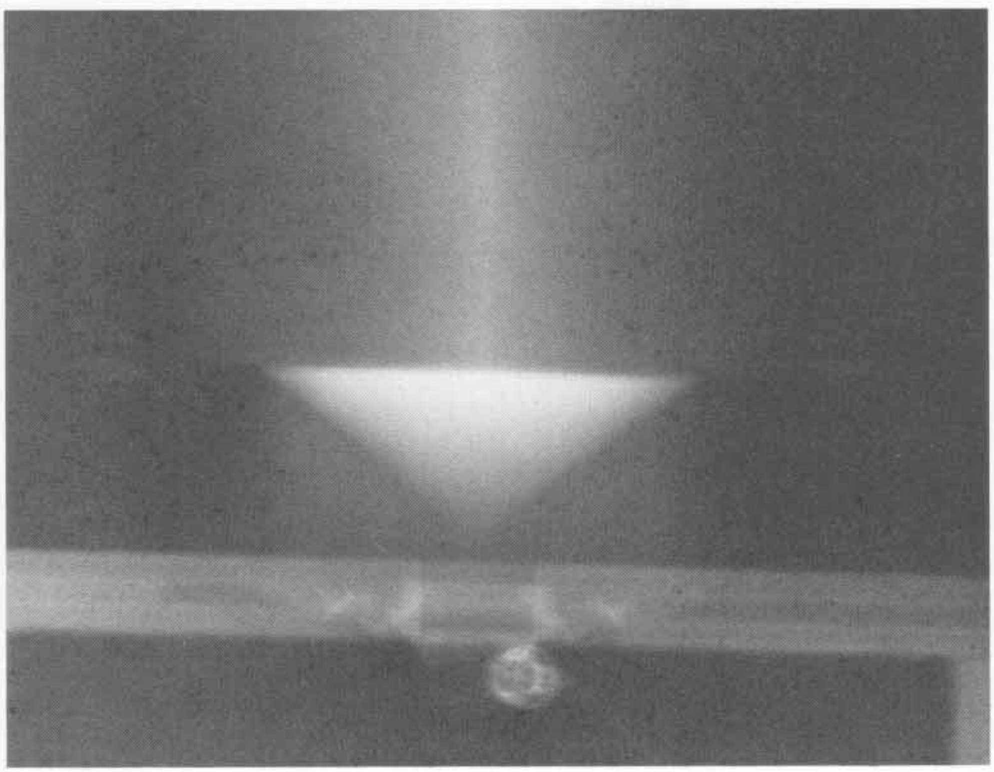


SHOT 633: P-040 Lens Detonation Wave
Date: June 30, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 13.74 μs

A P-040 lens 13.74 μs after initiation. h is 38.0 mm.

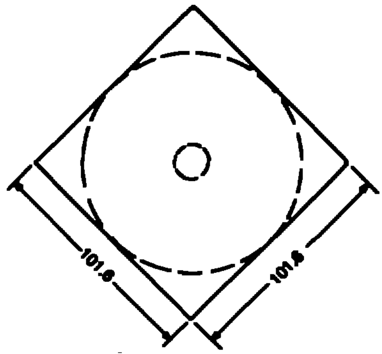


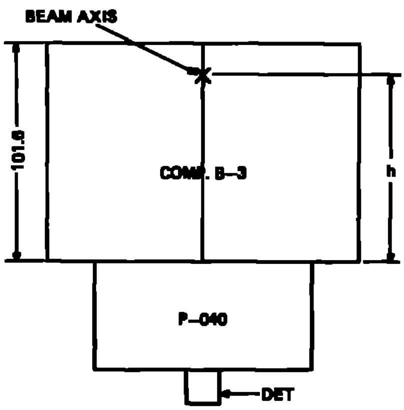


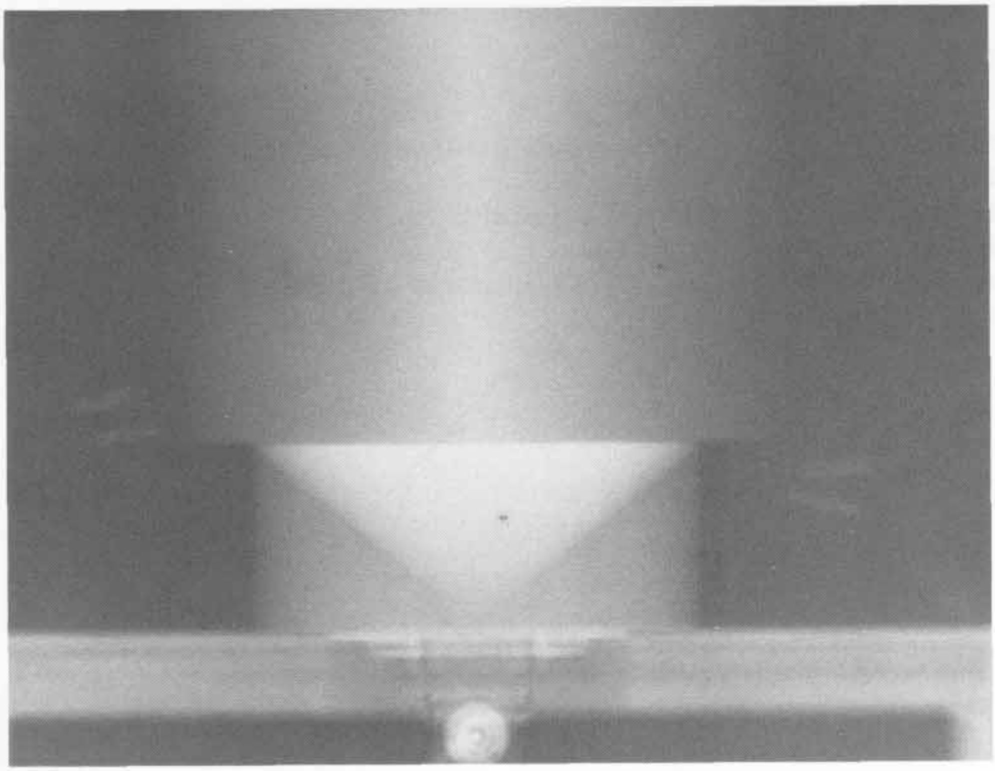


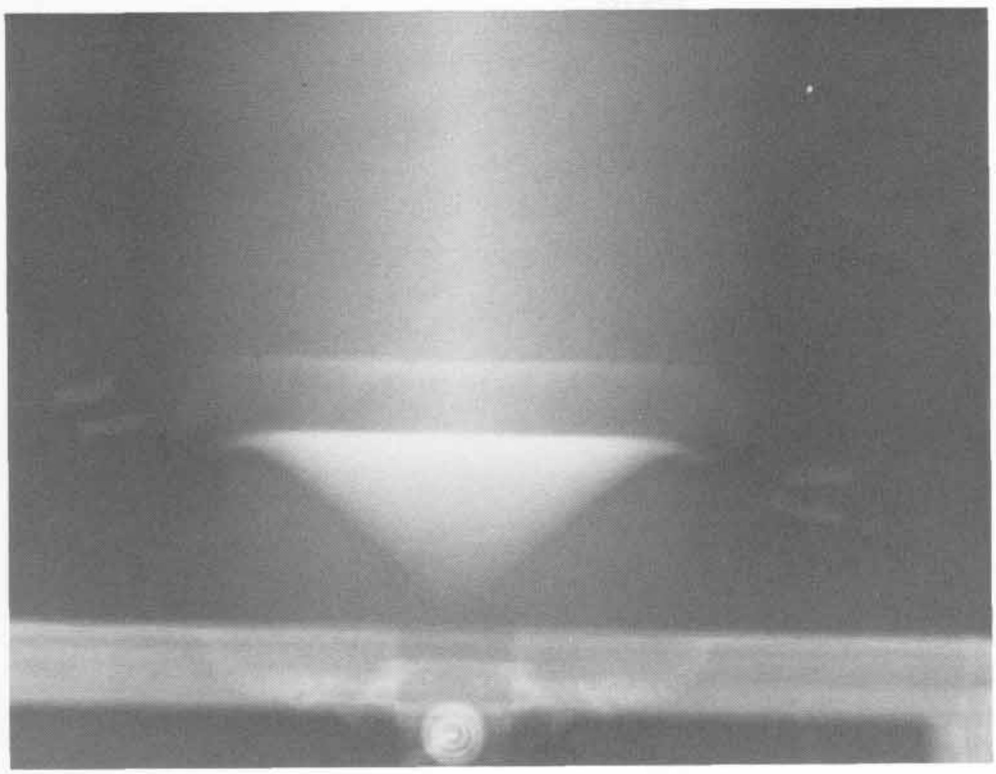
SHOT 634: **Composition B-3 Detonation Wave**
Date: July 12, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 15.89 μs

A 101.6-mm cube of Composition B-3 initiated by a P-040 lens and viewed edge-on. h is 16.67 mm.



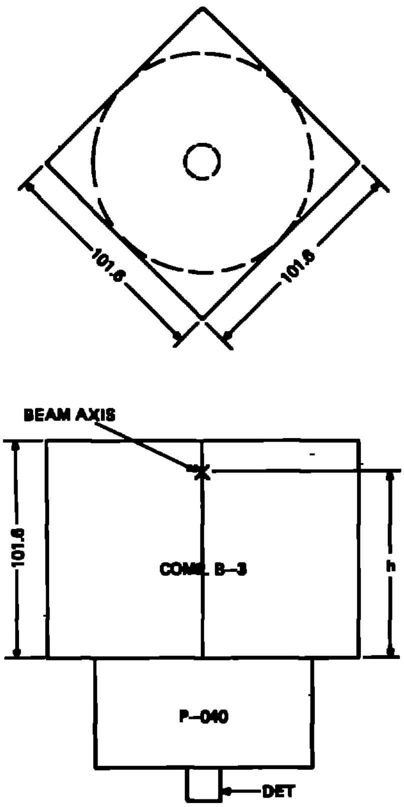


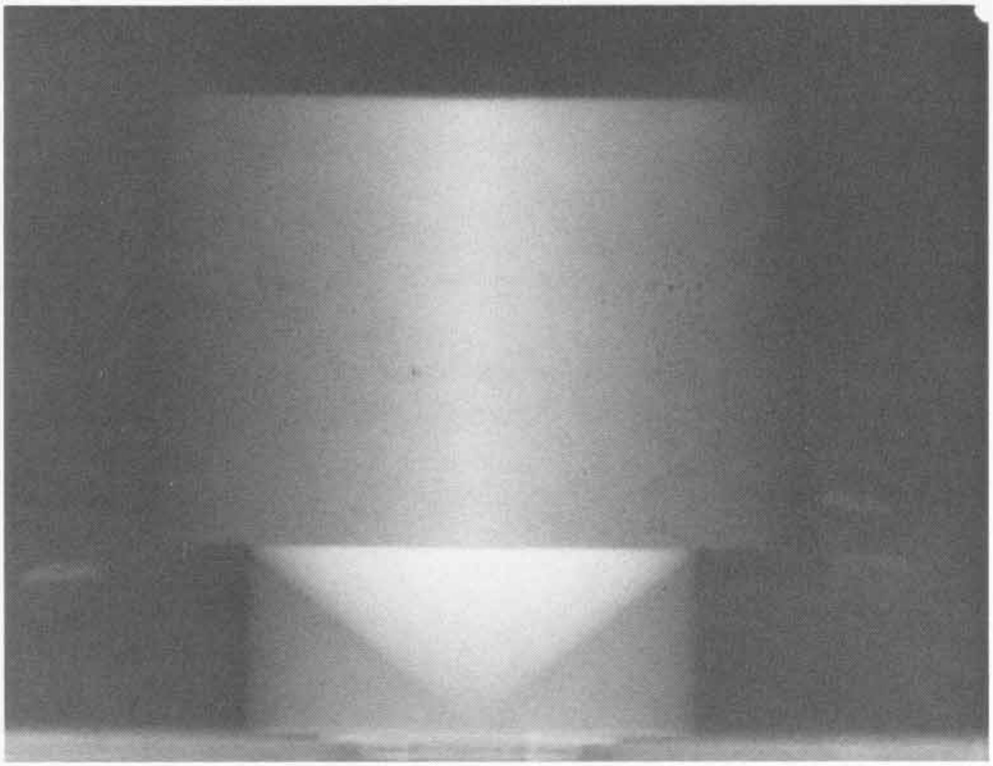


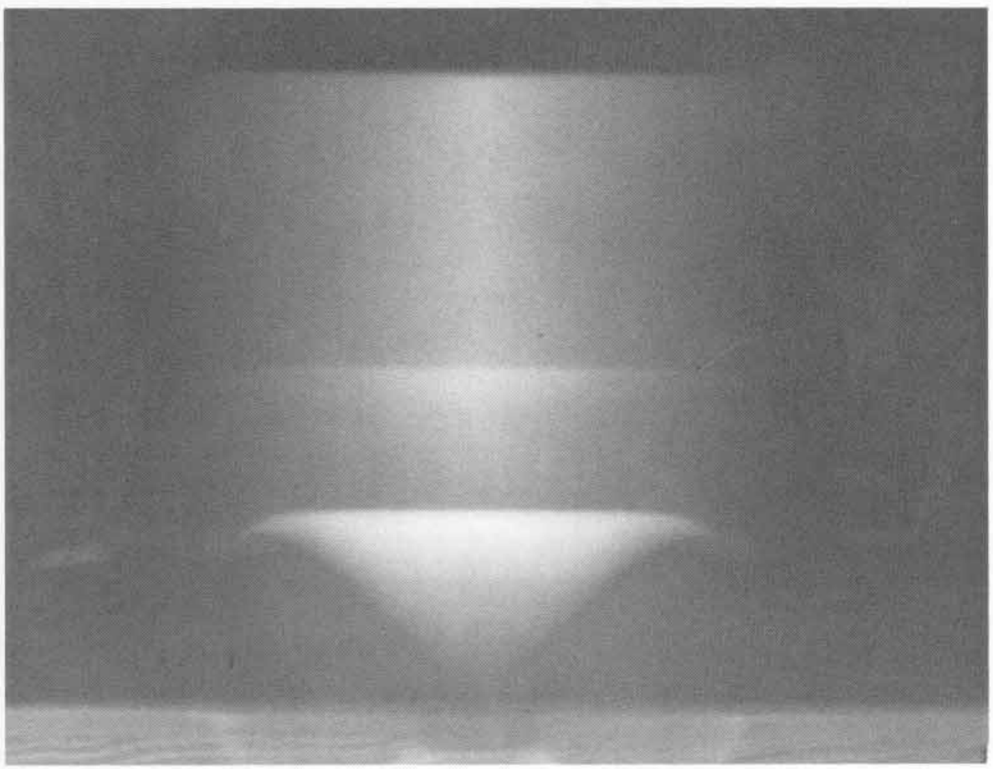


SHOT 635: **Composition B-3 Detonation Wave**
Date: July 12, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 17.94 μs

A 101.6-mm cube of Composition B-3 initiated by a P-040 lens and viewed edge-on. h is 34.93 mm.

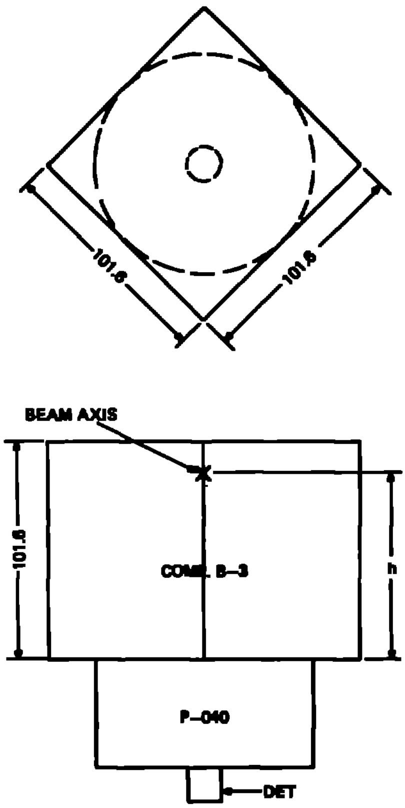


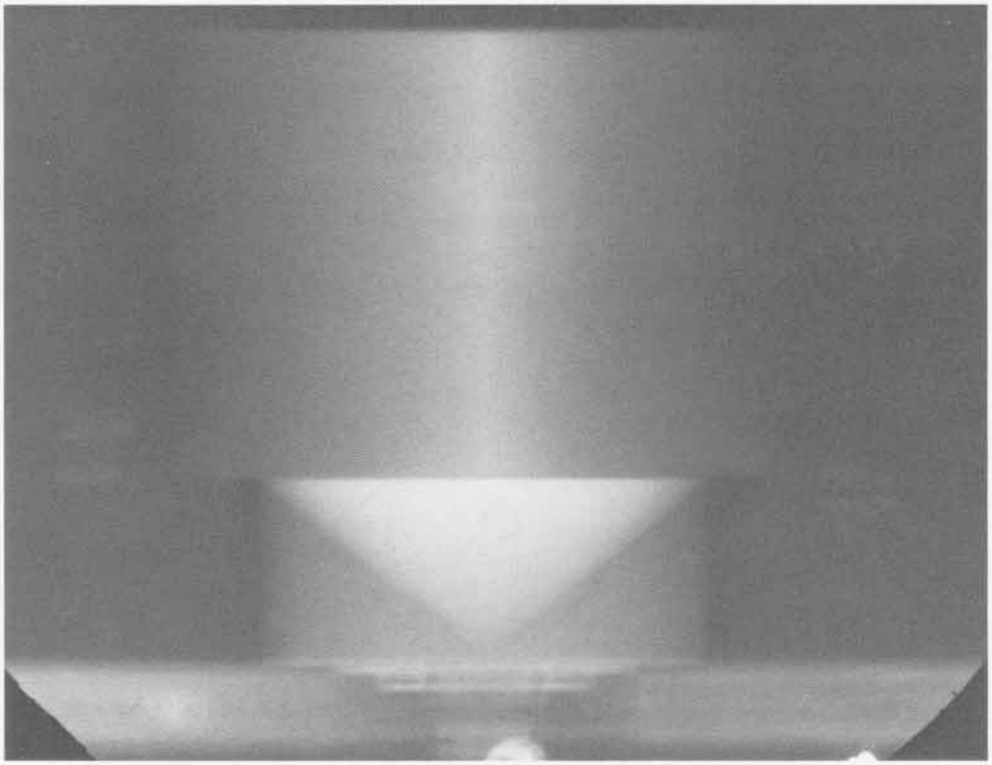


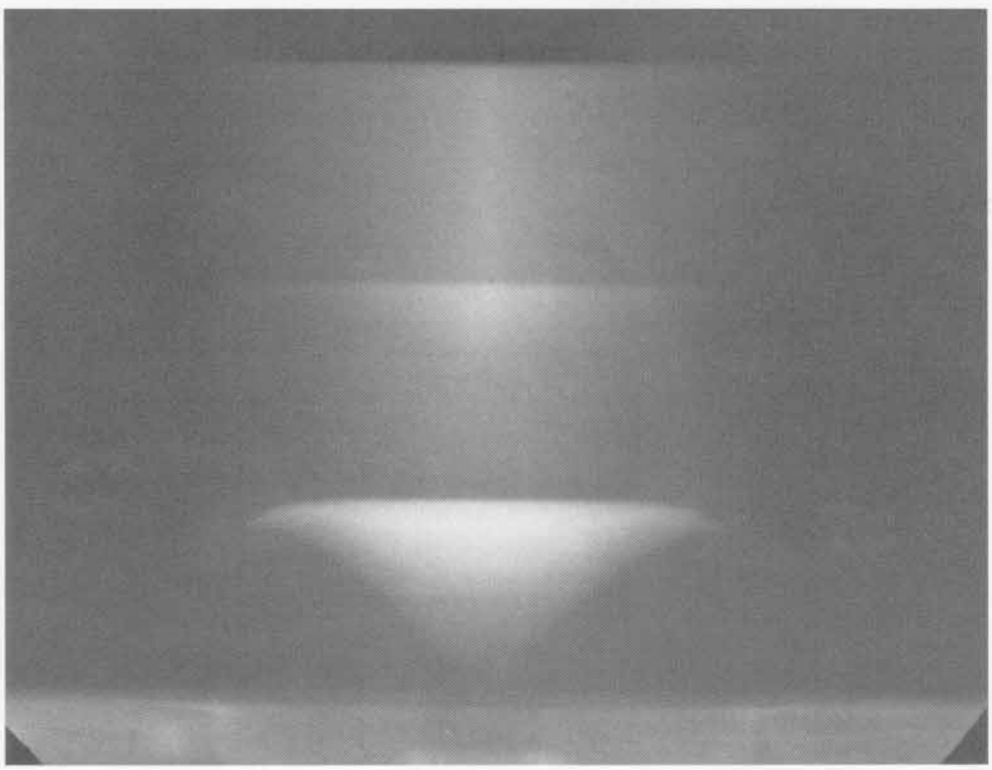


SHOT 636: **Composition B-3 Detonation Wave**
Date: June 30, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 20.0 μs

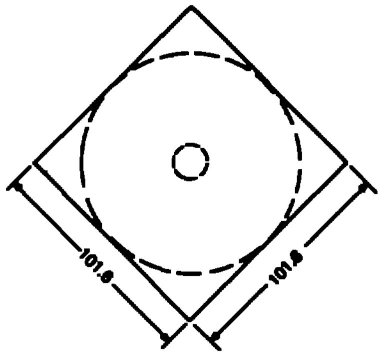
A 101.6-mm cube of Composition B-3 initiated by a P-040 lens and viewed edge-on. h is 51.6 mm.

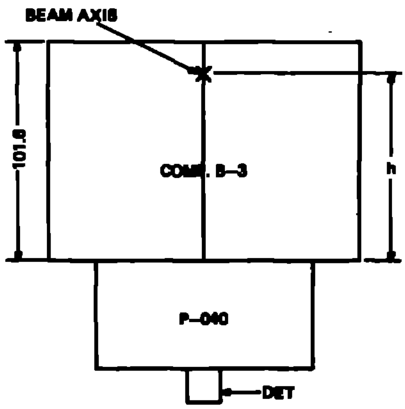


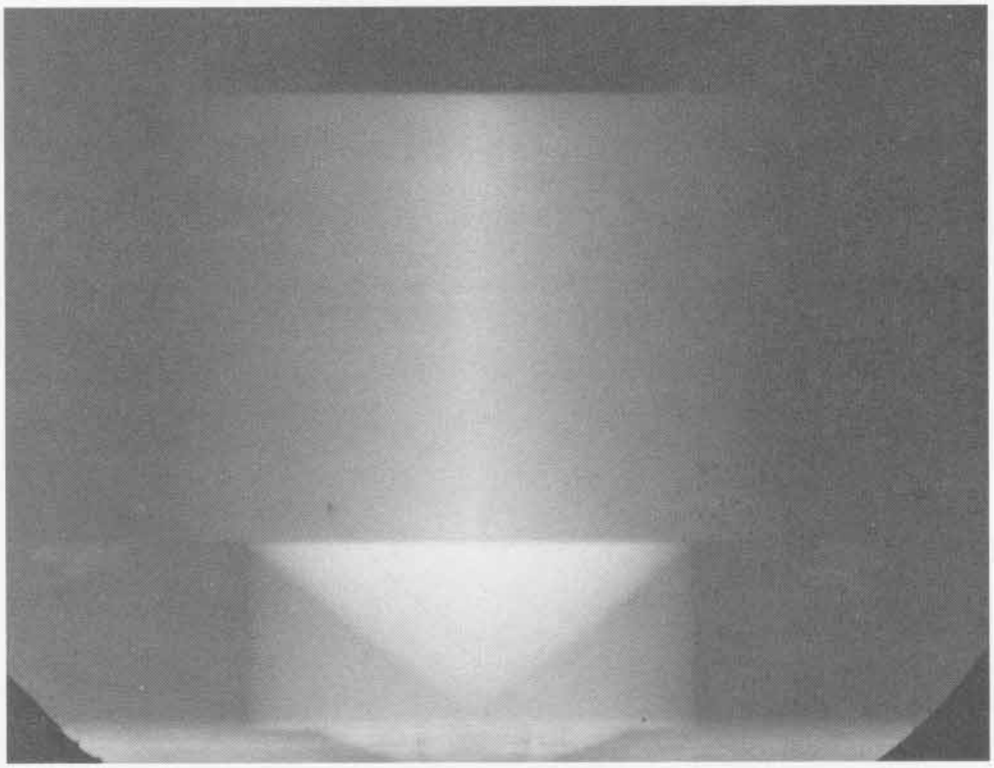


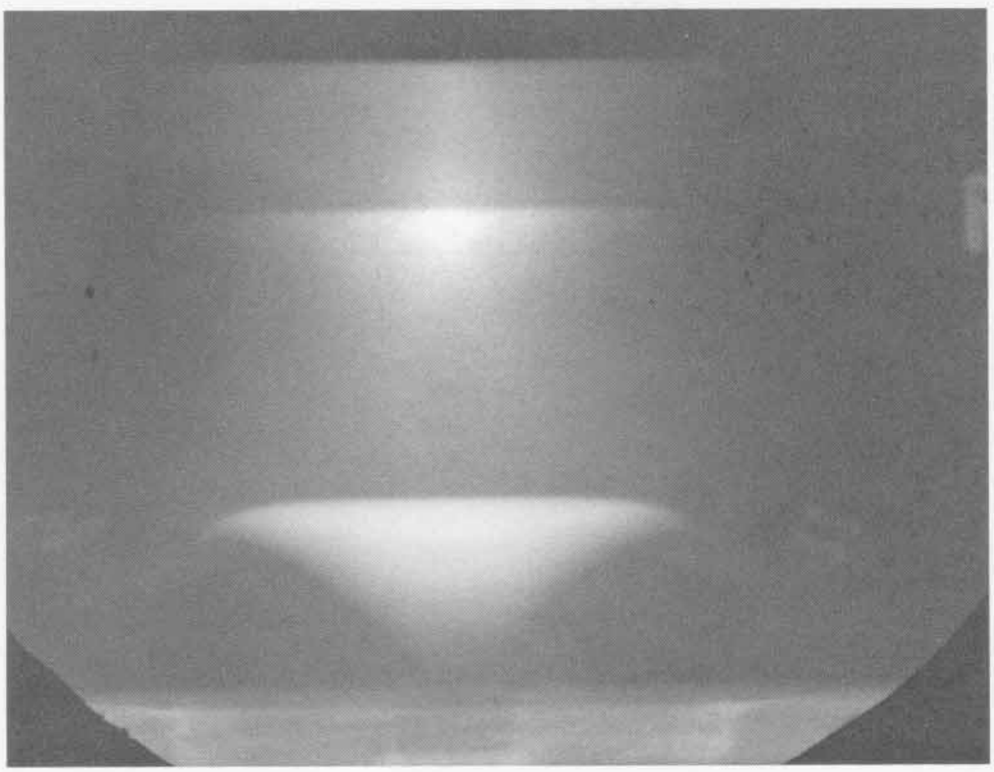


SHOT 637: **Composition B-3 Detonation Wave**
Date: July 13, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 22.11 μs
A 101.6-mm cube of Composition B-3 initiated by a P-040 lens and viewed edge-on.
h is 67.47 mm.



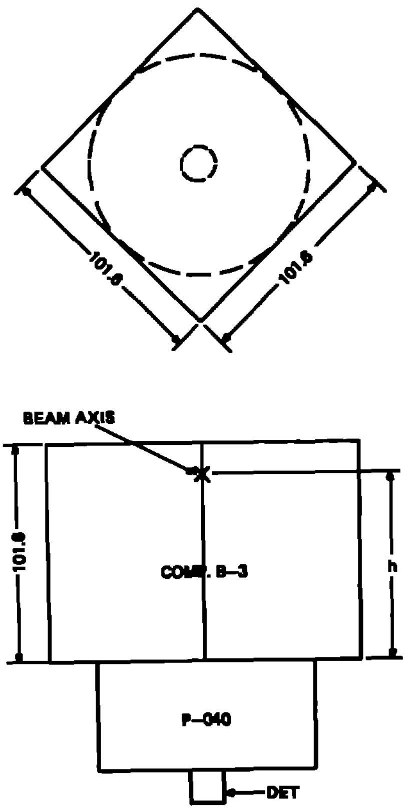


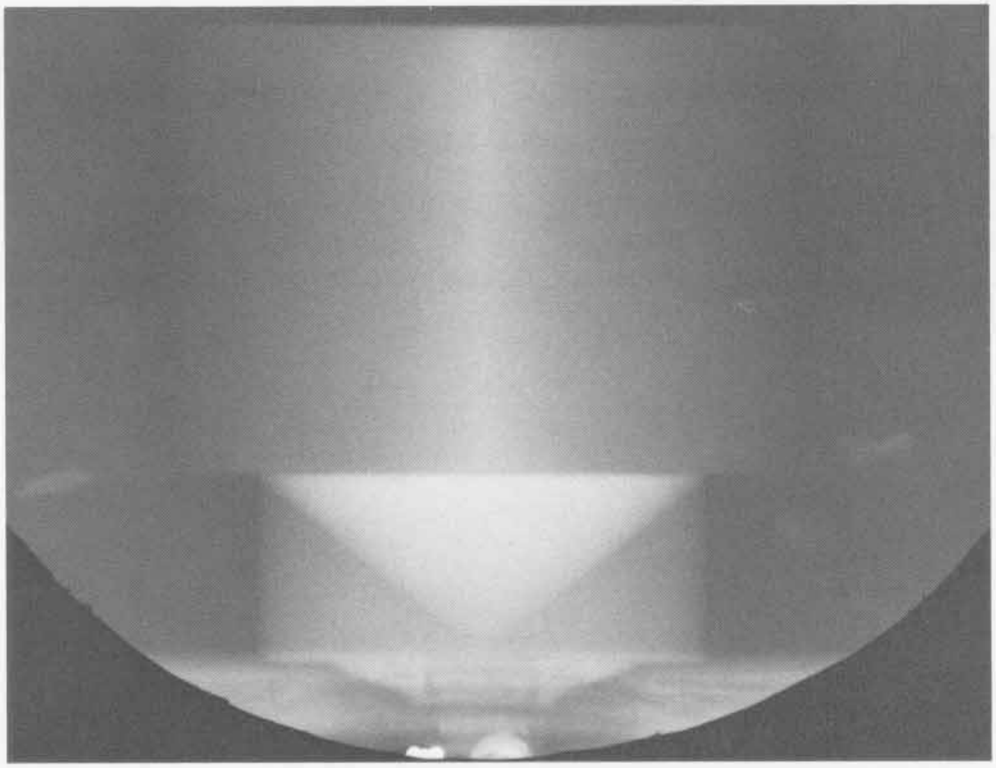


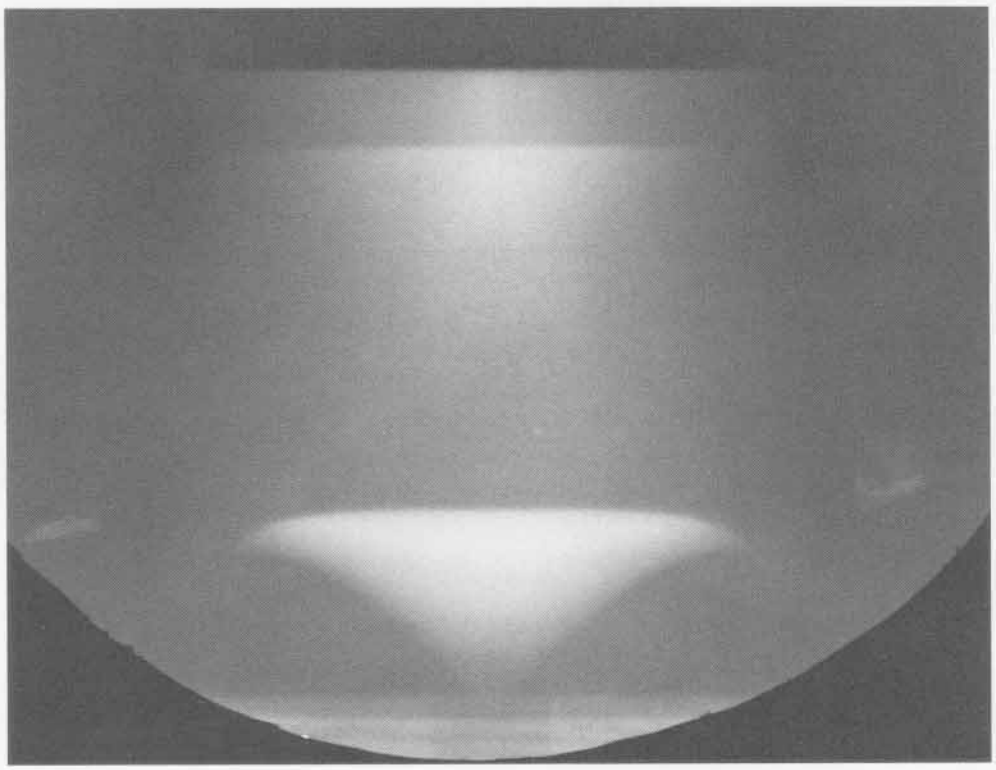


SHOT 638: **Composition B-3 Detonation Wave**
Date: July 13, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 24.16 μs

A 101.6-mm cube of Composition B-3 initiated by a P-040 lens and viewed edge-on. h is 84.14 mm.

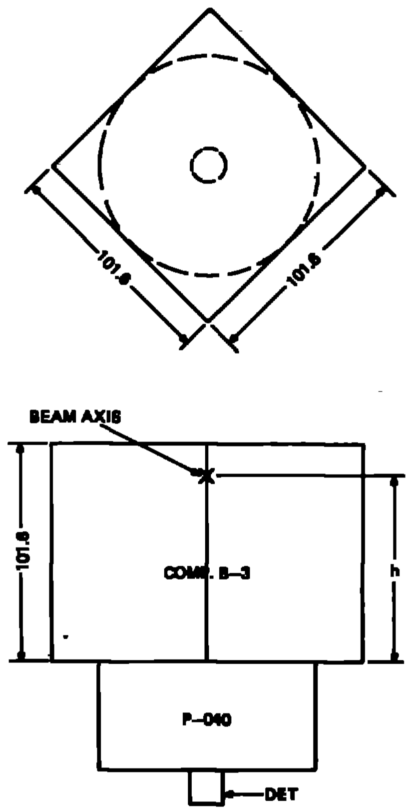


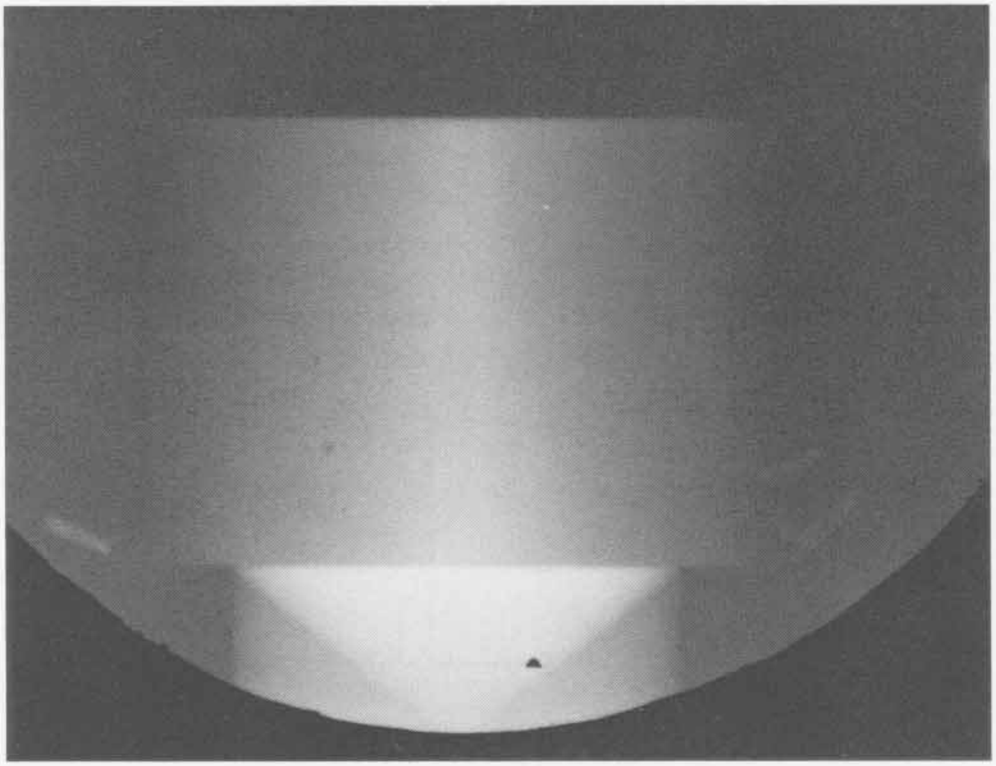


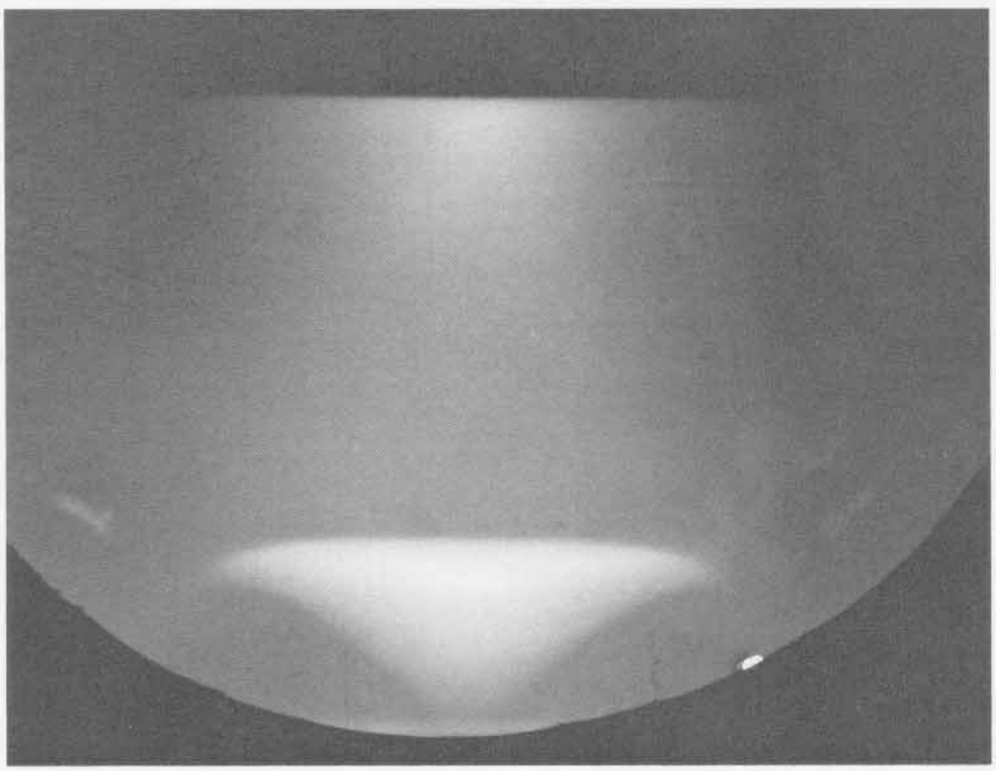


SHOT 639: **Composition B-3 Detonation Wave**
Date: June 30, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 26.28 μs

A 101.6-mm cube of Composition B-3 initiated by a P-040 lens and viewed edge-on. h is 100.80 mm.

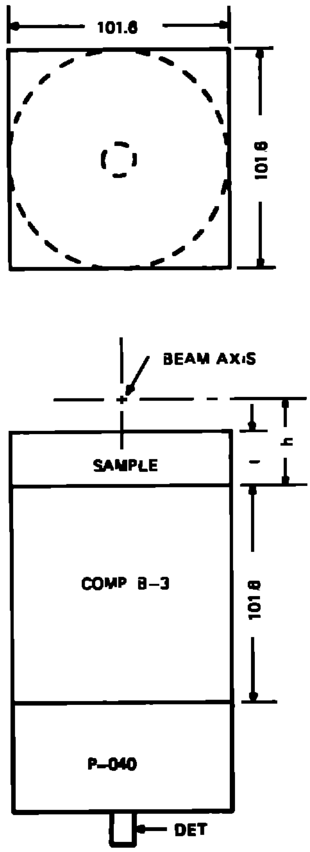


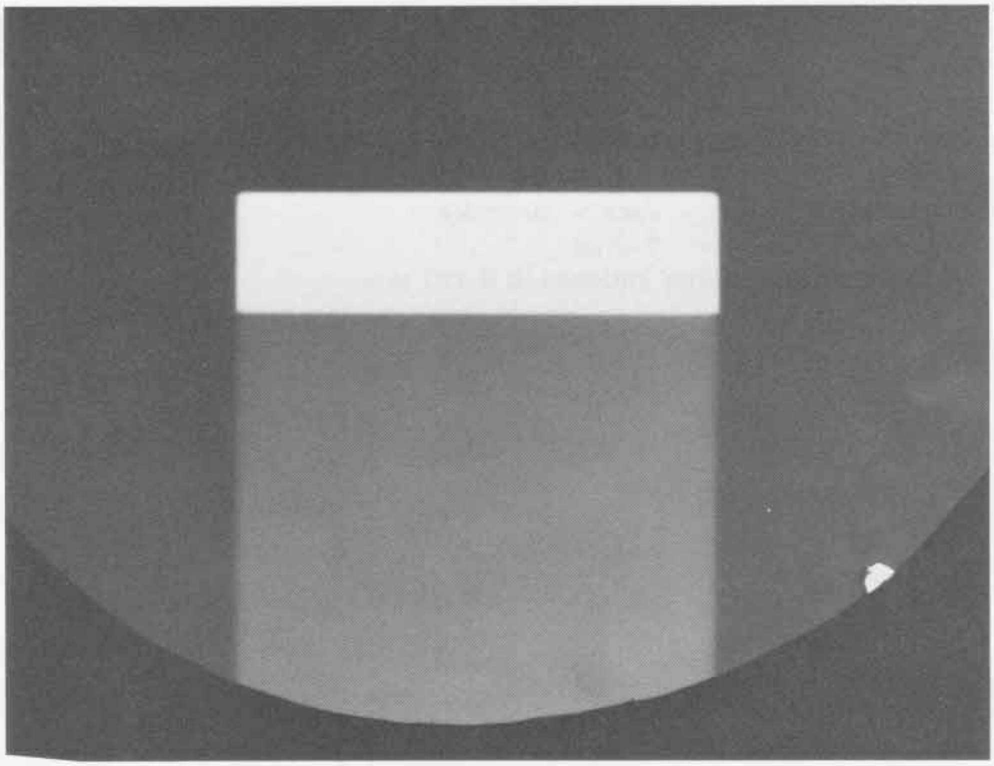


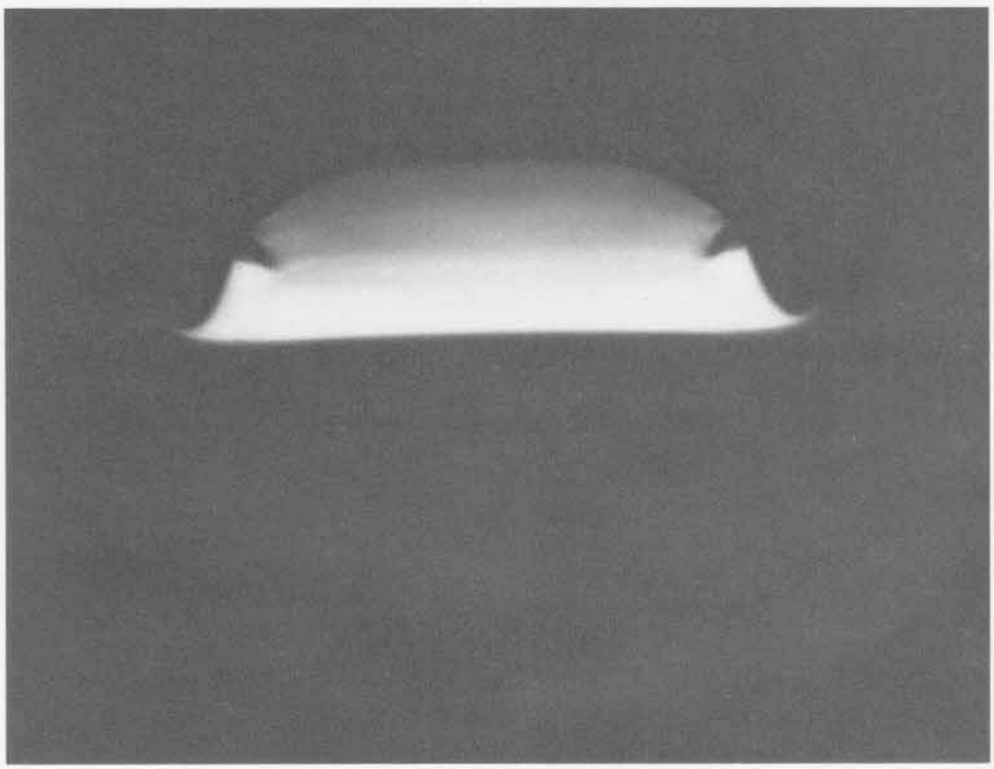


SHOT 640: **Dynamic Fracture of Tin**
Date: January 24, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 41.75 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

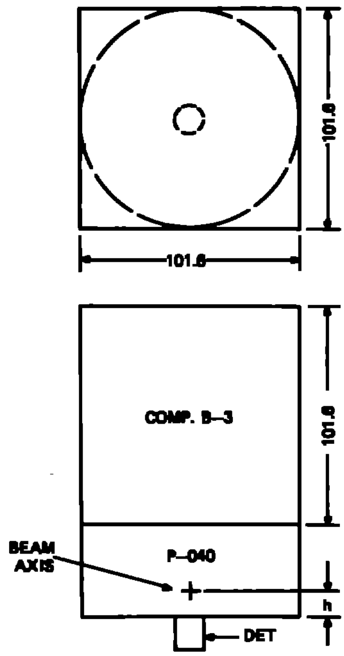
Dynamic fracture of 25.0-mm-thick, t, tin. The plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 50.8 mm.

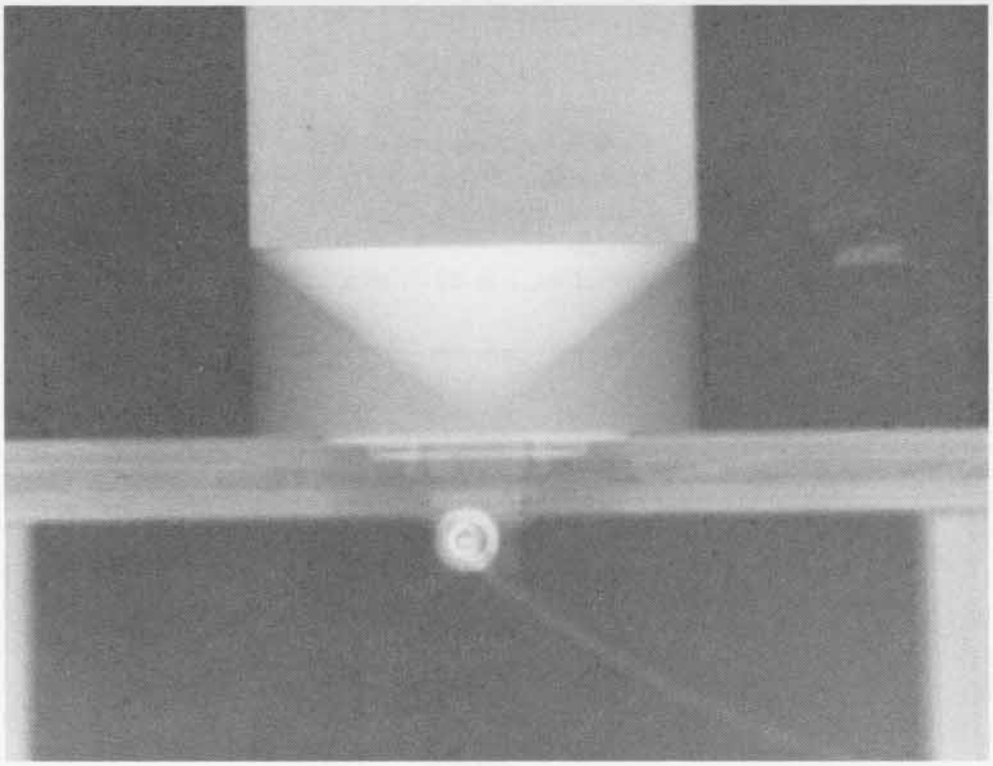


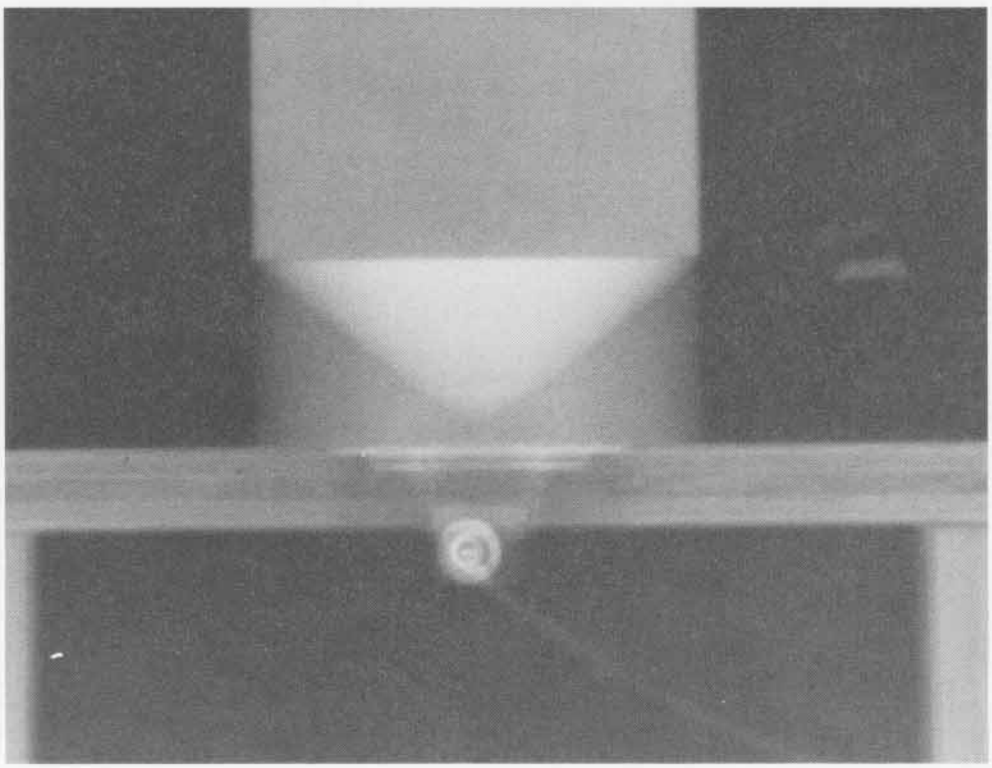




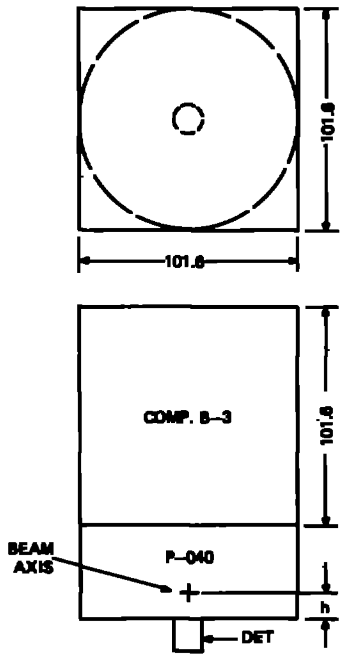
SHOT 641: **P-040 Lens Detonation Wave**
Date: August 25, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 7.47 μs
A P-040 lens 7.47 μs after initiation. h is 12.7 mm.

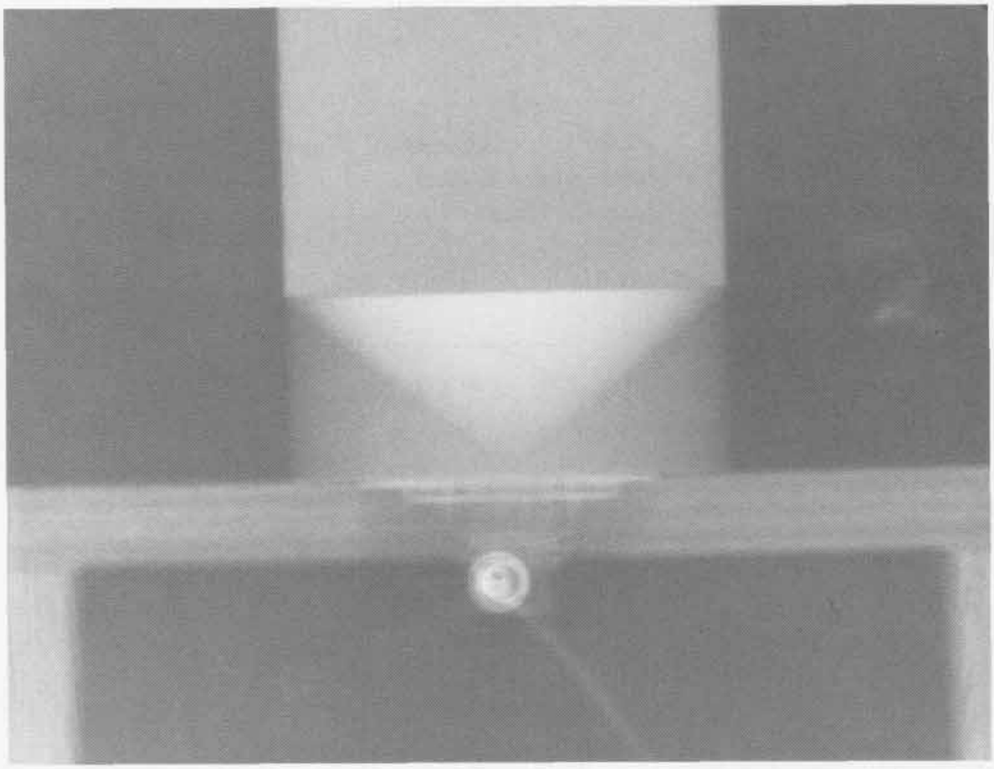


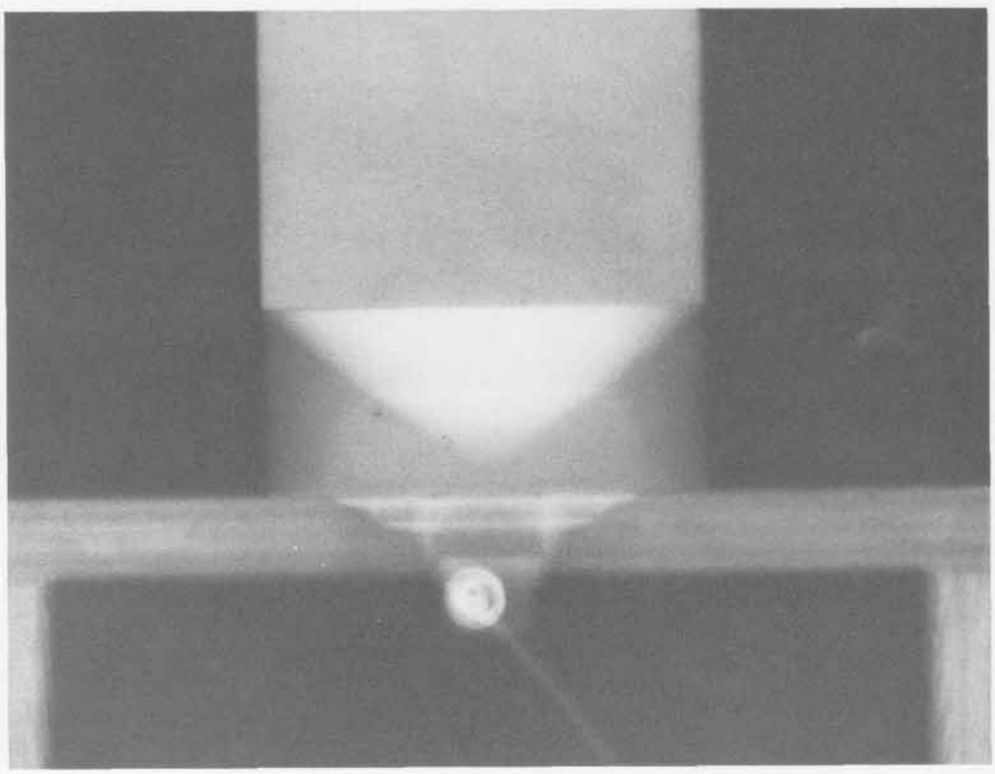




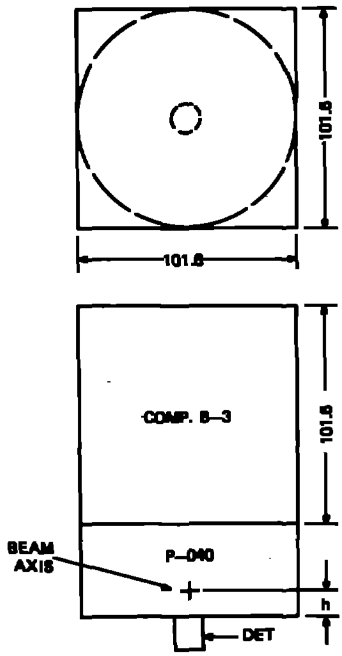
SHOT 642: **P-040 Lens Detonation Wave**
Date: August 30, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 9.58 μs
A P-040 lens 9.58 μs after initiation. h is 22.65 mm.

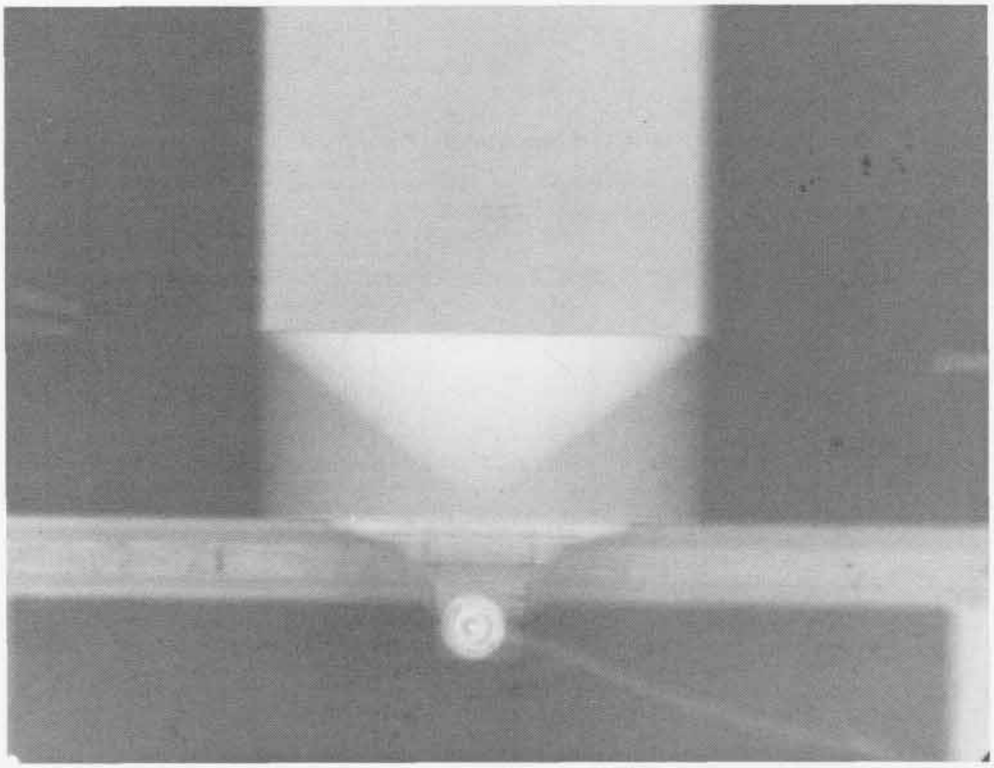


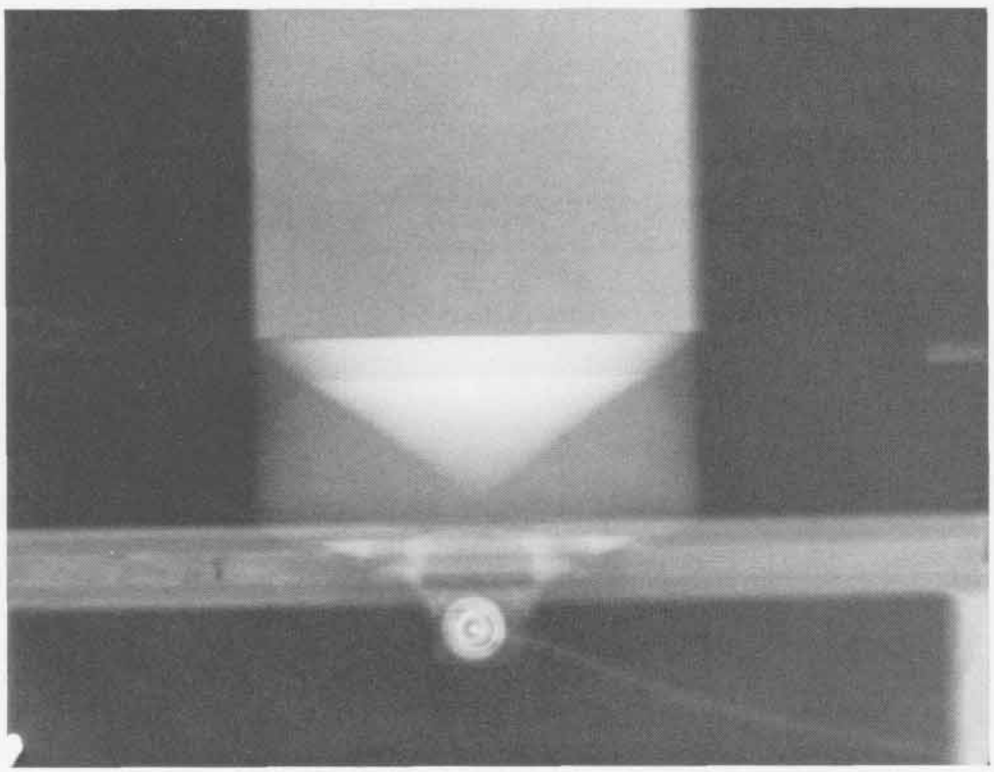




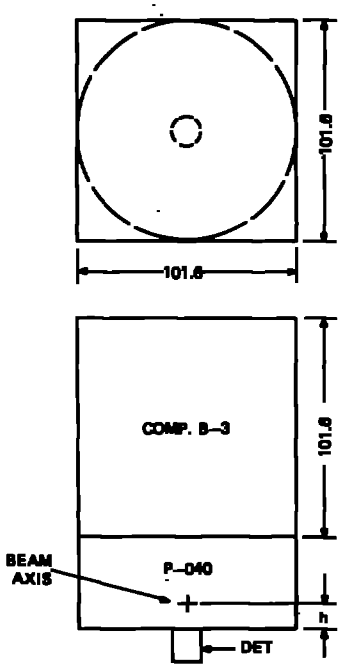
SHOT 643: **P-040 Lens Detonation Wave**
Date: September 14, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 11.62 μs
A P-040 lens 11.62 μs after initiation. h is 32.96 mm.

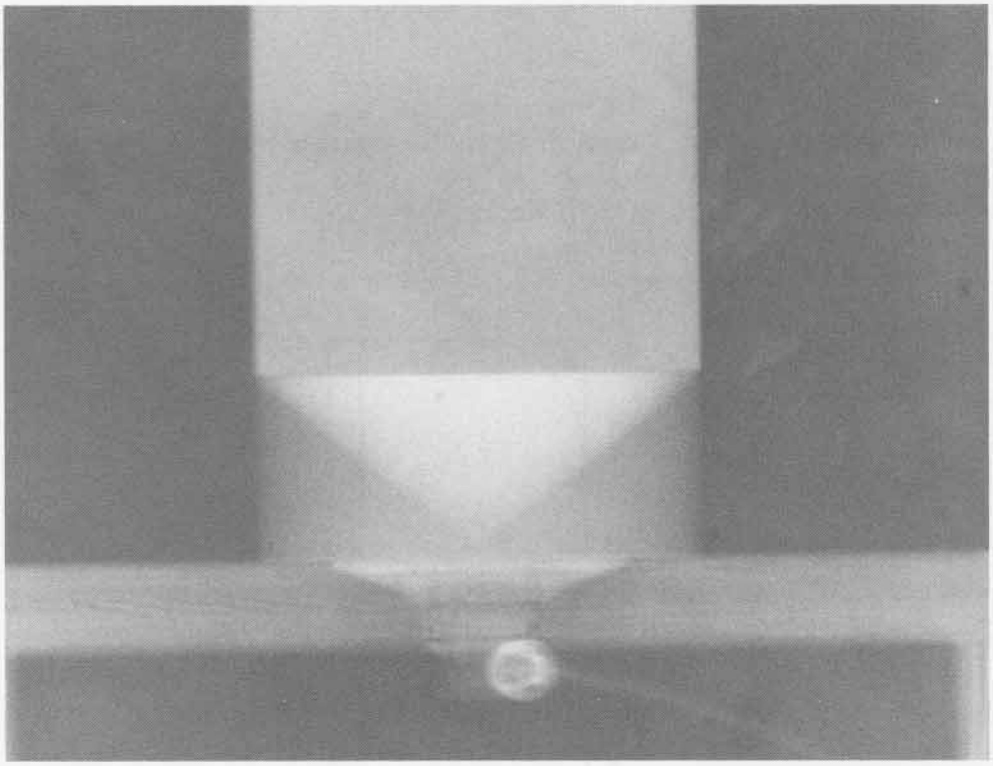


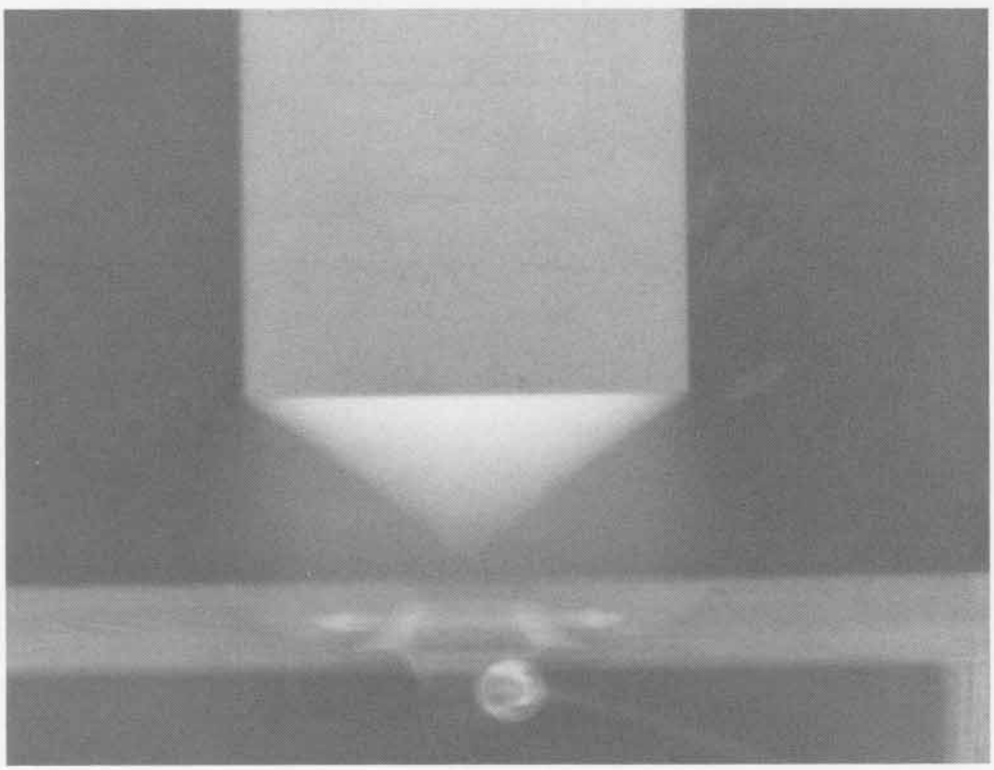




SHOT 644: **P-040 Lens Detonation Wave**
Date: November 23, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 13.75 μs
A P-040 lens 13.75 μs after initiation. h is 38 mm.

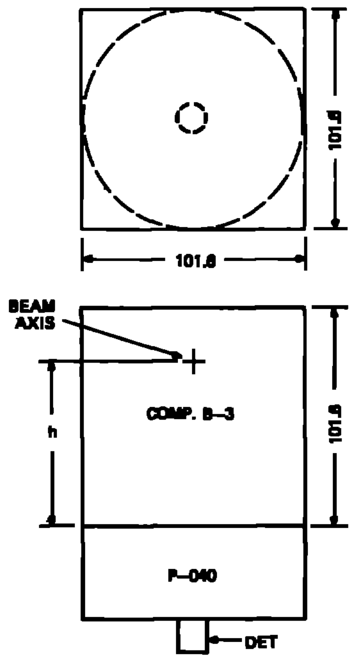


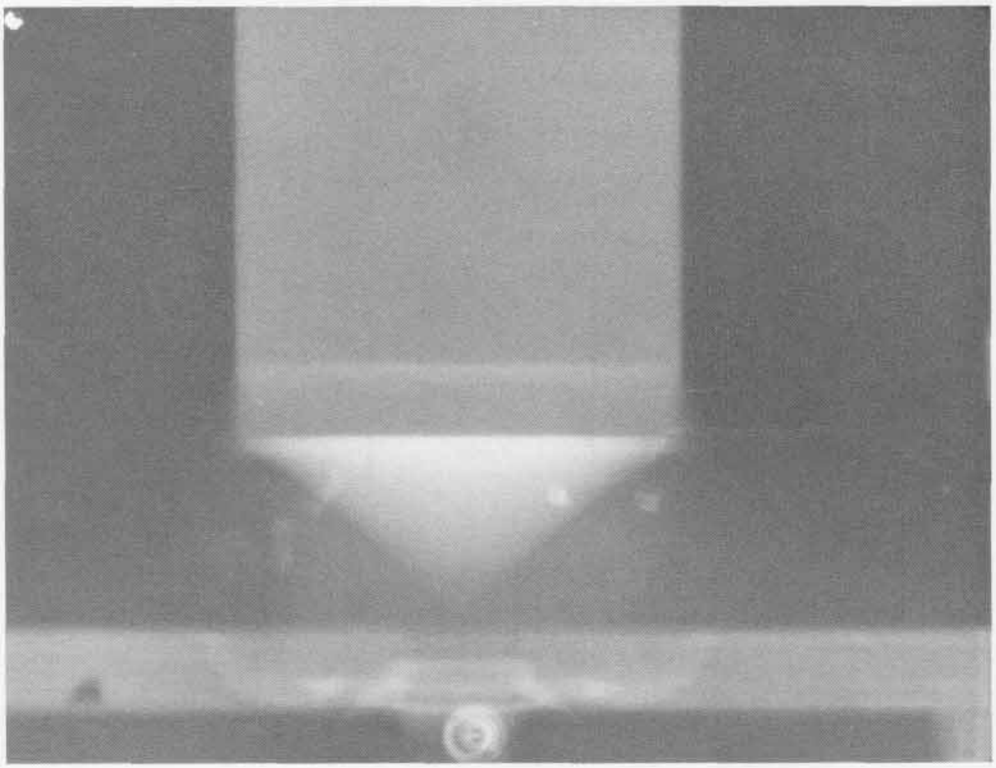




SHOT 645:	**Composition B-3 Detonation Wave**
Date:	December 8, 1966
Experimenter:	Jack N. Hardwick
Radiographic Time:	16.07 μs

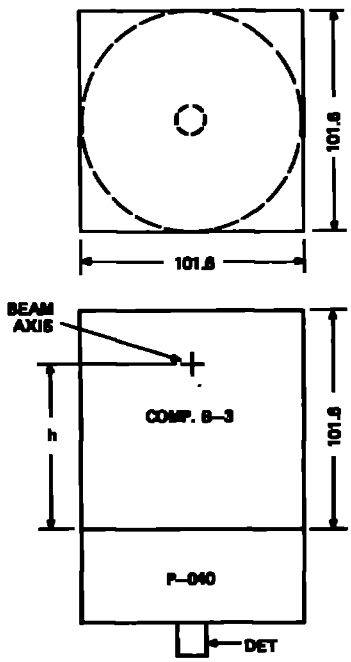
A 101.6-mm cube of Composition B-3 initiated by a P-040 lens. h is 18.26 mm.

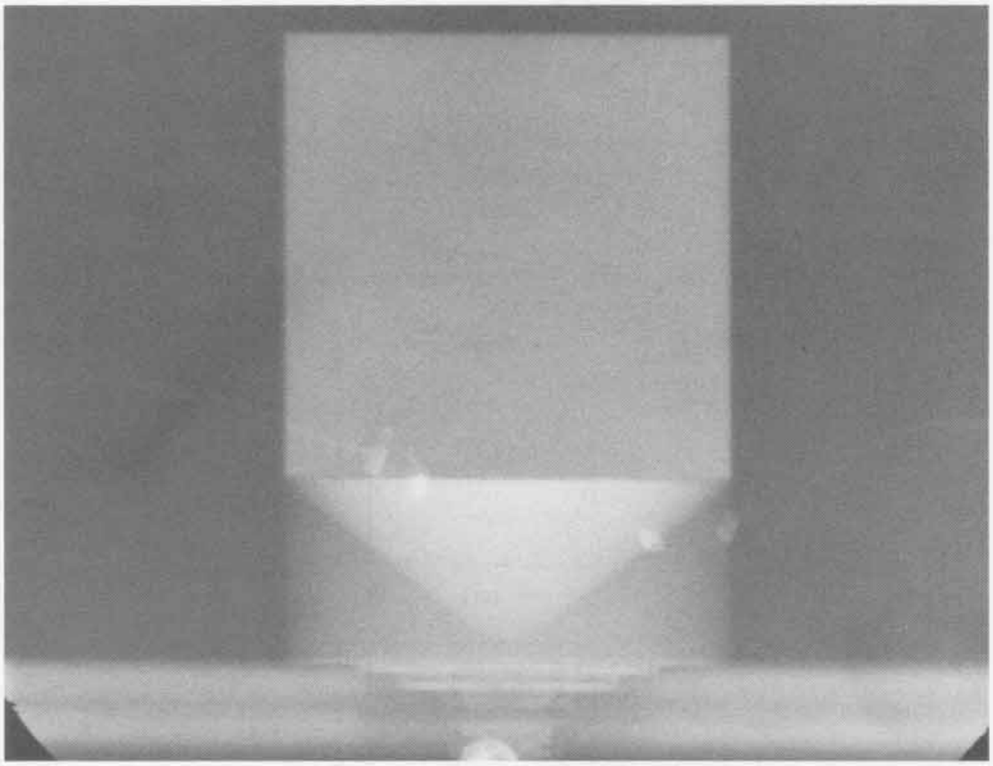


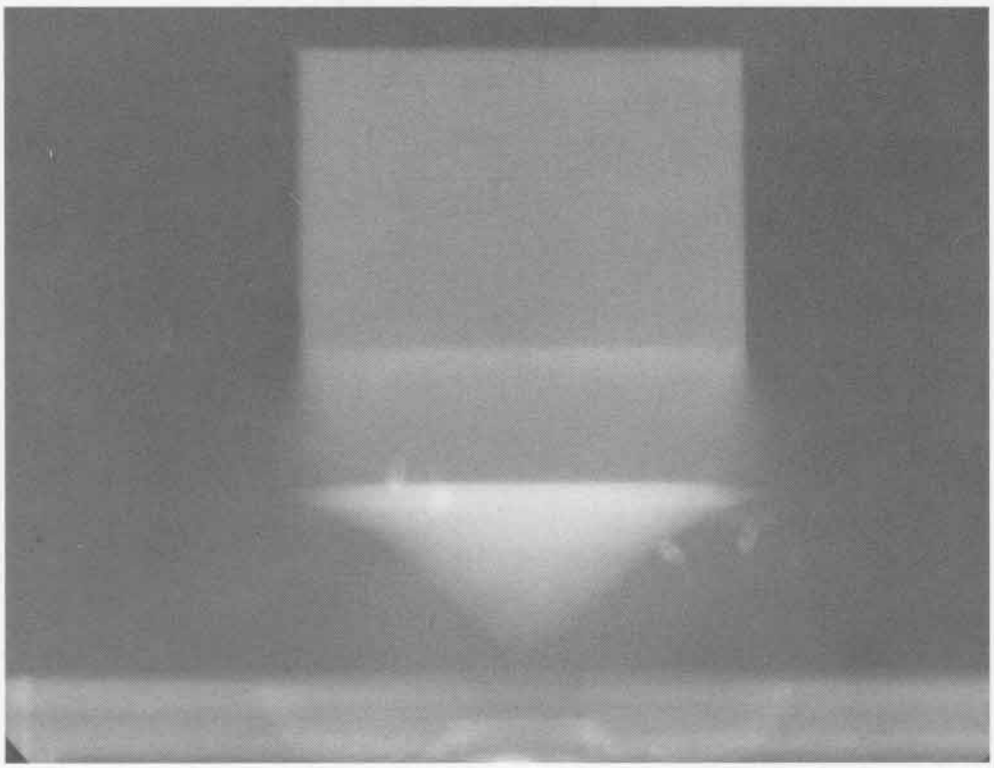


SHOT 646: **Composition B-3 Detonation Wave**
Date: December 8, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 17.94 μs

A 101.6-mm cube of Composition B-3 initiated by a P-040 lens. h is 34.93 mm.

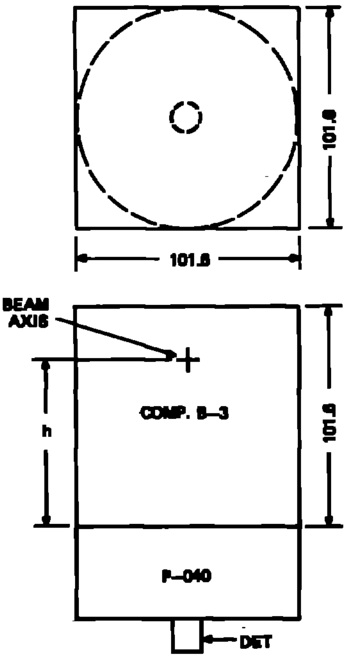


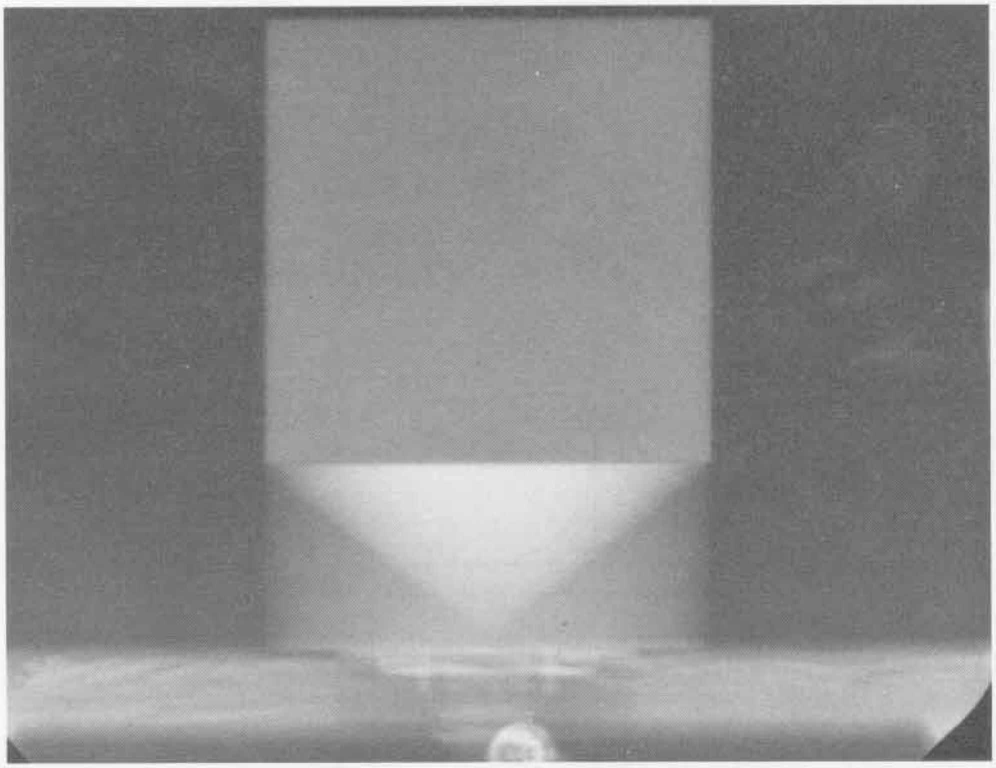


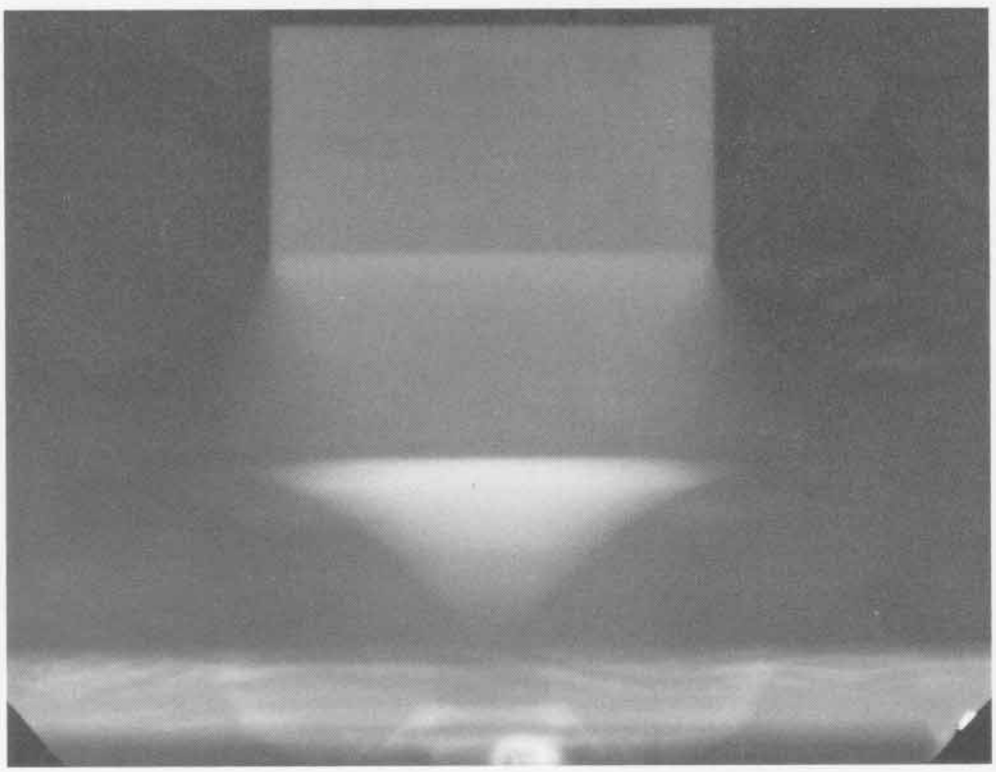


SHOT 647: **Composition B-3 Detonation Wave**
Date: January 4, 1967
Experimenter: Jack N. Hardwick
Radiographic Time: 20.03 μs

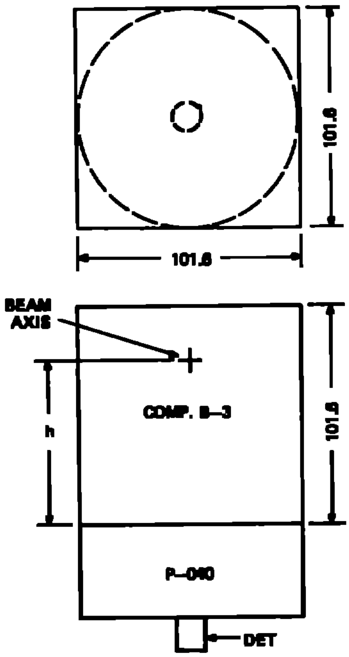
A 101.6-mm cube of Composition B-3 initiated by a P-040 lens. h is 51.59 mm.

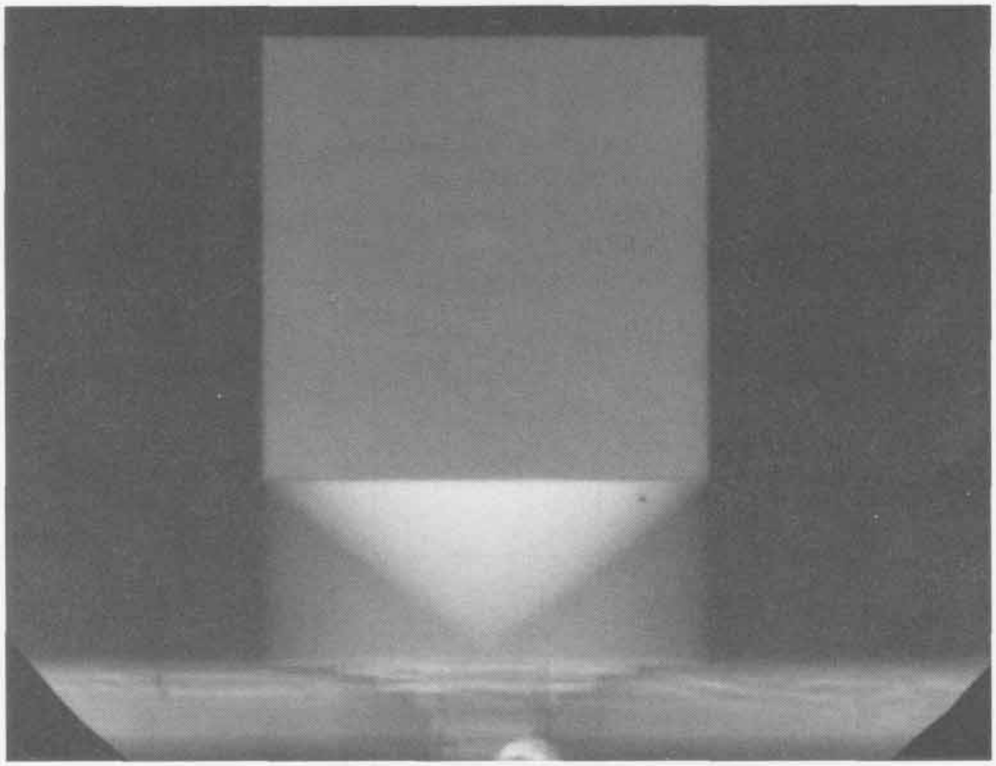


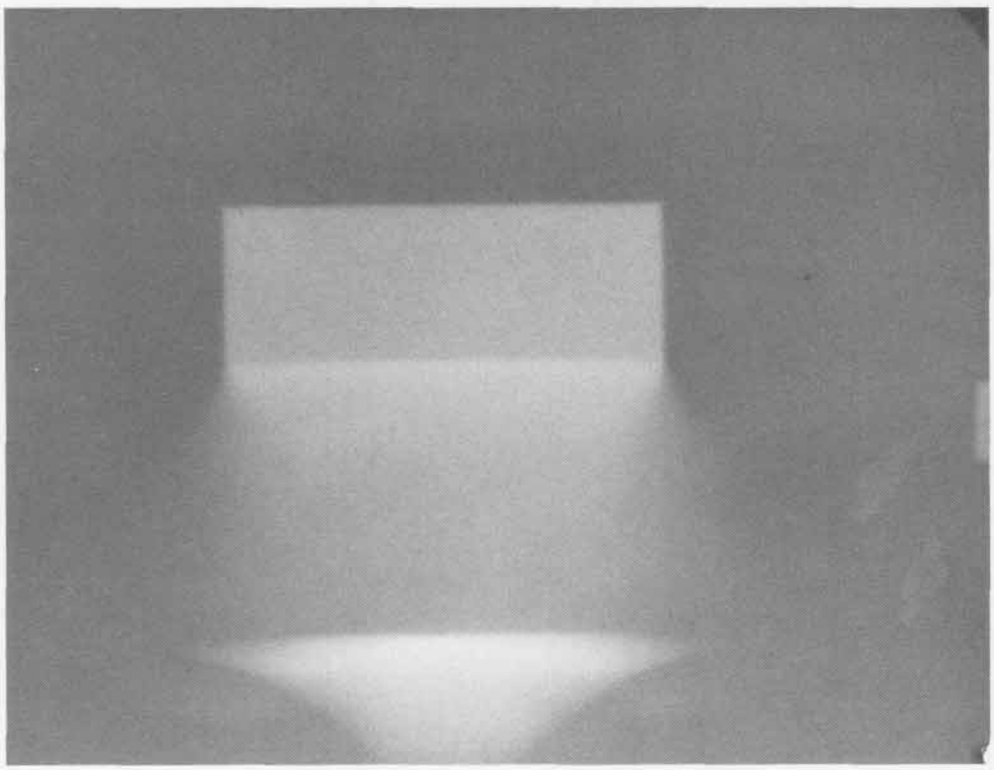




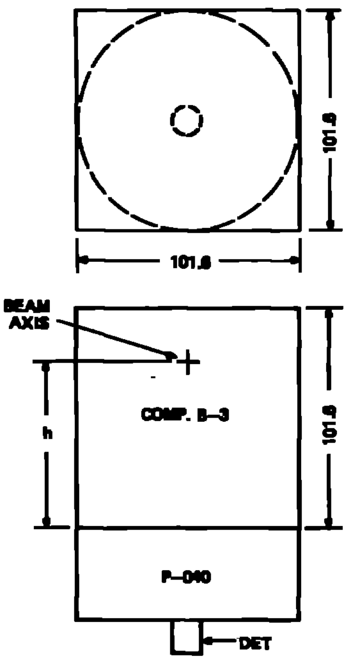
SHOT 648: **Composition B-3 Detonation Wave**
Date: January 4, 1967
Experimenter: Jack N. Hardwick
Radiographic Time: 22.10 μs
A 101.6-mm cube of Composition B-3 initiated by a P-040 lens. h is 67.46 mm.

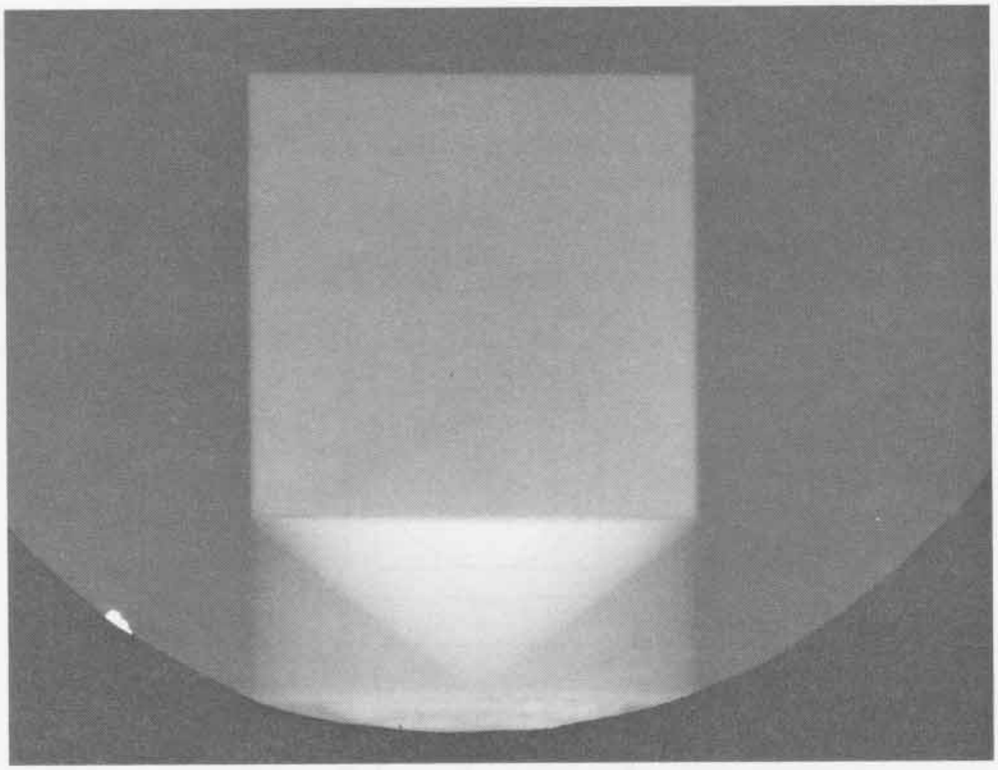


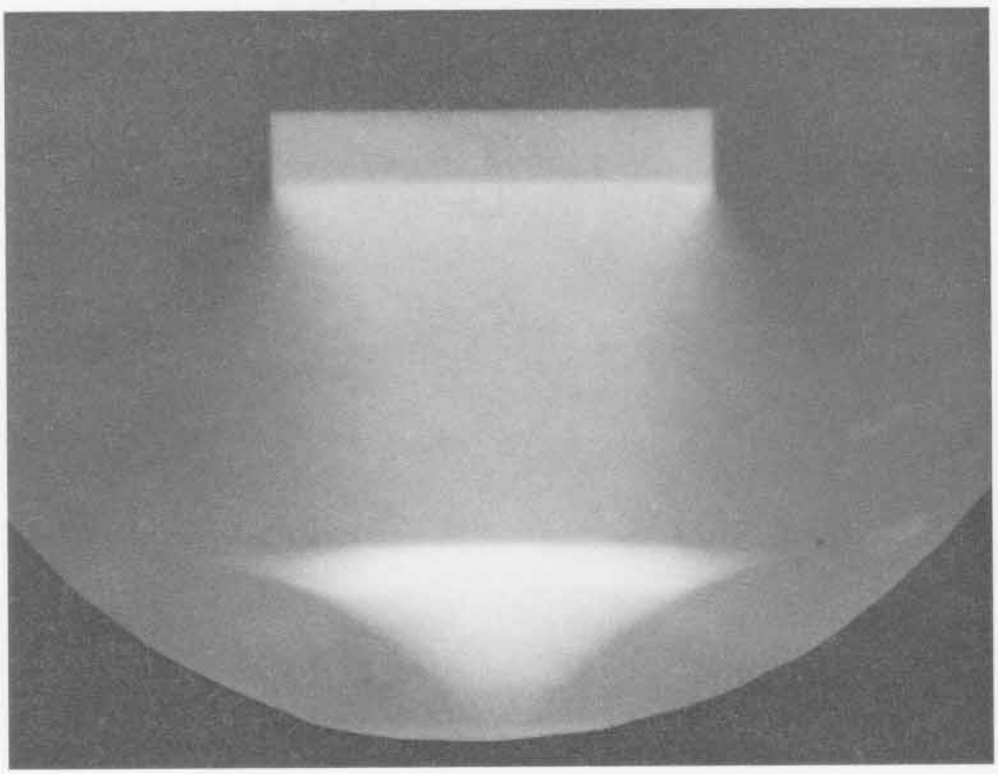




SHOT 649: **Composition B-3 Detonation Wave**
Date: January 9, 1967
Experimenter: Jack N. Hardwick
Radiographic Time: 24.60 μs
A 101.6-mm cube of Composition B-3 initiated by a P-040 lens. h is 84.14 mm.

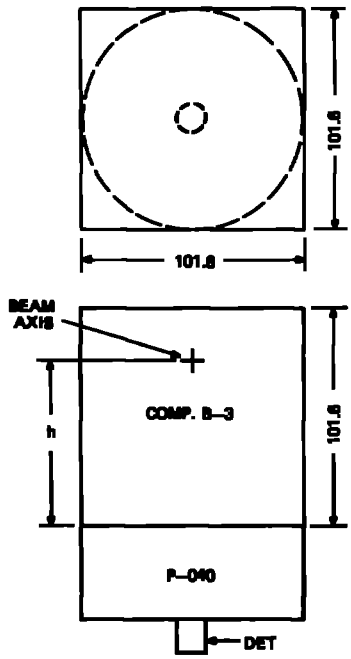


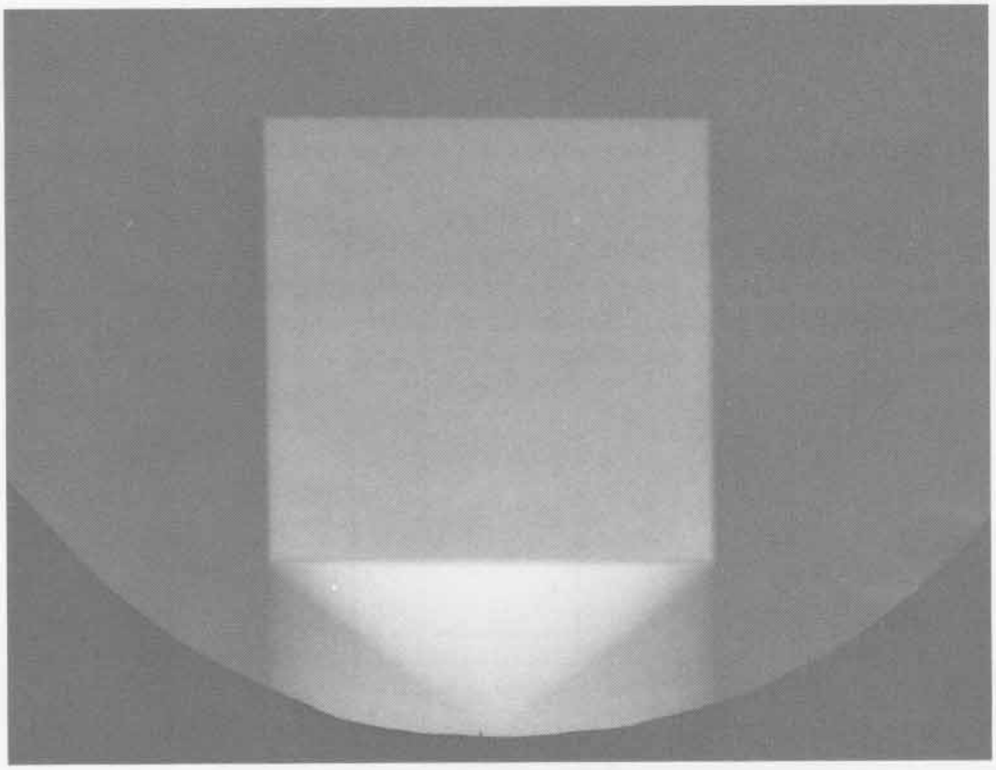


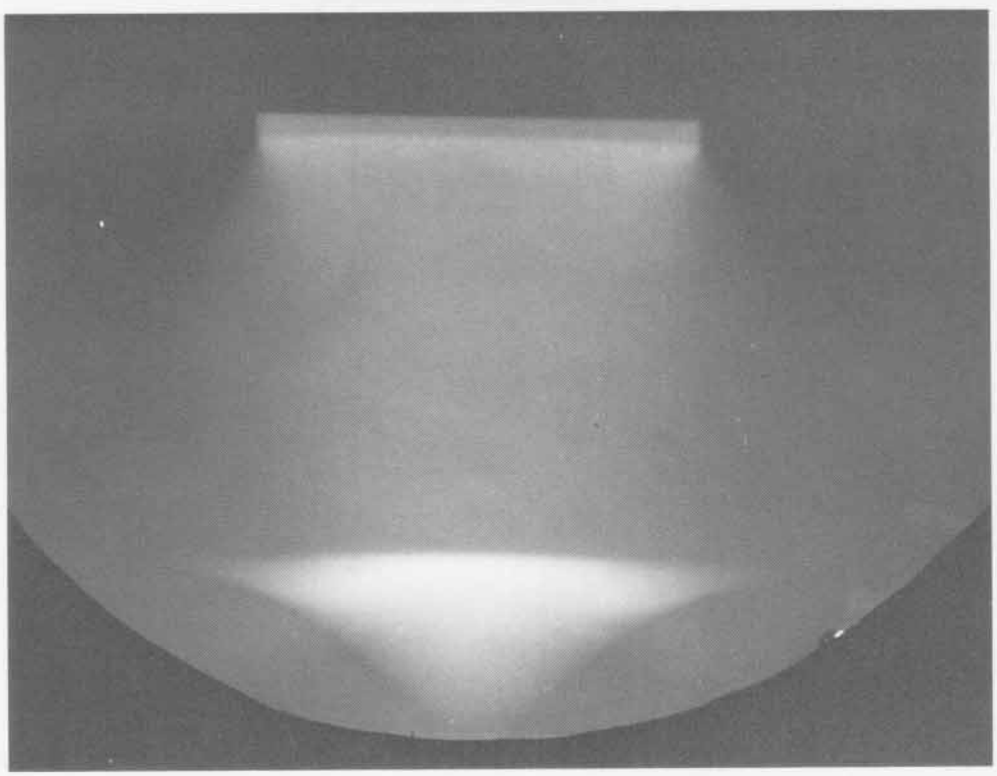


SHOT 650: **Composition B-3 Detonation Wave**
Date: January 9, 1967
Experimenter: Jack N. Hardwick
Radiographic Time: 26.08 μs

A 101.6-mm cube of Composition B-3 initiated by a P-040 lens. h is 100.8 mm.

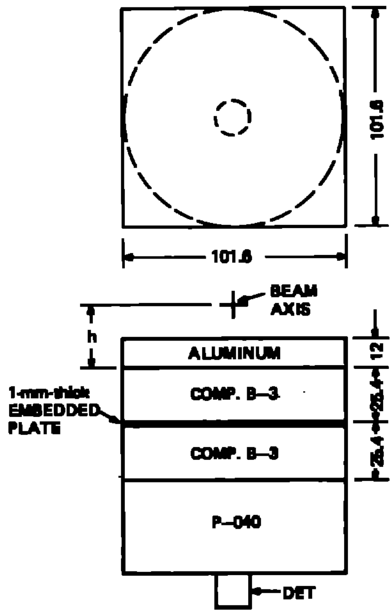


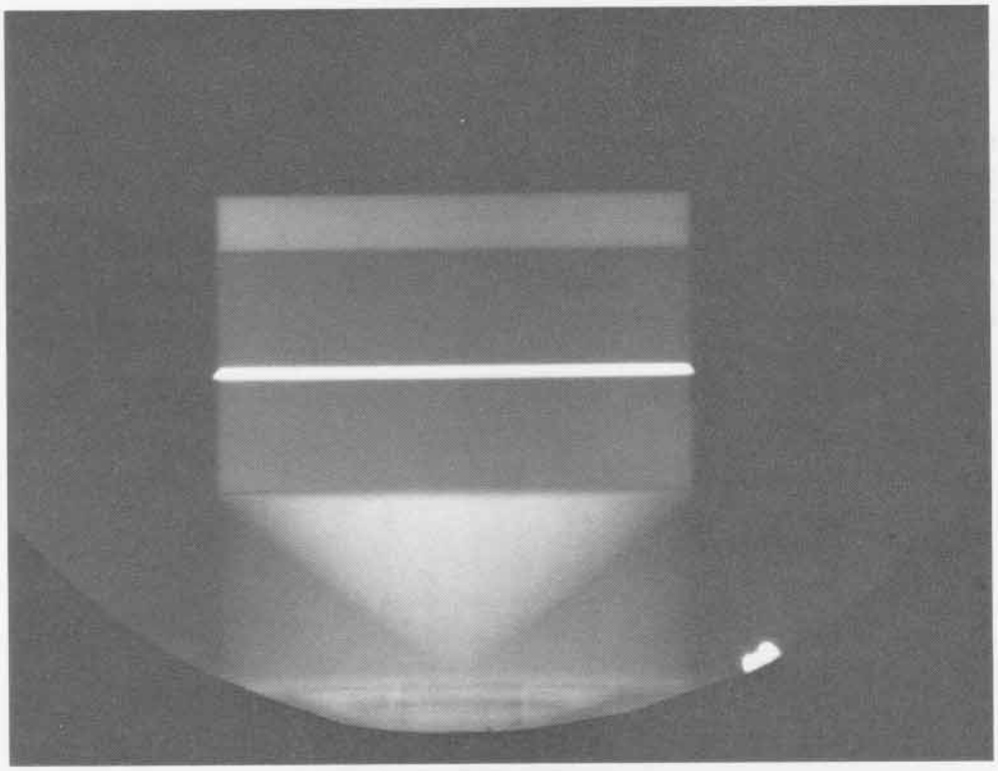


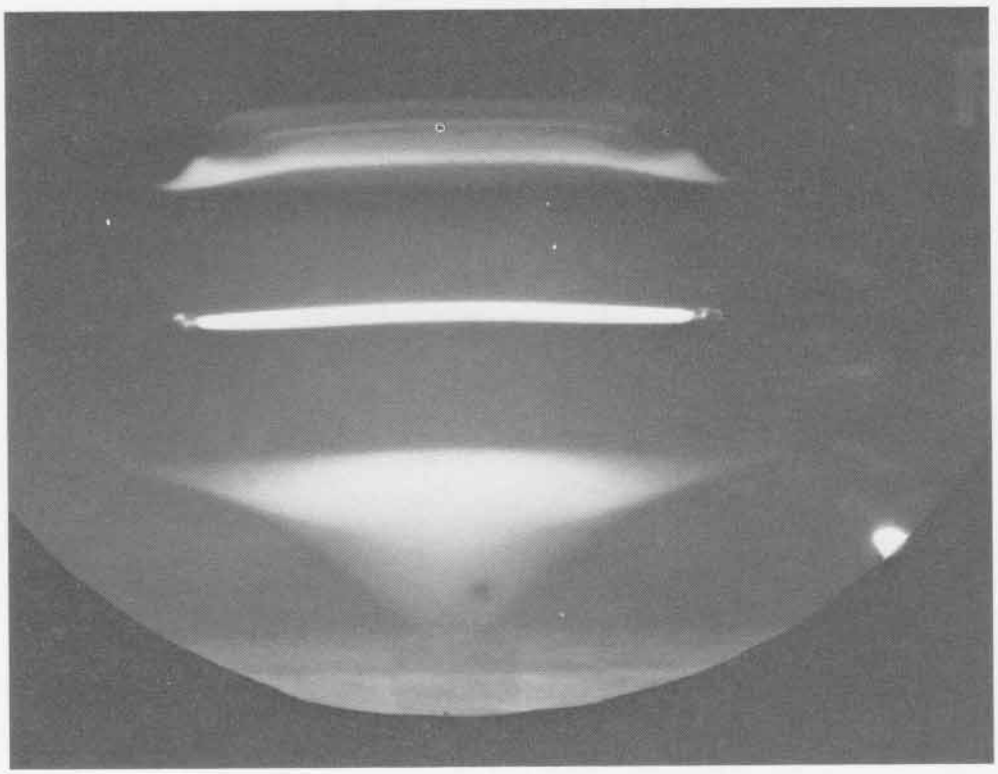


SHOT 651: **Composition B-3 with an Embedded Uranium Plate**
Date: July 14, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 26.79 μs

A 1.0-mm-thick uranium plate is embedded between a 25.4-mm-thick slab of Composition B-3 and another 25.4-mm-thick slab of Composition B-3 plus a P-040 lens. The system shocks 12.0 mm of aluminum. h is 28.575 mm. See Shot 598.

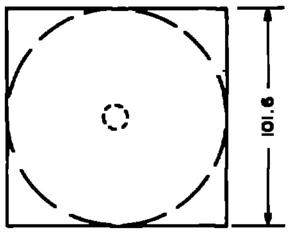


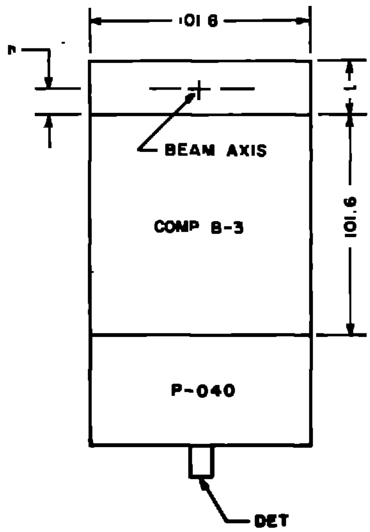


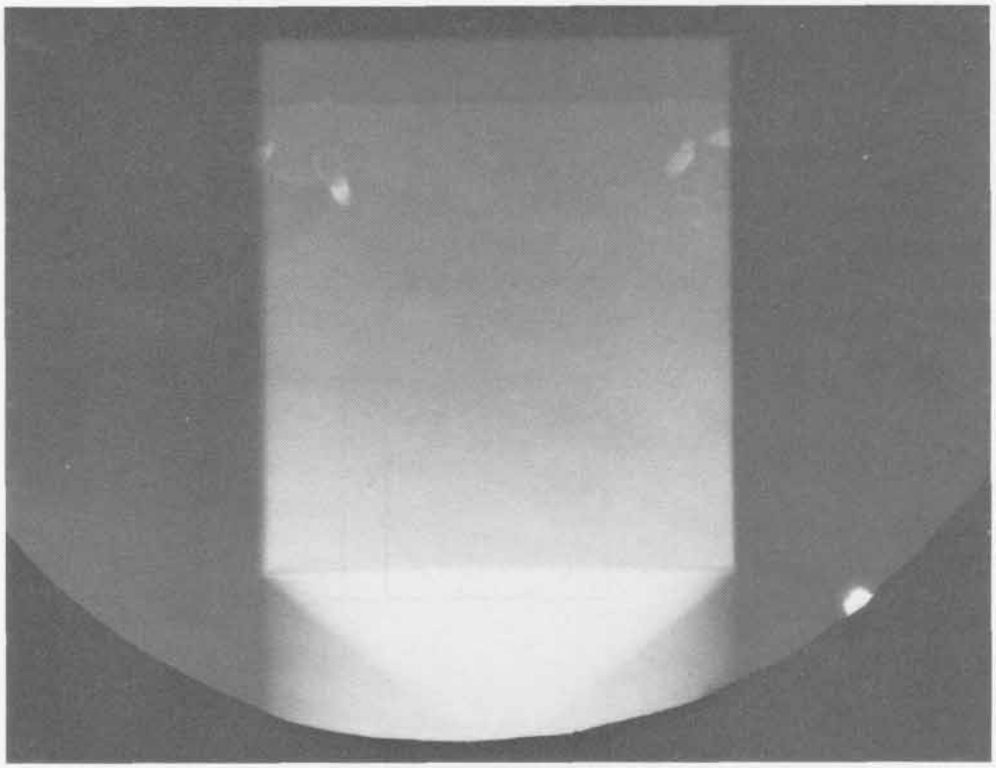


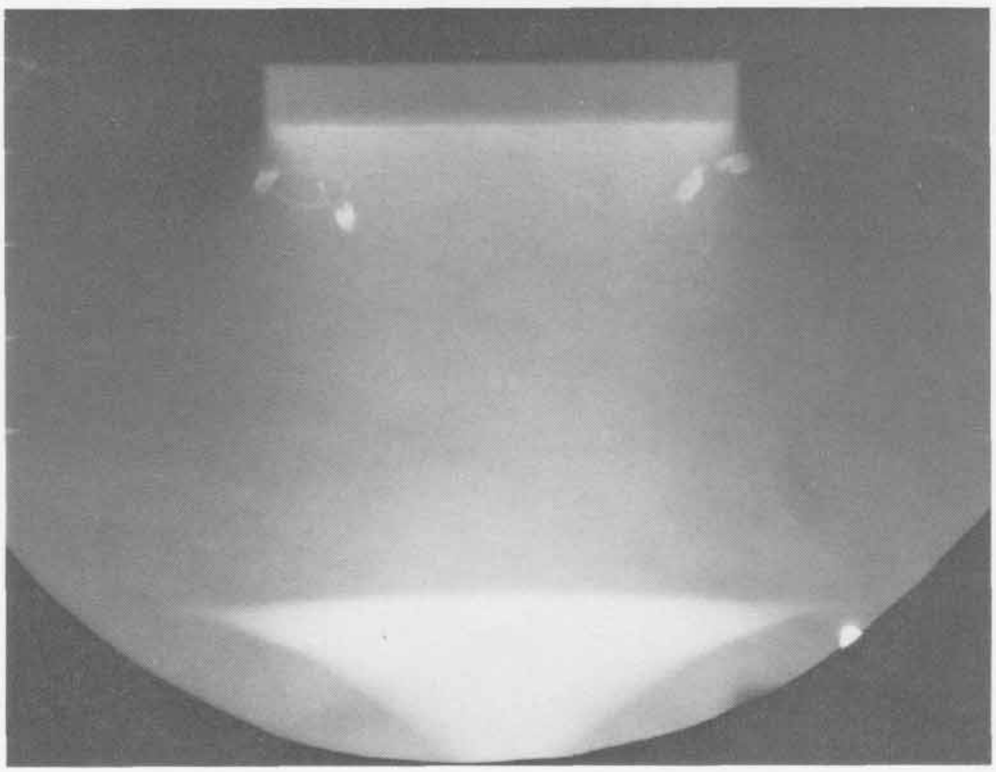
SHOT 654: **Beryllium Shock Wave**
Date: October 25, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 26.80 μS

A 25.0-mm-thick, t, beryllium plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 0.0 mm.



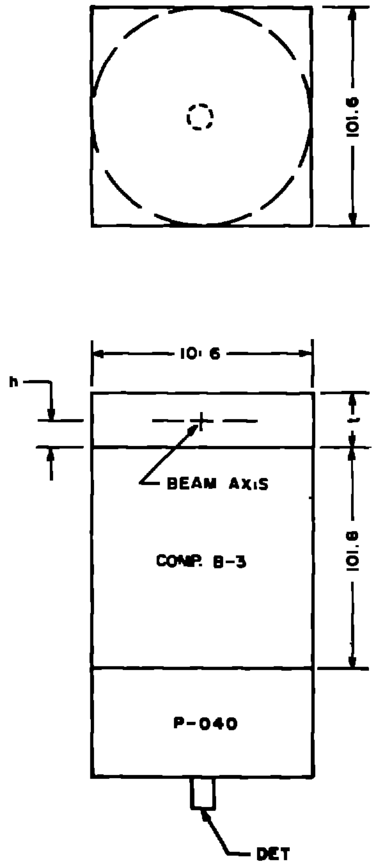


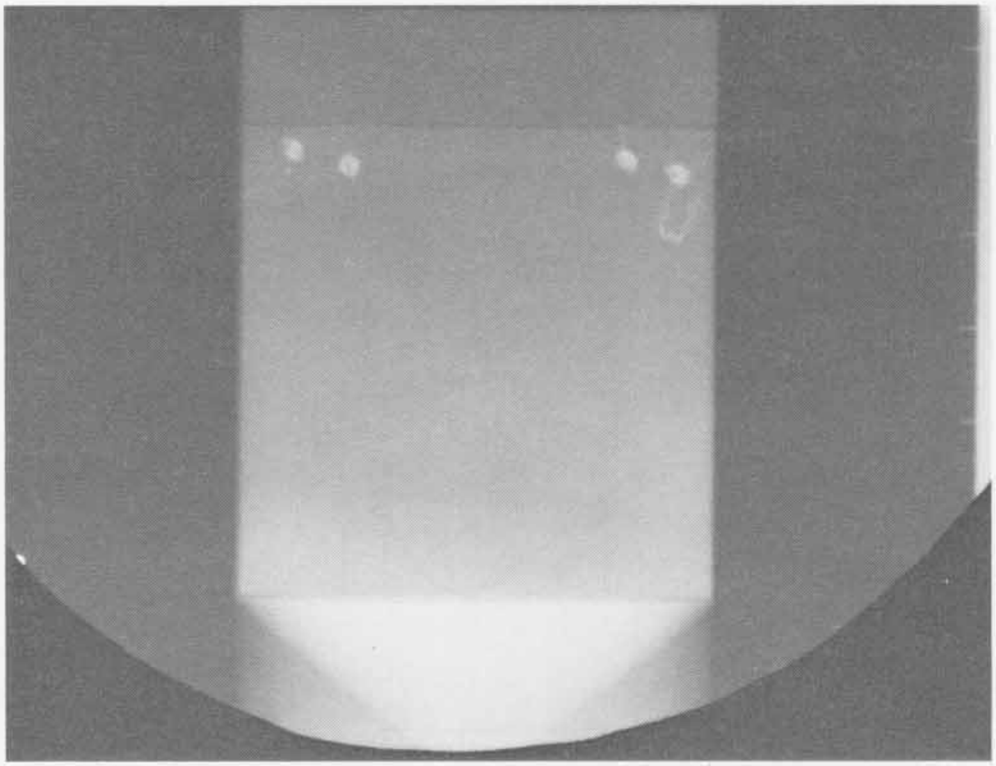


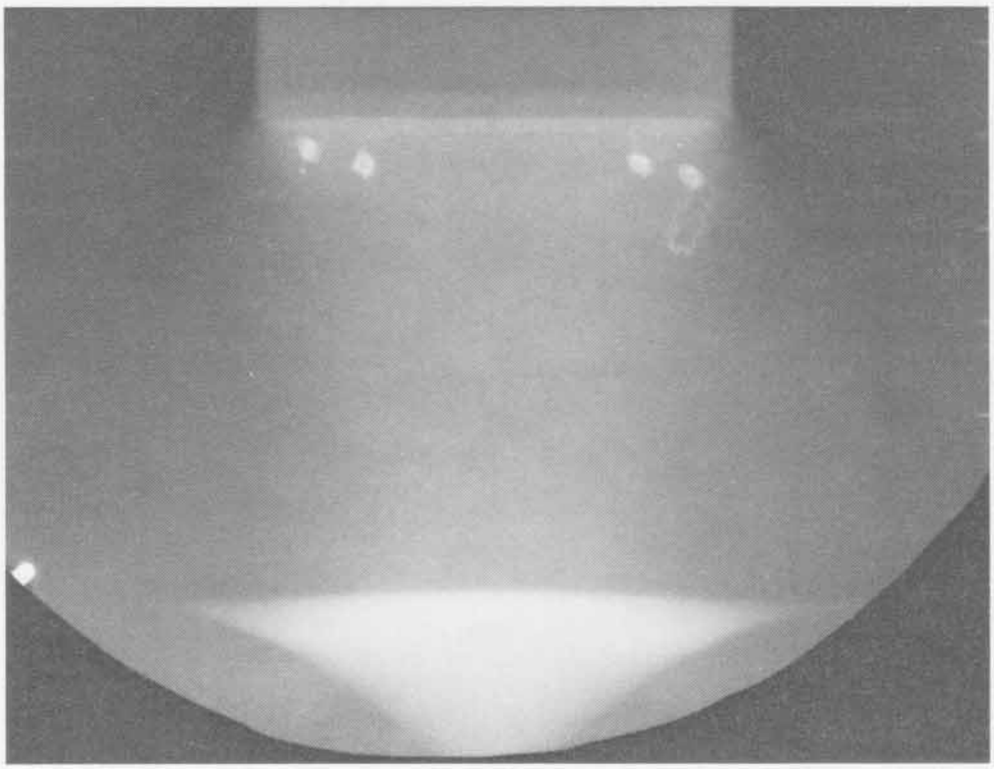


SHOT 655: **Beryllium Shock Wave**
Date: January 10, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 27.31 μs

A 25.0-mm-thick, t, beryllium plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 0.79 mm.

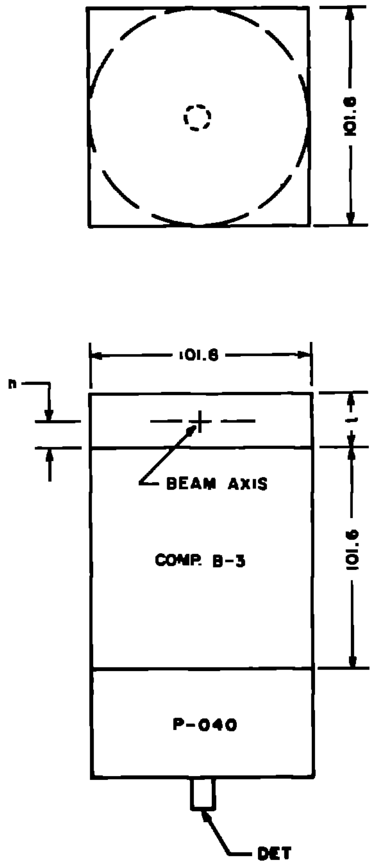


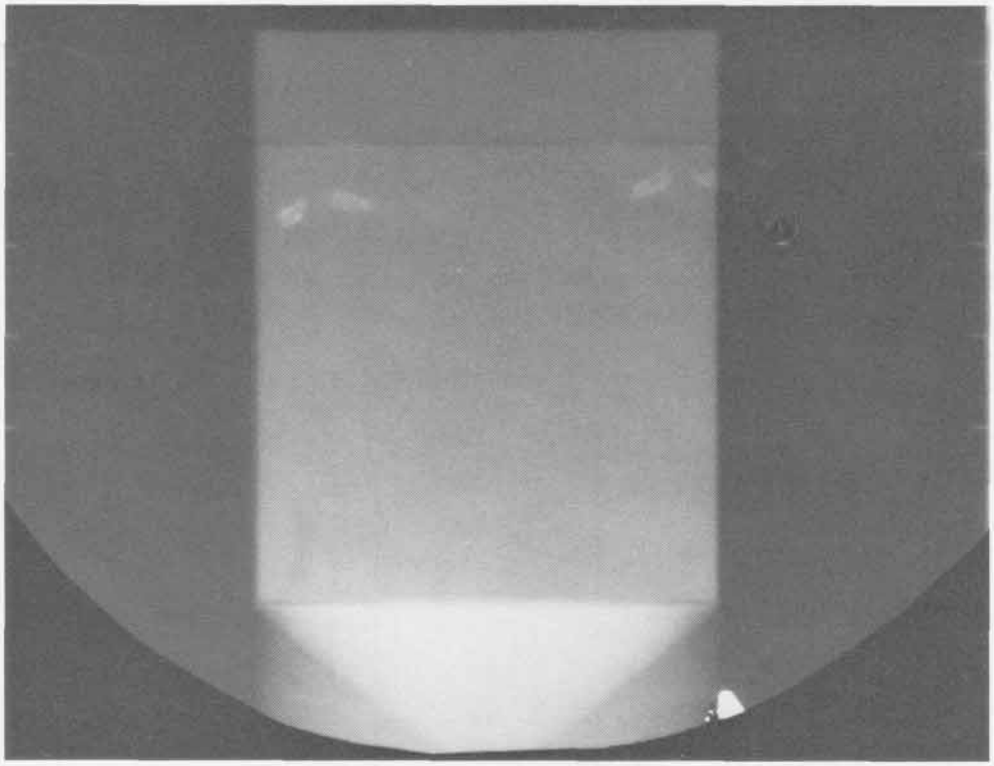


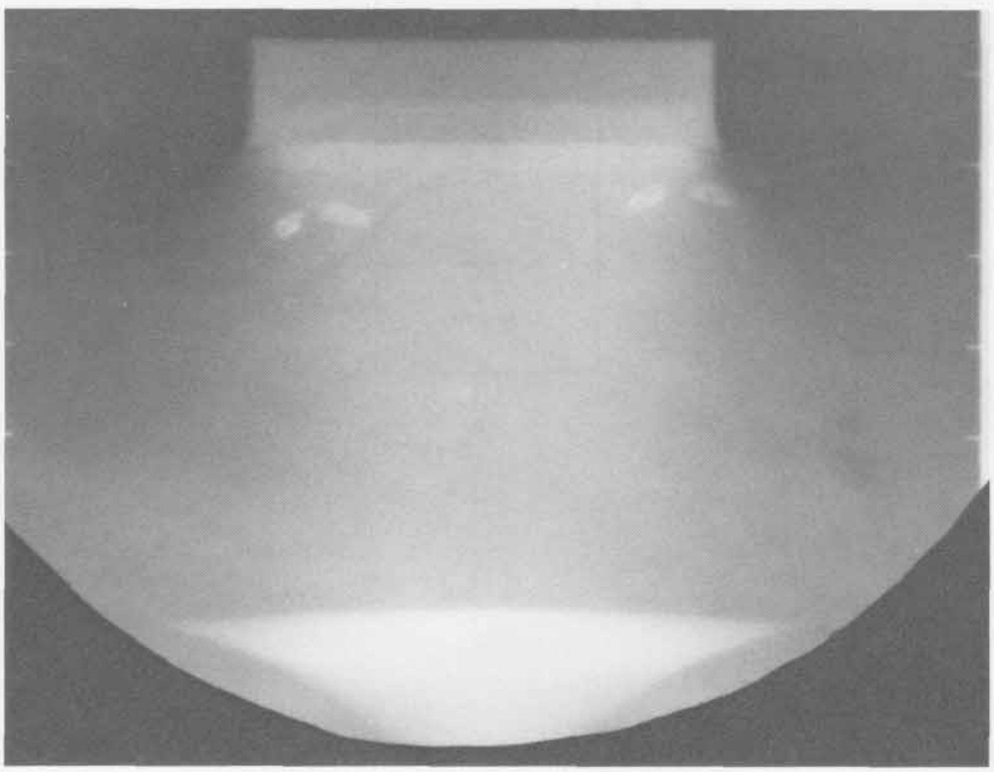


SHOT 656: **Beryllium Shock Wave**
Date: January 10, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 27.78 μs

A 25.0-mm-thick, t, beryllium plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 1.587 mm.

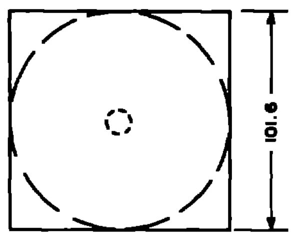


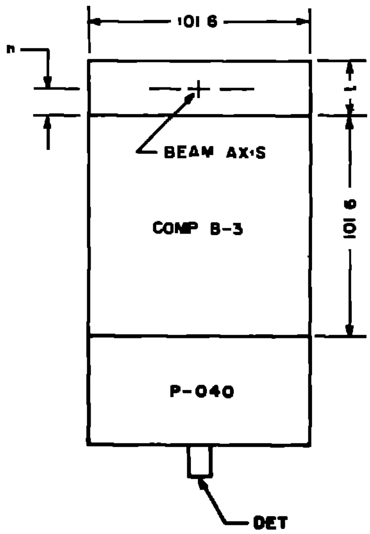


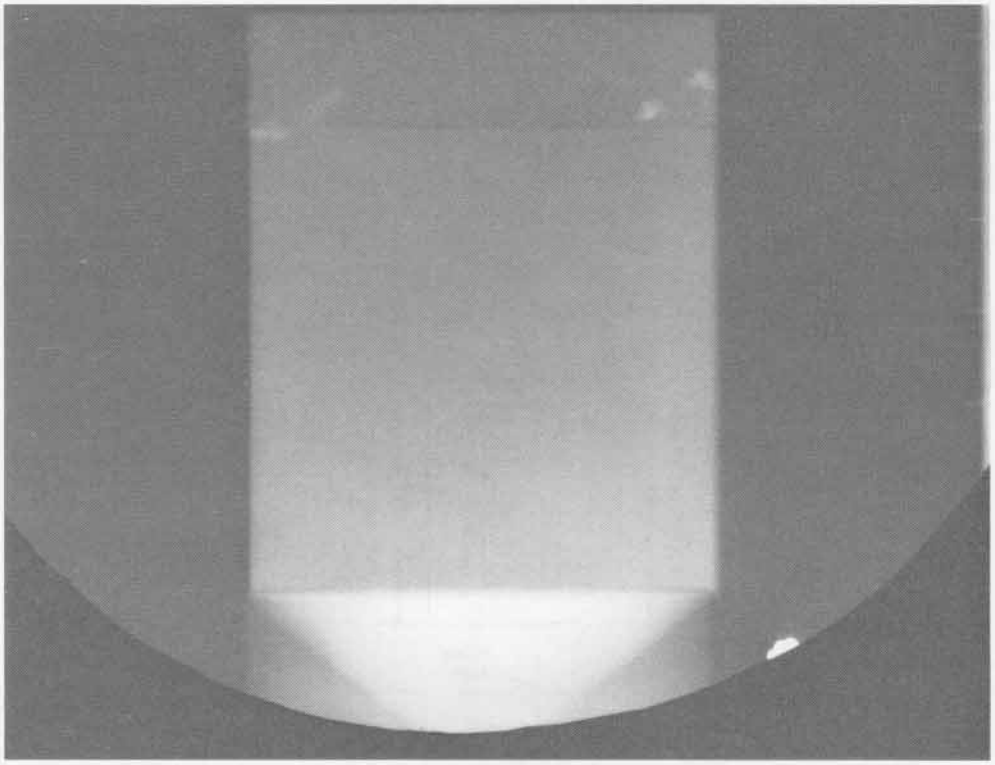


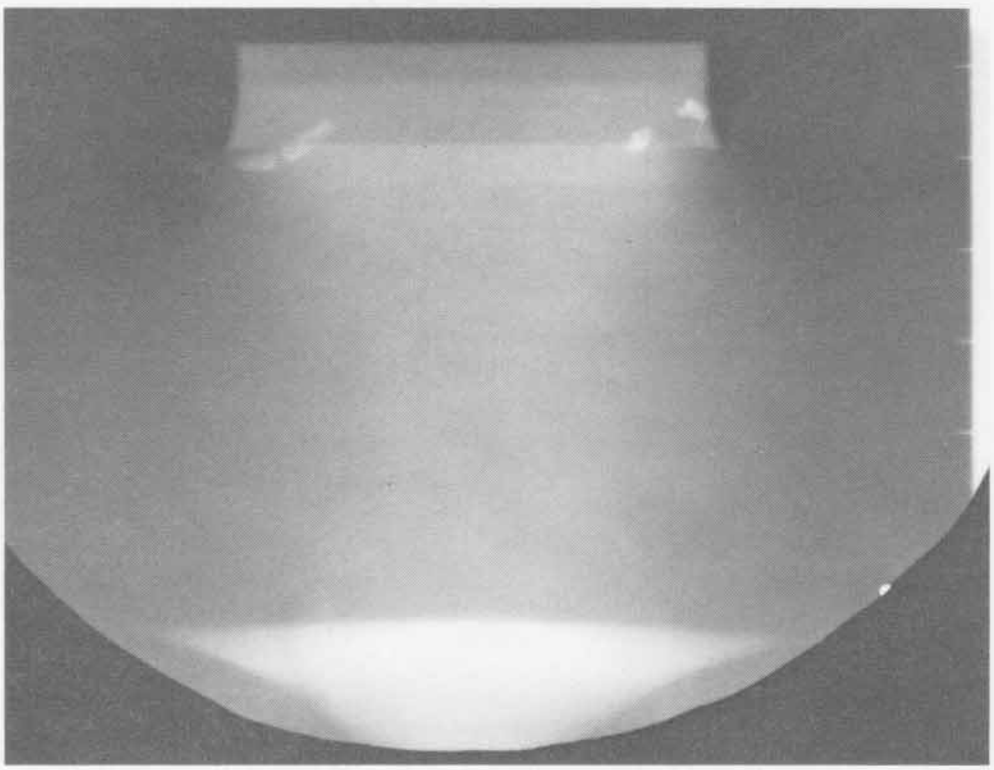
SHOT 657: **Beryllium Shock Wave**
Date: January 11, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 28.28 μs

A 25.0-mm-thick, t, beryllium plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 2.381 mm.



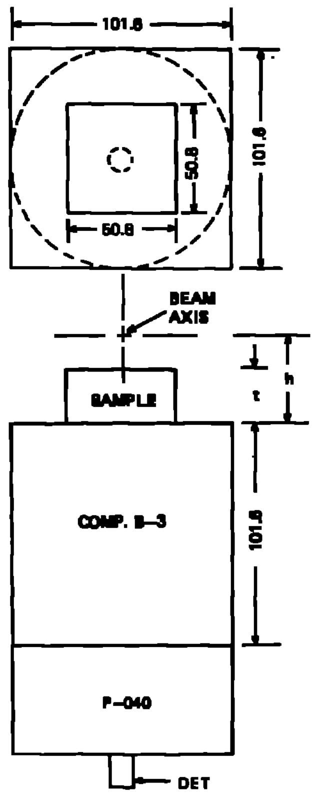


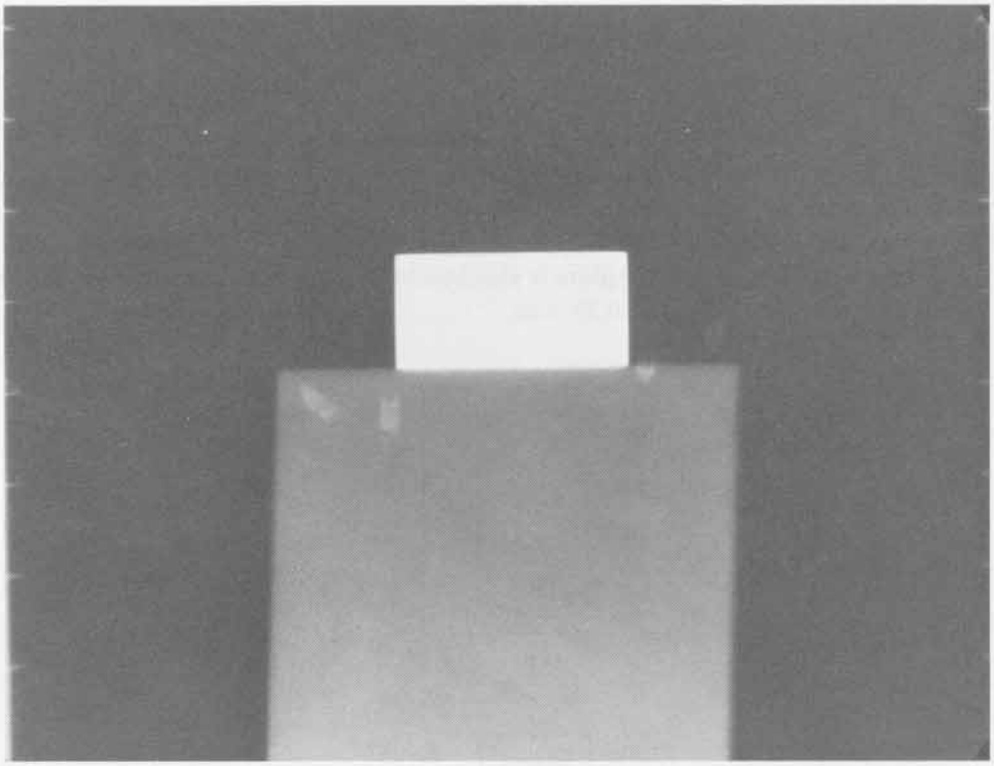


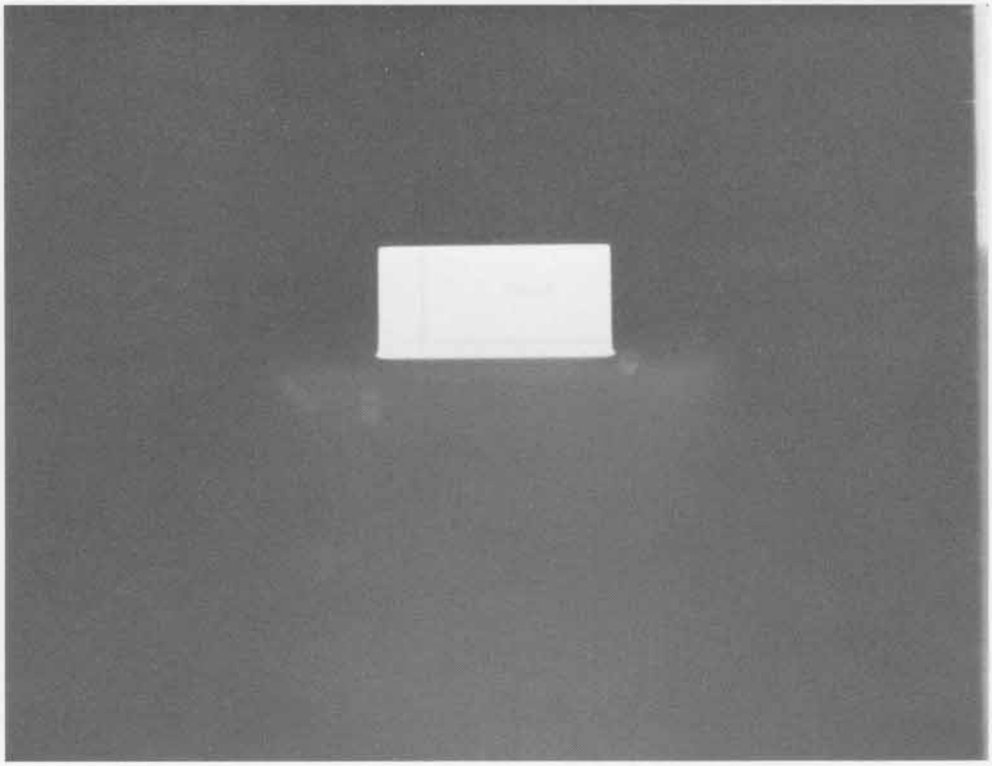


SHOT 658: **Uranium Shock Wave**
Date: October 25, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 27.30 μs

A 25.0-mm-thick, t, uranium plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 0.0 mm.

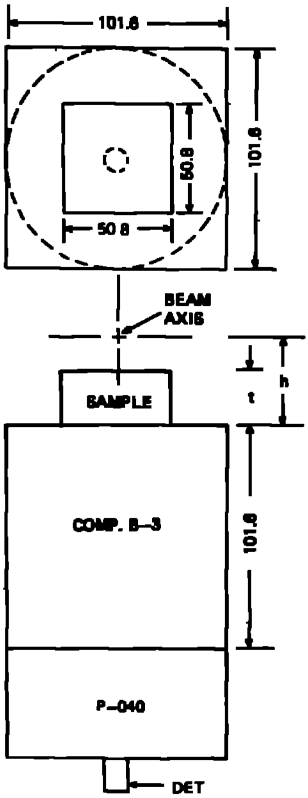


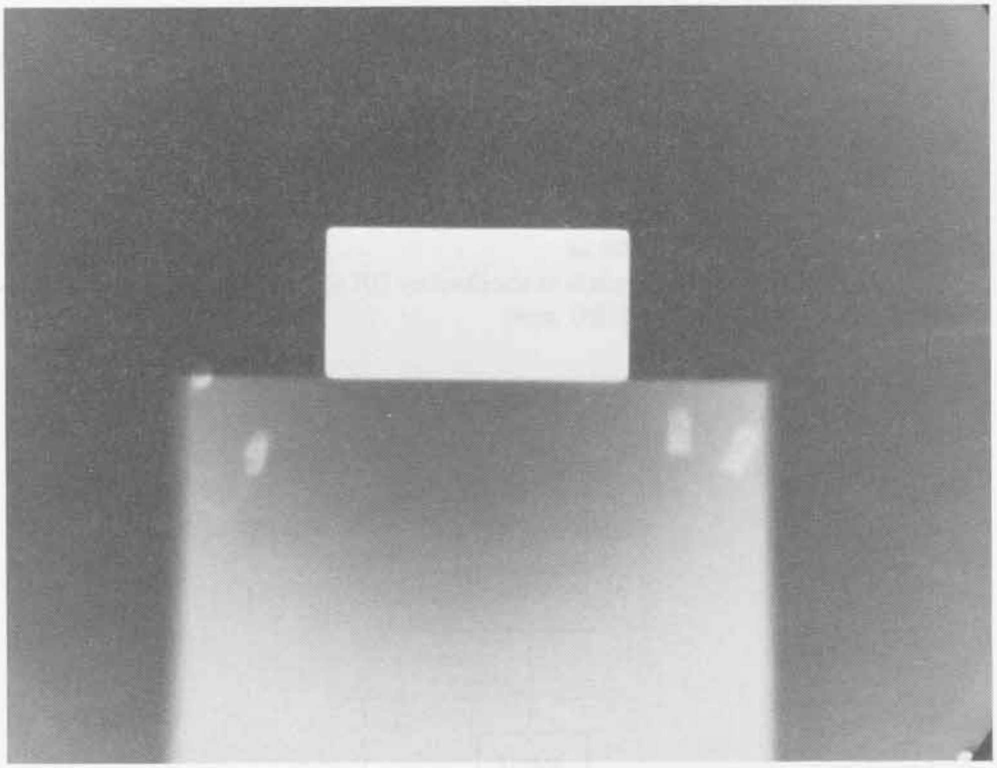


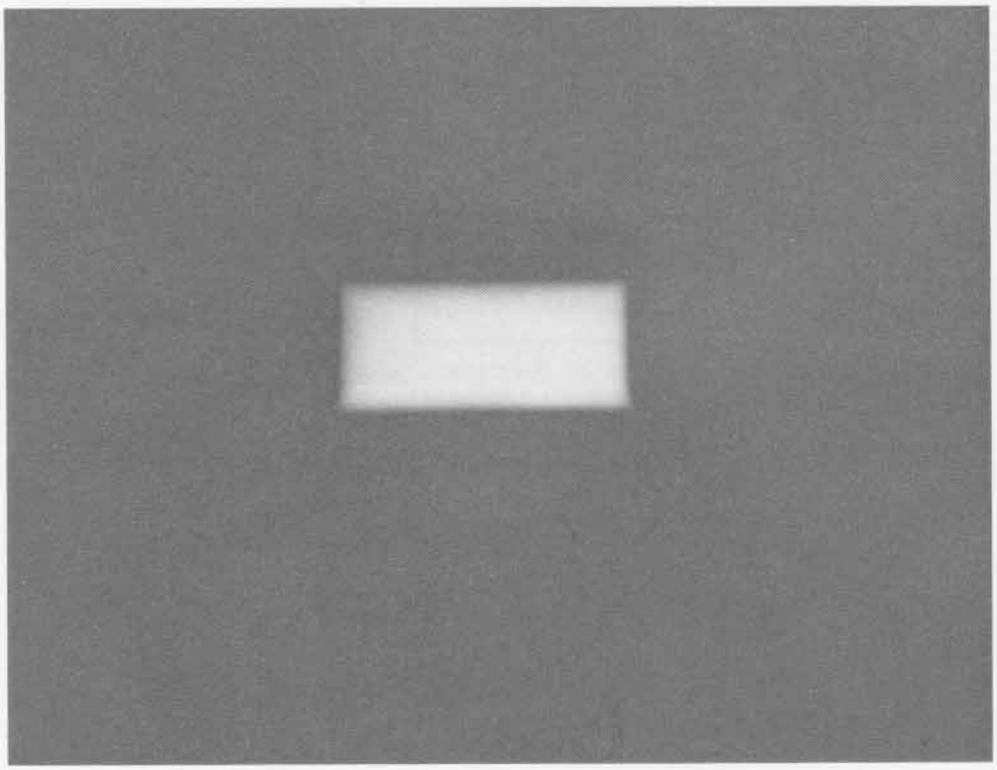


SHOT 659: **Uranium Shock Wave**
Date: December 8, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 28.30 μs

A 25.0-mm-thick, t, uranium plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 0.79 mm.

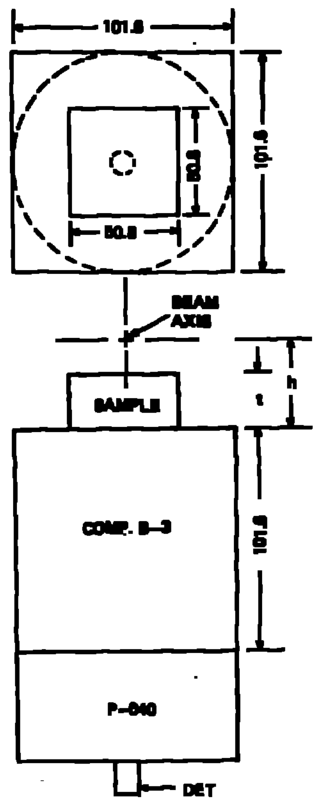


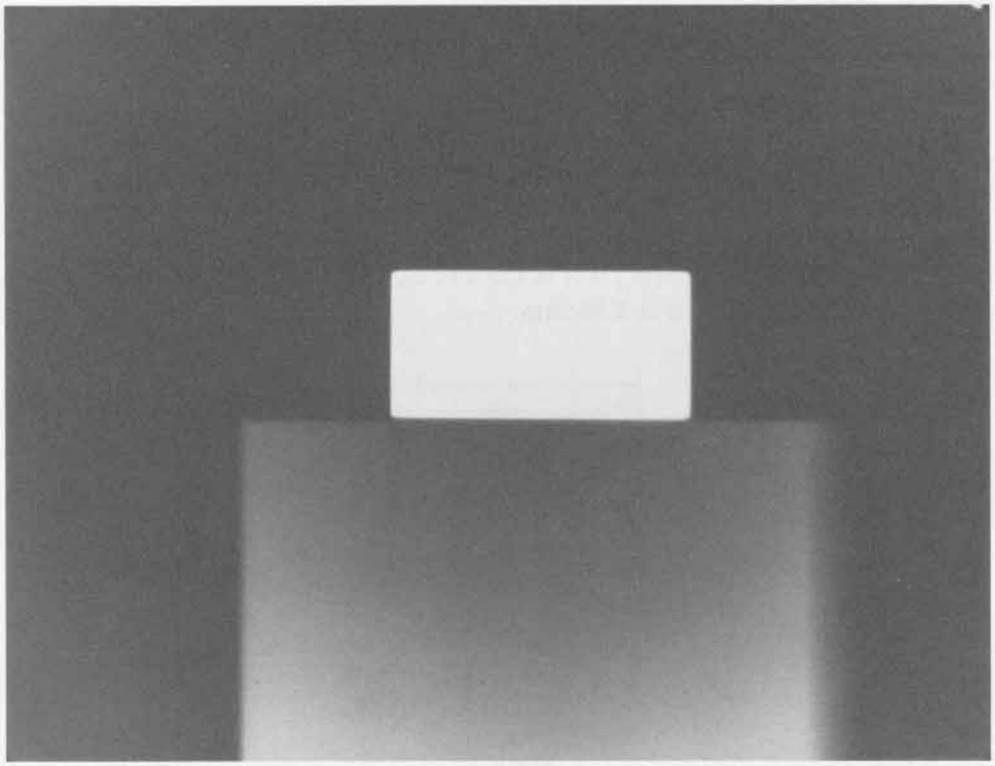


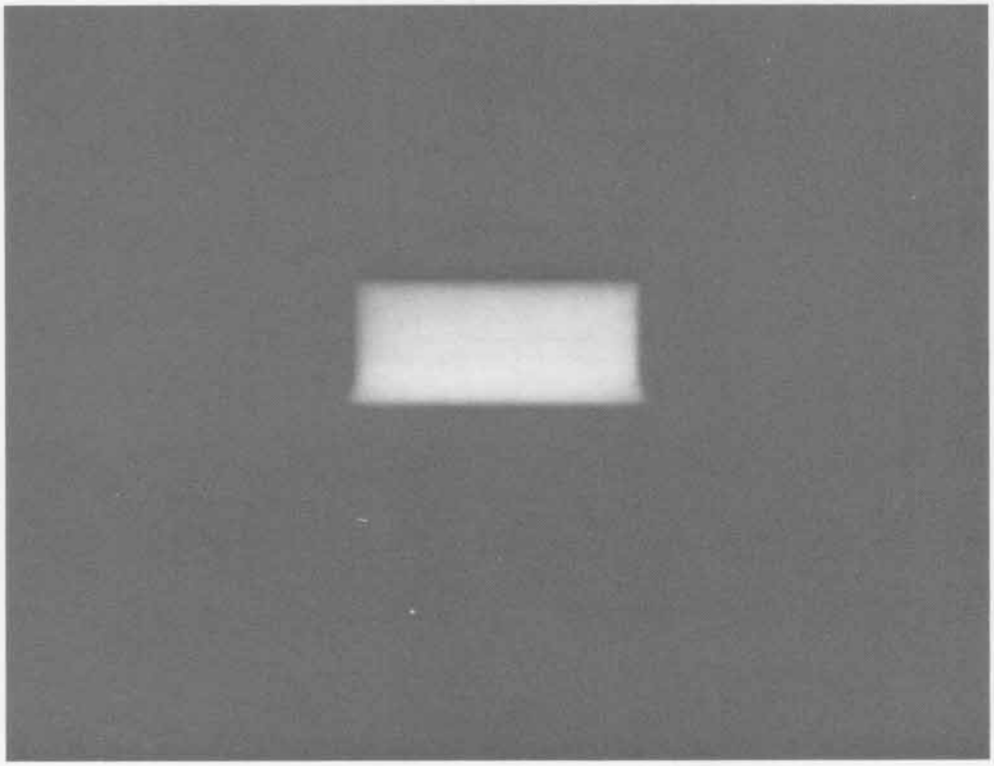


SHOT 660: **Uranium Shock Wave**
Date: **February 23, 1967**
Experimenter: **Roger W. Taylor**
Radiographic Time: **29.28 μs**

A 25.0-mm-thick, t, uranium plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 1.587 mm.

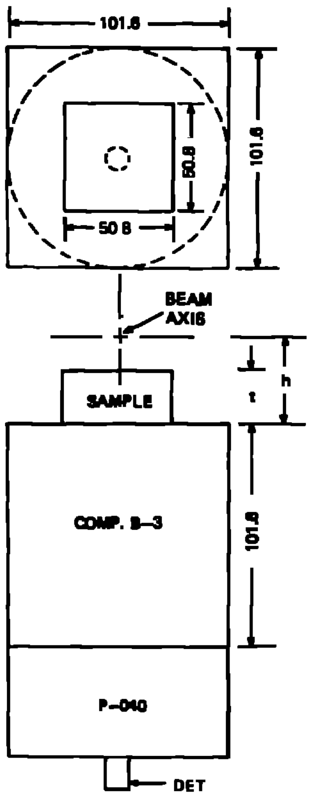


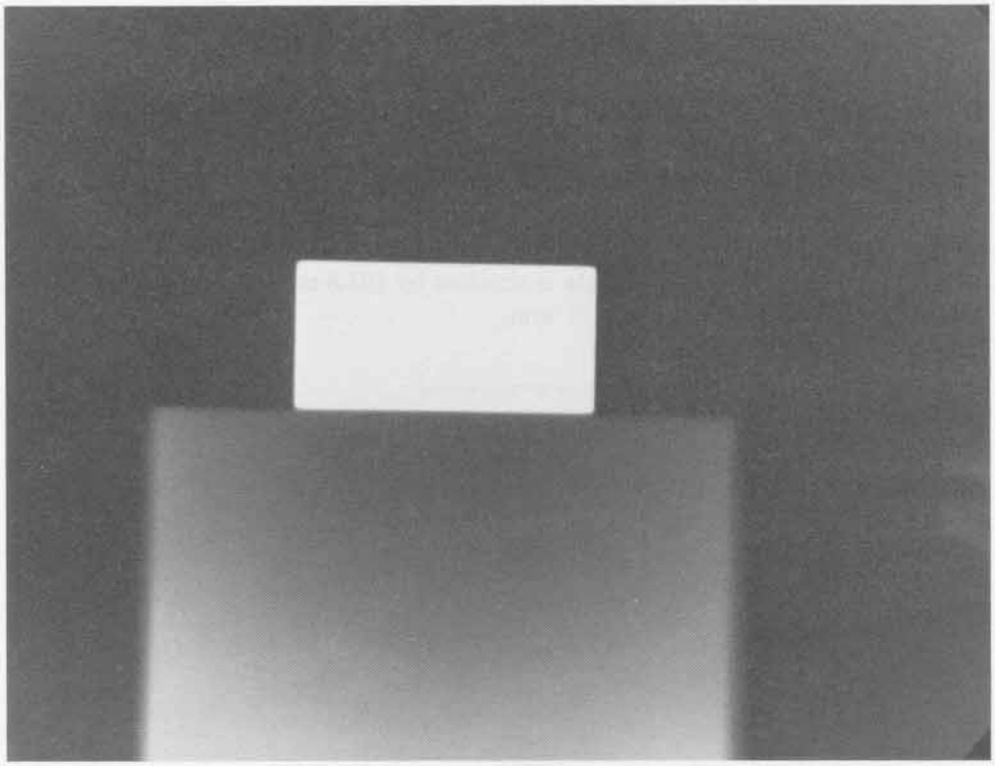


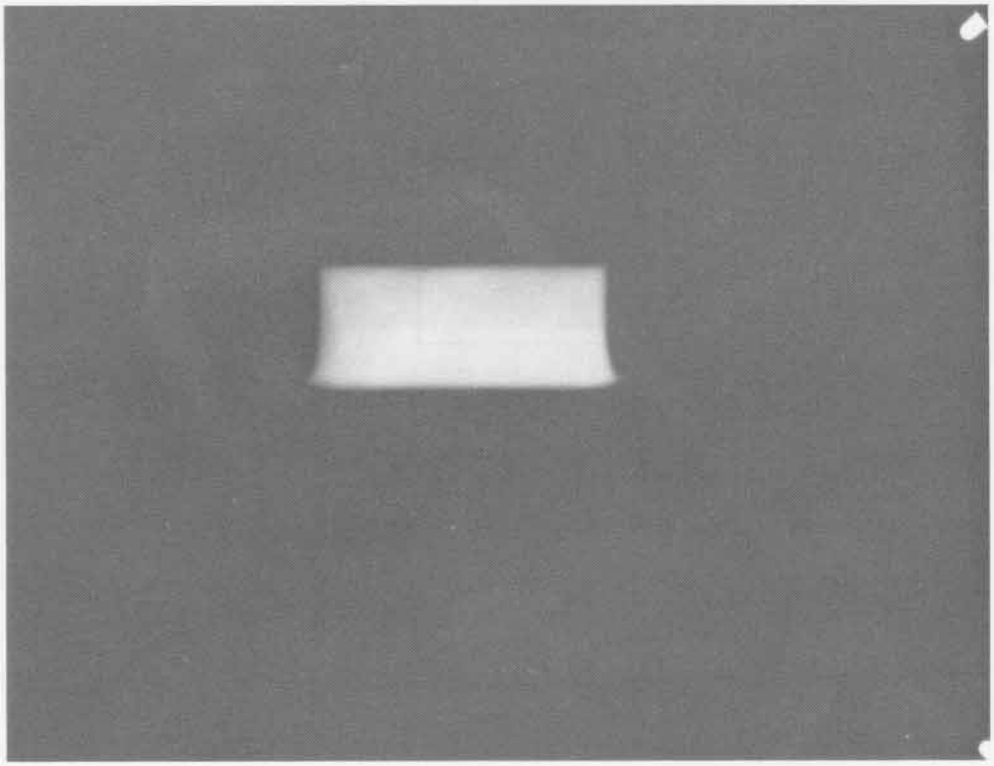


SHOT 661: **Uranium Shock Wave**
Date: February 23, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 30.26 μs

A 25.0-mm-thick, t, uranium plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 2.38 mm.

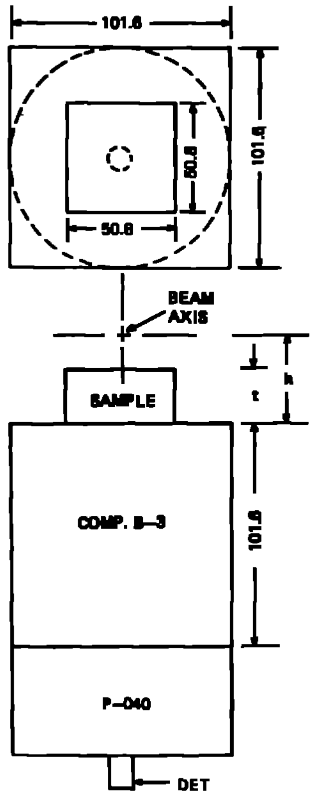


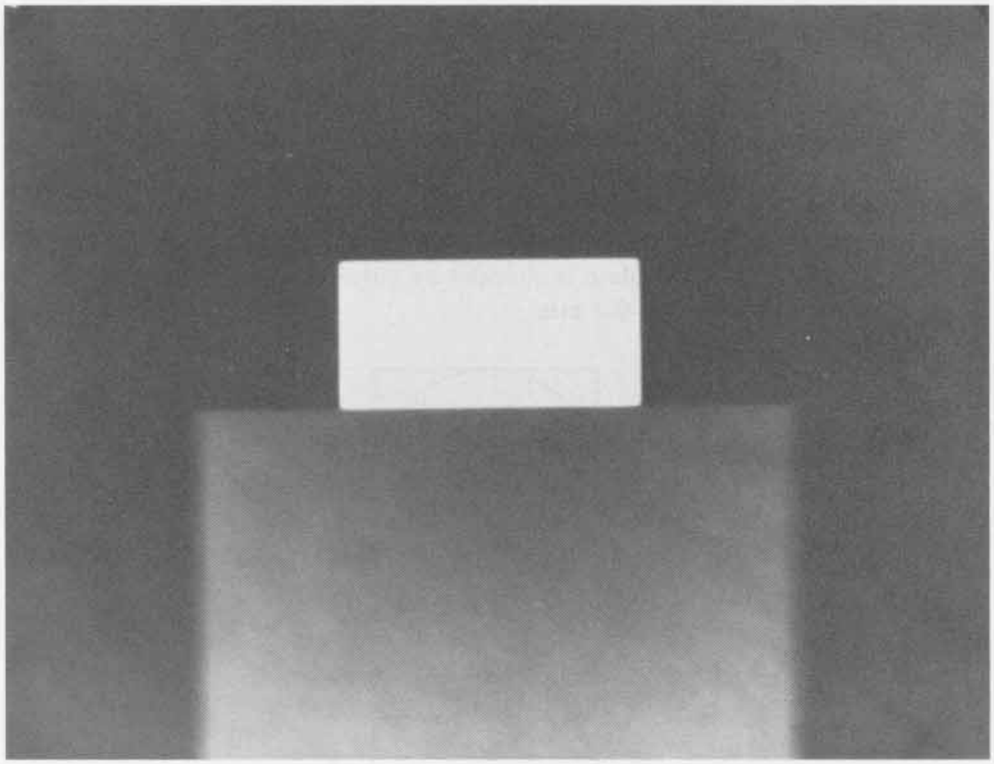


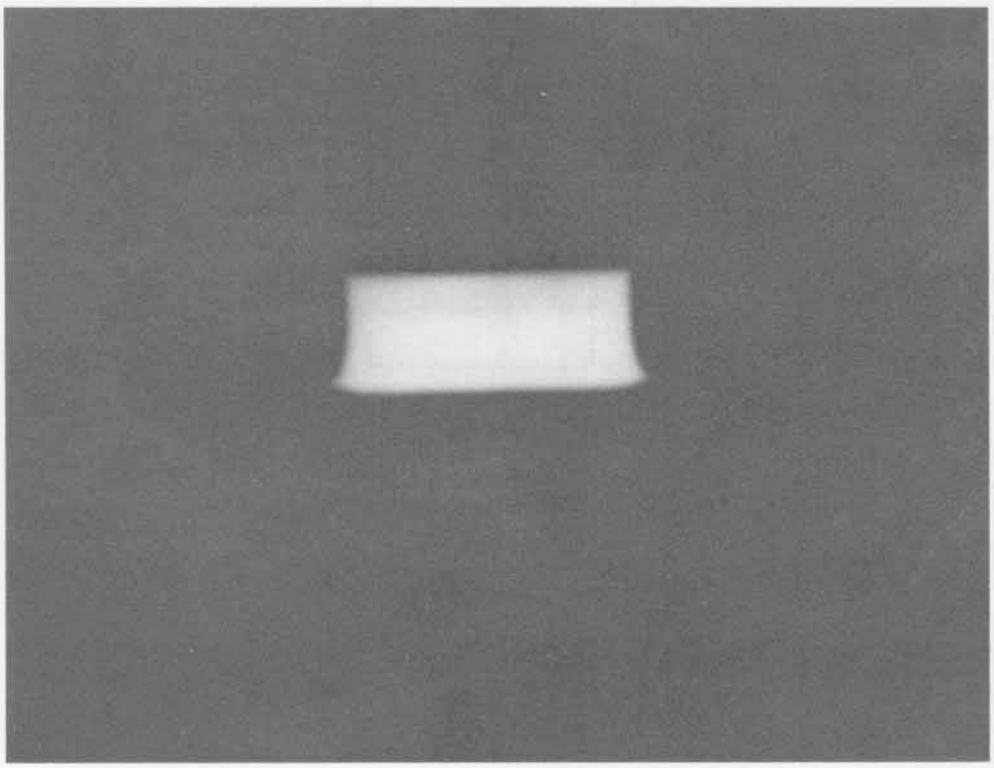


SHOT 662: **Uranium Shock Wave**
Date: February 23, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 31.26 μs

A 25.0-mm-thick, t, uranium plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 3.175 mm.

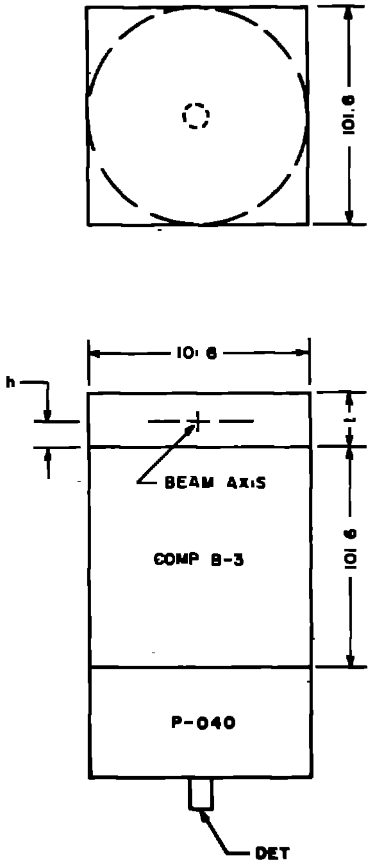


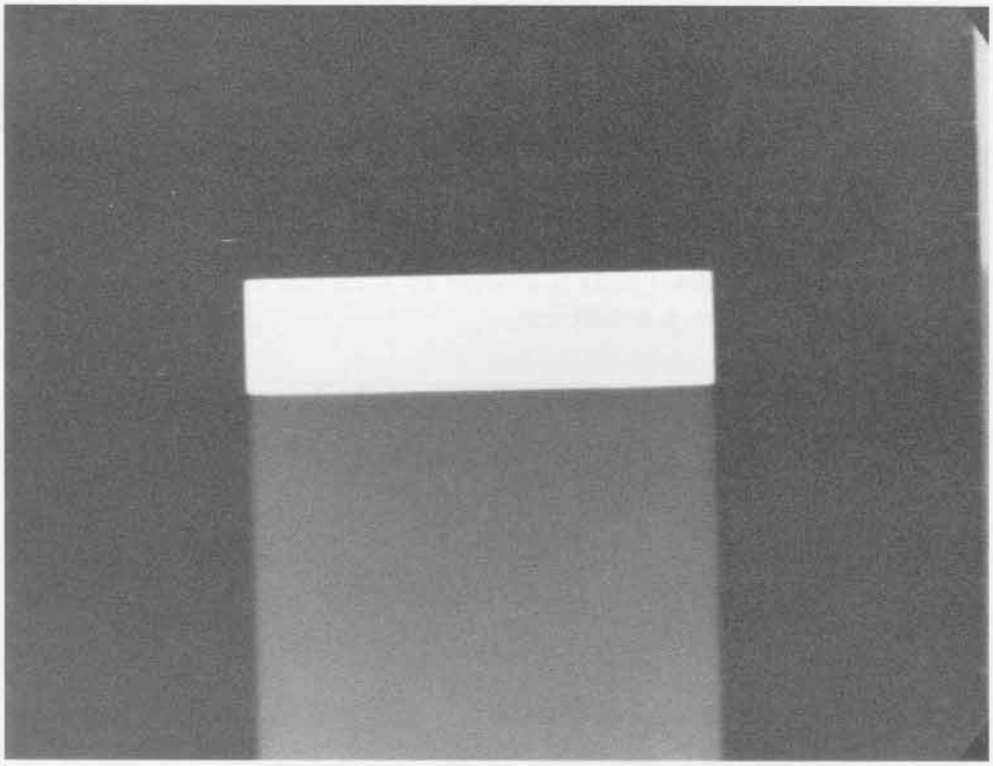


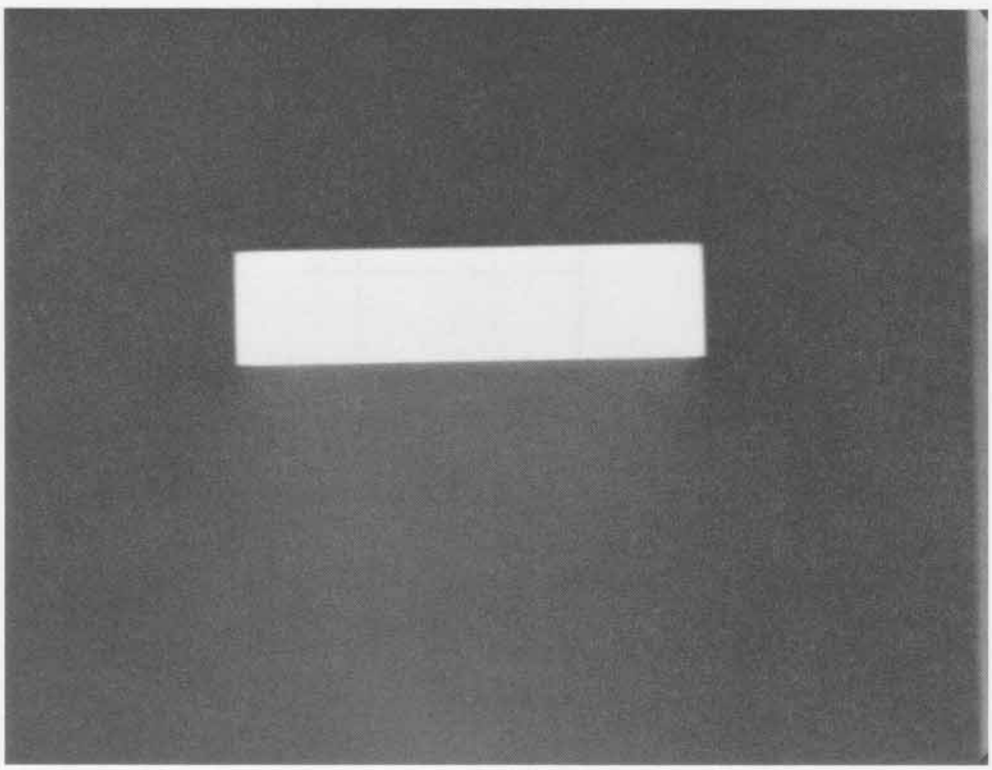


SHOT 663: **Nickel Shock Wave**
Date: August 17, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 26.77 μs

A 25.0-mm-thick, t, nickel plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 0.0 mm.

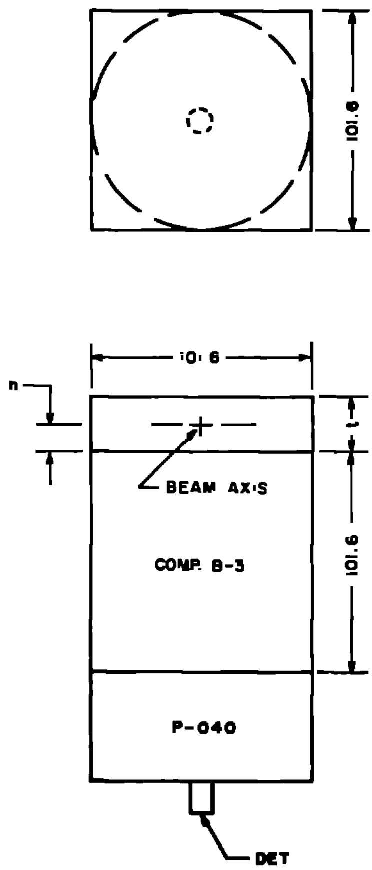


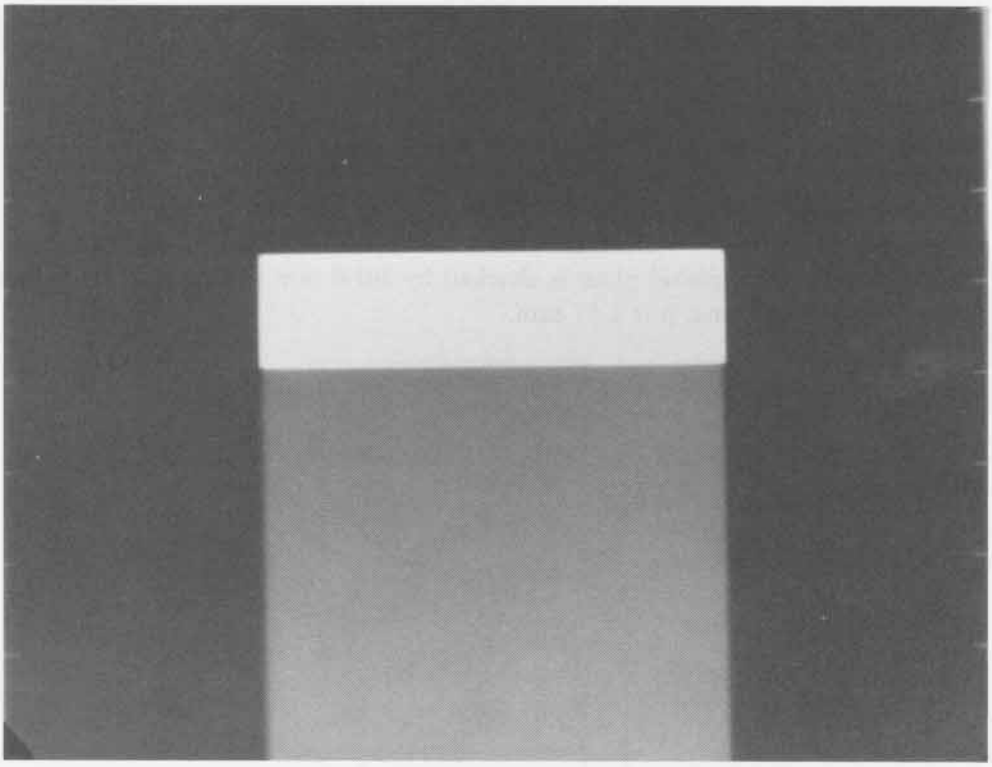


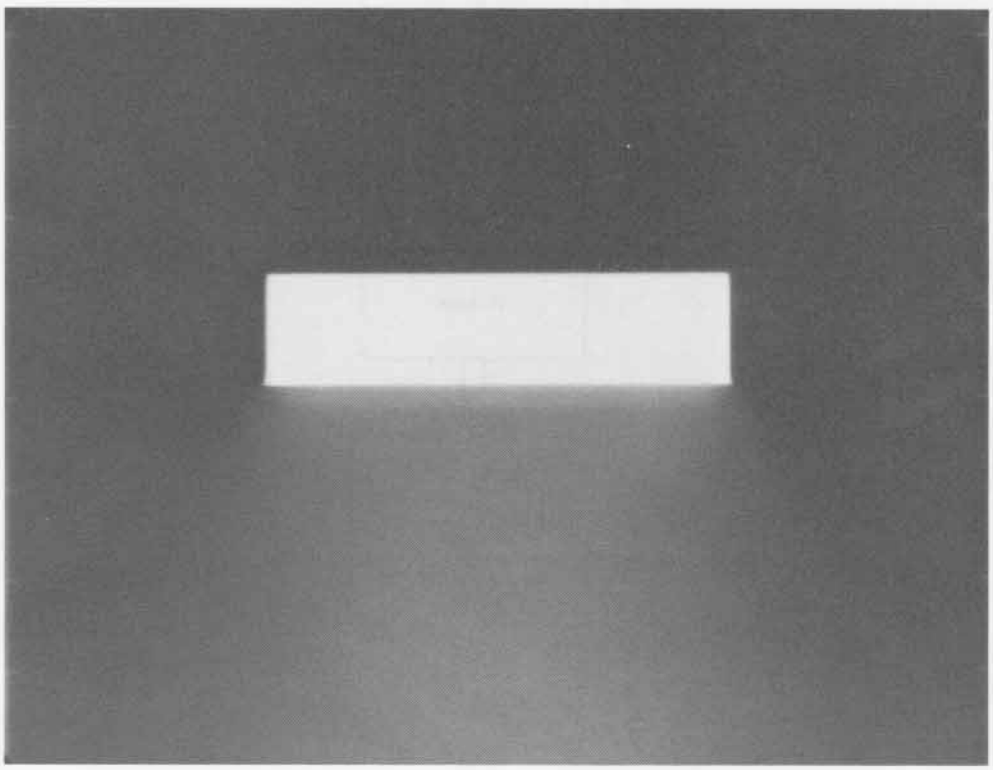


SHOT 664: **Nickel Shock Wave**
Date: August 23, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 27.28 μs

A 25.0-mm-thick, t, nickel plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 0.79 mm.

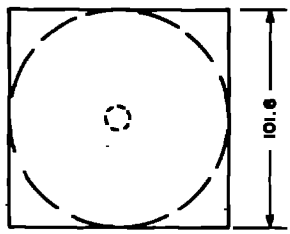


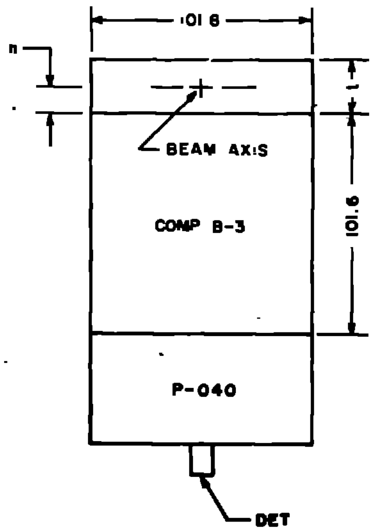


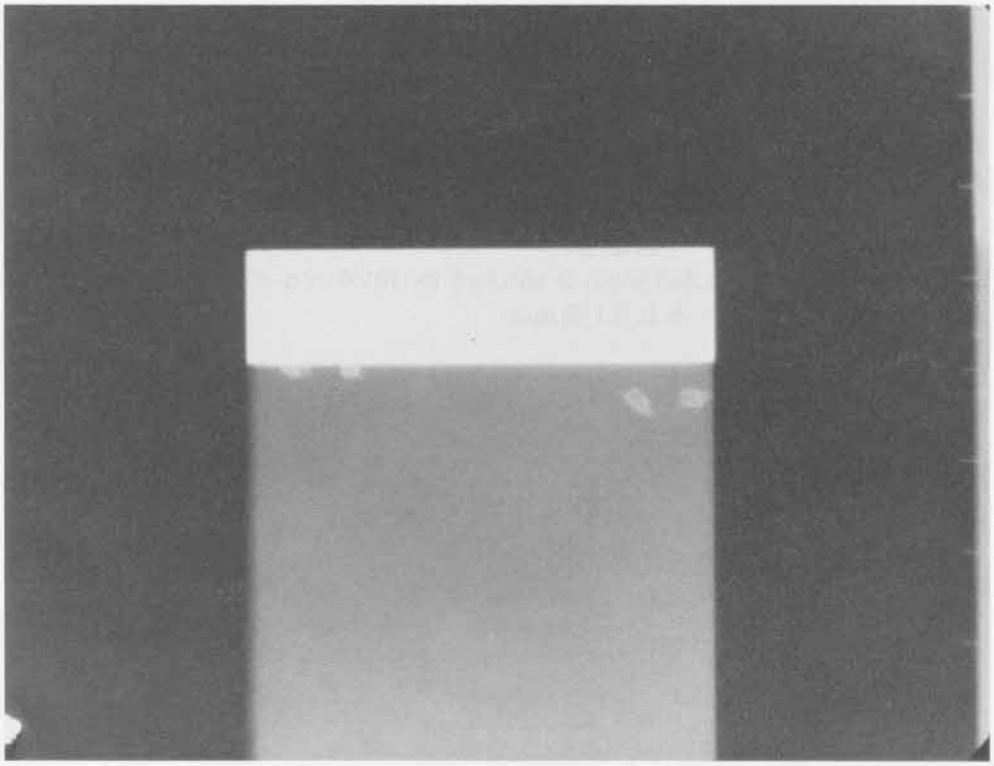


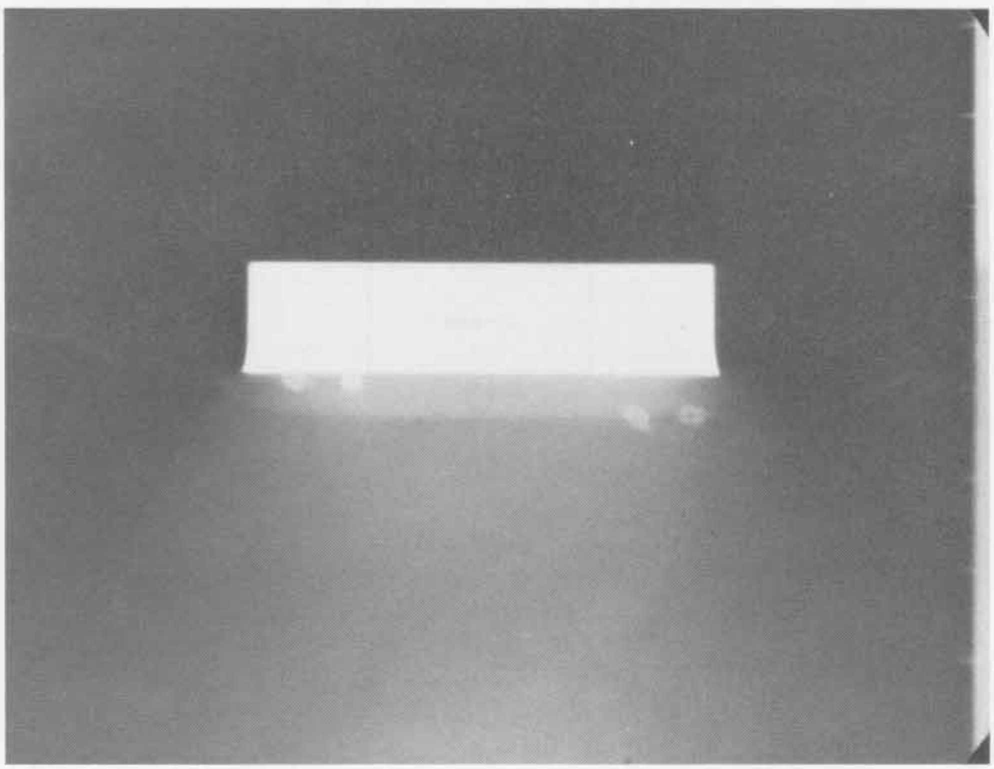
SHOT 665: **Nickel Shock Wave**
Date: October 19, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 28.29 μs

A 25.0-mm-thick, t, nickel plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 1.57 mm.



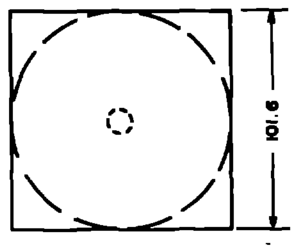


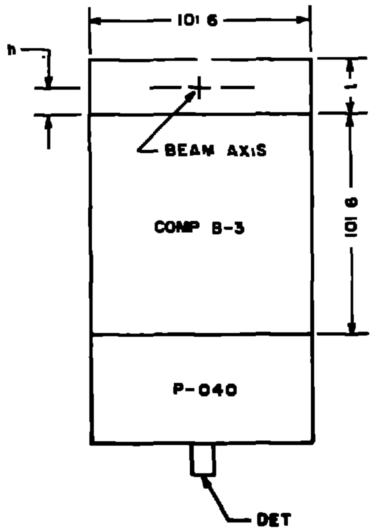


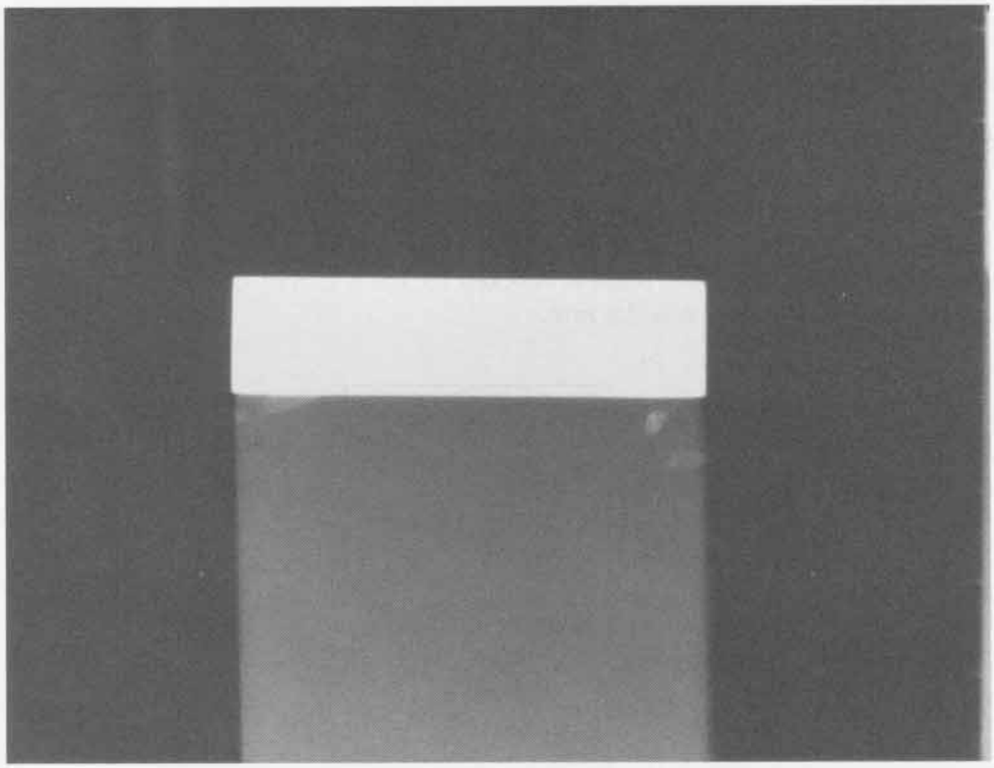


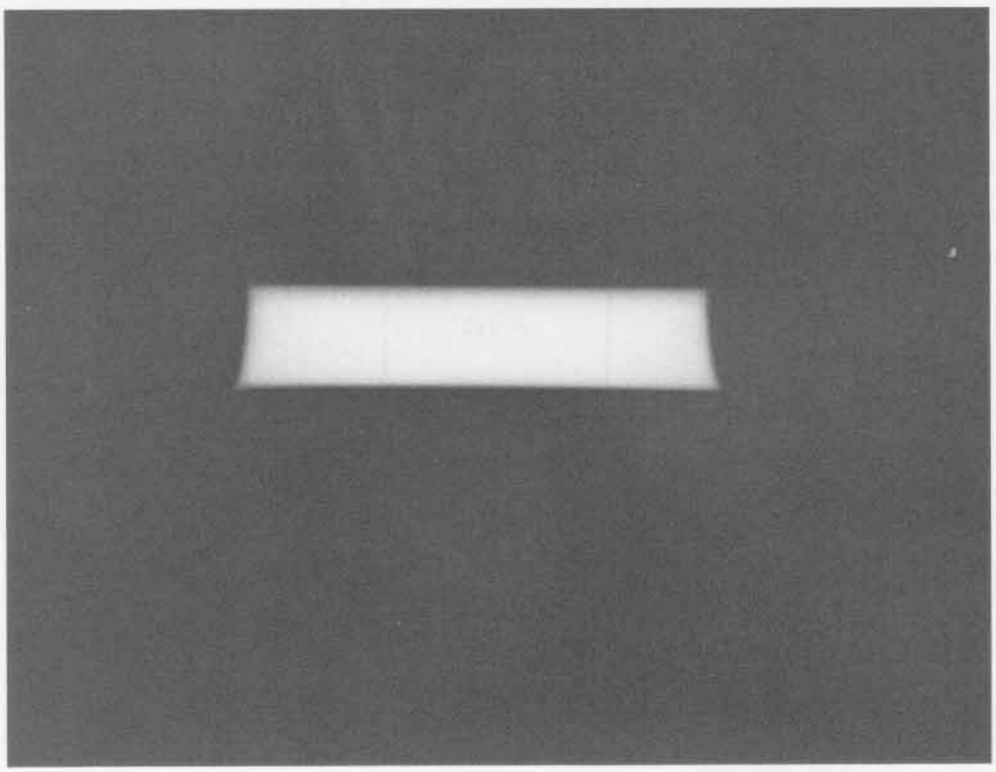
SHOT 667: **Nickel Shock Wave**
Date: October 25, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 30.28 μs

A 25.0-mm-thick, t, nickel plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 3.175 mm.



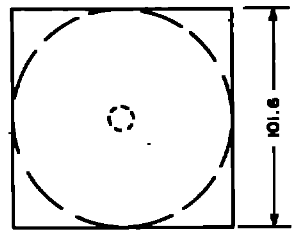


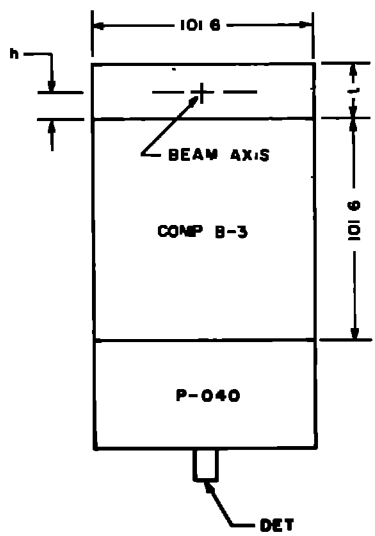


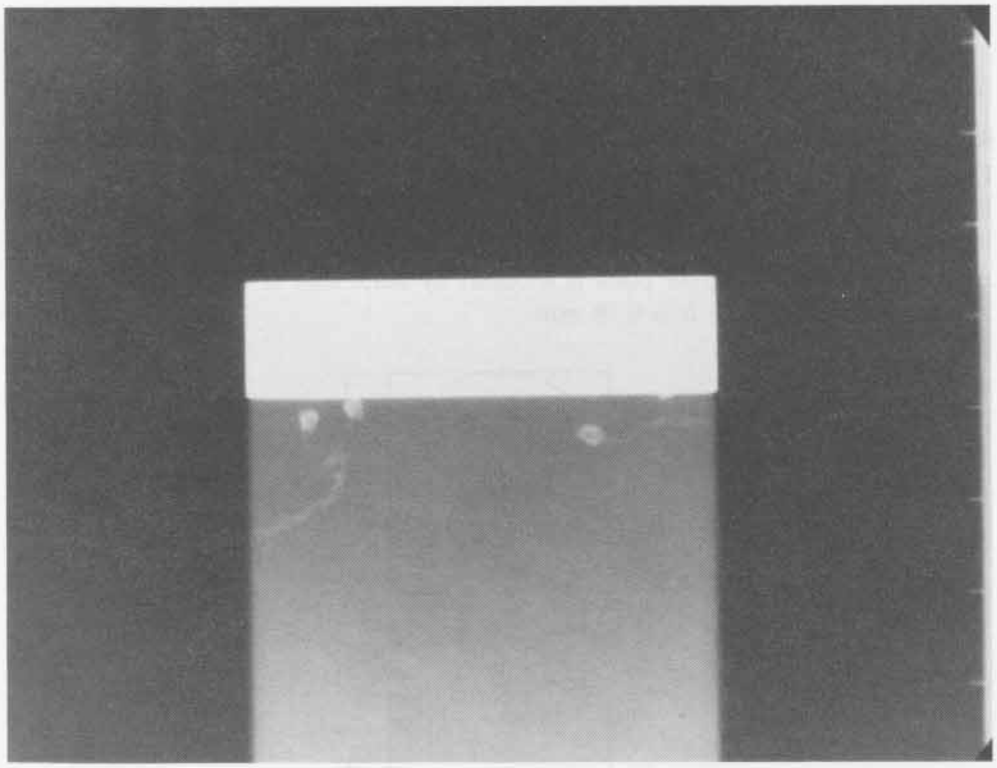


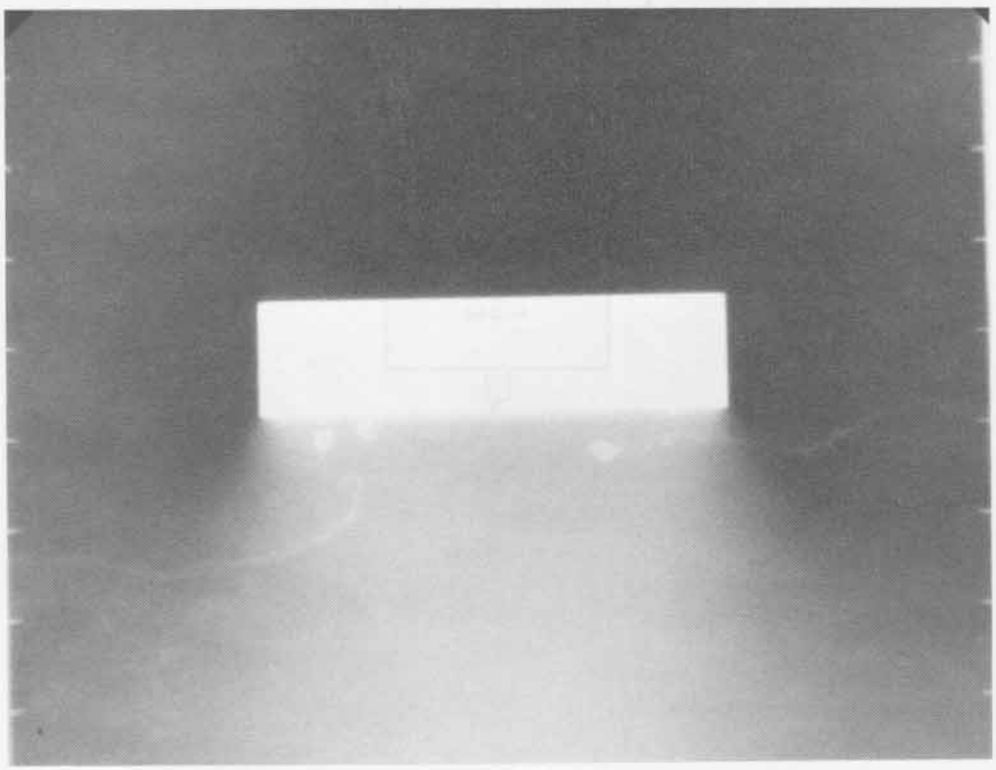
SHOT 668: **Copper Shock Wave**
Date: August 18, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 26.80 μs

A 25.0-mm-thick, t, copper plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 0.0 mm.



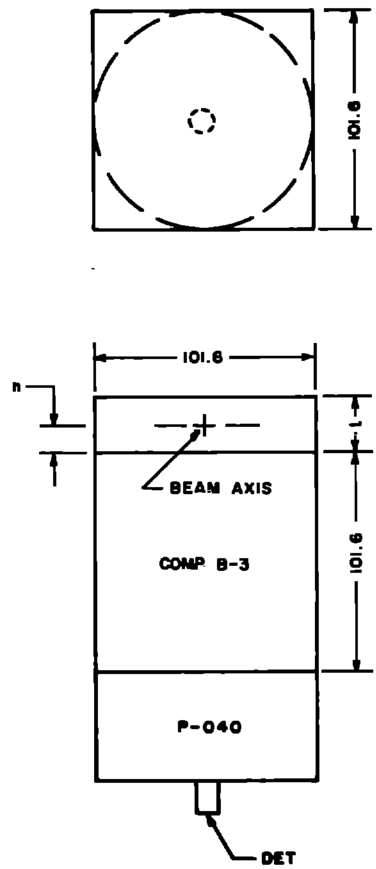


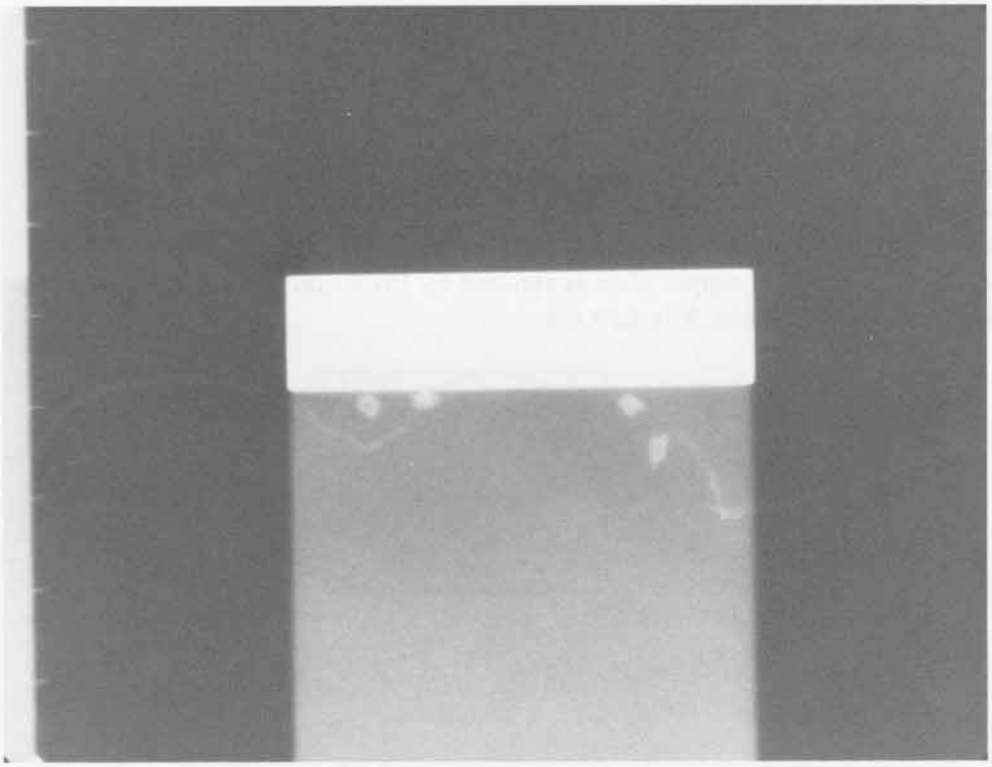


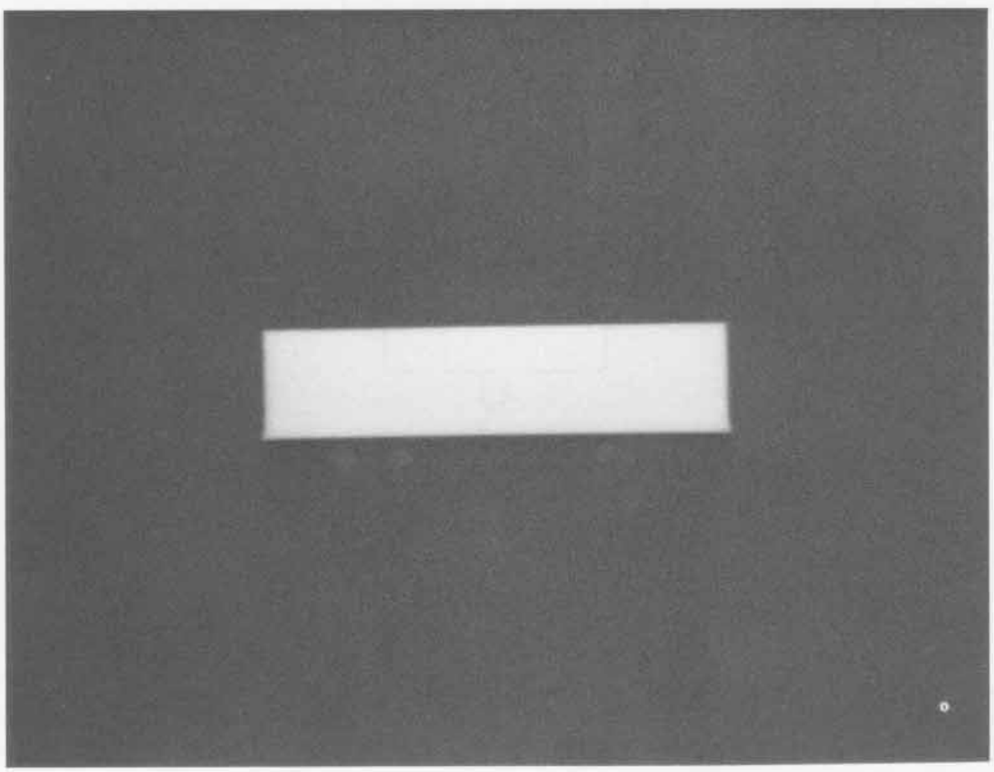


SHOT 669: Copper Shock Wave
Date: August 4, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 27.58 μs

A 25.0-mm-thick, t, copper plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 0.79 mm.

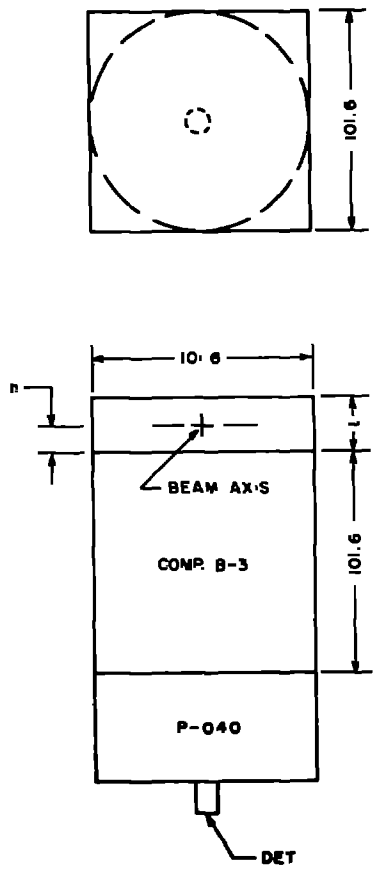


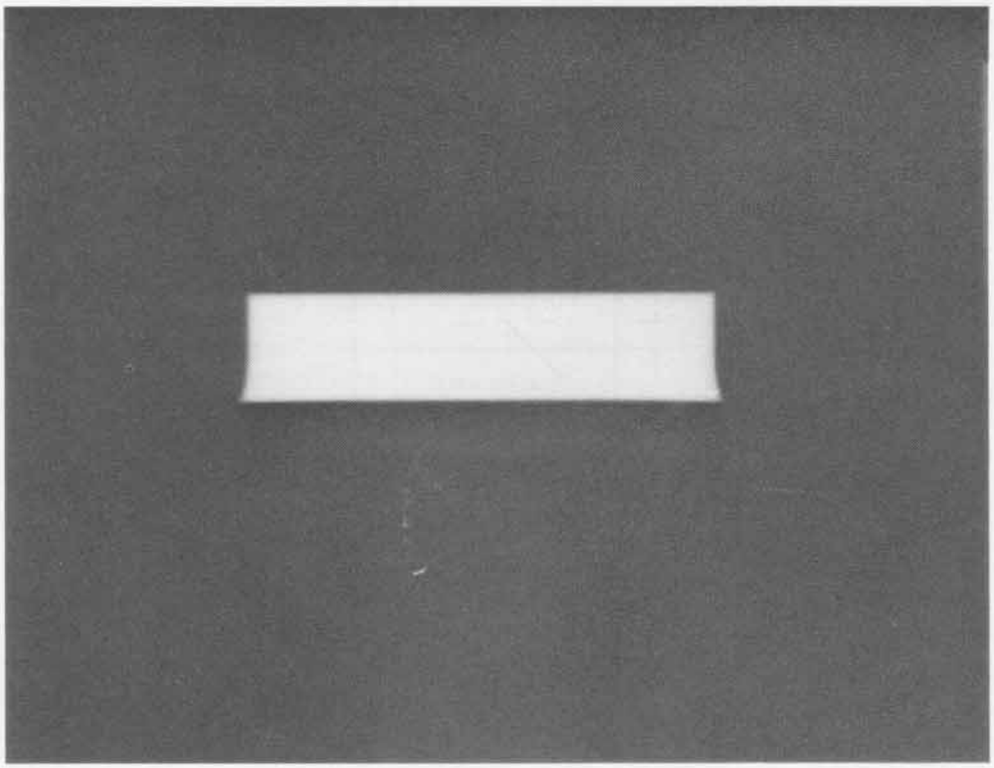




SHOT 670: **Copper Shock Wave**
Date: October 20, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 28.60 μs

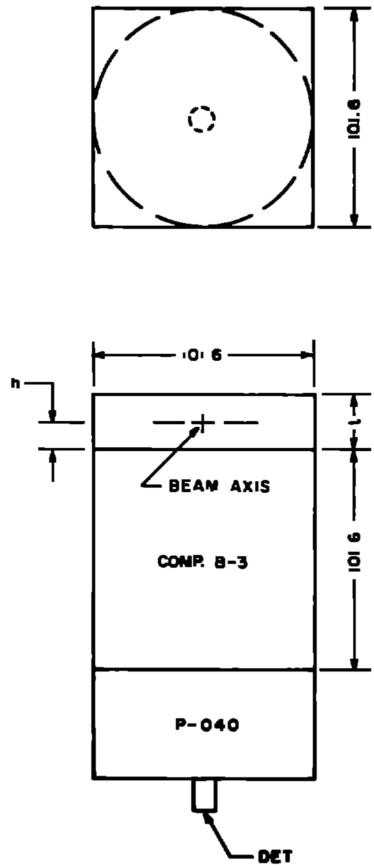
A 25.0-mm-thick, t, copper plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 1.59 mm.

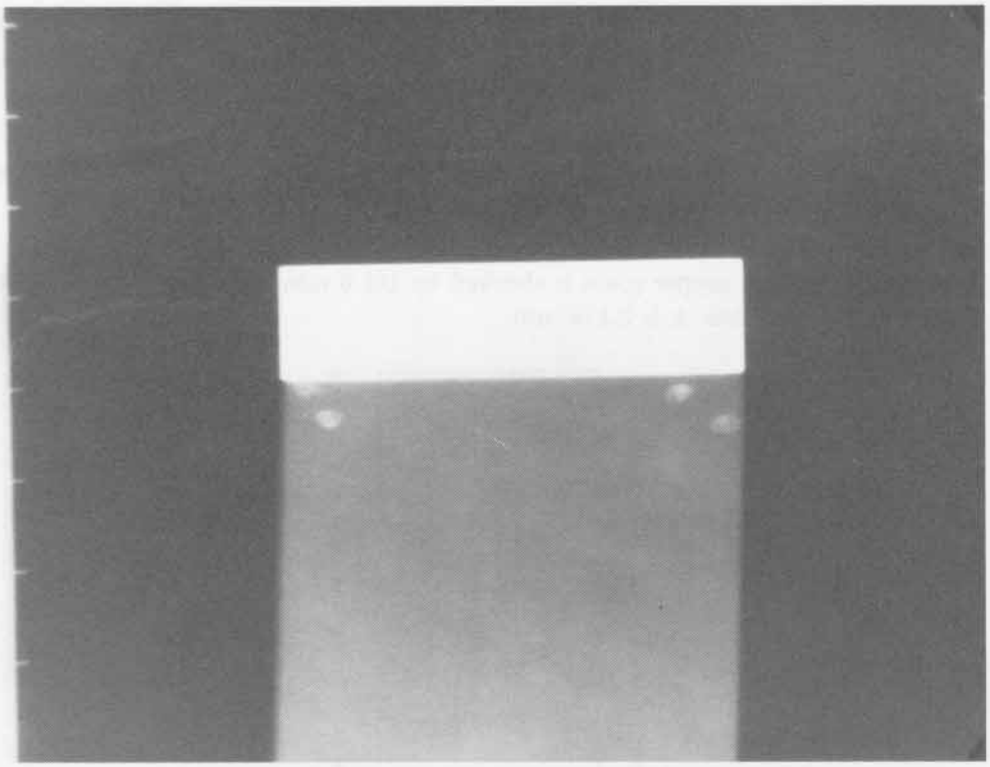


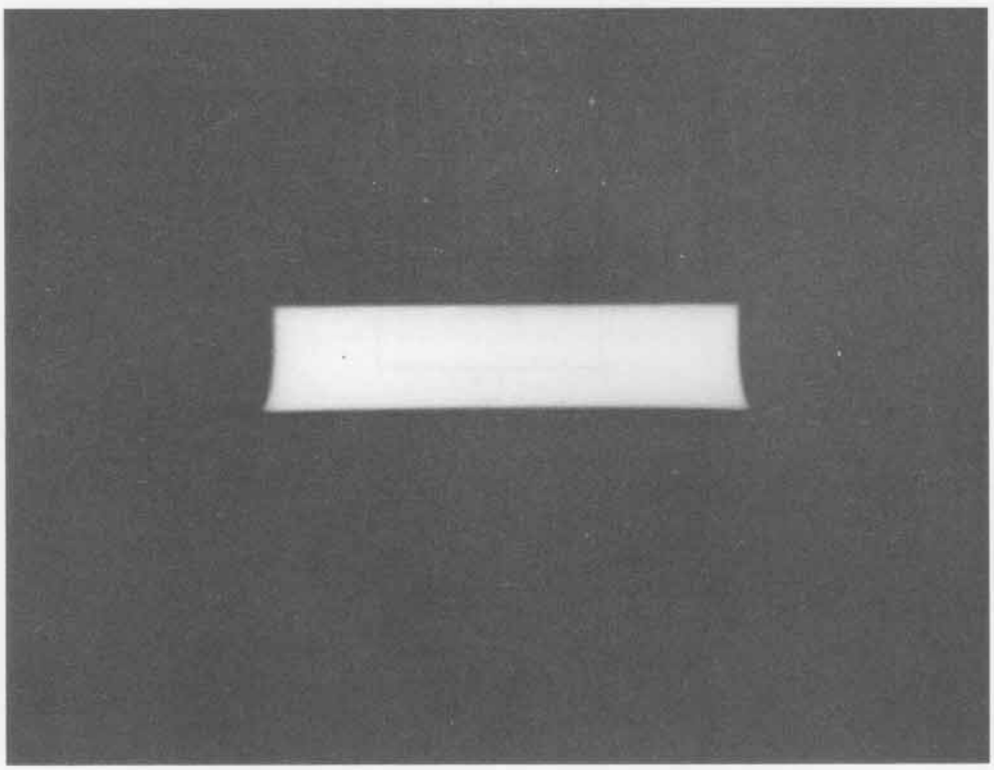


SHOT 671: **Copper Shock Wave**
Date: October 25, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 29.60 μs

A 25.0-mm-thick, t, copper plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 2.38 mm.

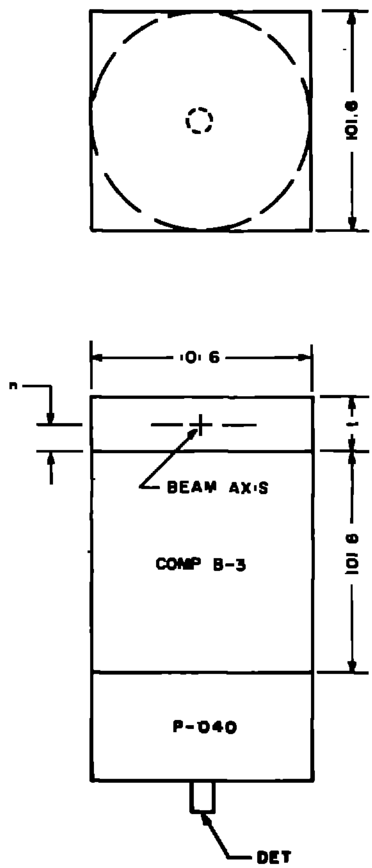


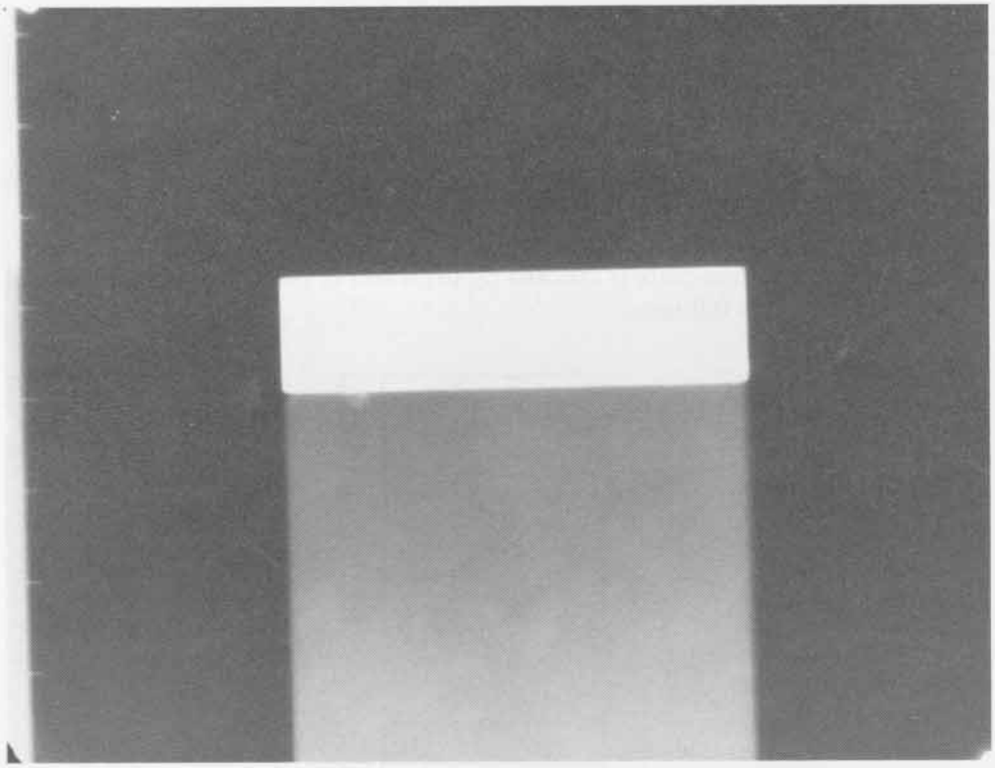


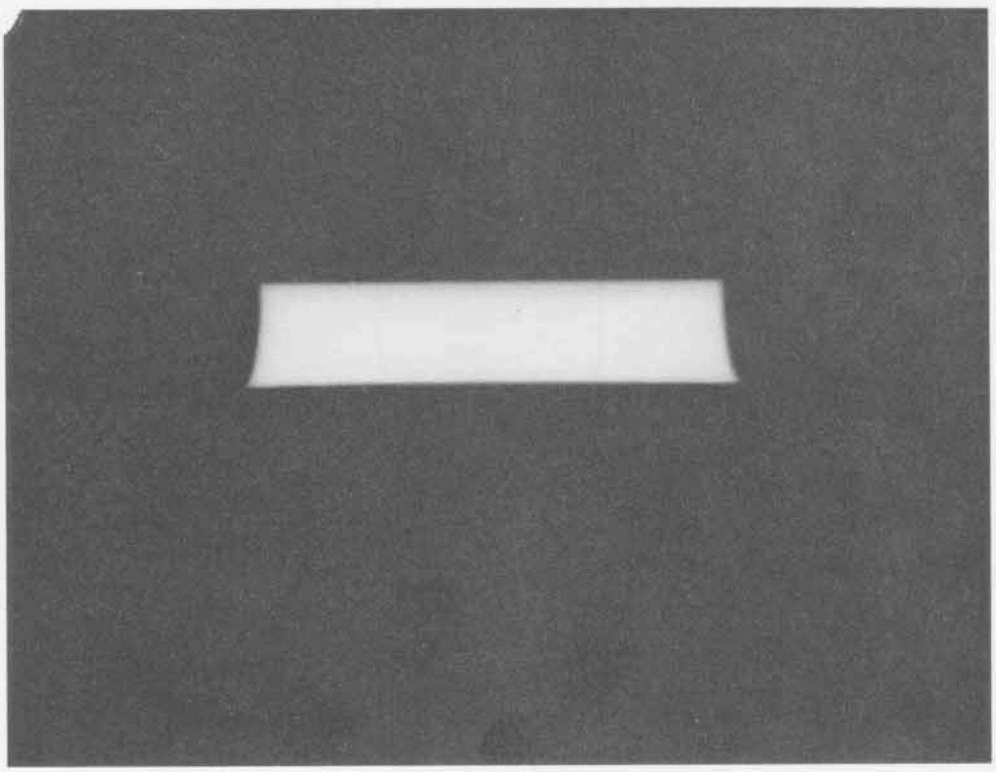


SHOT 672: **Copper Shock Wave**
Date: January 11, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 30.58 μs

A 25.0-mm-thick, t, copper plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 3.175 mm.

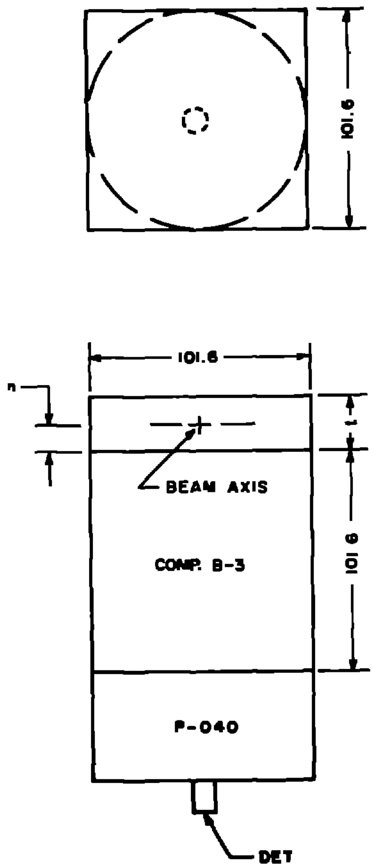


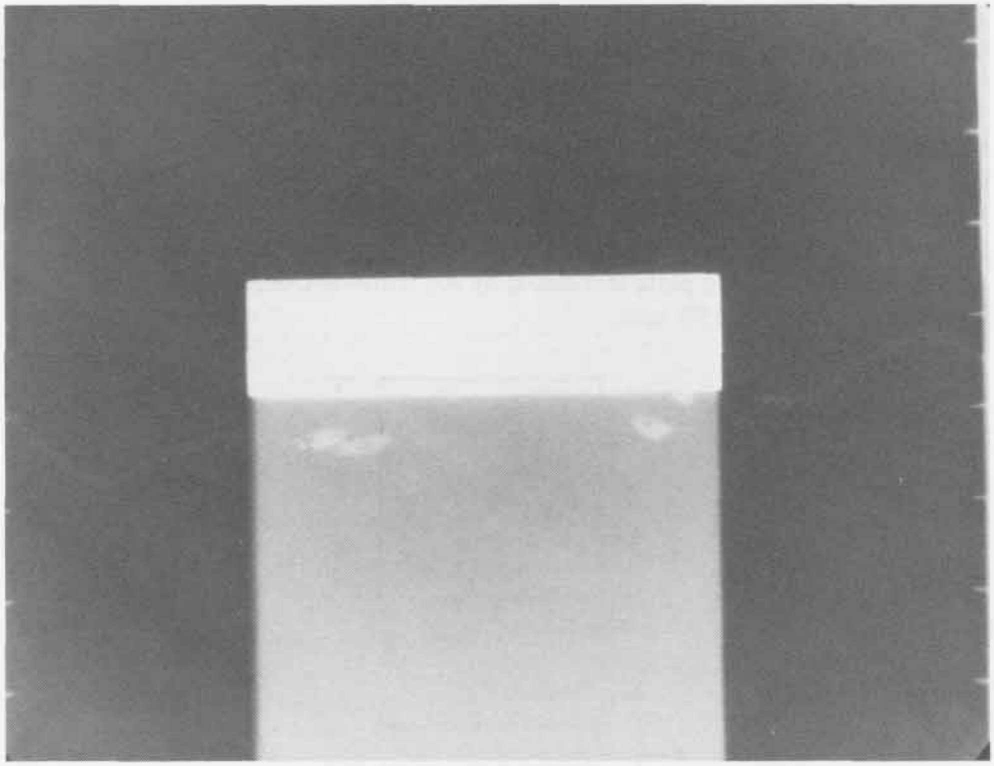


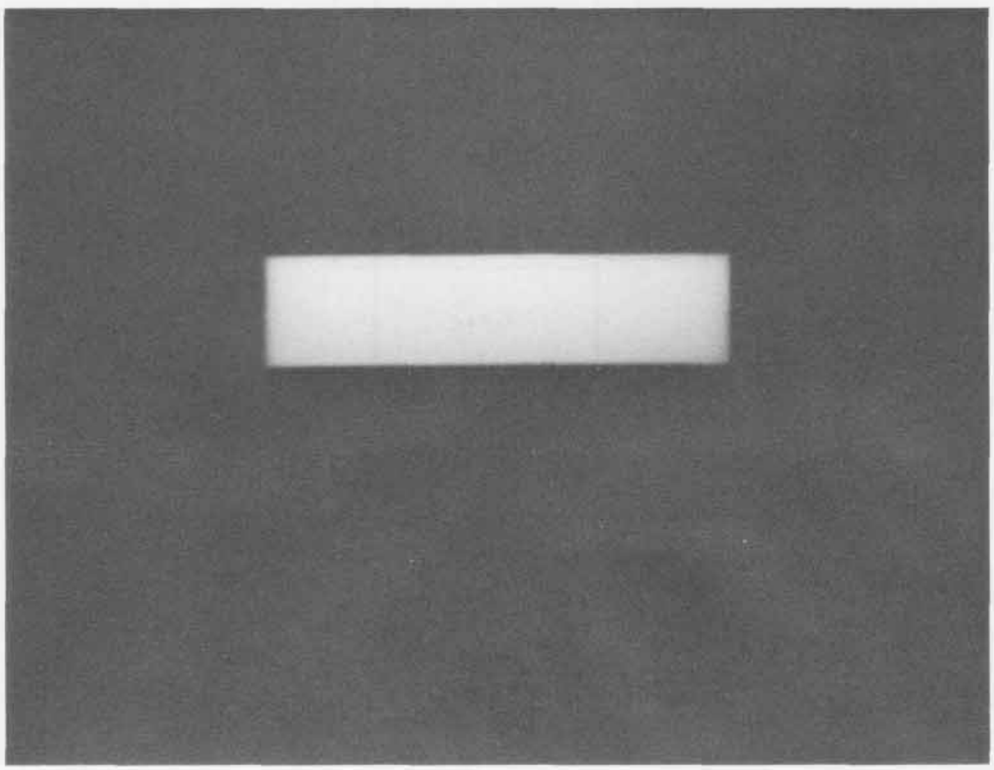


SHOT 673: **Iron Shock Wave**
Date: August 18, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 26.81 μs

A 25.0-mm-thick, t, iron plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 0.0 mm.

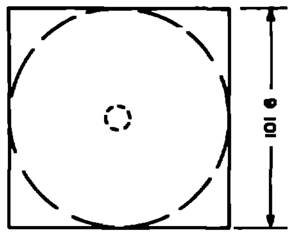


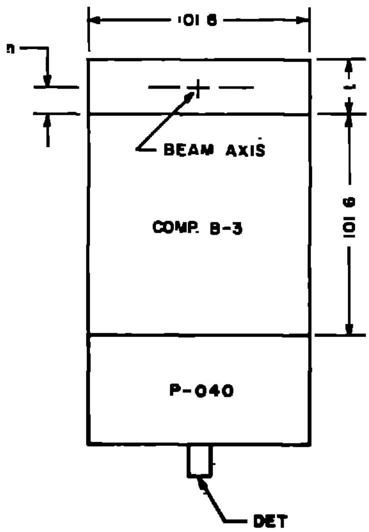


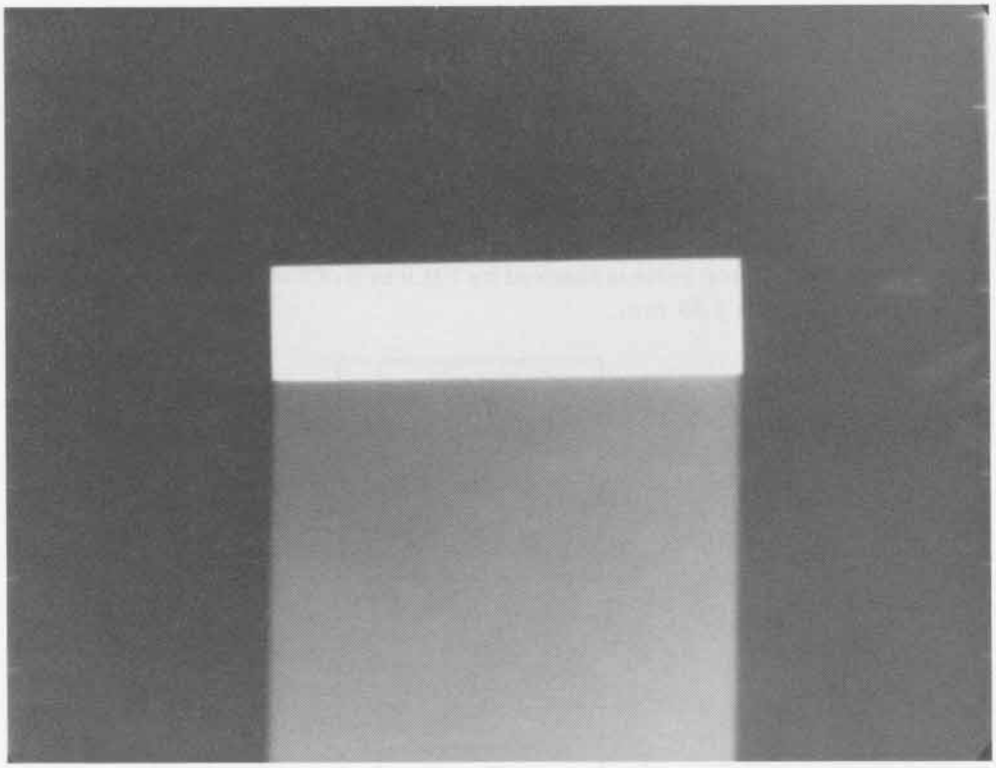


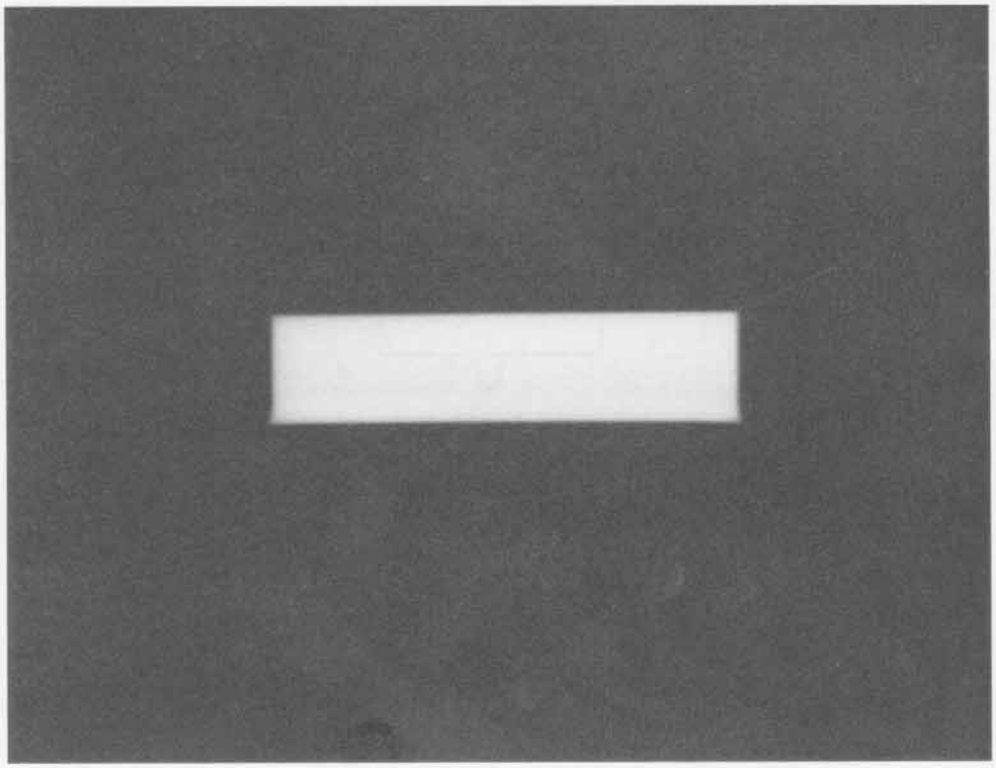
SHOT 674: **Iron Shock Wave**
Date: August 23, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 27.58 μs

A 25.0-mm-thick, t, iron plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 0.79 mm.



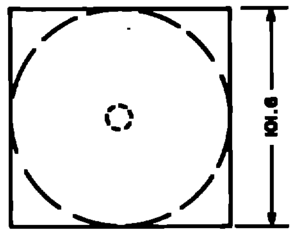


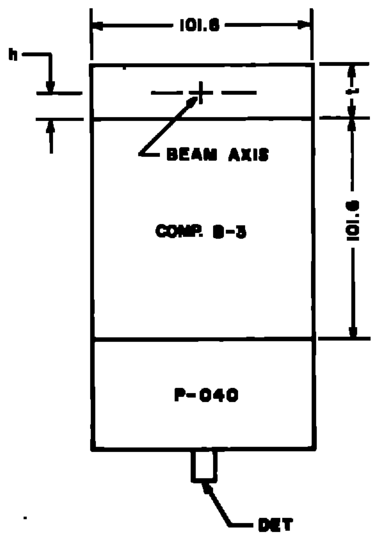


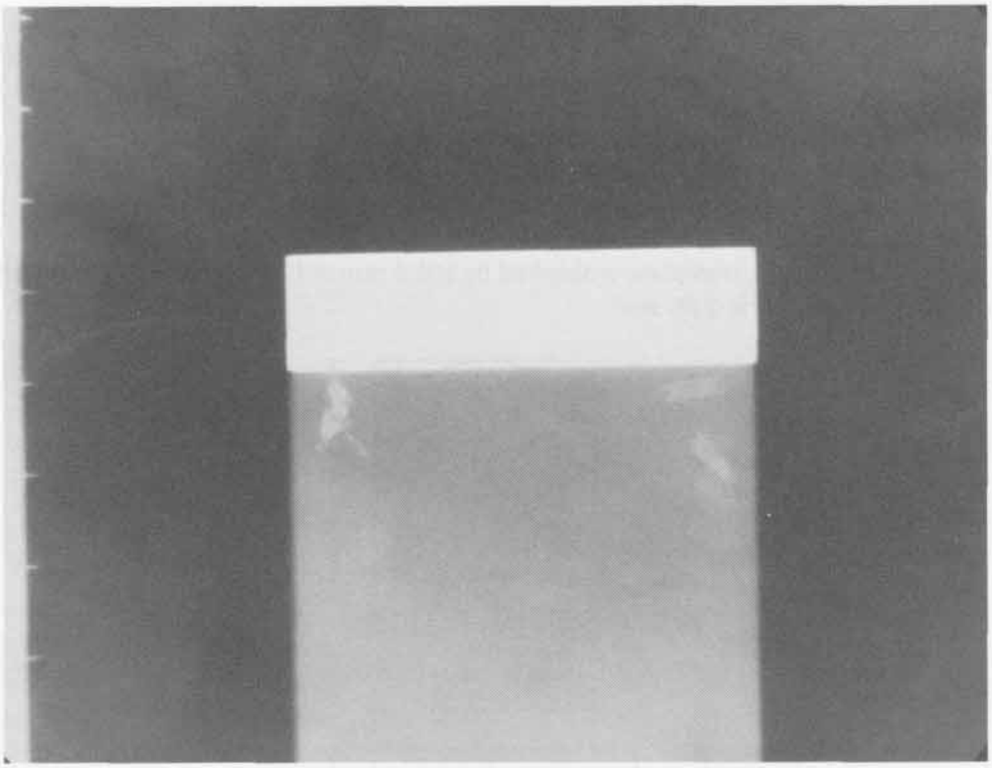


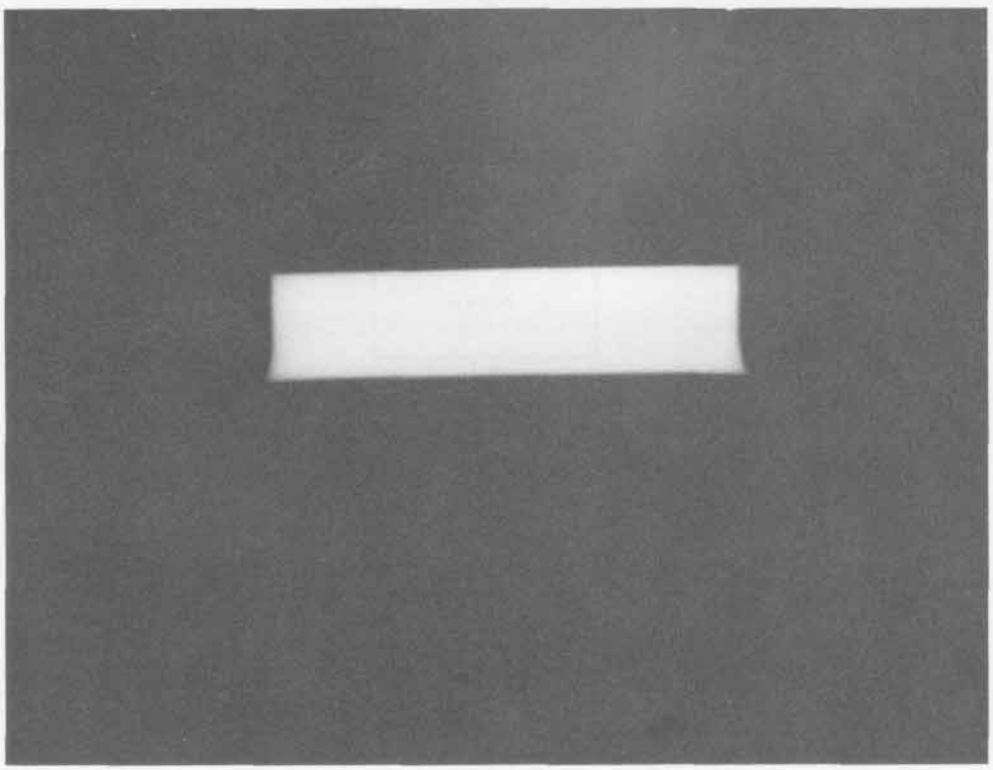
SHOT 675: Iron Shock Wave
Date: October 20, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 28.63 μs

A 25.0-mm-thick, t, iron plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 1.59 mm.



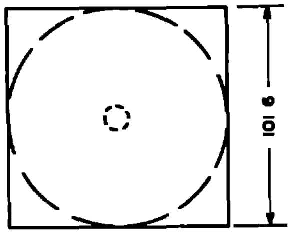


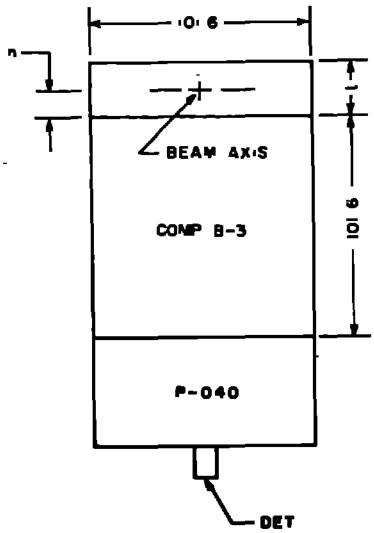


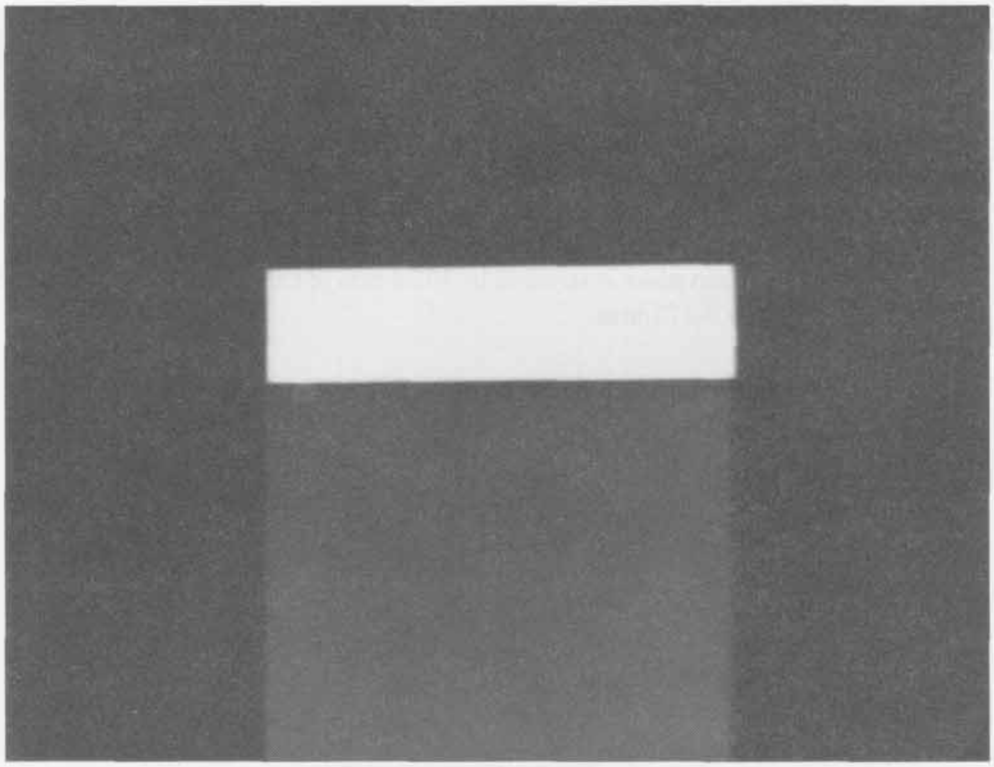


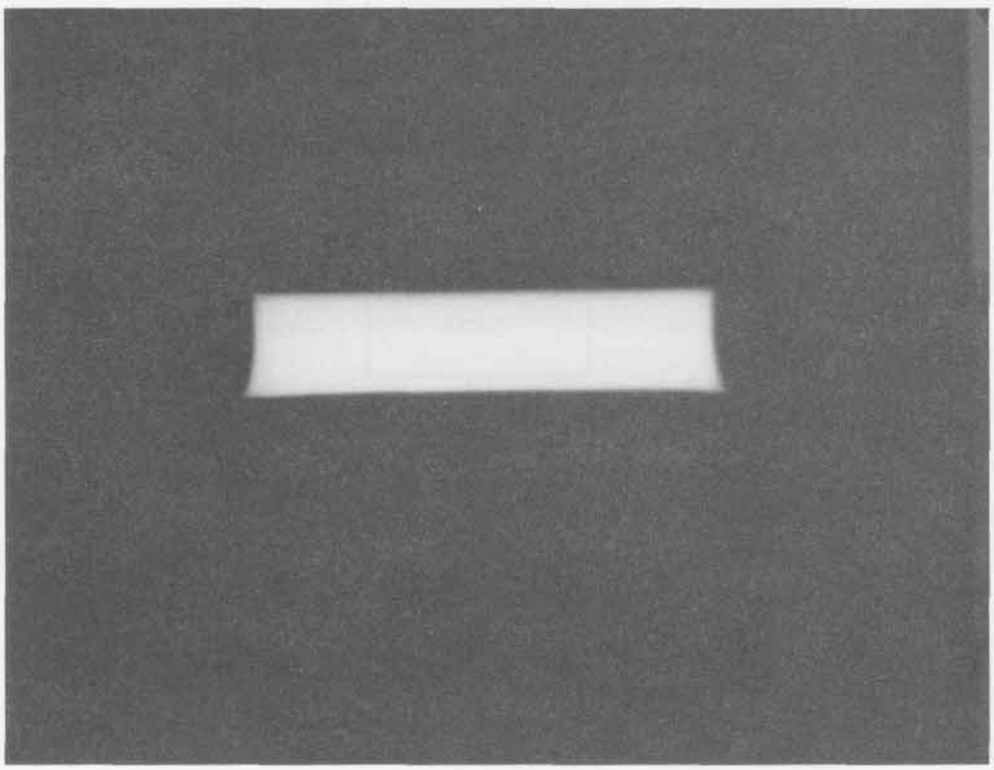
SHOT 676: **Iron Shock Wave**
Date: January 5, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 29.56 μs

A 25.0-mm-thick, t, iron plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 2.38 mm.



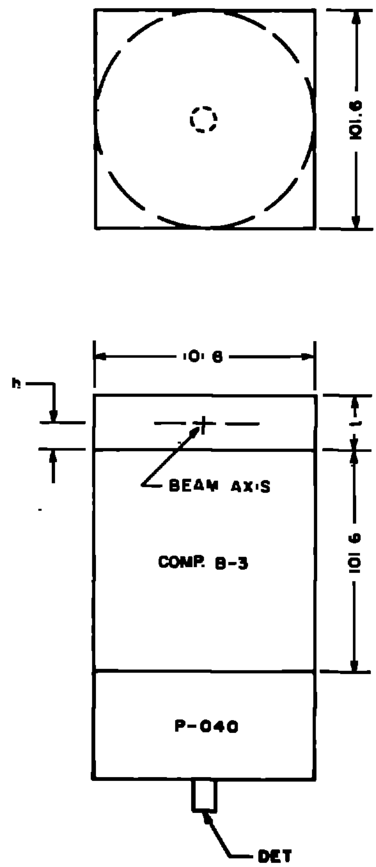


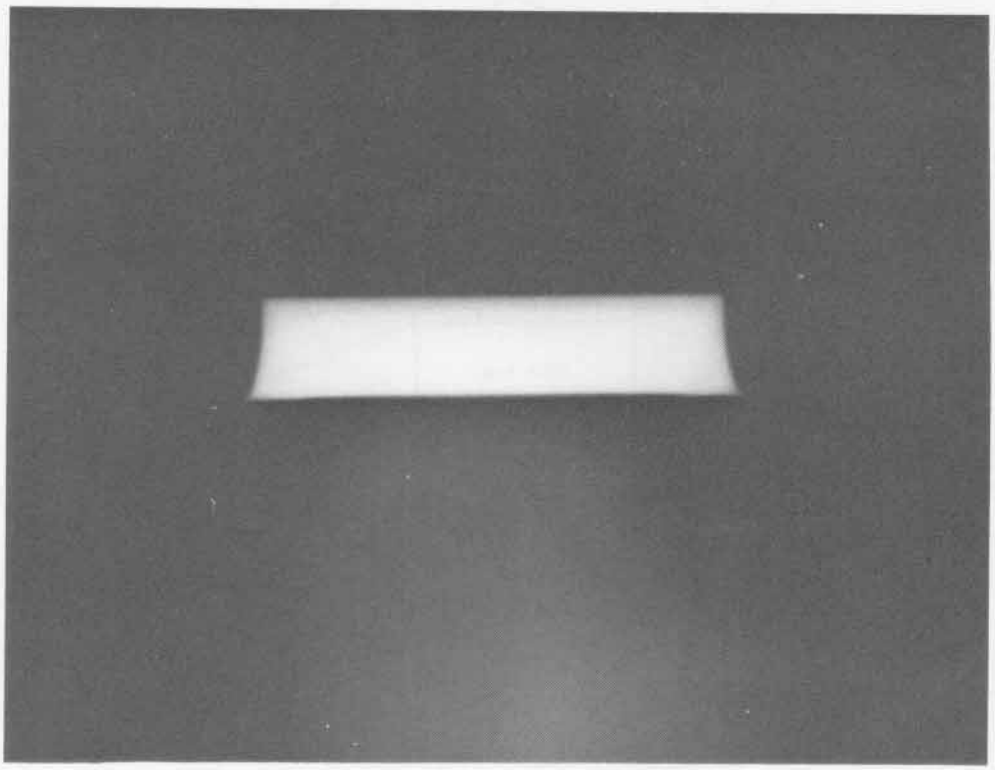




SHOT 677: **Iron Shock Wave**
Date: January 11, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 30.58 μs

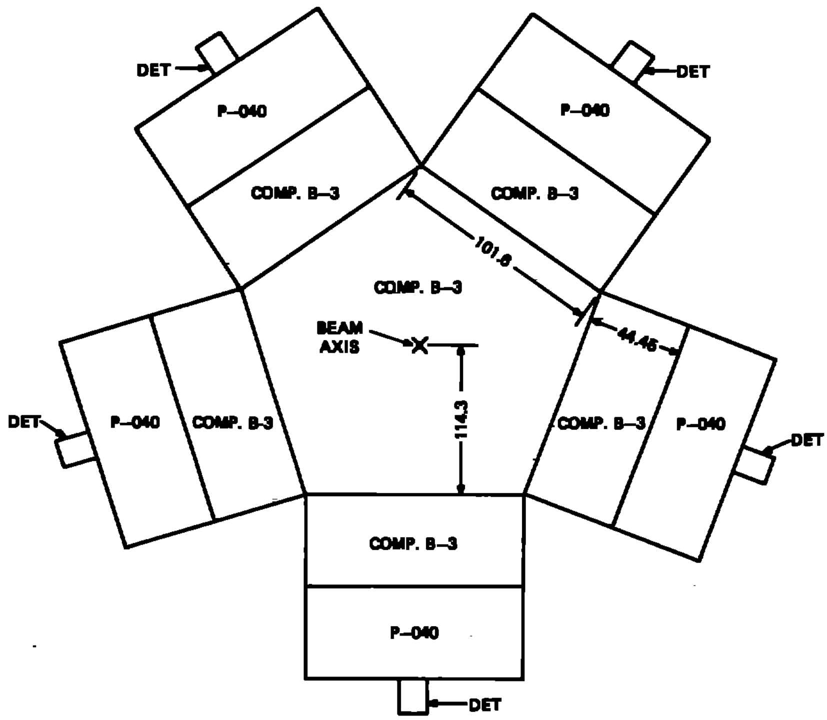
A 25.0-mm-thick, t, iron plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 3.175 mm.

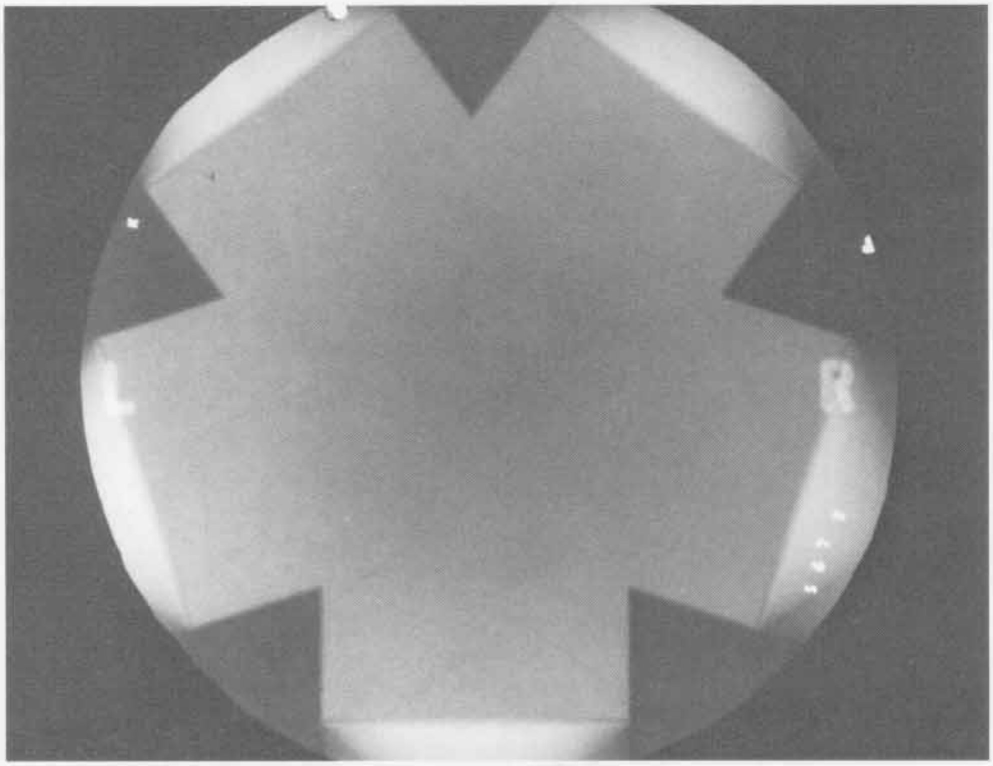


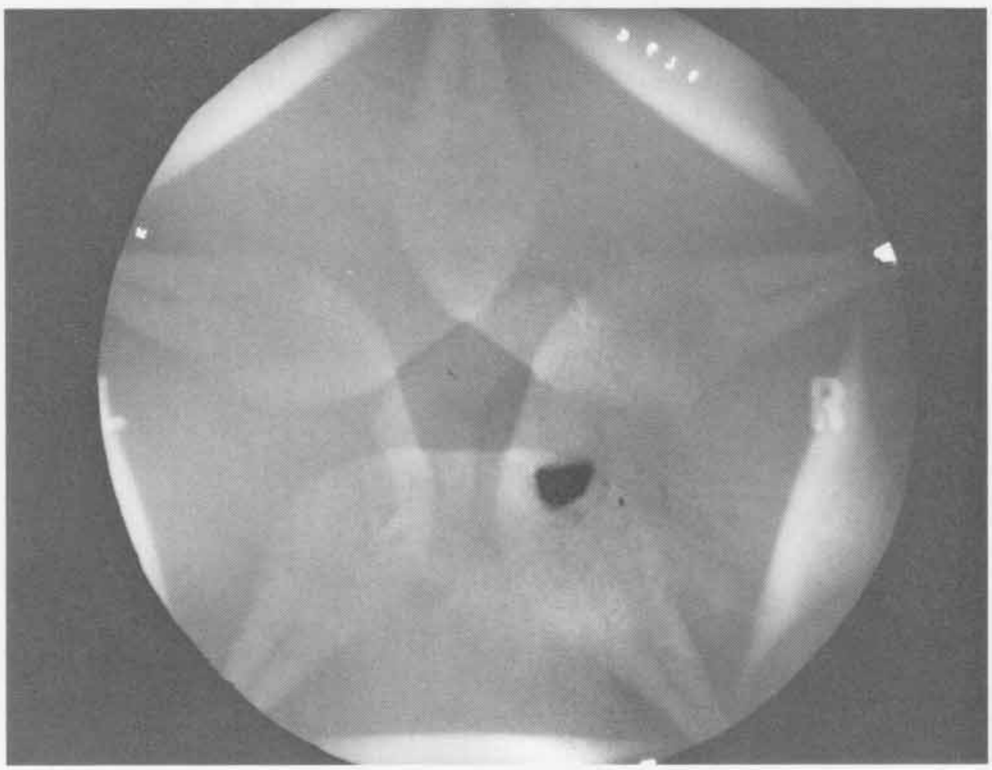


SHOT 678:	**Mach Reflections in Composition B-3**
Date:	July 28, 1966
Experimenter:	Roger W. Taylor
Radiographic Time:	25.57 μs

Five 44.54-mm-thick by 101.6-mm-square blocks of Composition B-3 are initiated by P-040 lenses. These blocks are placed in contact with the five 101.6-mm-wide sides of a 'Hepta-HE-dron' of Composition B-3. See Shots 621 and 679 for other times.

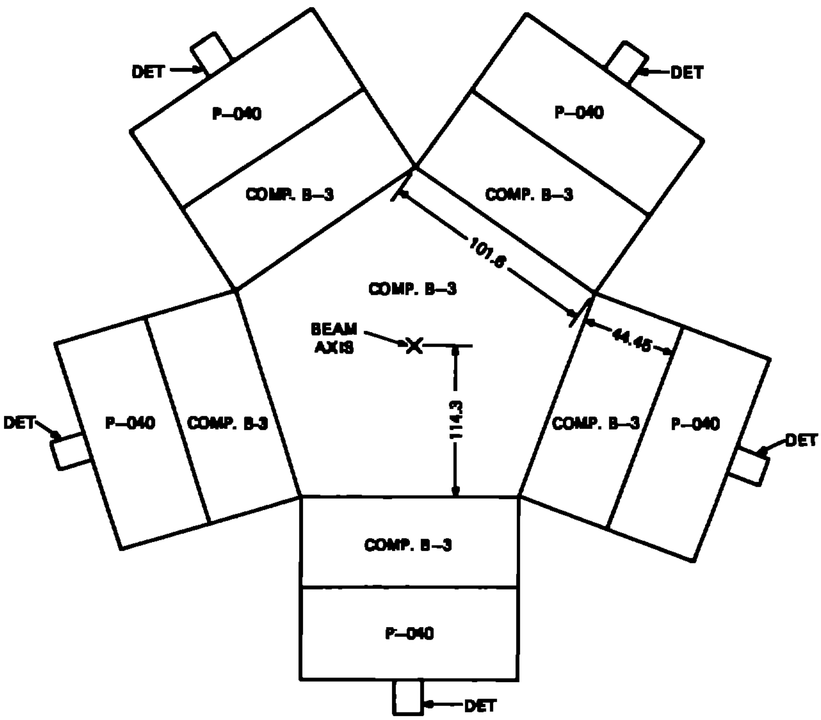


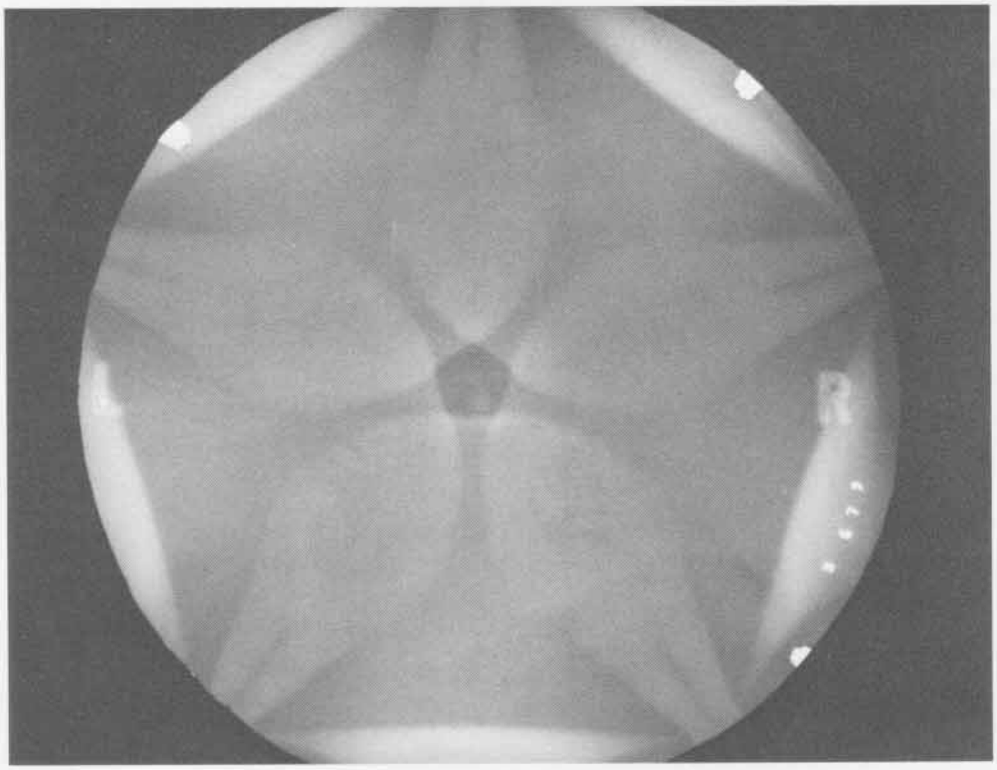

L
R


R

SHOT 679: **Mach Reflections in Composition B-3**
Date: July 28, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 26.64 μs

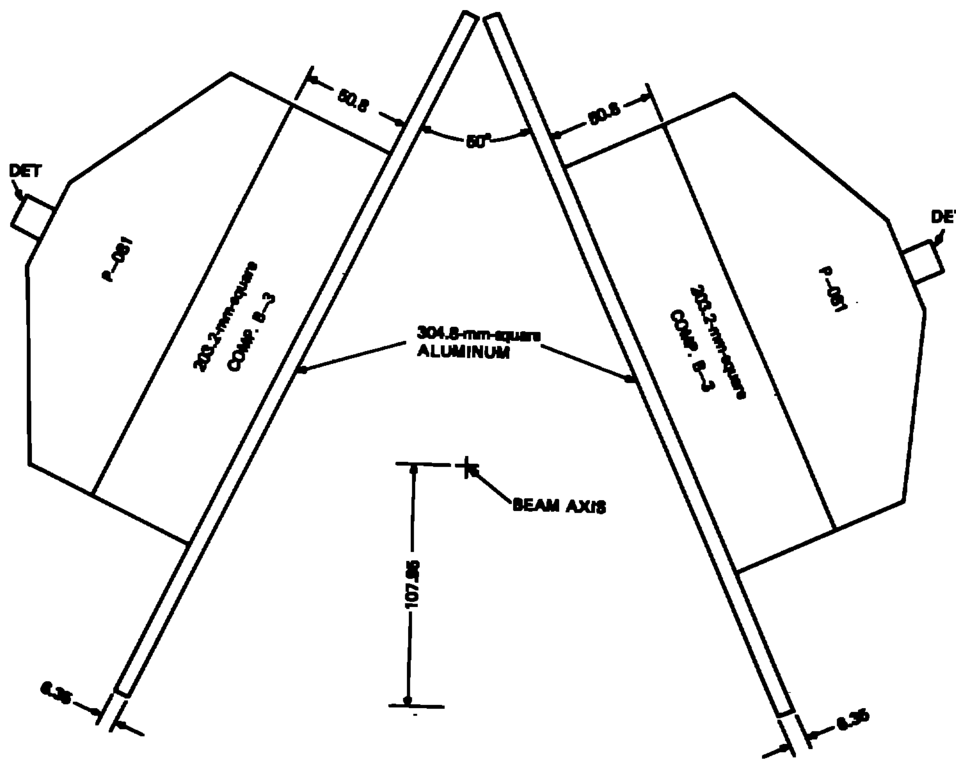
Five 44.45-mm-thick by 101.6-mm-square blocks of Composition B-3 are initiated by P-040 lenses. These blocks are placed in contact with the five 101.6-mm-wide sides of a "Hepta-HE-dron" of Composition B-3. See Shots 621 and 678 for other times.

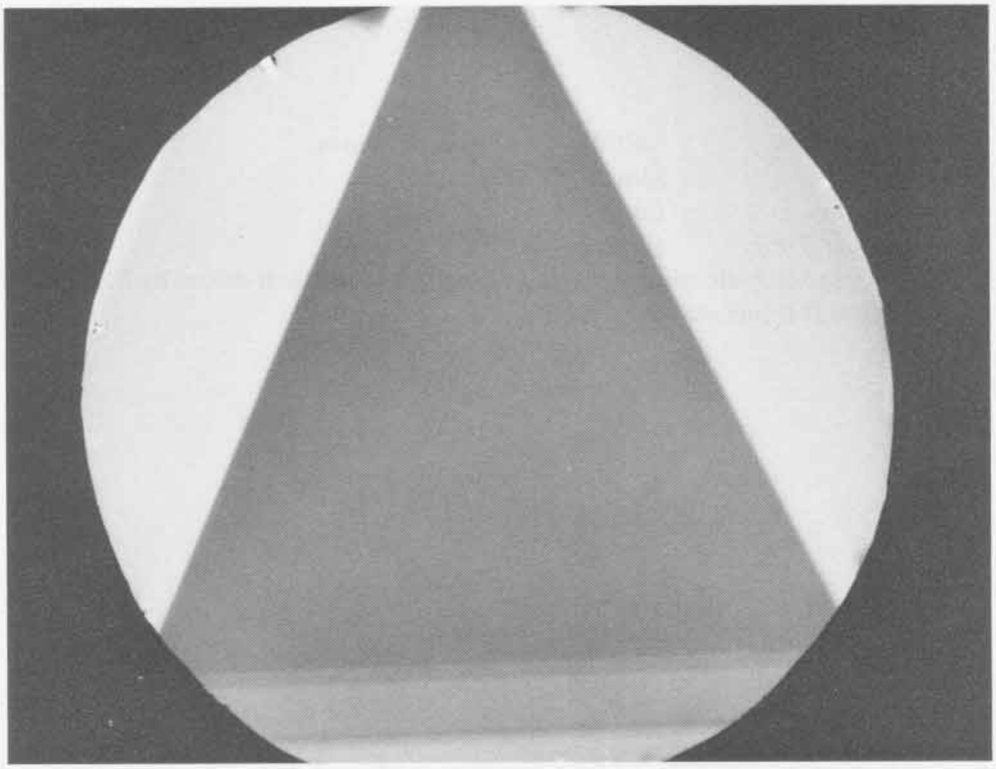


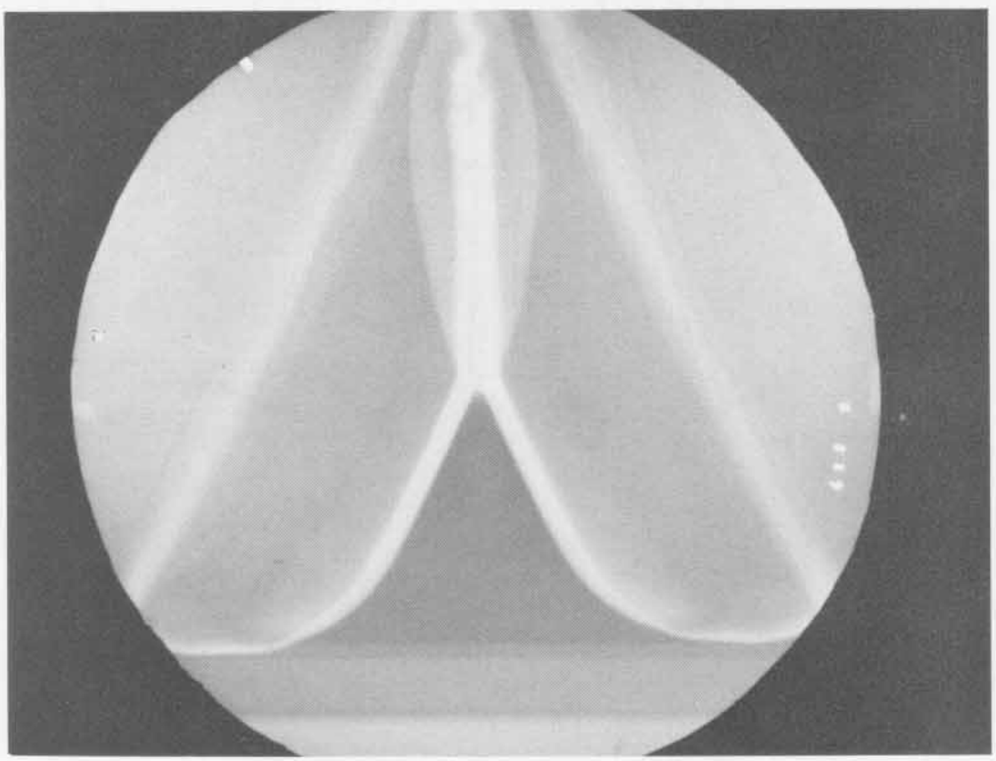


SHOT 688: **Colliding Aluminum Plates**
Date: September 1, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 49.42 μs

Two 6.35-mm-thick aluminum plates at a 50° angle are each driven by 50.8 mm of Composition B-3 initiated by a P-081 lens.

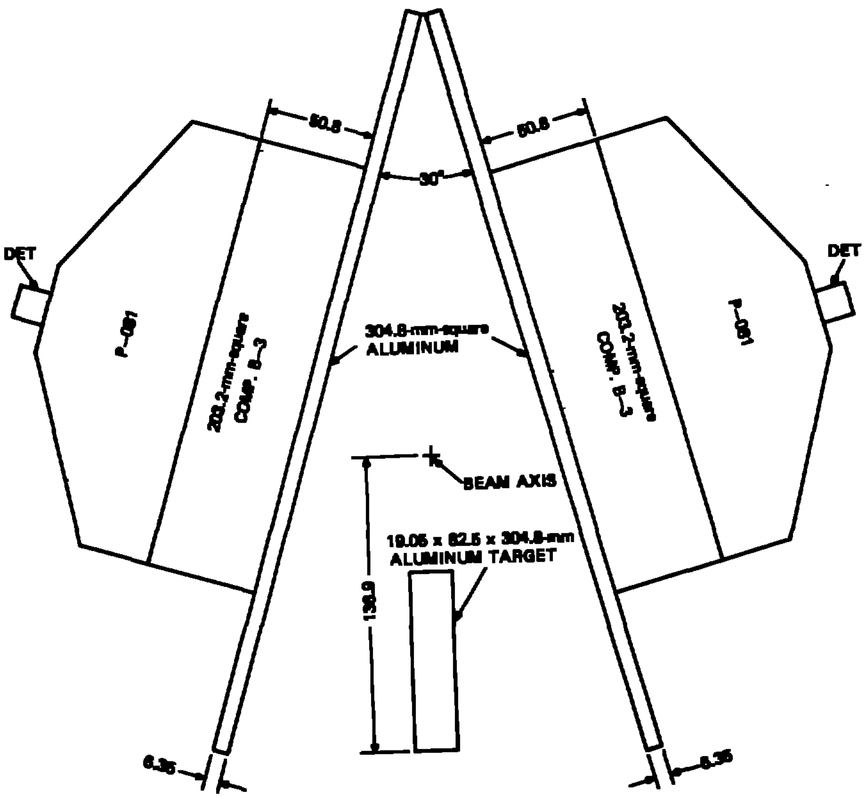


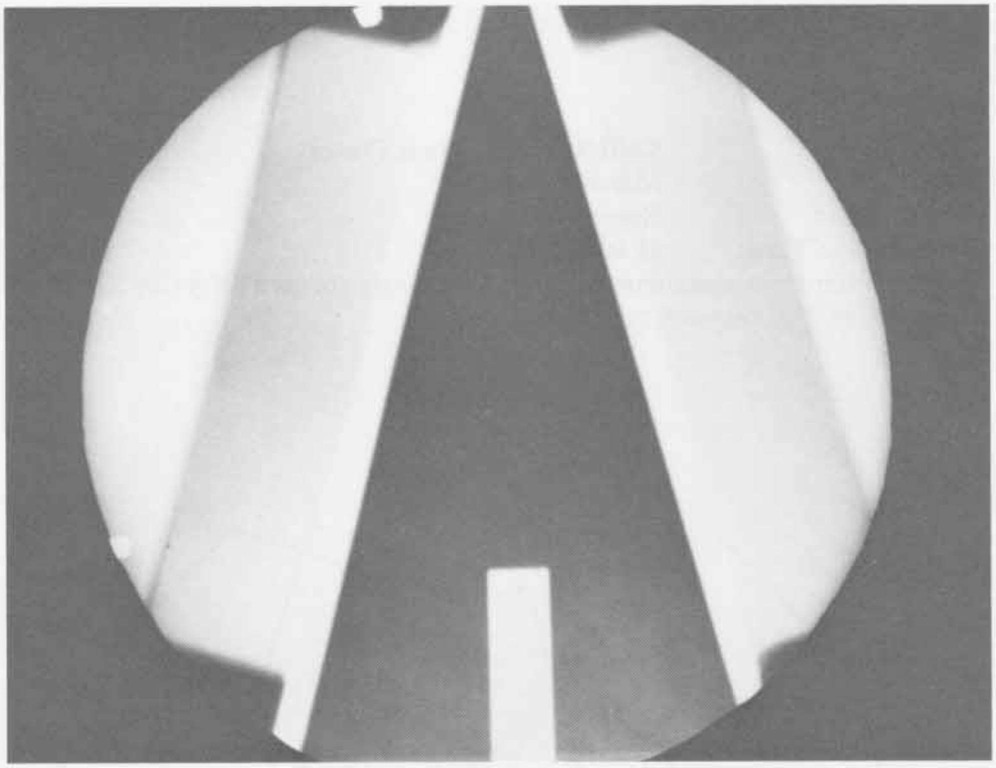


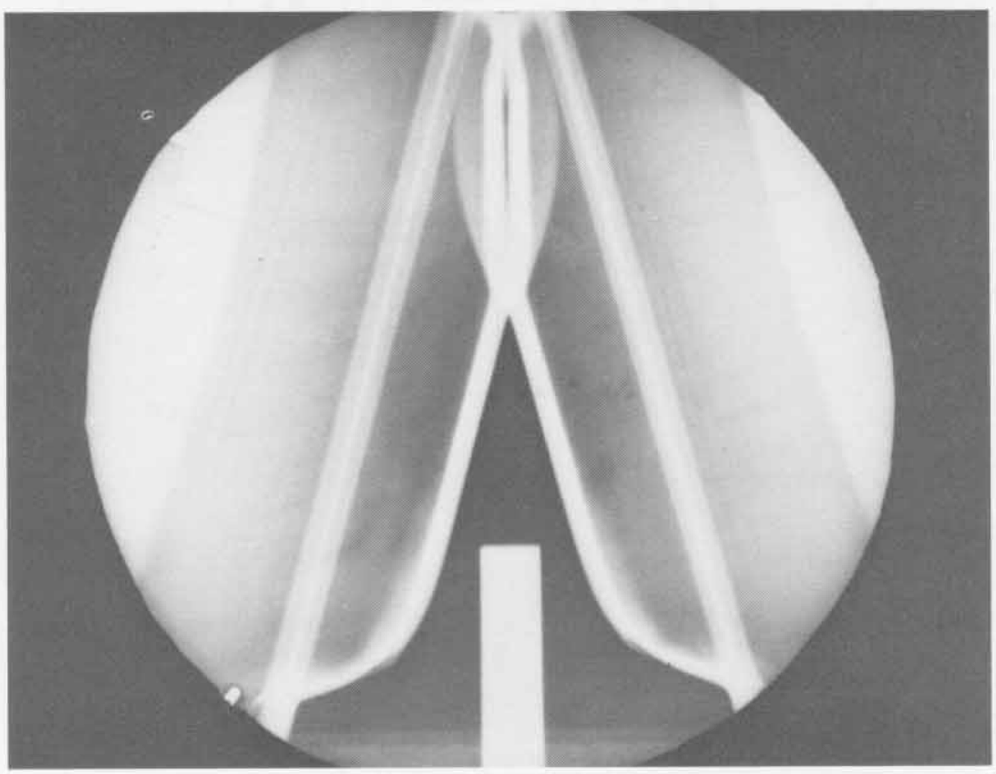


SHOT 689: **Colliding Aluminum Plates**
Date: March 22, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 40.42 μs

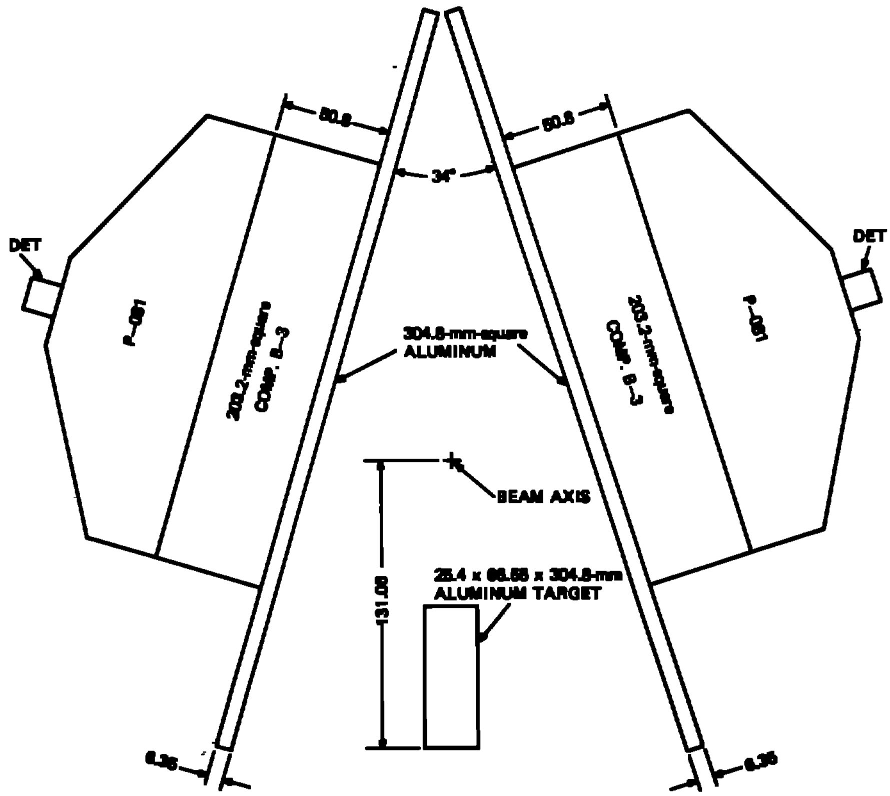
Two 6.35-mm-thick aluminum plates at a 30° angle are each driven by 50.8 mm of Composition B-3 initiated by a P-081 lens.

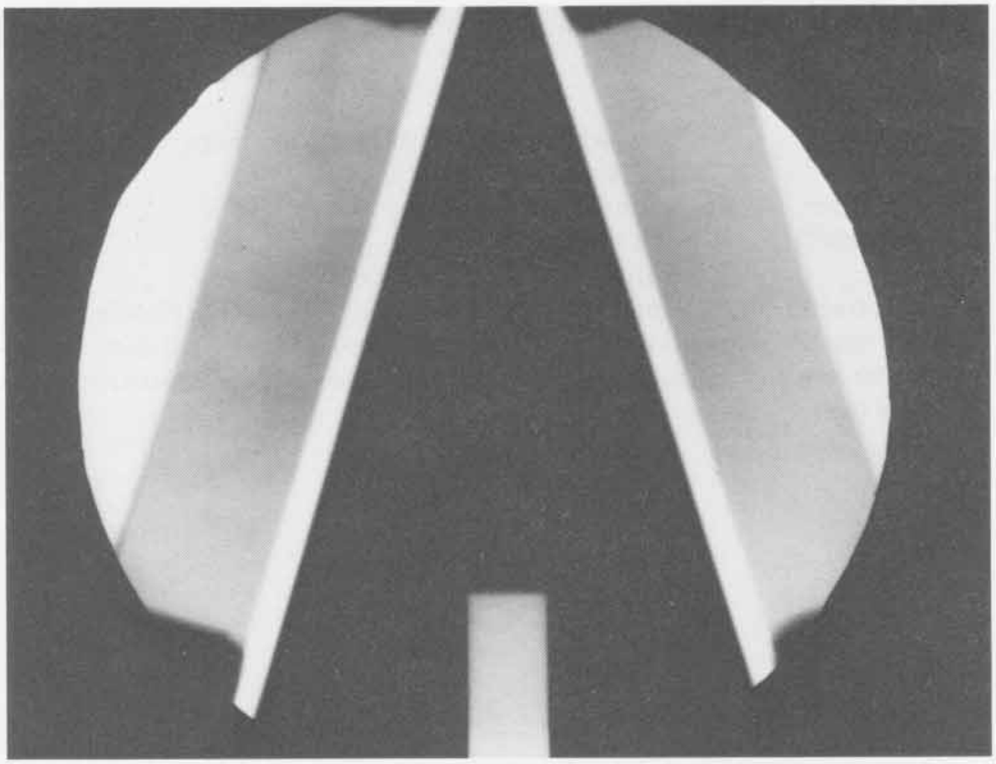


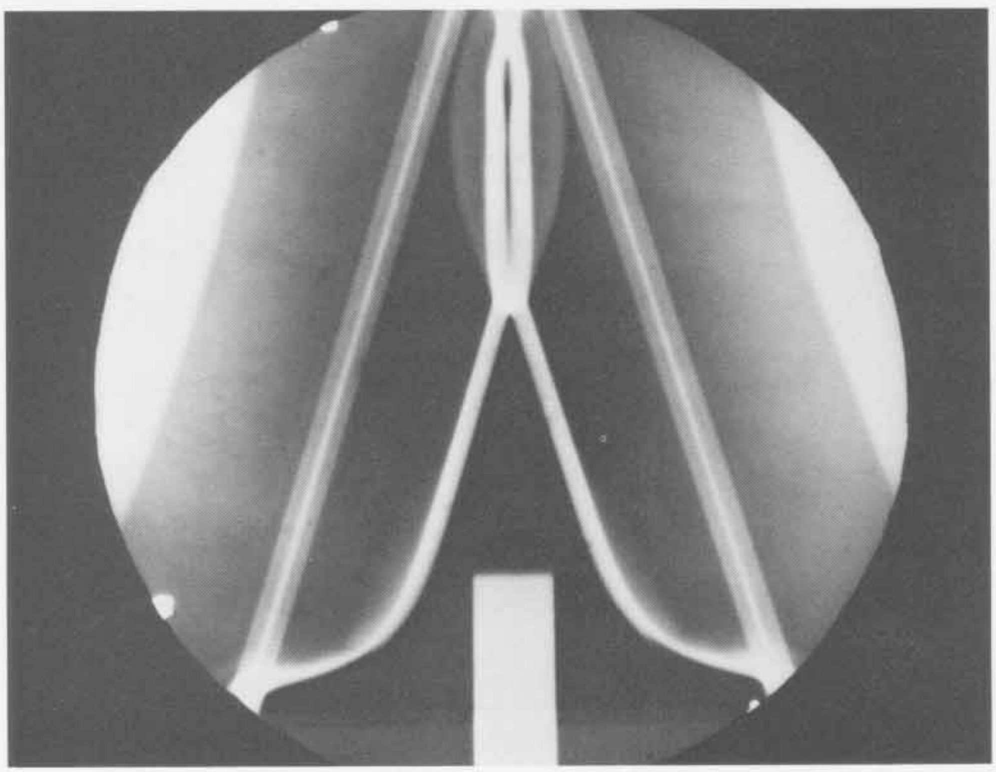




SHOT 690: **Colliding Aluminum Plates**
Date: March 23, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 41.96 μs
Two 6.35-mm-thick aluminum plates at a 34° angle are each driven by 50.8 mm of Composition B-3 initiated by a P-081 lens.

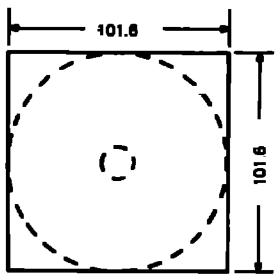


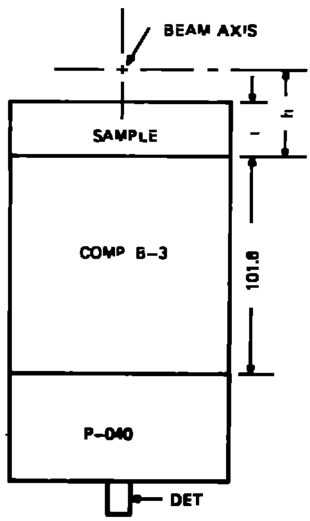


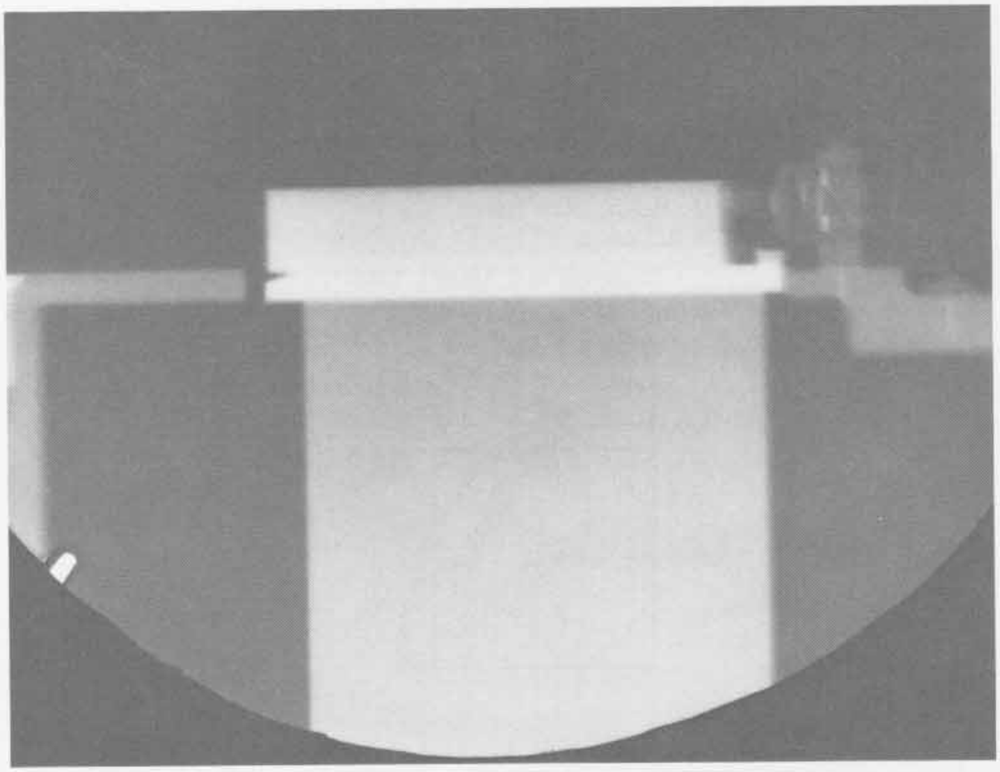


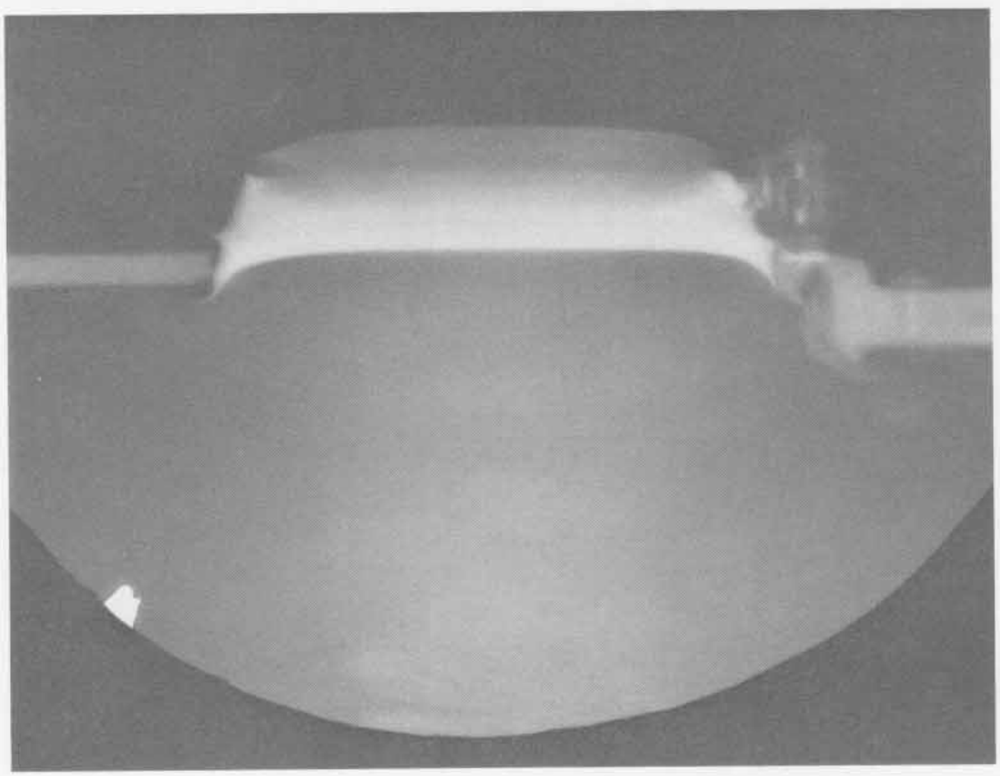
SHOT 691: **Dynamic Fracture of Hot Aluminum**
Date: September 8, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 33.41 μs
Reference: Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, 773 K, 1100 aluminum. The plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm. The apparatus for remotely placing the hot aluminum plate on a 6.35-mm-thick aluminum cap over the Composition B-3 is shown on the right.



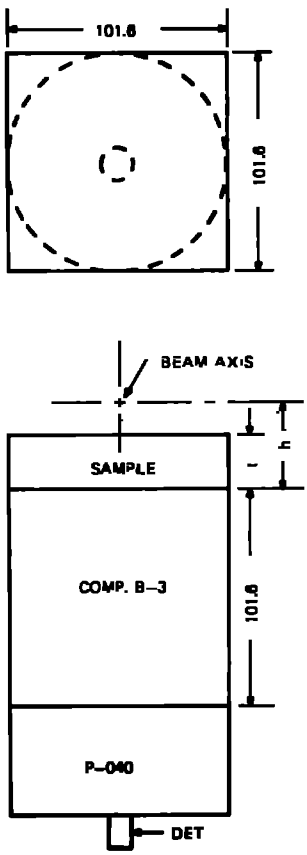


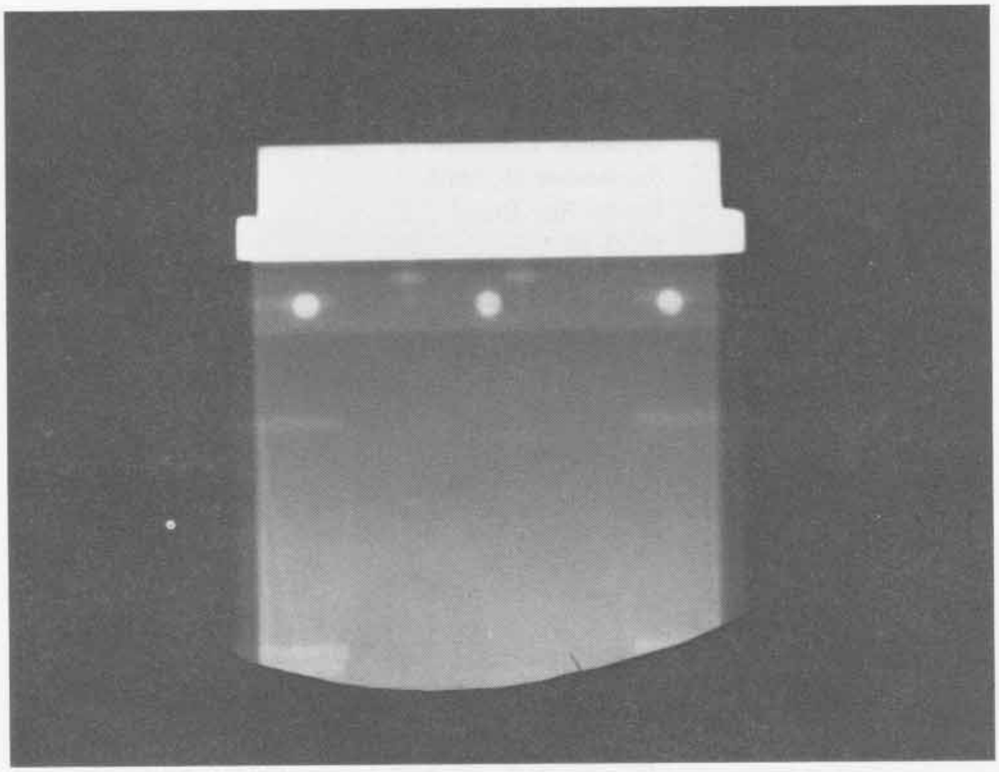


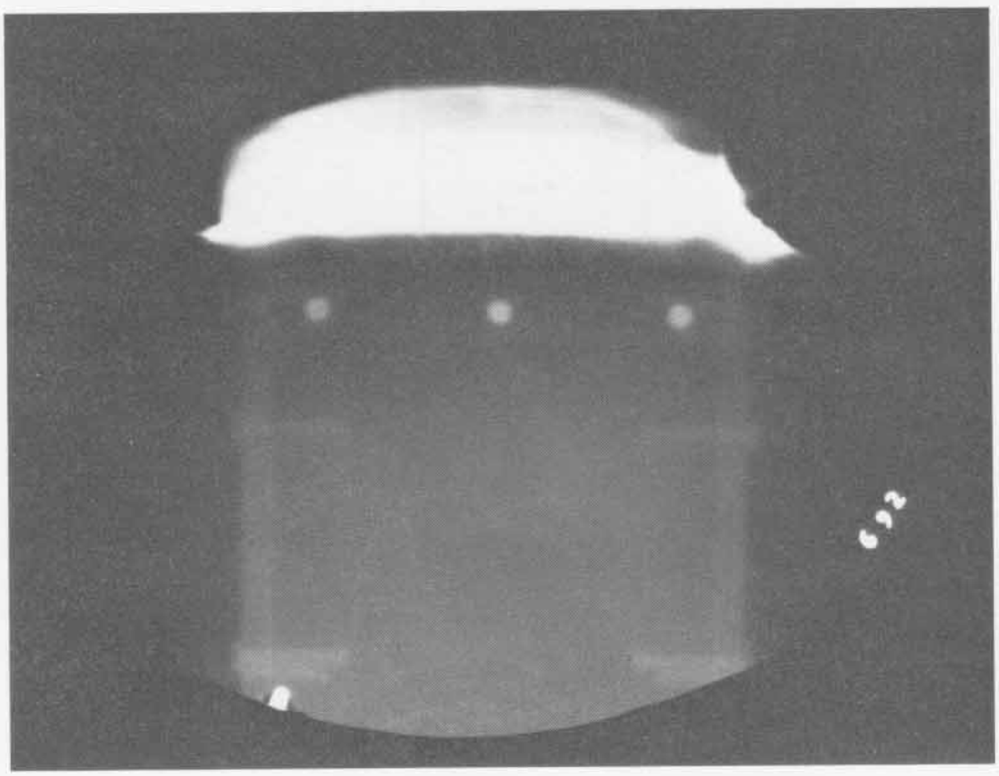


SHOT 692: **Dynamic Fracture of Cold Lead**
Date: August 30, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 43.39 μs
Reference: Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, 78 K lead. The plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 44.5 mm.

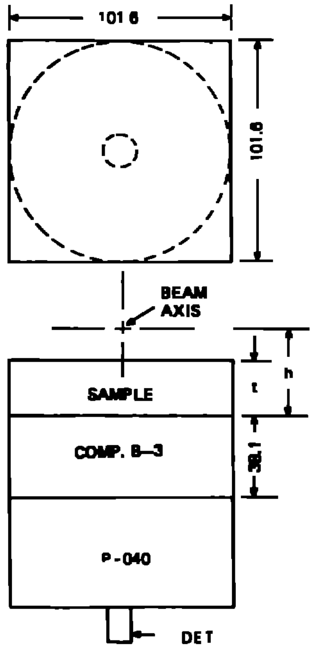


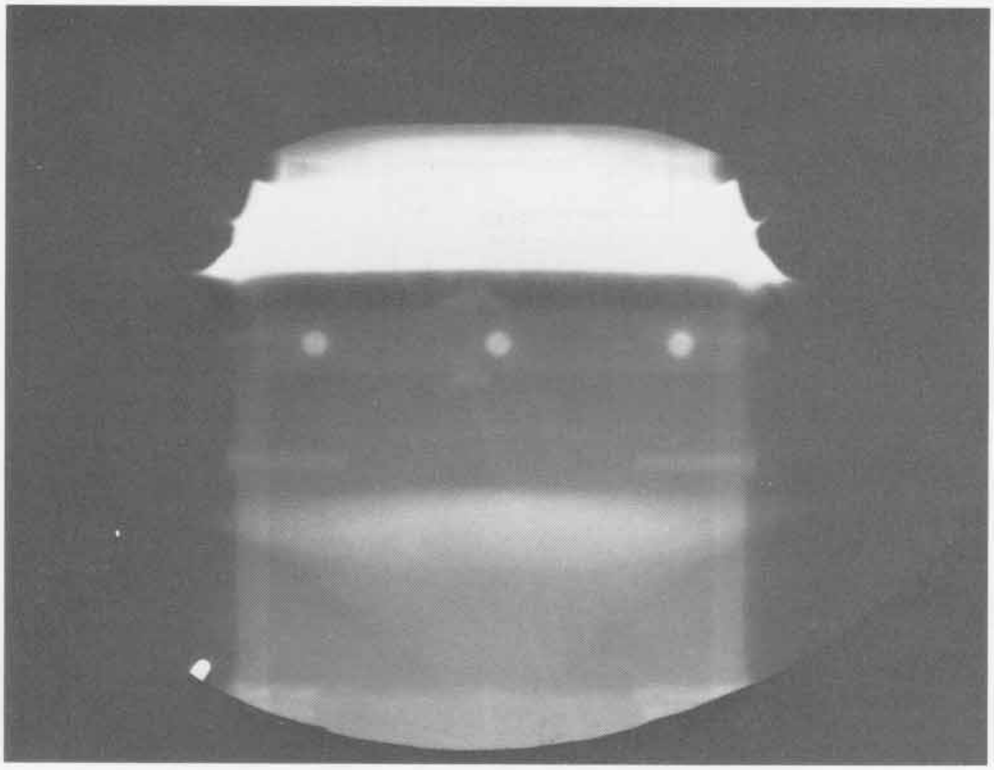




SHOT 693: **Dynamic Fracture of Cold Lead**
Date: September 28, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 35.29 μs
Reference: Thurston and Mudd, 1968

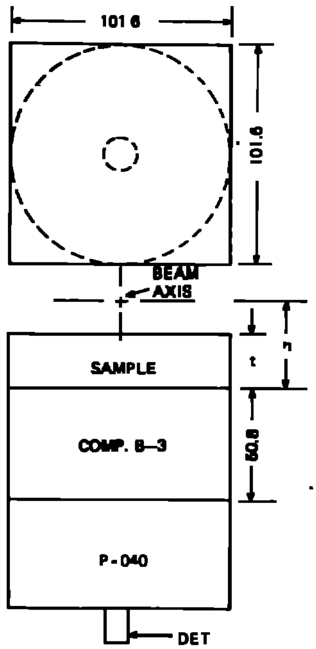
Dynamic fracture of 25.0-mm-thick, t, 78 K lead. The plate is shocked by 38.1 mm of Composition B-3 initiated by a P-040 lens. h is 44.5 mm.

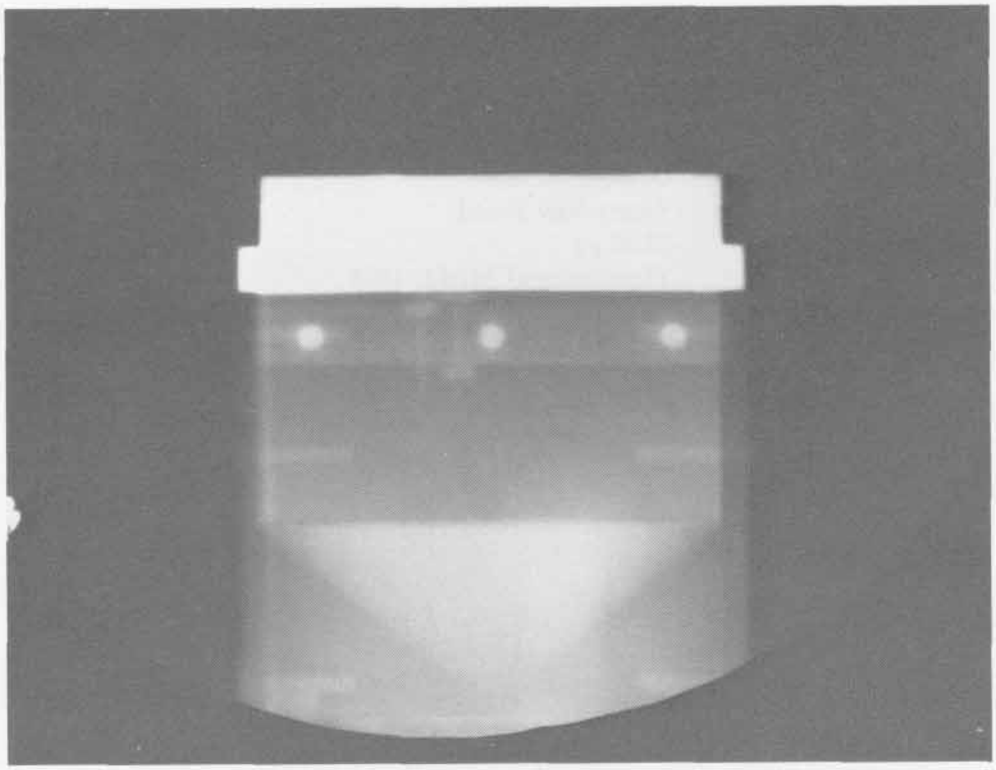


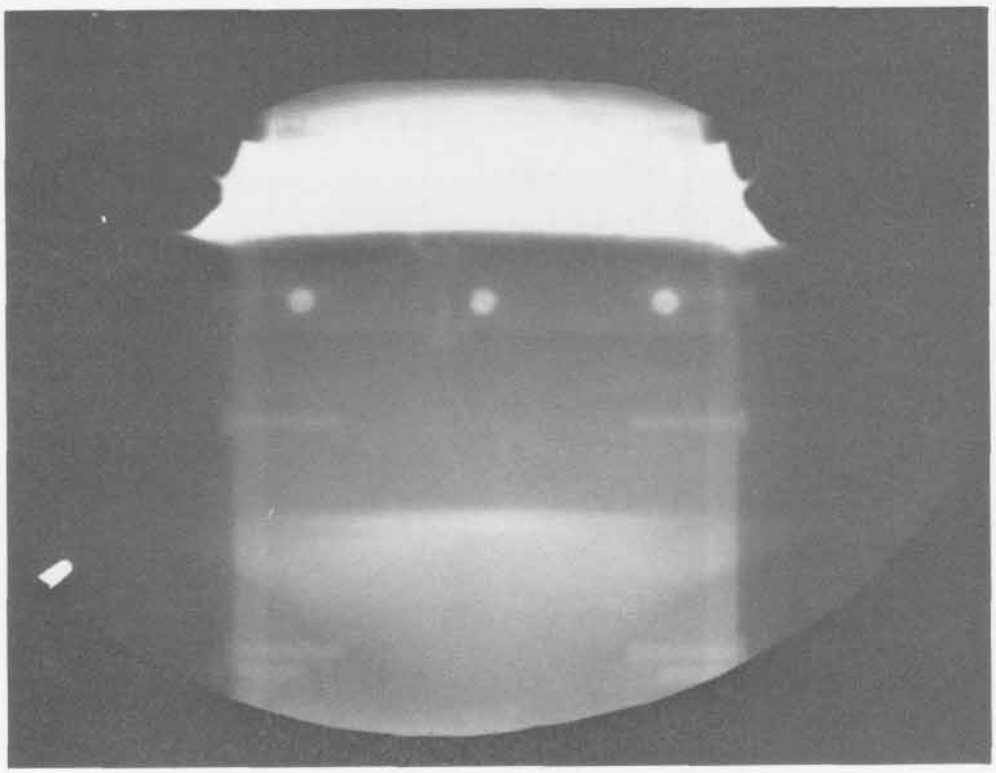


SHOT 694:	**Dynamic Fracture of Cold Lead**
Date:	September 29, 1966
Experimenter:	Benny Ray Breed
Radiographic Time:	36.99 μs
Reference:	Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, 78 K lead. The plate is shocked by 50.8 mm of Composition B-3 initiated by a P-040 lens. h is 44.5 mm.

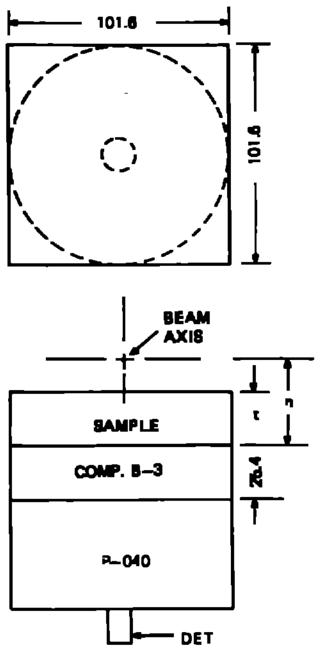


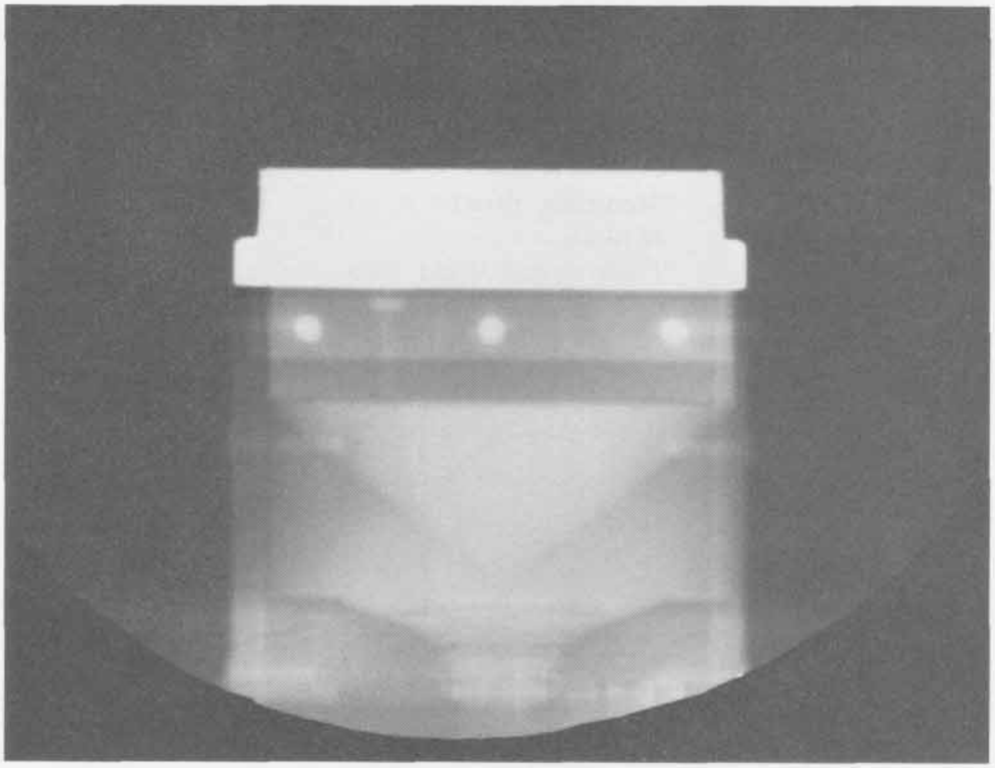


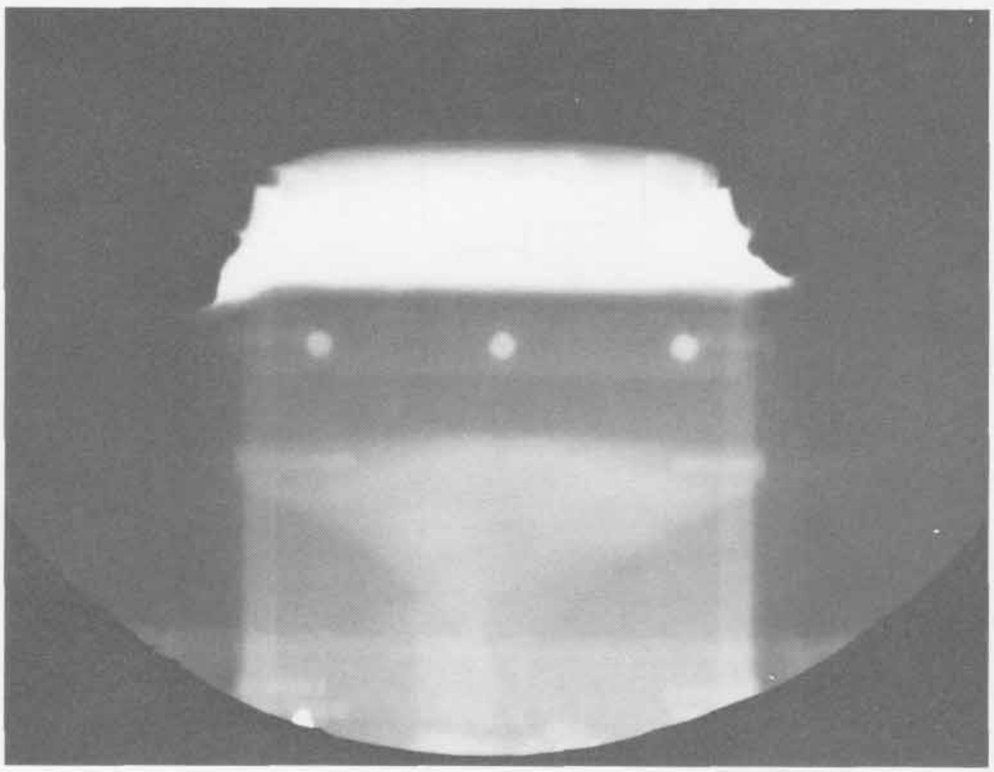


SHOT 695: **Dynamic Fracture of Cold Lead**
Date: October 5, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 33.83 μs
Reference: Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, 78 K lead. The plate is shocked by 25.4 mm of Composition B-3 initiated by a P-040 lens. h is 44.5 mm.

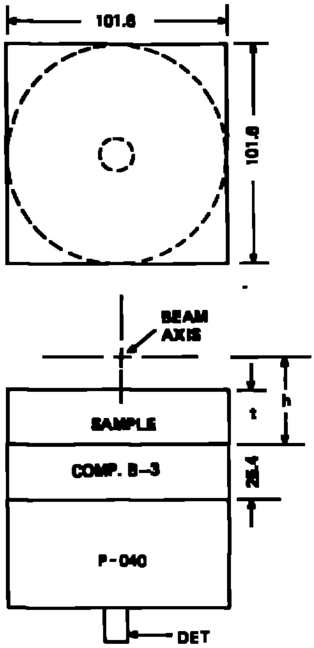


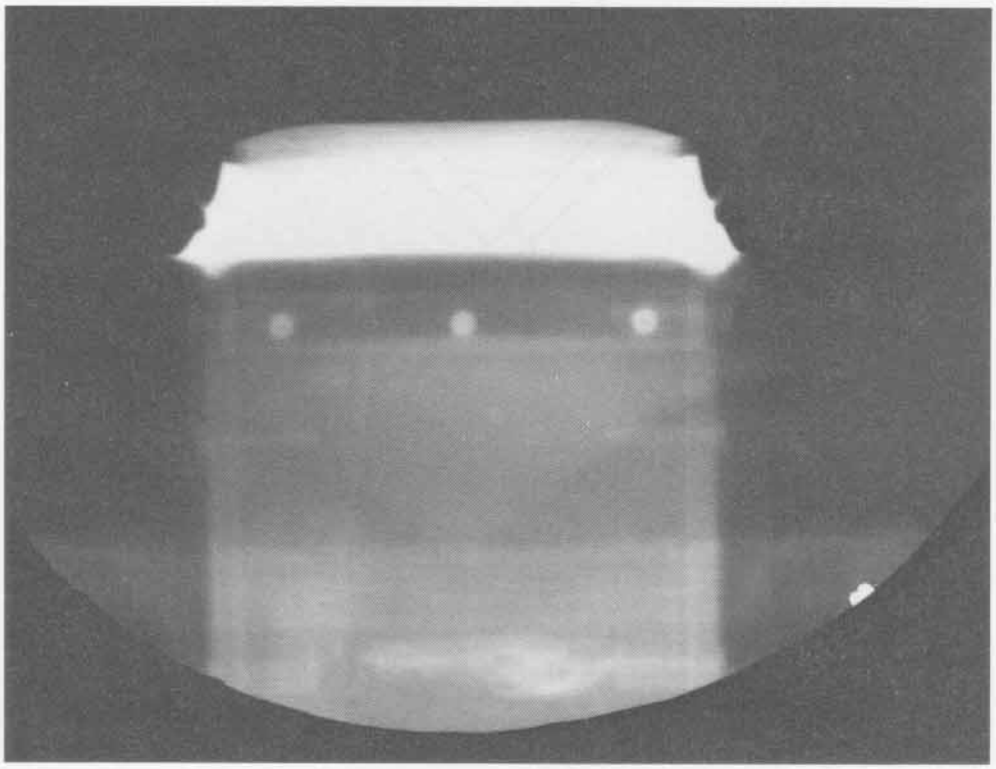




SHOT 696: **Dynamic Fracture of Cold Lead**
Date: October 5, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 32.19 μs
Reference: Thurston and Mudd, 1968

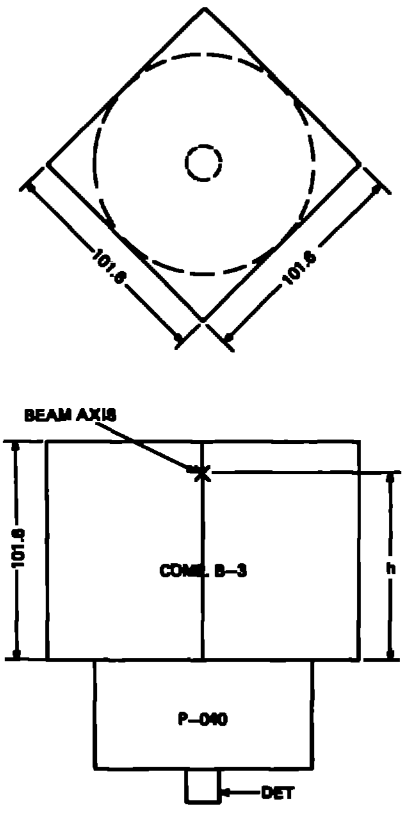
Dynamic fracture of 25.0-mm-thick, t, 78 K lead. The plate is shocked by 25.4 mm of Composition B-3 initiated by a P-040 lens. h is 44.5 mm.

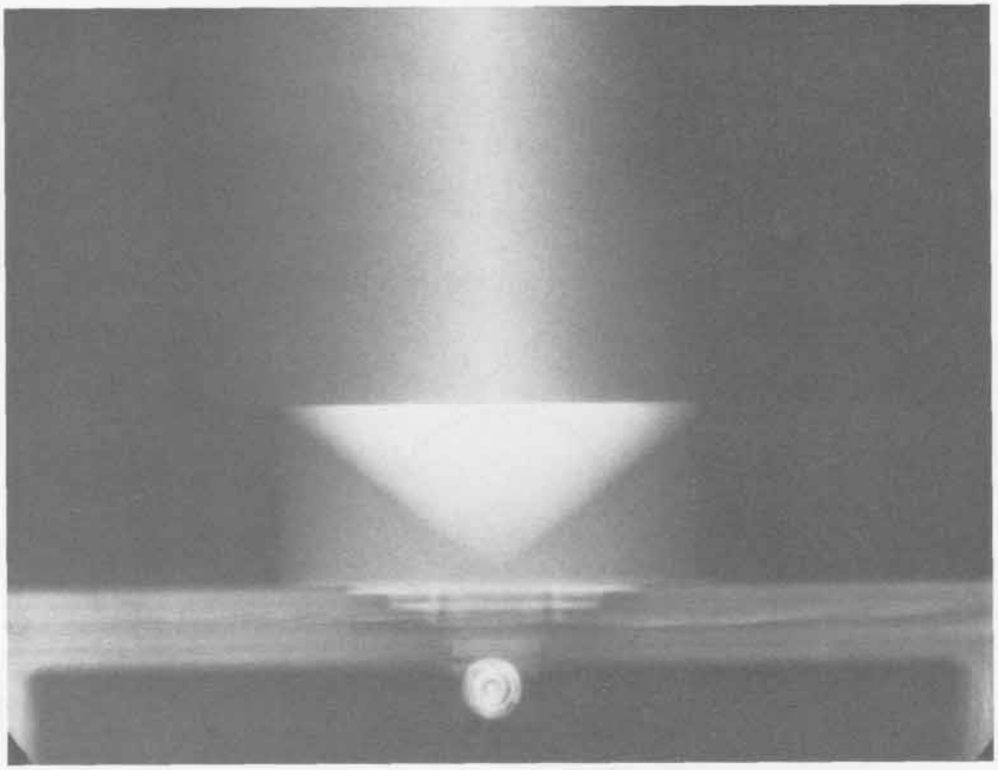


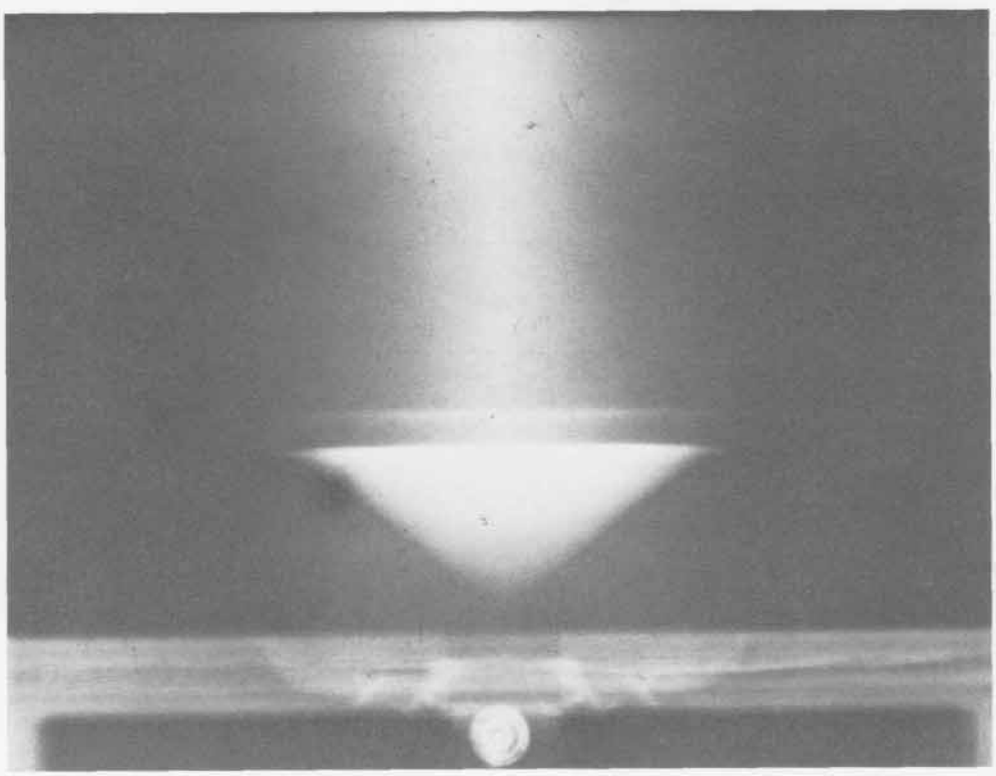


SHOT 697: **Composition B-3 Detonation Wave**
Date: August 16, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 14.78 μs

A 101.6-mm cube of Composition B-3 initiated by a P-040 lens and viewed edge-on. h is 10.31 mm.

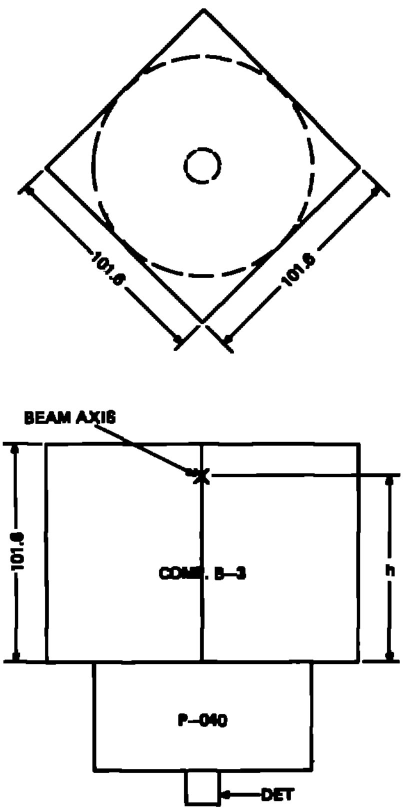


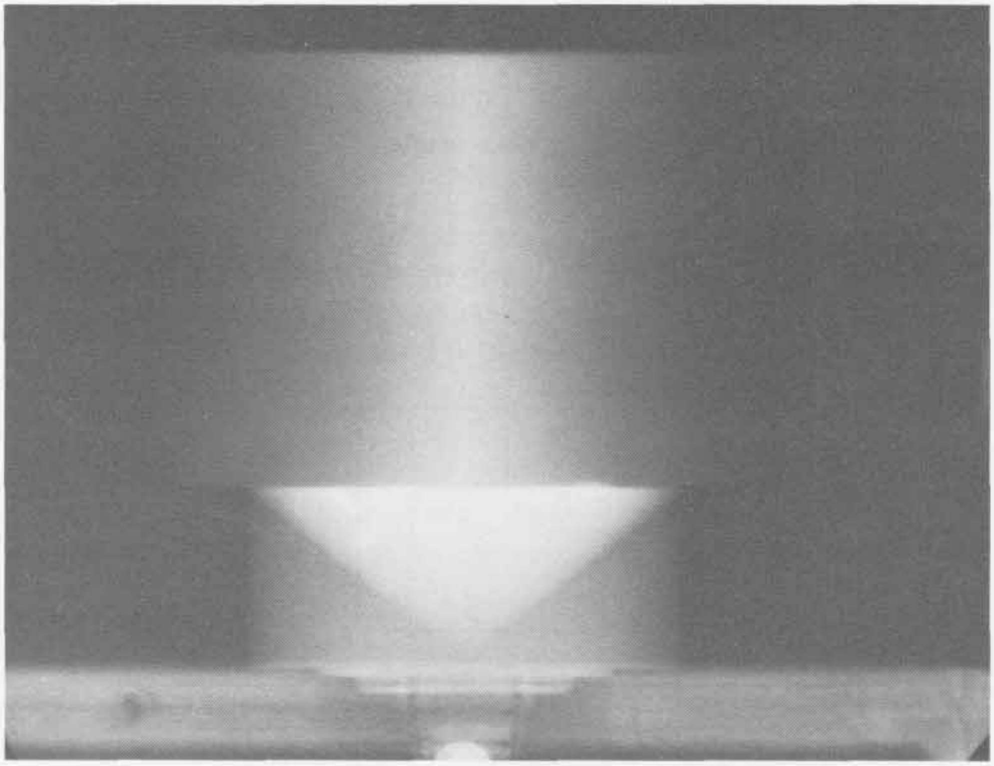


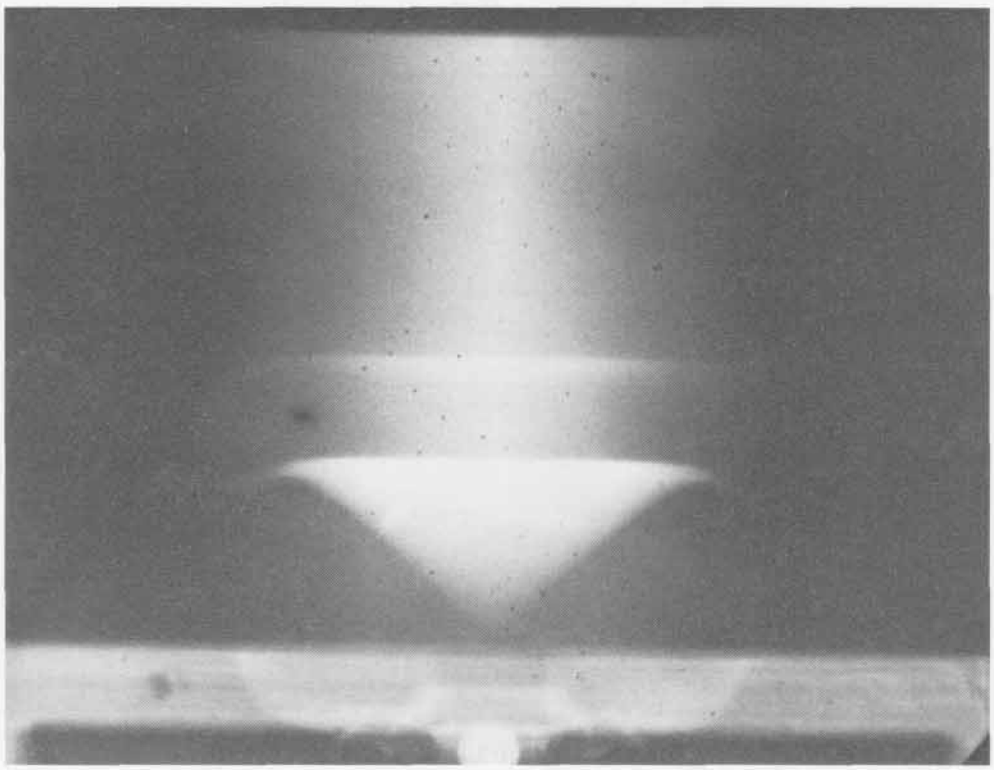


SHOT 698: **Composition B-3 Detonation Wave**
Date: August 17, 1966
Experimenter: Jack N. Hardwick
Radiographic Time: 16.86 μs

A 101.6-mm cube of Composition B-3 initiated by a P-040 lens and viewed edge-on. h is 26.19 mm.

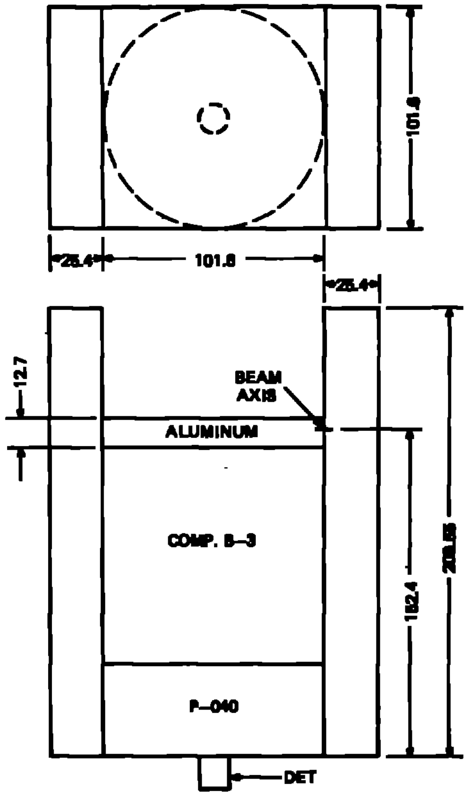


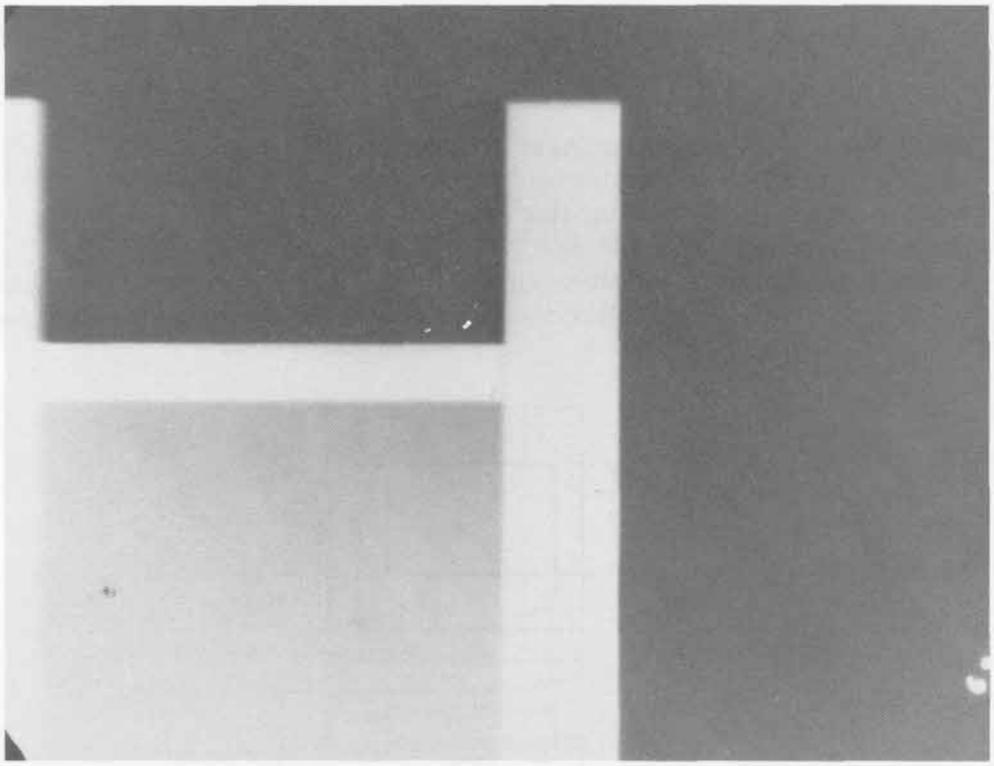


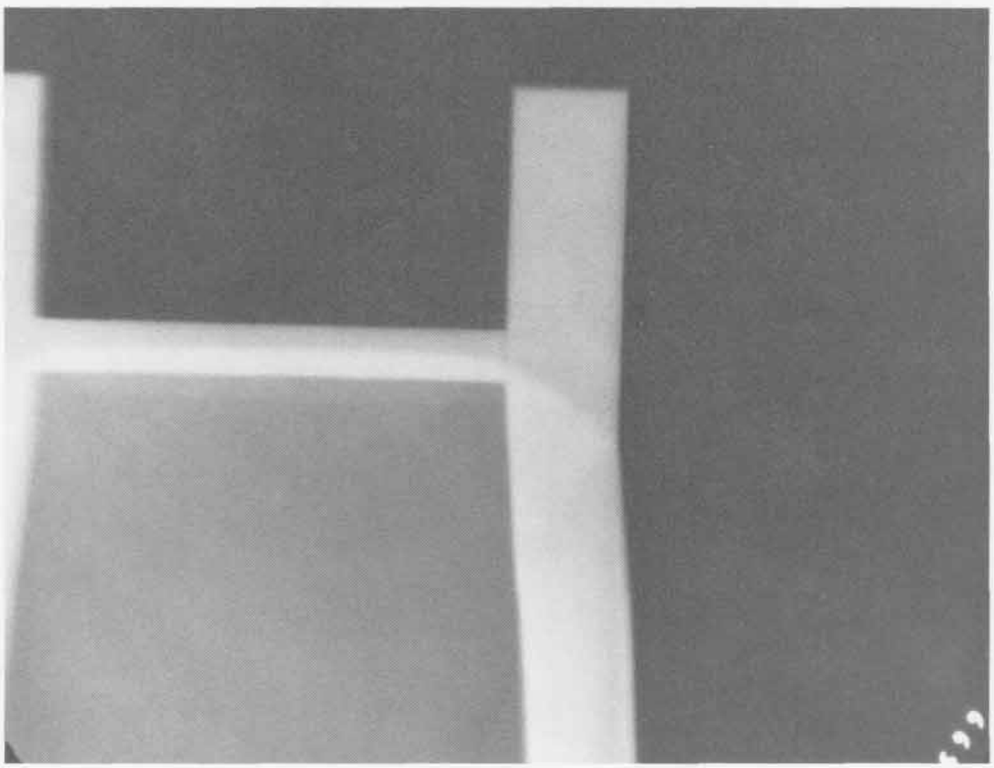


SHOT 699: **Metal Interface Motion**
Date: September 13, 1966
Experimenter: Roger W. Taylor
Radiographic Time: 27.47 μs

A study of the movement of a shocked 12.7-mm-thick aluminum plate moving perpendicular to two 25.4-mm-thick aluminum plates. The plates are driven by 101.6 mm of Composition B-3 initiated by a P-040 lens.

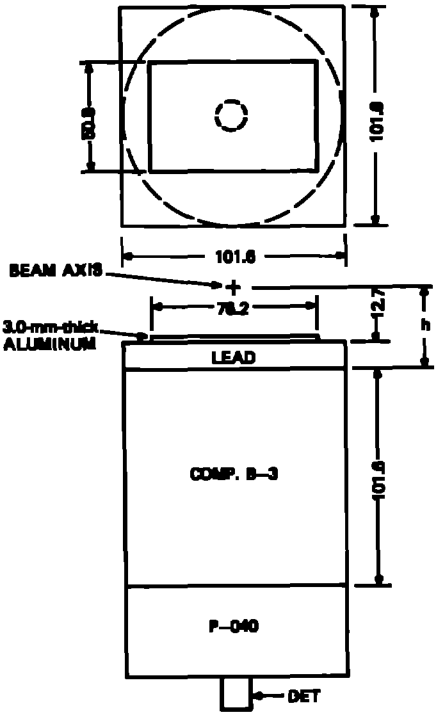


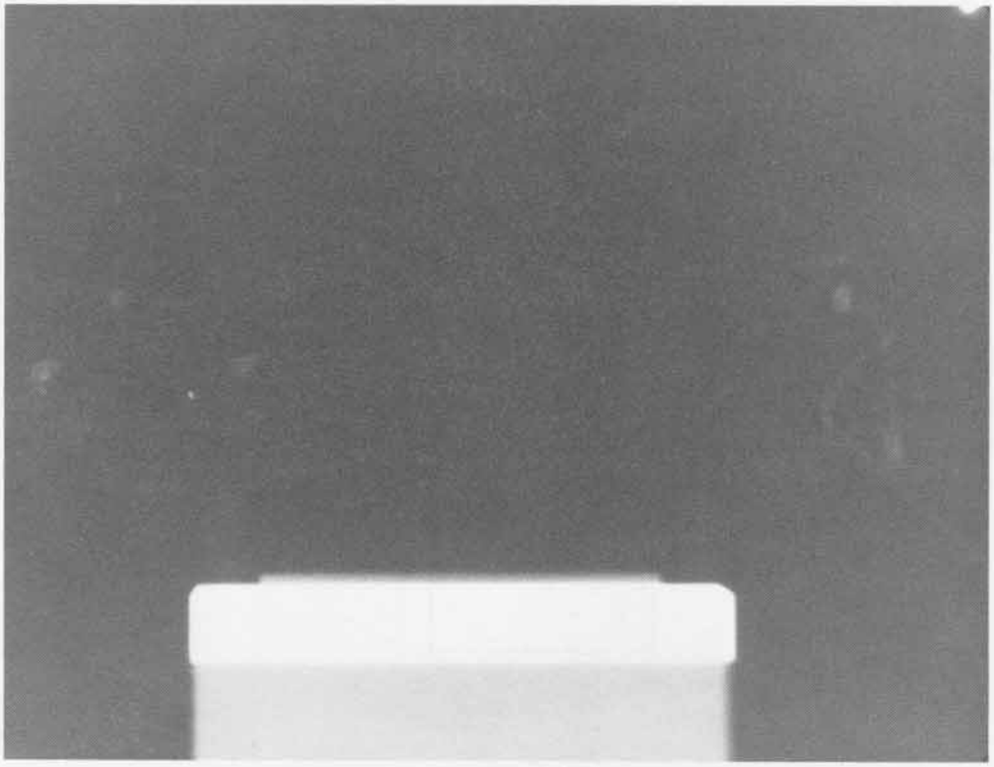


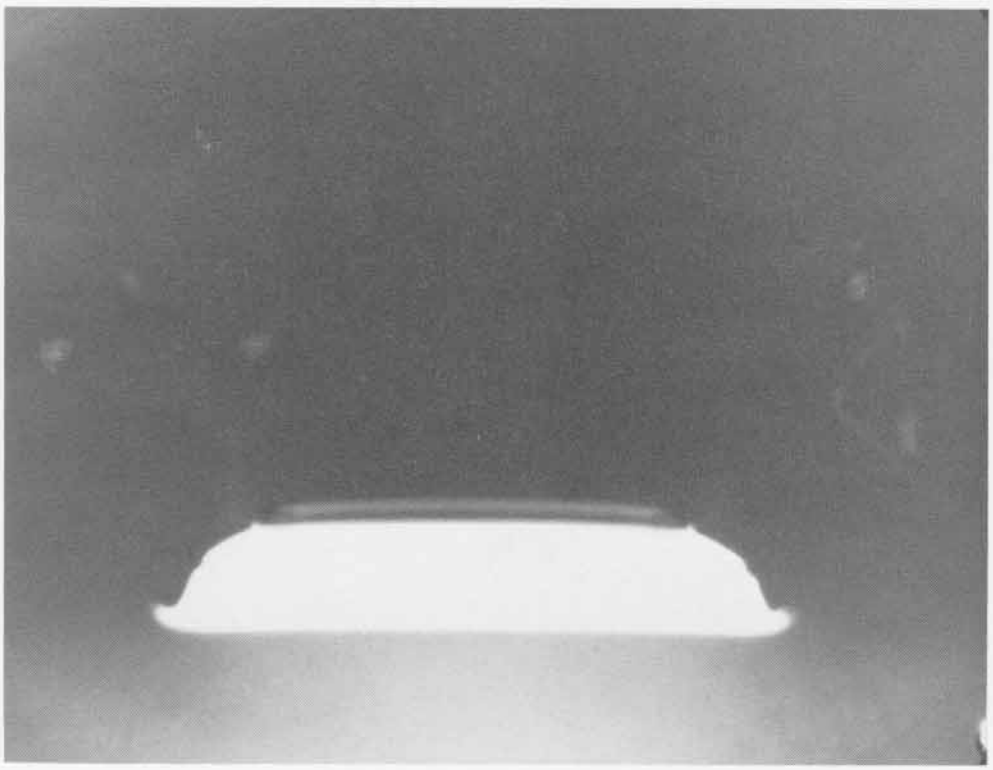


SHOT 700: **Aluminum Flying Plate**
Date: September 7, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 35.18 μs

A 3.0-mm-thick aluminum plate is initially shocked by a system of 12.7-mm-thick lead and 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 50.8 mm. See Shots 706, 707, and 710.

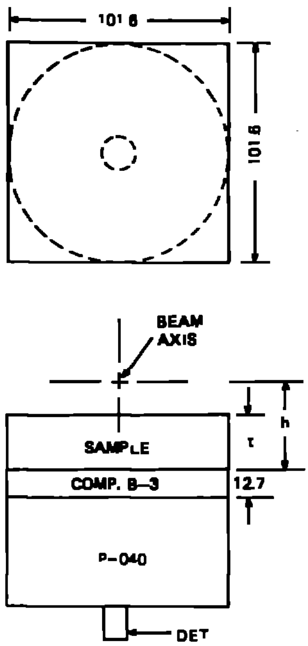


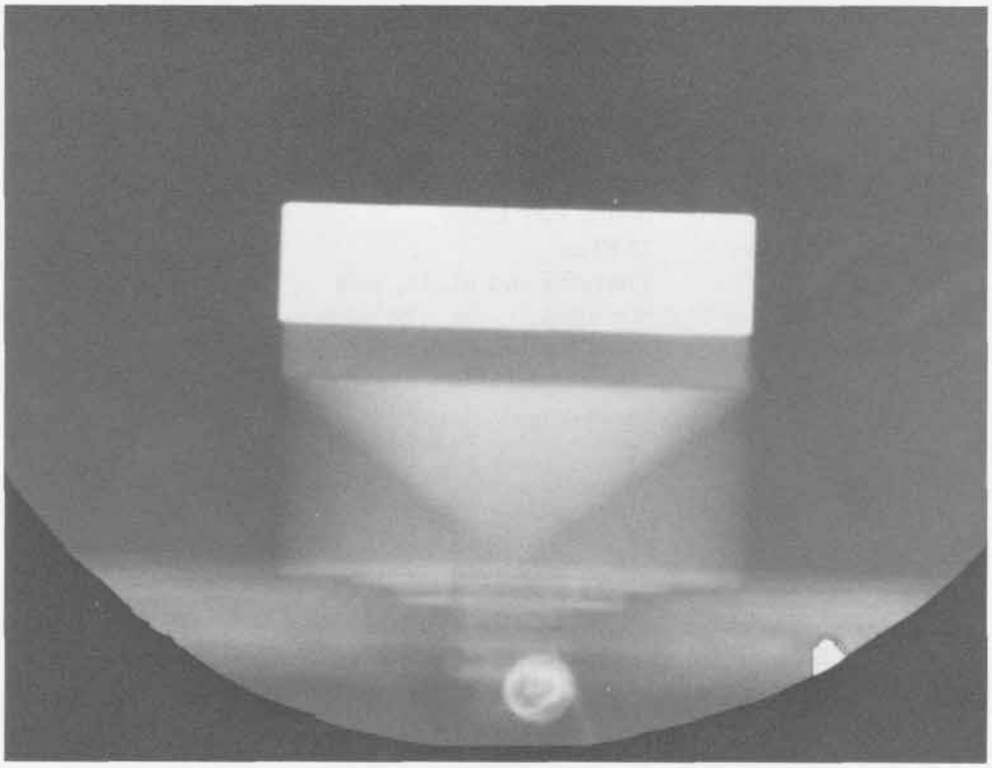


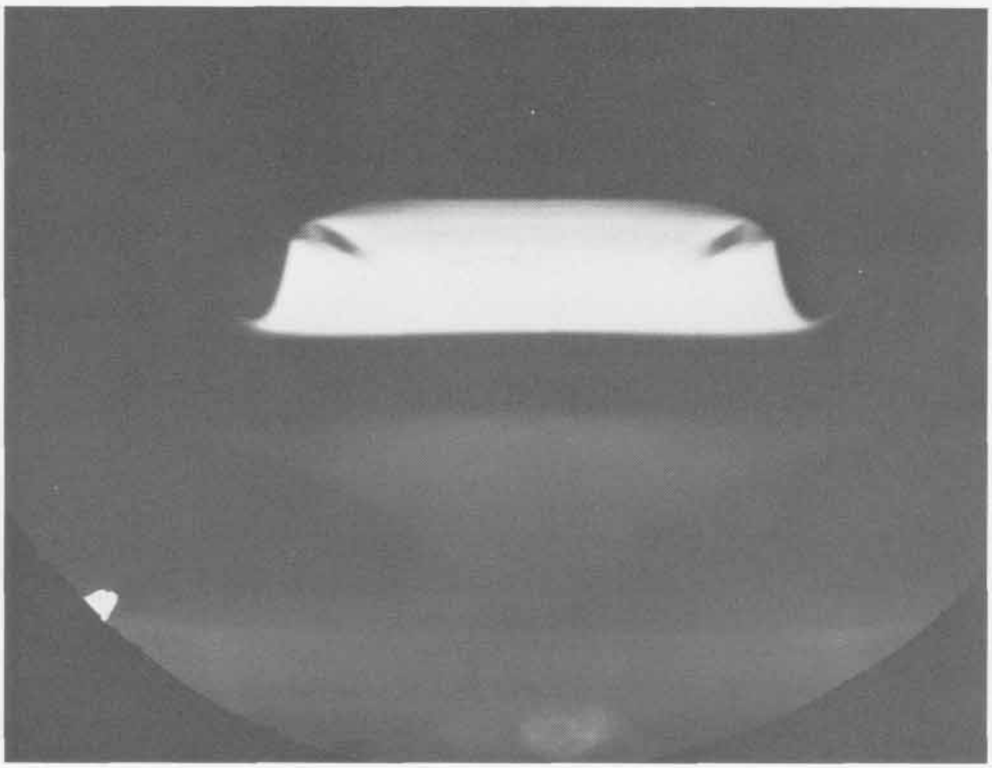


SHOT 701: **Dynamic Fracture of Tin**
Date: February 7, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 29.61 μs
Reference: Thurston and Mudd, 1968

Dynamic fracture of 25.07-mm-thick, t, tin. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 50.8 mm.

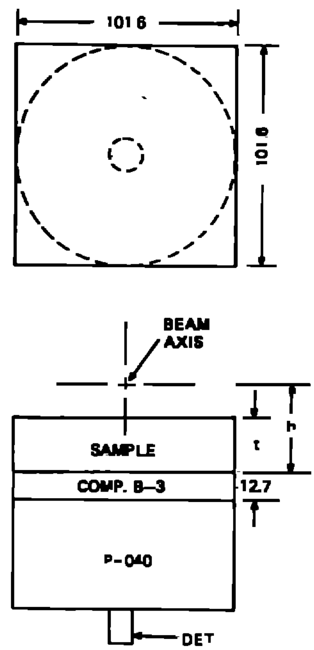


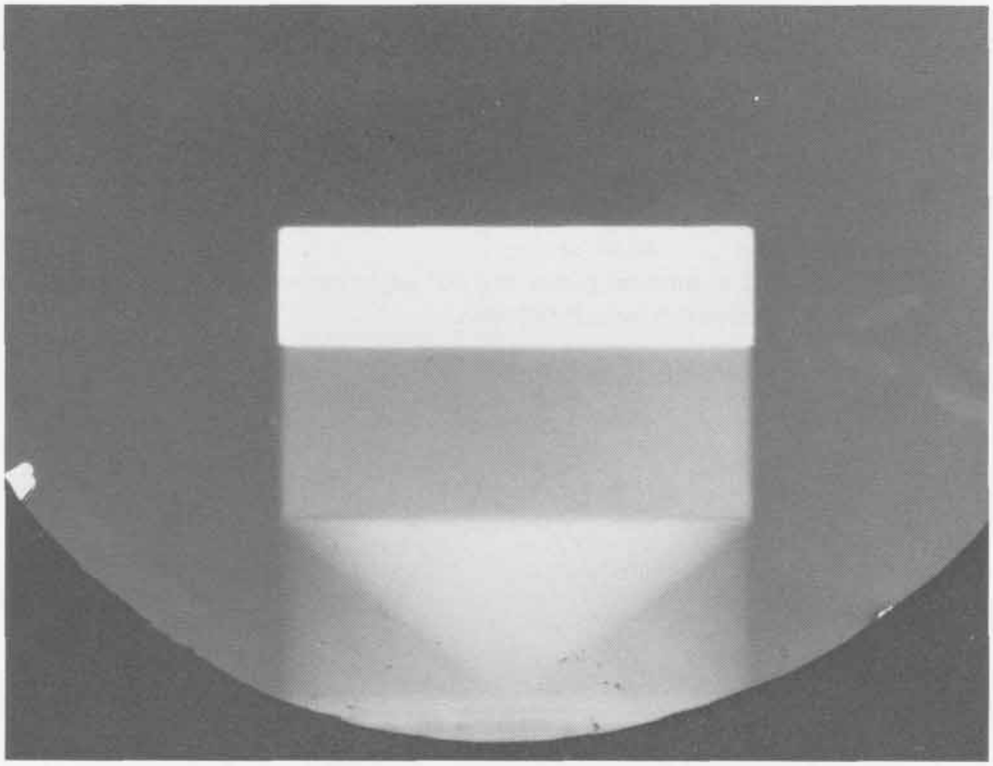


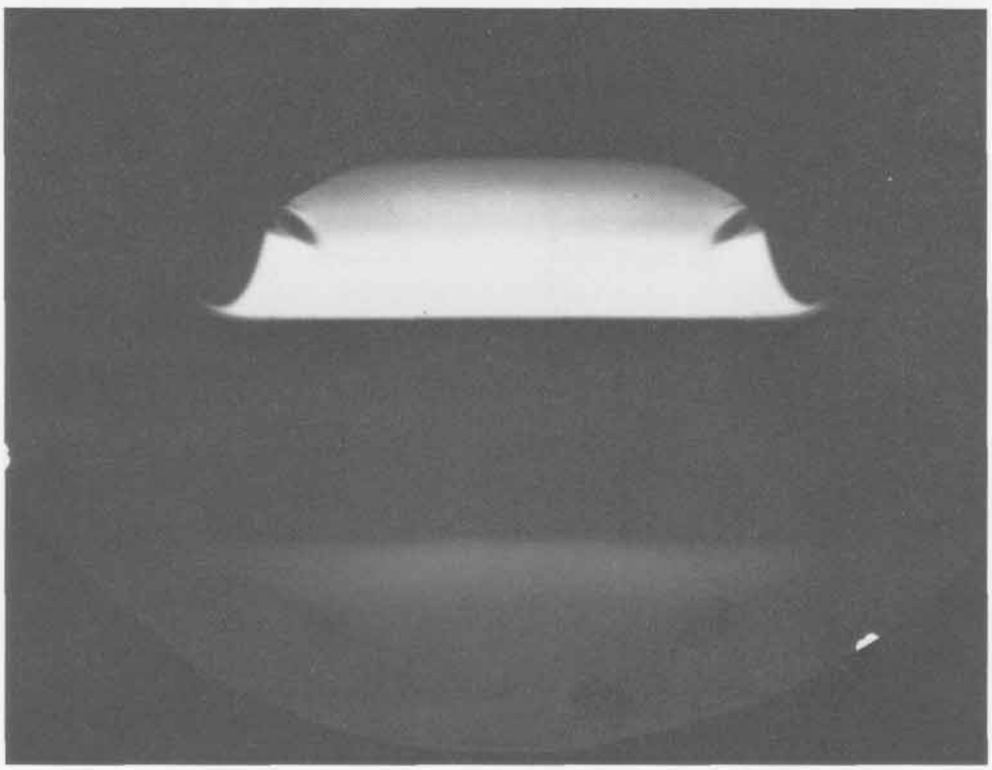


SHOT 702: **Dynamic Fracture of Tin**
Date: February 8, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 33.82 μs
Reference: Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, tin. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 50.8 mm.

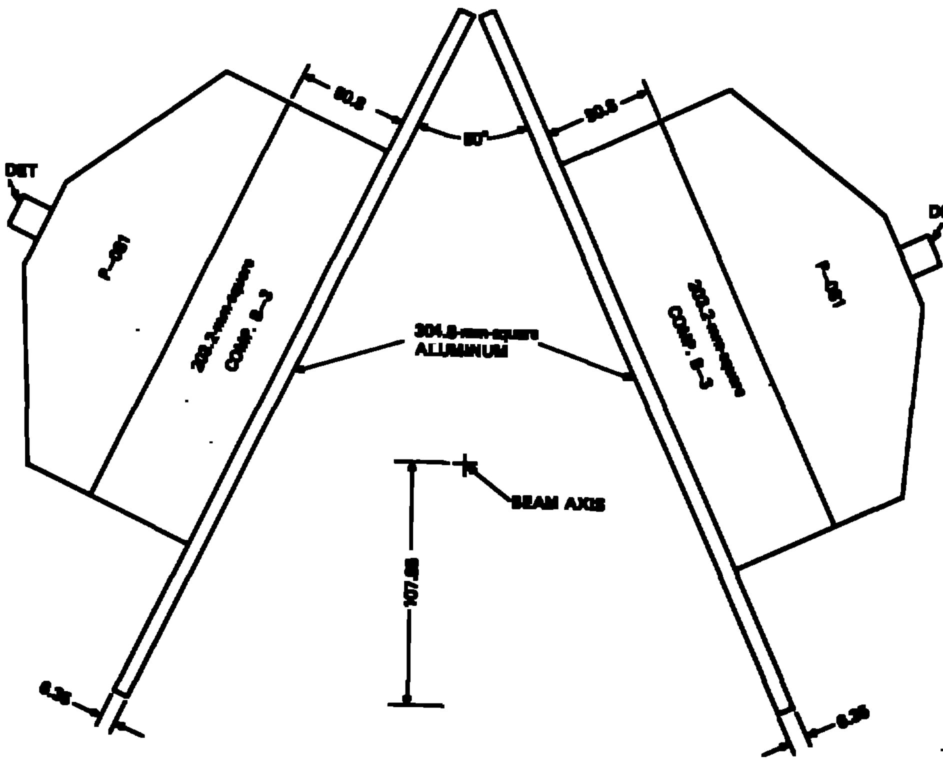


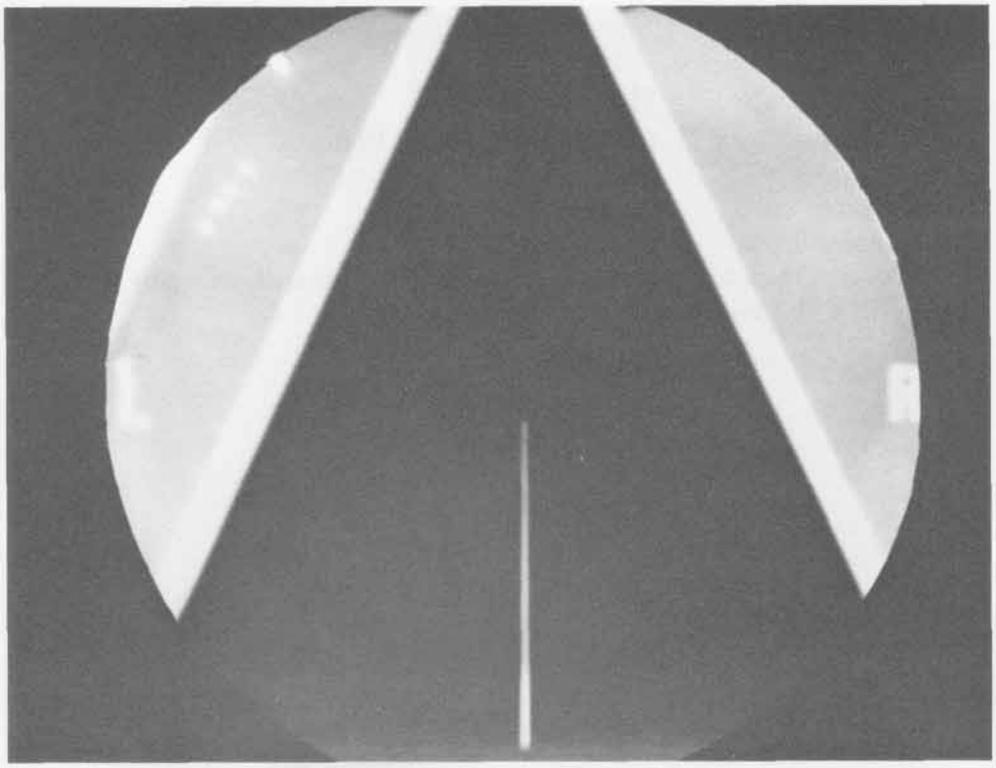


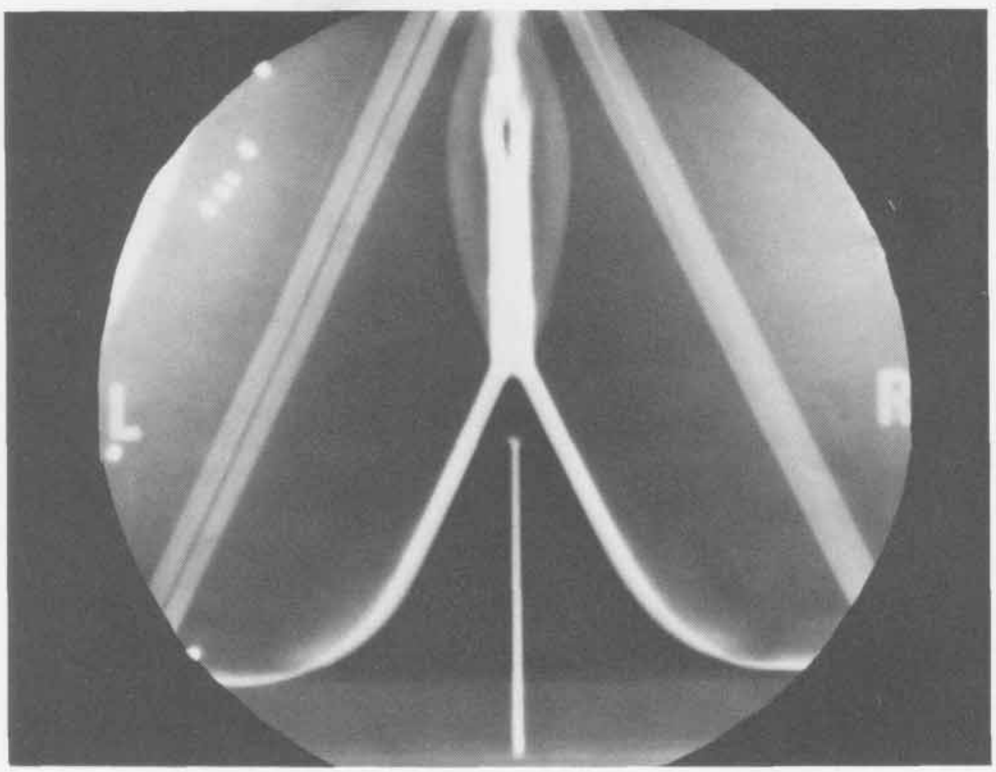


SHOT 704: Colliding Aluminum Plates
Date: April 6, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 48.35 μs

Two 6.35-mm-thick aluminum plates at a 50° angle are each driven by 50.8 mm of Composition B-3 initiated by a P-081 lens.

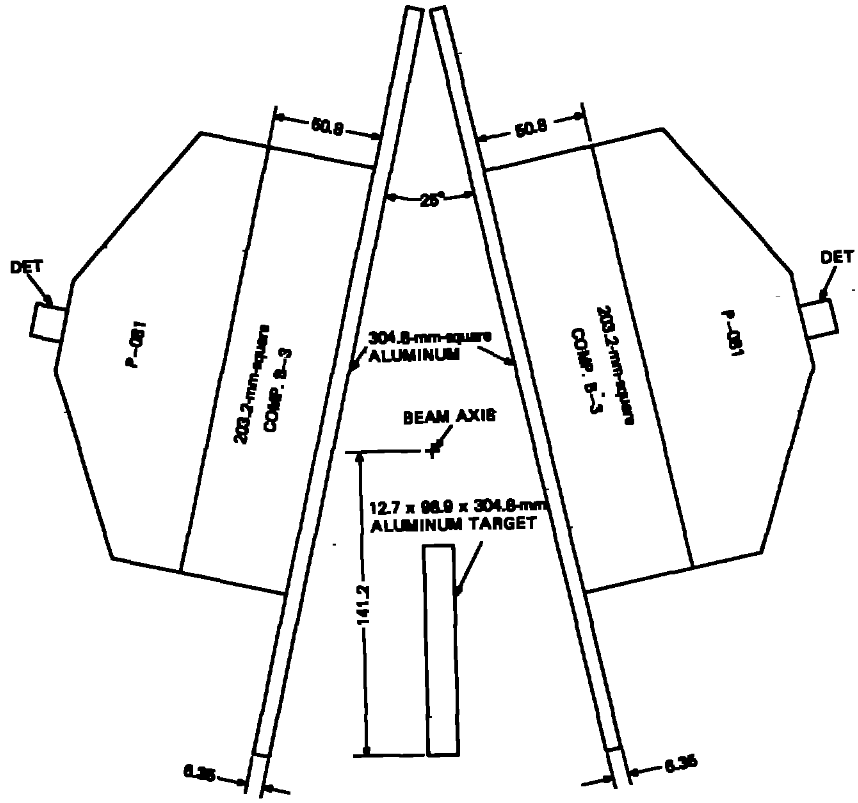


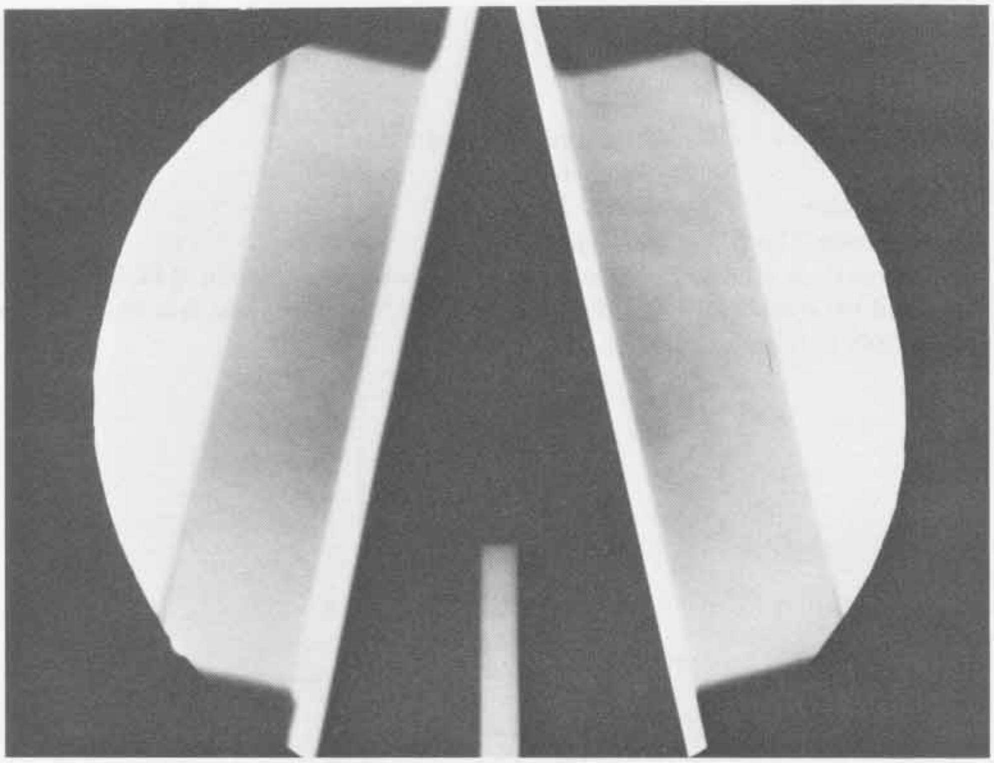

L
R

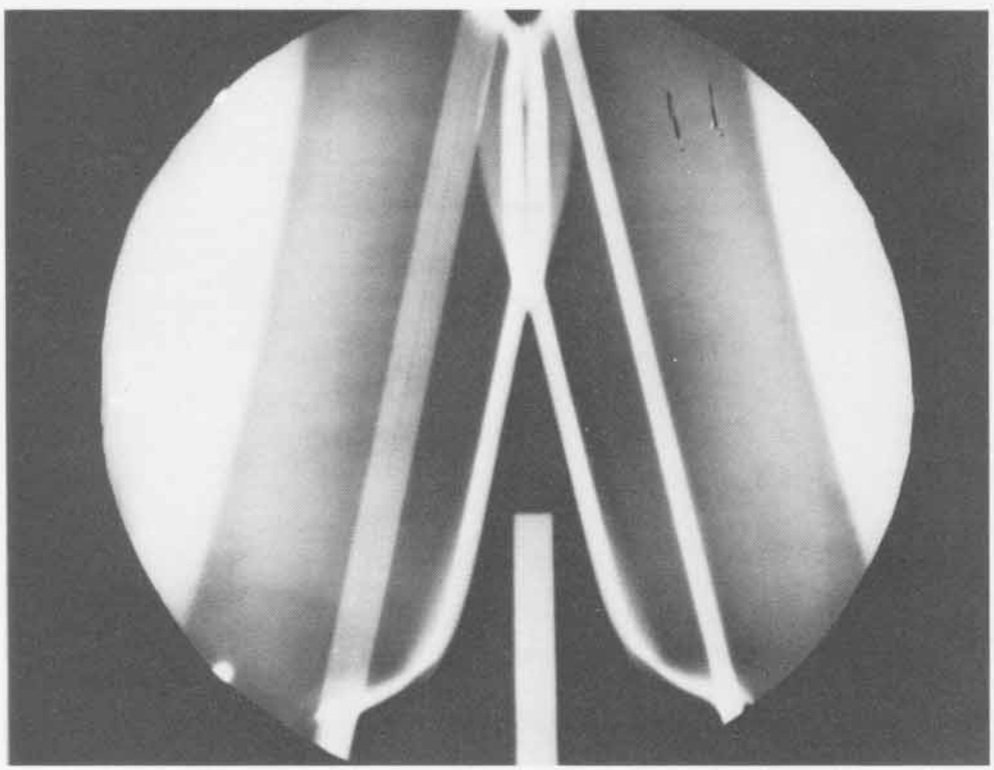

L
R

SHOT 705: **Colliding Aluminum Plates**
Date: April 6, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 38.67 μs

Two 6.35-mm-thick aluminum plates at a 25° angle are each driven by 50.8 mm of Composition B-3 initiated by a P-081 lens.

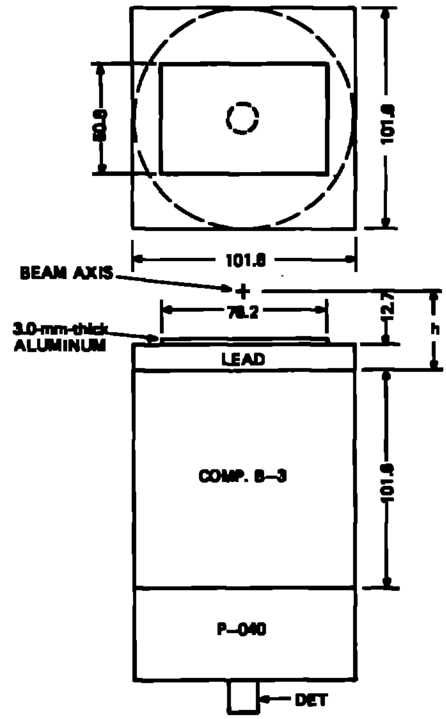


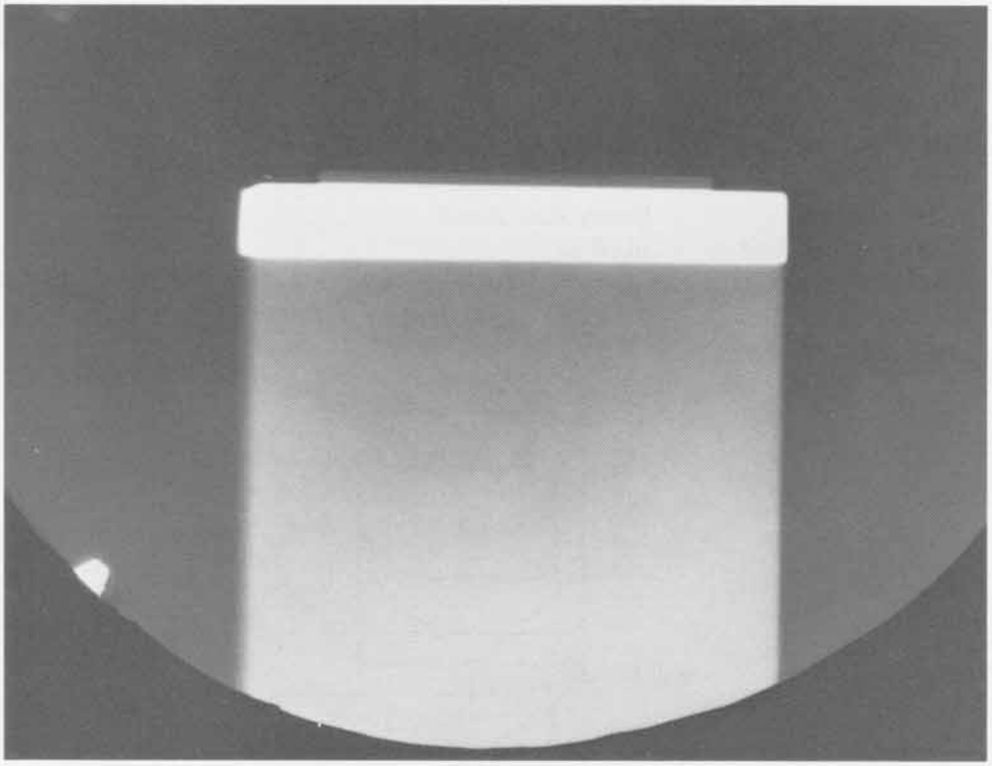


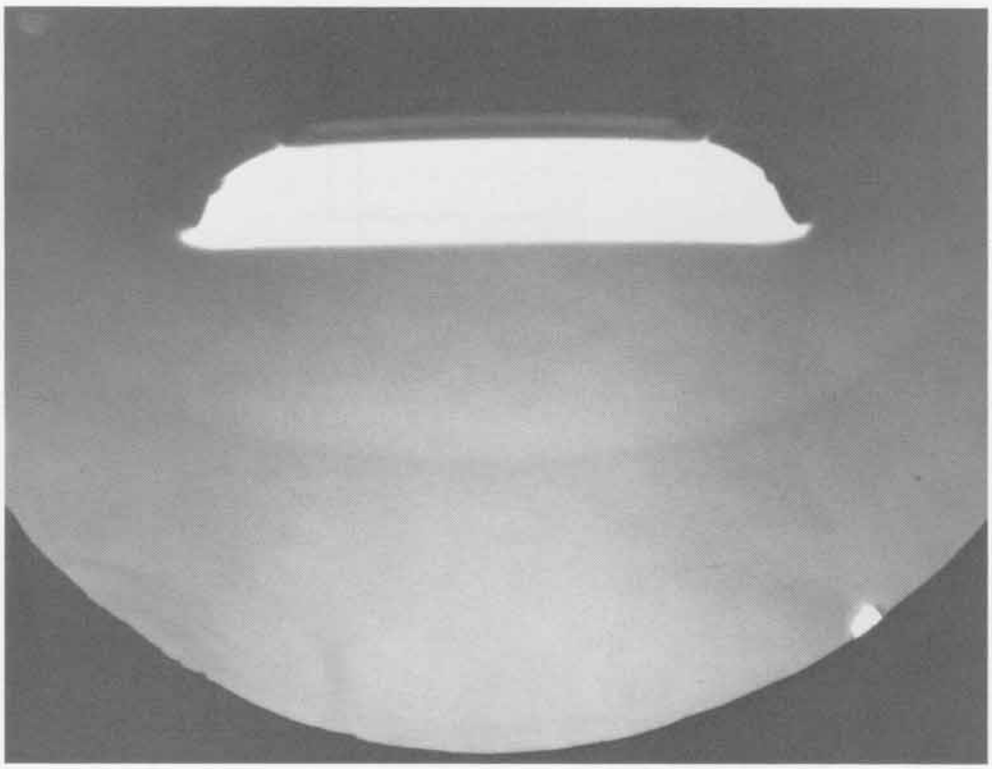


SHOT 706: **Aluminum Flying Plate**
Date: October 12, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 35.19 μs

A 3.0-mm-thick aluminum plate is initially shocked by a system of 12.7-mm-thick lead and 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 28.5 mm. See Shots 700, 707, and 710.

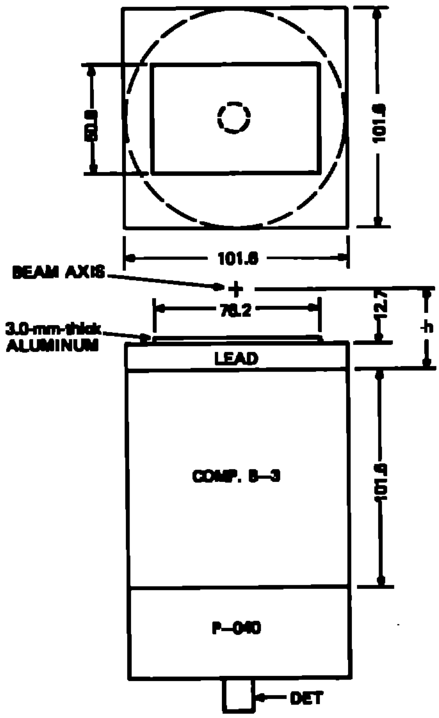


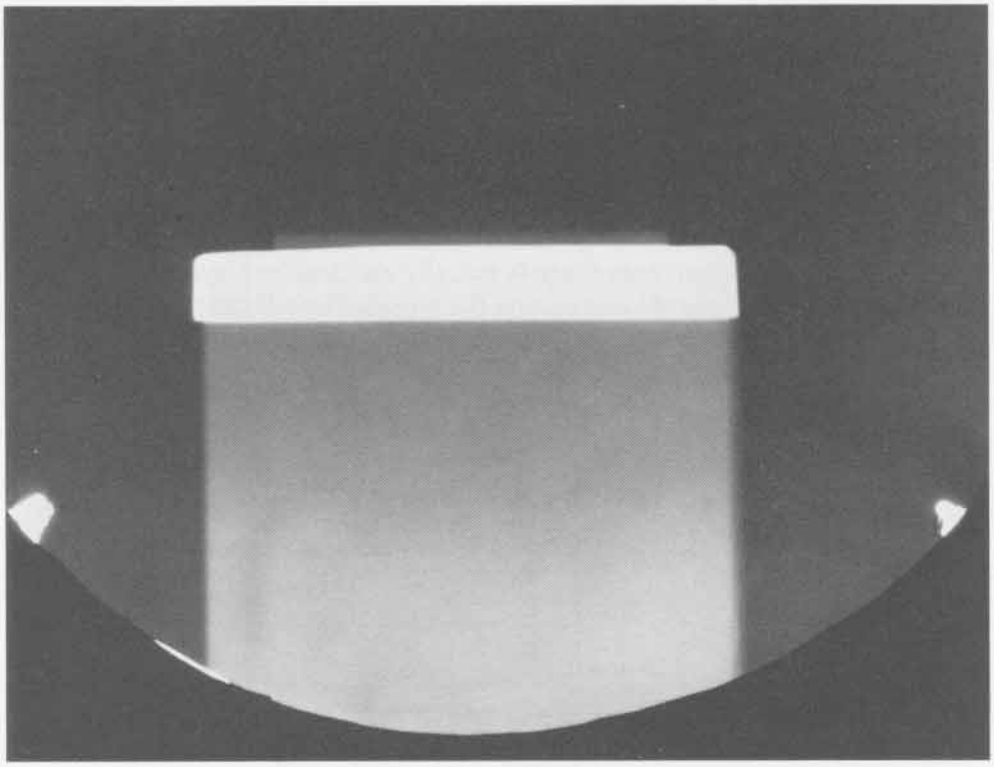


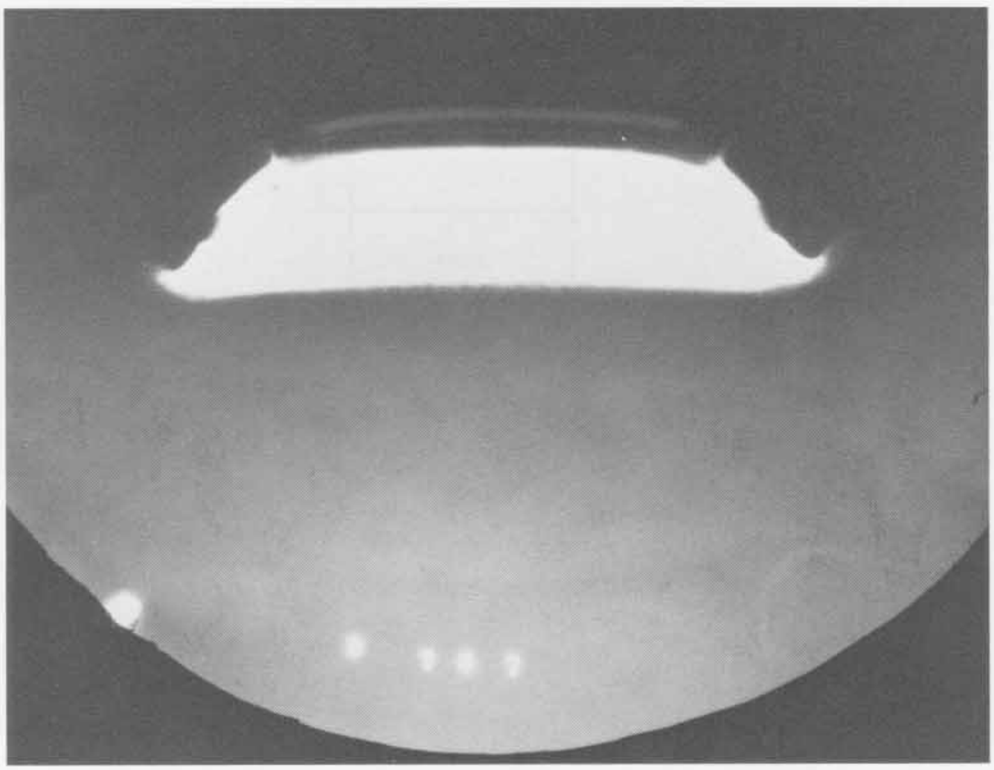


SHOT 707: **Aluminum Flying Plate**
Date: October 13, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 40.06 μs

A 3.0-mm-thick aluminum plate is initially shocked by a system of 12.7-mm-thick lead and 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm. See Shots 700, 706, and 710.

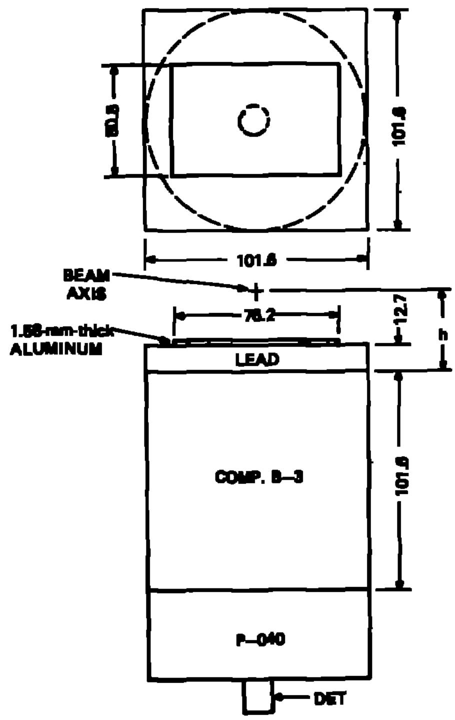


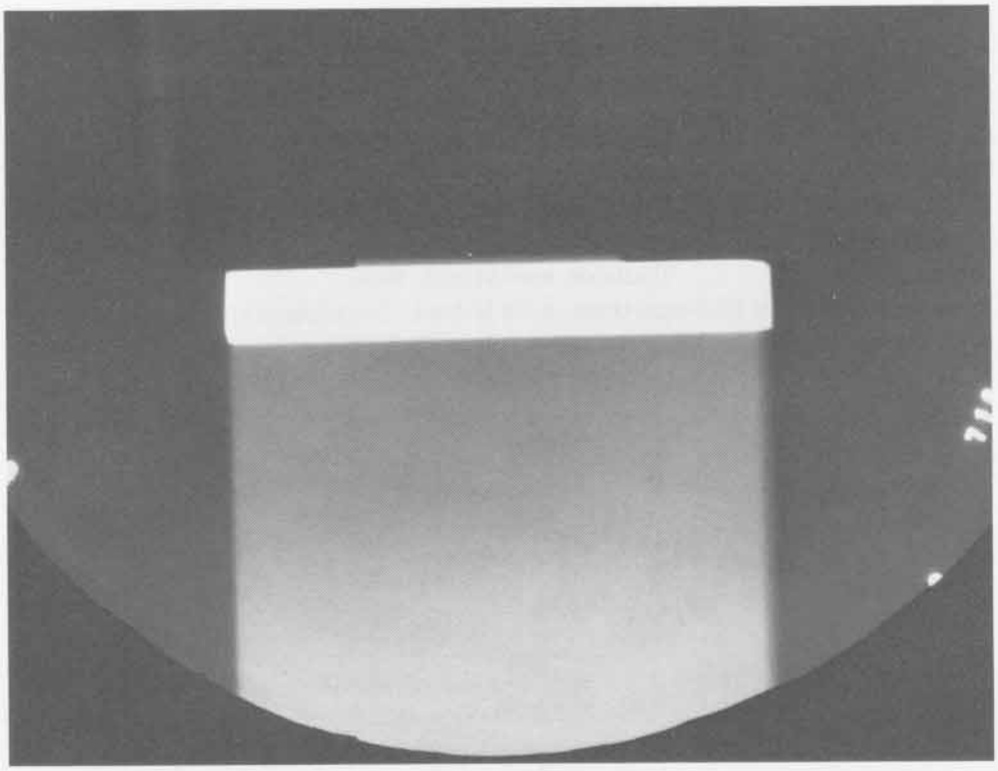


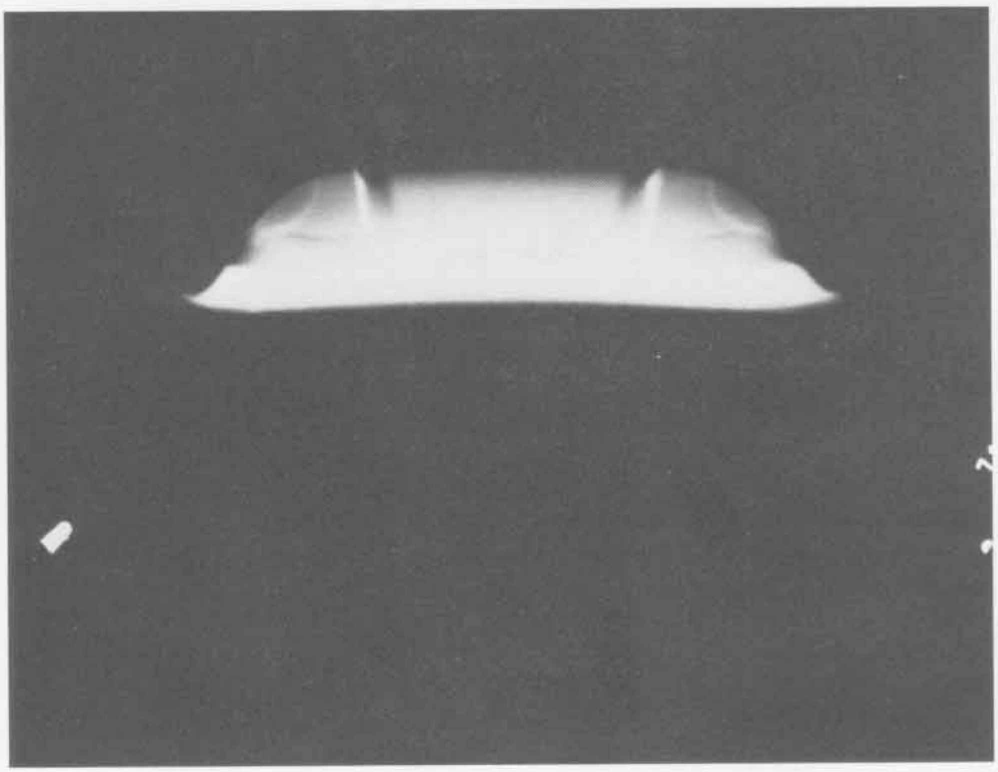


SHOT 710: **Aluminum Flying Plate**
Date: October 17, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 40.10 μs

A 1.5875-mm-thick aluminum plate is initially shocked by a system of 12.7-mm-thick lead and 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm. See Shots 700, 706, and 707.

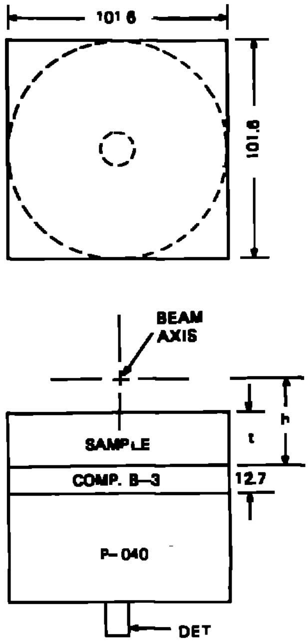


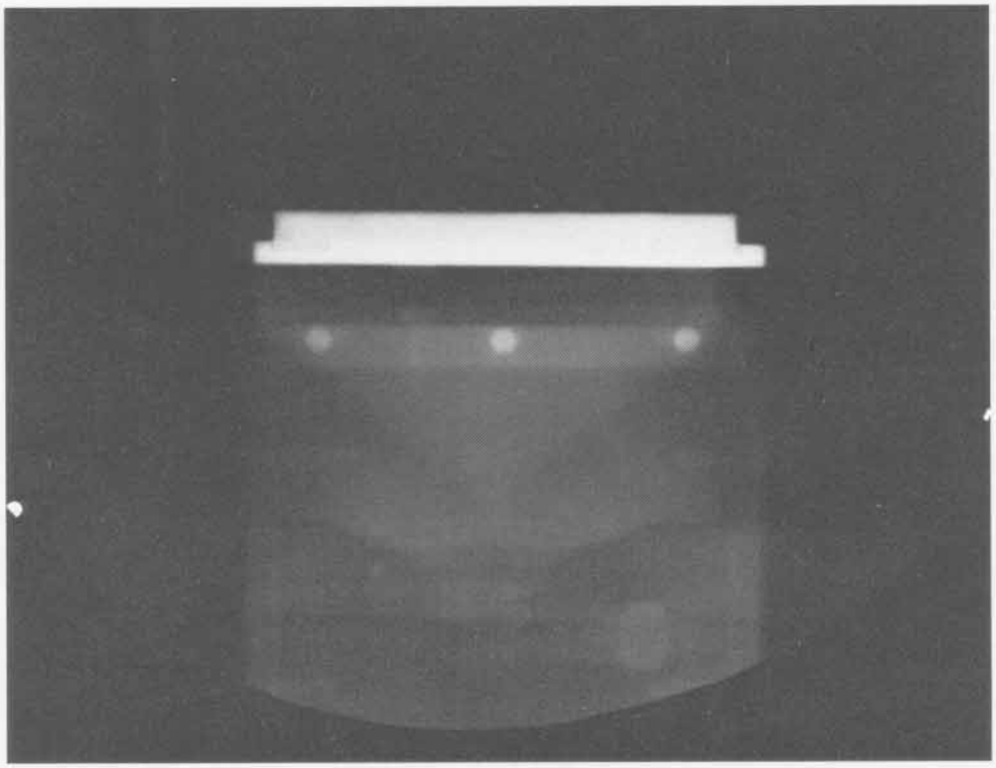


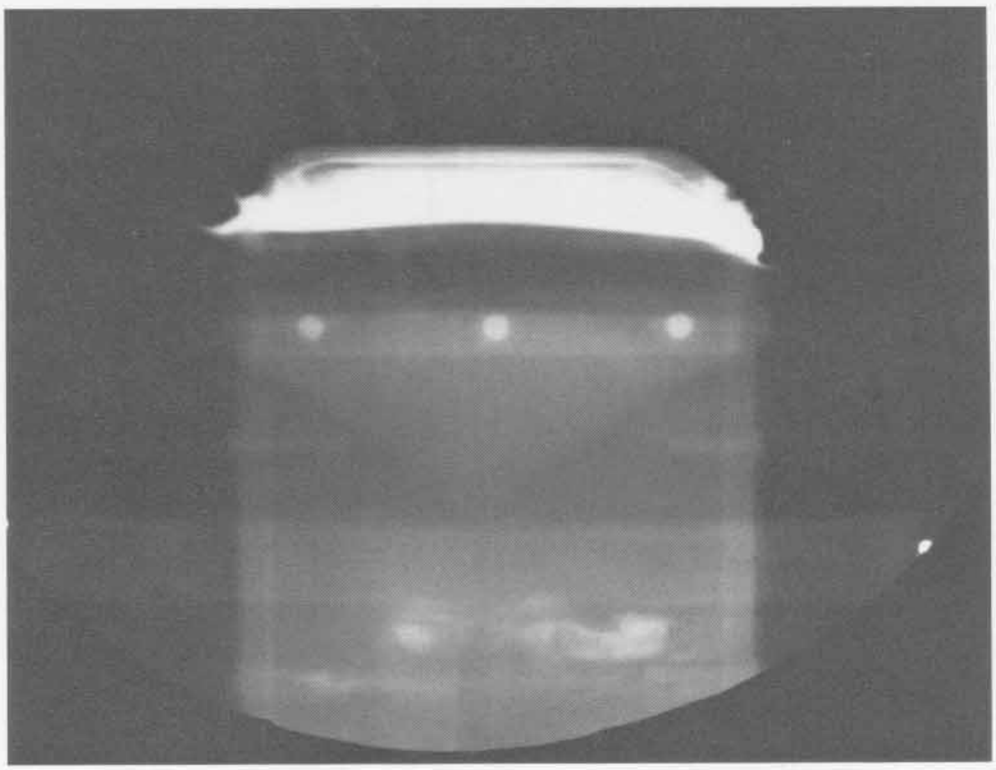


SHOT 711: **Dynamic Fracture of Cold Lead**
Date: October 5, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 28.52 μs
Reference: Thurston and Mudd, 1968

Dynamic fracture of 12.0-mm-thick, t, 78 K lead. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

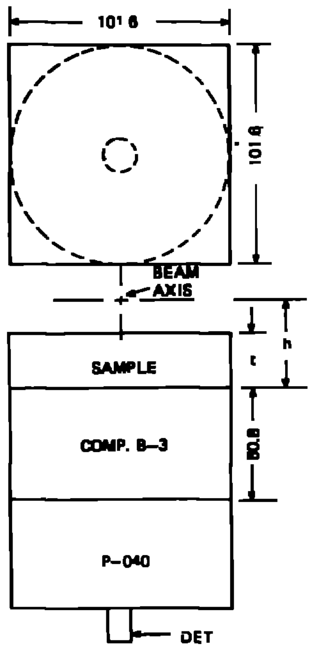


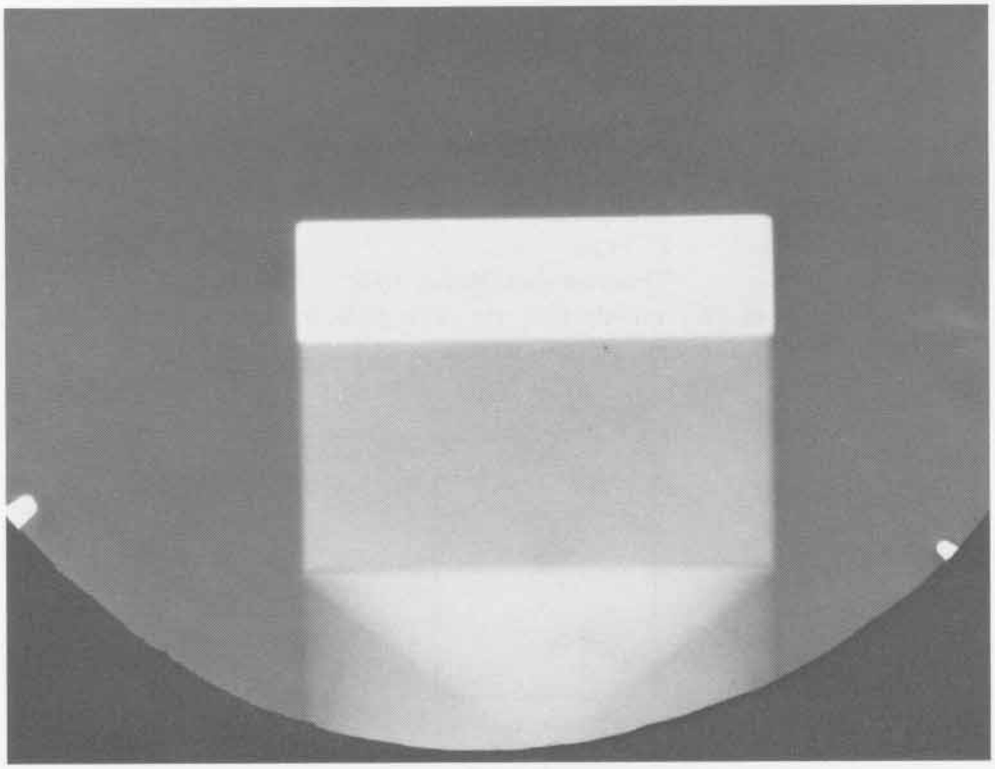


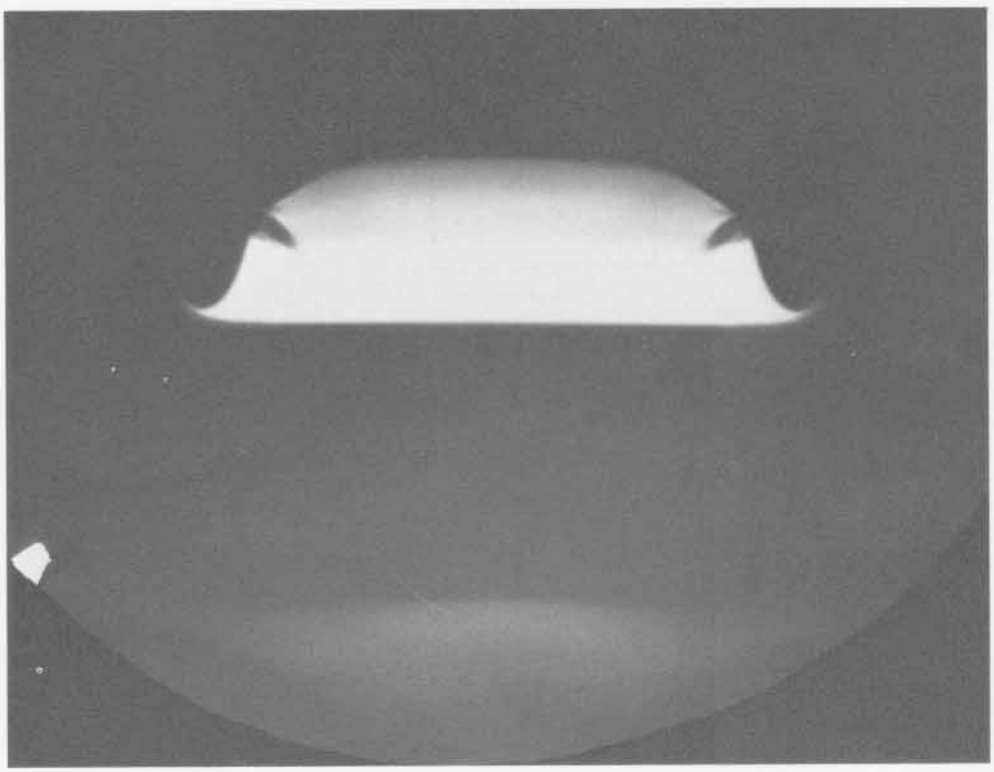


SHOT 712: **Dynamic Fracture of Tin**
Date: February 8, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 35.41 μs
Reference: Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, tin. The plate is shocked by 50.8 mm of Composition B-3 initiated by a P-040 lens. h is 50.8 mm.

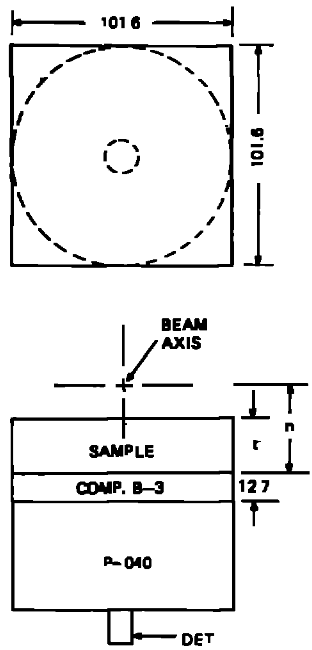


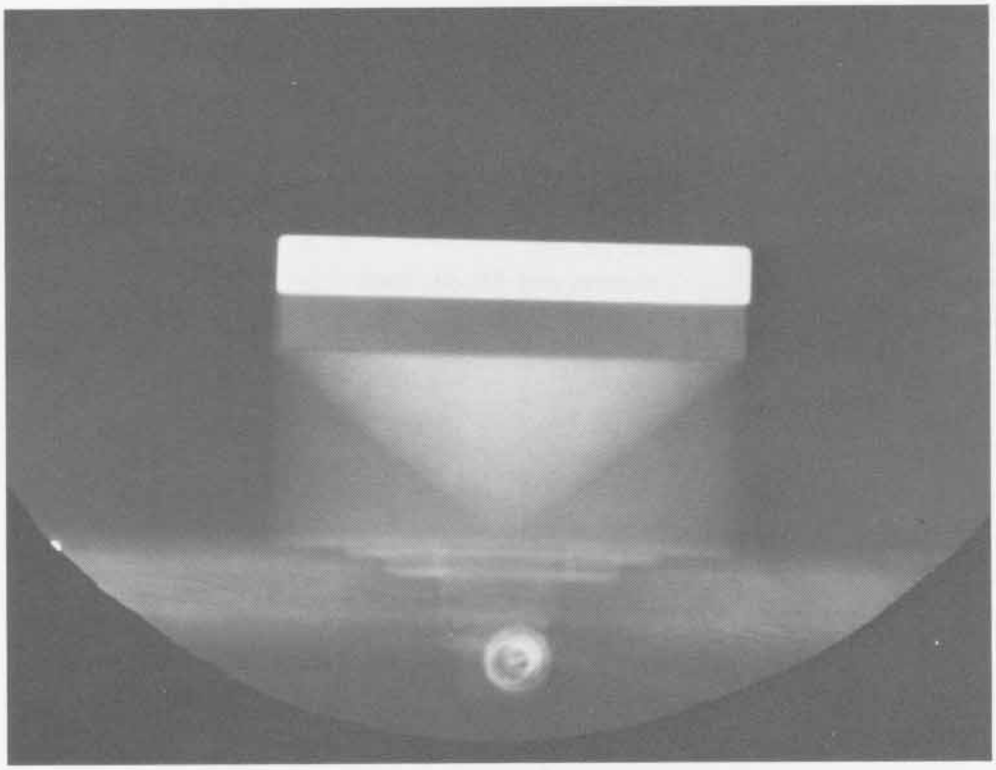


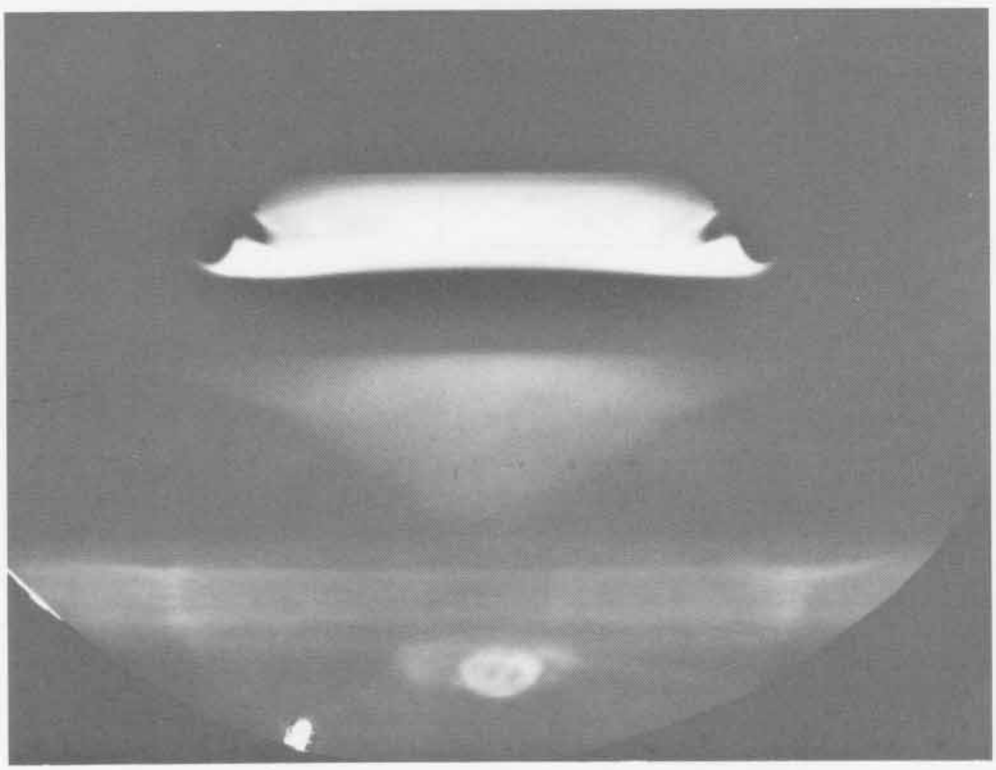


SHOT 713: **Dynamic Fracture of Tin**
Date: February 9, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 27.75 μs
Reference: Thurston and Mudd, 1968

Dynamic fracture of 12.0-mm-thick, t, tin. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

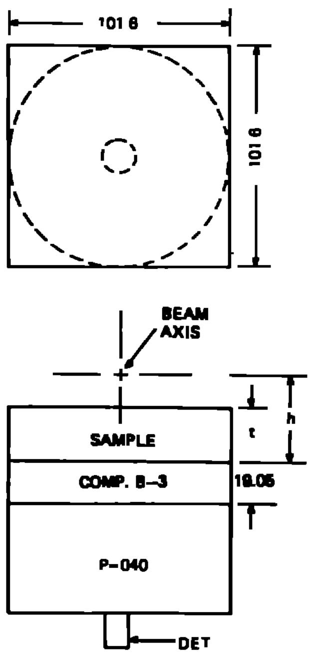


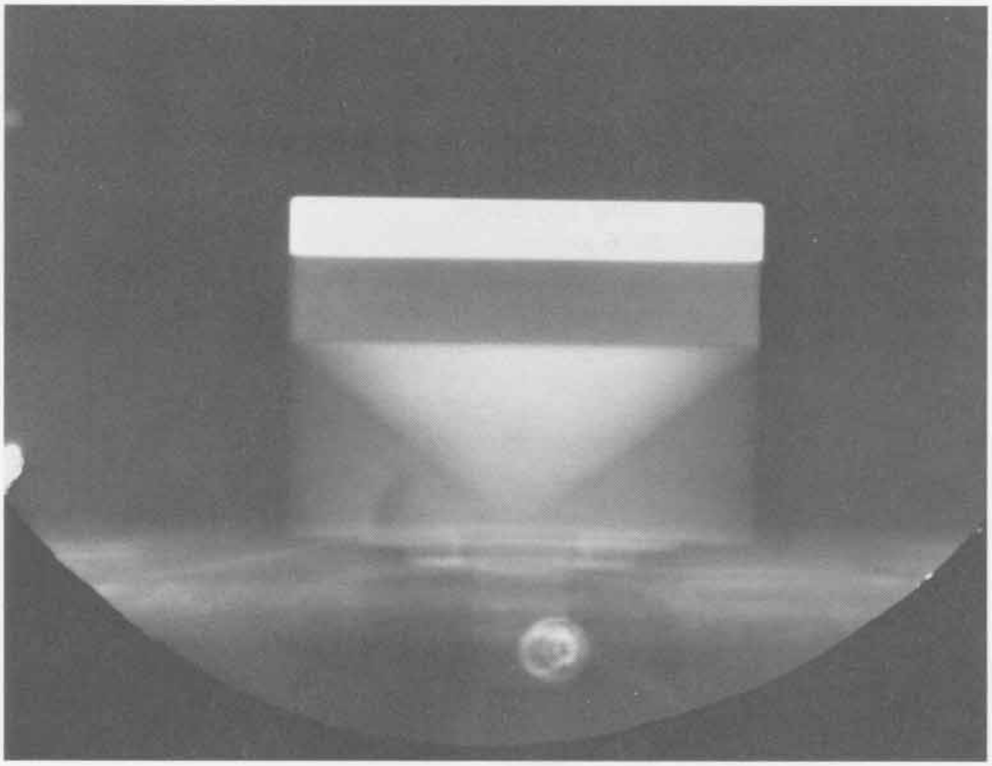


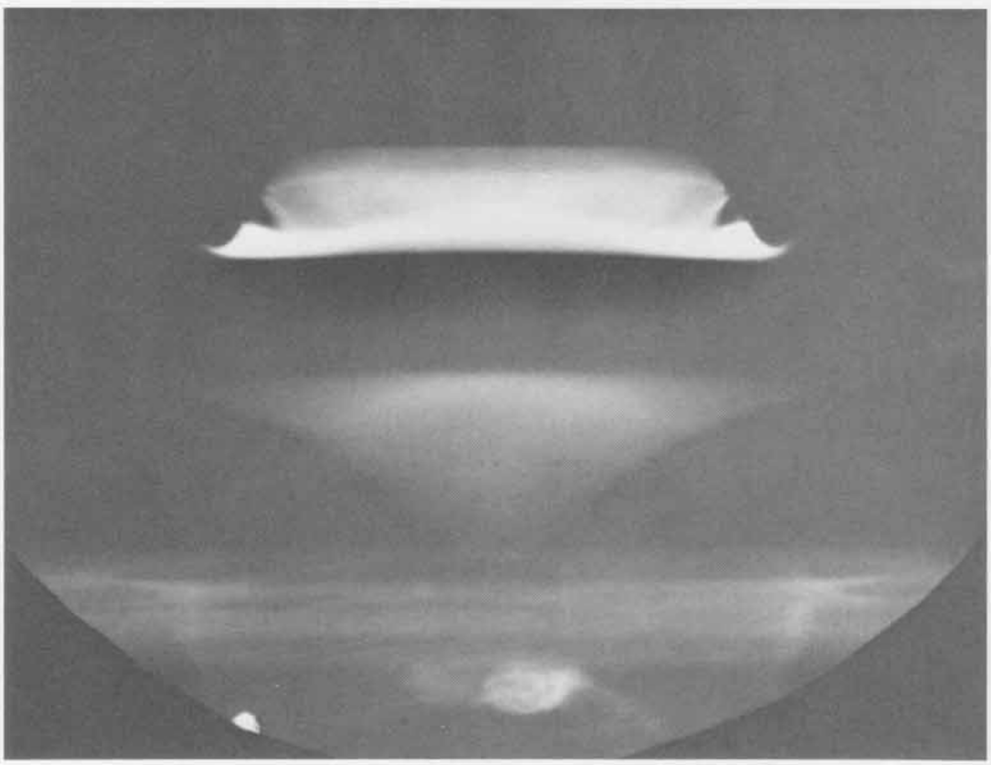


SHOT 714: **Dynamic Fracture of Tin**
Date: February 9, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 28.79 μs
Reference: Thurston and Mudd, 1968

Dynamic fracture of 12.0-mm-thick, t, tin. The plate is shocked by 19.05 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

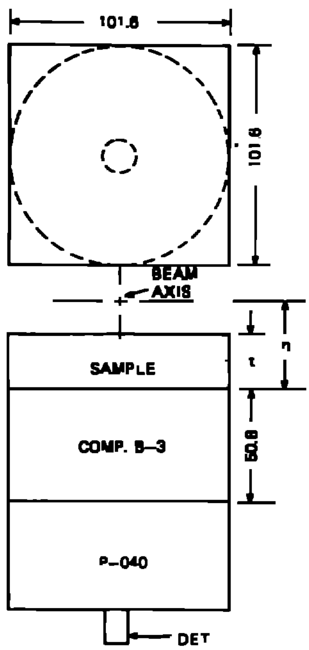


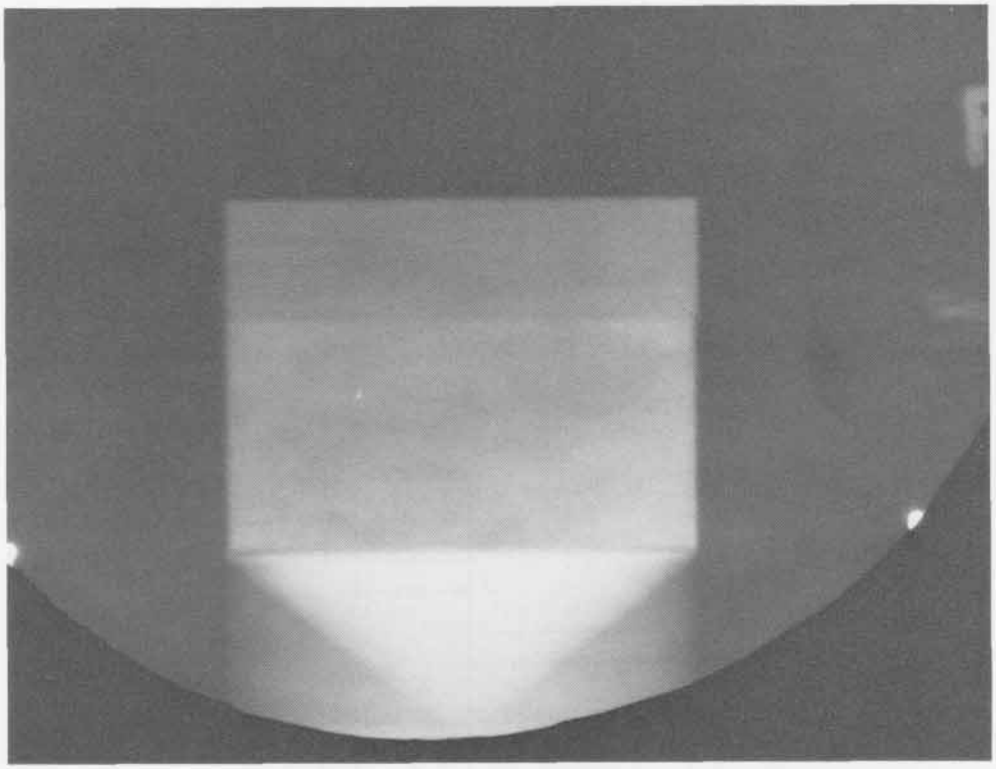


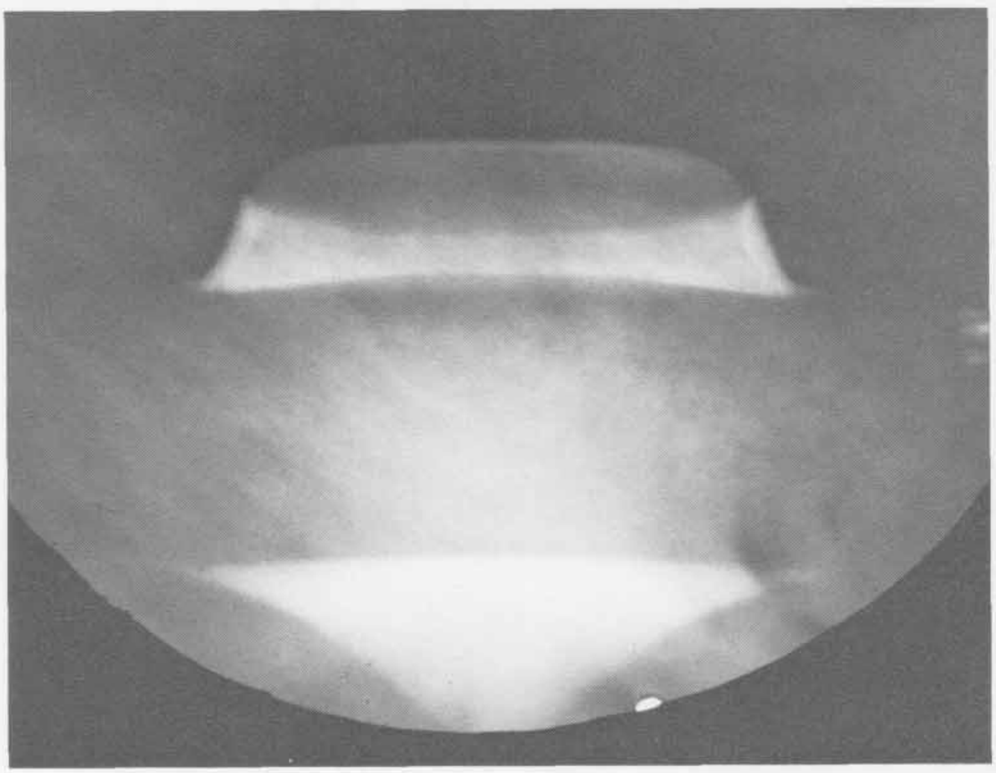


SHOT 715: **Dynamic Fracture of Beryllium**
Date: January 24, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 28.36 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, beryllium. The plate is shocked by 50.8 mm of Composition B-3 initiated by a P-040 lens. h is 44.5 mm.

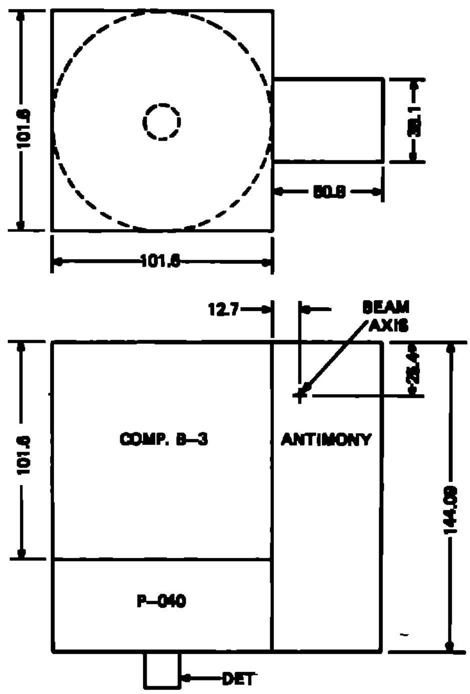


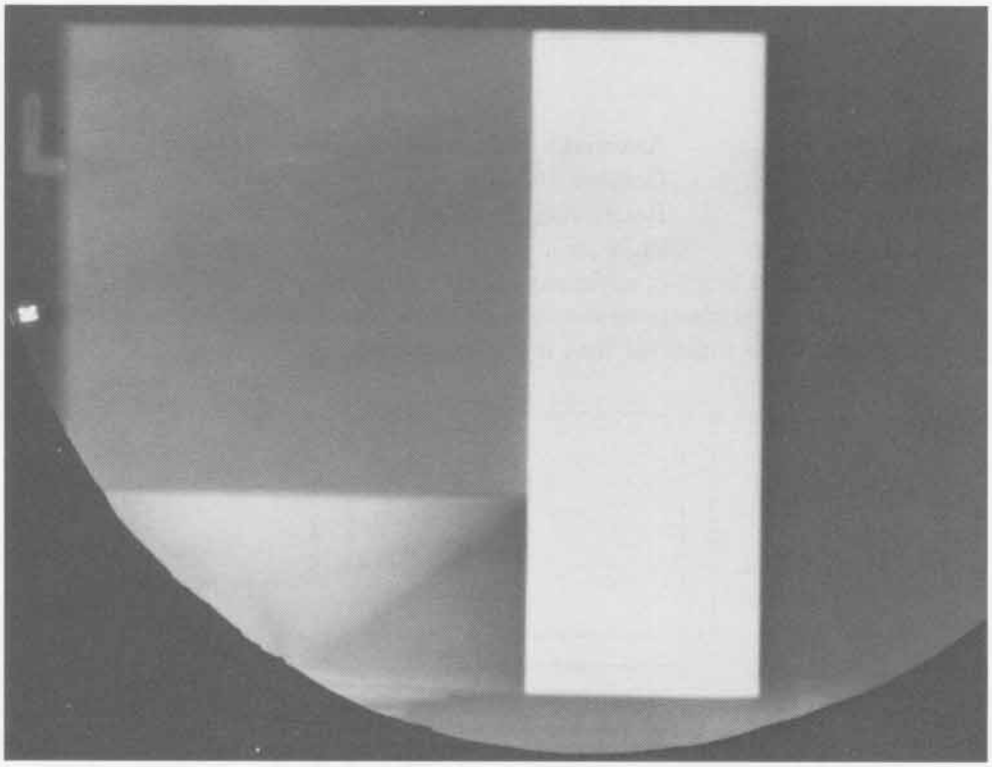


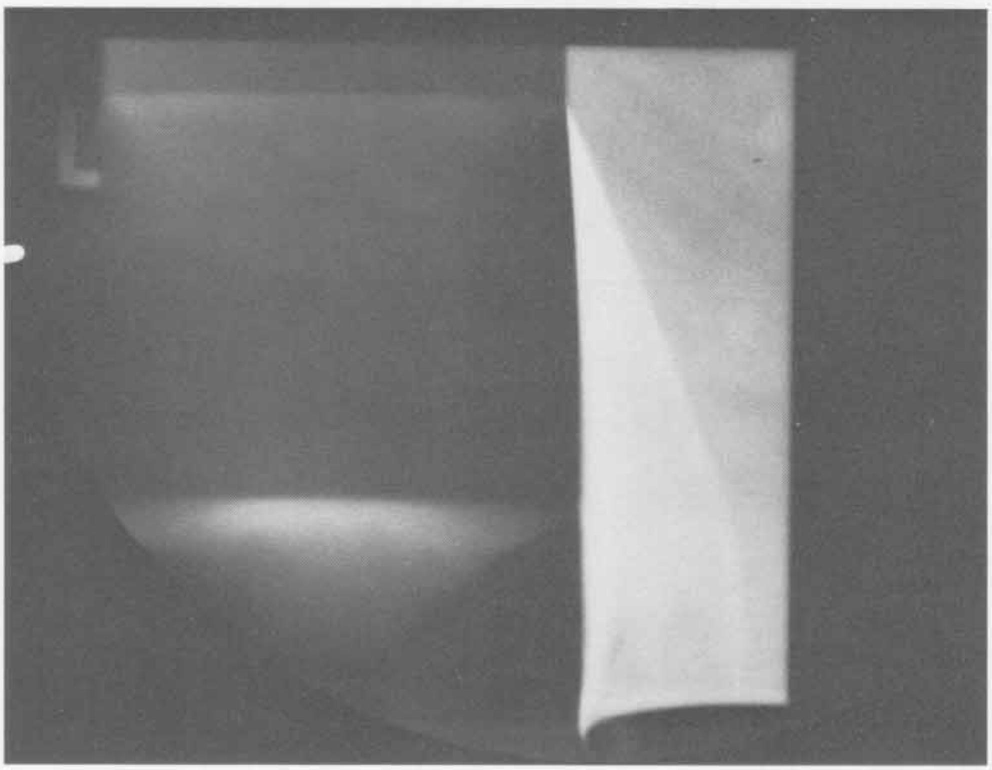


SHOT 716:	**Antimony Phase Change**
Date:	October 11, 1966
Experimenter:	Benny Ray Breed
Radiographic Time:	25.01 μs
Reference:	Breed and Venable, 1968; Neal, 1976b

A 50.8- by 38.1-mm block of antimony is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. The explosive overdrives the phase change.

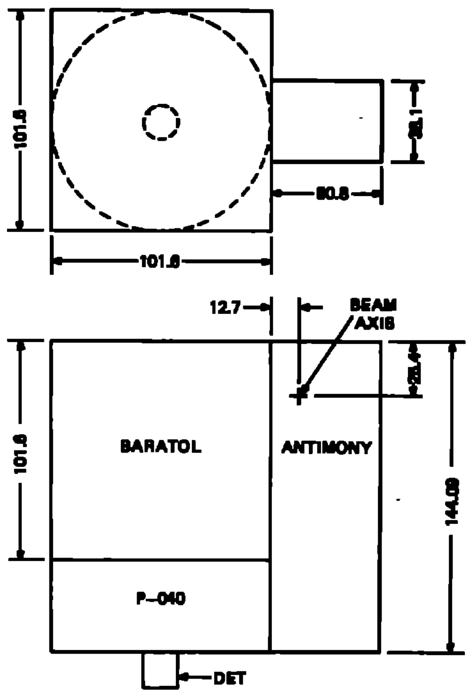


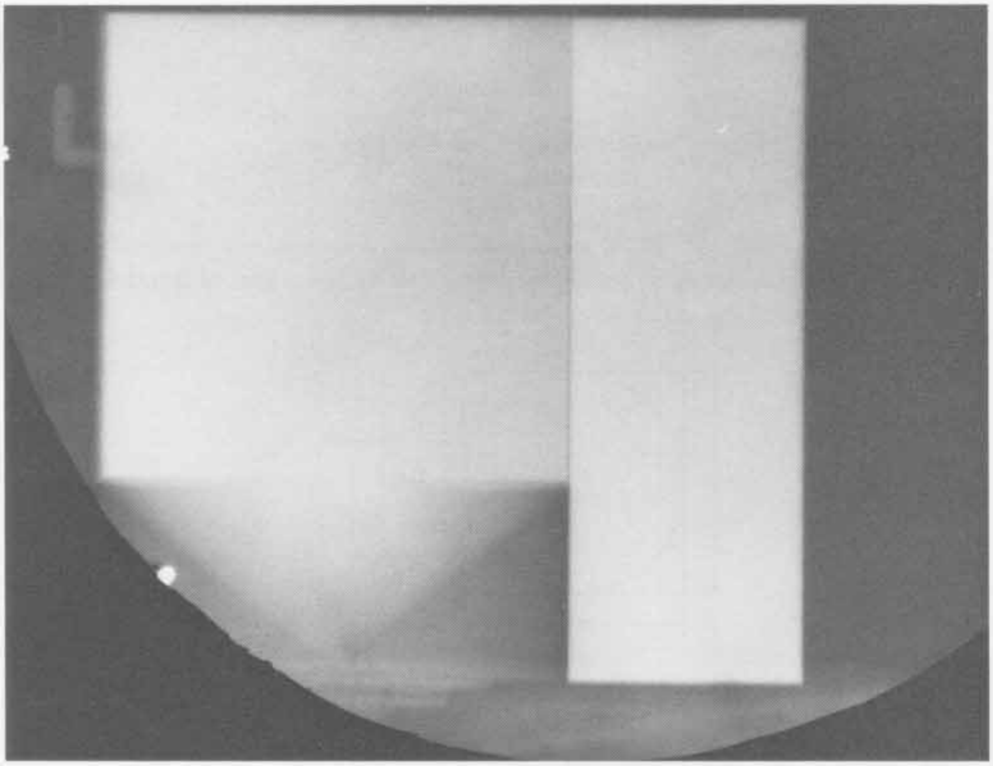


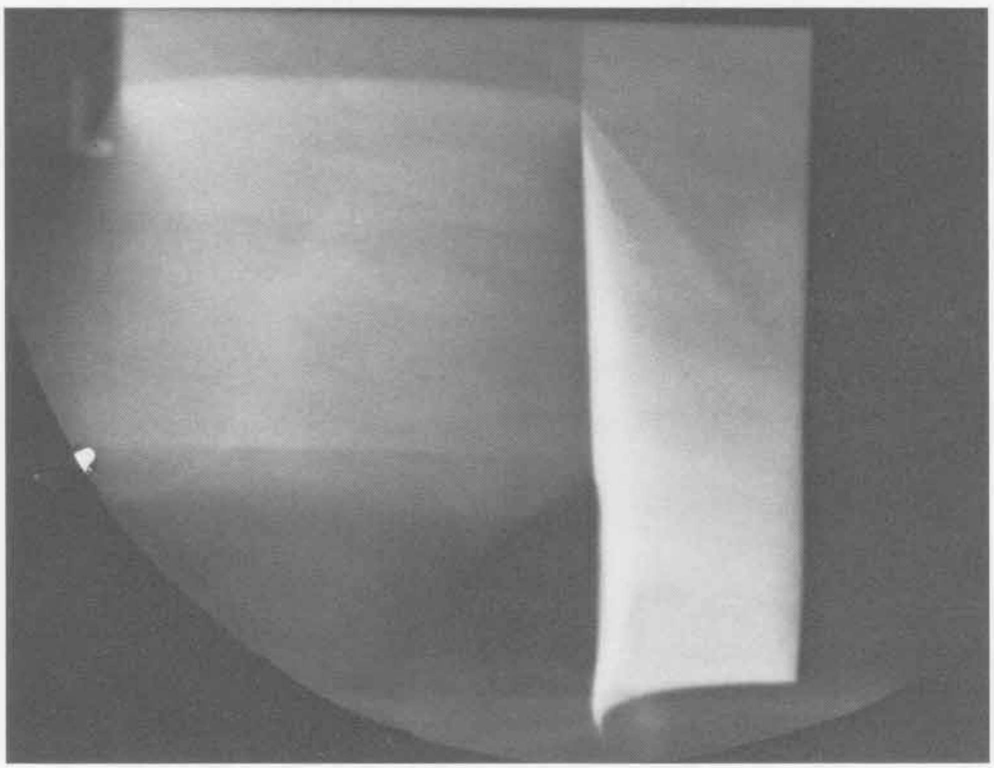


SHOT 717: **Antimony Phase Change**
Date: October 11, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 31.79 μs

A 50.8- by 38.1-mm block of antimony is shocked by 101.6 mm of Baratol initiated by a P-040 lens. Two plastic waves were formed in the antimony. Curvature of the second plastic wave indicates that it is accelerating.

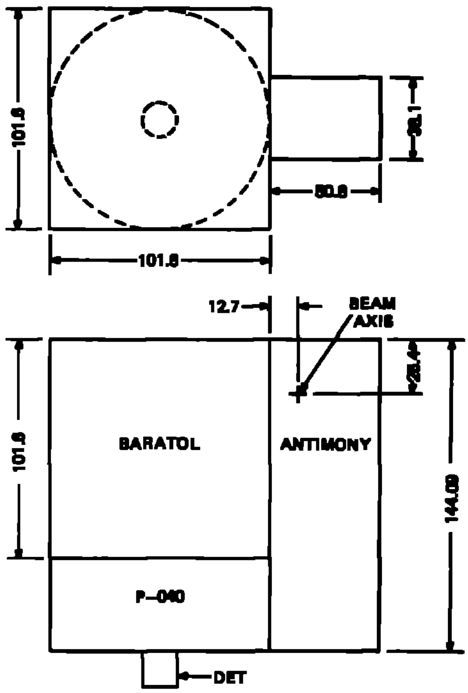


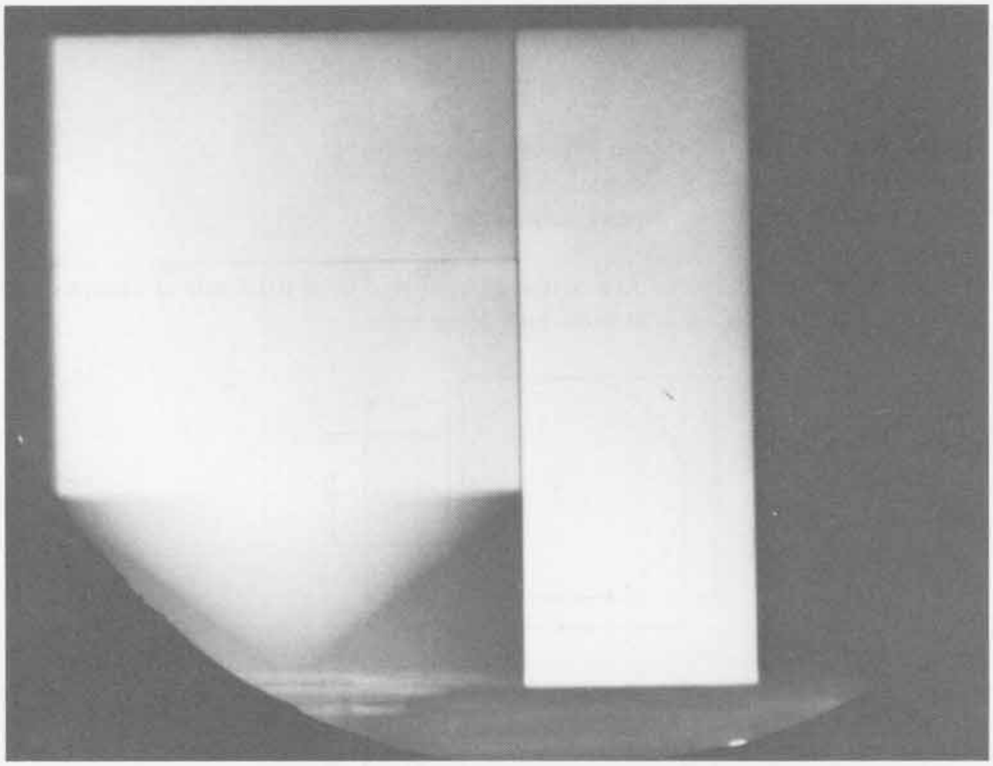


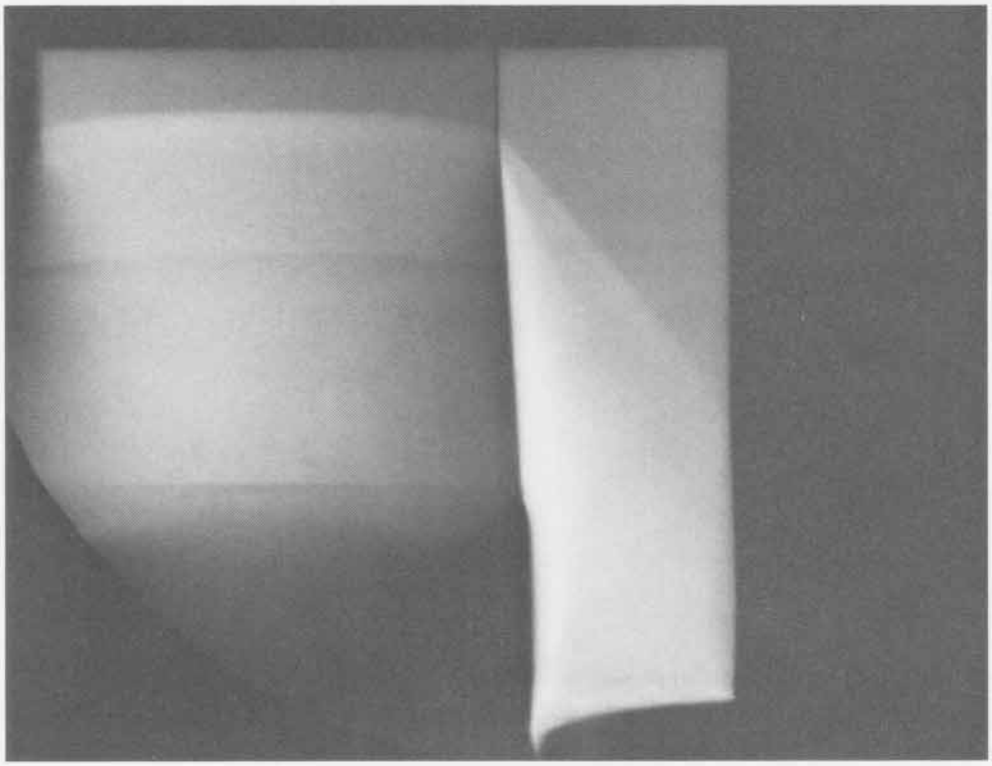


SHOT 718: **Antimony Phase Change**
Date: October 24, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 31.80 μs

A 50.8- by 38.1-mm block of antimony is shocked by 101.6 mm of Baratol initiated by a P-040 lens.

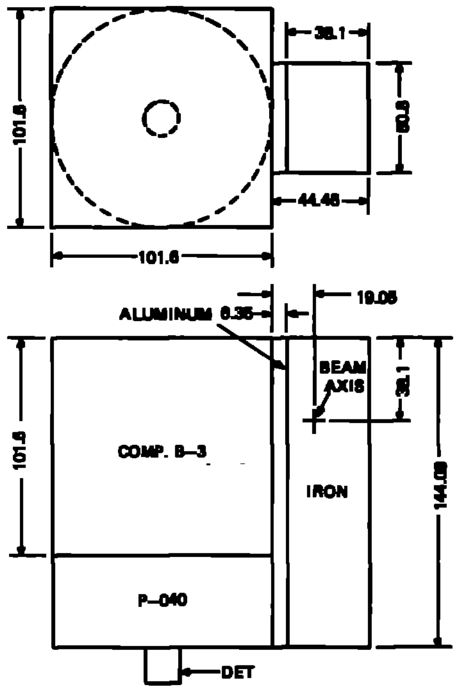


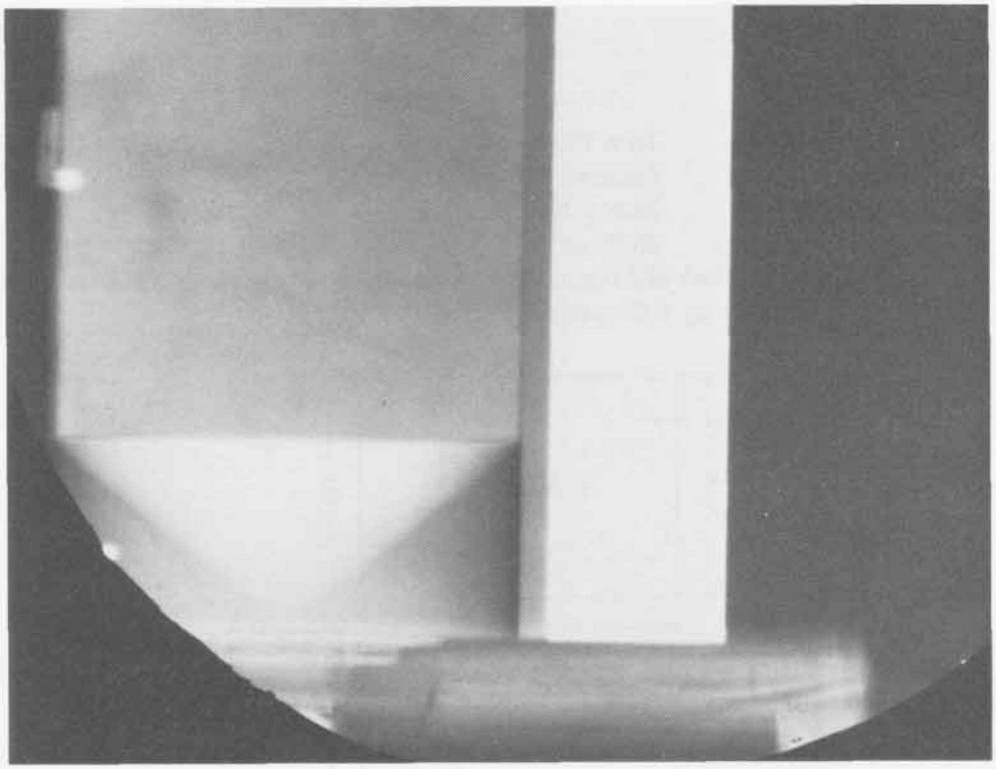


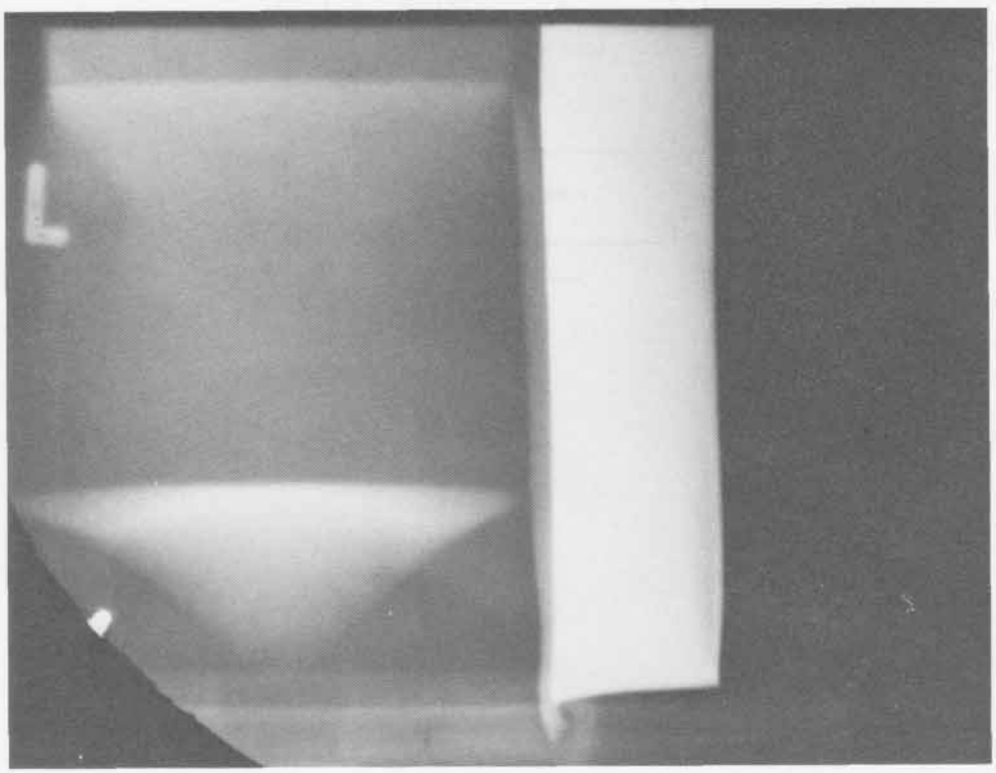


SHOT 720: **Iron Phase Change**
Date: November 3, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 25.01 μs

A 50.8- by 38.1-mm block of Armco iron is separated from 101.6 mm of Composition B-3 and a P-040 lens by 6.35-mm-thick aluminum.

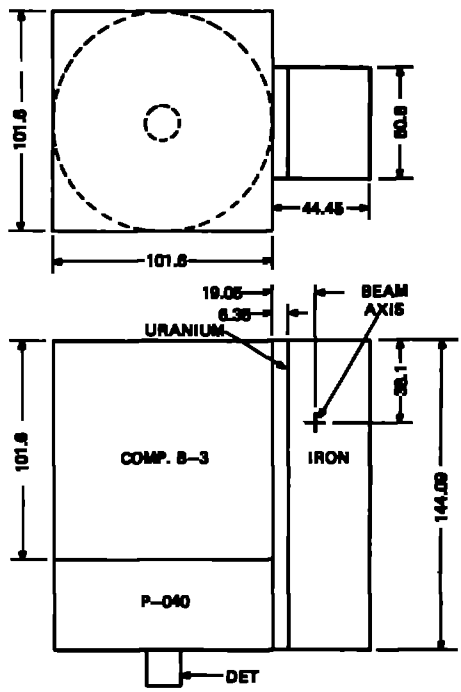


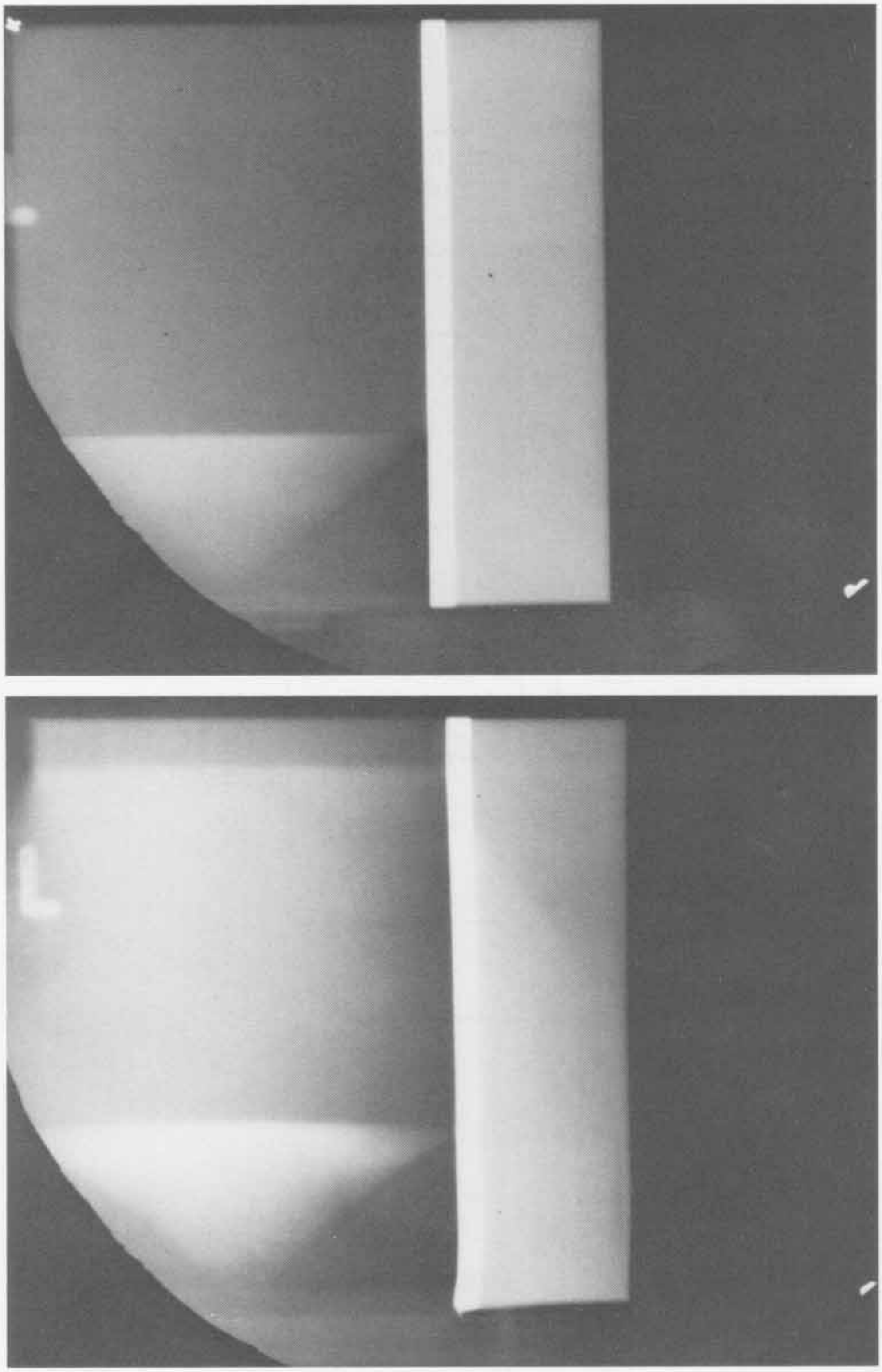




SHOT 721: **Iron Phase Change**
Date: October 13, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 25.00 μs

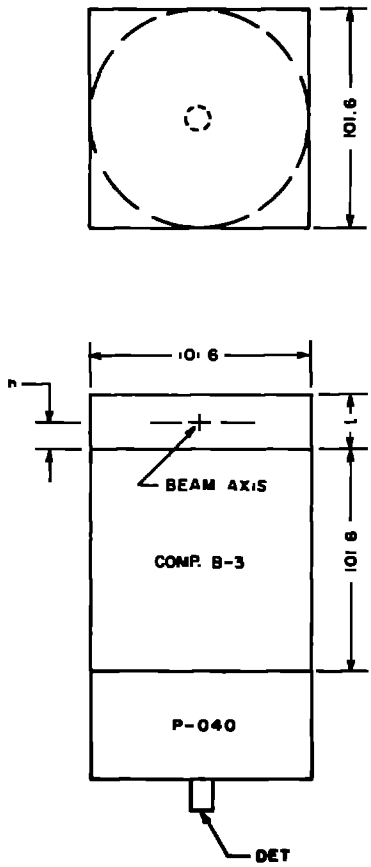
A 50.8- by 38.1-mm block of Armco iron is separated from 101.6 mm of Composition B-3 and a P-040 lens by 6.35-mm-thick uranium.

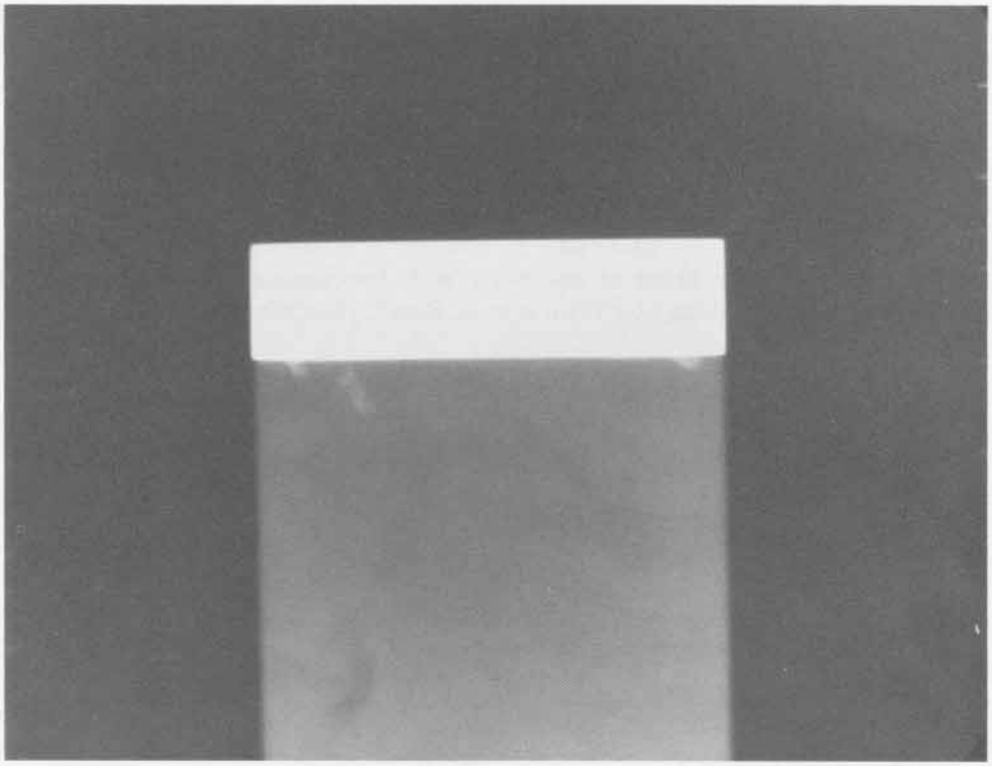


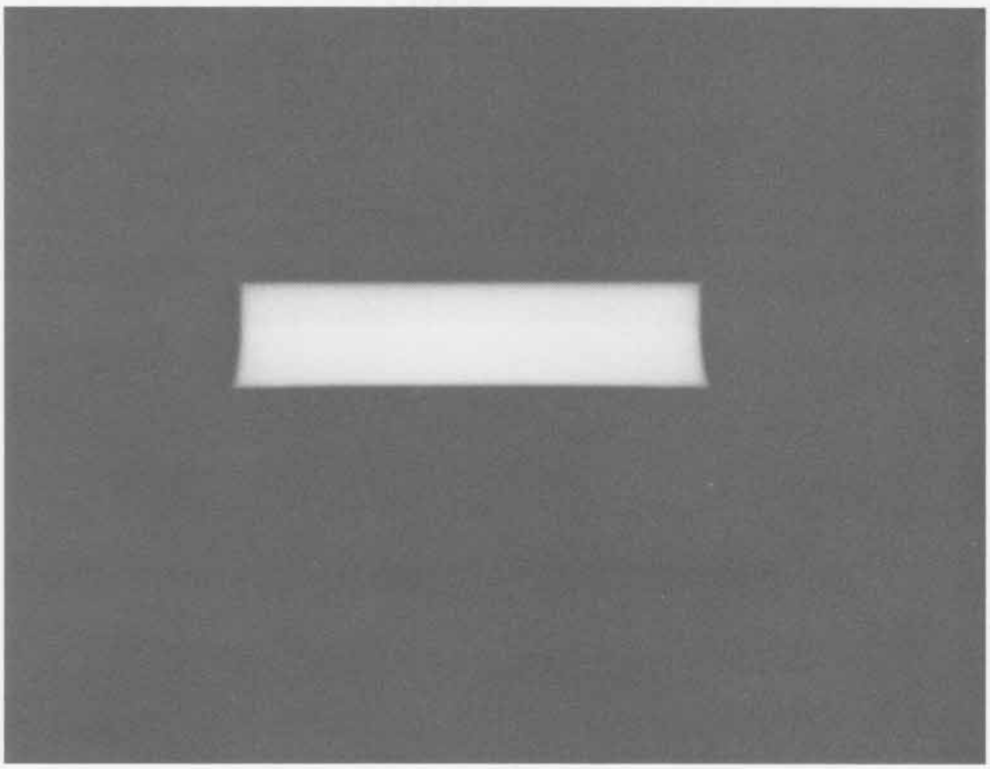


SHOT 722: **Nickel Shock Wave**
Date: January 11, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 29.28 μs

A 25.0-mm-thick, t, nickel plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 2.38 mm.

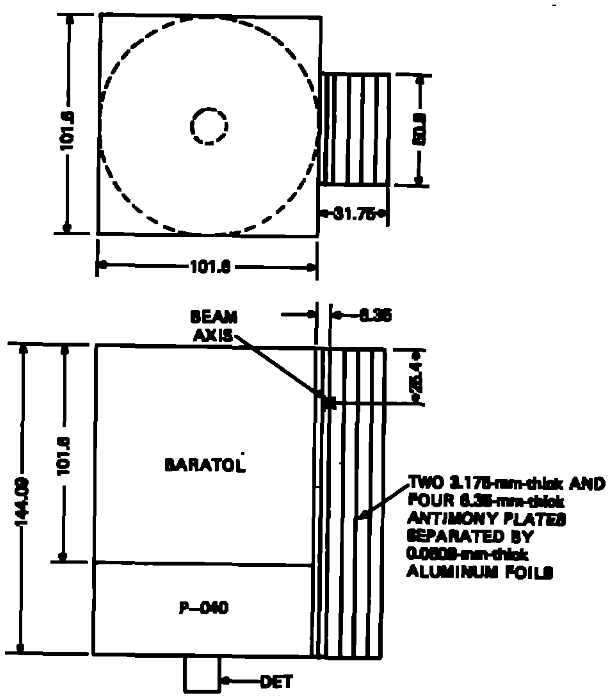


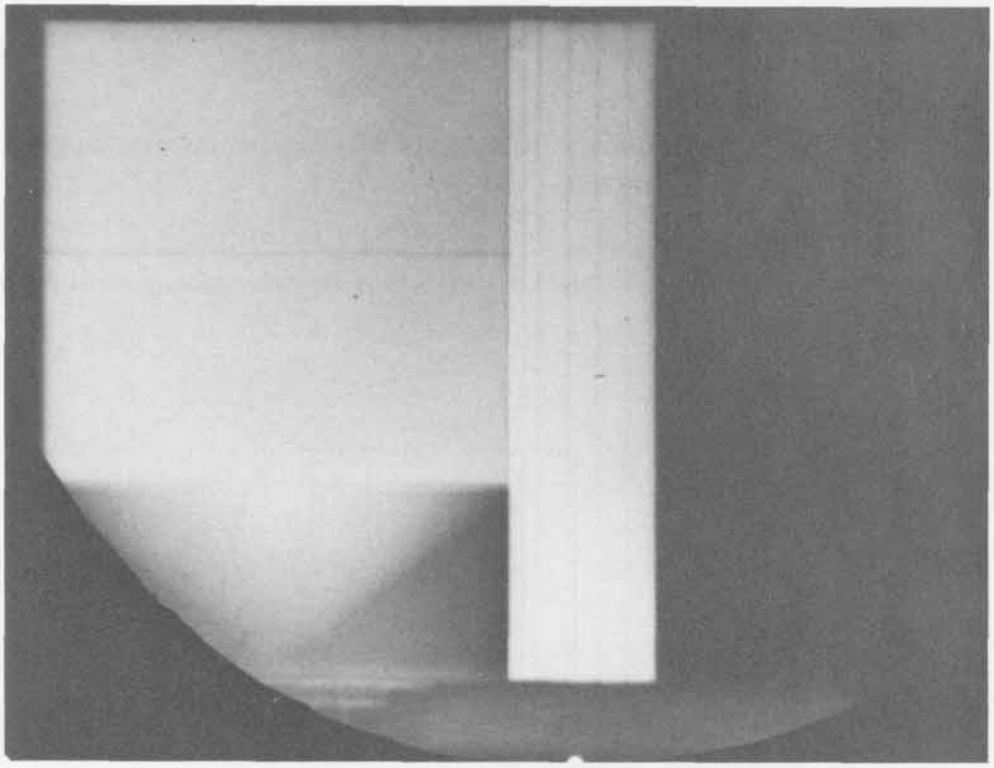


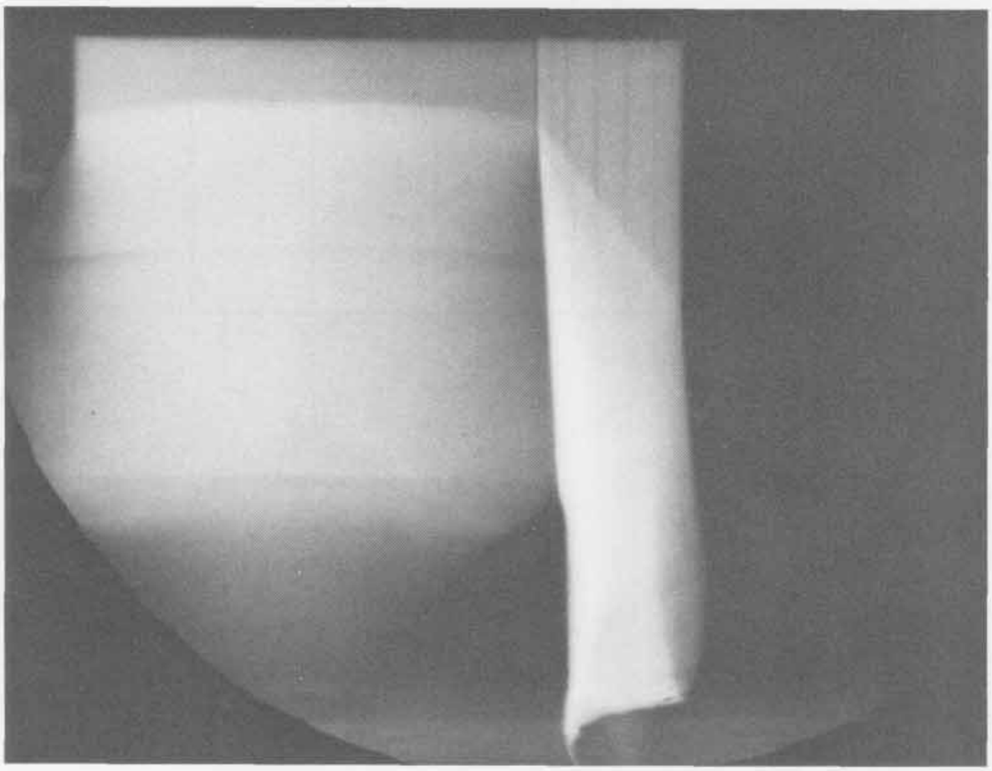


SHOT 723: **Antimony Phase Change**
Date: November 16, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 31.77 μs

A 50.8- by 38.1-mm block of antimony with five embedded 0.0508-mm-thick aluminum foils is shocked by 101.6 mm of Baratol initiated by a P-040 lens.

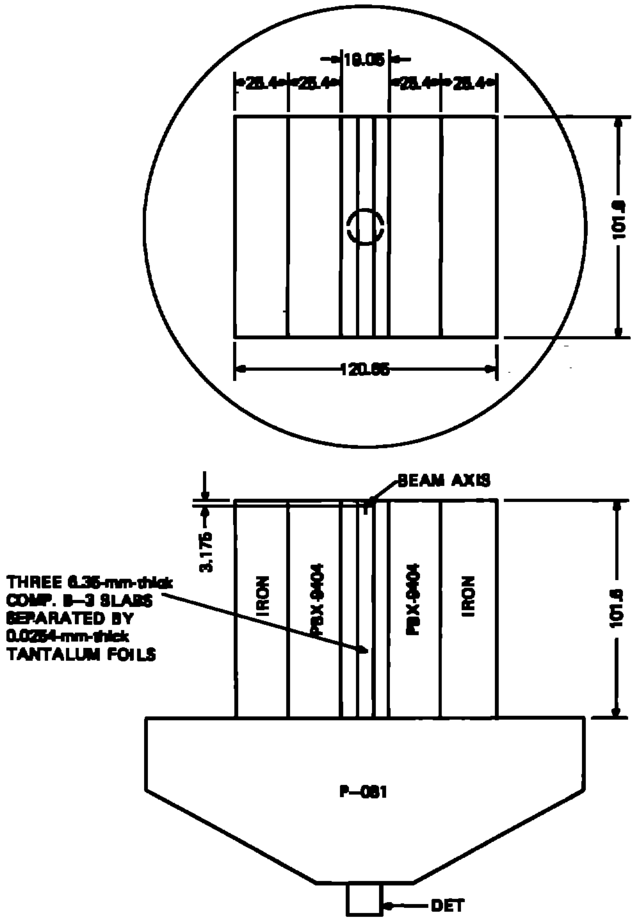


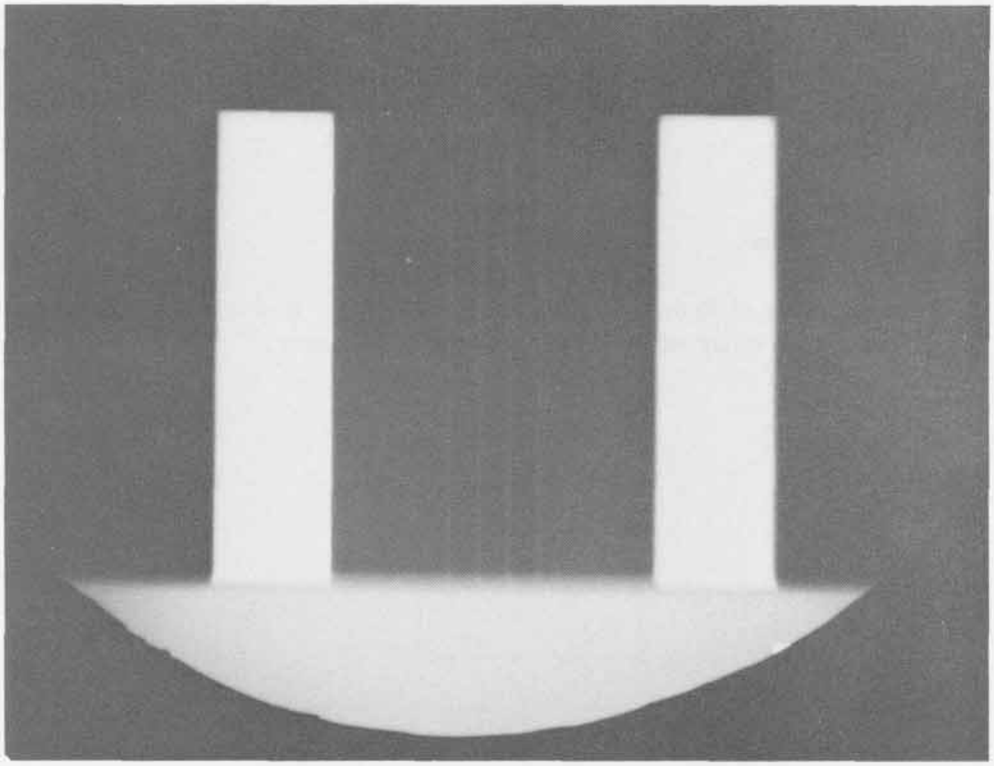


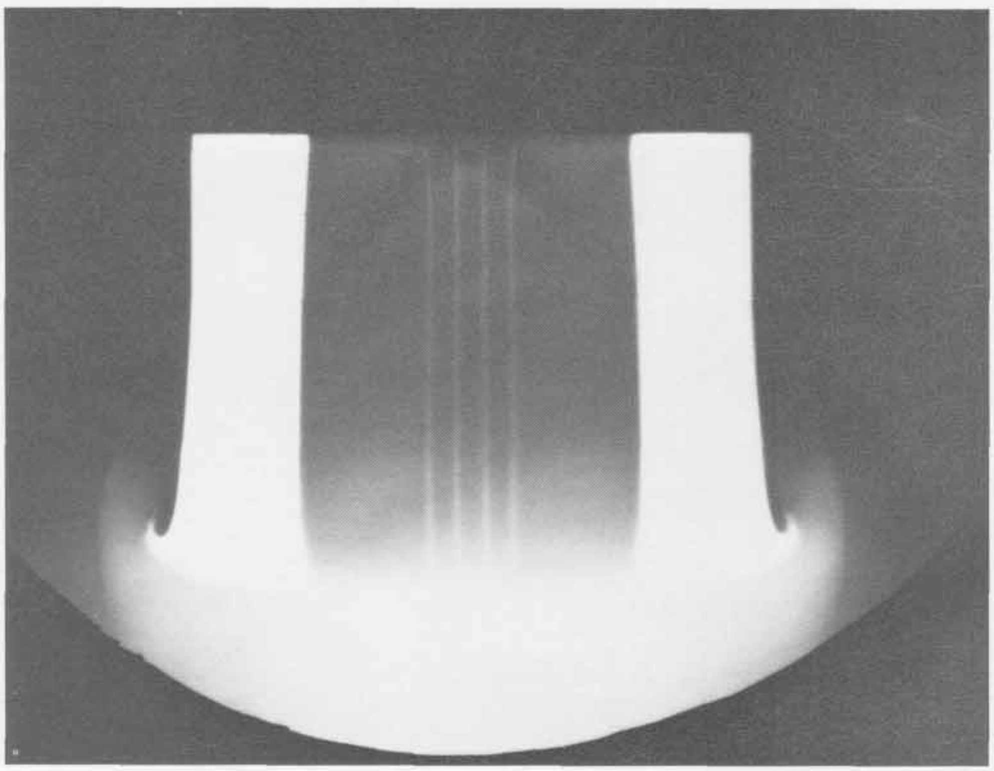


SHOT 724: **Oblique PBX-9404 and Composition B-3 Detonations**
Date: January 19, 1967
Experimenter: Douglas Venable
Radiographic Time: 34.07 μs

An experiment performed to examine how PBX-9404 overdrives Composition B-3 in oblique geometry.

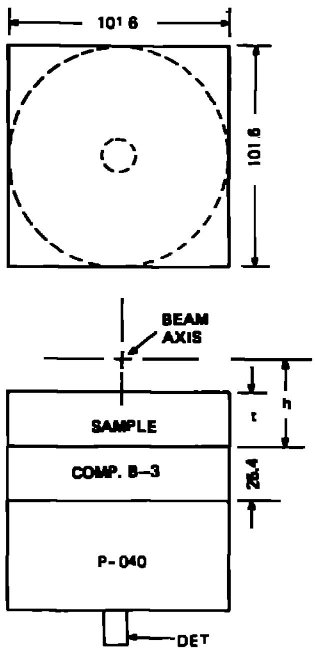


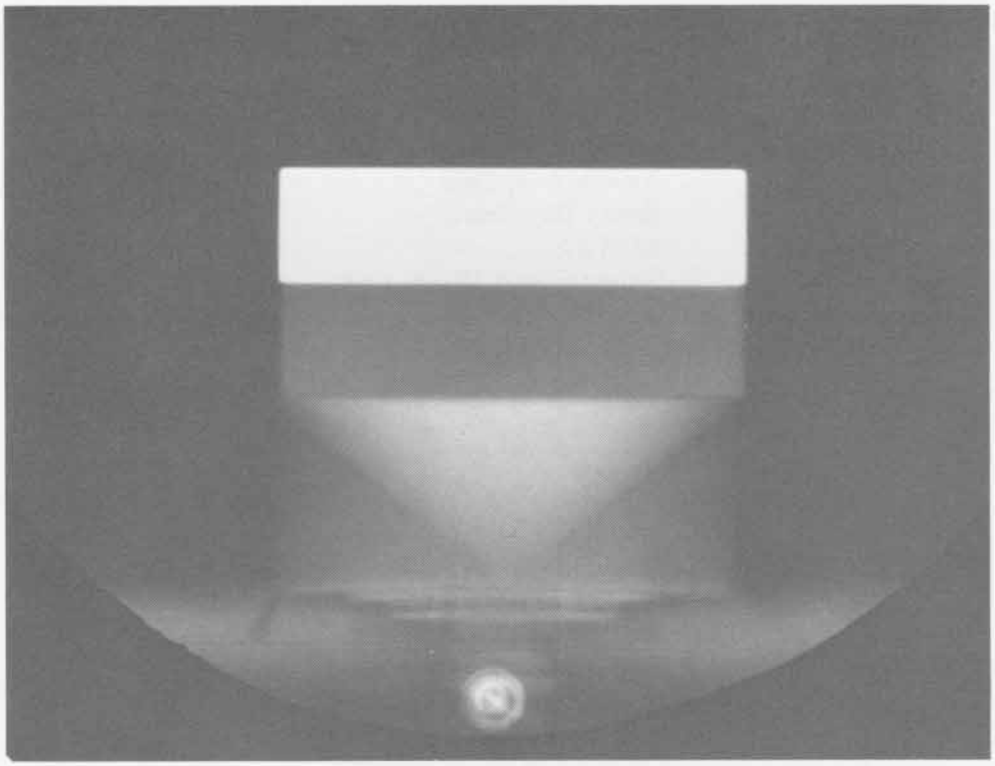


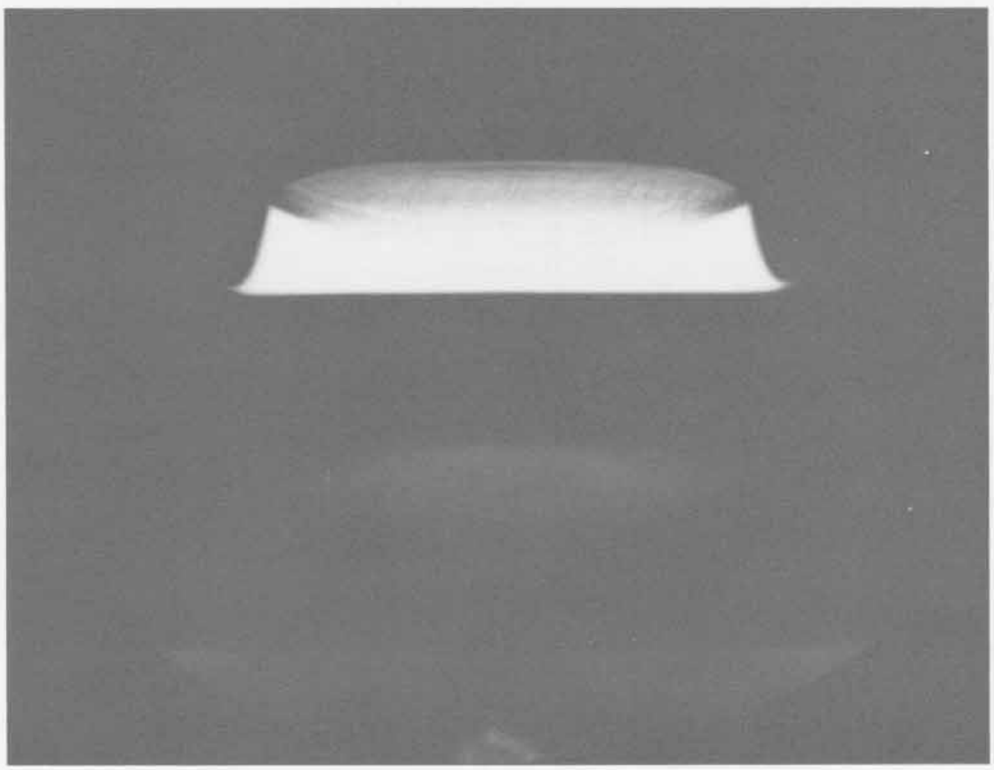


SHOT 726: **Dynamic Fracture of Zinc**
Date: November 8, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 29.72 μs
Reference: Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, zinc. The plate is shocked by 25.4 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

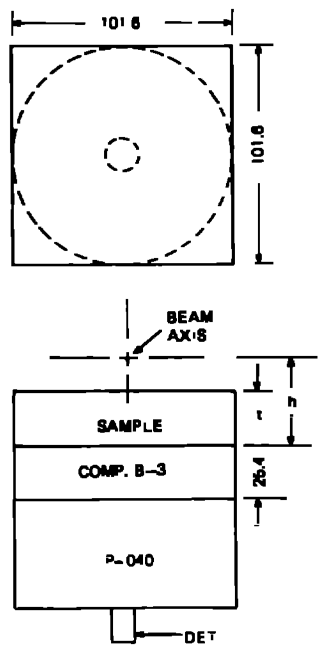


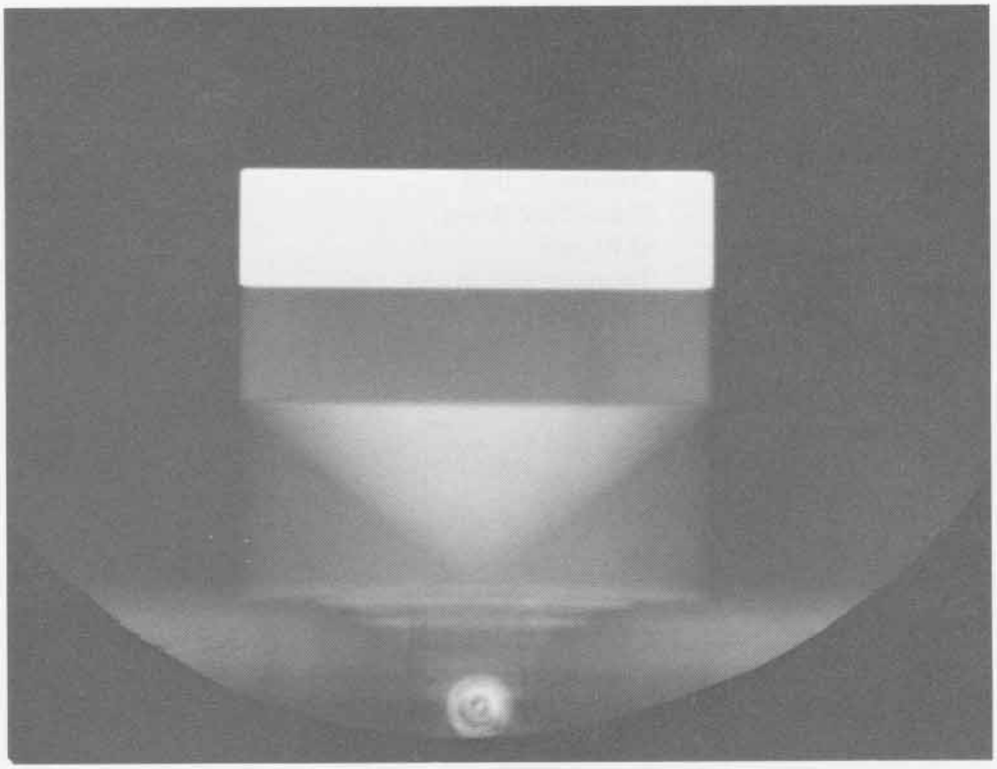


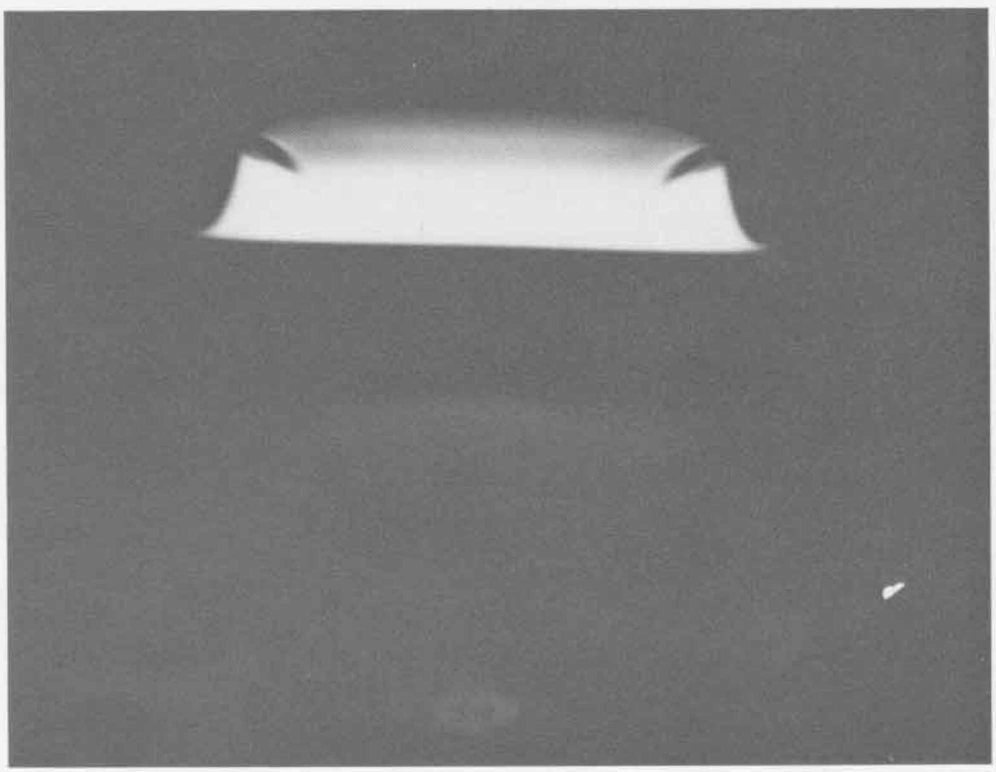


SHOT 727: **Dynamic Fracture of Tin**
Date: November 8, 1966
Experimenter: Benny Ray Breed
Radiographic Time: 30.18 μs
Reference: Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, tin. The plate is shocked by 25.4 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

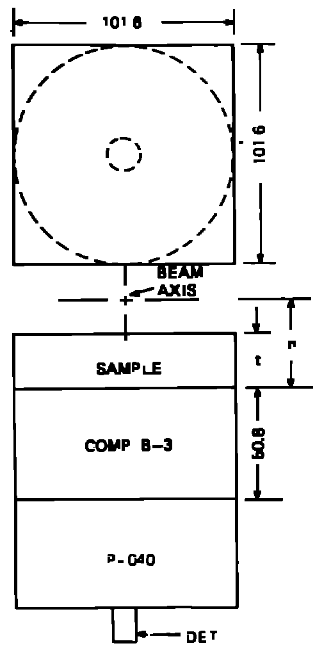


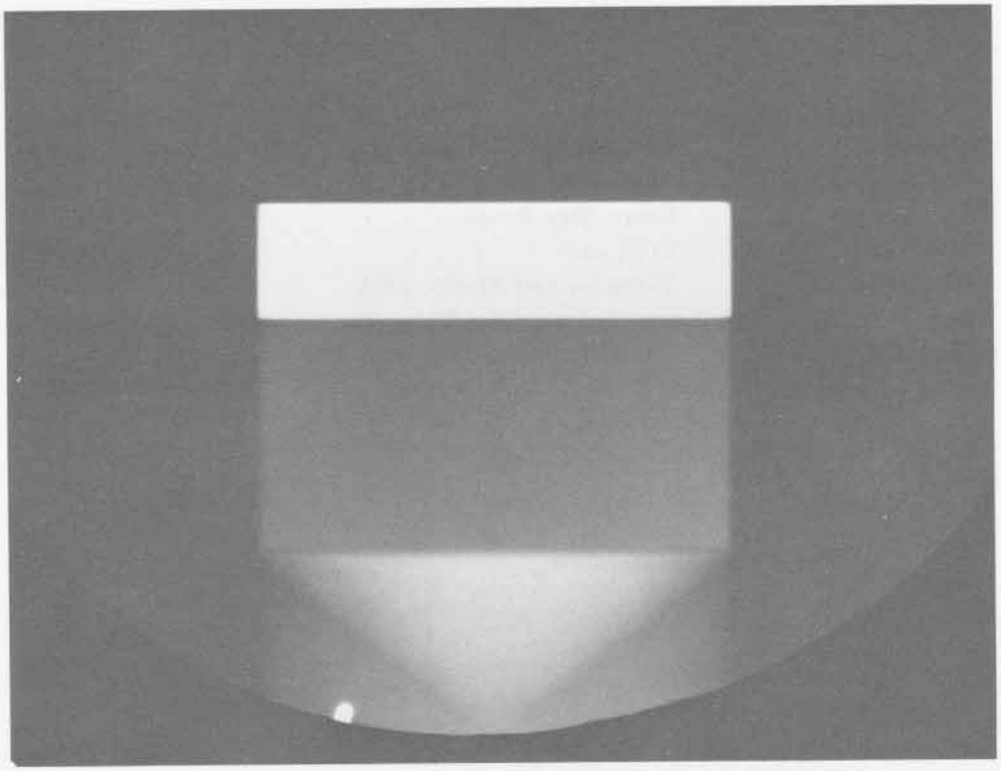


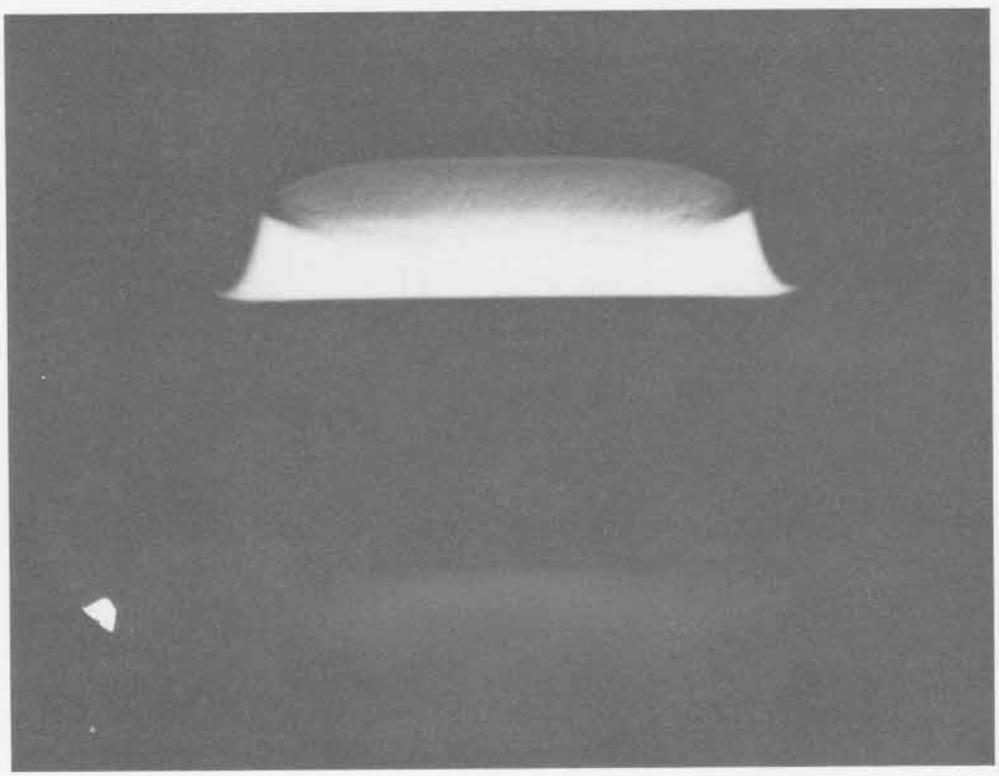


SHOT 729: **Dynamic Fracture of Zinc**
Date: January 5, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 32.93 μs
Reference: Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, zinc. The plate is shocked by 50.8 mm of Composition B-3 initiated by a P-040 lens. h is 44.5 mm.

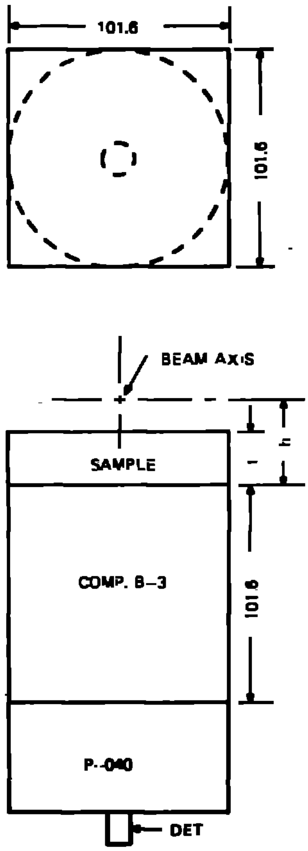


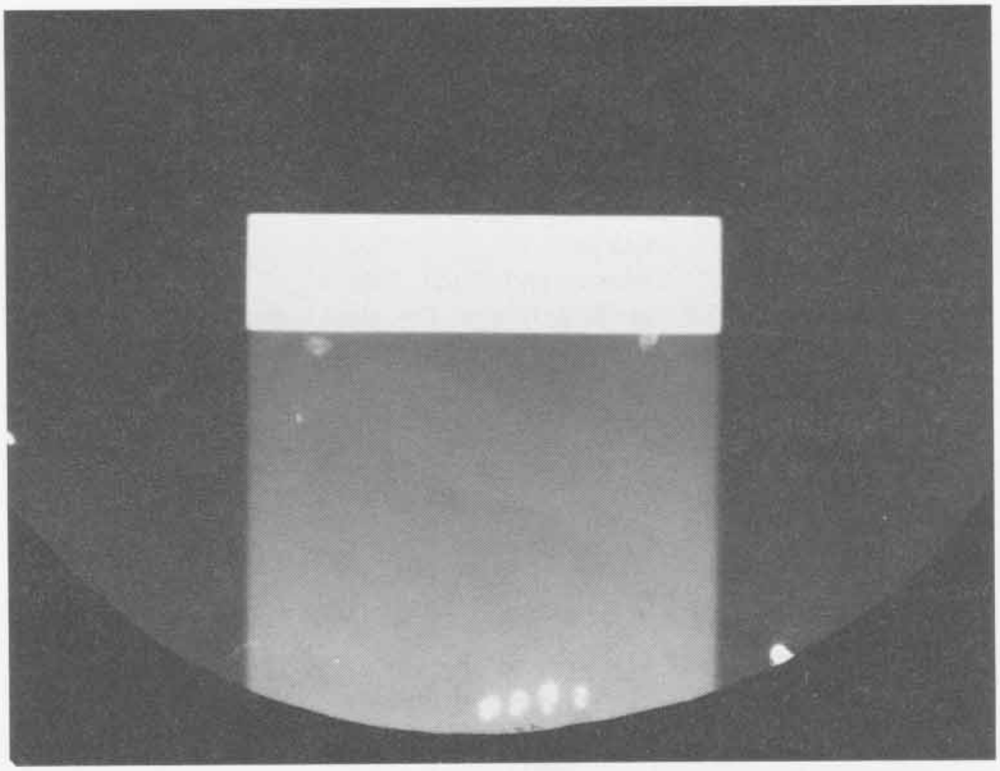


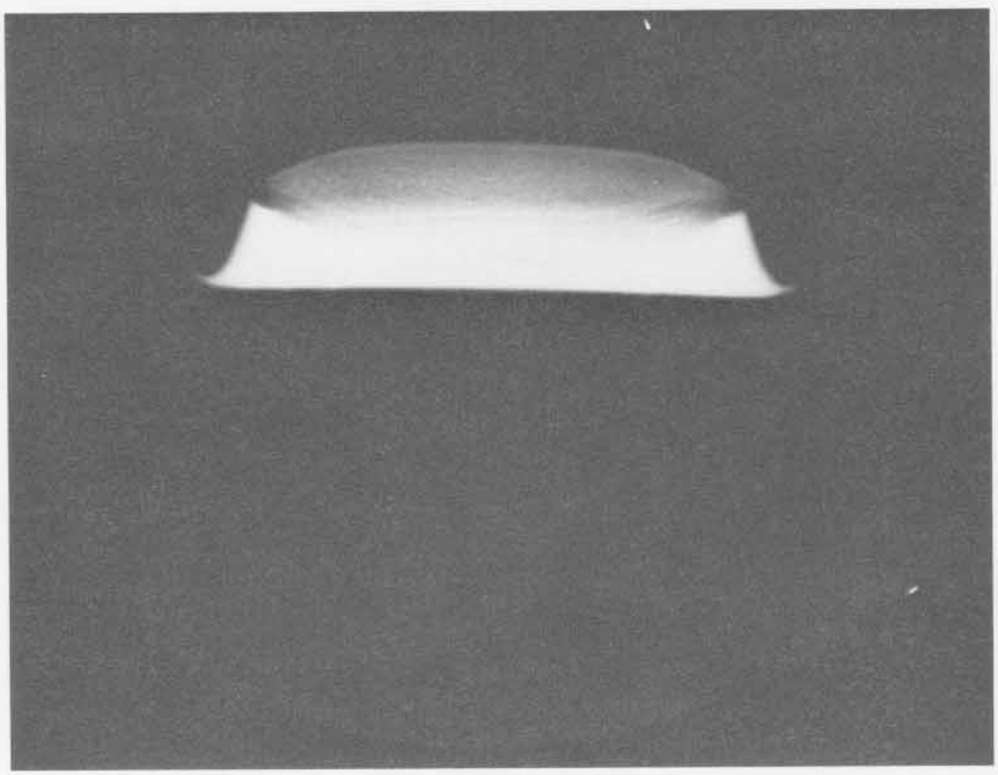


SHOT 730: **Dynamic Fracture of Zinc**
Date: January 10, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 39.35 μs
Reference: Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, zinc. The plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 44.5 mm.

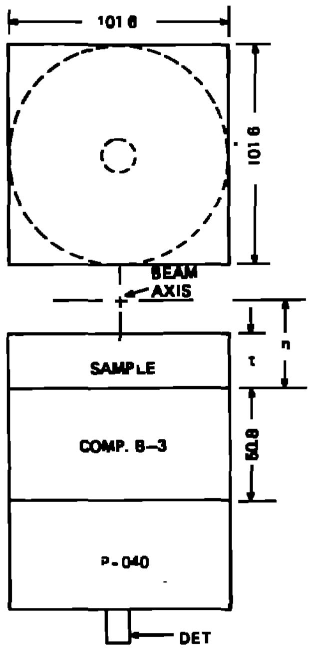


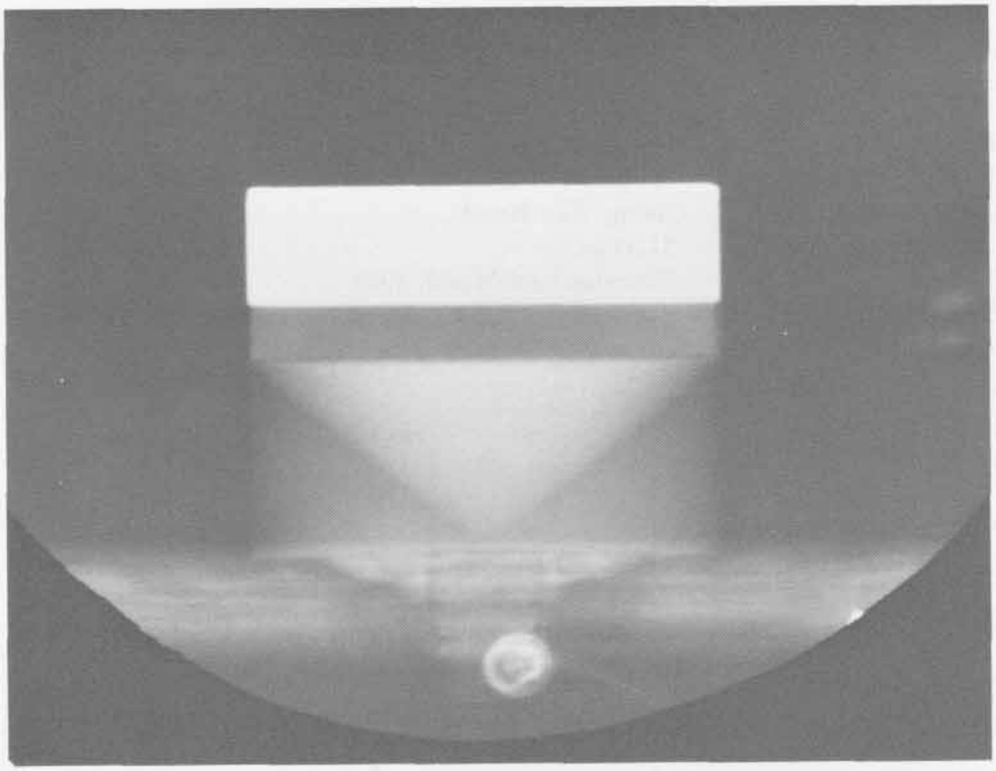


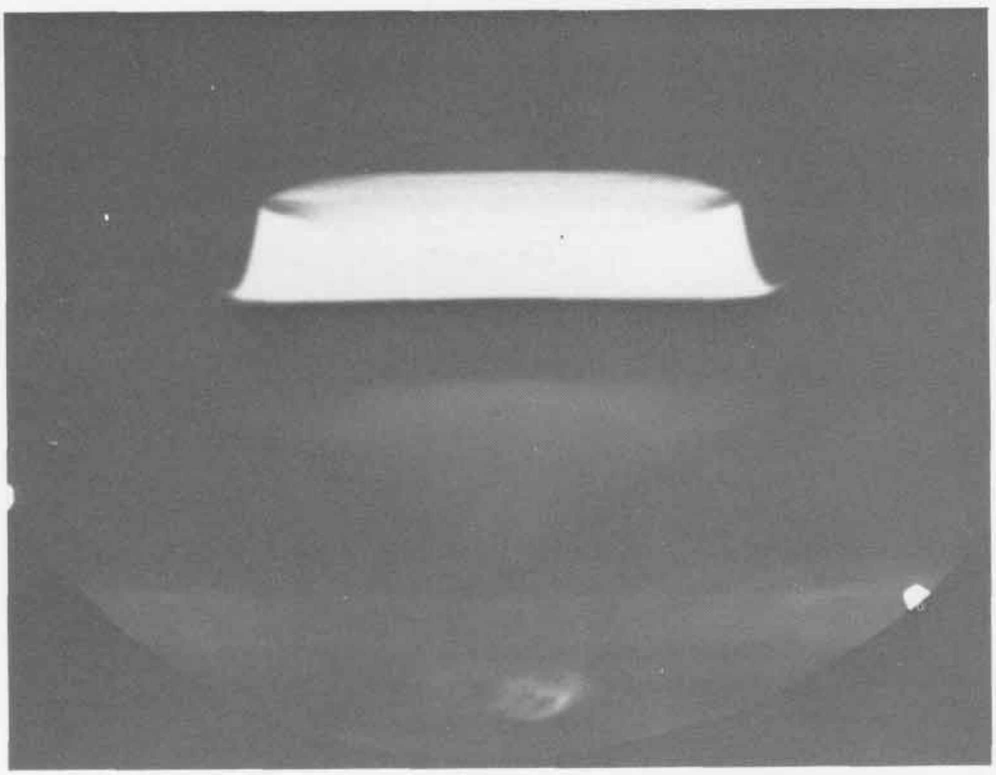


SHOT 731:	**Dynamic Fracture of Zinc**
Date:	January 19, 1967
Experimenter:	Benny Ray Breed
Radiographic Time:	28.15 μs
Reference:	Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, zinc. The plate is shocked by 50.8 mm of Composition B-3 initiated by a P-040 lens. h is 44.5 mm.

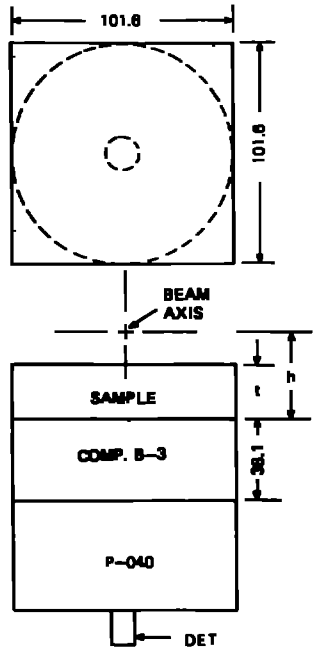


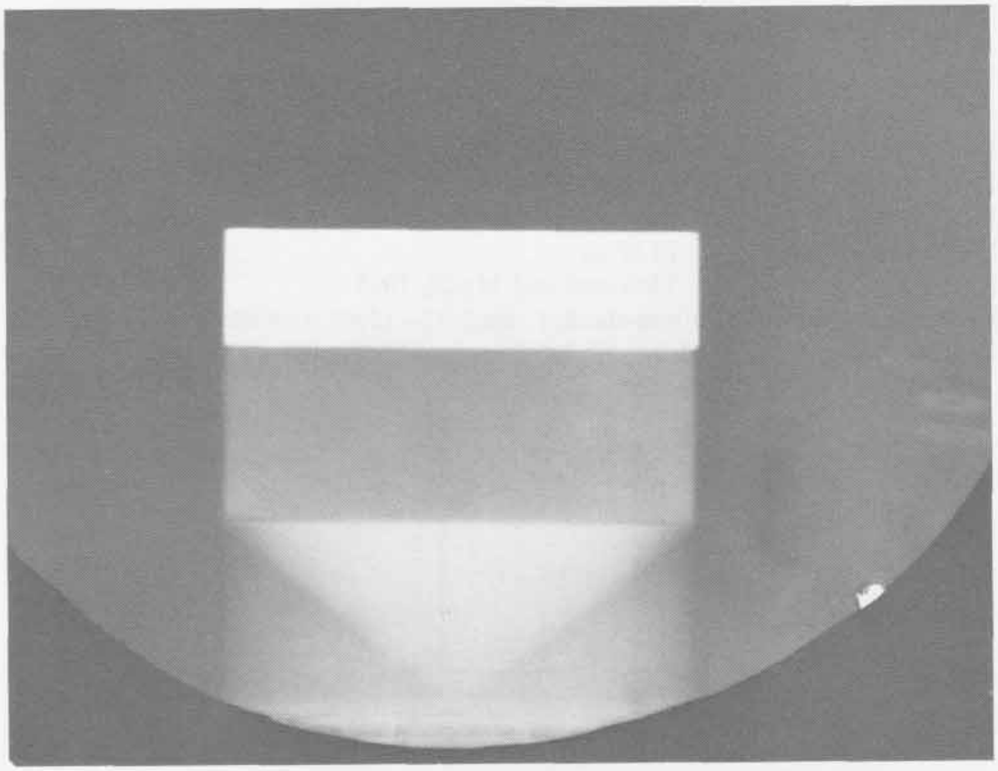


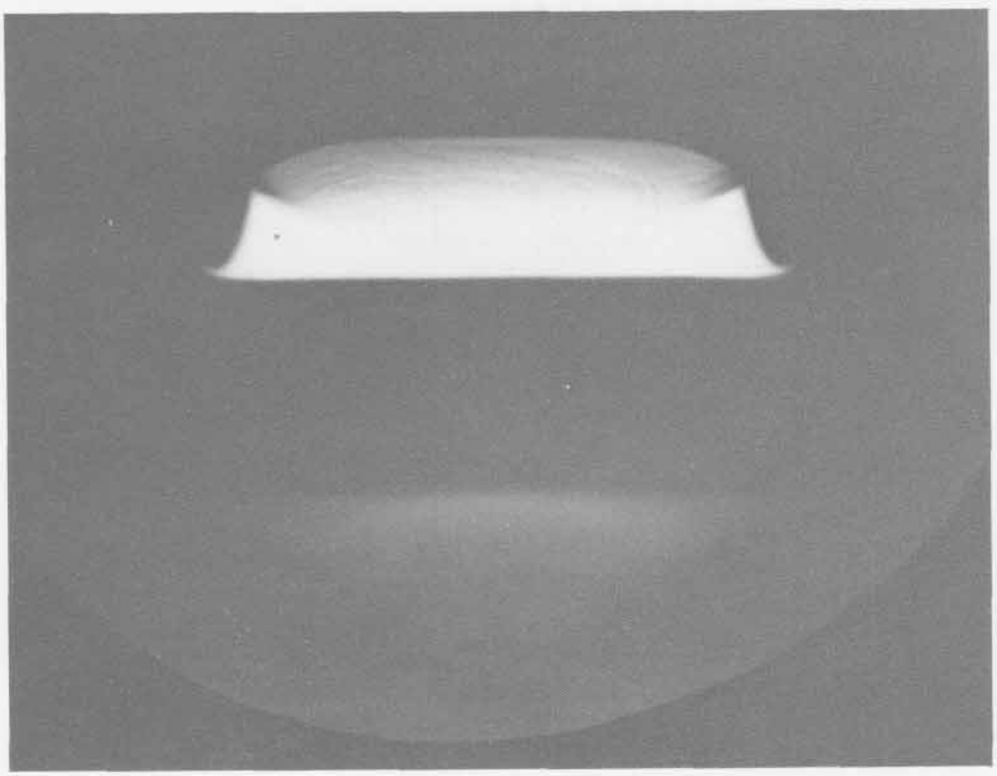


SHOT 732: **Dynamic Fracture of Zinc**
Date: January 24, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 31.34 μs
Reference: Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, zinc. The plate is shocked by 38.1 mm of Composition B-3 initiated by a P-040 lens. h is 44.5 mm.

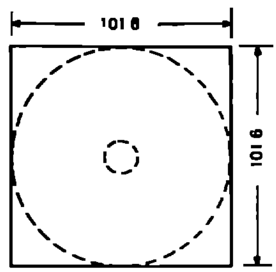


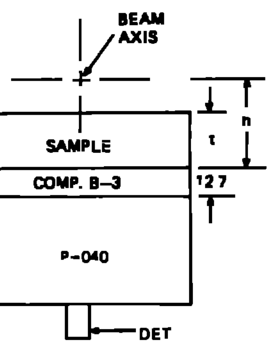


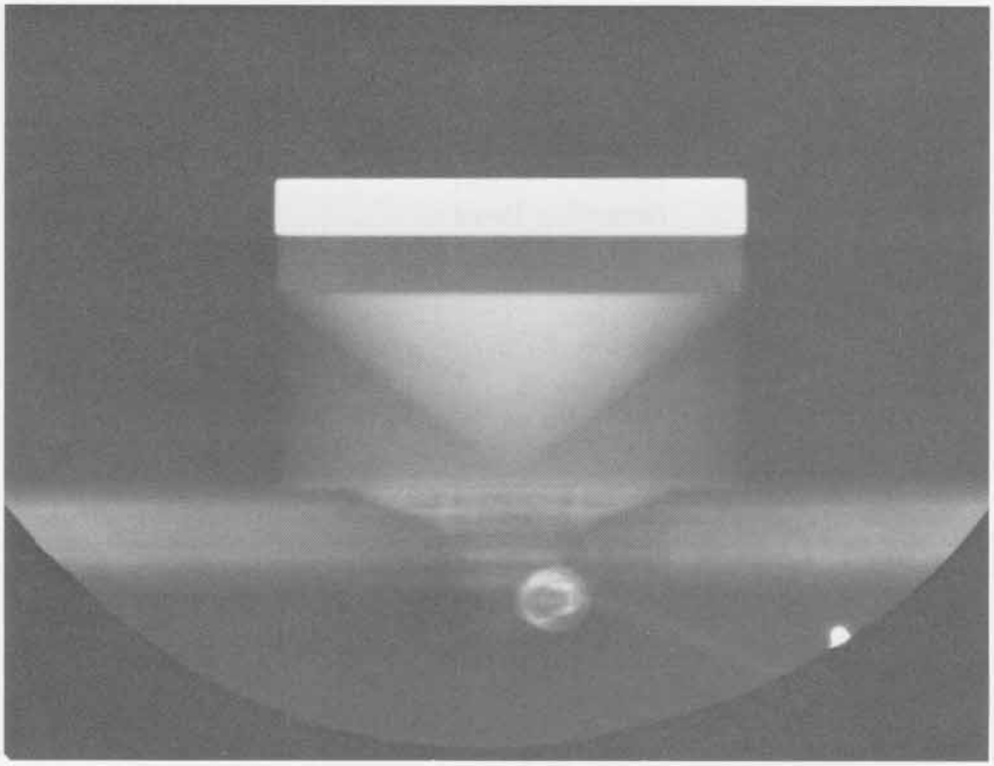


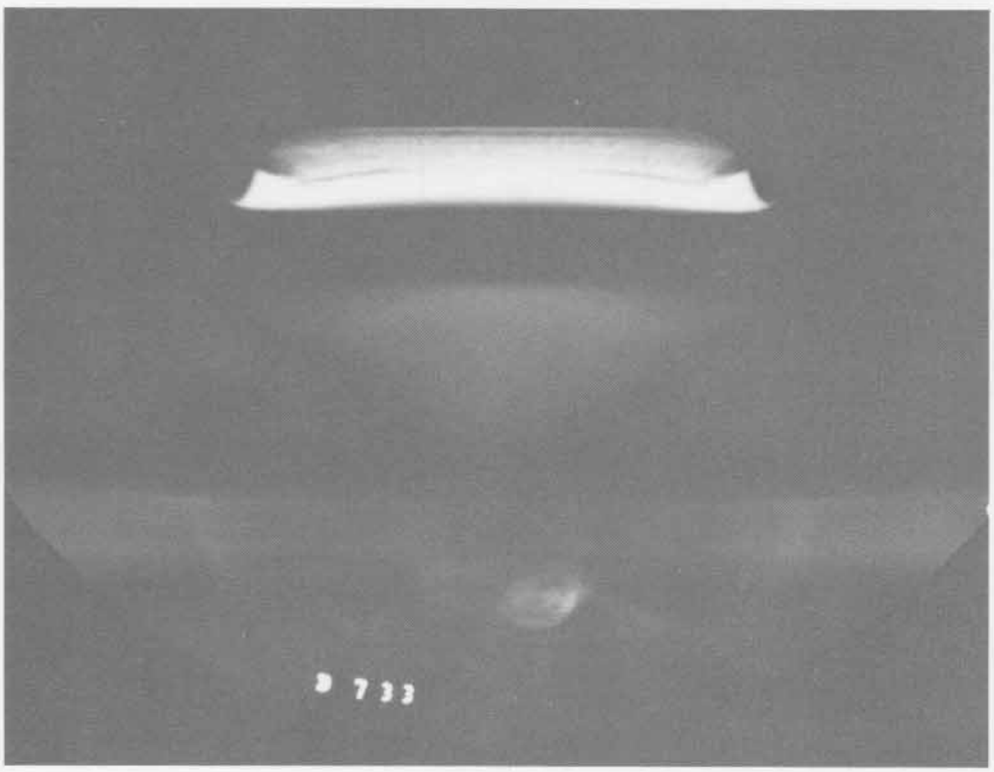
SHOT 733: **Dynamic Fracture of Zinc**
Date: January 10, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 25.52 μs
Reference: Thurston and Mudd, 1968

Dynamic fracture of 12.0-mm-thick, t, zinc. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 31.75 mm.



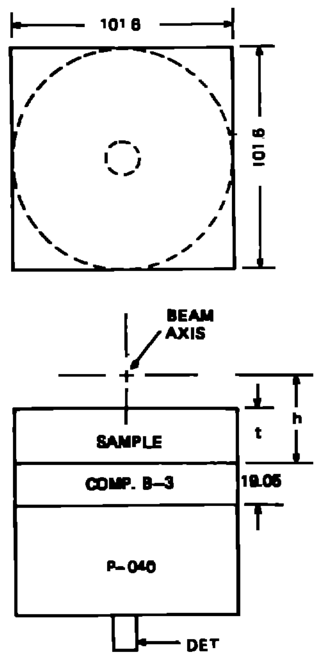


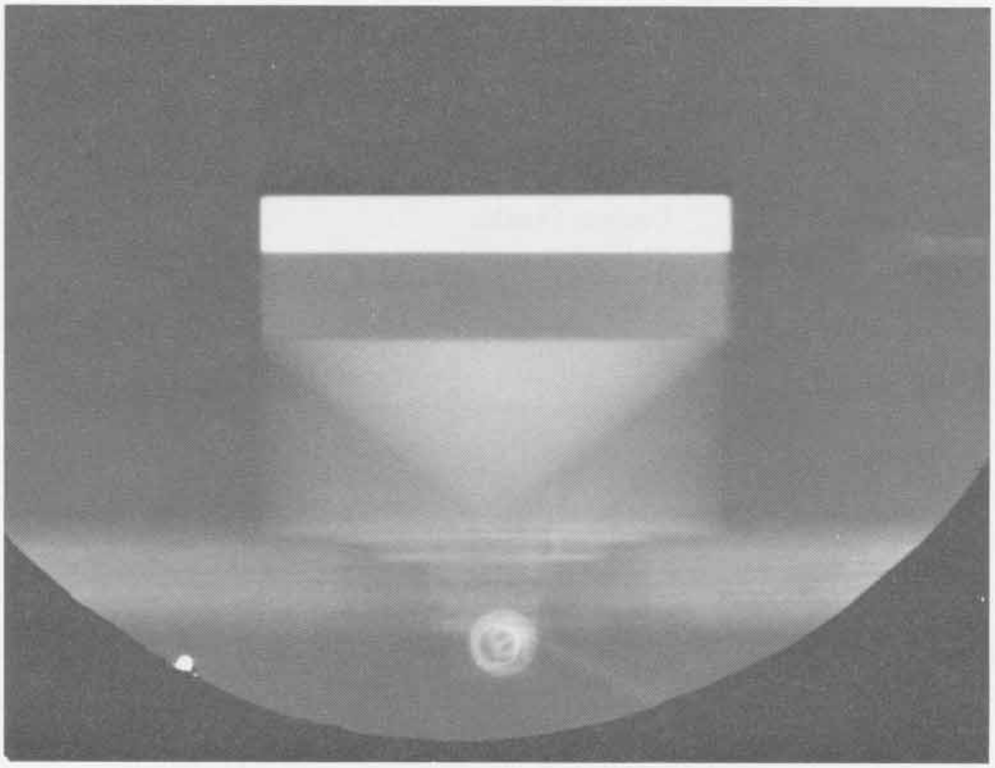


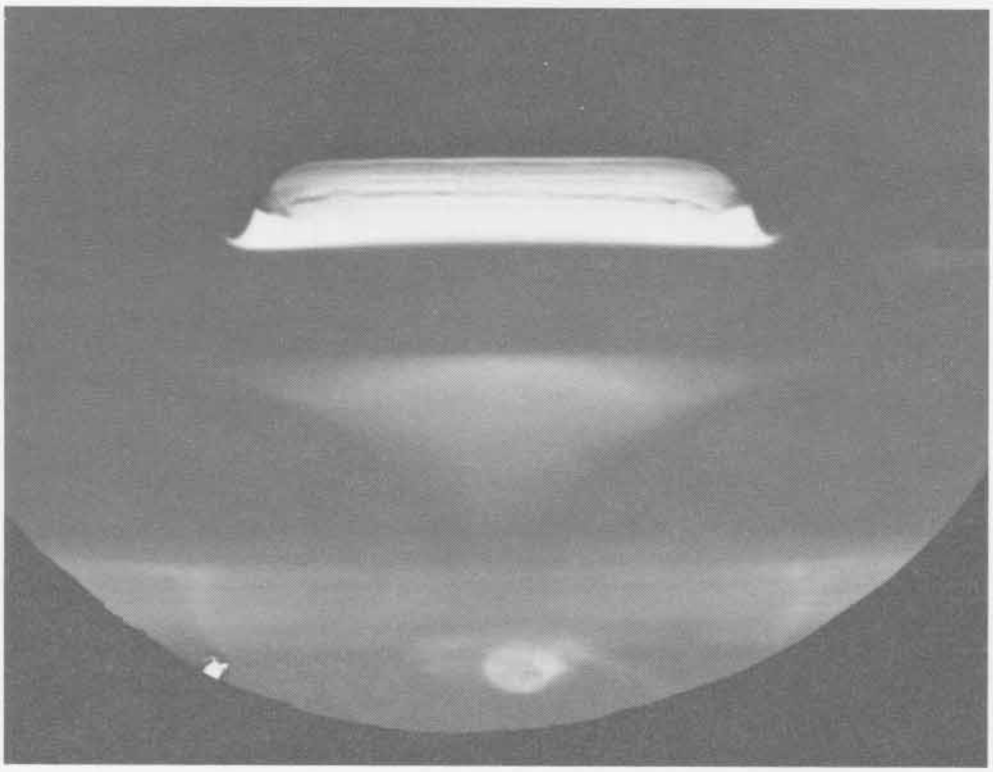


SHOT 734: **Dynamic Fracture of Zinc**
Date: February 14, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 26.34 μs
Reference: Thurston and Mudd, 1968

Dynamic fracture of 12.0-mm-thick, t, zinc. The plate is shocked by 19.05 mm of Composition B-3 initiated by a P-040 lens. h is 31.75 mm.

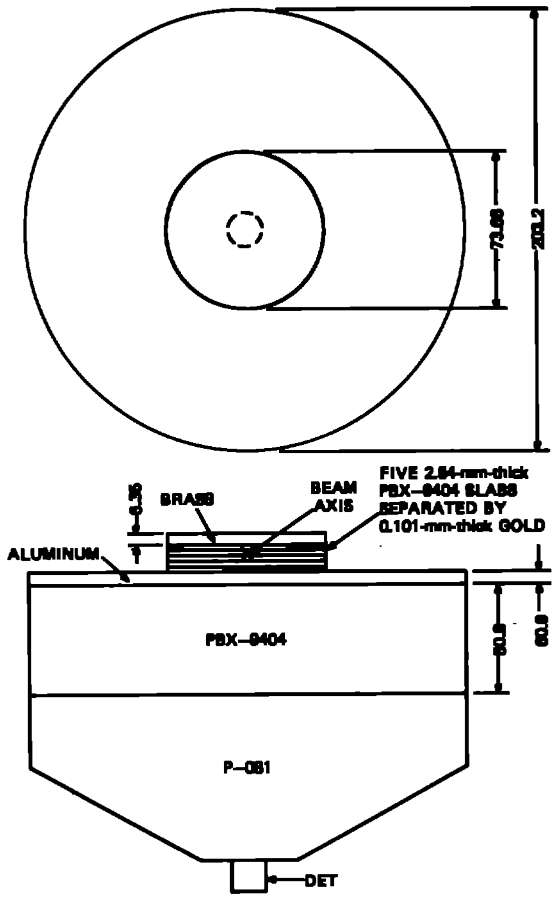


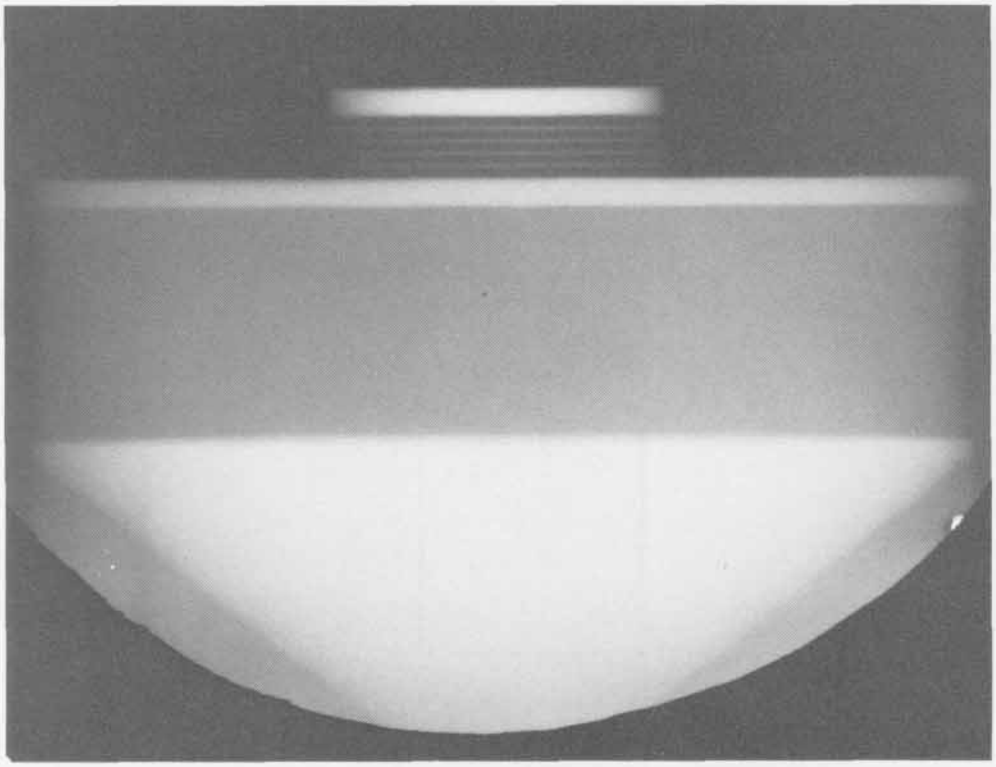


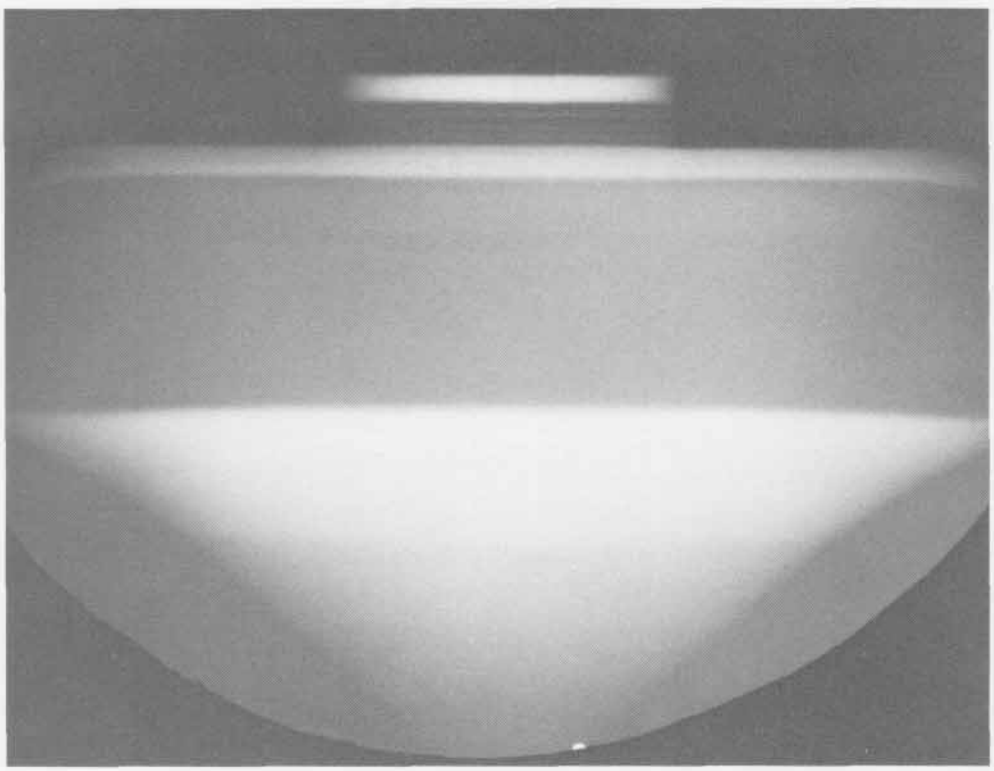


SHOT 735: **PBX 9404 with Embedded Gold Foils**
Date: January 18, 1967
Experimenter: Doulgas Venable
Radiographic Time: 30.47 μs

Five 2.54-mm-thick slabs of PBX 9404 separated by 0.101-mm-thick gold foils and placed between a 6.35-mm-thick brass plate and a 6.096-mm-thick aluminum plate are shocked by 50.8 mm of PBX-9401 and a P-081 lens.

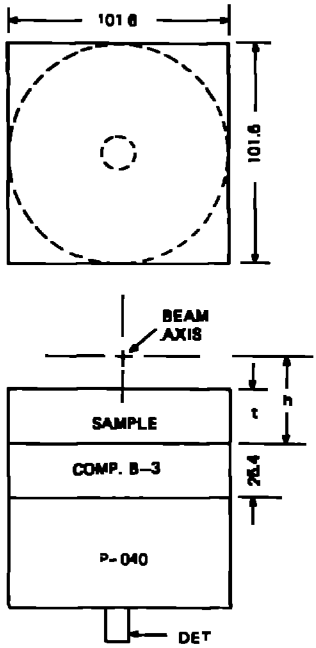


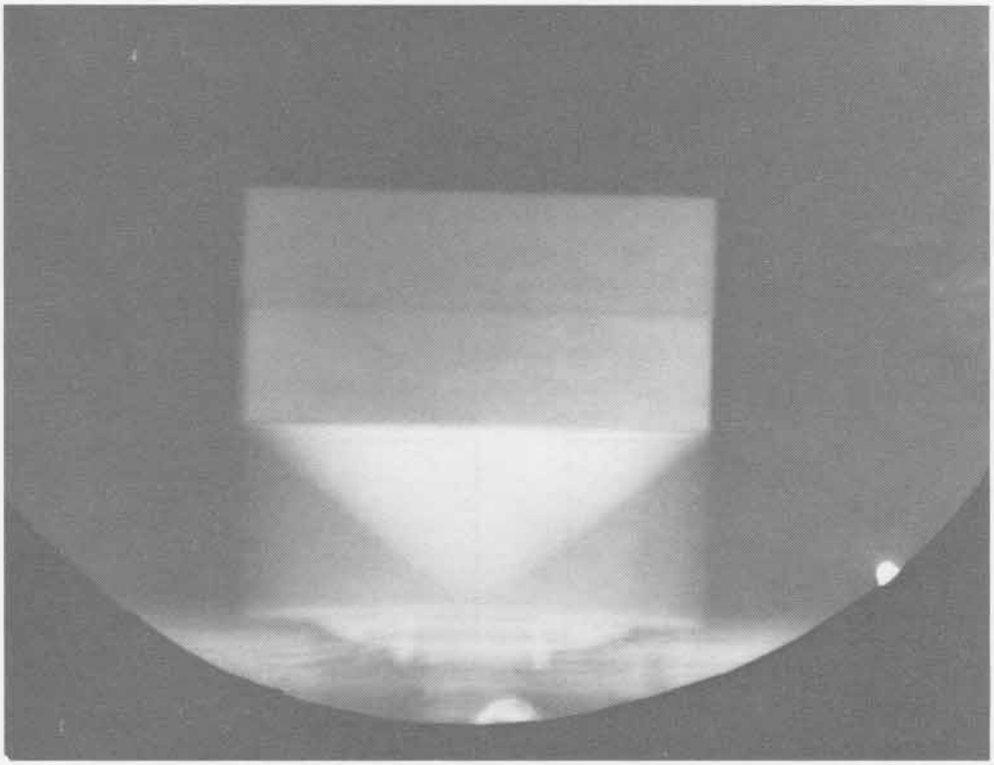


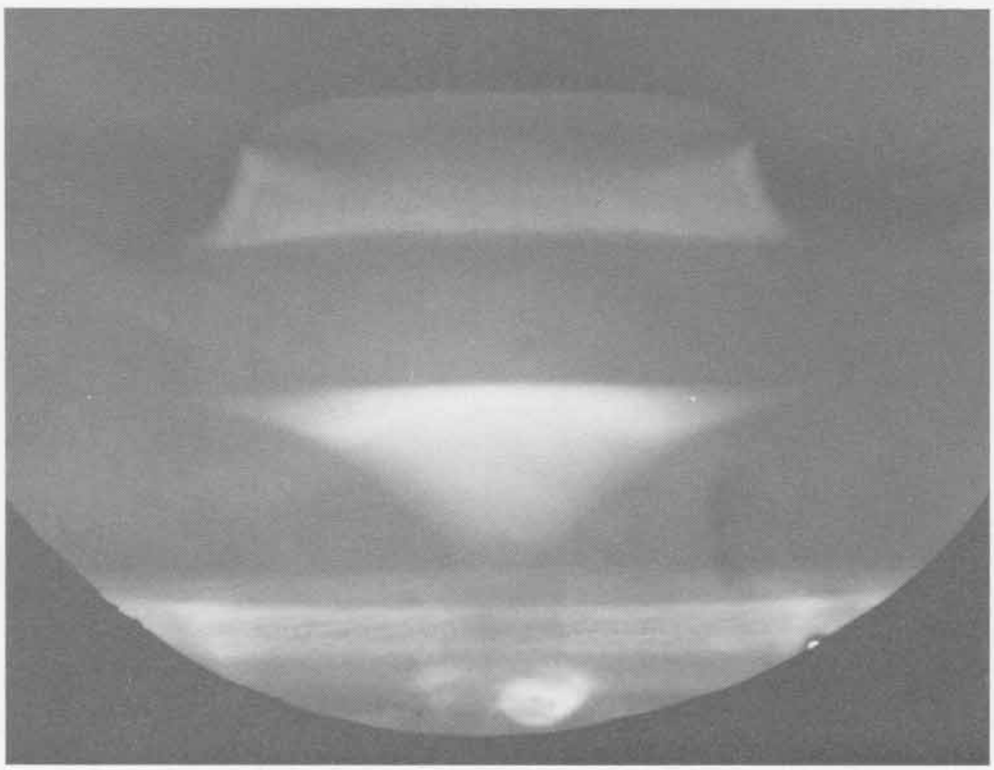


SHOT 736:	**Dynamic Fracture of Beryllium**
Date:	**January 24, 1967**
Experimenter:	**Benny Ray Breed**
Radiographic Time:	**25.15 μs**
Reference:	**Thurston and Mudd, 1968**

Dynamic fracture of 25.0-mm-thick, t, beryllium. The plate is shocked by 25.4 mm of Composition B-3 initiated by a P-040 lens. h is 44.5 mm.







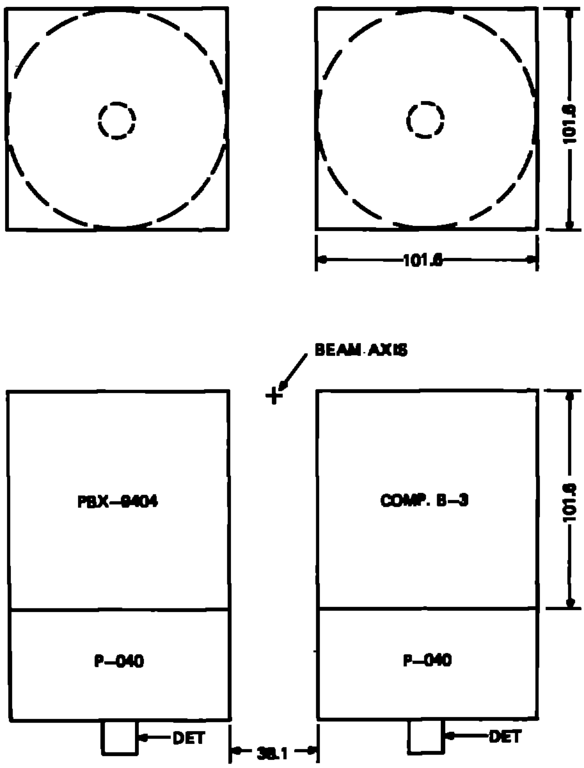
SHOT 744: **Interaction of PBX-9404 and Composition B-3 Detonation Products**

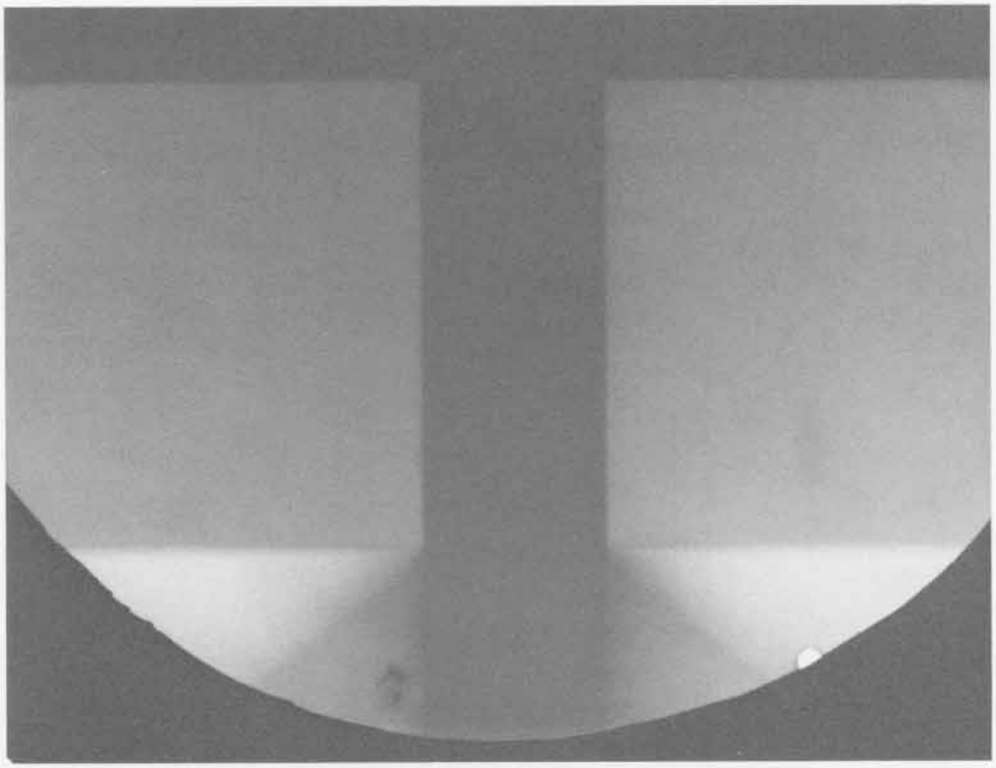
Date: February 14, 1967

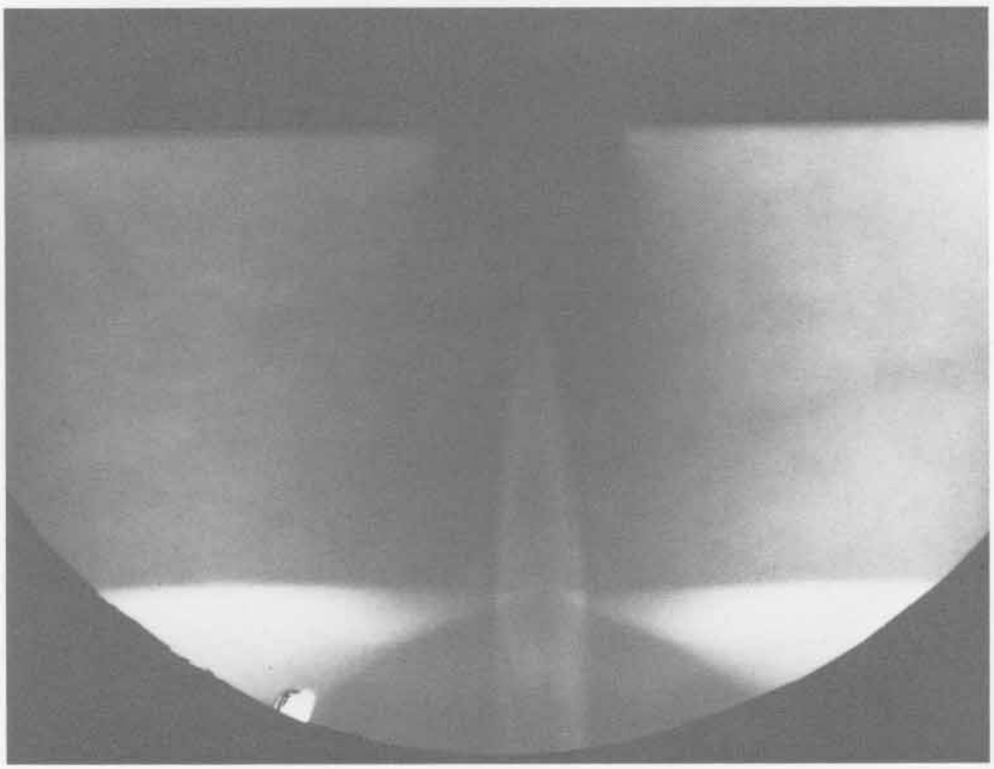
Experimenter: Roger W. Taylor

Radiographic Time: 25.12 μs

Interaction of the detonation products of Composition B-3 and PBX 9404 blocks placed 38.1 mm apart and detonated so that the detonation waves would arrive at the tops of the blocks simultaneously after 101.6 mm of travel.

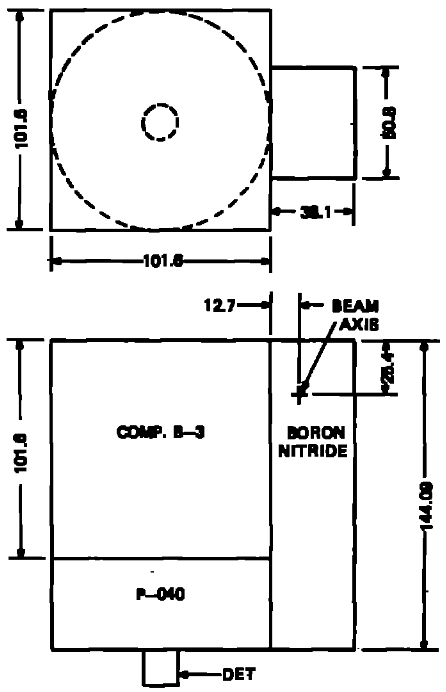


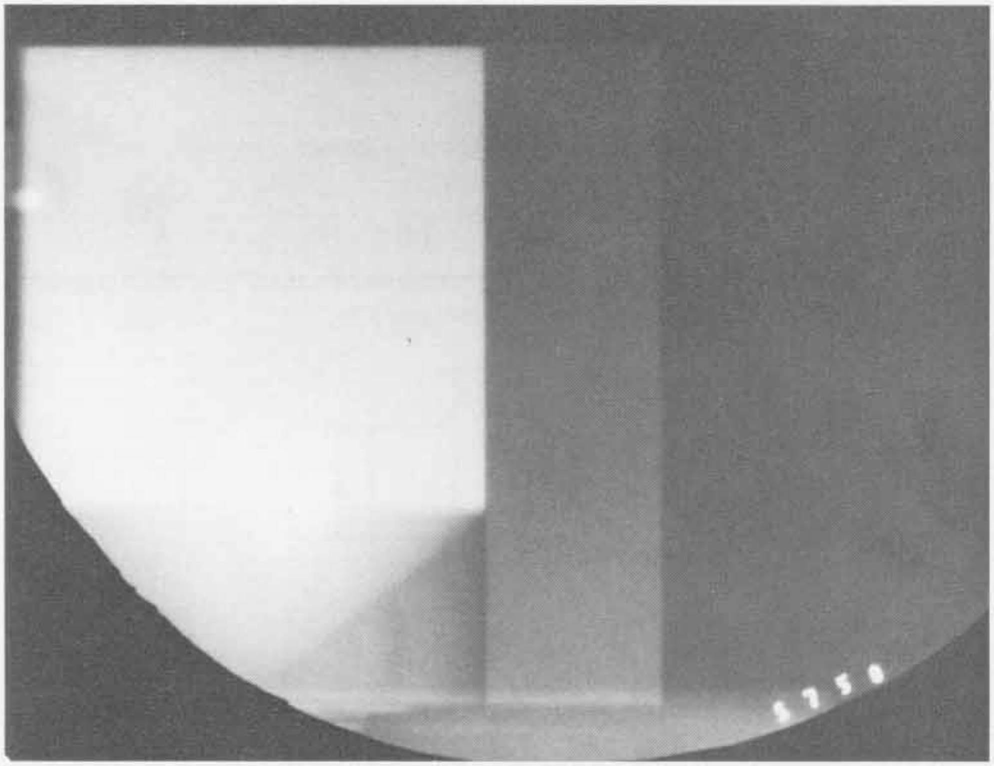




SHOT 750: **Boron Nitride Phase Change**
Date: February 21, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 31.74 μs

A 50.8- by 38.1-mm block of boron nitride is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens.

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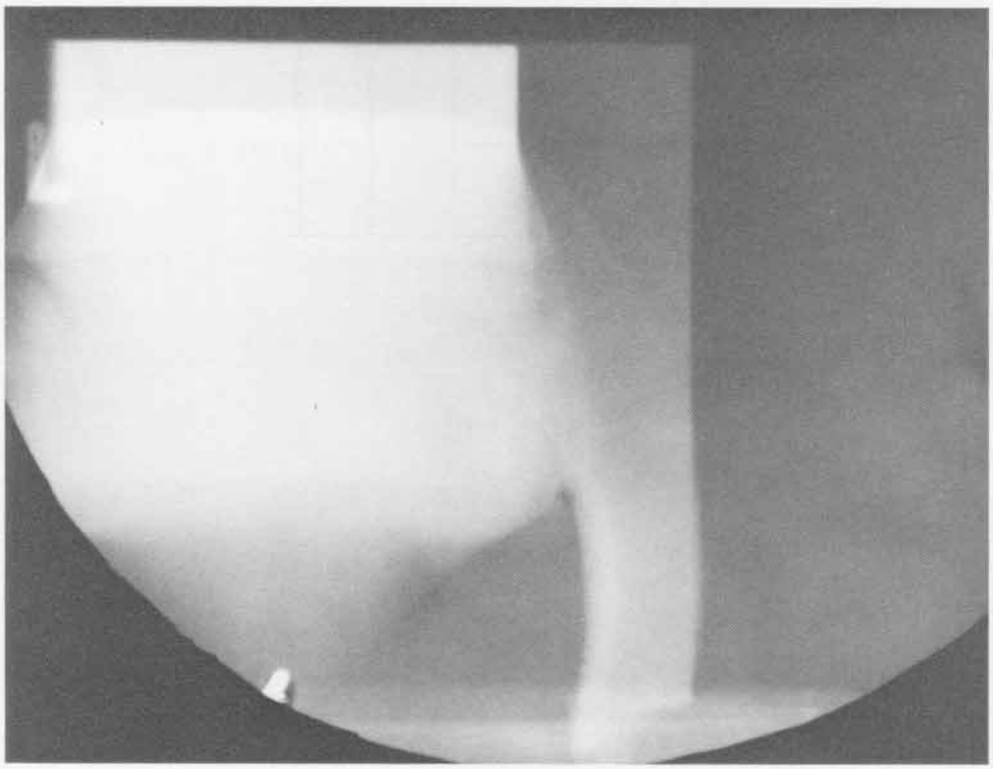
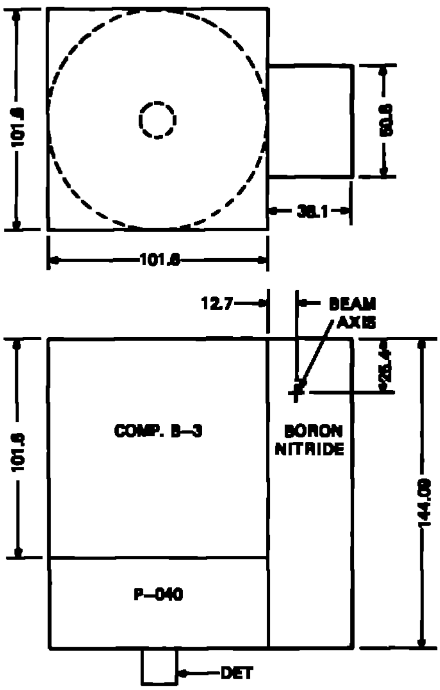
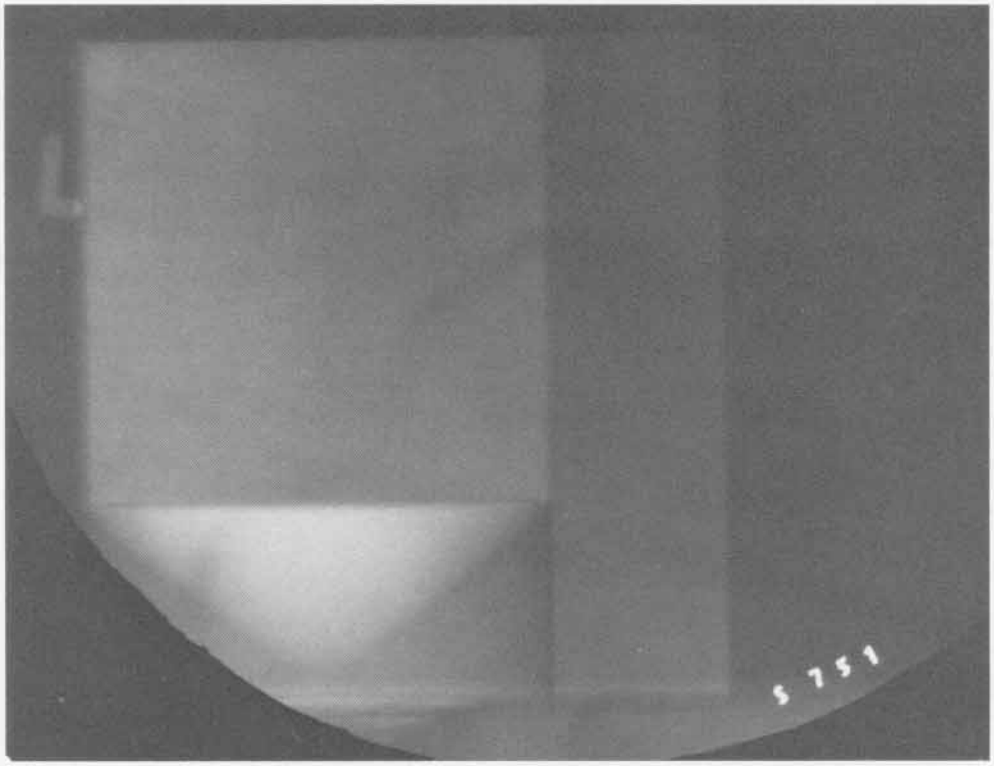


SHOT 751: **Boron Nitride Phase Change**
Date: February 23, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 24.65 μs

A 50.8- by 38.1-mm block of boron nitride is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. See Shots 768 and 776.

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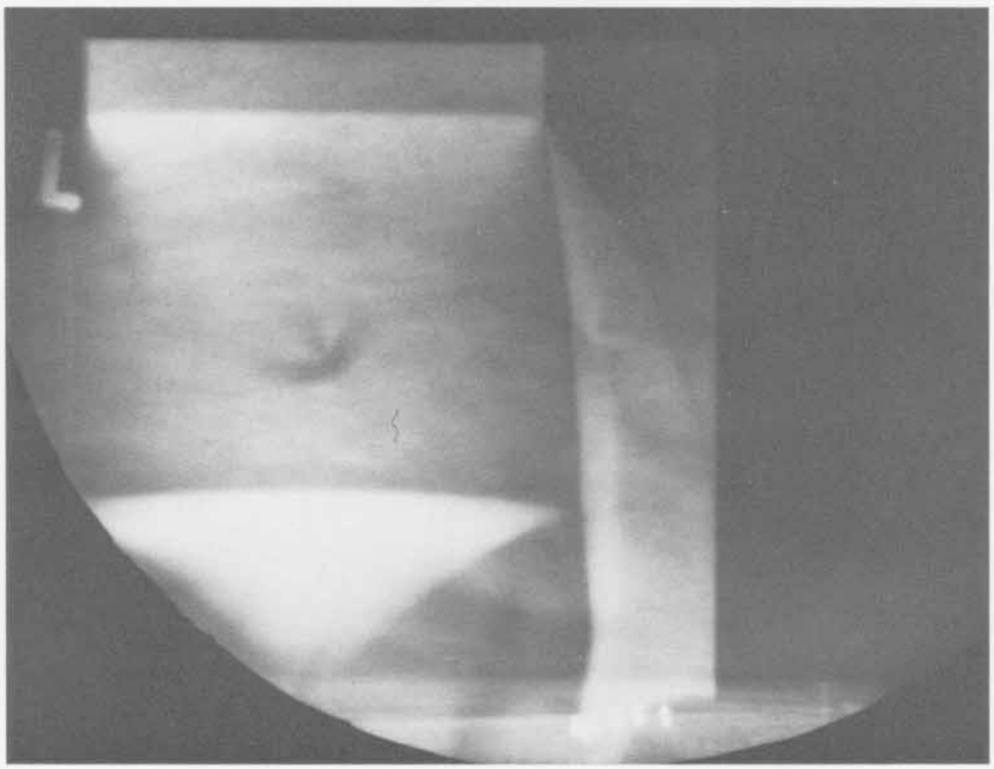
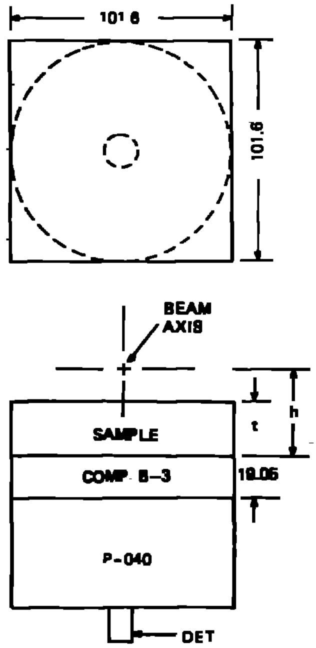
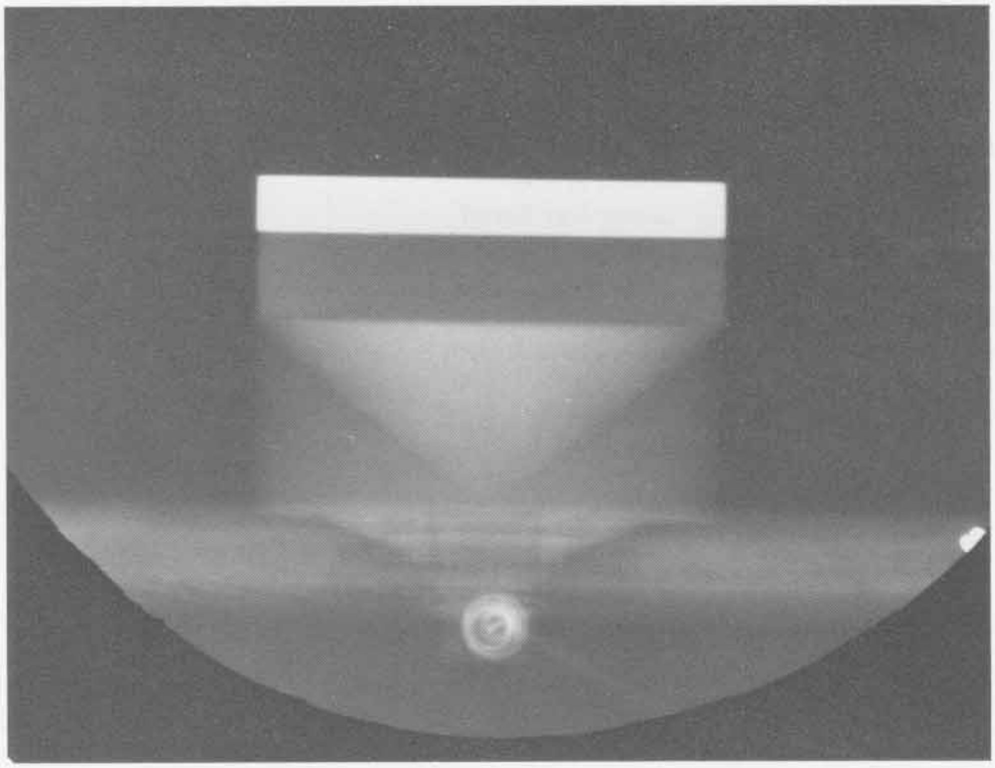
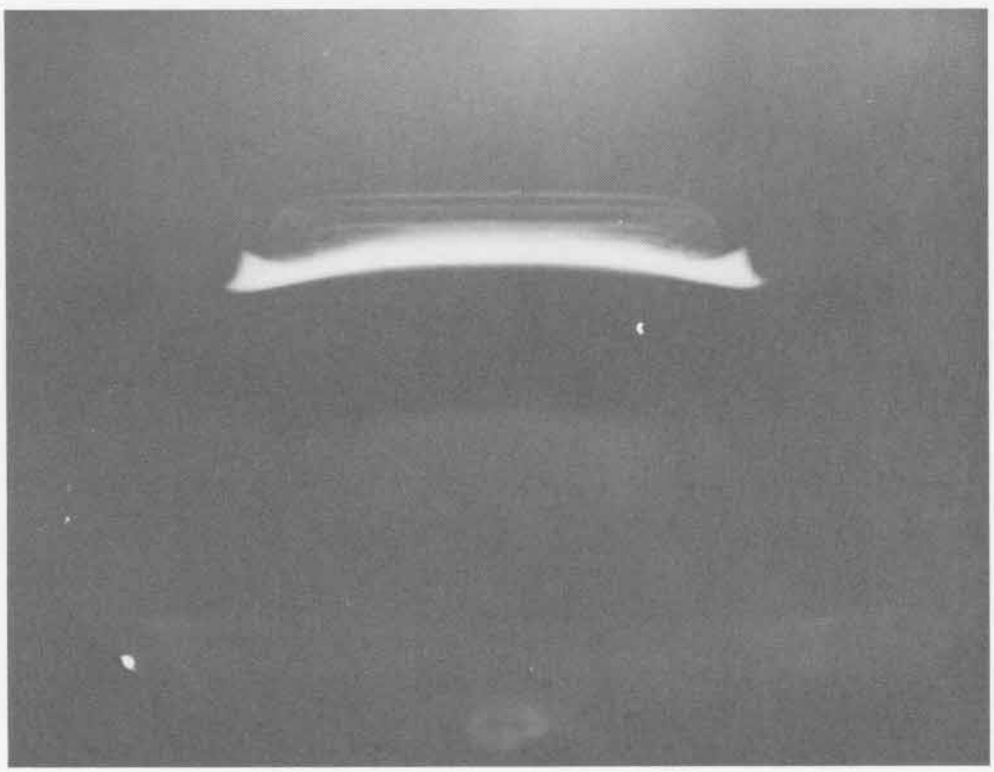


SHOT 756: **Dynamic Fracture of 347 Steel**
Date: March 7, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 29.92 μs

Dynamic fracture of 12.0-mm-thick, t, 347 steel. The plate is shocked by 19.05 mm of Composition B-3 initiated by a P-040 lens. h is 25.4 mm.

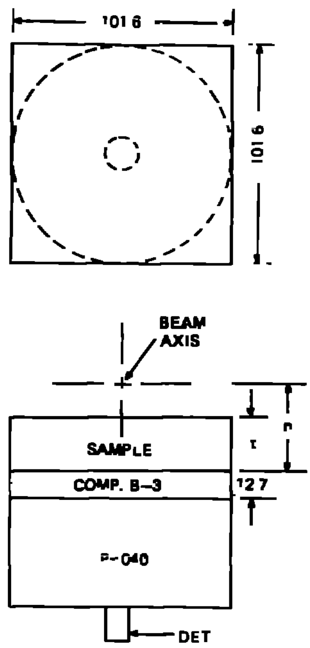


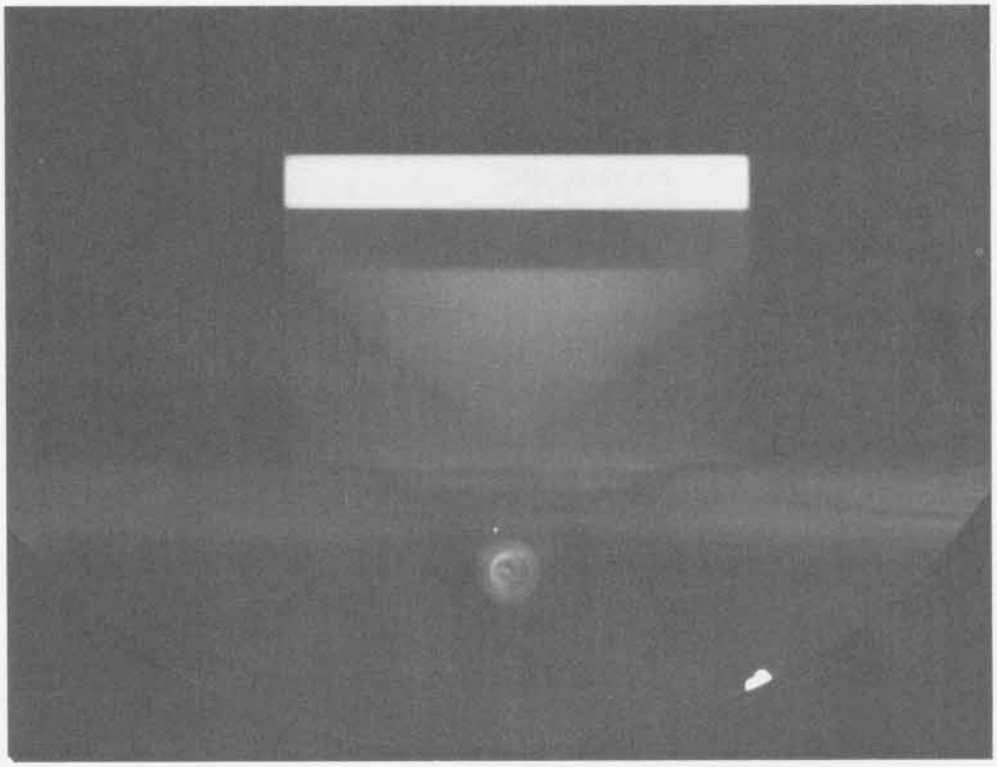


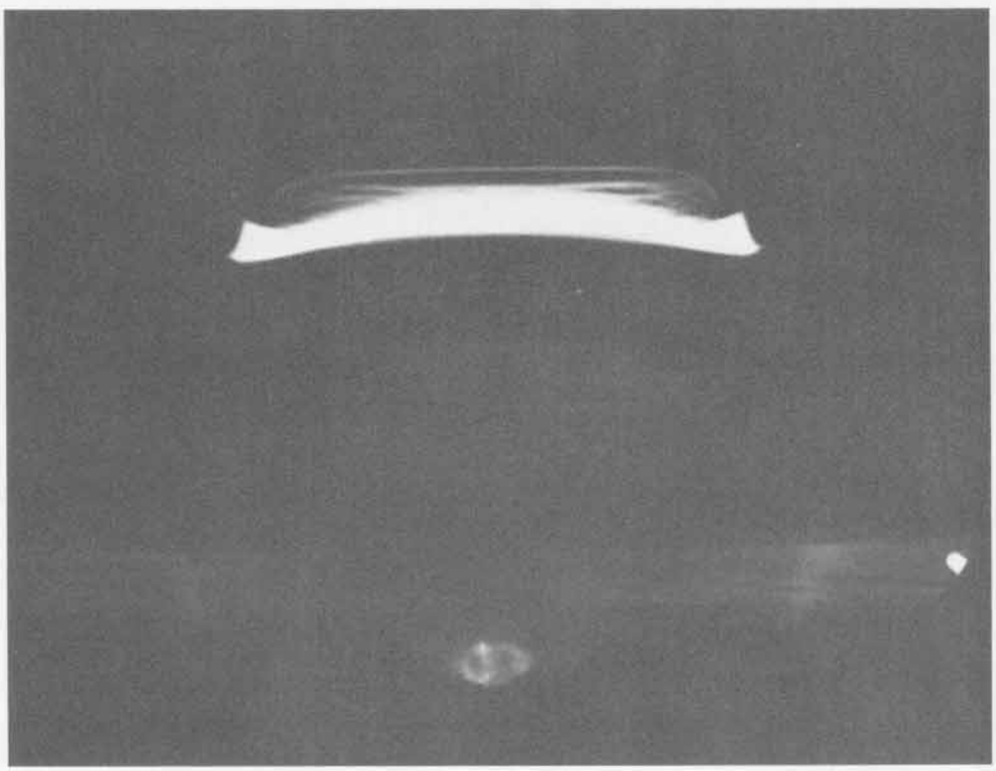


SHOT 757: **Dynamic Fracture of 347 Steel**
Date: March 8, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 29.27 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 12.0-mm-thick, t, 347 steel. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 25.4 mm.

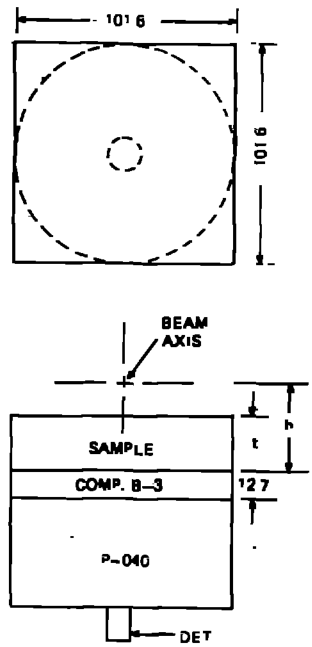


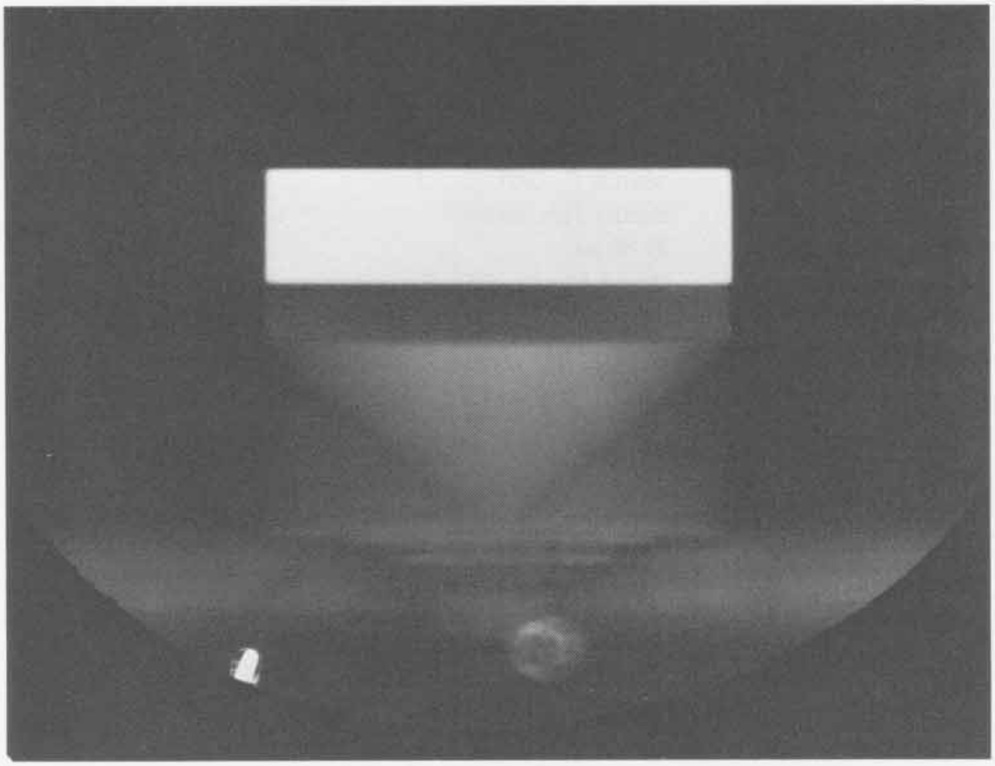


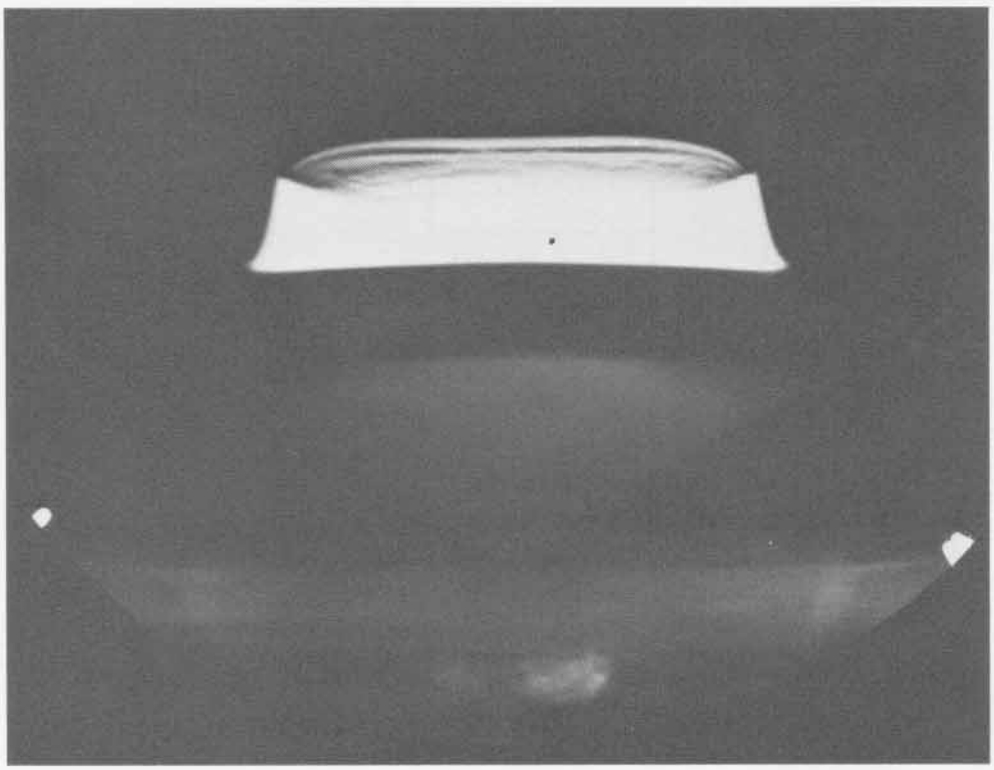


SHOT 758: **Dynamic Fracture of 347 Steel**
Date: March 8, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 31.27 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, 347 steel. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

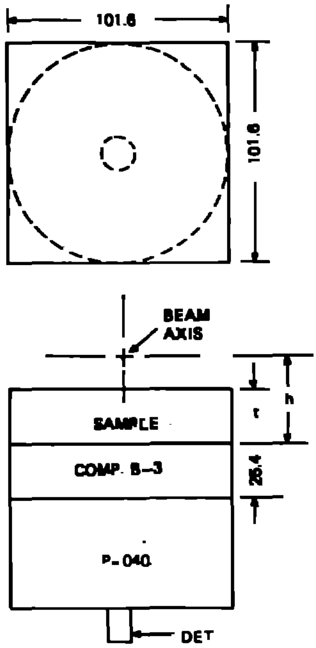


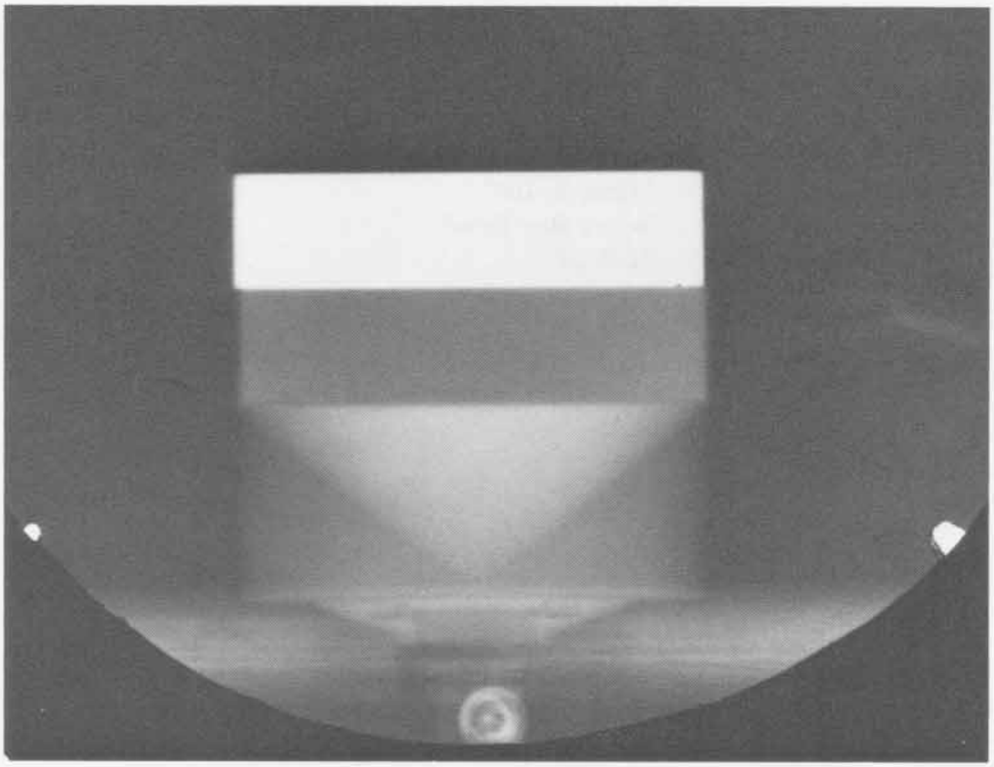


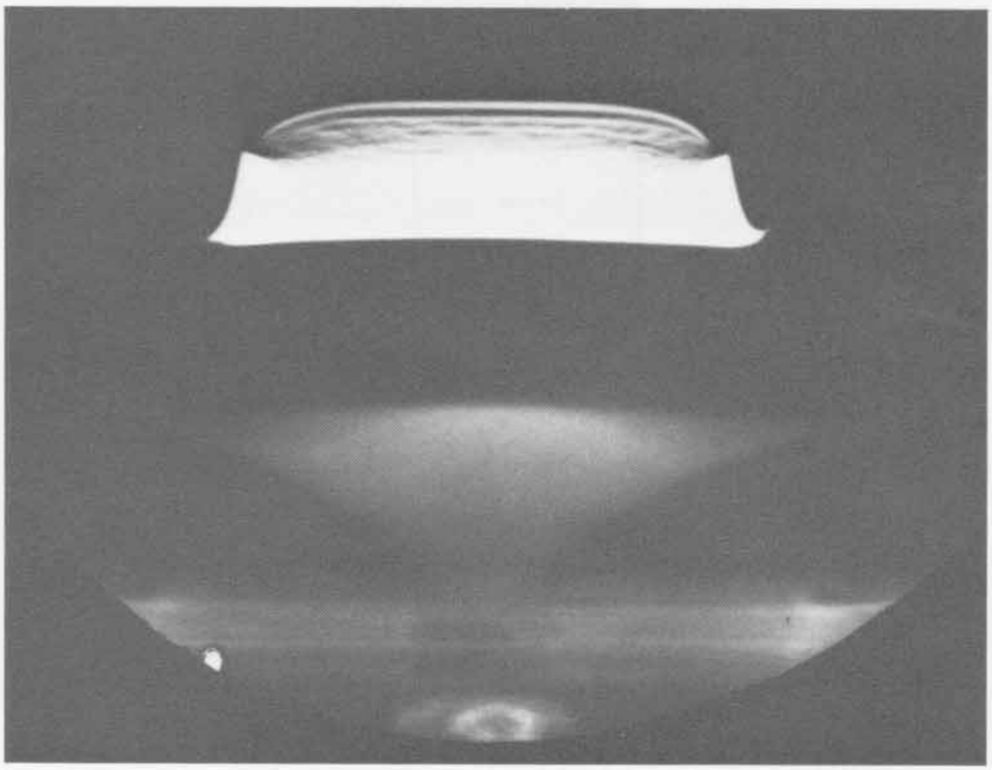


SHOT 759: **Dynamic Fracture of 347 Steel**
Date: March 8, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 32.89 μs
Reference: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, 347 steel. The plate is shocked by 25.4 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

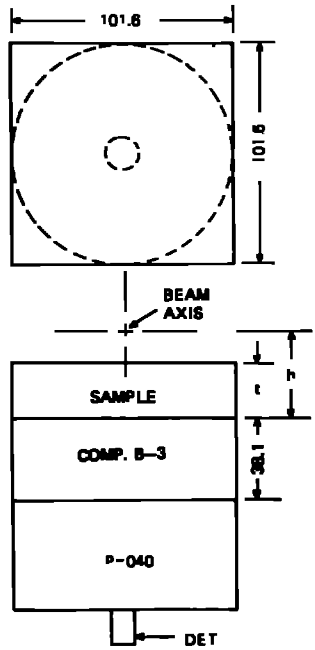


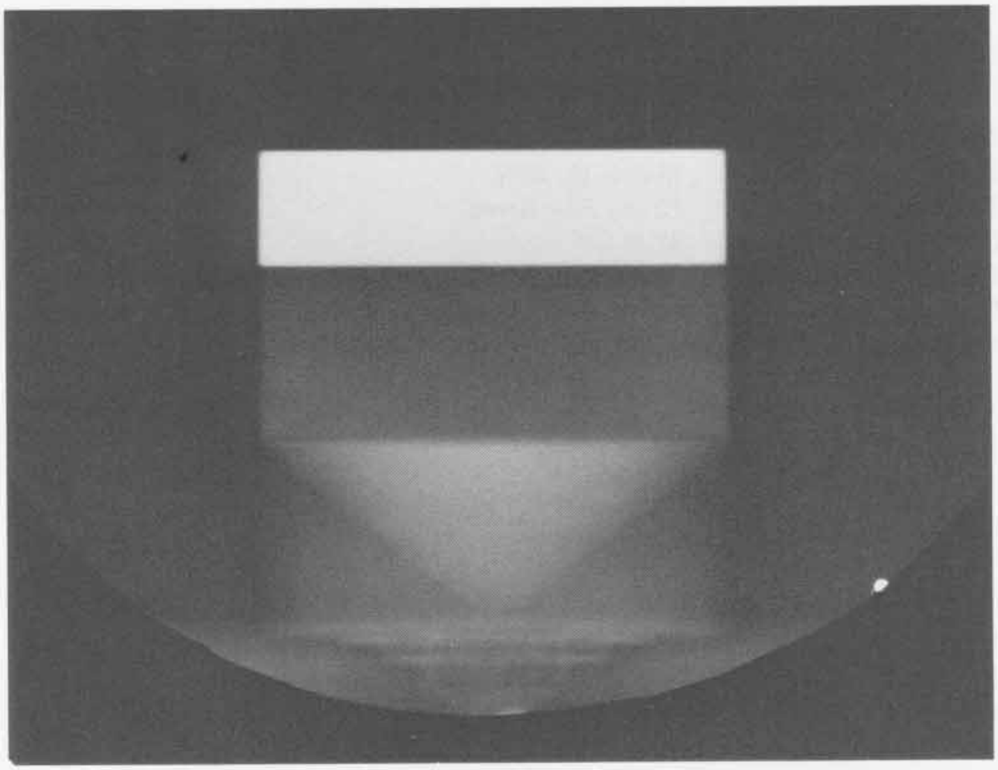


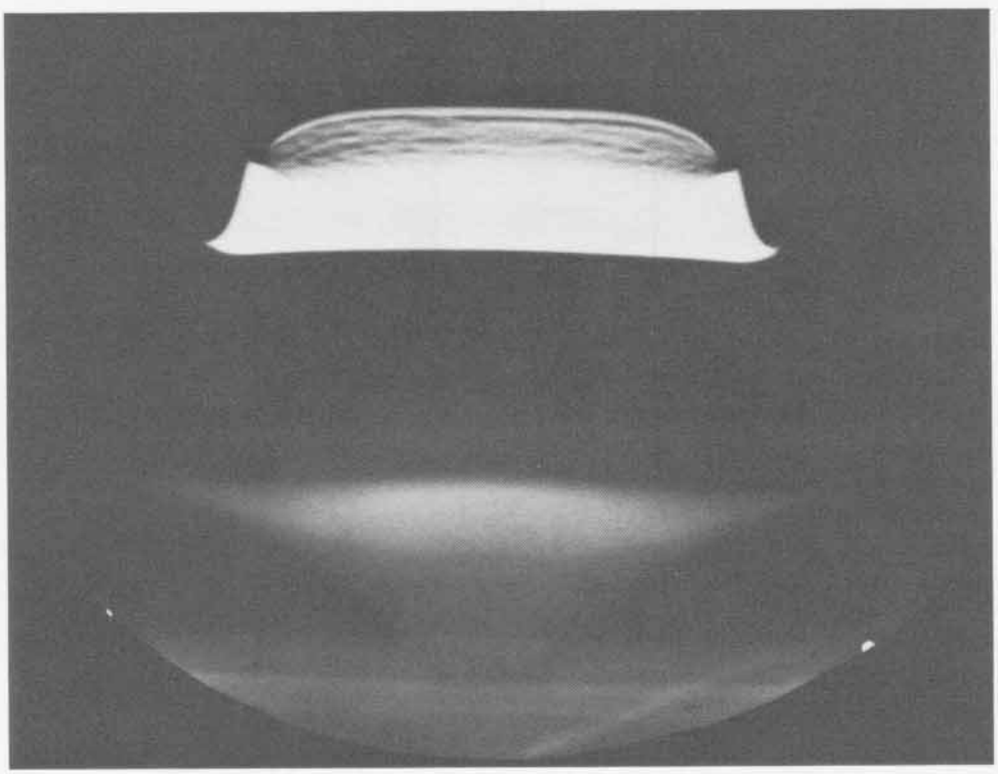


SHOT 760: **Dynamic Fracture of 347 Steel**
Date: March 8, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 34.45 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, 347 steel. The plate is shocked by 38.1 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

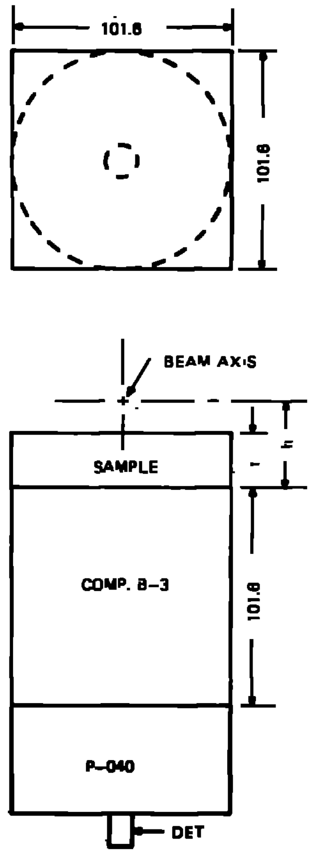


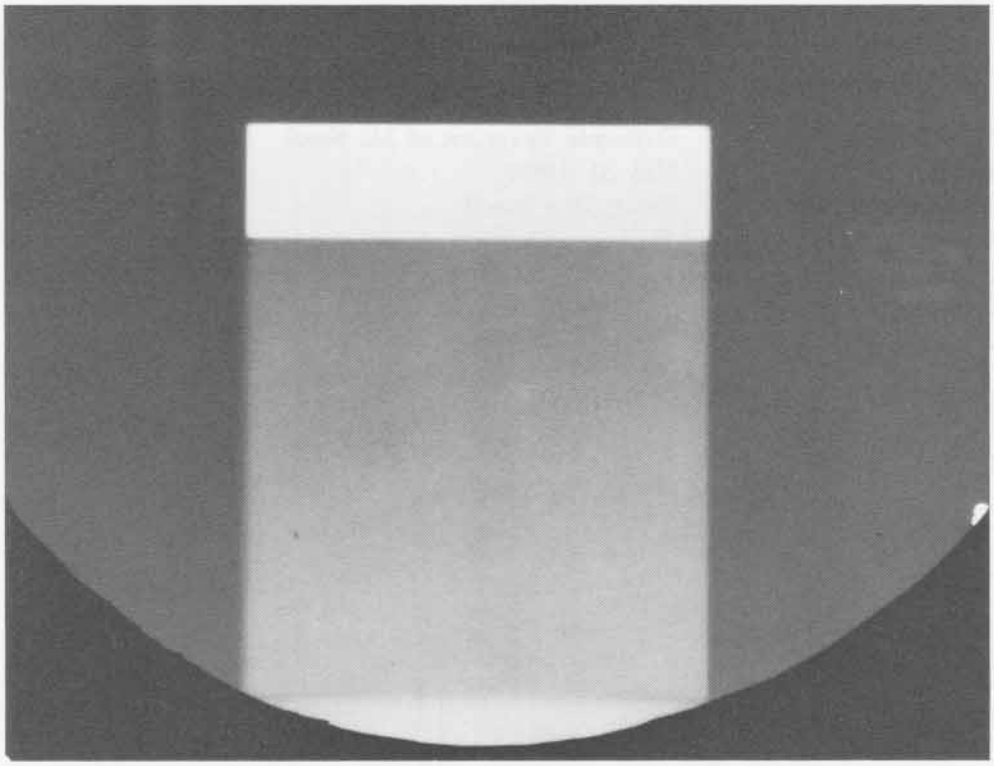


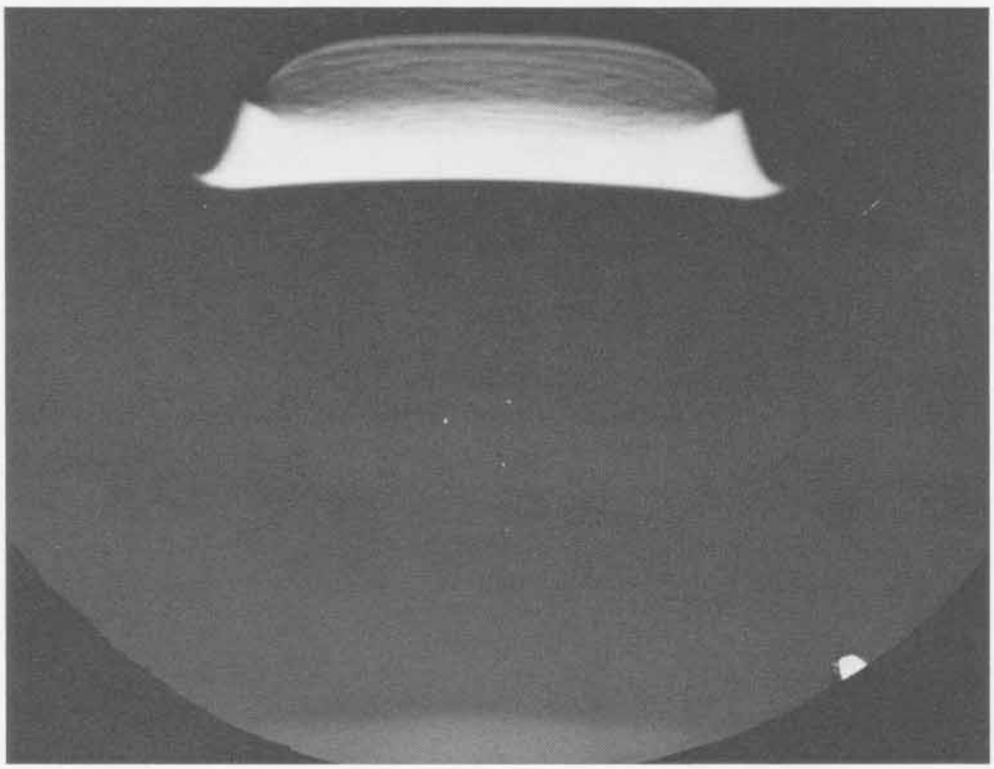


SHOT 761: **Dynamic Fracture of 347 Steel**
Date: March 15, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 42.46 μs
References: Breed et al., 1967; Thurston and Mudd, 1968

Dynamic fracture of 25.0-mm-thick, t, 347 steel. The plate is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

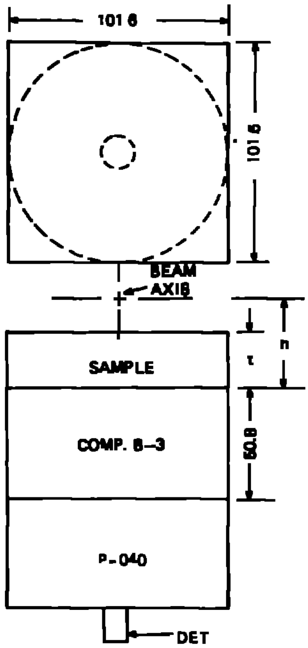


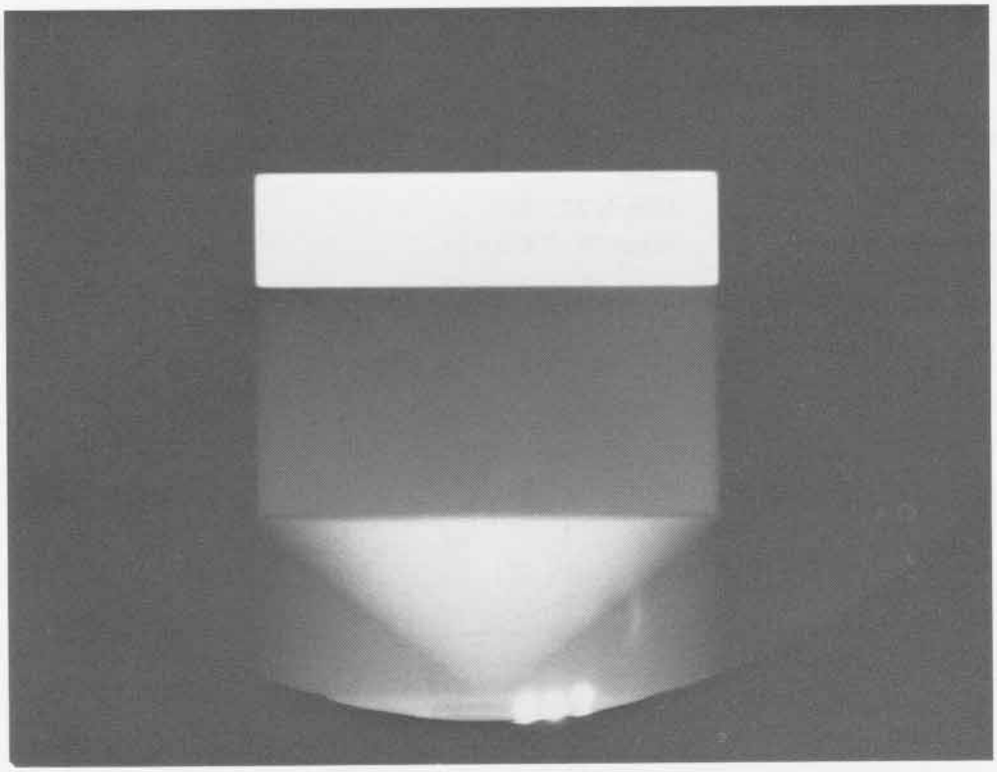


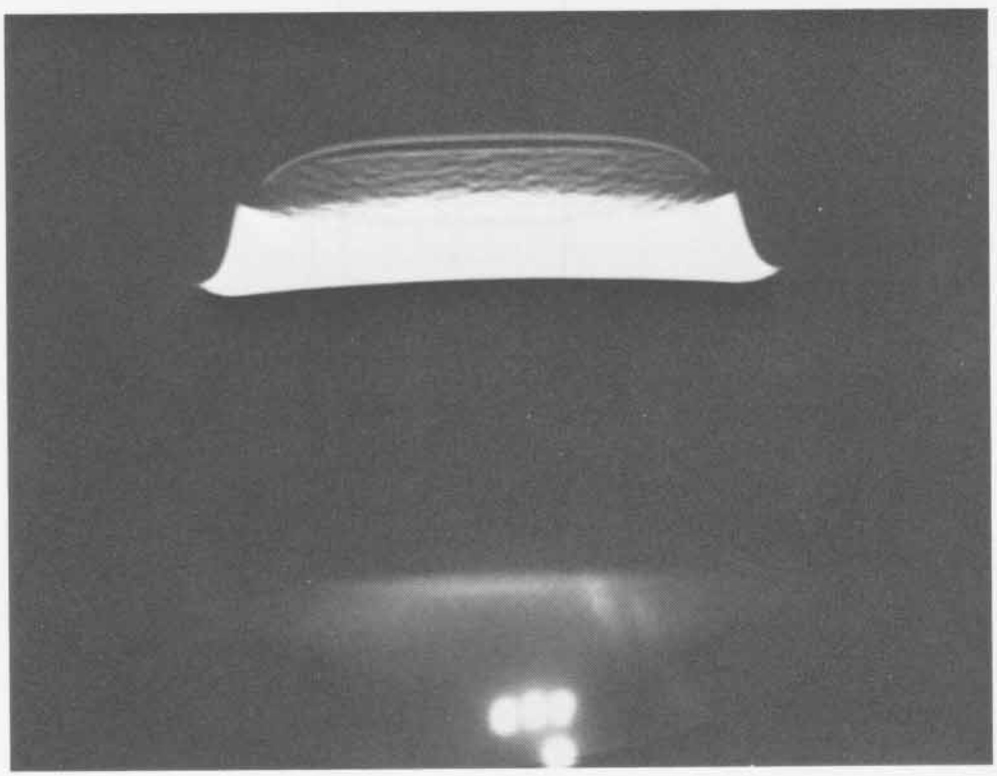


SHOT 762: **Dynamic Fracture of 347 Steel**
Date: May 31, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 36.11 μs

Dynamic fracture of 25.0-mm-thick, t, 347 steel. The plate is shocked by 50.8 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.







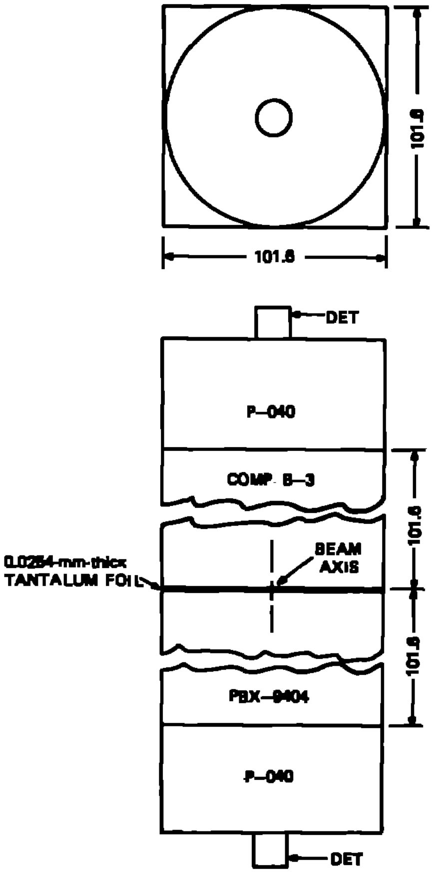
SHOT 763: **Colliding PBX-9404 and Composition B-3 Detonations**

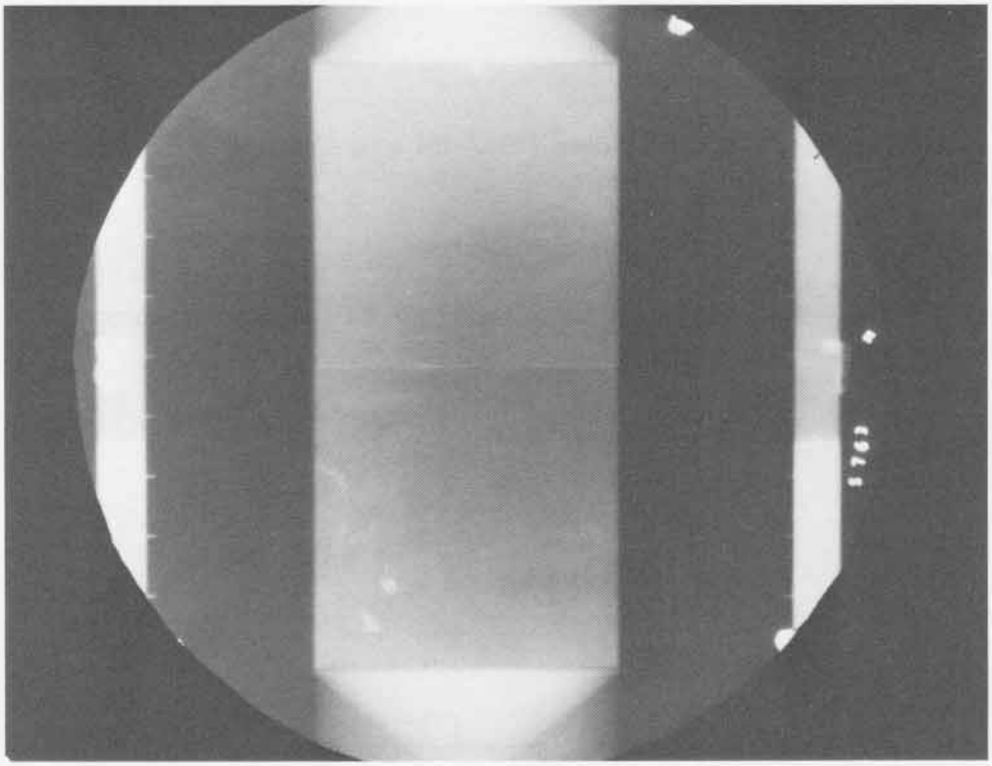
Date: March 23, 1967

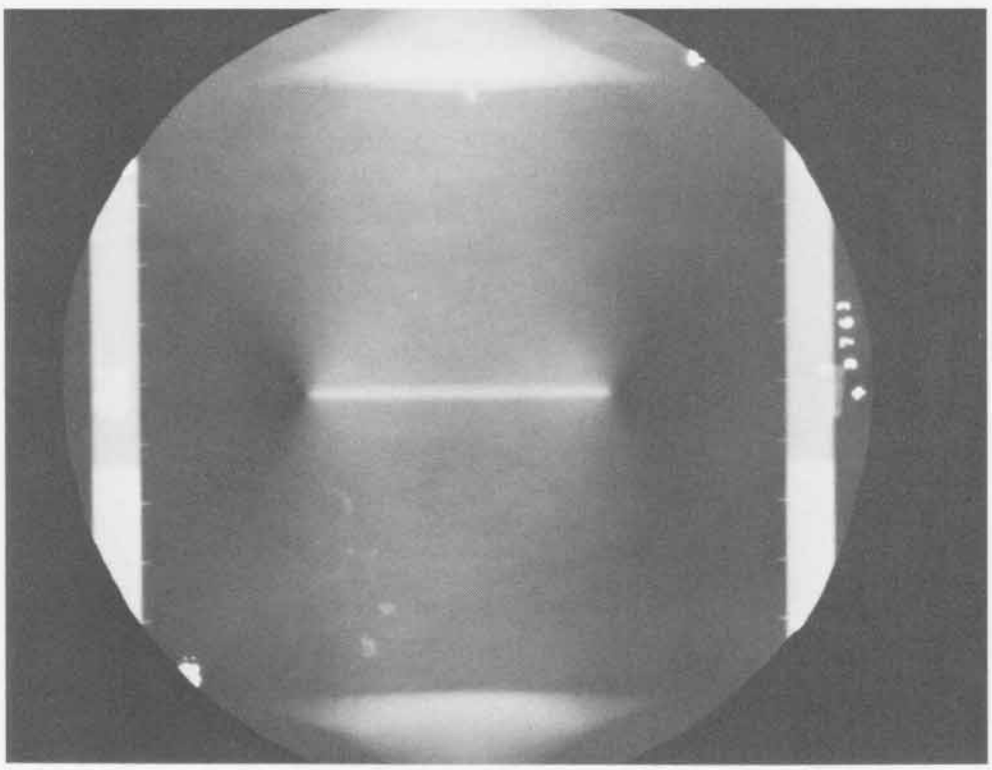
Experimenter: Roger W. Taylor

Radiographic Time: 25.53 μs

The collision of Composition B-3 and PBX 9404 detonation waves with a 0.0254-mm-thick tantalum foil.







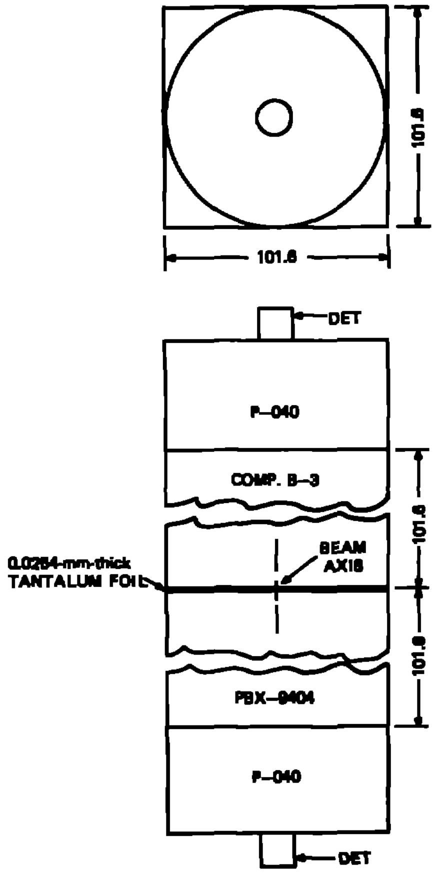
SHOT 764: **Colliding PBX-9404 and Composition B-3 Detonations**

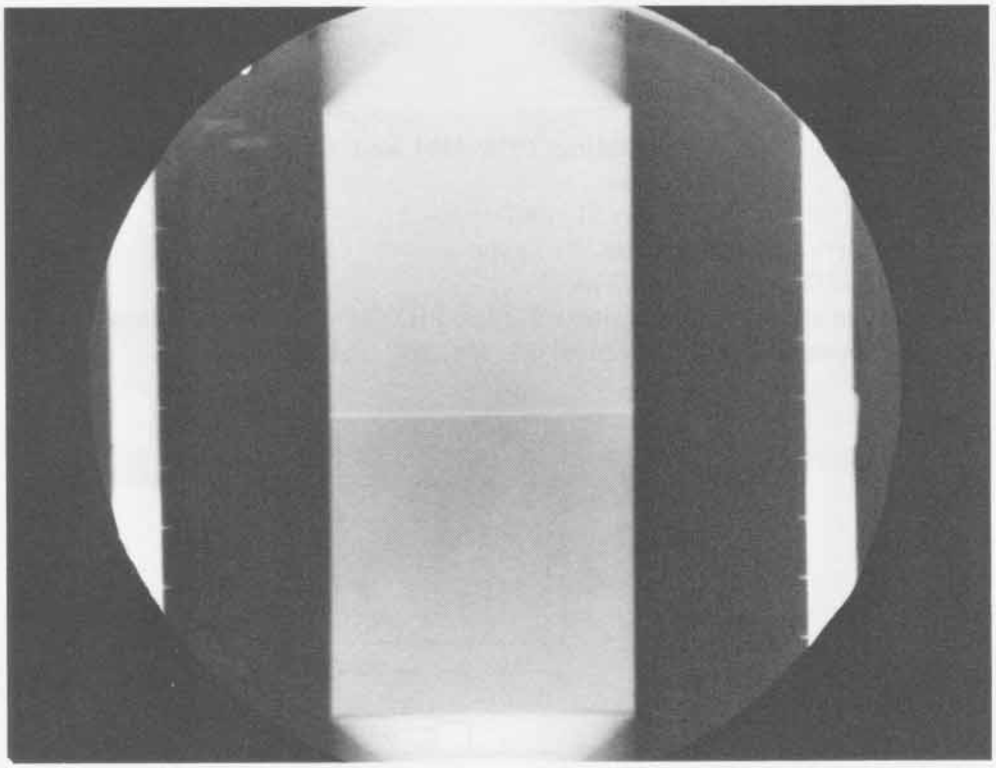
Date: June 1, 1967

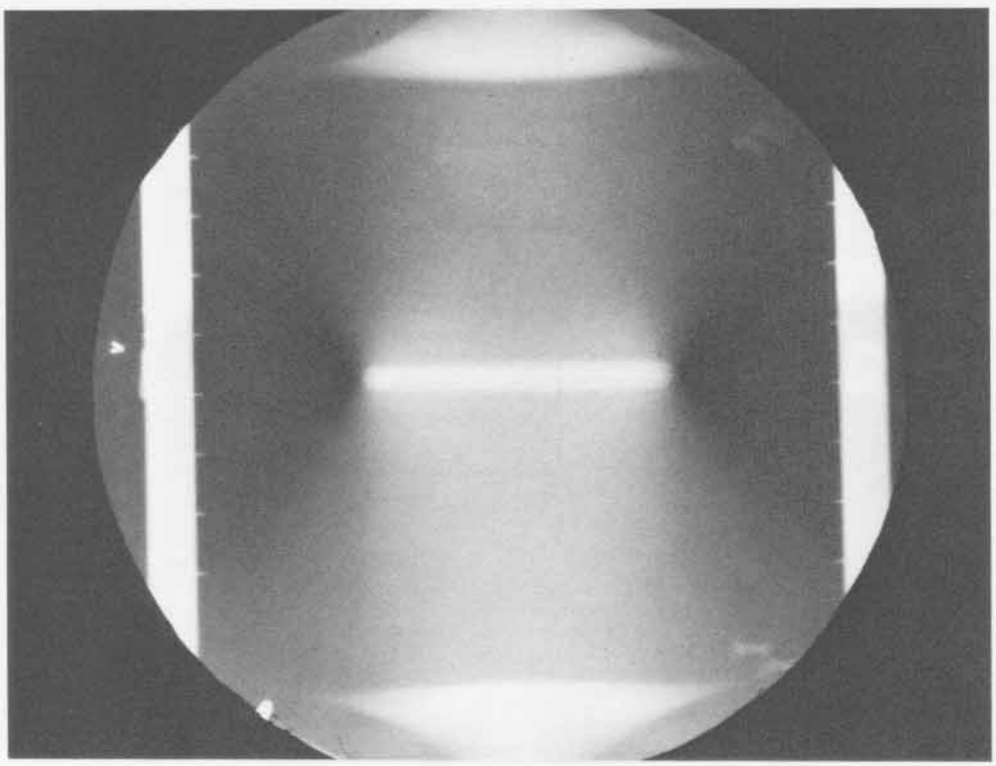
Experimenter: Roger W. Taylor

Radiographic Time: 26.04 μs

The reflected shocks in Composition B-3 and PBX-9404 detonation products 0.5 μs after the waves collided. See Shots 763 and 765-767.







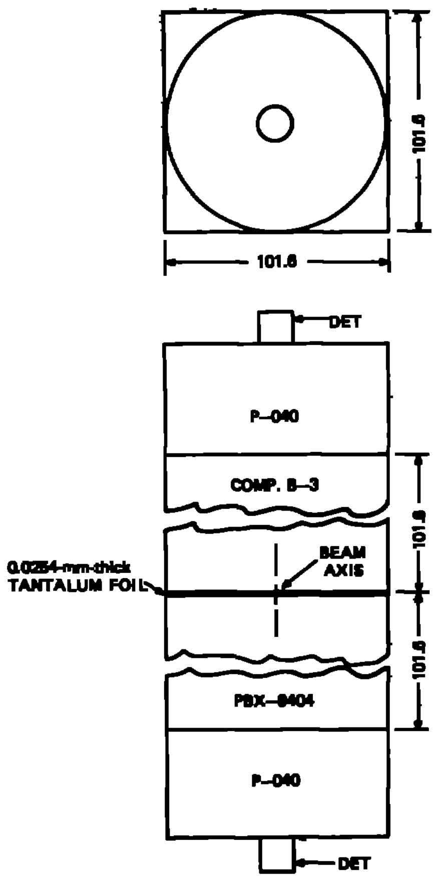
SHOT 765: **Colliding PBX-9404 and Composition B-3 Detonations**

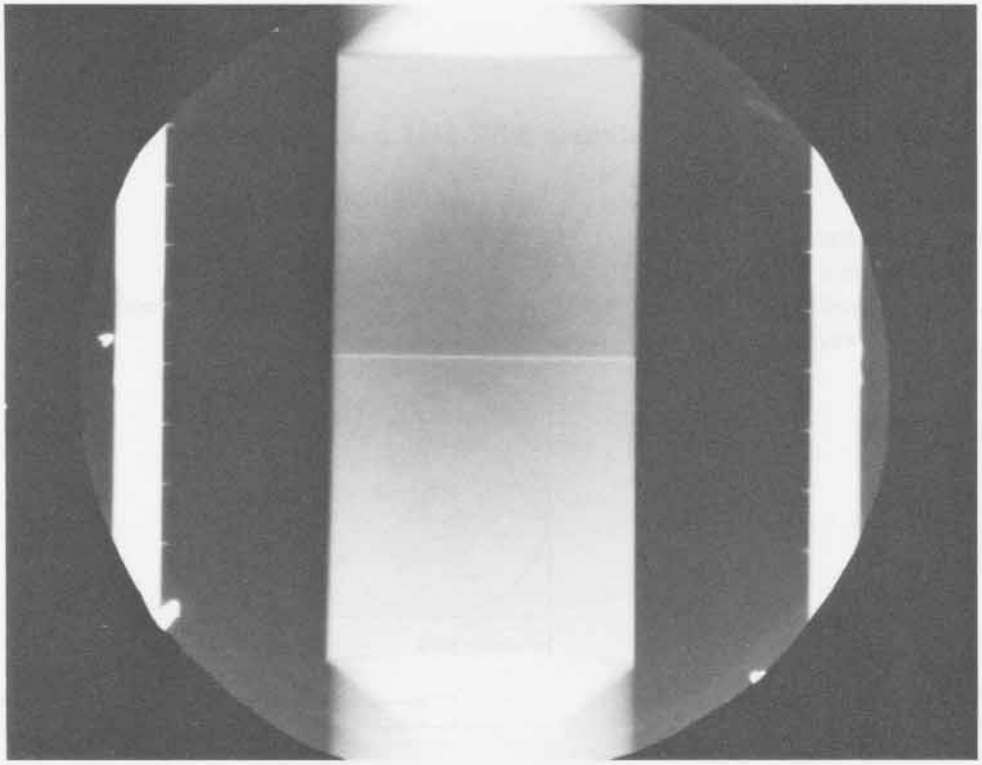
Date: June 21, 1967

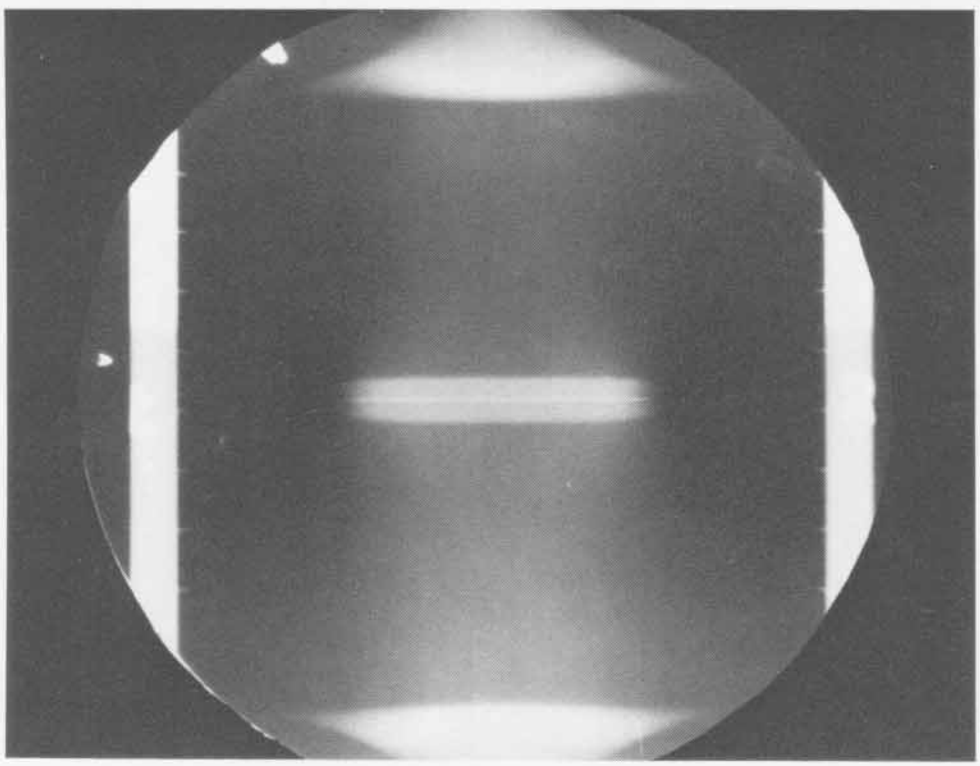
Experimenter: Roger W. Taylor

Radiographic Time: 26.52 μs

The reflected shocks in Composition B-3 and PBX-9404 detonation products 1.0 μs after the waves collided. See Shots 763, 764, 766, and 767.







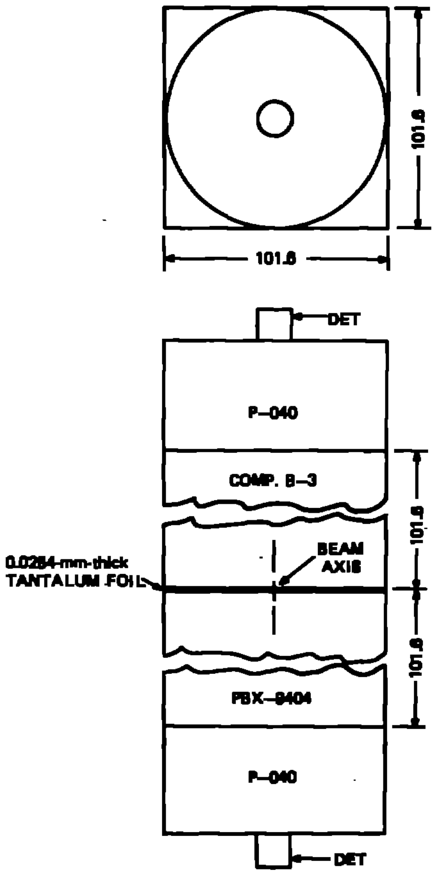
SHOT 766: **Colliding PBX-9404 and Composition B-3 Detonations**

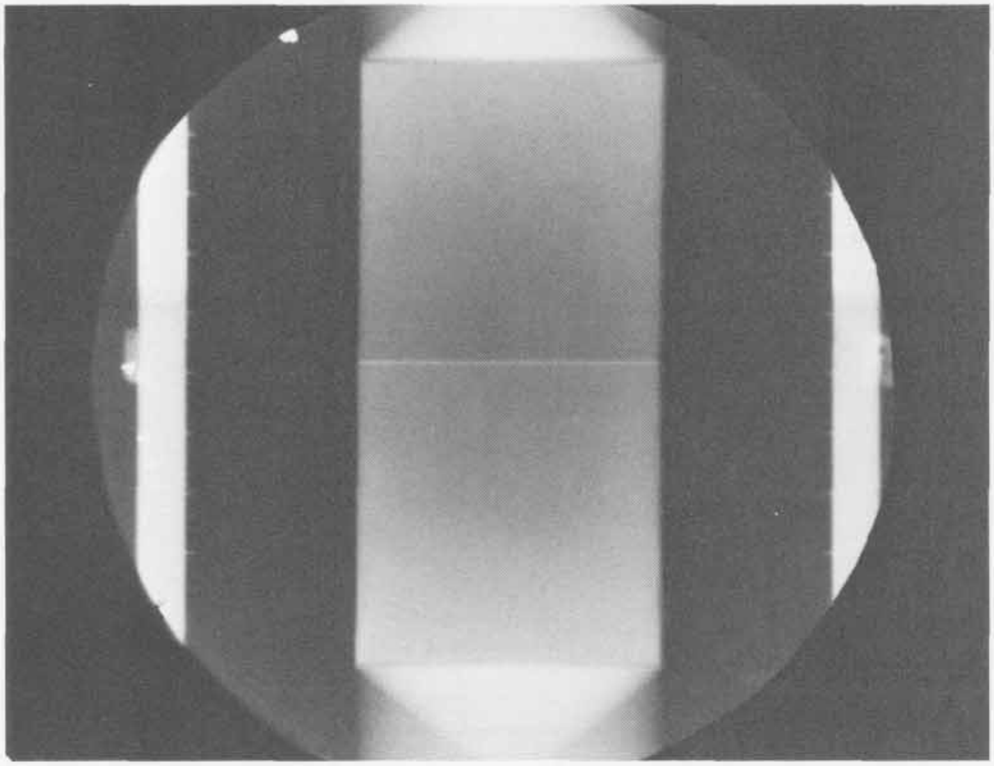
Date: June 21, 1967

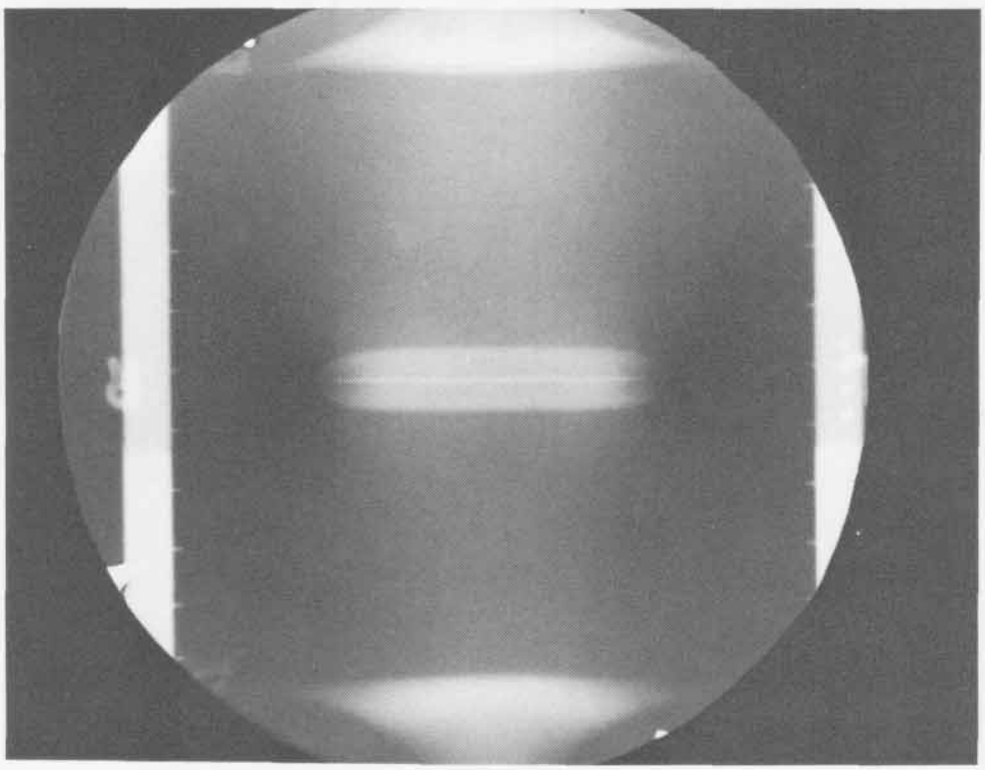
Experimenter: Roger W. Taylor

Radiographic Time: 27.04 μs

The reflected shocks in Composition B-3 and PBX-9404 detonation products 1.5 μs after the waves collided. See Shots 763-765 and 767.







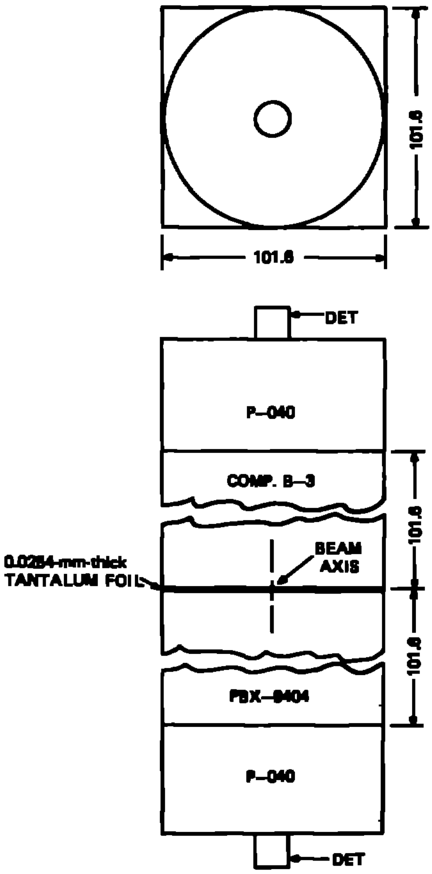
SHOT 767: **Colliding PBX-9404 and Composition B-3 Detonations**

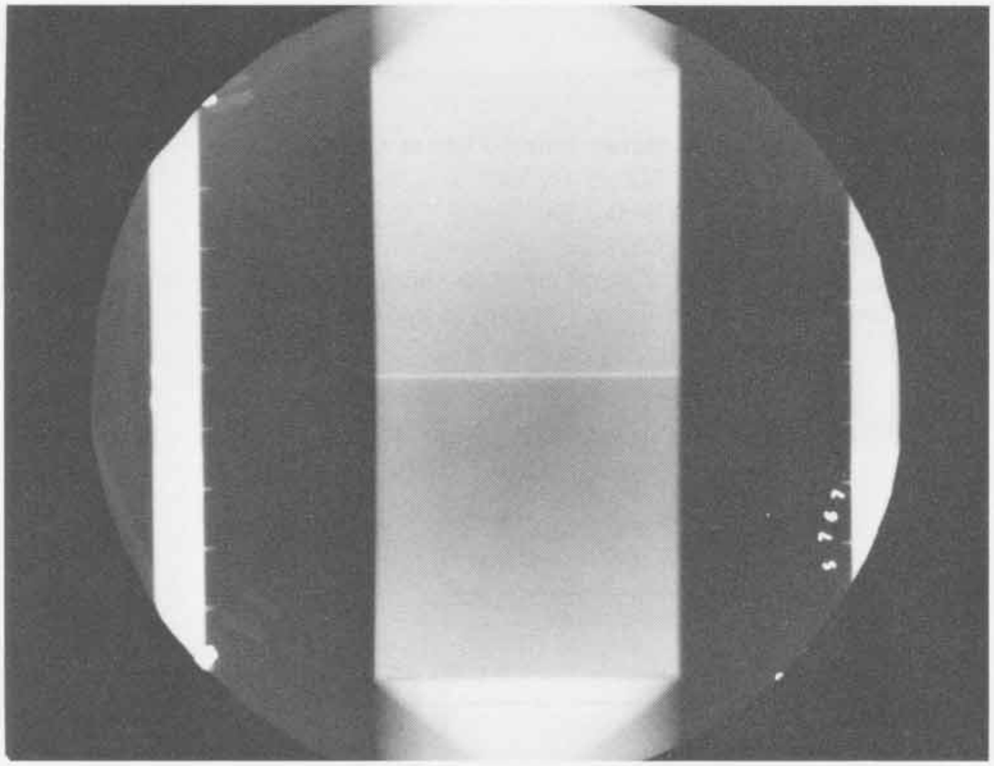
Date: June 29, 1967

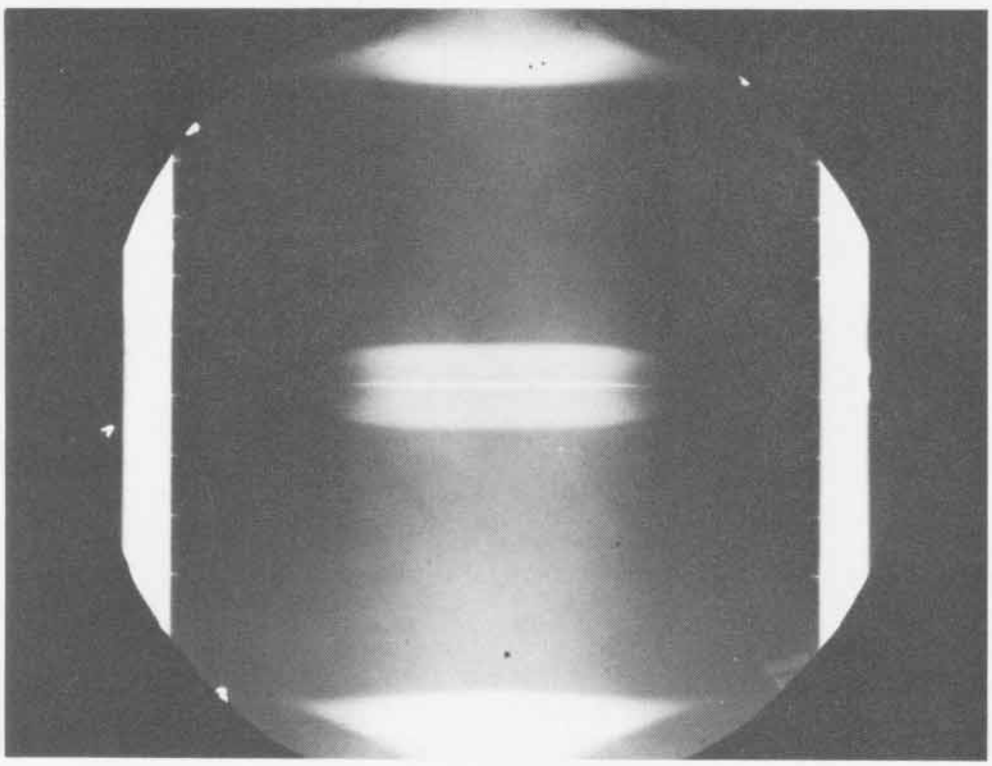
Experimenter: Roger W. Taylor

Radiographic Time: 27.56 μs

The reflected shocks in Composition B-3 and PBX-9404 detonation products 2.0 μs after the waves collided. See Shots 763-766.







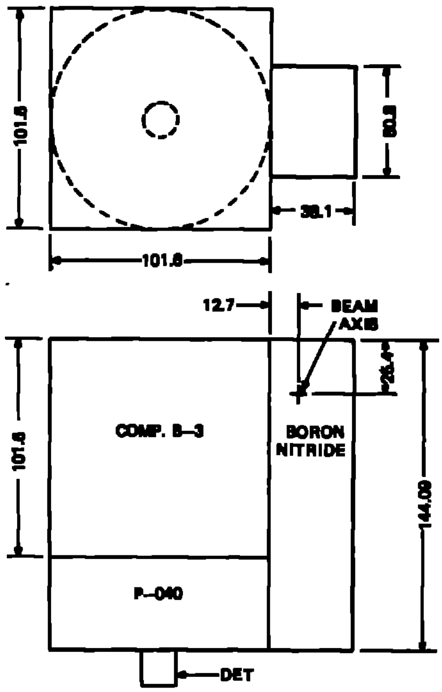
SHOT 768: **Boron Nitride Phase Change**

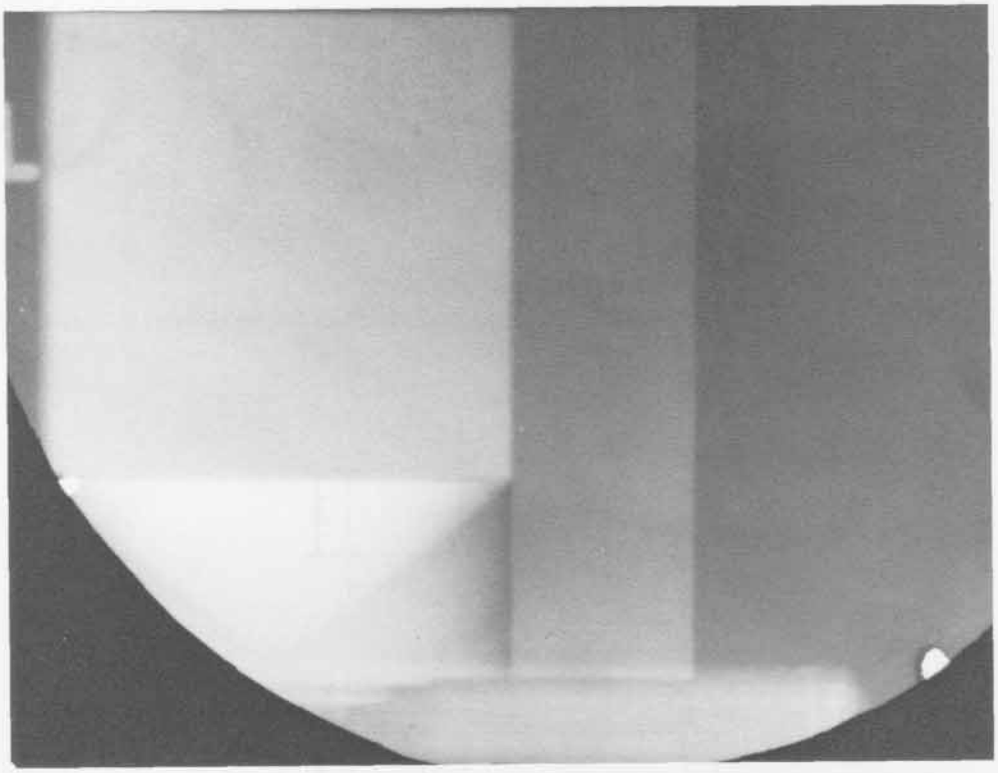
Date: March 15, 1967

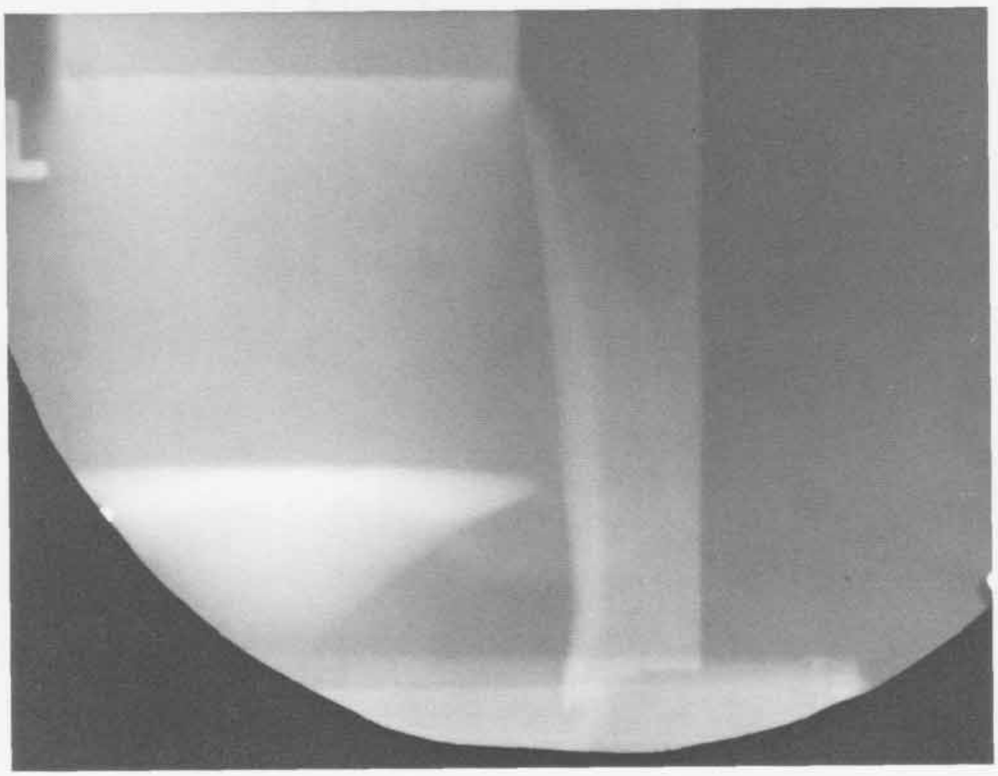
Experimenter: Benny Ray Breed

Radiographic Time: 24.73 μs

A 50.8- by 38.1-mm block of boron nitride is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens. See Shots 751 and 776.

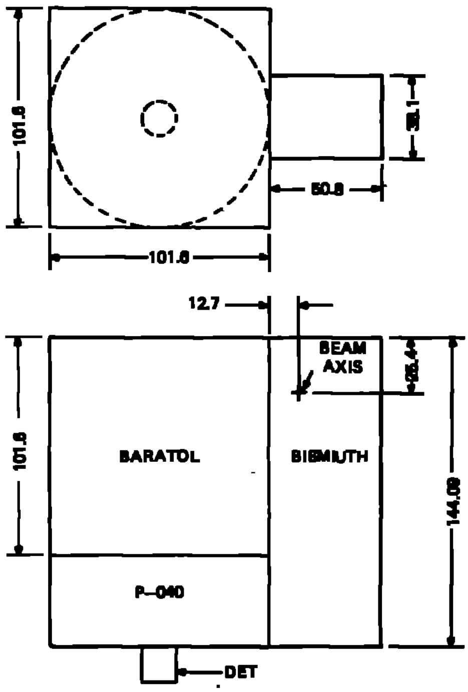


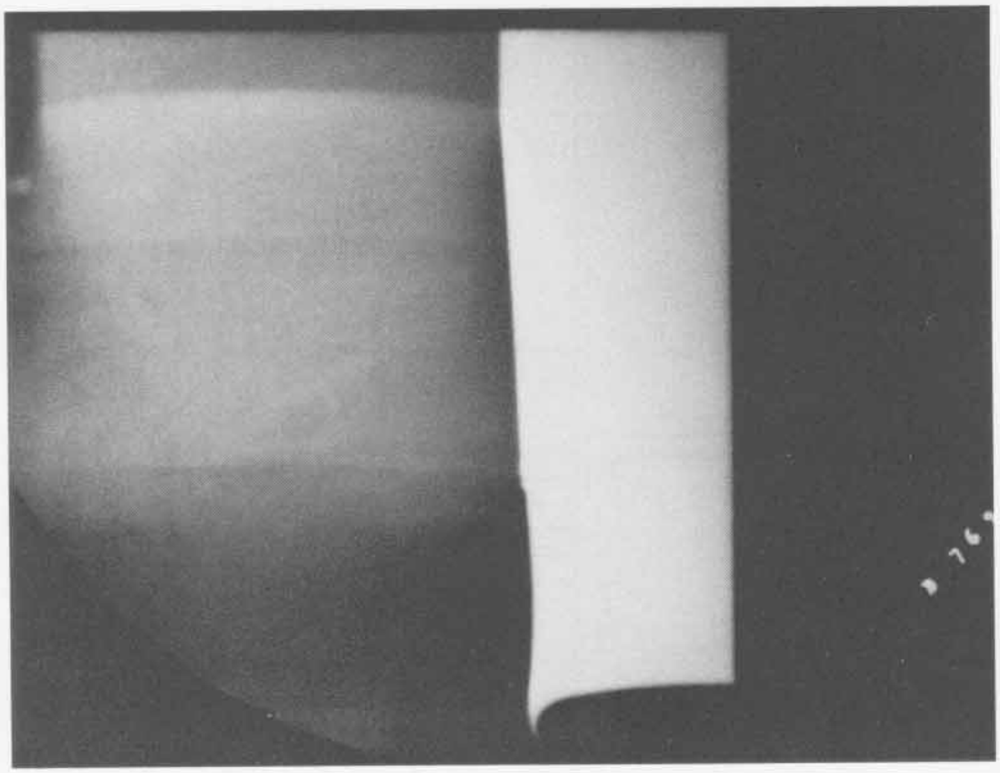




SHOT 769: **Bismuth Phase Change**
Date: March 15, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 32.07 μs
Reference: Breed and Venable, 1968

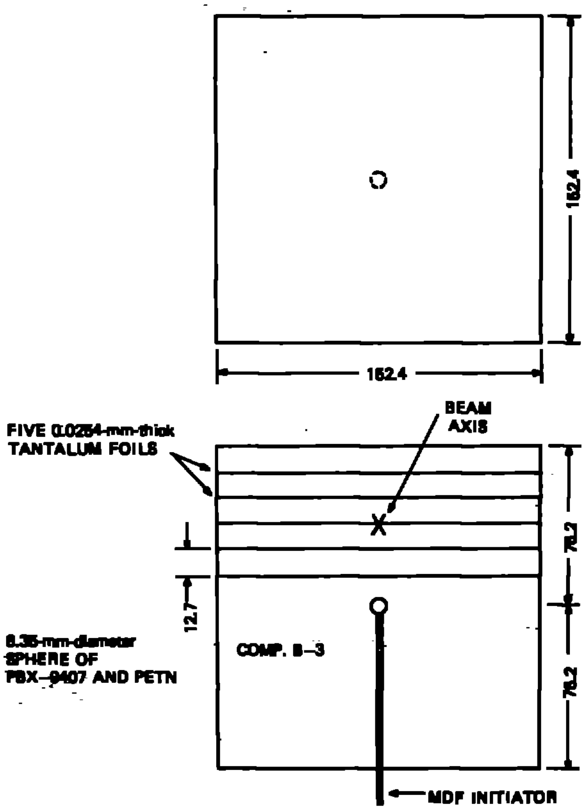
A 50.8- by 38.1-mm block of bismuth is shocked by 101.6 mm of Baratol initiated by a P-040 lens.

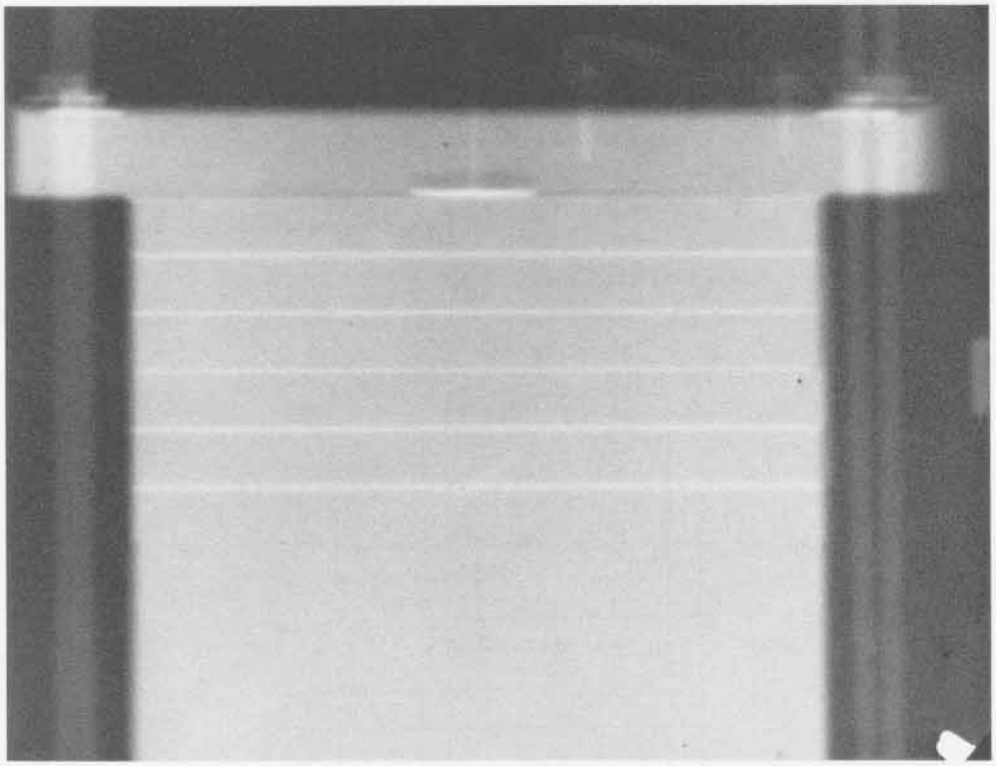


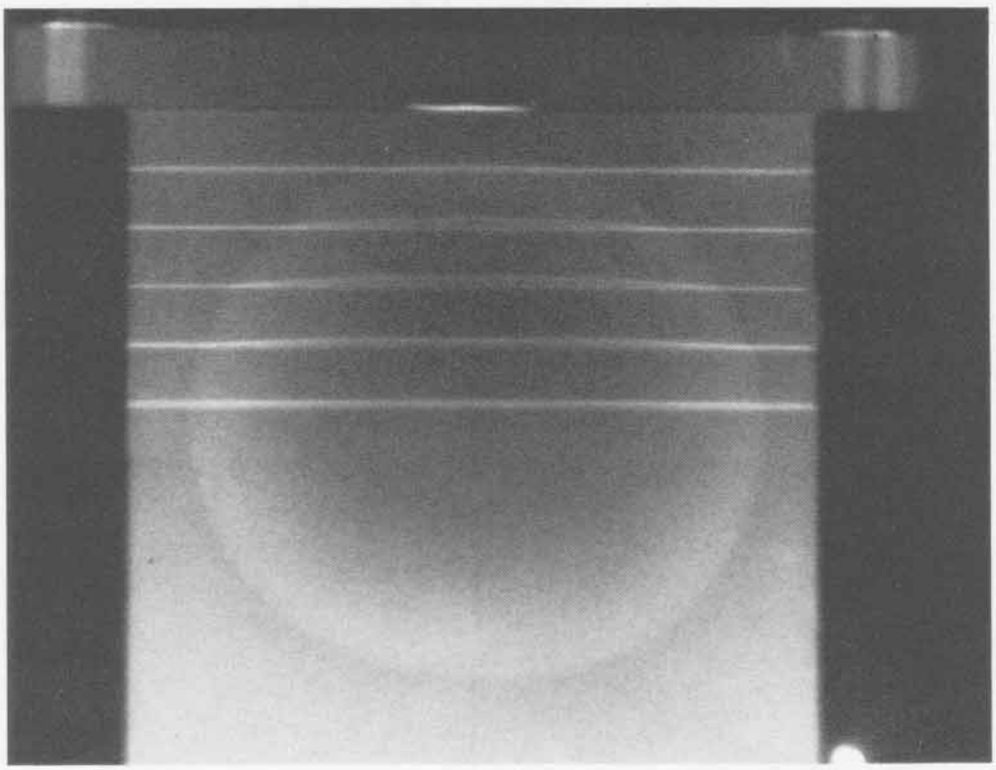


SHOT 770: **Spherically Diverging Composition B-3 Detonation**
Date: May 18, 1967
Experimenter: Douglas Venable
Radiographic Time: 28.04 μs

A 152.4-mm cube of Composition B-3 is center initiated by composite hemispheres of PBX 9407 and PETN, center initiated by a length of MDF (mild detonating fuse). Five 0.0254-mm-thick tantalum foils are embedded in the Composition B-3 every 12.7 mm. The detonation product density may be calculated from the foil movement. See Shots 796 and 797.

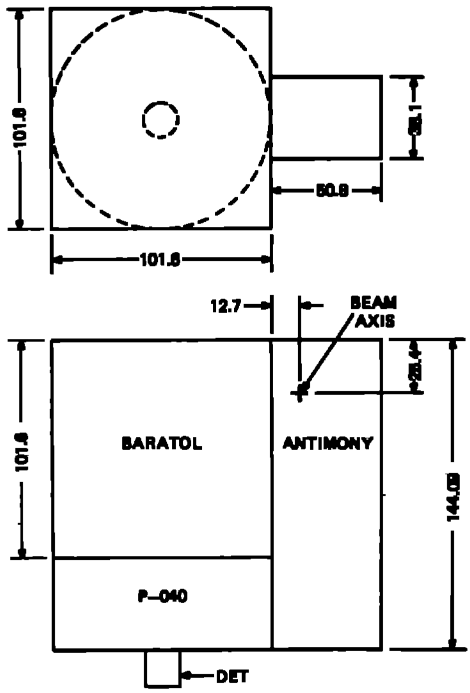


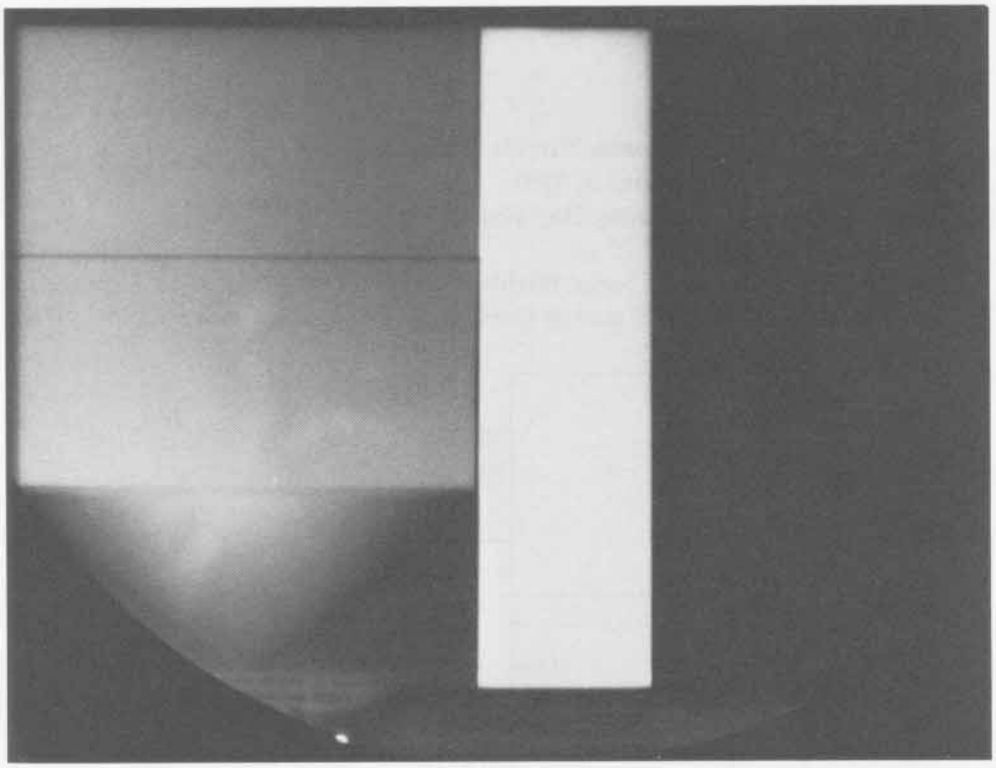


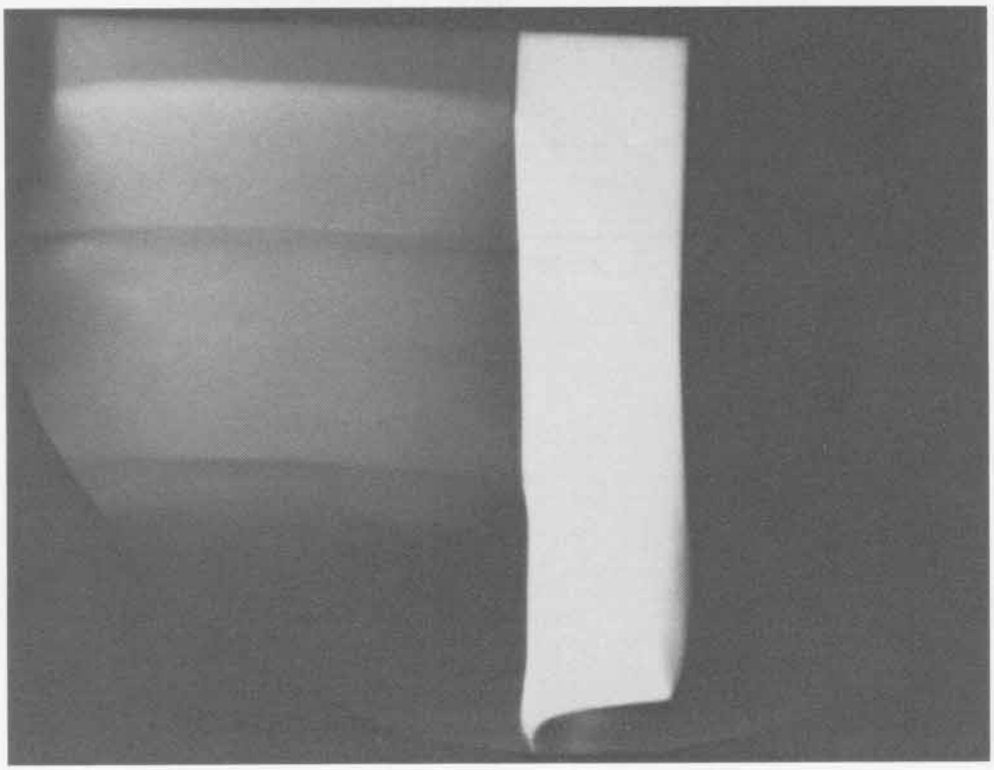


SHOT 775: **Antimony Phase Change**
Date: June 14, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 32.01 μs
Reference: Breed and Venable, 1968

A 50.8- by 38.1-mm block of antimony is shocked by 101.6 mm of Baratol initiated by a P-040 lens.

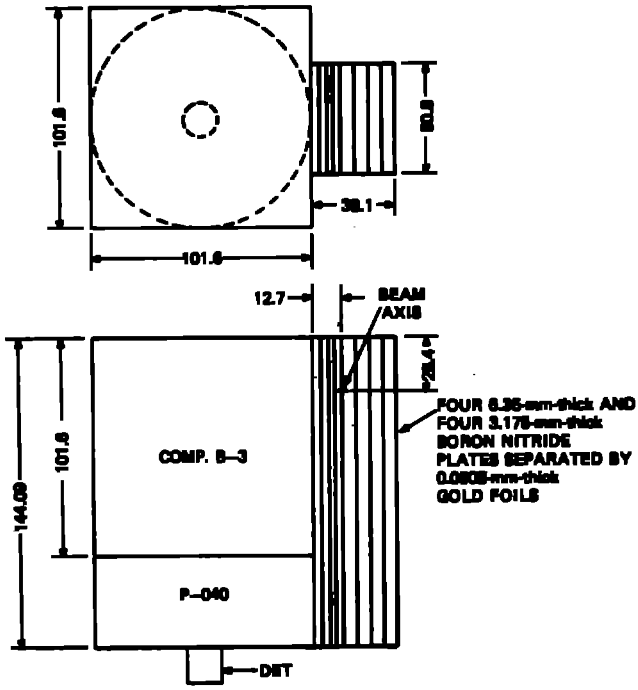


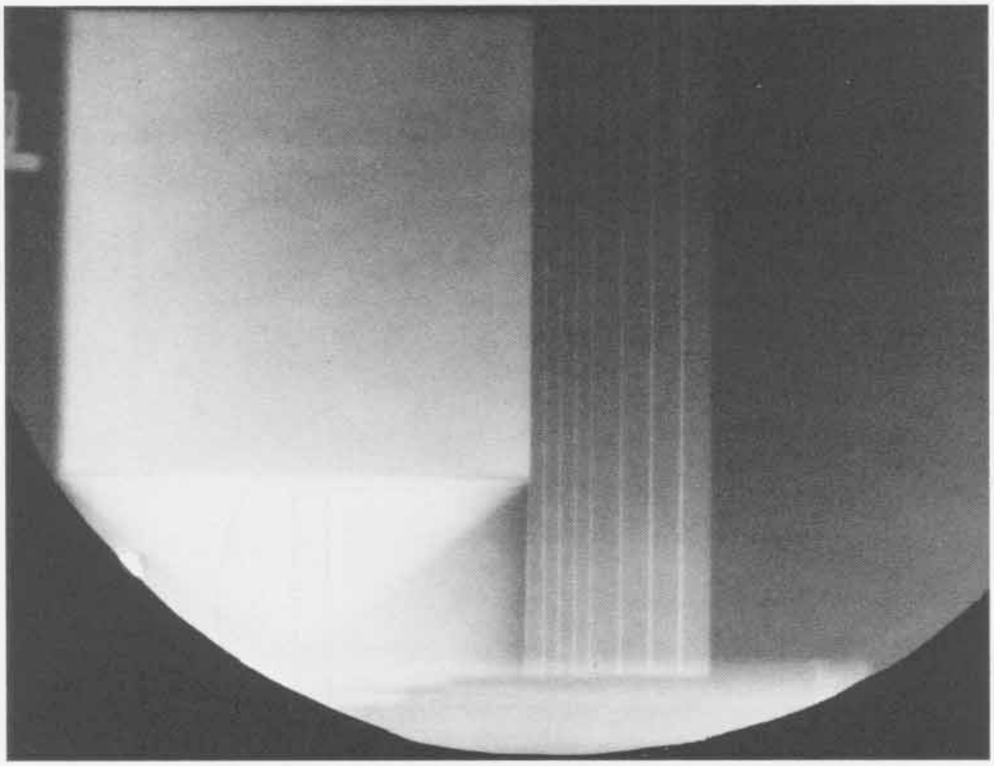


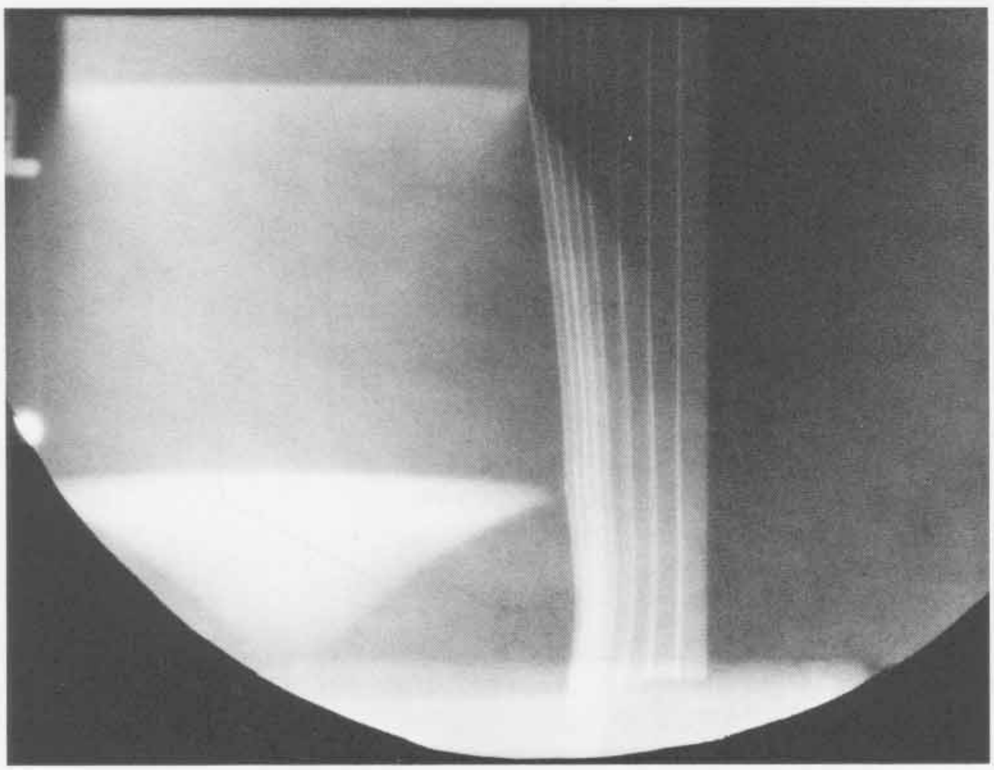


SHOT 776: **Boron Nitride Phase Change**
Date: April 5, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 24.72 μs

A 50.8- by 38.1-mm block of boron nitride with seven embedded 0.0508-mm-thick gold foils is shocked by 101.6 mm of Composition B-3 initiated by a P-040 lens.

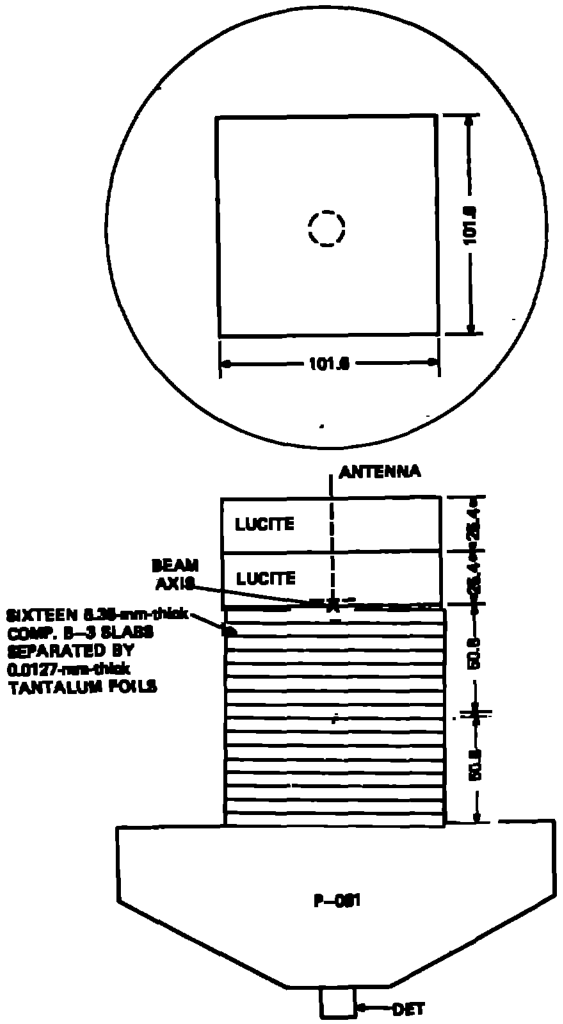


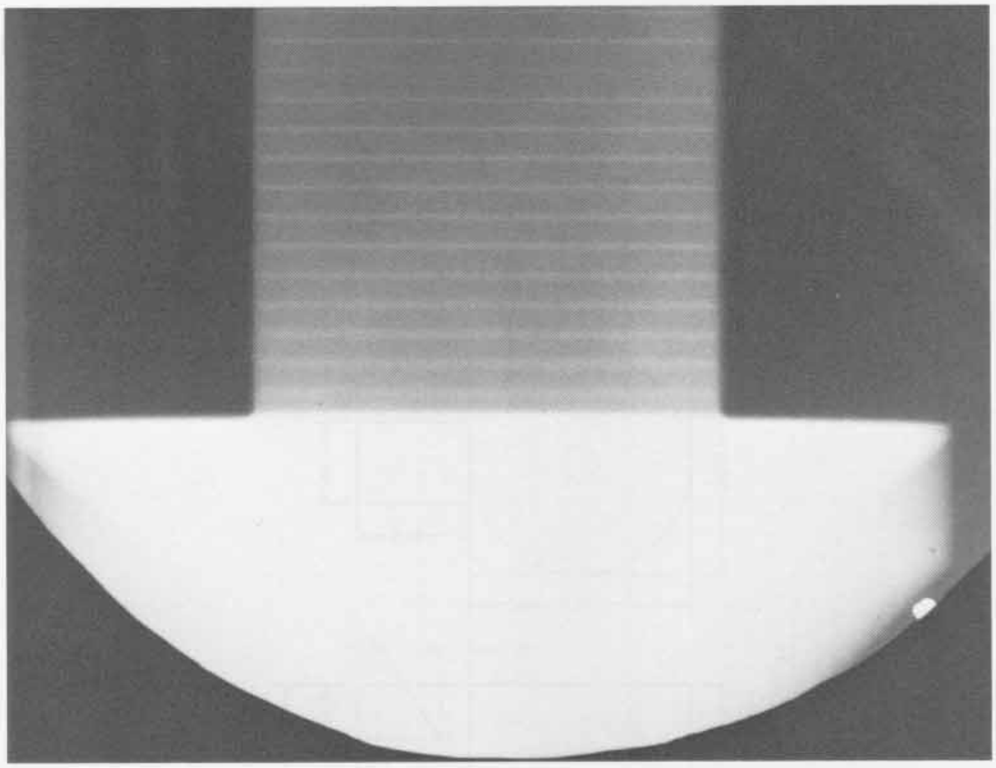


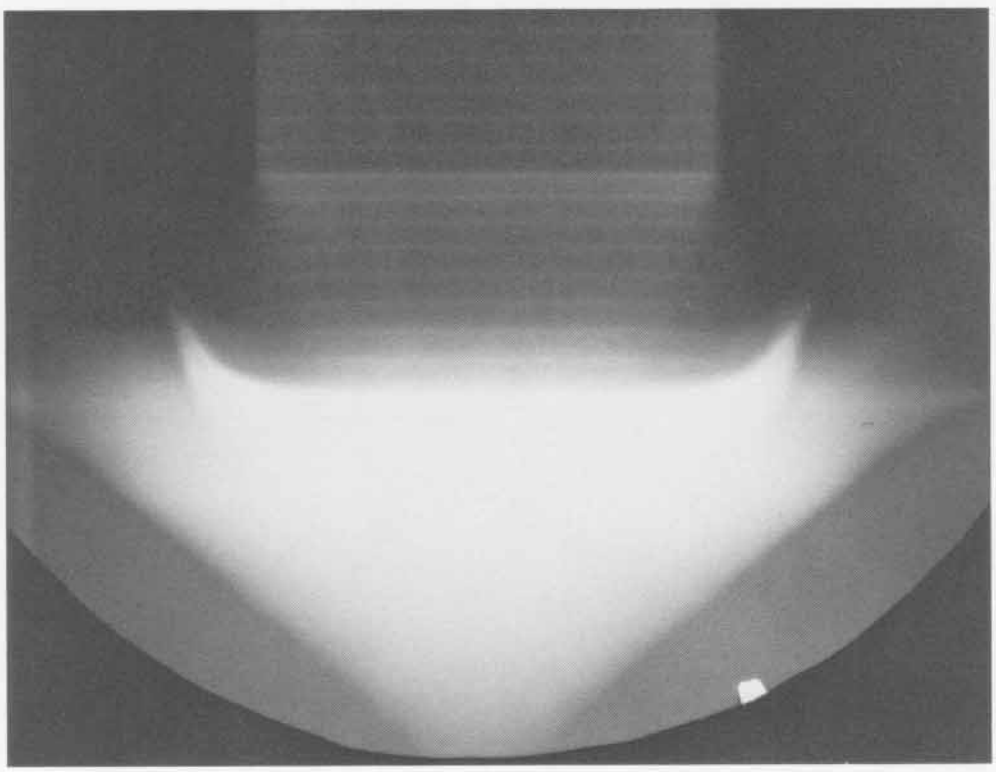


SHOT 784: **Composition B-3 with Embedded Tantalum Foils**
Date: **June 15, 1967**
Experimenter: **Jack N. Hardwick**
Radiographic Time: **29.56 μs**

Sixteen slabs of 6.35-mm-thick Composition B-3 separated by 0.0127-mm-thick tantalum foils are initiated by a P-081 lens.

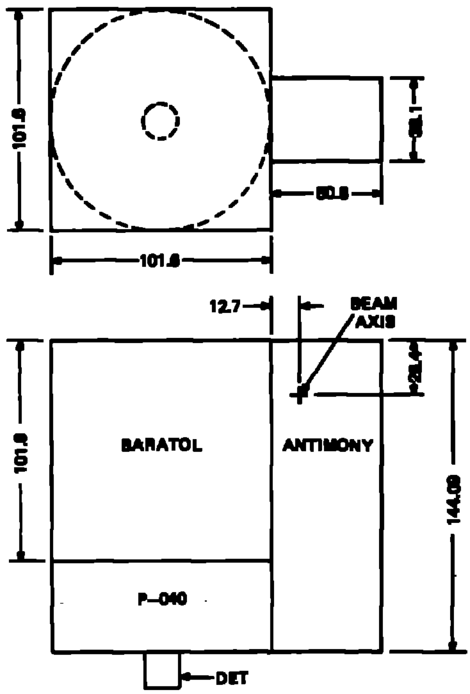


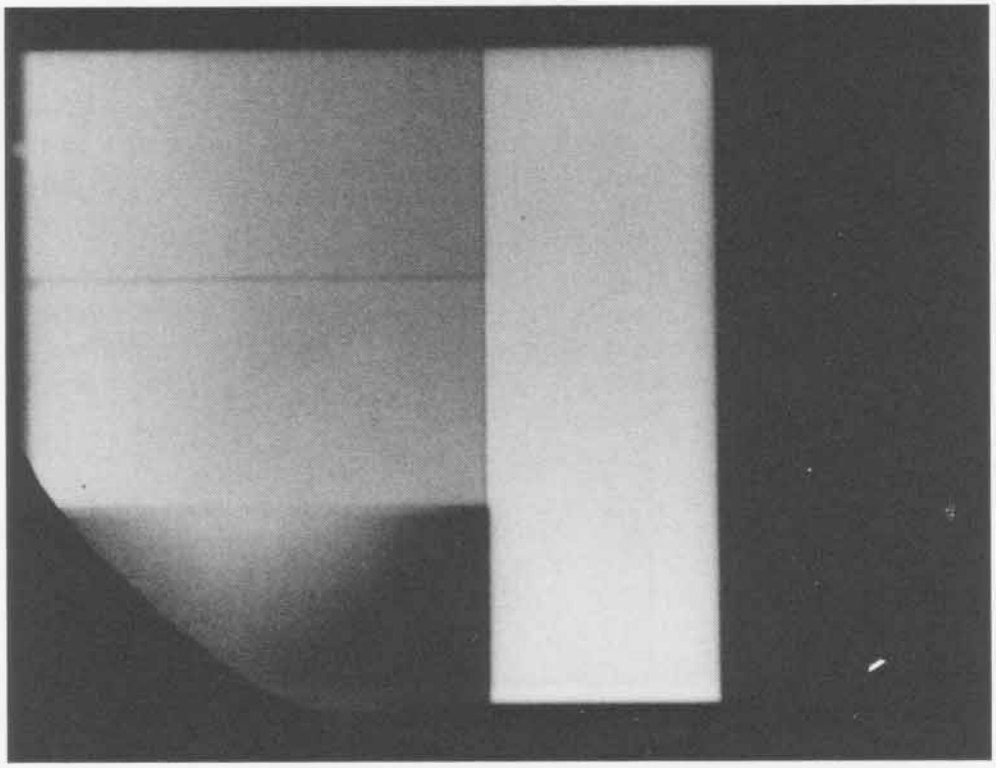


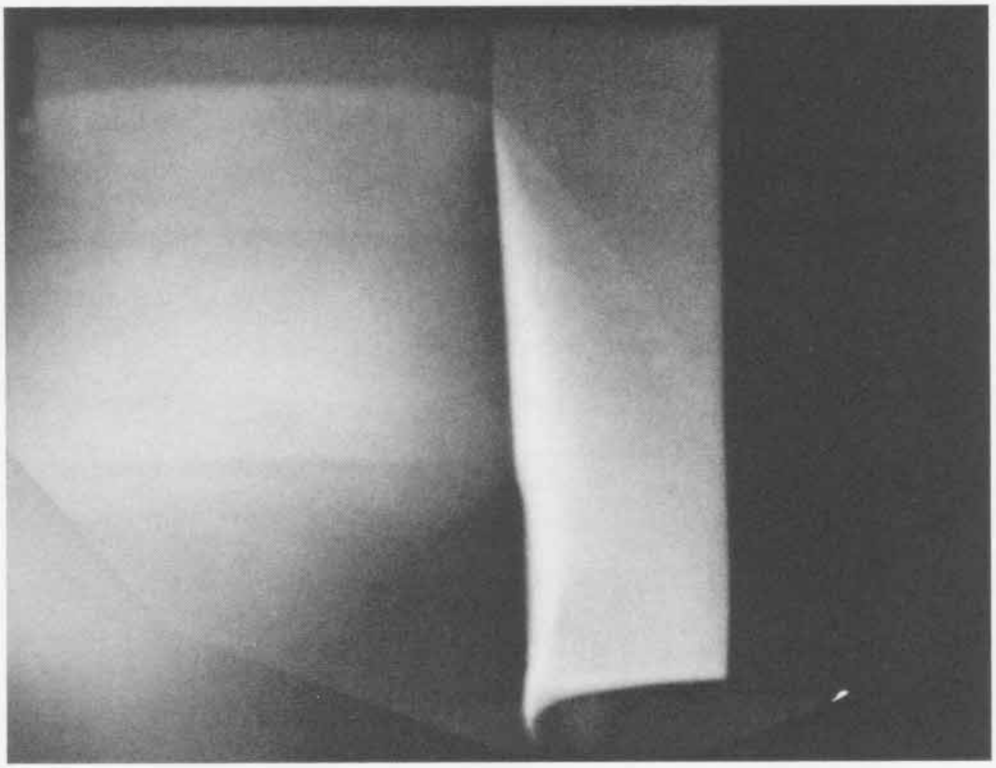


SHOT 786: **Antimony Phase Change**
Date: June 20, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 32.06 μs

A 50.8- by 38.1-mm block of antimony is shocked by 101.6 mm of Baratol initiated by a P-040 lens.







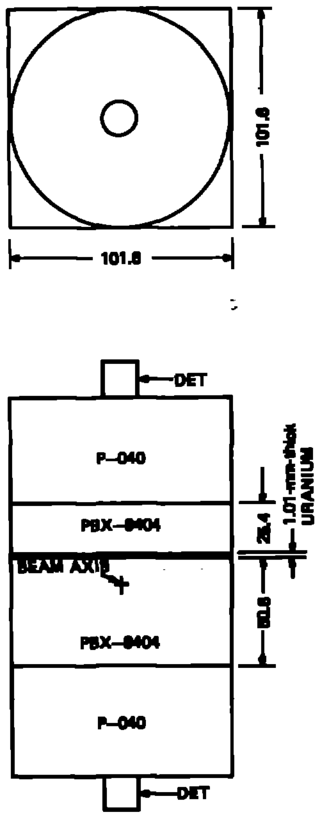
SHOT 787: **Two PBX-9404 Detonations Interacting with an Embedded Plate**

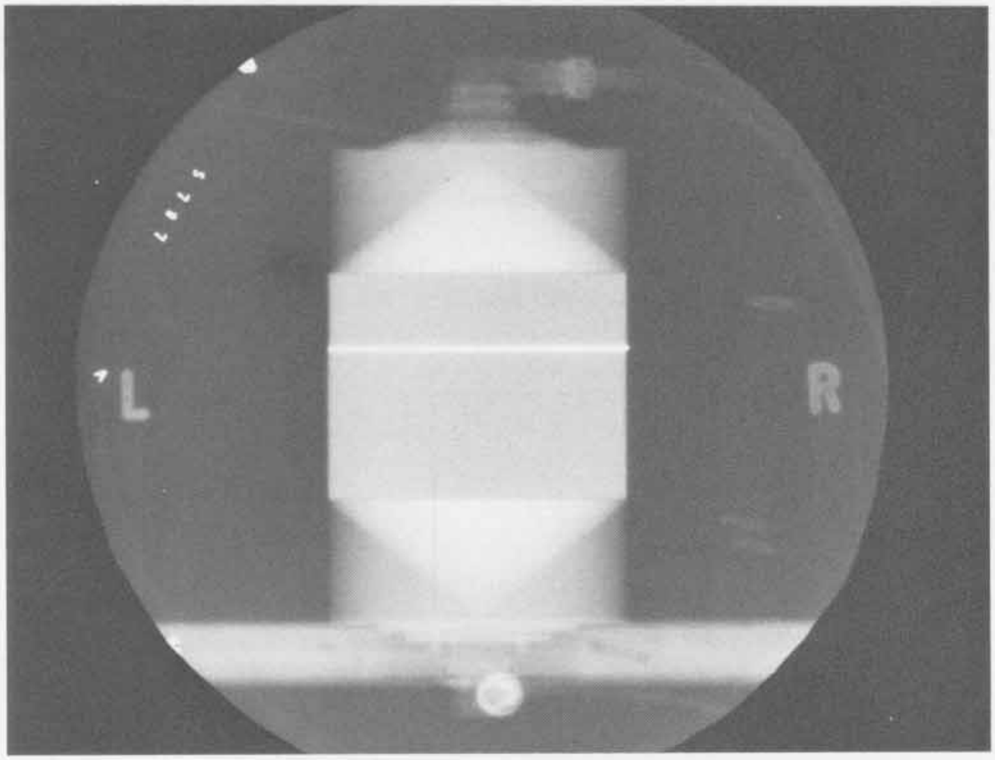
Date: July 5, 1967

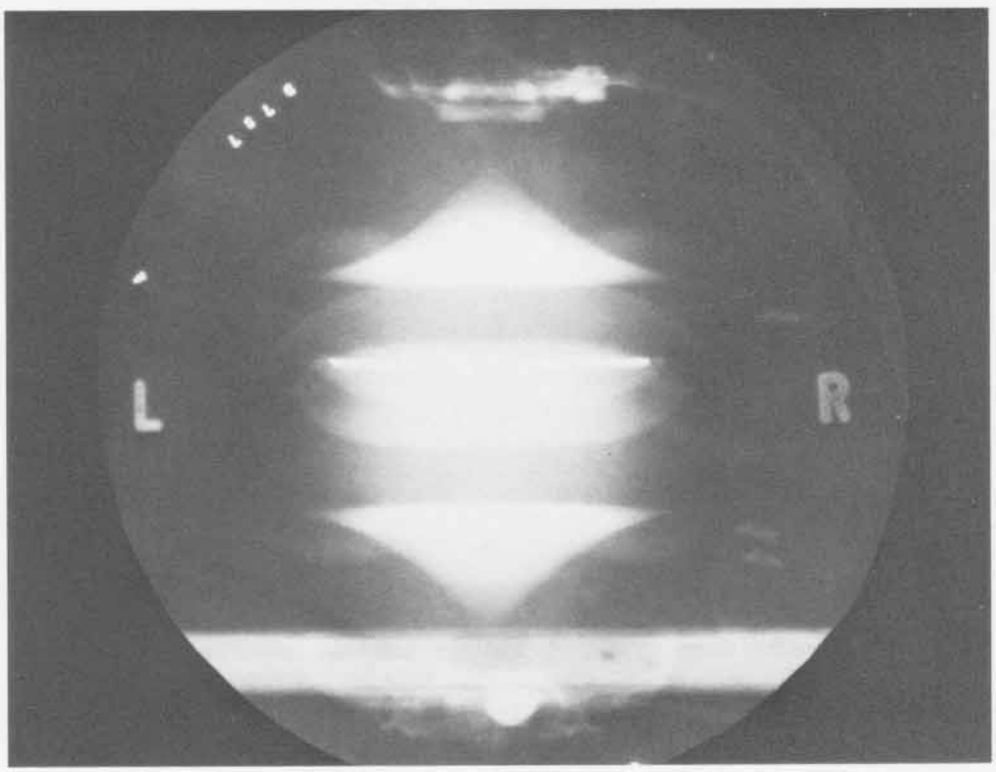
Experimenter: William R. Field

Radiographic Time: 21.43 μs

Two P-040 lenses simultaneously initiated 25.4- and 50.8-mm-thick PBX-9404 slabs separated by a 1.01-mm-thick uranium plate. The reflected shock waves from the embedded uranium plate and the interaction of the two detonation waves are shown.

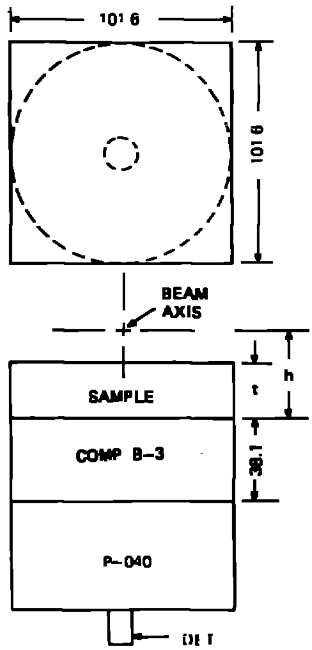


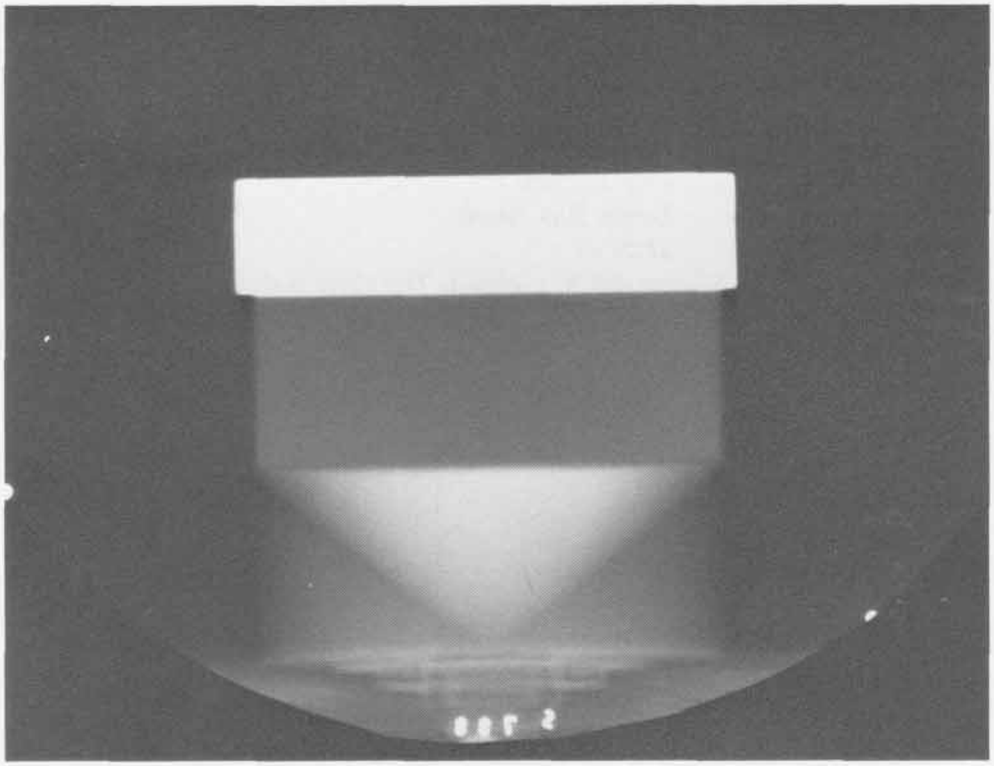

L
R

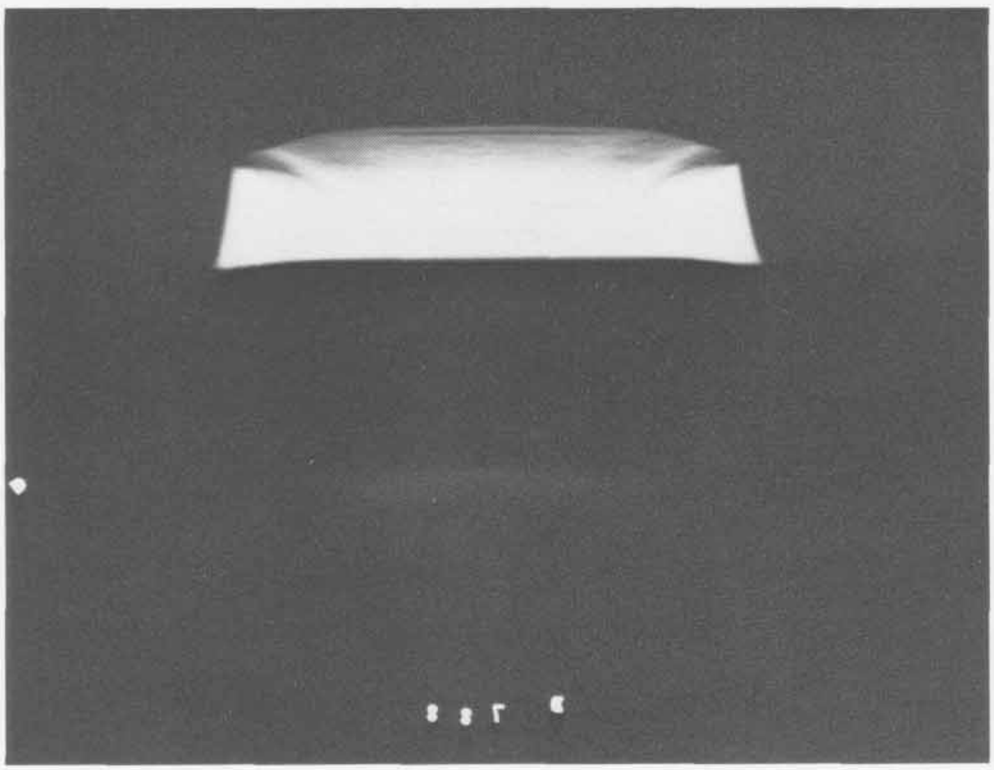

L
R

SHOT 788: **Dynamic Fracture of Cobalt**
Date: July 11, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 30.44 μs

Dynamic fracture of 25.0-mm-thick, t, cobalt. The plate is shocked by 38.1 mm of Composition B-3 initiated by a P-040 lens. h is 38.1 mm.

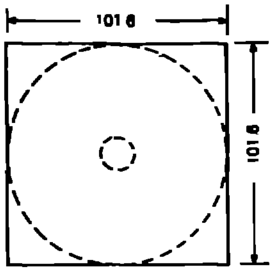


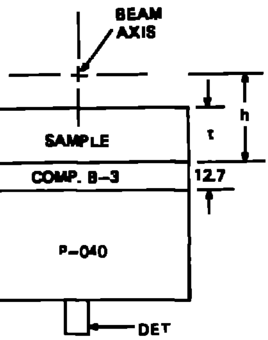


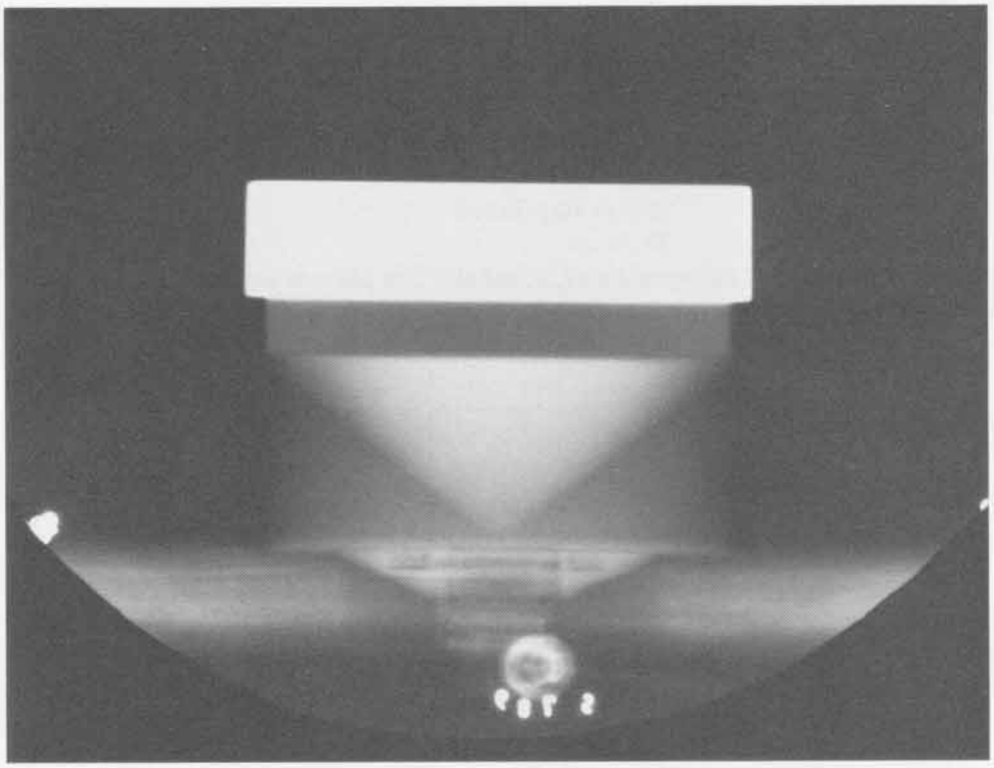


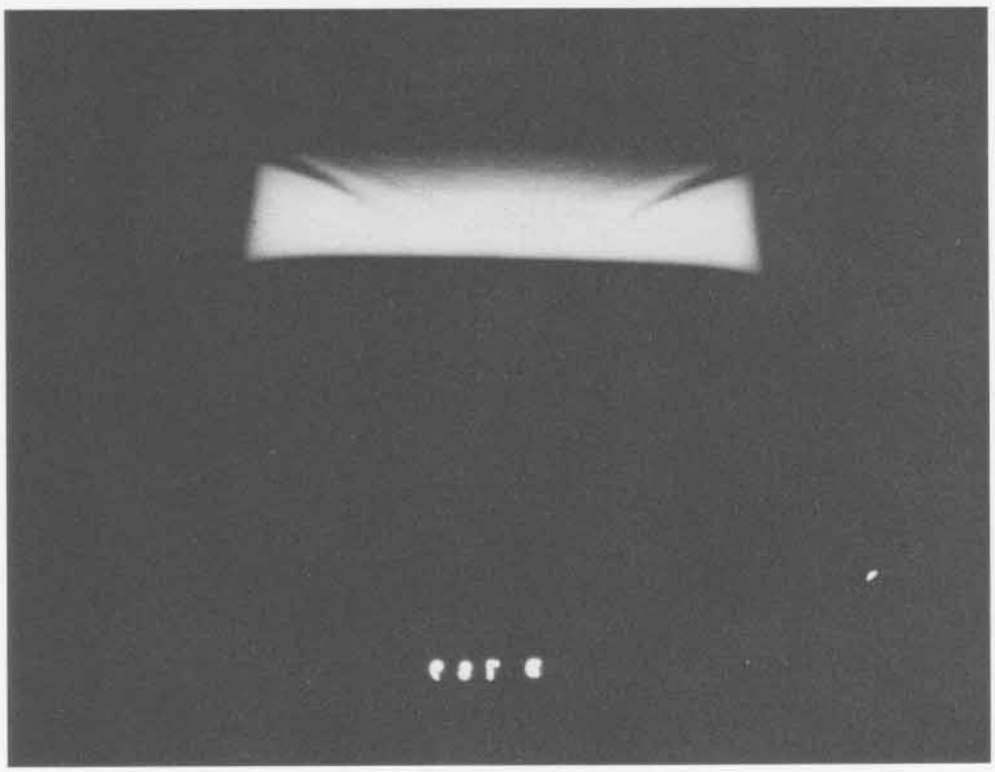
SHOT 789: **Dynamic Fracture of Cobalt**
Date: July 11, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 27.26 μs

Dynamic fracture of 25.0-mm-thick, t, cobalt. The plate is shocked by 12.7 mm of Composition B-3 initiated by a P-040 lens. h is 41.27 mm.



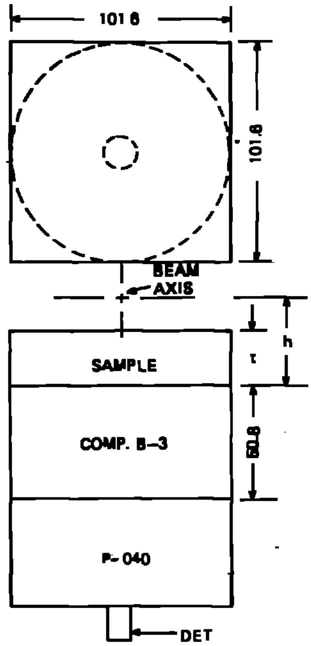


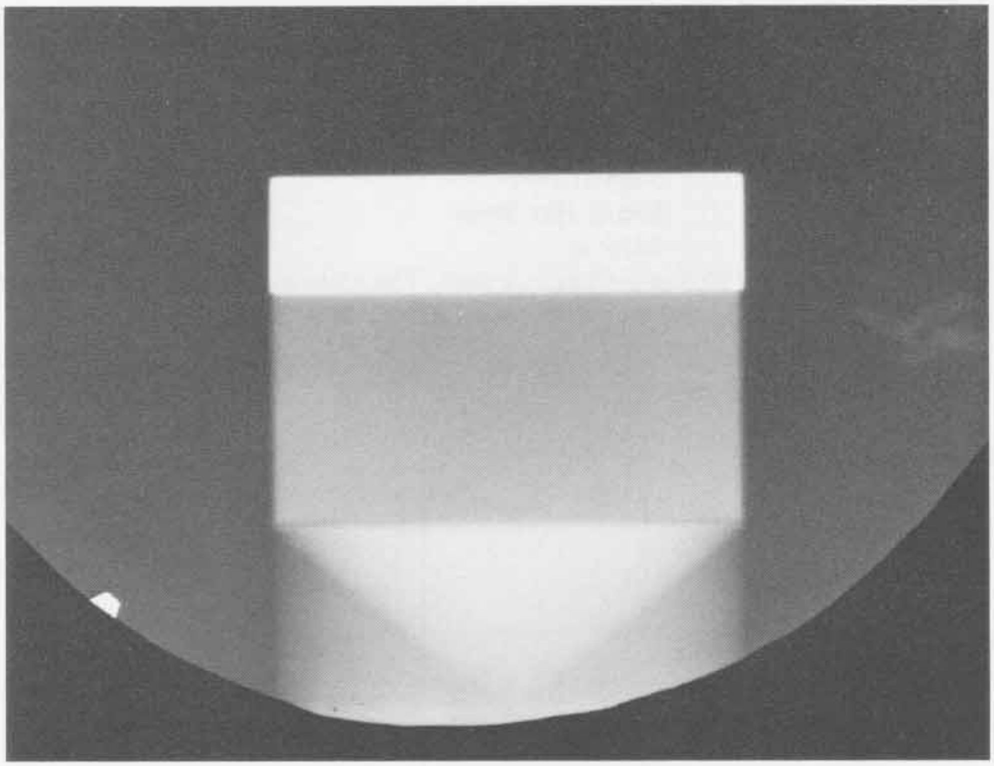


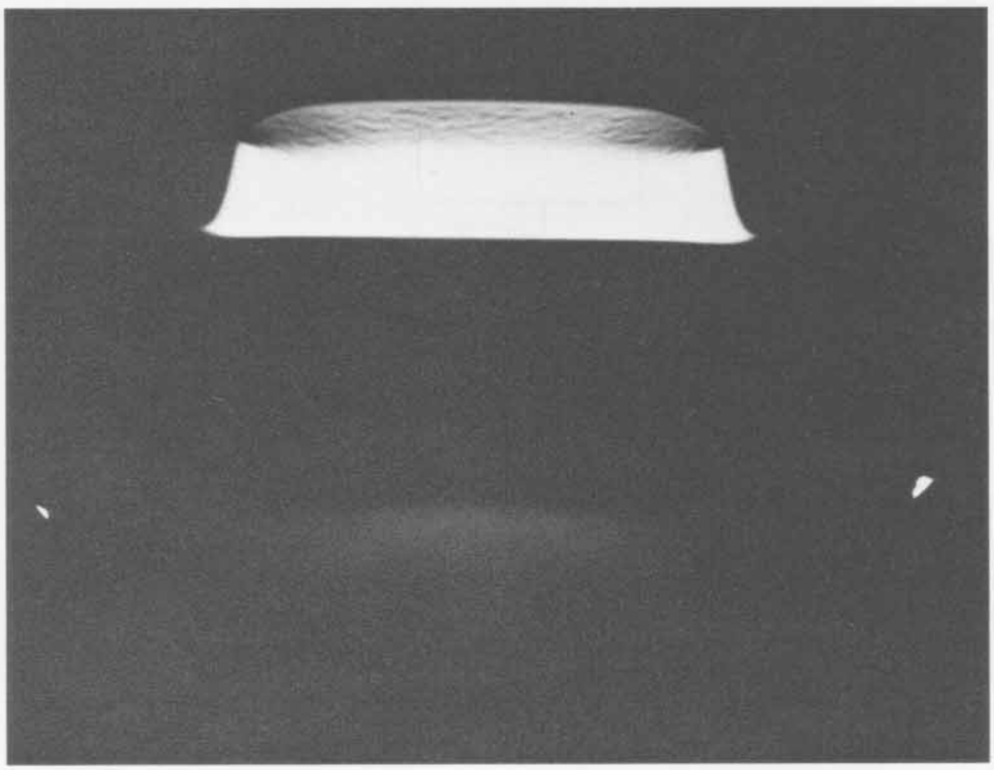


SHOT 794: **Dynamic Fracture of Cobalt**
Date: May 25, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 32.57 μs

Dynamic fracture of 25.0-mm-thick, t, cobalt. The plate is shocked by 50.8 mm of Composition B-3 initiated by a P-040 lens. h is 41.27 mm.

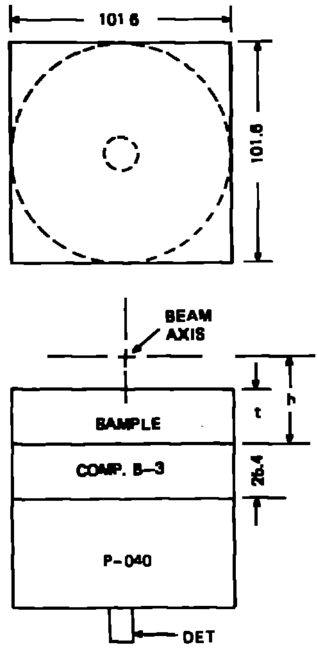


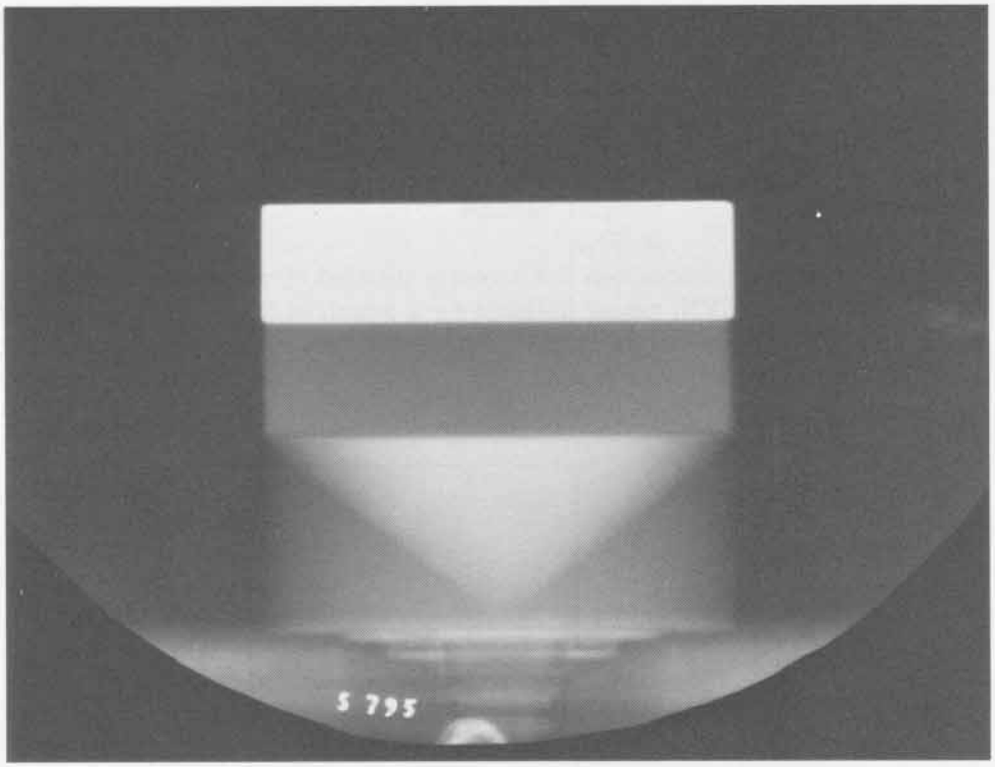


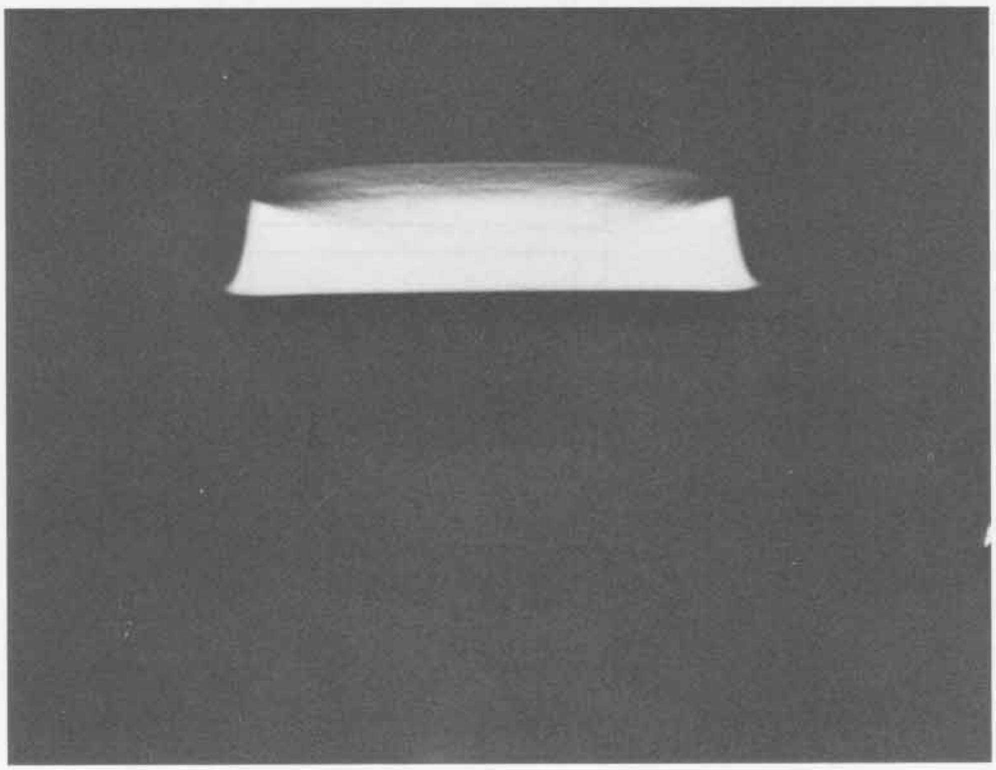


SHOT 795: **Dynamic Fracture of Cobalt**
Date: June 1, 1967
Experimenter: Benny Ray Breed
Radiographic Time: 28.82 μs

Dynamic fracture of 25.0-mm-thick, t, cobalt. The plate is shocked by 25.4 mm of Composition B-3 initiated by a P-040 lens. h is 41.27 mm.

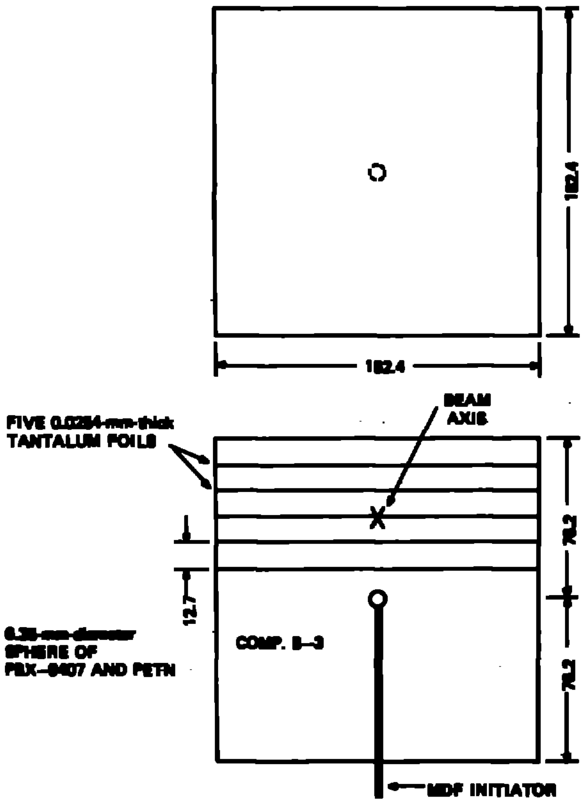


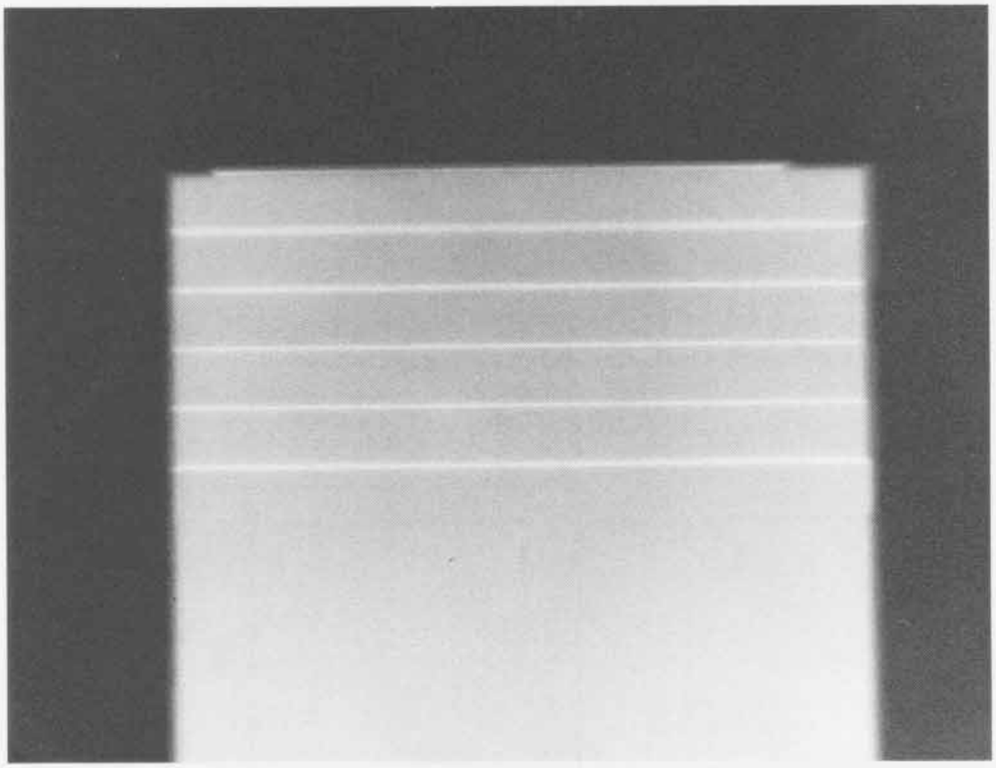

S 795

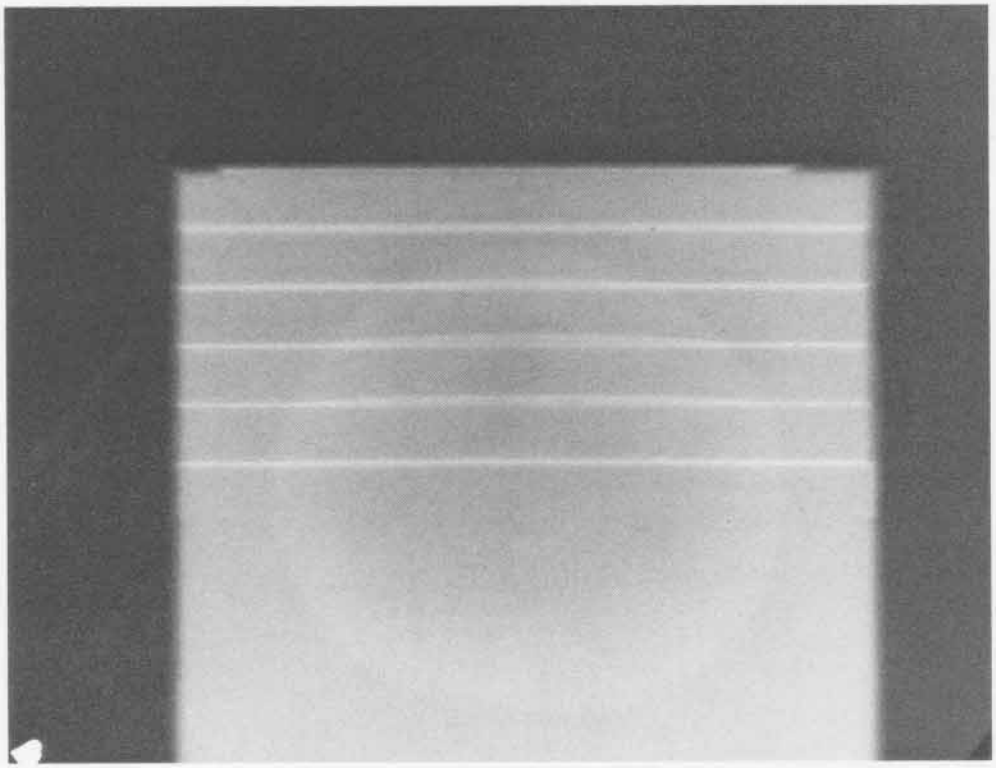


SHOT 796:	**Spherically Diverging Composition B-3 Detonation**
Date:	May 24, 1967
Experimenter:	Douglas Venable
Radiographic Time:	26.80 μs

A 152.4-mm cube of Composition B-3 is center initiated by composite hemispheres of PBX-9407 and PETN, center initiated by a length of MDF (mild detonating fuse). Five 0.0254-mm-thick tantalum foils are embedded in the Composition B-3 every 12.7 mm. The detonation product density may be calculated from the foil movement. See Shots 770 and 797.

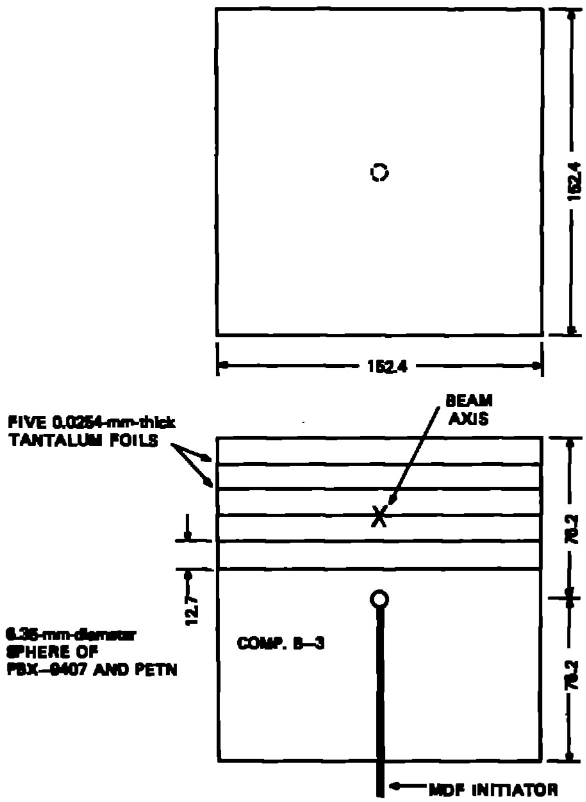


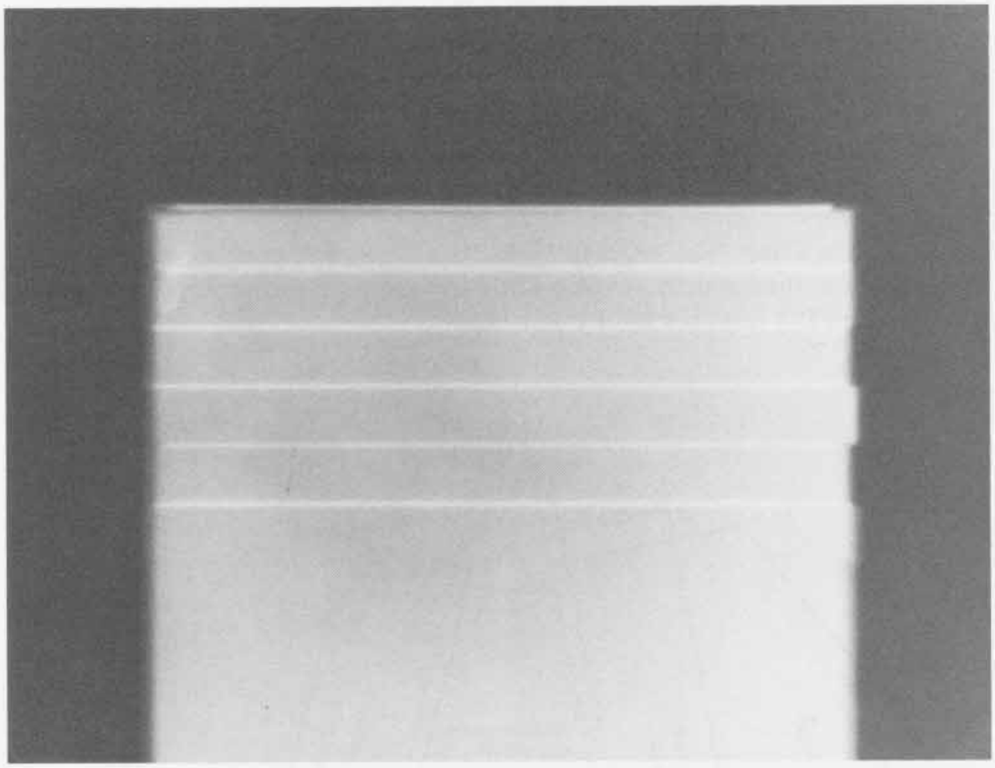
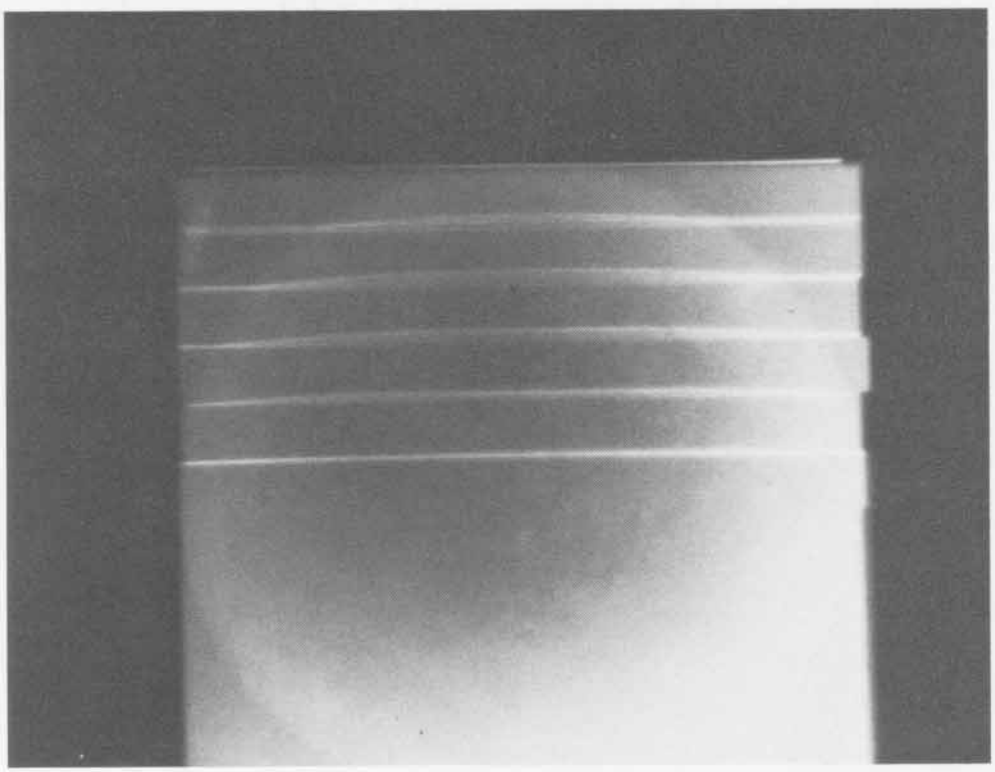




SHOT 797: **Spherically Diverging Composition B-3 Detonation**
Date: June 20, 1967
Experimenter: Douglas Venable
Radiographic Time: 29.27 μs

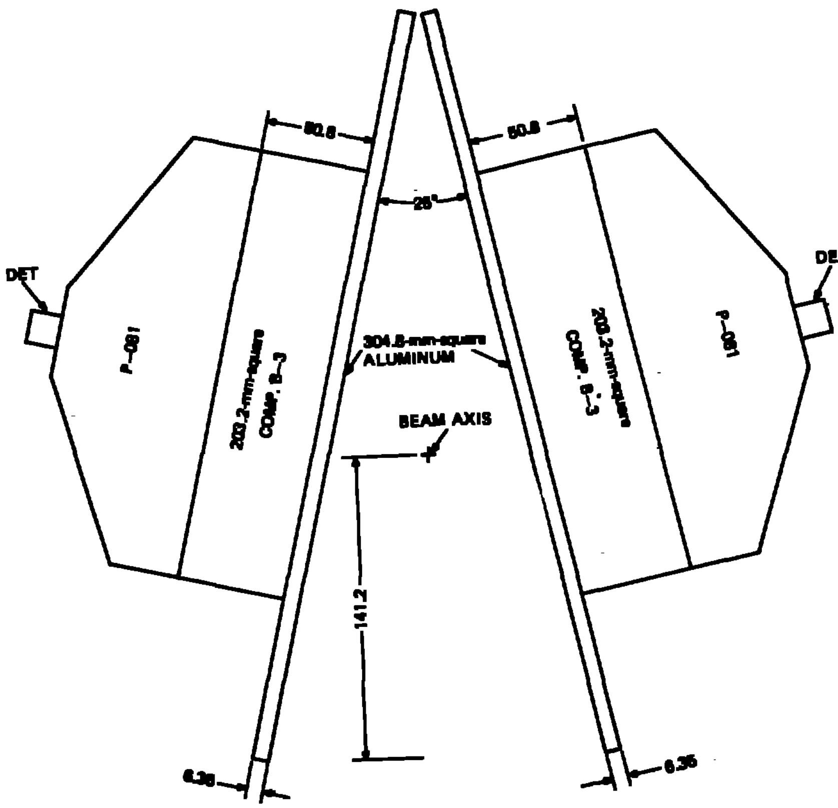
A 152.4-mm cube of Composition B-3 is center initiated by composite hemispheres of PBX-9407 and PETN, center initiated by a length of MDF (mild detonating fuse). Five 0.0254-mm-thick tantalum foils are embedded in the Composition B-3 every 12.7 mm. The detonation product density may be calculated from the foil movement. See Shots 770 and 796.

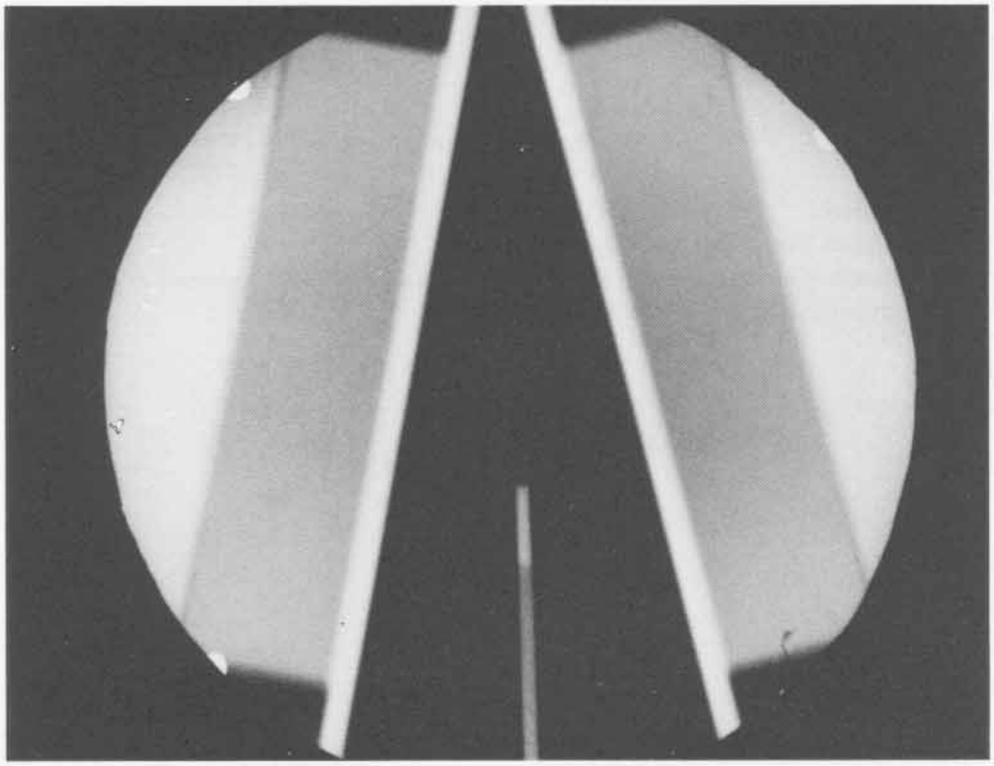


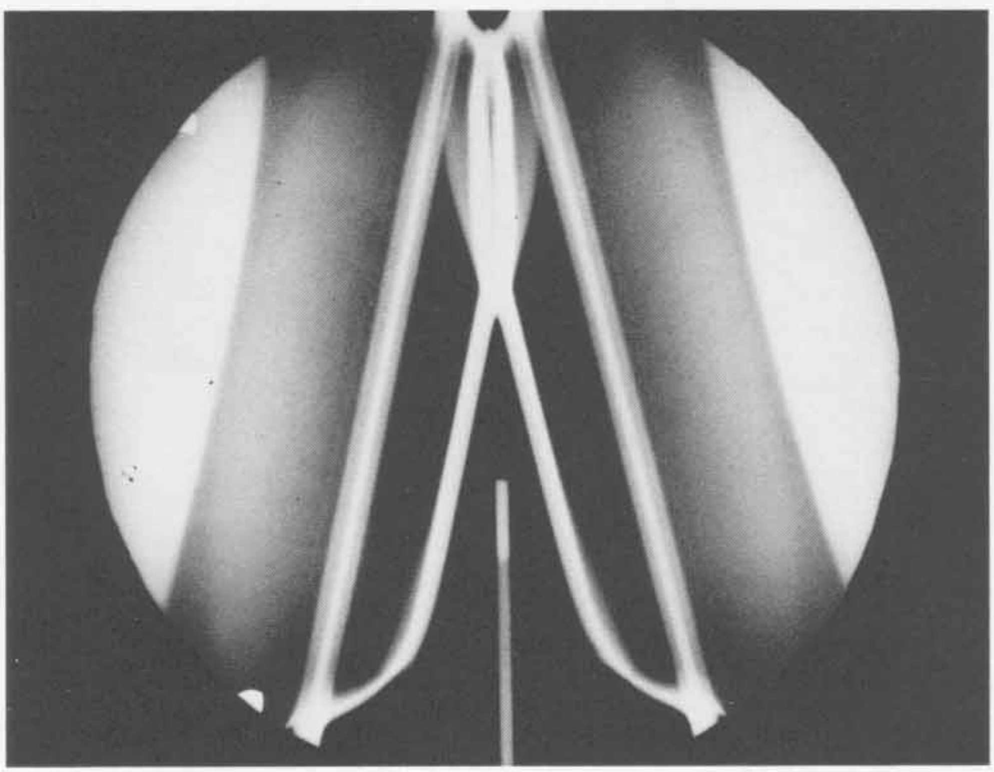



SHOT 798: Colliding Aluminum Plates
Date: June 29, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 38.66 μs

Two 6.35-mm-thick aluminum plates at a 25° angle are each driven by 50.8 mm of Composition B-3 initiated by a P-081 lens.

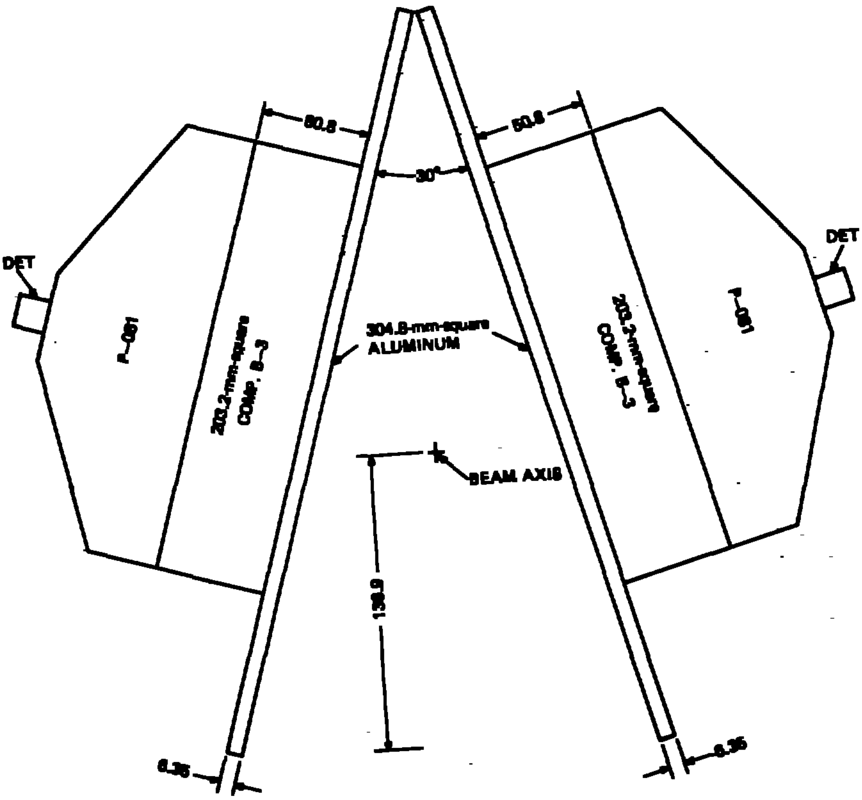


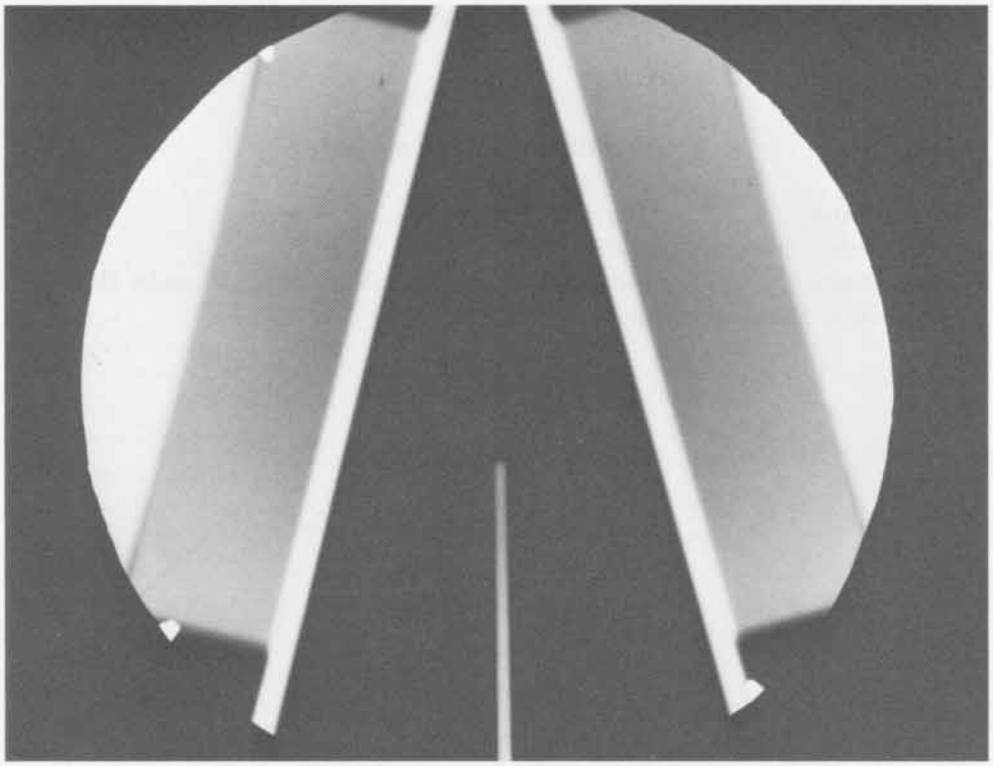


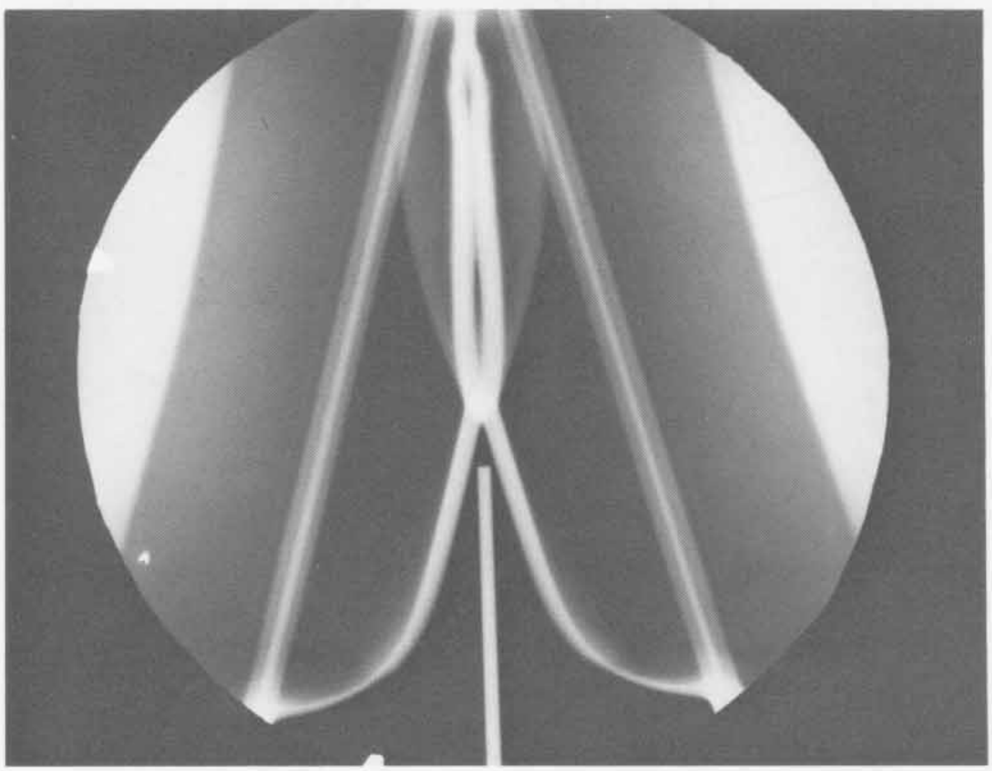


SHOT 799: **Colliding Aluminum Plates**
Date: July 5, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 42.99 μs

Two 6.35-mm-thick aluminum plates at a 30° angle are each driven by 50.8 mm of Composition B-3 initiated by a P-081 lens.







SHOT 800: **Colliding Aluminum Plates**
Date: July 11, 1967
Experimenter: Roger W. Taylor
Radiographic Time: 44.98 μs
Two 6.35-mm-thick aluminum plates at a 34° angle are each driven by 50.8 mm of Composition B-3 initiated by a P-081 lens.