

NOTICE
OF
CHANGE

NOT MEASUREMENT
SENSITIVE

MIL-HDBK-146
NOTICE 2
1 February 1993

MILITARY HANDBOOK
FUZE CATALOG
LIMITED STANDARD, OBSOLESCE, OBSOLETE,
TERMINATED, AND CANCELED FUZES

TO ALL HOLDERS OF MIL-HDBK-146:

1. THE FOLLOWING PAGES OF MIL-HDBK-146 HAVE BEEN REVISED AND
SUPERSEDE THE PAGES LISTED:

New Page	Date	Superseded Page	Date
vii thru xxviii	1-Feb-93	vii thru xxx	1-Oct-82
1-3 thru 1-4	1-Feb-93	1-3 thru 1-4	1-Oct-82
1-9 thru 1-10	1-Feb-93	1-9 thru 1-10	1-Oct-82
1-10A thru 1-10-B	1-Feb-93	New pages	
1-11 thru 1-12	1-Feb-93	1-11 thru 1-12	1-Oct-82
1-15 thru 1-16	1-Feb-93	1-15 thru 1-16	1-Oct-82
1-23 thru 1-24	1-Feb-93	1-23 thru 1-24	1-Oct-82
1-26A thru 1-26B	1-Feb-93	New pages	
1-27 thru 1-28	1-Feb-93	1-27 thru 1-28	1-Oct-82
1-28A thru 1-28J	1-Feb-93	New pages	
1-35 thru 1-38	1-Feb-93	1-35 thru 1-38	1-Oct-82
1-41 thru 1-42	1-Feb-93	1-41 thru 1-42	1-Oct-82
1-42A thru 1-42B	1-Feb-93	New pages	
1-49 thru 1-52	1-Feb-93	1-49 thru 1-52	1-Oct-82
1-55 thru 1-60	1-Feb-93	1-55 thru 1-60	1-Oct-82
1-60A thru 1-60H	1-Feb-93	New pages	
1-61 thru 1-62	1-Feb-93	1-61 thru 1-62	1-Oct-82
1-62A thru 1-62B	1-Feb-93	New pages	
1-74A thru 1-74B	1-Feb-93	New pages	
1-81 thru 1-82	1-Feb-93	1-81 thru 1-82	1-Oct-82
1-85 thru 1-86	1-Feb-93	1-85 thru 1-86	1-Oct-82
1-92A thru 1-92B	1-Feb-93	New pages	
1-93 thru 1-94	1-Feb-93	1-93 thru 1-94	1-Oct-82
1-97 thru 1-102	1-Feb-93	1-97 thru 1-102	1-Oct-82
1-104A thru 1-104B	1-Feb-93	New pages	
1-105 thru 1-108	1-Feb-93	1-5 thru 1-8	1-Oct-82
1-111 thru 1-112	1-Feb-93	1-111 thru 1-112	1-Oct-82
1-119 thru 1-120	1-Feb-93	1-119 thru 1-120	1-Oct-82
1-123 thru 1-128	1-Feb-93	1-123 thru 1-128	1-Oct-82

DISTRIBUTION STATEMENT A. Approved for
public release; distribution is unlimited.

AMSC/NA

FSC 13GP

MIL-HDBK-146
NOTICE 2

New Page	Date	Superseded Page	Date
1-128A thru 1-128B	1-Feb-93	New pages	
1-131 thru 1-132	1-Feb-93	1-131 thru 1-132	1-Oct-82
1-136A thru 1-136B	1-Feb-93	New pages	
1-139 thru 1-140	1-Feb-93	1-139 thru 1-140	1-Oct-82
1-140A thru 1-140B	1-Feb-93	New pages	
1-141 thru 1-142	1-Feb-93	1-141 thru 1-142	1-Oct-82
1-147 thru 1-148	1-Feb-93	1-147 thru 1-148	1-Oct-82
1-151 thru 1-156	1-Feb-93	1-151 thru 1-156	1-Oct-82
1-159 thru 1-160	1-Feb-93	1-159 thru 1-160	1-Oct-82
1-171 thru 1-172	1-Feb-93	1-171 thru 1-172	1-Oct-82
1-183 thru 1-186	1-Feb-93	1-183 thru 1-186	1-Oct-82
1-199 thru 1-200	1-Feb-93	1-199 thru 1-200	1-Oct-82
1-207 thru 1-214	1-Feb-93	1-207 thru 1-214	1-Oct-82
1-217 thru 1-218	1-Feb-93	1-217 thru 1-218	1-Oct-82
1-221 thru 1-222	1-Feb-93	1-221 thru 1-222	1-Oct-82
1-367 thru 1-368	1-Feb-93	1-367 thru 1-368	1-Oct-82
1-371 thru 1-372	1-Feb-93	1-371 thru 1-372	1-Oct-82
1-372A thru 1-372B	1-Feb-93	New pages	
1-373 thru 1-374	1-Feb-93	1-373 thru 1-374	1-Oct-82
1-377 thru 1-386	1-Feb-93	1-377 thru 1-386	1-Oct-82
1-386A thru 1-386D	1-Feb-93	New pages	
1-387 thru 1-390	1-Feb-93	1-387 thru 1-390	1-Oct-82
1-393 thru 1-394	1-Feb-93	1-393 thru 1-394	1-Oct-82
1-401 thru 1-402	1-Feb-93	1-401 thru 1-402	1-Oct-82
1-402A thru 1-402B	1-Feb-93	New pages	
1-407 thru 1-408	1-Feb-93	1-407 thru 1-408	1-Oct-82
1-417 thru 1-418	1-Feb-93	1-417 thru 1-418	1-Oct-82
1-421 thru 1-426	1-Feb-93	1-421 thru 1-426	1-Oct-82
1-429 thru 1-440	1-Feb-93	1-429 thru 1-440	1-Oct-82
1-443 thru 1-444	1-Feb-93	1-443 thru 1-444	1-Oct-82
1-447 thru 1-450	1-Feb-93	1-447 thru 1-450	1-Oct-82
1-461 thru 1-464	1-Feb-93	1-461 thru 1-464	1-Oct-82
1-473 thru 1-476	1-Feb-93	1-473 thru 1-476	1-Oct-82
1-480A thru 1-480B	1-Feb-93	New pages	
1-486A thru 1-486B	1-Feb-93	New pages	
1-493 thru 1-494	1-Feb-93	1-493 thru 1-494	1-Oct-82
1-503 thru 1-504	1-Feb-93	1-503 thru 1-504	1-Oct-82
1-507 thru 1-510	1-Feb-93	1-507 thru 1-510	1-Oct-82
1-513 thru 1-516	1-Feb-93	1-513 thru 1-516	1-Oct-82
1-519 thru 1-520	1-Feb-93	1-519 thru 1-520	1-Oct-82
1-520A thru 1-520D	1-Feb-93	New pages	
1-522A thru 1-522F	1-Feb-93	New pages	
1-524A thru 1-524J	1-Feb-93	New pages	
2-5 thru 2-8	1-Feb-93	2-5 thru 2-8	1-Oct-82
2-12A thru 2-12B	1-Feb-93	New pages	
2-14A thru 2-14B	1-Feb-93	New pages	
2-27 thru 2-28	1-Feb-93	2-27 thru 2-28	1-Oct-82
2-36A thru 2-36B	1-Feb-93	New pages	

MIL-HDBK-146

NOTICE 2

New Page	Date	Superseded Page	Date
2-41 thru 2-42	1-Feb-93	2-41 thru 2-42	1-Oct-82
2-45 thru 2-46	1-Feb-93	2-45 thru 2-46	1-Oct-82
2-78A thru 2-78B	1-Feb-93	New pages	
2-89 thru 2-90	1-Feb-93	2-89 thru 2-90	1-Oct-82
2-98A thru 2-98B	1-Feb-93	New pages	
2-112A thru 2-112B	1-Feb-93	New pages	
2-143 thru 2-144	1-Feb-93	2-143 thru 2-144	1-Oct-82
2-153 thru 2-154	1-Feb-93	2-153 thru 2-154	1-Oct-82
2-157 thru 2-158	1-Feb-93	2-157 thru 2-158	1-Oct-82
2-165 thru 2-168	1-Feb-93	2-165 thru 2-168	1-Oct-82
2-195 thru 2-196	1-Feb-93	2-195 thru 2-196	1-Oct-82
2-275 thru 2-276	1-Feb-93	2-275 thru 2-276	1-Oct-82
2-297 thru 2-298	1-Feb-93	2-297 thru 2-298	1-Oct-82
2-303 thru 2-304	1-Feb-93	2-303 thru 2-304	1-Oct-82
2-309 thru 2-310	1-Feb-93	2-309 thru 2-310	1-Oct-82
2-317 thru 2-318	1-Feb-93	2-317 thru 2-318	1-Oct-82
3-13 thru 3-14	1-Feb-93	3-13 thru 3-14	1-Oct-82
3-17 thru 3-22	1-Feb-93	3-17 thru 3-22	1-Oct-82
4-3 thru 4-8	1-Feb-93	4-3 thru 4-8	1-Oct-82
4-10A thru 4-10B	1-Feb-93	New pages	
4-14A thru 4-14D	1-Feb-93	New pages	
4-15 thru 4-18	1-Feb-93	4-15 thru 4-18	1-Oct-82
4-29 thru 4-30	1-Feb-93	4-29 thru 4-30	1-Oct-82
5-4A thru 5-4B	1-Feb-93	New pages	
5-22A thru 5-22B	1-Feb-93	New pages	
5-33 thru 5-34	1-Feb-93	5-33 thru 5-34	1-Oct-82
5-111 thru 5-112	1-Feb-93	5-111 thru 5-112	1-Oct-82
5-115 thru 5-116	1-Feb-93	5-115 thru 5-116	1-Oct-82
5-153 thru 5-154	1-Feb-93	5-153 thru 5-154	1-Oct-82
5-165 thru 5-166	1-Feb-93	5-165 thru 5-166	1-Oct-82
5-171 thru 5-172	1-Feb-93	5-171 thru 5-172	1-Oct-82
5-175 thru 5-176	1-Feb-93	5-175 thru 5-176	1-Oct-82
5-181 thru 5-182	1-Feb-93	5-181 thru 5-182	1-Oct-82
5-182A thru 5-182B	1-Feb-93	New pages	
5-188A thru 5-188D	1-Feb-93	New pages	
5-190A thru 5-190 B	1-Feb-93	New pages	
5-257 thru 5-260	1-Feb-93	5-257 thru 5-260	1-Oct-82
6-2A thru 6-2B	1-Feb-93	New pages	
6-4A thru 6-4B	1-Feb-93	New pages	
6-16A thru 6-16B	1-Feb-93	New pages	
6-38A thru 6-38F	1-Feb-93	New pages	
6-49 thru 6-50	1-Feb-93	6-49 thru 6-50	1-Oct-82
6-63 thru 6-70	1-Feb-93	6-63 thru 6-70	1-Oct-82
6-72A thru 6-72B	1-Feb-93	New pages	
6-78A thru 6-78B	1-Feb-93	New pages	
7-3 thru 7-4	1-Feb-93	7-3 thru 7-4	1-Oct-82
7-4A thru 7-4L	1-Feb-93	New pages	
7-5 thru 7-6	1-Feb-93	7-5 thru 7-6	1-Oct-82

MIL-HDBK-146
NOTICE 2

New Page	Date	Superseded Page	Date
7-13 thru 7-14	1-Feb-93	7-13 thru 7-14	1-Oct-82
7-21 thru 7-22	1-Feb-93	7-21 thru 7-22	1-Oct-82
7-24A thru 7-24B	1-Feb-93	New pages	
7-77 thru 7-80	1-Feb-93	7-77 thru 7-80	1-Oct-82
7-85 thru 7-88	1-Feb-93	7-85 thru 7-88	1-Oct-82
7-96A thru 7-96H	1-Feb-93	New pages	
7-99 thru 7-110	1-Feb-93	7-99 thru 7-100	1-Oct-82
8-2A thru 8-2D	1-Feb-93	New pages	
8-4A thru 8-4B	1-Feb-93	New pages	
8-7 thru 8-16	1-Feb-93	8-7 thru 8-16	1-Oct-82
8-21 thru 8-22	1-Feb-93	8-21 thru 8-22	1-Oct-82
9-2A thru 9-2B	1-Feb-93	New pages	
9-5 thru 9-6	1-Feb-93	9-5 thru 9-6	1-Oct-82
9-8A thru 9-8F	1-Feb-93	New pages	
9-13 thru 9-14	1-Feb-93	9-13 thru 9-14	1-Oct-82
9-21 thru 9-24	1-Feb-93	9-21 thru 9-24	1-Oct-82
A-1 thru A-9	1-Feb-93	A-1 thru A-8	1-Oct-82
I-1 thru I-36	1-Feb-93	I-1 thru I-36	1-Oct-82

2. RETAIN THIS NOTICE AND INSERT BEFORE TABLE OF CONTENTS.

3. Holders of MIL-HDBK-146 will verify that page changes and additions indicated above have been entered. This notice page will be retained as a check sheet. This issuance, together with appended pages, is a separate publication. Each notice is to be retained by stocking points until the military handbook is completely revised or canceled.

Custodians:

Army = AR
Navy - OS
Air Force - 99

Preparing activity:

Army - AR

(Project 13GP0027)

Reviewing activities:

Army - EA, MI, MT, TE

CONTENTS

Chapter		Page
1	Projectiles	1-1
2	Bombs	2-1
3	Submunitions	3-1
4	Mines	4-1
5	Rockets	5-1
6	Missiles	6-1
7	Small Caliber	7-1
8	Grenades	8-1
9	Miscellaneous	9-1
10	Scant	10-1
Appendix		
A	Data Sheet Description	A-1
I	Master Index of Fuzes	I-1

All items contained in this handbook are listed in order of appearance on the following pages.

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
MK 2 Mod 9	Base Ignition Fuze	1-3	01/15/93
MK 3 Mods 0-2	BD Fuze	1-5	04/01/87
M5	Time & SQ Fuze	1-7	10/01/82
MK 7 Mod 0	PD Fuze	1-9	09/24/90
MK 7 Mod 1	PD Fuze	1-10A	09/24/90
M8	PD Fuze	1-11	12/10/91
MK 8 Mod 0-6	BD Fuze	1-13	10/01/82
M9	PD Fuze	1-15	12/10/91
MK 9 Mod 0-3	BD Fuze	1-17	10/01/82
MK 10	BD Fuze	1-19	10/01/82
MK 13 Mod 0-7	BD Fuze	1-21	10/01/82
MK 17 Mod 0-13	Aux Det Fuze	1-25	10/01/82
EX 18 Mod 0	Arming Safety Device (ASD)	1-26A	11/06/92
MK 18 Mod 0	MT Fuze	1-27	09/25/90
MK 18 Mod 1	MT Fuze	1-28A	09/25/90
MK 18 Mod 2	MT Fuze	1-28C	09/25/90
MK 18 Mod 3	MT Fuze	1-28E	09/25/90
MK 18 Mod 4	MT Fuze	1-28G	09/25/90
MK 18 Mod 5	MT Fuze	1-28I	09/25/90
MK 19 Mod 0-3	BD Fuze	1-29	10/01/82
M20A2	Booster	1-31	10/01/82
MK 20 Mod 0-5	BD Fuze	1-33	10/01/82
M22	Booster	1-39	10/01/82
MK 22 Mod 0-3	MT Fuze	1-41	09/26/90
MK 22 Mod 4-6	MT Fuze	1-42A	09/26/90
EX 23	Proximity Fuze	1-43	10/01/82
MK 23 Mod 0	BD Fuze	1-45	10/01/82
M24B1	Booster	1-47	10/01/82
MK 25 Mod 5	MT Fuze	1-51	12/12/91
EX 26	Proximity Fuze	1-53	10/01/82
MK 29 Mod 0-2	PD Fuze	1-59	09/27/90
MK 29 Mod 3	PD Fuze	1-60A	10/12/90
MK 29 Mod 4	PD Fuze	1-60C	09/27/90
MK 30 Mod 0-2	PD Fuze	1-60E	10/12/90
MK 30 Mod 3	PD Fuze	1-60G	10/12/90
MK 32 Mod 0-40	Proximity Fuze	1-62A	10/03/90
MK 35 Mod 0	BD Fuze	1-63	10/01/82
T36E2	Booster	1-65	10/01/82
MK 36 Mod 0,1	BD Fuze	1-67	10/01/82
M37A1	Time & SQ Fuze	1-69	10/01/82
M39A2	PD Fuze	1-71	10/01/82
MK 39 Mod 0,1	BD Fuze	1-73	10/01/82
MK 40	Proximity Fuze	1-74A	10/04/90
MK 42	MT Fuze	1-75	10/01/82
M43A4	MT Fuze	1-77	10/01/82
T44	Booster	1-79	10/01/82
MK 44 Mod 1,2	Aux Det Fuze	1-81	03/06/92
M45	PD Fuze	1-83	10/01/82
MK 45 Mods 1-12	Proximity Fuze	1-85	10/04/90
M46	PD Fuze	1-87	10/01/82
MK 46	Aux Det Fuze	1-89	10/01/82
M47	PD Fuze	1-91	10/01/82

Supersedes page viii of MIL-HDBK-146.

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
MK 47 Mod 0	Proximity Fuze	1-92A	10/04/90
M48A3E2	PD Fuze	1-95	10/01/82
MK 50 Mod 8	MT Fuze	1-99	02/11/92
M51A5-3	PD Fuze	1-103	10/01/82
MK 51 Mod 5	MT Fuze	1-104A	02/11/92
M53A1	PD Fuze	1-109	01/01/87
MK 53 Mods 0-6	Proximity Fuze	1-111	10/04/90
M54	Time & SQ Fuze	1-113	10/01/82
XP-54A	ET Fuze	1-115	10/01/82
M55A3	Time & SQ Fuze	1-117	10/01/82
XP-56A	BD Fuze	1-121	10/01/82
M57	PD Fuze	1-123	02/11/92
MK 57 Mod 0-3	MT Fuze	1-125	03/06/92
M58	BD Fuze	1-127	02/11/92
MK 58 Mod 0	Proximity Fuze	1-128A	10/04/90
XP-58A	BD Fuze	1-129	10/01/82
MK 59 Mod 0	Proximity Fuze	1-131	10/04/90
M60	BD Fuze	1-133	10/01/82
MK 60 Mod 1	Proximity Fuze	1-135	10/01/82
EX 60	Target Detecting Device	1-136A	02/11/92
M61A2	MT Fuze	1-137	10/01/82
EX 61	Target Detecting Device	1-140A	02/11/92
MK 62 Mod 0,1	MT Fuze	1-141	03/06/92
MK 63 Mod 0	MT Fuze	1-143	10/01/82
XP-63A	BD Fuze	1-145	10/01/82
XP-64A	BD Fuze	1-149	10/01/82
M66A1, A2	BD Fuze	1-153	11/05/92
MK 66 Mod 0	PD Fuze	1-155	10/10/90
M67A3	MT Fuze	1-157	10/01/82
M68A1	BD Fuze	1-159	02/11/92
XP-68B	BD Fuze	1-161	10/01/82
MK 69	Proximity Fuze	1-163	10/01/82
XP-69A,B	MT Fuze	1-165	10/01/82
M70	PD Fuze	1-167	10/01/82
XP-70A,B	MT Fuze	1-169	10/01/82
XP-71A,B	MT Fuze	1-173	10/01/82
M72	BD Fuze	1-175	10/01/82
MK 74 Mod 0,1	Proximity Fuze	1-177	10/01/82
MK 75 Mod 0-5	Proximity Fuze	1-179	10/01/82
MK 76 Mod 0,3	Proximity Fuze	1-181	10/01/82
MK 79 Mod 0,1	Proximity Fuze	1-187	10/01/82
MK 80 Mod 0	PD Fuze	1-189	10/01/82
M81A1	PD Fuze	1-191	01/01/87
M82A1	PD Fuze	1-193	10/01/82
MK 82 Mod 0	Aux Det Fuze	1-195	10/01/82
M83	CP Fuze	1-197	10/01/82
M85	PD Fuze	1-201	10/01/82
M86E1	PD Fuze	1-203	10/01/82
M89	PD Fuze	1-205	10/01/82
M90, M90A1	PI Fuze	1-209	10/27/92
XM92	Safety-Arming Device	1-215	10/01/82
M124	Booster	1-219	10/01/82

Supersedes page ix of MIL-HDBK-146.

MIL-HDBK-146
NOTICE 2

CONTENTS			
MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
T155E2	PD Fuze	1-223	10/01/82
T165E7	BD Fuze	1-225	10/01/82
T175E3	CP Fuze	1-227	10/01/82
T183E4	PD Fuze	1-229	10/01/82
T184E11	PD Fuze	1-231	10/01/82
T188	PD Practice Fuze	1-233	10/01/82
T191E6	PD Fuze	1-235	10/01/82
T193	PD Fuze	1-237	10/01/82
T194	PD Fuze	1-239	10/01/82
T198E1	PD Fuze	1-241	10/01/82
T199E5	BD Fuze	1-243	10/01/82
T202	Proximity Fuze	1-245	10/01/82
T204	PD Fuze	1-247	10/01/82
T206E4	PD Fuze	1-249	10/01/82
T209E3	PI BD Fuze	1-251	10/01/82
T210E2	PD Fuze	1-253	10/01/82
T212	PD Fuze	1-255	10/01/82
T216	PD Fuze	1-257	10/01/82
T219	PD SD Fuze	1-259	10/01/82
T221	BD Fuze	1-261	10/01/82
T224	PI BD Fuze	1-263	10/01/82
T228	PD Fuze	1-265	10/01/82
T230	PD Fuze	1-267	10/01/82
T234E2	PD SD Fuze	1-269	10/01/82
T235	PI BD Fuze	1-271	10/01/82
T236	PI BD Fuze	1-273	10/01/82
T240	MT SQ Fuze	1-275	10/01/82
T244	PD Fuze	1-277	10/01/82
T246	PD Fuze	1-279	10/01/82
T250E1	MT SQ Fuze	1-281	10/01/82
T252	MT Fuze	1-283	10/01/82
T257	BD Fuze	1-285	10/01/82
T265	PD Fuze	1-287	10/01/82
T267	PI BD Fuze	1-289	10/01/82
T271	PD SD Fuze	1-291	10/01/82
T272	PD SD Fuze	1-293	10/01/82
T273	PD SD Fuze	1-295	10/01/82
T277	PI BD Fuze	1-297	10/01/82
T279	Proximity Fuze	1-299	10/01/82
T280	PI BD Fuze	1-301	10/01/82
T282	ET SQ Fuze	1-303	10/01/82
T284	MT SQ Fuze	1-305	10/01/82
T285	PD Fuze	1-307	10/01/82
T287	PD Fuze	1-309	10/01/82
T289	MT SQ Fuze	1-311	10/01/82
T291E3	PD Fuze	1-313	10/01/82
T293	Proximity Fuze	1-315	10/01/82
T294	Proximity Fuze	1-317	10/01/82
T296	BD Fuze	1-319	10/01/82
T297	PD Fuze	1-321	10/01/82
T298	PD Fuze	1-323	10/01/82
T299	BD Fuze	1-325	10/01/82

Supersedes page x of MIL-HDBK-146.

x

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
T302	MT SQ Fuze	1-327	10/01/82
T303	BD Fuze	1-329	10/01/82
T305	Proximity Fuze	1-331	10/01/82
T311	PD Fuze	1-333	10/01/82
T312	PD Fuze	1-335	10/01/82
T313	PD Fuze	1-337	10/01/82
T314	PD Fuze	1-339	10/01/82
T315	PD Fuze	1-341	10/01/82
T324	PI BD Fuze	1-343	10/01/82
T325	BD Fuze	1-345	10/01/82
T326	BD Fuze	1-347	10/01/82
T327E1	BD Fuze	1-349	10/01/82
T331	PD Fuze	1-351	10/01/82
T335	Proximity Fuze	1-353	10/01/82
MK 336 Mod 0	MT Fuze	1-355	10/01/82
T337	BD Fuze	1-357	10/01/82
EX 337 Mod 0	Proximity Fuze	1-359	10/01/82
T338	PD Fuze	1-361	10/01/82
MK 338 Mod 0	Proximity Fuze	1-363	10/01/82
T339	PD Fuze	1-365	10/01/82
T355	MT Fuze	1-369	10/01/82
MK 357 Mod 0	Fuze & Adapter Assembly	1-371	02/20/92
MK 360 Mod 0	Fuze & Adapter Assembly	1-372A	02/20/92
MK 363 Mod 0	PD Fuze	1-373	04/19/90
T370E1	PI BD Fuze	1-375	10/01/82
MK 392 Mod 0	MT Fuze	1-379	11/05/92
MK 400	Proximity Fuze	1-383	03/06/92
EX 402	Proximity Fuze	1-385	11/05/92
EX 416	ET Fuze	1-386A	11/05/92
MK 424 Mod 0	ET Fuze	1-386C	03/06/92
M502A1	MT SQ Fuze	1-391	10/01/82
M504A2	Proximity Fuze	1-395	10/01/82
M506	MT SQ Fuze	1-397	10/01/82
M507	PD Fuze	1-399	10/01/82
M509A2E1	PI BD Fuze	1-402A	11/05/92
M510	MT SQ Fuze	1-403	10/01/82
M511	MT Fuze	1-405	10/01/82
M513	Proximity Fuze	1-407	11/05/92
M514	Proximity Fuze	1-409	10/01/82
M514A3	Proximity Fuze	1-411	10/01/82
M515	Proximity Fuze	1-413	10/01/82
M516	Proximity Fuze	1-415	10/01/82
M517	Proximity Fuze	1-417	03/03/92
M518A1	MT SQ Fuze	1-419	10/01/82
M519	PD Fuze	1-421	05/01/91
M522	MT SQ Fuze	1-427	10/01/82
M535	PD Fuze	1-441	01/01/87
M543	MT Fuze	1-445	10/01/82
M557E1	PD Fuze	1-451	10/01/82
XM558	MT Fuze	1-453	10/01/82
XM559E1	PI BD Fuze	1-455	10/01/82
XM560	MT SQ Fuze	1-457	10/01/82

Supersedes page xi of MIL-HDBK-146.

MIL-HDBK-146
NOTICE 2

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
XM561	Time & SQ Fuze	1-459	10/01/82
XM566	PD Fuze	1-465	10/01/82
XM568	MT Fuze	1-467	10/01/82
XM569	PI BD Fuze	1-469	10/01/82
XM570	MT Fuze	1-471	10/01/82
M572E1	PD Fuze	1-477	10/01/82
XM574	ET Fuze	1-479	10/01/82
M578A1	BD Fuze	1-480A	11/05/92
XM583	Proximity Fuze	1-481	10/01/82
XM584	ET Fuze	1-483	10/01/82
XM585E4	PD Fuze	1-485	10/01/82
M587	ET/PD Fuze	1-486A	03/06/92
XM588	Proximity Fuze	1-487	10/01/82
XM589	Proximity Fuze	1-489	10/01/82
M591	MT Fuze	1-491	10/01/82
M592	MT Fuze	1-495	10/01/82
XM593E1	PD Fuze	1-497	10/01/82
XM597	PD Fuze	1-499	10/01/82
XM599	MT Fuze	1-501	10/01/82
M711	MT Fuze	1-503	10/28/92
XM712E2	PD Fuze	1-505	10/01/82
XM718	Proximity Fuze	1-511	10/01/82
M719	PD Fuze	1-513	10/28/92
XM723E1	PD Fuze	1-517	10/01/82
M732A1	Proximity Fuze	1-520A	10/28/92
XM741	Multi-Option Fuze	1-520C	01/01/87
XM742	ET Fuze	1-521	10/01/82
M747E2	PD Practice Fuze	1-522A	03/04/92
M748	PD Practice Fuze	1-522C	03/04/92
XM763	PI BD Fuze	1-522E	03/04/92
XM765	PI BD Fuze	1-523	10/01/82
XM768	Time Fuze	1-524A	03/04/92
XM769	Time Fuze	1-524C	03/04/92
XM770	Medium-Altitude Proximity Fuze	1-524E	10/31/92
M777	PI BD Fuze	1-524G	03/04/92
XM778	Electronic Time Fuze	1-524I	11/04/92
M1117	BD Fuze	1-525	10/01/82
M1907M	Fuze Combination	1-527	10/01/82
M2	Bomb Impact Fuze	2-3	04/01/87
DSU-23/B	Target Detecting Device	2-5	11/05/90
E28	Bomb Fuze	2-9	10/01/82
E29	Bomb Fuze	2-11	10/01/82
DSU-29/B	Target Detecting Device	2-12A	11/05/90
E30	Bomb Fuze	2-13	10/01/82
DSU-30/B	Target Detecting Device	2-14A	03/20/90
E34R4	Bomb Impact Fuze	2-15	10/01/82
FMU-35/B	Bomb Long Delay Fuze	2-17	10/01/82
E38	Bomb Impact Fuze	2-19	10/01/82
E40	Bomb Impact Fuze	2-21	10/01/82
E41	Bomb Impact Fuze	2-23	10/01/82
E43	Bomb Impact Fuze	2-25	10/01/82
FMU-57A/B	Bomb Proximity Fuze	2-29	10/01/82

Supersedes page xii of MIL-HDBK-146.

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
FMU-63/B	Bomb Impact Fuze	2-31	10/01/82
E64	Bomb MT Initiator	2-33	10/01/82
XB-65A	Bomb Impact Fuze	2-35	10/01/82
FMU-67/B	Bomb Proximity Fuze	2-36A	10/10/90
FMU-68/B	Bomb Impact Fuze	2-37	10/01/82
FMU-70/B	Bomb Impact Fuze	2-39	10/01/82
XB-74B	Bomb Long Delay Fuze	2-43	10/01/82
FMU-82/B	Bomb Proximity Fuze	2-47	10/01/82
T93	Bomb Proximity Fuze	2-49	10/01/82
AN-M100A2	Bomb Impact Fuze	2-51	10/01/82
AN-M101A2	Bomb Impact Fuze	2-53	10/01/82
AN-M102A2	Bomb Impact Fuze	2-55	10/01/82
AN-M103A2	Bomb Impact Fuze	2-57	10/01/82
AN-M104	Bomb Impact Fuze	2-59	10/01/82
M105	Bomb Impact Fuze	2-61	10/01/82
M106A2	Bomb Impact Fuze	2-63	10/01/82
M107	Bomb MT Fuze	2-65	10/01/82
M108	Bomb Impact Fuze	2-67	10/01/82
M109	Bomb Impact Fuze	2-69	10/01/82
XM109	Bomb MT Initiator	2-71	10/01/82
AN-M110A1	Bomb Impact Fuze	2-73	10/01/82
M111A2	Bomb MT Fuze	2-75	10/01/82
M112A1	Bomb Impact Fuze	2-77	10/01/82
FMU-112/B	Bomb Impact Fuze	2-78A	08/06/90
M113A1	Bomb Impact Fuze	2-79	10/01/82
M114A1	Bomb Impact Fuze	2-81	10/01/82
M115	Bomb Impact Fuze	2-83	10/01/82
M116	Bomb Impact Fuze	2-85	10/01/82
M117	Bomb Impact Fuze	2-87	10/01/82
FMU-117/B	Bomb Impact Fuze	2-89	02/20/92
AN-M120A1	Bomb Impact Fuze	2-91	10/01/82
M121	Bomb Impact Fuze	2-93	10/01/82
FMU-122/B	Bomb Proximity Fuze	2-95	10/01/82
M123A1	Bomb Long Delay Fuze	2-97	10/01/82
FMU-123/B	Bomb Proximity Fuze	2-98A	01/01/87
M124A1	Bomb Long Delay Fuze	2-99	10/01/82
M125A1	Bomb Long Delay Fuze	2-101	10/01/82
AN-M126A1	Bomb Impact Fuze	2-103	10/01/82
FMU-126/B	Bomb Fuze	2-105	10/01/82
M127	Bomb MT Fuze	2-107	10/01/82
AN-M128	Bomb Impact Fuze	2-109	10/01/82
M129	Bomb Impact Fuze	2-111	10/01/82
FMU-130/B	Bomb Impact Fuze	2-112A	08/06/90
M131A1	Bomb AD Fuze	2-113	10/01/82
M132	Bomb Time Fuze	2-115	10/01/82
M133	Bomb Time Fuze	2-117	10/01/82
M134	Bomb Time Fuze	2-119	10/01/82
M135A1	Bomb MT Fuze	2-121	10/01/82
M136A1	Bomb MT Fuze	2-123	10/01/82
M137	Bomb Impact Fuze	2-125	10/01/82
M138	Bomb MT Fuze	2-127	10/01/82
AN-M139A1	Bomb Impact Fuze	2-129	10/01/82

Supersedes page xiii of MIL-HDBK-146.

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
MR 140	Bomb Hydrostatic Fuze	2-131	10/01/82
AN-M140A1	Bomb Impact Fuze	2-133	10/01/82
M142A1	Bomb Impact Fuze	2-135	10/01/82
M144	Bomb MT Fuze	2-137	10/01/82
AN-M145A1	Bomb MT Fuze	2-139	10/01/82
AN-M146A1	Bomb MT Fuze	2-141	10/01/82
M148	Bomb Impact Fuze	2-145	10/01/82
M149	Bomb Impact Fuze	2-147	10/01/82
M150A1	Bomb Impact Fuze	2-149	10/01/82
M151E2	Bomb Impact Fuze	2-151	10/01/82
M153	Bomb MT Fuze	2-155	10/01/82
M156	Bomb Impact Fuze	2-159	10/01/82
M157	Bomb Impact Fuze	2-161	10/01/82
XM157	Arming Assembly	2-163	10/01/82
M160	Bomb Impact Fuze	2-169	10/01/82
M161	Bomb Impact Fuze	2-171	10/01/82
M162	Bomb Impact Fuze	2-173	10/01/82
M163	Bomb Impact Fuze	2-175	10/01/82
M164	Bomb Impact Fuze	2-177	10/01/82
M165	Bomb Impact Fuze	2-179	10/01/82
M166E3	Bomb Proximity Fuze	2-181	10/01/82
M167	Bomb Impact Fuze	2-183	10/01/82
M168E2	Bomb Proximity Fuze	2-185	10/01/82
M169	Bomb Impact Fuze	2-187	10/01/82
M170	Bomb Impact Fuze	2-189	10/01/82
M171	Bomb Impact Fuze	2-191	10/01/82
M172	Bomb Impact Fuze	2-193	10/01/82
M174	Bomb Impact Fuze	2-197	10/01/82
M175	Bomb Impact Fuze	2-199	10/01/82
M176	Bomb Impact Fuze	2-201	10/01/82
AN-M177	Bomb Impact Fuze	2-203	10/01/82
M178	Bomb Impact Fuze	2-205	10/01/82
M179	Bomb Impact Fuze	2-207	10/01/82
M180	Bomb Impact Fuze	2-209	10/01/82
M181	Bomb Impact Fuze	2-211	10/01/82
M182	Bomb Impact Fuze	2-213	10/01/82
M183	Bomb Impact Fuze	2-215	10/01/82
M184	Bomb Impact Fuze	2-217	10/01/82
M185	Bomb Impact Fuze	2-219	10/01/82
M186	Bomb Impact Fuze	2-221	10/01/82
M187	Bomb Impact Fuze	2-223	10/01/82
M188	Bomb Proximity Fuze	2-225	10/01/82
M189	Bomb Impact Fuze	2-227	10/01/82
M190	Bomb Impact Fuze	2-229	10/01/82
M191	Bomb Impact Fuze	2-231	10/01/82
M192	Bomb Impact Fuze	2-233	10/01/82
M193	Bomb Impact Fuze	2-235	10/01/82
M194	Bomb Impact Fuze	2-237	10/01/82
M195	Bomb Impact Fuze	2-239	10/01/82
M196	Bomb Impact Fuze	2-241	10/01/82
M198	Bomb MT Fuze	2-243	10/01/82
EX 200 Mod 4	Bomb Impact Fuze	2-245	10/01/82

Supersedes page xiv of MIL-HDBK-146.

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
ANMK219	Bomb Impact Fuze	2-247	10/01/82
M220	Bomb Time Fuze	2-249	10/01/82
MK 221	Bomb Impact Fuze	2-251	10/01/82
MK 223	Bomb Impact Fuze	2-253	10/01/82
MK 227	Bomb Impact Fuze	2-255	10/01/82
ANMK228	Bomb Impact Fuze	2-257	10/01/82
MK 230 Mod 4B	Bomb Hydrostatic Fuze	2-259	10/01/82
MK 243 Mod 0	Bomb Impact Fuze	2-261	10/01/82
MK 244 Mod 1	Bomb Impact Fuze	2-263	10/01/82
MK 247 Mod 0	Bomb Impact Fuze	2-265	10/01/82
MK 255 Mod 0	Bomb Impact Fuze	2-267	10/01/82
MK 256	Bomb MT Fuze	2-269	10/01/82
MK 257 Mod 0	Bomb Proximity Fuze	2-271	10/01/82
MK 347 Mod 0	Bomb Impact Fuze	2-273	10/01/82
XM590E2	Time Fuze	2-277	10/01/82
T702E1	Bomb Proximity Fuze	2-279	10/01/82
T704	Bomb Proximity Fuze	2-281	10/01/82
T736	Bomb MT Fuze	2-283	10/01/82
T763	Bomb ET Fuze	2-285	10/01/82
T766	Bomb Proximity Fuze	2-287	10/01/82
T779	Bomb Proximity Fuze	2-289	10/01/82
T787E4	Bomb Long Delay Fuze	2-291	10/01/82
T796	Bomb Proximity Fuze	2-293	10/01/82
M903	Bomb AD Fuze	2-295	10/01/82
M906	Bomb Impact Fuze	2-299	10/01/82
T906	Bomb ET Fuze	2-301	10/01/82
M908	Bomb MT Fuze	2-305	10/01/82
T908E4	Bomb Impact Fuze	2-307	10/01/82
M910	Bomb Proximity Fuze	2-311	10/01/82
M913	Bomb Proximity Fuze	2-313	01/01/87
M914E1	Bomb Proximity Fuze	2-315	10/01/82
T1301	Bomb Proximity Fuze	2-319	10/01/82
FAE	Bomb Proximity Fuze	2-321	10/01/82
Opener	ET Opener	2-323	10/01/82
BLU-7A/B	Bomblet, Fuze for	3-3	10/01/82
BLU-25/B	Bomblet, Fuze for	3-5	10/01/82
FMU-50/B	Bomb Impact Fuze	3-7	10/01/82
FMU-65/B	Bomb Impact Fuze	3-9	10/01/82
FMU-73/B	Bomb Impact Fuze	3-11	10/01/82
M130A1	Bomb MT Fuze	3-15	10/01/82
XM221	General Purpose Grenade Fuze	3-23	10/01/82
XM222	General Purpose Grenade Fuze	3-25	10/01/82
XM737	Impact Fuze	3-27	10/01/82
XM922	Bomblet Impact Fuze	3-29	10/01/82
XM928	Bomblet Impact Fuze	3-31	10/01/82
DADT	Bomblet AD SD Fuze	3-33	10/01/82
M6A1	Mine Combination Fuze	4-3	12/10/91
M7A1	Mine Combination Fuze	4-5	12/10/91
M10, A2, A3	AP Practice Mine Fuze	4-7	12/12/91
M12	AT Mine Practice Fuze	4-9	10/01/82
F/M26 AP Mine	Land Mine, Fuze for	4-10A	01/01/87
FMU-30A/B	Mine Seismic Fuze	4-11	10/01/82

Supersedes page xv of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
XM44	Anti-Instrusion Device	4-13	10/01/82
XM84	AT/AV Mine, fuze for	4-14A	10/27/92
XM132	AT Mine System, fuze for	4-14C	01/01/87
M609	AT Mine Influence Fuze	4-19	10/01/82
XM611	AP Mine Combination Fuze	4-21	10/01/82
M612	AT Mine Fuze	4-23	10/01/82
M616	AT Mine Fuze	4-25	01/01/87
XM617	AP Mine Influence Fuze	4-27	10/01/82
M619	AT Mine Influence Fuze	4-29	03/03/92
XM621	Anti Disturb Device	4-31	10/01/82
T1200E1	AP Mine Fuze	4-33	10/01/82
T1205	GP Mine Fuze	4-35	10/01/82
T1214	AT Mine Fuze	4-37	10/01/82
T1215	AT Mine Practice Fuze	4-39	10/01/82
T1216	AT Mine Fuze	4-41	10/01/82
T1221E1	Mine Combination Practice Fuze	4-43	10/01/82
T1223	AT Mine Influence Fuze	4-45	10/01/82
T1224E1	AT Mine Influence Fuze	4-47	10/01/82
T1226	AT Mine Fuze	4-49	10/01/82
T1228	AT Mine Fuze	4-51	10/01/82
T1229	AT Mine Fuze	4-53	10/01/82
T1231	AT Mine Fuze	4-55	10/01/82
T1233	AT Mine Influence Fuze	4-57	10/01/82
Bomine	PI and Proximity Fuze	4-59	10/01/82
T1E4	Rocket PD Fuze	5-3	04/01/87
T3	Rocket PD Fuze	5-4A	01/15/93
AIR-3	Rocket PD Fuze	5-5	04/01/87
M4A2	Rocket PD Fuze	5-7	10/01/82
PIR-8	Rocket BD Fuze	5-9	10/01/82
AIR-9-1	Rocket PD Fuze	5-11	10/01/82
PIR-9	Rocket BD Fuze	5-13	10/01/82
AIR-12-1	Rocket PD Fuze	5-15	10/01/82
PIR-14	Rocket BD Fuze	5-17	10/01/82
PIR-22	Rocket BD Fuze	5-19	10/01/82
PIR-23	Rocket BD Fuze	5-21	10/01/82
MK 30 Mod 4	Rocket PD Fuze	5-22A	10/12/90
XR-36	Rocket BD Fuze	5-23	10/01/82
M43	Safety-Arming Device	5-25	01/01/87
XR-51	Rocket BD Fuze	5-27	10/01/82
XR-78	Rocket BD Fuze	5-29	10/01/82
XM79	Safety-Arming Device	5-31	10/01/82
FMU-98/B	Rocket Proximity Fuze	5-33	03/06/92
MK 100 Mod 0-2	Rocket PD Fuze	5-35	10/01/82
EX 104 Mod 0	Rocket Time Fuze	5-37	10/01/82
EX 107	Rocket Time & SQ Fuze	5-39	10/01/82
EX 110A	Rocket MT Fuze	5-41	10/01/82
EX 111	Rocket PD Fuze	5-43	10/01/82
MK 131	Rocket PD Fuze	5-45	10/01/82
MK 132 Mod 0	Rocket PD Fuze	5-47	10/01/82
MK 133	Rocket PD Fuze	5-49	10/01/82
MK 134 Mod 0	Rocket Time Fuze	5-51	10/01/82
MK 135	Rocket PD Fuze	5-53	10/01/82

Supersedes page xvi of MIL-HDBK-146.

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
MK 136	Rocket PD Fuze	5-55	10/01/82
MK 137 Mod 0-2	Rocket PD Fuze	5-57	10/01/82
MK 139	Rocket PD Fuze	5-59	10/01/82
MK 141 Mod 0	Rocket PD Fuze	5-61	10/01/82
MK 144	Rocket PD Fuze	5-63	10/01/82
MK 145 Mod 0,1	Rocket PD Fuze	5-65	10/01/82
MK 146 Mod 1	Rocket BD Fuze	5-67	10/01/82
MK 147 Mod 0,1	Rocket PD Fuze	5-69	10/01/82
MK 148	Rocket PD Fuze	5-71	10/01/82
MK 149 Mod 0,1	Rocket PD Fuze	5-73	10/01/82
MK 152	Rocket PD Fuze	5-75	10/01/82
MK 154 Mod 0,2,3	Rocket PD Fuze	5-77	10/01/82
MK 155 Mod 0	Rocket PD Fuze	5-79	10/01/82
MK 156	Rocket PD Fuze	5-81	10/01/82
MK 157 Mod 0-2	Rocket BD Fuze	5-83	10/01/82
MK 158	Rocket BD Fuze	5-85	10/01/82
MK 159 Mod 0,1	Rocket BD Fuze	5-87	10/01/82
MK 160	Rocket BD Fuze	5-89	10/01/82
MK 161 Mod 0	Rocket BD Fuze	5-91	10/01/82
MK 162 Mod 0	Rocket BD Fuze	5-93	10/01/82
MK 163 Mod 0,1	Rocket BD Fuze	5-95	10/01/82
MK 164	Rocket BD Fuze	5-97	10/01/82
MK 165 Mod 0	Rocket BD Fuze	5-99	10/01/82
MK 166 Mod 0-2	Rocket BD SD Fuze	5-101	10/01/82
MK 170	Rocket Proximity Fuze	5-103	10/01/82
MK 172 Mod 0-2	Rocket Proximity Fuze	5-105	10/01/82
MK 173 Mod 0-4	Rocket Proximity Fuze	5-107	10/01/82
MK 174 Mod 0-3	Rocket Proximity Fuze	5-109	10/01/82
MK 177 Mod 0,1	Rocket PD Fuze	5-113	10/01/82
MK 179 Mod 0	Rocket BD Fuze	5-117	10/01/82
MK 180 Mod 0	Rocket BD Fuze	5-119	10/01/82
MK 184	Rocket PD Fuze	5-121	10/01/82
MK 185	Rocket PD Fuze	5-123	10/01/82
MK 189 Mod 0,1	Rocket PD Fuze	5-125	10/01/82
MK 190 Mod 0	Rocket PI BD Fuze	5-127	10/01/82
MK 192 Mod 0-2	Rocket MT Fuze	5-129	10/01/82
MK 198	Rocket MT Fuze	5-131	10/01/82
T214	Rocket MT SQ Fuze	5-133	10/01/82
T274	Rocket MT SQ Fuze	5-135	10/01/82
T332	Rocket MT Fuze	5-137	10/01/82
EX 335 Mod 0	Rocket Proximity Fuze	5-139	10/01/82
MK 378 Mod 0,1	Rocket Proximity Fuze	5-141	10/01/82
MK 387 Mods 0-2	Proximity Fuze	5-143	03/06/92
M400	Rocket BD Fuze	5-145	10/01/82
M401	Rocket BD Fuze	5-147	10/01/82
M402A2	Rocket Proximity Fuze	5-149	10/01/82
M403A2	Rocket Proximity Fuze	5-151	10/01/82
M406	Rocket PI BD Fuze	5-155	10/01/82
M408E1	Rocket PI BD Fuze	5-157	10/01/82
M409	Rocket PI BD Fuze	5-159	10/01/82
M411	Rocket MT Fuze	5-161	10/01/82
XM413	Rocket Proximity Fuze	5-163	10/01/82

Supersedes page xvii of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
M415	Rocket PD Fuze	5-167	10/01/82
XM416	Rocket MT Fuze	5-169	10/01/82
M417	Rocket PD Fuze	5-171	04/19/91
M421	Rocket MT Fuze	5-173	10/01/82
XM425	Rocket Proximity Fuze	5-177	10/01/82
XM426E4	Rocket MT Fuze	5-179	10/01/82
EX 427 Mod 0	Electronic Time Fuze	5-181	03/10/92
M431	Rocket PD Fuze	5-182A	03/10/92
XM432	Rocket ET Fuze	5-183	10/01/82
XM443	Rocket ET Fuze	5-185	10/01/82
XM444	Rocket Multi-option Fuze	5-187	10/01/82
XM448	Rocket ET Fuze	5-188A	01/01/87
XM450	Rocket Prox/Time Fuze	5-188C	03/06/92
XM540	MT Fuze	5-189	10/01/82
XM750	Rocket ET Fuze	5-190A	03/13/92
XM1133	Rocket Time Fuze	5-191	10/01/82
T2000E3	Rocket PI BD Fuze	5-193	10/01/82
T2019	Rocket PD Fuze	5-195	10/01/82
T2021E6	Rocket PD SD Fuze	5-197	10/01/82
T2022E8	Rocket BD Fuze	5-199	10/01/82
T2024	Rocket PD SD Fuze	5-201	10/01/82
T2025E2	Rocket PD Fuze	5-203	10/01/82
T2027	Rocket PD Fuze	5-205	10/01/82
T2028	Rocket PI BD Fuze	5-207	10/01/82
T2029	Rocket PI BD Fuze	5-209	10/01/82
T2034	Rocket PI BD SD Fuze	5-211	10/01/82
T2036	Rocket PD SD Fuze	5-213	10/01/82
T2037	Rocket Time Fuze	5-215	10/01/82
T2039	Rocket Proximity Fuze	5-217	10/01/82
T2040	Rocket PD Fuze	5-219	10/01/82
T2041	Rocket PD SD Fuze	5-221	10/01/82
T2043	Rocket PD SD Fuze	5-223	10/01/82
T2044E5	Rocket PD Fuze	5-225	10/01/82
T2046	Rocket Proximity Fuze	5-227	10/01/82
T2047	Rocket PD SD Fuze	5-229	10/01/82
T2048	Rocket PD Fuze	5-231	10/01/82
T2049	Rocket PD Fuze	5-233	10/01/82
T2051	Rocket PD Fuze	5-235	10/01/82
T2052	Rocket BD SD Fuze	5-237	10/01/82
T2053	Rocket PI BD Fuze	5-239	10/01/82
T2054	Rocket BD SD Fuze	5-241	10/01/82
T2055	Rocket BD SD Fuze	5-243	10/01/82
T2056	Rocket BD Fuze	5-245	10/01/82
T2057	Rocket BD Fuze	5-247	10/01/82
T2063	Rocket PI BD Fuze	5-249	10/01/82
T2066	Rocket Fuze	5-251	10/01/82
T2069	Rocket Time Fuze	5-253	10/01/82
MARS	Timer	5-255	10/01/82
SHAWL (F)	PI BD Fuze	5-257-	01/15/93
SHAWL (R)	BD Fuze	5-259-	01/15/93
MK 1 Mod 0	Safety-Arming Device	6-2A	12/19/92
MK 2 Mod 0	Safety-Arming Device	6-3	04/01/87

Supersedes page xviii of MIL-HDBK-146.

xviii

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
MK 3 Mod 3	Safety-Arming Device	6-4A	12/19/92
MK 4 Mod 1	Safety-Arming Device	6-5	10/01/82
MK 5 Mod 2	Safety-Arming Device	6-7	10/01/82
MK 6 Mod 1	Safety-Arming Device	6-9	10/01/82
MK 7 Mod 1	Safety-Arming Device	6-11	10/01/82
MK 10 Mod 0	Safety-Arming Device	6-13	10/01/82
MK 12 Mod 0	Safety-Arming Device	6-15	10/01/82
MK 13 Mod 0	Safety-Arming Device	6-16A	02/21/90
MK 14 Mod 0	Safety-Arming Device	6-17	10/01/82
XM26	Movement	6-19	10/01/82
M30A1	Safety-Arming Device	6-21	10/01/82
XM32	Safety-Arming Device	6-23	10/01/82
XM32E6	Safety-Arming Device	6-25	10/01/82
M51	GM PIBD Element	6-27	10/01/82
FMU-71/B	GM Proximity Fuze	6-29	10/01/82
T90E3	Safety-Arming Device	6-31	10/01/82
XM90	Safety-Arming Device	6-33	10/01/82
T93E8	Safety-Arming Device	6-35	10/01/82
T104	Safety-Arming device	6-37	10/01/82
FMU-131/B	GM Impact Fuze	6-38A	12/19/92
FMU-133/B	GM Impact Fuze	6-38C	12/19/92
FMU-137/B	Safety-Arming Device	6-38E	12/19/92
MK 304 Mod 2	GM Impact Fuze	6-39	10/01/82
MK 310 Mod 0	GM Impact Fuze	6-41	10/01/82
MK 312 Mod 0,1	GM Impact Fuze	6-43	10/01/82
MK 312 Mod 2	GM Impact Fuze	6-45	10/01/82
MK 312 Mod 3	GM Impact Fuze	6-47	10/01/82
MK 330 Mod 0	GM Impact Fuze	6-51	10/01/82
MK 330 Mod 1	GM Impact Fuze	6-53	10/01/82
MK 383 Mod 0	GM Impact Fuze	6-55	10/01/82
M800	GM BD Fuze	6-57	10/01/82
XM802	GM BD SD Fuze	6-59	10/01/82
XM804E1	GM Impact Fuze	6-61	10/01/82
M813	Safety-Arming Device	6-67	01/15/93
XM815	GM Impact Fuze	6-71	10/01/82
M819	GM ET Practice Fuze	6-72A	12/19/92
T1402E5	GM PD Fuze	6-73	10/01/82
T1403E2	GM Impact SD Fuze	6-75	10/01/82
T1404	GM MT Fuze	6-77	10/01/82
T1407	GM Impact Fuze	6-78A	12/19/92
T1409	GM Impact Fuze	6-79	10/01/82
T1410	GM PI BD Fuze	6-81	10/01/82
T1411	GM Impact Fuze	6-83	10/01/82
T1412	GM Impact Fuze	6-85	10/01/82
MINIRAD	Proximity Fuze	6-87	10/01/82
MK 12 Mod 0	PD Fuze	7-3	09/24/90
MK 12 Mod 1	PD Fuze	7-4A	09/24/90
MK 12 Mod 2	PD Fuze	7-4C	09/24/90
MK 12 Mod 3	PD Fuze	7-4E	09/24/90
MK 26 Mod 0	PD Fuze	7-4G	09/27/90
MK 26 Mod 1	PD Fuze	7-4I	10/12/90
MK 26 Mod 2	PD Fuze	7-4K	10/12/90

Supersedes page xix of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
MK 27 Mod 0	PD Fuze	7-5	10/17/90
MK 34 Mod 0,1	PD Fuze	7-7	10/01/82
M38A1	BD Fuze	7-9	10/01/82
M56	PD Fuze	7-11	10/01/82
M69	Dummy Fuze	7-13	02/11/92
M71	PD Fuze	7-15	10/01/82
M74	PD Fuze	7-17	10/01/82
M75	PD Fuze	7-19	10/01/82
MK 78 Mod 0-2	PD Fuze	7-21	02/25/92
MK 81 Mod 0	PD Fuze	7-23	10/01/82
FMU-128/B	PD Fuze	7-24A	10/01/82
T195E11	PD Fuze	7-25	10/01/82
T200E16	PD Fuze	7-27	10/01/82
T231E3	PD Fuze	7-29	10/01/82
T238	Time Fuze	7-31	10/01/82
XM246 PROJ	SD FOR	7-33	10/01/82
T253	PD Fuze	7-35	10/01/82
T262	PD Fuze	7-37	10/01/82
T263E14	PD Fuze	7-39	10/01/82
T264E9	PD Fuze	7-41	10/01/82
T270	PD SD Fuze	7-43	10/01/82
T292	PD Fuze	7-45	10/01/82
T300	BD SD Fuze	7-47	10/01/82
T301	BD Fuze	7-49	10/01/82
T306	BD SD Fuze	7-51	10/01/82
T307	BD Fuze	7-53	10/01/82
T308	BD Fuze	7-55	10/01/82
T320	PD Fuze	7-57	10/01/82
T321	PD Fuze	7-59	10/01/82
T322	PD Fuze	7-61	10/01/82
T323	PD Fuze	7-63	10/01/82
T328	PD Fuze	7-65	10/01/82
T329	PD SD Fuze	7-67	10/01/82
T346E7	PD Fuze	7-69	10/01/82
T363	BD Fuze	7-71	10/01/82
T364	BD Fuze	7-73	10/01/82
EX 380 Mod 0	PD Fuze	7-75	10/01/82
EX 421	PD Fuze	7-77	02/27/92
M505A3E2	PD Fuze	7-79	10/01/82
XM537	PD Fuze	7-81	10/01/82
XM538E1	PD Fuze	7-83	10/01/82
M552	PD Fuze	7-85	03/04/92
XM579	PI BD Fuze	7-87	10/10/90
M581E1	PD Fuze	7-89	10/01/82
M594	PD SD Fuze	7-91	10/01/82
M596	Proximity Fuze	7-93	10/01/82
XM714	PD SD Fuze	7-95	10/01/82
XM714E2	PD SD Fuze	7-96A	03/05/92
M714E5	PD SD Fuze	7-96C	03/05/92
M714E6	PI BD Fuze	7-96E	03/05/92
M714E8	PD SD Fuze	7-96G	03/05/92
XM722	PD SD Fuze	7-97	10/01/82

Supersedes page xx of MIL-HDBK-146.

xx

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
XM755	PD SD Fuze	7-99	01/01/87
XM756	PD SD Fuze	7-101	10/31/92
XM757	PD SD Fuze	7-103	10/31/92
M760	PD SD Fuze	7-105	10/31/92
M761	PD SD Fuze	7-107	10/31/92
M766	Proximity Fuze	7-109	10/31/92
M1	Hand Grenade Fuze	8-2A	04/01/87
M6A3	Hand Grenade Fuze	8-2C	01/01/87
M6A4D	Hand Grenade Fuze	8-3	10/01/82
M10A3	Hand Grenade Fuze	8-4A	12/12/91
XM75	Hand Grenade Igniter	8-5	10/01/82
M217	Hand Grenade Fuze	8-17	10/01/82
XM225	Hand Grenade Fuze	8-19	10/01/82
MK 394 Mod 0	Hand Grenade Fuze	8-21	01/15/93
T1015	Hand Grenade Fuze	8-23	10/01/82
T1020	Hand Grenade Fuze	8-25	10/01/82
T1021	Rifle Grenade Fuze	8-27	10/01/82
T1022E2	Rifle Grenade Fuze	8-29	10/01/82
T1023	Rifle Grenade Fuze	8-31	10/01/82
T1025	Hand Grenade Fuze	8-33	10/01/82
F/MK15 Mod 1 SUS	Arming and Firing Mechanism	9-2A	02/21/90
M23	Fuze Setter	9-3	10/01/82
M28	Fuze Setter	9-7	10/01/82
MK 30 Mod 0	Arming and Firing Device	9-8A	02/27/90
MK 31 Mod 0	Arming and Firing Mechanism	9-8C	02/27/90
FZU-35/B	Bomb Fuze Initiator	9-8E	01/01/87
XM64	Firing Device	9-9	10/01/82
XM70	Demolition Firing Device	9-11	10/01/82
MK 175 Mod 0	Signal Hydrostatic Fuze	9-13	03/06/90
MK 182 Mod 0	Signal Hydrostatic Fuze	9-15	10/01/82
MK 183 Mod 0	Signal Hydrostatic Fuze	9-17	10/01/82
XM715	MT Fuze	9-19	10/01/82
T1304	Line Charge Time Fuze	9-25	10/01/82
T1	AT Mine Fuze	10-3	04/01/87
T1	Bomb Fuze	10-3	04/01/87
MK 1	Combination Fuze	10-3	04/01/87
MK 1	PD Fuze	10-3	04/01/87
MK 1 Mods 0,1	BD Fuze	10-3	04/01/87
MK 1 Mods 0-4	Base Ignition Fuze	10-3	04/01/87
M1,A1	AT Mine Fuze	10-3	04/01/87
M2	MT Fuze	10-3	04/01/87
M2	PD Fuze	10-3	04/01/87
T2	AT Mine Fuze	10-3	04/01/87
T2	Bomb Fuze	10-3	04/01/87
T2	Rocket PD Fuze	10-3	04/01/87
MK 2 Mod 0	BD Fuze	10-3	04/01/87
MK 2 Mod 1	BD Fuze	10-3	04/01/87
MK 2 Mod 2	BD Fuze	10-3	04/01/87
MK 2 Mod 3	BD Fuze	10-3	04/01/87
M2A1	APERS Mine Fuze	10-3	04/01/87
M3	PD Fuze	10-3	04/01/87
T3	PD Fuze	10-3	04/01/87

Supersedes page xxi of MIL-HDBK-146.

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
MK 3	PD Fuze	10-3	04/01/87
MK 3 Mod 0	BD Fuze	10-3	04/01/87
MK 3 Mod 0	Base Ignition Fuze	10-3	04/01/87
MK 3 Mod 2	BD Fuze	10-3	04/01/87
FMU-3/B	Rocket PD SD Fuze	10-3	04/01/87
M3A1	APERS Mine Fuze	10-3	04/01/87
MK 3A2	Time Fuze	10-3	04/01/87
M4	AT Mine Fuze	10-3	10/01/82
T4	PD Fuze	10-3	10/01/82
T4	Rocket Practice Fuze	10-3	10/01/82
M5	AT Mine Fuze	10-3	10/01/82
M5	Hand Grenade Fuze	10-3	10/01/82
M5	Rocket BD Fuze	10-4	10/01/82
T5	BD Fuze	10-4	10/01/82
T5	Hand Grenade Fuze	10-4	10/01/82
M6	Rocket Dummy Fuze	10-4	10/01/82
T6	PD Fuze	10-4	10/01/82
M7	Hand Grenade Fuze	10-4	10/01/82
T7	BD Fuze	10-4	10/01/82
XP-7A	BD SD Fuze	10-4	10/01/82
M8	Rifle Grenade Fuze	10-4	10/01/82
T8	Rocket PD Fuze	10-4	10/01/82
M9	AP Mine Fuze	10-4	10/01/82
M9	Rifle Grenade Fuze	10-4	10/01/82
T9	Bomb Fuze	10-4	10/01/82
T10	PD Fuze	10-4	10/01/82
T11	MT SQ Fuze	10-5	10/01/82
T13	Time Fuze	10-5	10/01/82
T15	MT Fuze	10-5	10/01/82
T16	Rocket PD Fuze	10-5	10/01/82
T17	Rocket BD Fuze	10-5	10/01/82
XP-17A	BD Fuze	10-5	10/01/82
T18	Rocket PD Fuze	10-5	10/01/82
M19	Fuze Setter	10-5	10/01/82
T19	Rocket PD Fuze	10-5	10/01/82
XP-19A	BD Fuze	10-5	10/01/82
L19A3	BD Fuze	10-5	10/01/82
T20	PD Fuze	10-5	10/01/82
T20	Rocket PD Fuze	10-5	10/01/82
XP-20A	BD SD Fuze	10-5	10/01/82
T21	Mine Fuze	10-6	10/01/82
M22	Fuze Setter	10-6	10/01/82
T22	PD Fuze	10-6	10/01/82
M23	Booster	10-6	10/01/82
M24	Fuze Setter	10-6	10/01/82
XP-24A	PD Fuze	10-6	10/01/82
T25	Bomb Fuze	10-6	10/01/82
T25	PD Fuze	10-6	10/01/82
T25	Rocket BD Fuze	10-6	10/01/82
XP-25A	Aux Det Fuze	10-6	10/01/82
T26	Bomb Fuze	10-6	10/01/82
T27	Bomb Barometric Fuze	10-6	10/01/82

Supersedes page xxii of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
FMU-27/B	Rocket Proximity Fuze	10-6	10/01/82
T28	Rocket PD Fuze	10-6	10/01/82
FMU-28/B)	Rocket Proximity Fuze	10-6	10/01/82
FMU-29/B	Bomb Long Delay Fuze	10-6	10/01/82
T30	Rocket Proximity Fuze	10-6	10/01/82
T31	Bomb Impact Fuze	10-7	10/01/82
FMU-31/B	GM Proximity Fuze	10-7	10/01/82
T34	Bomb Fuze	10-7	10/01/82
M35	PD Fuze	10-7	10/01/82
T35	Rocket PD Fuze	10-7	10/01/82
XP-35A	PD Fuze	10-7	10/01/82
M36	PD Fuze	10-7	10/01/82
T36	Rocket PD Fuze	10-7	10/01/82
T37	Bomb Fuze	10-7	10/01/82
T39	Percussion Fuze	10-7	10/01/82
M40	PD Fuze	10-7	10/01/82
T40	PD Fuze	10-7	10/01/82
T41	PD Fuze	10-7	10/01/82
MK 41	Proximity Fuze	10-8	10/01/82
T42	Bomb Fuze	10-8	10/01/82
T42	Rocket PD Fuze	10-8	10/01/82
M42A1	Dummy Fuze	10-8	10/01/82
T43	Bomb Proximity Fuze	10-8	10/01/82
MK 43 Mod 1	Aux Det Fuze	10-8	10/01/82
FMU-43/B	Proximity Fuze	10-8	10/01/82
T45	Percussion Fuze	10-8	10/01/82
XP-45A	BD Fuze	10-8	10/01/82
T46	Percussion Fuze	10-8	10/01/82
T47	Rocket BD Fuze	10-8	10/01/82
T49	Dummy Fuze	10-8	10/01/82
T50	Bomb Proximity Fuze	10-8	10/01/82
T50	PD Fuze	10-8	10/01/82
FMU-51/B	Bomb Impact Fuze	10-8	10/01/82
T52	Dummy Fuze	10-8	10/01/82
T53	PD Fuze	10-8	10/01/82
T55	BD Fuze	10-8	10/01/82
MK 56 Mod 0	Proximity Fuze	10-9	10/01/82
T57	BD Fuze	10-9	10/01/82
T58	Bomb Fuze	10-9	10/01/82
FMU-58/B	Bomb Inertial Fuze	10-9	10/01/82
T59	BD SD Fuze	10-9	10/01/82
T59	Bomb Fuze	10-9	10/01/82
T60	Bomb Fuze	10-9	10/01/82
FMU-60/B	Bomb Impact Fuze	10-9	10/01/82
M60B1	BD Fuze	10-9	10/01/82
T61	PD SD Fuze	10-9	10/01/82
T62	Bomb Fuze	10-9	10/01/82
T62	PD SD Fuze	10-9	10/01/82
M63	Dummy Fuze	10-9	10/01/82
M63	Fuze Setter	10-9	01/01/87
T63	Bomb Fuze	10-9	10/01/82
T64	PD Fuze	10-9	10/01/82

Supersedes page xxiii of MIL-HDBK-146.

xxiii

MIL-HDBK-146

NOTICE 2

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
FMU-64/B	Bomb Impact Fuze	10-9	10/01/82
T65	Bomb Fuze	10-9	10/01/82
T65	PD Fuze	10-10	10/01/82
FMU-66/B	Bomb Proximity Fuze	10-10	10/01/82
MK 67	Proximity Fuze	10-10	10/01/82
MK 68	Proximity Fuze	10-10	10/01/82
T69	Bomb Impact Fuze	10-10	10/01/82
FMU-69/B	Rocket Proximity Fuze	10-10	10/01/82
T70	BD Fuze	10-10	10/01/82
T72	Bomb MT Fuze	10-10	10/01/82
T75	Proximity Fuze	10-10	10/01/82
FMU-75/B	GM Impact Fuze	10-10	10/01/82
M76	PD Fuze	10-10	10/01/82
T76	Bomb Fuze	10-10	10/01/82
FMU-76/B	Bomb Proximity Fuze	10-10	10/01/82
T77	Bomb MT Fuze	10-10	10/01/82
FMU-77/B	GM Proximity Fuze	10-10	10/01/82
T78	Bomb Impact Fuze	10-10	10/01/82
FMU-78/B	GM PI BD Fuze	10-11	10/01/82
T79	MT SQ Fuze	10-11	10/01/82
FMU-79/B	Bomb Proximity Fuze	10-11	10/01/82
T80	Bomb Fuze	10-11	10/01/82
FMU-80/B	Bomb Time Fuze	10-11	10/01/82
T82	Bomb Proximity Fuze	10-11	10/01/82
T83	Bomb Fuze	10-11	10/01/82
T83	PD Fuze	10-11	10/01/82
T84	Bomb Fuze	10-11	10/01/82
MK 84	MT Fuze	10-11	10/01/82
FMU-84/B	GM Training Fuze	10-11	10/01/82
MK 85 Mod 0	MT Fuze	10-11	10/01/82
FMU-85/B	GM Proximity Fuze	10-11	10/01/82
MK 86	MT Fuze	10-11	10/01/82
FMU-86/B	Bomb MT Fuze	10-11	10/01/82
M87	PD Fuze	10-11	10/01/82
T88	Bomb MT Fuze	10-11	10/01/82
T89	PD Fuze	10-12	10/01/82
FMU-91/B	GM Proximity Fuze	10-12	10/01/82
M92	Proximity Fuze	10-12	10/01/82
FMU-92/B	PD Fuze	10-12	10/01/82
M93	Proximity Fuze	10-12	10/01/82
M94	Proximity Fuze	10-12	10/01/82
M95	Proximity Fuze	10-12	10/01/82
M96	Proximity Fuze	10-12	10/01/82
M97A1	Proximity Fuze	10-12	10/01/82
M98	Proximity Fuze	10-12	10/01/82
M99	Proximity Fuze	10-12	10/01/82
FMU-99/B	Dispenser MT Fuze	10-12	10/01/82
FMU-100/B	Bomb Impact Fuze	10-12	10/01/82
M101	Rocket PI Fuze	10-12	10/01/82
T101	Time & SQ Fuze	10-12	10/01/82
FMU-101/B	Bomb Impact Fuze	10-13	10/01/82
T102	PD Fuze	10-13	10/01/82

Supersedes page xxiv of MIL-HDBK-146.

xxiv

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
FMU-102/B	Bomb impact Fuze	10-13	10/01/82
T103	PD Fuze	10-13	10/01/82
FMU-103/B	Bomblet Impact Fuze	10-13	10/01/82
T104	PD Fuze	10-13	10/01/82
FMU-104/B	Bomblet Impact Fuze	10-13	10/01/82
FMU-106/B	GM Proximity Fuze	10-13	10/01/82
FMU-108/B	GM Proximity Fuze	10-13	10/01/82
T109	PD Fuze	10-13	10/01/82
T112	Time & PD Fuze	10-13	10/01/82
T114	PD Fuze	10-13	10/01/82
FMU-114/B	Bomb Impact Fuze	10-13	10/01/82
FMU-115/B	Time Fuze	10-14	10/01/82
T116	MT Fuze	10-14	10/01/82
FMU-116/B	Rocket Dummy Fuze	10-14	10/01/82
M118	Bomb Impact Fuze	10-14	10/01/82
T118	Time & SQ Fuze	10-14	10/01/82
M119	Bomb Impact Fuze	10-14	10/01/82
M120	Bomb Impact Fuze	10-14	10/01/82
T120	PD Fuze	10-14	10/01/82
FMU-120/B	Bomb Impact Fuze	10-14	10/01/82
T121	Dummy BD Fuze	10-14	10/01/82
M122	Bomb Impact Fuze	10-14	10/01/82
M122	Booster	10-14	10/01/82
T125	PD Fuze	10-14	10/01/82
MK 127	Ejector Fuze	10-14	10/01/82
T128	PD Fuze	10-14	10/01/82
T130	Proximity Fuze	10-14	10/01/82
T131	PI Fuze	10-15	10/01/82
T132	Proximity Fuze	10-15	10/01/82
FMU-132/B	GM Impact Fuze	10-15	01/01/87
T135	PD Fuze	10-15	10/01/82
T136	BD Fuze	10-15	10/01/82
T137	BD Fuze	10-15	10/01/82
T138	PD Fuze	10-15	10/01/82
T139	PD Fuze	10-15	10/01/82
T140	BD Fuze	10-15	10/01/82
M143	Bomblet Time Fuze	10-15	10/01/82
T143	BD Fuze	10-15	10/01/82
T146	PD Fuze	10-15	10/01/82
T148	PD Fuze	10-15	10/01/82
T150E2	PI Fuze	10-15	10/01/82
T151	PI Fuze	10-15	10/01/82
T153	MT SQ Fuze	10-15	10/01/82
M154	Bomb Impact Fuze	10-15	10/01/82
T154	CP Fuze	10-16	10/01/82
T156	Rocket BD Fuze	10-16	10/01/82
T158	Rocket BD Fuze	10-16	10/01/82
T161	Rocket BD Fuze	10-16	10/01/82
T162	Rocket PI BD Fuze	10-16	10/01/82
T163	CP Fuze	10-16	10/01/82
T164	PD Fuze	10-16	10/01/82
T166	Time Fuze	10-16	10/01/82

Supersedes page xxv of MIL-HDBK-146.

xxv

MIL-HDBK-146

NOTICE 2

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
T167	PD Fuze	10-16	10/01/82
T168	PI BD Fuze	10-16	10/01/82
T171	Proximity Fuze	10-16	10/01/82
T173	PI Fuze	10-16	10/01/82
T174	BD Fuze	10-16	10/01/82
T187	PD Fuze	10-16	10/01/82
T189	PI Fuze	10-16	10/01/82
M197	Bomb Impact Fuze	10-17	10/01/82
M200A1	Hand Grenade Fuze	10-17	10/01/82
M202	Rifle Grenade Fuze	10-17	10/01/82
M203	Rifle Grenade Fuze	10-17	10/01/82
T205	PD Fuze	10-17	10/01/82
T207	PD Fuze	10-17	10/01/82
M212	Grenade Fuze	10-17	10/01/82
T213	PD Fuze	10-17	10/01/82
XM214	Hand Grenade Fuze	10-17	10/01/82
T217	PD Fuze	10-17	10/01/82
T223	PD Fuze	10-17	10/01/82
M229	Grenade Fuze	10-17	10/01/82
T229	PD SD Fuze	10-17	10/01/82
MK 229	Bomb Hydrostatic Fuze	10-17	10/01/82
MK 231	Bomb Hydrostatic Fuze	10-18	10/01/82
MK 233	Bomb Hydrostatic Fuze	10-18	10/01/82
MK 235	Bomb Impact Fuze	10-18	10/01/82
MK 236	Bomb Impact Fuze	10-18	10/01/82
MK 237	Bomb Long Delay Fuze	10-18	10/01/82
MK 238	Bomb Long Delay Fuze	10-18	10/01/82
MK 239	Bomb Impact Fuze	10-18	10/01/82
MK 240	Bomb Hydrostatic Fuze	10-18	10/01/82
T241	PD Fuze	10-18	10/01/82
T243	PD SD Fuze	10-18	10/01/82
MK 245	Bomb Impact Fuze	10-18	10/01/82
T248	PD Fuze	10-18	10/01/82
T251	PD Fuze	10-18	10/01/82
T254	PD Fuze	10-18	10/01/82
T268	PD SD Fuze	10-18	10/01/82
T290	Time Fuze	10-19	10/01/82
T295	ET SQ Fuze	10-19	10/01/82
MK 301	GM Proximity Fuze	10-19	10/01/82
MK 303 Mod 2	GM Proximity Fuze	10-19	10/01/82
MK 305 Mod 2	GM Impact Fuze	10-19	10/01/82
MK 308 Mod 3	GM Proximity Fuze	10-19	10/01/82
MK 309 Mod 2	GM Proximity Fuze	10-19	10/01/82
MK 311	GM Dummy Fuze	10-19	10/01/82
MK 313 Mod 1	GM Dummy Fuze	10-19	10/01/82
MK 315	GM Proximity Fuze	10-19	10/01/82
MK 316	GM Proximity Fuze	10-19	10/01/82
T317	MT Fuze	10-19	10/01/82
MK 317	GM Impact Fuze	10-19	10/01/82
T318	MT SQ Fuze	10-19	10/01/82
MK 319 Mod 2	GM Proximity Fuze	10-19	10/01/82
MK 322 Mod 2	GM Proximity Fuze	10-20	10/01/82

Supersedes page xxvi of MIL-HDBK-146.

xxvi

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
MK 323 Mod 2	GM Proximity Fuze	10-20	10/01/82
MK 325 Mod 3	GM Proximity Fuze	10-20	10/01/82
MK 327 Mod 0	Bomb Proximity Fuze	10-20	10/01/82
T330	MT SQ Fuze	10-20	10/01/82
T341	Time Fuze	10-20	10/01/82
T344	MT Fuze	10-20	10/01/82
T345	MT Fuze	10-20	10/01/82
EX 353	MT PD Fuze	10-20	10/01/82
EX 354	MT PD Fuze	10-20	10/01/82
EX 355	PD Fuze	10-20	10/01/82
T356	PD Fuze	10-20	10/01/82
EX 356	MT PD Fuze	10-20	10/01/82
EX 364	Rocket Time Fuze	10-20	10/01/82
EX 368	Target Detecting Device	10-20	10/01/82
EX 373	Aux Det Fuze	10-21	10/01/82
EX 385	PD Fuze	10-21	10/01/82
EX 386	PD Fuze	10-21	10/01/82
EX 397	Proximity Fuze	10-21	10/01/82
MK 401	GM Proximity Fuze	10-21	10/01/82
EX 408	Proximity Fuze	10-21	10/01/82
EX 409	GM Proximity Fuze	10-21	10/01/82
EX 410	Proximity Fuze	10-21	10/01/82
M418	Rocket MT Fuze	10-21	10/01/82
M419	Rocket MT Fuze	10-21	10/01/82
XM422	Rocket MT Training Fuze	10-21	10/01/82
XM430	Rocket Proximity Fuze	10-21	10/01/82
XM437	Rocket Practice Fuze	10-21	10/01/82
XM441	Rocket PD Fuze	10-21	10/01/82
M512	MT Fuze	10-21	10/01/82
M523	MT SQ Fuze	10-22	10/01/82
XM529	MT SQ Fuze	10-22	10/01/82
M542	MT Fuze	10-22	10/01/82
XM544E1	PD Fuze	10-22	10/01/82
XM545	Dummy Fuze	10-22	10/01/82
XM546	Proximity Fuze	10-22	10/01/82
XM547	MT Fuze	10-22	10/01/82
XM554	MT SQ Fuze	10-22	10/01/82
XM556	MT SQ Fuze	10-22	10/01/82
XM575	MT SQ Fuze	10-22	10/01/82
M576	PD Fuze	10-22	10/01/82
XM595	MT Fuze	10-22	10/01/82
M600	AT Mine Fuze	10-22	10/01/82
M601	AT Mine Fuze	10-23	10/01/82
M602	AT Mine Fuze	10-23	10/01/82
XM610	AT Mine Fuze	10-23	10/01/82
XM613	AT Mine Fuze	10-23	10/01/82
XM614	AT Mine Fuze	10-23	10/01/82
XM615	AT Mine Fuze	10-23	10/01/82
XM618	AT Mine Influence Fuze	10-23	10/01/82
XM623	AT Mine Fuze	10-23	10/01/82
XM714E3	PD SD Fuze	10-23	10/01/82
XM714E4	PD SD Fuze	10-23	10/01/82

Supersedes page xxvii of MIL-HDBK-146.

xxvii

MIL-HDBK-146

NOTICE 2

CONTENTS

MODEL	TYPE	CHAPTER-PAGE	DATE OF INFO.
XM721	MT Fuze	10-23	10/01/82
XM725	PD Fuze	10-23	10/01/82
XM729	PD Fuze	10-23	10/01/82
XM760	PD SD Fuze	10-23	10/01/82
XM801	GM BD SD Fuze	10-23	10/01/82
XM803	GM Impact Fuze	10-23	10/01/82
XM806	GM Proximity Fuze	10-24	10/01/82
M807	GM Proximity Fuze	10-24	10/01/82
XM808	GM Proximity Fuze	10-24	10/01/82
XM809	GM MT Fuze	10-24	10/01/82
XM810	GM Proximity Fuze	10-24	10/01/82
M900	Bomb Impact Fuze	10-24	10/01/82
XM911	Bomblet Impact Fuze	10-24	10/01/82
XM919	Bomb MT Fuze	10-24	10/01/82
XM920E2	Bomb MT Fuze	10-24	10/01/82
XM921	Bomb MT Fuze	10-24	10/01/82
XM923	Bomb Impact Fuze	10-24	10/01/82
XM924	Bomb Impact Fuze	10-24	10/01/82
M925	Bomb Impact Fuze	10-24	10/01/82
XM926	Bomblet AD Fuze	10-25	10/01/82
XM927	Bomblet AD Fuze	10-25	10/01/82
XM929	Bomb Impact Fuze	10-25	10/01/82
T1010	Rifle Grenade Fuze	10-25	10/01/82
T1013	Hand Grenade Fuze	10-25	10/01/82
T1016	Hand Grenade Fuze	10-25	10/01/82
T1018	Hand Grenade Fuze	10-25	10/01/82
T1019	Hand Grenade Fuze	10-25	10/01/82
T1201	AP Mine Fuze	10-25	10/01/82
T1204	AP Mine Fuze	10-25	10/01/82
T1209	AT Mine Influence Fuze	10-25	10/01/82
T1222	AT Mine Influence Fuze	10-25	10/01/82
T1225	AT Mine Influence Fuze	10-25	10/01/82
T1227	AT Mine Influence Fuze	10-25	10/01/82
T1230	AP Mine Fuze	10-26	10/01/82
T1232	AT Mine Fuze	10-26	10/01/82
T1408	GM Fuze	10-26	10/01/82
T2003	Rocket PI BD Fuze	10-26	10/01/82
T2006	Rocket PD Fuze	10-26	10/01/82
T2009	Rocket PI BD Fuze	10-26	10/01/82
T2013	Rocket PD Fuze	10-26	10/01/82
T2017	Rocket Proximity Fuze	10-26	10/01/82
T2026	Rocket PD Fuze	10-26	10/01/82
T2032	Rocket ET Fuze	10-26	10/01/82
T2035	Rocket Proximity Fuze	10-26	10/01/82
T2045	Rocket Time Fuze	10-26	10/01/82
T2059	Rocket PD Fuze	10-26	10/01/82
T2067	Rocket Time Fuze	10-26	10/01/82

Supersedes page xxviii of MIL-HDBK-146.

xxviii

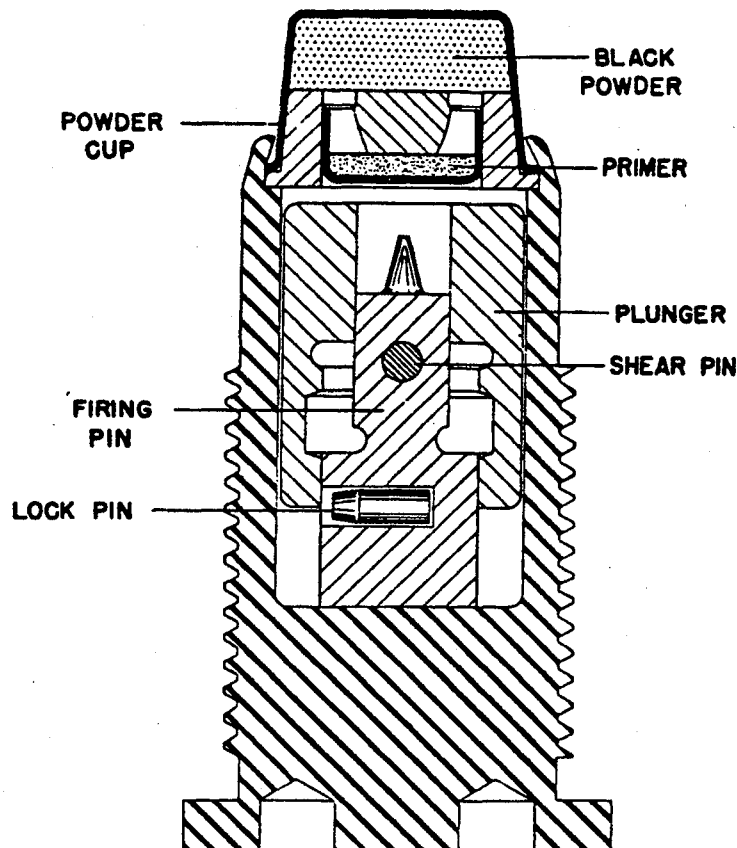
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 Check the source to verify that this is the current version before use.

LAST UPDATE: 01/15/93

MIL-HDBK-146
NOTICE 2

FUZE: MK 2 Mod 9
Base Ignition Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.75 in (44.5 mm)

XSECT: 0.875 in (22.2 mm)

- INTRUSION -

DP:

DIA: 0.63 in (16.0 mm)

WT:

THD: 0.722-18LH *

THD DP: 0.80 in (20.3 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G41

CONTACT:

PHONE:

STATUS: Obsolete

USER: Navy

ASSY DWG: 57 331

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

NA

DODIC: NA

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 3-in/23, 1 pdr/40,
3 pdr/50,
6 pdr/40/42/45/50

AMMUNITION:

Common

LOCATION: Base

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-331

SETTERS: None

Supersedes page 1-3 of MIL-HDBK-146.

ARMING DATA

FIRST SAFETY:
Setback

SECOND SAFETY:
Spin

OTHER SAFETY:
None

SAFE/ARM INDICATION:
None

ARMING TIME OR DISTANCE:
None

EXPLOSIVE COMPONENTS

S&A DEVICE: In-line explosive train

PRIMER: Yes

DETONATOR: None

LEAD: None

BOOSTER: Black powder

OTHER:

FUNCTIONING DATA

MODES: BD
TYPE: Mechanical, pyrotechnic
CHARACTERISTICS:
Instantaneous

TARGET: Ground
SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

None

STORAGE AND
TRANSPORTATION
SAFETY DATA

UN SER NO:
US HCSDS:
UN CL/DIV SCG:
US DOT SHIP CL:
NET EXPL WT:
NET PROP WT:
STORAGE TEMP:

REMARKS/DESCRIPTION:

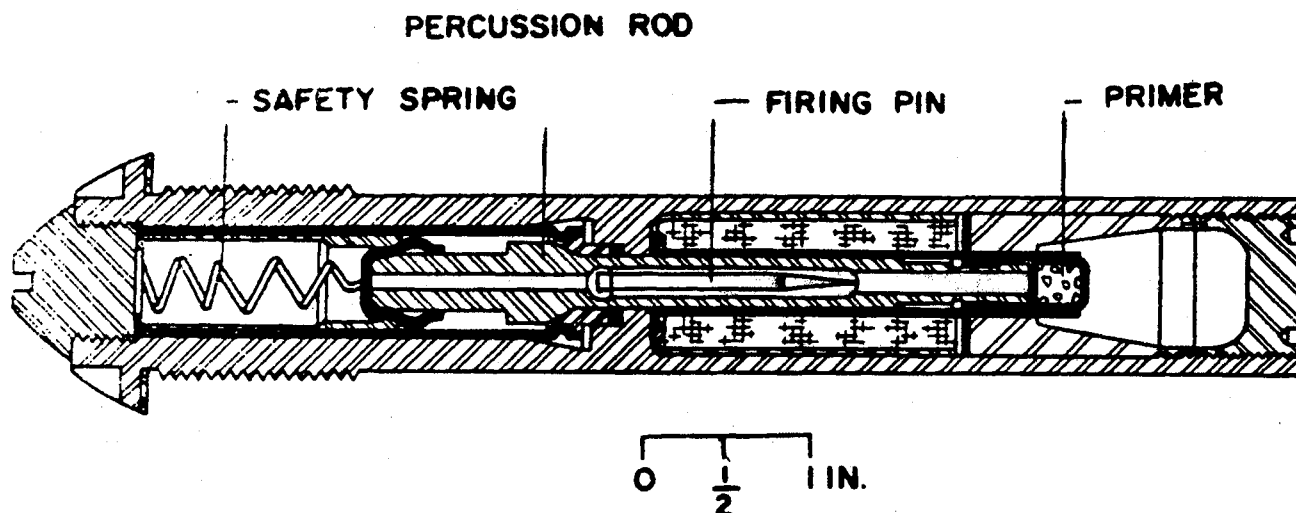
The Mk 2 Mod 9 Base Ignition Fuze consists of a brass fuze body housing a firing pin and a plunger assembly. The firing pin and plunger are locked together by a copper shear pin, in the unarmed position. A primer and black powder magazine are crimped to the upper end of the fuze body. When the projectile is fired from the gun, the force of setback drives the plunger back towards the head of the fuze, shearing the copper pin locking the plunger to the firing pin. When the plunger has moved back sufficiently, centrifugal force moves the lock pin in the firing pin into the groove cut in the interior of the plunger body. The two units are again locked together, but the plunger is now in the lower position. There is no anticreep spring. After setback, nothing prevents forward motion of the plunger and firing pin towards the primer. On impact inertia forces both the plunger and the firing pin forward, driving the firing pin into the primer and initiating the black powder ignition charge. This fires the black powder/TNT main charge in the projectile.

LAST UPDATE: 09/24/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 7 Mod 0
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 7.81 in (198.4 mm)
XSECT: 1.62 in (41.1 mm)

- INTRUSION -

DP: Unknown
DIA: 1.12 in (28.4 mm)

WT: Unknown

THD: 1.257-10RH

THD DP: 1.27 in (32.3 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Navy
ASSY DWG: 51 757
PARTS LIST: LD 41 204
SPEC: Unknown
PUB: None

NATIONAL STOCK NO:
None

DODIC: None
PRIOR MODEL NO:
SIMILAR TO:

REPLACES:
REPLACED BY:

GENERAL

WEAPON: 7-in/45 Field Marine Shore
Batteries

AMMUNITION:
HE

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: Unknown
SETBACK: Unknown
VELOCITY: Unknown

CREEP: Unknown

FLIGHT TIME: Unknown

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: None

Supersedes page 1-9 of MIL-HDBK-146.

FUZE: MK 7 Mod 0
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 09/24/90

ARMING DATA

FIRST SAFETY:

Fuze arms and functions simultaneously. Detonator held out of alignment until impact.

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

NA

ARMING TIME OR DISTANCE:

NA

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: Yes, composition unknown

LEAD: None

BOOSTER: Yes, composition unknown

OTHER: None

FUNCTIONING DATA

MODES: PD

TYPE: Mechanical

CHARACTERISTICS:

POWER SUPPLY:

None

TARGET: Personnel, material

SENSITIVITY:

Unknown

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

PD

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

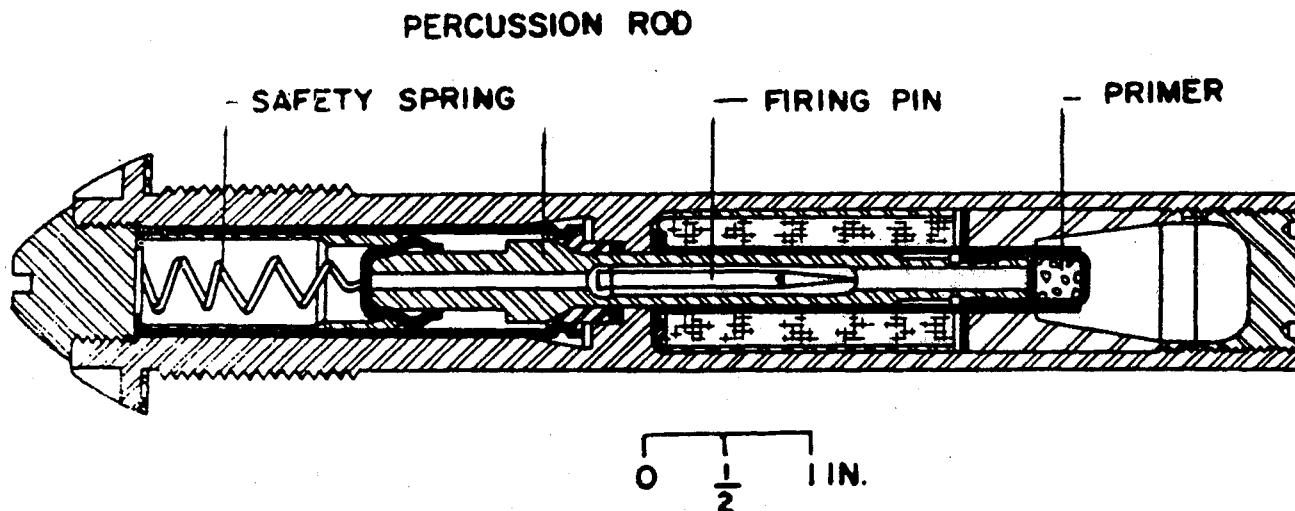
NET PROP WT: None

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

Prior to firing, the percussion rod is held in place by a safety spring and the rolled edges of its upper cap. The detonator is positioned in a safety chamber away from the booster. On impact, inertia of the percussion rod drives the rolled edges of its upper cap past the shoulder of the cap retaining sleeve. The percussion rod is slotted longitudinally, permitting it to slide forward around ears on the firing pin. The ears engage the firing pin retaining sleeve holding the firing pin stationary with respect to the fuze body. The percussion rod continues into the upper portion of the fuze body, against the force of the safety spring. The detonator moves forward with the rod out of the safety chamber and in line with the booster initiating against the fixed firing pin.

ILLUSTRATION:

**- OVERALL SIZE -**

LG: 7.81 in (198.4 mm)

XSECT: 1.62 in (41.1 mm)

- INTRUSION -

DP: Unknown

DIA: 1.12 in (28.4 mm)

WT: Unknown

THD: 1.257-10RH

THD DP: 1.27 in (32.3 mm)

IDENTIFICATION

AGENCY: NSWG, White Oak, Code G402

CONTACT: Bagnall, J

PHONE: DSN 290-2791

STATUS: Obsolete

USER: Navy

ASSY DWG: 55 189

PARTS LIST: LD 41 942

SPEC: Unknown

PUB: None

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERALWEAPON: 7-in/45 Field Marine Shore
Batteries**AMMUNITION:**

HE

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: Unknown

SETBACK: Unknown

VELOCITY: Unknown

CREEP: Unknown

FLIGHT TIME: Unknown

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: None

NEW PAGE.

ARMING DATA

FIRST SAFETY:

Fuze arms and functions simultaneously. Detonator held out of alignment until impact.

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

NA

ARMING TIME OR DISTANCE:

NA

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: Yes, composition unknown

LEAD: None

BOOSTER: Yes, composition unknown

OTHER: None

FUNCTIONING DATA

MODES: PD

TYPE: Mechanical

CHARACTERISTICS:

TARGET: Personnel, material

SENSITIVITY:

Unknown

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

PD

POWER SUPPLY:

None

STORAGE AND
TRANSPORTATION
SAFETY DATA

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: None

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

Prior to firing, the percussion rod is held in place by a safety spring and the rolled edges of its upper cap. The detonator is positioned in a safety chamber away from the booster. On impact, inertia of the percussion rod drives the rolled edges of its upper cap past the shoulder of the cap retaining sleeve. The percussion rod is slotted longitudinally, permitting it to slide forward around ears on the firing pin. The ears engage the firing pin retaining sleeve holding the firing pin stationary with respect to the fuze body. The percussion rod continues into the upper portion of the fuze body, against the force of the safety spring. The detonator moves forward with the rod out of the safety chamber and in line with the booster initiating against the fixed firing pin.

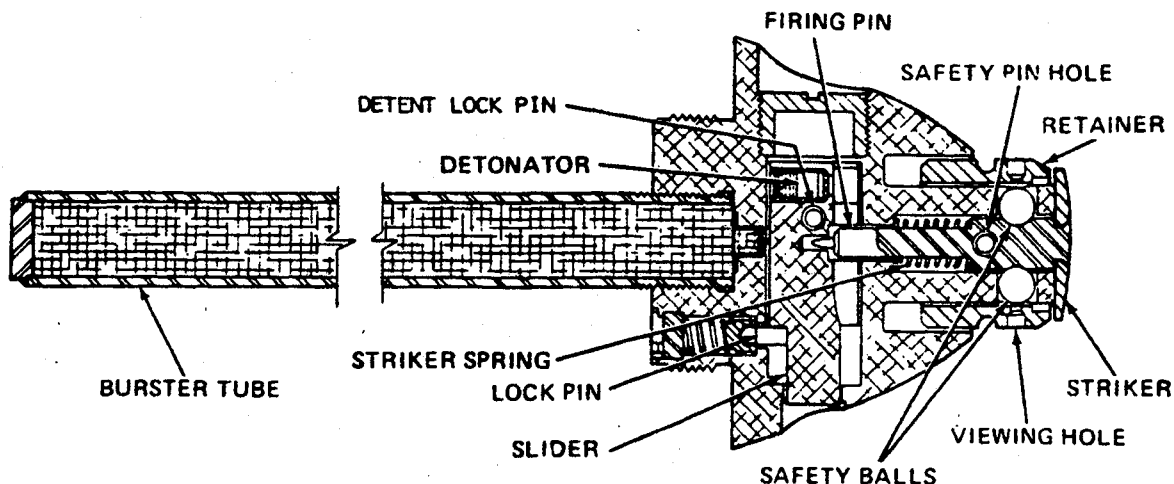
NEW PAGE.

LAST UPDATE: 12/10/91

MIL-HDBK-146
NOTICE 2

FUZE: M8
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 16.25 lb (414 mm)
XSECT: 2.76 in (70.2 mm)

- INTRUSION -

DP: 14.1 in (358.1 mm)
DIA: 0.62 in (15.8 mm)

WT: 1.90 lb (861 g)

THD: 1.7-14UNS-2A
THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-C
CONTACT:
PHONE: DSN 880-
STATUS: Obsolete
USER: Army
ASSY DWG: 73-2-311
PARTS LIST:
SPEC:
PUB: TM 43-0001-28

NATIONAL STOCK NO:
1390-00-985-4415
DODIC: N338
PRIOR MODEL NO:
SIMILAR TO: M9

REPLACES: M2
REPLACED BY:

GENERAL

WEAPON: M2 & M30 4.2-in Mortar

AMMUNITION:

M2 Series Gas Cartridges

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 49 to 119 rps
SETBACK: 2000 to 8000 g
VELOCITY: 345 to 840 ft/s
(105 to 256 m/s)

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: Doesn't meet MIL-STD-1316B

SETTERS: None

Supersedes page 1-11 of MIL-HDBK-146.

FUZE: M8
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 12/10/91

ARMING DATA

FIRST SAFETY:

Pull wire

SECOND SAFETY:

Setback: 600 g arm
500 g no arm

OTHER SAFETY:

Spin, slight

SAFE/ARM INDICATION:

Yes

ARMING TIME OR DISTANCE:

None, bore safe only

EXPLOSIVE COMPONENTS

S&A DEVICE: Shear pin

PRIMER: None

DETONATOR: M22 Stab

LEAD: None

BOOSTER: 65 g Tetryl

OTHER: None

FUNCTIONING DATA

MODES: SQ

TYPE: Mechanical

CHARACTERISTICS:

SQ

TARGET: Gnd - Pers, Screening

SENSITIVITY:

NA

FUNCTION TEMP:

-40 to +52 deg C

MODE ON DELIVERY:

SQ

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0408

US HCSDS:

UN CL/DIV SCG: 1.1 D

US DOT SHIP CL: A

NET EXPL WT: 65.27 g

NET PROP WT: None

STORAGE TEMP: -62 deg C 3 days max
+71 deg C 4 hr/day max

REMARKS/DESCRIPTION:

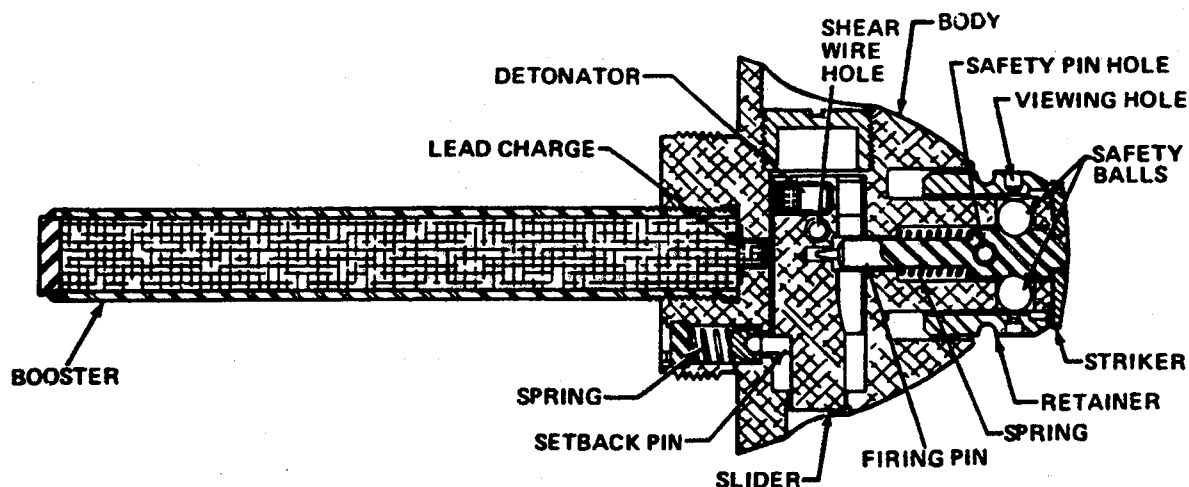
In the safe position, the slider is restrained by a setback pin and the firing pin. The firing pin is restrained by a pull wire, shear wire, and two centrifugal ball detents. The safety pull wire is removed from the retainer and body. On firing acceleration, a pin moves back out of slider partially releasing the slider and the retainer moves back, cutting the shear pin and releasing the two ball detents which were locking the striker to the retainer. Centrifugal force moves these balls outward and with the firing pin spring move the striker and firing pin assembly forward completely releasing the slider. Centrifugal force moves the slider to the armed position and locks it with a spin detent. On impact, the firing pin functions the M22 Detonator. The M9 Fuze is the same as the M8, except that it has a booster for HE loaded shells instead of a burster for chemical shells.

LAST UPDATE: 12/10/91

MIL-HDBK-146
NOTICE 2

FUZE: M9
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 6.87 lb (174 mm)
XSECT: 2.76 in (70.2 mm)

- INTRUSION -

DP: 4.7 in (119 mm)
DIA: 0.62 in (15.8 mm)

WT: 0.98 lb (444 g)

THD: 1.7-14UNS-2A

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-C
CONTACT:
PHONE: DSN 880-
STATUS: Obsolete
USER: Army
ASSY DWG: 73-2-312
PARTS LIST:
SPEC:
PUB: TM 43-0001-28

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:
SIMILAR TO: M8

REPLACES: M3
REPLACED BY:

GENERAL

WEAPON: M2 & M30 4.2-in Mortar

AMMUNITION:
HE

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 49 to 119 rps
SETBACK: 2000 to 8000 g
VELOCITY: 345 to 840 ft/s
(105 to 256 m/s)

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: Doesn't meet MIL-STD-1316B
SETTERS: None

Supersedes page 1-15 of MIL-HDBK-146.

FUZE: M9
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 12/10/91

ARMING DATA

FIRST SAFETY:

Pull wire

SECOND SAFETY:

Setback: 600 g arm
500 g no arm

OTHER SAFETY:

Spin, slight

SAFE/ARM INDICATION:

Yes

ARMING TIME OR DISTANCE:

None, bore safe only

EXPLOSIVE COMPONENTS

S&A DEVICE: Shear pin

PRIMER: None

DETONATOR: M22 Stab

LEAD: None

BOOSTER: 65 g Tetryl
(0.63 in dia x 4.667 in
long)

OTHER: None

FUNCTIONING DATA

MODES: SQ

TYPE: Mechanical

CHARACTERISTICS:

SQ

TARGET: Ground personnel

SENSITIVITY:

NA

FUNCTION TEMP:

-40 to +52 deg C

MODE ON DELIVERY:

SQ

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0408

US HCSDS:

UN CL/DIV SCG: 1.1 D

US DOT SHIP CL: A

NET EXPL WT: 65.27 g

NET PROP WT: None

STORAGE TEMP: -62 deg C 3 days max
+71 deg C 4 hr/day max

REMARKS/DESCRIPTION:

In the safe position, the slider is restrained by a setback pin and the firing pin. The firing pin is restrained by a pull wire, shear wire, and two centrifugal ball detents. The safety pull wire is removed from the retainer and body. On firing acceleration, a pin moves back out of slider partially releasing the slider and the retainer moves back, cutting the shear pin and releasing the two ball detents which were locking the striker to the retainer. Centrifugal force moves these balls outward and with the firing pin spring move the striker and firing pin assembly forward completely releasing the slider. Centrifugal force moves the slider to the armed position and locks it with a spin detent. On impact, the firing pin functions the M22 Detonator. The M8 Fuze is the same as the M9, except that it has a burster for chemical shells instead of a booster for HE shells.

MIL-HDBK-146
NOTICE 2

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**Data for the Mk 15 Mod 0 Rear Fitting Safety Device
may be found in MIL-HDBK-145B.**

Supersedes pages 1-23 and 1-24 of MIL-HDBK 146

1-23/1-24

MIL-HDBK-146
NOTICE 2

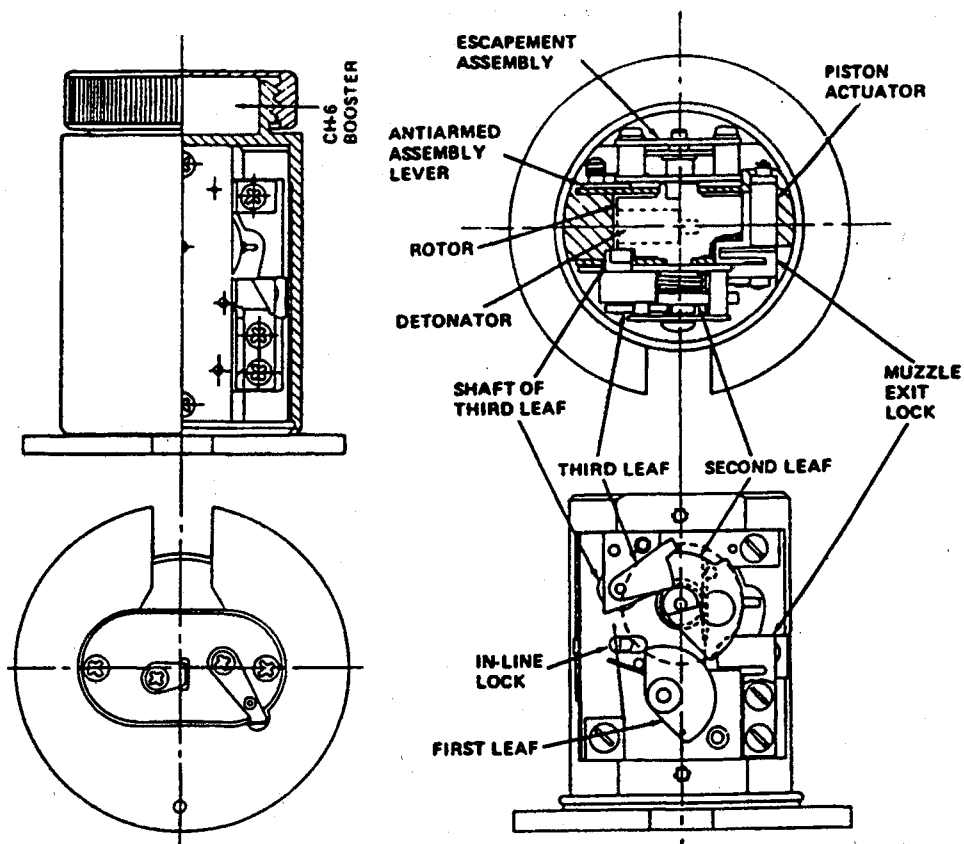
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LAST UPDATE: 11/06/92

MIL-HDBK-146
NOTICE 2

FUZE: EX 18 Mod 0
Arming Safety Device (ASD)

ILLUSTRATION:



- OVERALL SIZE -

LG: 2.447 in (62 mm)

XSECT: 1.5 in (38 mm)

- INTRUSION -

DP: 2.324 in (56 mm)

DIA: 1.5 in (38 mm)

WT: 0.35 lb (159 g)

THD: None

THD DP: NA

IDENTIFICATION

AGENCY: LABCOM, SLCHD-TA-ME

CONTACT: Beard, J

PHONE: DSN 290-2420

STATUS: Terminated

USER: Navy

ASSY DWG: 5 021 123

PARTS LIST: DL 5 021 123

SPEC: XWS 18712

PUB: None

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Nothing

REPLACES: Nothing

REPLACED BY: Nothing

GENERAL

WEAPON: 5-in/54 Mk 18 & 19 Guns

AMMUNITION:

5-in guided projectile,
EX 105 and EX 106

LOCATION: Base of warhead

BALLISTIC LEVELS:

ROTATION: 20 rps

SETBACK: 7,500 g

VELOCITY: 2,030 ft/s (619 m/s)

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: STANAG 4187

SETTERS: None

NEW PAGE.

FUZE: EX 18 Mod 0
Arming Safety Device (ASD)

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 11/06/92

ARMING DATA

FIRST SAFETY:

Setback: 375 g, no arm
850 g, all arm

SECOND SAFETY:

Muzzle exit (sensed elsewhere in
projectile). Input to ASD is 2,500
erg/min electric pulse

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

0.6 to 1.2 s

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER: None

DETONATOR: Mk 96-0 electric

LEAD: 160 mg CH-6

BOOSTER: 8.5 g CH-6

OTHER: Piston actuator used to remove
second rotor lock

FUNCTIONING DATA

MODES: Proximity

TYPE: Mechanical

CHARACTERISTICS:

Functions on target detection
signal from EX 60 or EX 61 TDD.

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS: 1583 or 1585

UN CL/DIV SCG:

US DOT SHIP CL: A

NET EXPL WT: 8.70 g

NET PROP WT: None

STORAGE TEMP: -54°C to +72°C

REMARKS/DESCRIPTION:

The EX 18 is used to base-detonate the EX 109 Warhead of the EX 105 & EX 106 Guided Projectiles. The ASD keeps the explosive train of the projectile out of line prior to launch and aligns the explosive train after the projectile has travelled a safe distance from the gun. The ASD consists of a housing, a rotor containing a electric detonator, and anti-armed assembly lever, a runaway escapement, a setback system which locks the rotor, a second lock on the rotor, and a piston actuator. The rotor is in the out of line (safe) position prior to launch. During launch, setback causes the setback system to cock a spring which provides the energy to drive the rotor into line. The setback force also removes one lock from the rotor. As the projectile exits the muzzle, a signal is induced elsewhere in the projectile to fire the piston actuator which removes the second lock on the rotor. The rotor then moves to the in-line position. The motion of the rotor is dampened by a runaway escapement providing the necessary arming delay. When the rotor reaches the in-line position, the detonator is connected to the firing circuits.

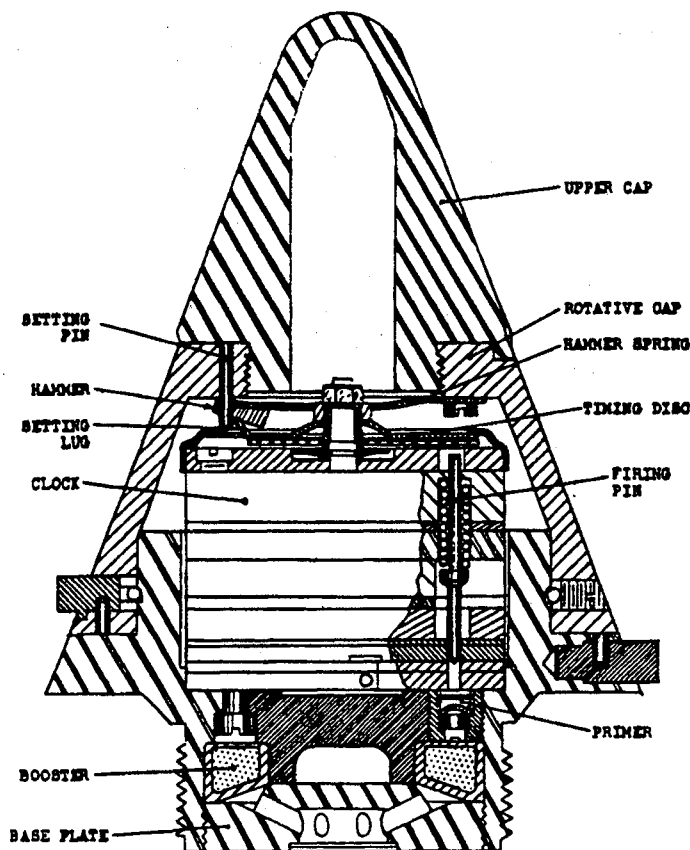
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LAST UPDATE: 09/25/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 18 Mod 0
MT Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.313 in (109.6 mm)
XSECT: 3.05 in (77.5 mm)

- INTRUSION -

DP: 0.803 in (20.4 mm)
DIA: 1.7 in (43.2 mm)

WT: 2.5 lb (1134 g)

THD: 1.7-14NS-1RH

THD DP: 0.81 in (20.6 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Army, Navy
ASSY DWG: 190 845
PARTS LIST: LD 59 189
SPEC: OS 2114
PUB: OP 1212

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Mk 22, Mk 25, Mk 51

REPLACES:

REPLACED BY: Mk 50

GENERAL

WEAPON: 4-in/50, 5-in/25, 5-in/38,
5-in/51, 6-in/47, 6-in/53
guns

AMMUNITION:

HC, AAC, Illumination

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 210 rps

SETBACK: 14,500 g

VELOCITY: Unknown

CREEP: Unknown

FLIGHT TIME: Unknown

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: Hand

Supersedes page 1-27 of MIL-HDBK-146.

ARMING DATA

FIRST SAFETY:

Setback: releases separate locks on timing disc and firing arm shaft.

SECOND SAFETY:

Spin: lever unlocks escapement;
33 rps, no arm; 100 rps, all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

Unknown

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: FA70 primer mix

DETONATOR: None

LEAD: Black powder relay

BOOSTER: 40 grains (2.6 g) black powder

OTHER: None

FUNCTIONING DATA

MODES: Time

TYPE: Mechanical

CHARACTERISTICS:

2.4 to 45 s

Junghans escapement

TARGET: Aircraft

SENSITIVITY:

Unknown

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

Time

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: 2.6 g

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

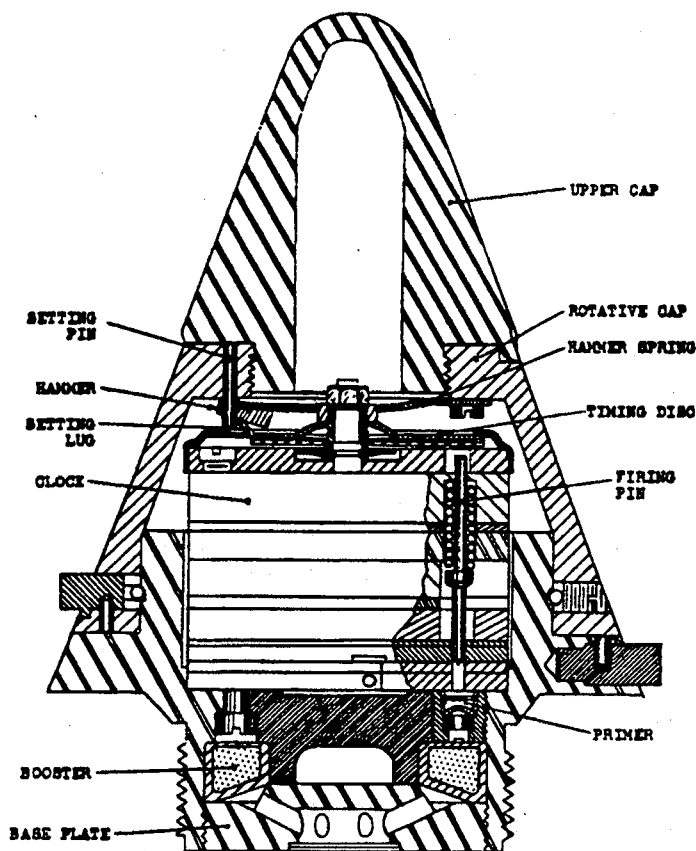
Rotation of the lower cap to the preset time turns the internal timing disc which is held in place on the main pinion with a friction clutch. Two setback features and one centrifugally operated mechanism maintain fuze safety until firing. On firing, setback and subsequent creep forces release the setting pin from the timing disk through the operation of the hammer weights and setting lug. A separate setback pin moves aft, unlocking the firing arm shaft. A centrifugal safety lever releases the escapement permitting the timer to start. After all safeties are removed, the pinion shaft turns by two sector gears which are powered by centrifugal weights and kick-off springs. The movement is governed by the escapement. At the preset time, a notch in the timing disk engages a lug on the firing arm shaft. The shaft rotates, clearing the firing pin safety plate and releasing the firing pin. The firing pin initiates the percussion primer which subsequently initiates the rest of the explosive train. A safety disk covers the notch in the timing disk when the fuze is set "safe" or below the minimum prescribed setting. Mk 54 AD Fuze used in HC rounds. Mod 0 made at NTS, Newport.

LAST UPDATE: 09/25/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 18 Mod 1
MT Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.313 in (109.6 mm)
XSECT: 3.05 in (77.5 mm)

- INTRUSION -

DP: 0.803 in (20.4 mm)
DIA: 1.7 in (43.2 mm)

WT: 2.33 lb (1057 g)

THD: 1.7-14NS-1RH

THD DP: 0.81 in (20.6 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Army, Navy
ASSY DWG: 219 869
PARTS LIST: Unknown
SPEC: OS 2114
PUB: OP 1212

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Mk 22, Mk 25, Mk 51

REPLACES:

REPLACED BY: Mk 50

GENERAL

WEAPON: 4-in/50, 5-in/25, 5-in/38,
5-in/51, 6-in/47, 6-in/53
guns

AMMUNITION:

HC, AAC, Illumination

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 210 rps

SETBACK: 14,500 g

VELOCITY: Unknown

CREEP: Unknown

FLIGHT TIME: Unknown

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: Hand

NEW PAGE.

FUZE: MK 18 Mod 1
MT Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 09/25/90

ARMING DATA

FIRST SAFETY:

Setback: releases separate locks on timing disc and firing arm shaft.

SECOND SAFETY:

Spin: lever unlocks escapement; 33 rps, no arm; 100 rps, all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

Unknown

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: FA70 primer mix

DETONATOR: None

LEAD: Black powder relay

BOOSTER: 40 grains (2.6 g) black powder

OTHER: None

FUNCTIONING DATA

MODES: Time

TYPE: Mechanical

CHARACTERISTICS:

2.4 to 45 s

Junghans escapement

TARGET: Aircraft

SENSITIVITY:

Unknown

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

Time

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: 2.6 g

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

Rotation of the lower cap to the preset time turns the internal timing disc which is held in place on the main pinion with a friction clutch. Two setback features and one centrifugally operated mechanism maintain fuze safety until firing. On firing, setback and subsequent creep forces release the setting pin from the timing disk through the operation of the hammer weights and setting lug. A separate setback pin moves aft, unlocking the firing arm shaft. A centrifugal safety lever releases the escapement permitting the timer to start. After all safeties are removed, the pinion shaft turns by two sector gears which are powered by centrifugal weights and kick-off springs. The movement is governed by the escapement. At the preset time, a notch in the timing disk engages a lug on the firing arm shaft. The shaft rotates, clearing the firing pin safety plate and releasing the firing pin. The firing pin initiates the percussion primer which subsequently initiates the rest of the explosive train. A safety disk covers the notch in the timing disk when the fuze is set "safe" or below the minimum prescribed setting. Mk 54 AD Fuze used in HC rounds. Mod 1 made at Frankford Arsenal.

NEW PAGE.

LAST UPDATE: 09/25/90

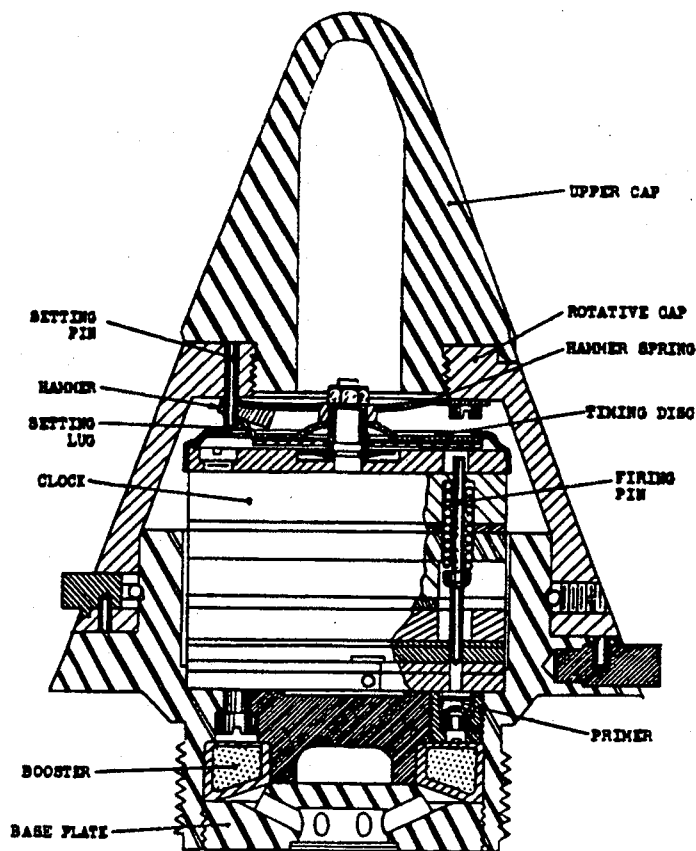
MIL-HDBK-146

NOTICE 2

FUZE: MK 18 Mod 2

MT Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.313 in (109.6 mm)

XSECT: 3.05 in (77.5 mm)

- INTRUSION -

DP: 0.803 in (20.4 mm)

DIA: 1.7 in (43.2 mm)

WT: 2.33 lb (1057 g)

THD: 1.7-14NS-1RH

THD DP: 0.81 in (20.6 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402

CONTACT: Bagnall, J

PHONE: DSN 290-2791

STATUS: Obsolete

USER: Army, Navy

ASSY DWG: 439 468

PARTS LIST: LD 109 332

SPEC: OS 2114

PUB: OP 1212

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Mk 22, Mk 25, Mk 51

REPLACES:

REPLACED BY: Mk 50

GENERAL

WEAPON: 4-in/50, 5-in/25, 5-in/38,
5-in/51, 6-in/47, 6-in/53
guns

AMMUNITION:

HC, AAC, Illumination

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 210 rps

SETBACK: 14,500 g

VELOCITY: Unknown

CREEP: Unknown

FLIGHT TIME: Unknown

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: Hand

NEW PAGE.

FUZE: MK 18 Mod 2
MT Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 09/25/90

ARMING DATA

FIRST SAFETY:

Setback: releases separate locks on timing disc and firing arm shaft.

SECOND SAFETY:

Spin: lever unlocks escapement;
33 rps, no arm; 100 rps, all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

Unknown

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: FA70 primer mix

DETONATOR: None

LEAD: Black powder relay

BOOSTER: 40 grains (2.6 g) black powder

OTHER: None

FUNCTIONING DATA

MODES: Time

TYPE: Mechanical

CHARACTERISTICS:

0.8 to 45 s

Junghans escapement

TARGET: Aircraft

SENSITIVITY:

Unknown

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

Time

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: 2.6 g

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

Rotation of the lower cap to the preset time turns the internal timing disc which is held in place on the main pinion with a friction clutch. Two setback features and one centrifugally operated mechanism maintain fuze safety until firing. On firing, setback and subsequent creep forces release the setting pin from the timing disk through the operation of the hammer weights and setting lug. A separate setback pin moves aft, unlocking the firing arm shaft. A centrifugal safety lever releases the escapement permitting the timer to start. After all safeties are removed, the pinion shaft turns by two sector gears which are powered by centrifugal weights and kick-off springs. The movement is governed by the escapement. At the preset time, a notch in the timing disk engages a lug on the firing arm shaft. The shaft rotates, clearing the firing pin safety plate and releasing the firing pin. The firing pin initiates the percussion primer which subsequently initiates the rest of the explosive train. A safety disk covers the notch in the timing disk when the fuze is set "safe" or below the minimum prescribed setting. Mk 54 AD Fuze used in HC rounds. Mod 2 made at Bendix Aviation, Eclipse Div.

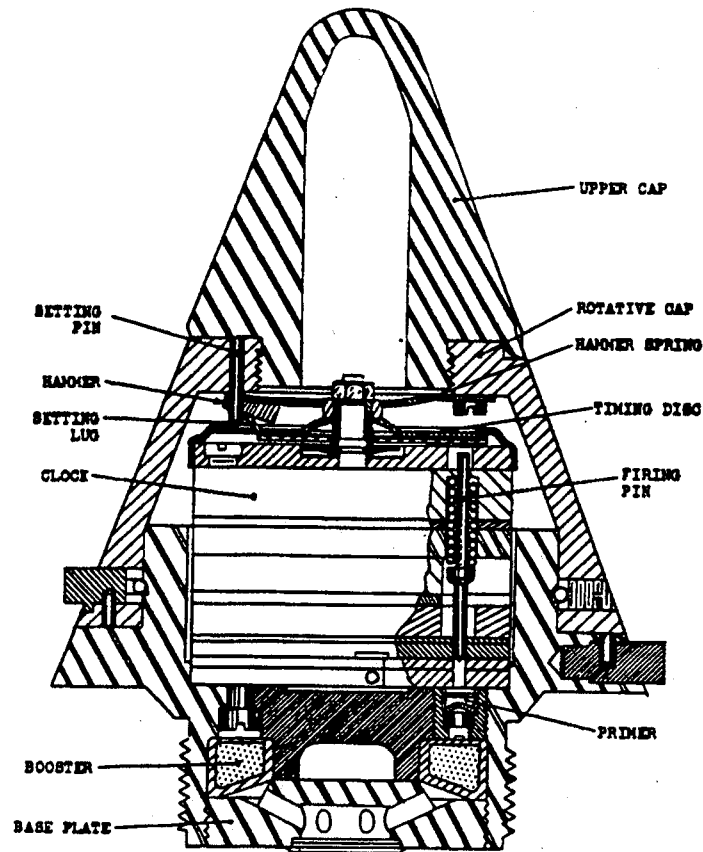
NEW PAGE.

LAST UPDATE: 09/25/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 18 Mod 3
MT Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.313 in (109.6 mm)
XSECT: 3.05 in (77.5 mm)

- INTRUSION -

DP: 0.803 in (20.4 mm)
DIA: 1.7 in (43.2 mm)

WT: 2.33 lb (1057 g)

THD: 1.7-14NS-1RH

THD DP: 0.81 in (20.6 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Army, Navy
ASSY DWG: Unknown
PARTS LIST: Unknown
SPEC: OS 2114
PUB: OP 1212

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Mk 22, Mk 25, Mk 51

REPLACES:

REPLACED BY: Mk 50

GENERAL

WEAPON: 4-in/50, 5-in/25, 5-in/38,
5-in/51, 6-in/47, 6-in/53
guns

AMMUNITION:

HC, AAC, Illumination

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 210 rps

SETBACK: 14,500 g

VELOCITY: Unknown

CREEP: Unknown

FLIGHT TIME: Unknown

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: Hand

NEW PAGE.

1-28E

FUZE: MK 18 Mod 3
MT Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 09/25/90

ARMING DATA

FIRST SAFETY:

Setback: releases separate locks on timing disc and firing arm shaft.

SECOND SAFETY:

Spin: lever unlocks escapement;
33 rps, no arm; 100 rps, all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

Unknown

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: FA70 primer mix

DETONATOR: None

LEAD: Black powder relay

BOOSTER: 40 grains (2.6 g) black powder

OTHER: None

FUNCTIONING DATA

MODES: Time

TYPE: Mechanical

CHARACTERISTICS:

0.8 to 45 s

Junghans escapement

TARGET: Aircraft

SENSITIVITY:

Unknown

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

Time

POWER SUPPLY:

None

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: 2.6 g

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

Rotation of the lower cap to the preset time turns the internal timing disc which is held in place on the main pinion with a friction clutch. Two setback features and one centrifugally operated mechanism maintain fuze safety until firing. On firing, setback and subsequent creep forces release the setting pin from the timing disk through the operation of the hammer weights and setting lug. A separate setback pin moves aft, unlocking the firing arm shaft. A centrifugal safety lever releases the escapement permitting the timer to start. After all safeties are removed, the pinion shaft turns by two sector gears which are powered by centrifugal weights and kick-off springs. The movement is governed by the escapement. At the preset time, a notch in the timing disk engages a lug on the firing arm shaft. The shaft rotates, clearing the firing pin safety plate and releasing the firing pin. The firing pin initiates the percussion primer which subsequently initiates the rest of the explosive train. A safety disk covers the notch in the timing disk when the fuze is set "safe" or below the minimum prescribed setting. Mk 54 AD Fuze used in HC rounds. Mod 3 made at Frankford Arsenal.

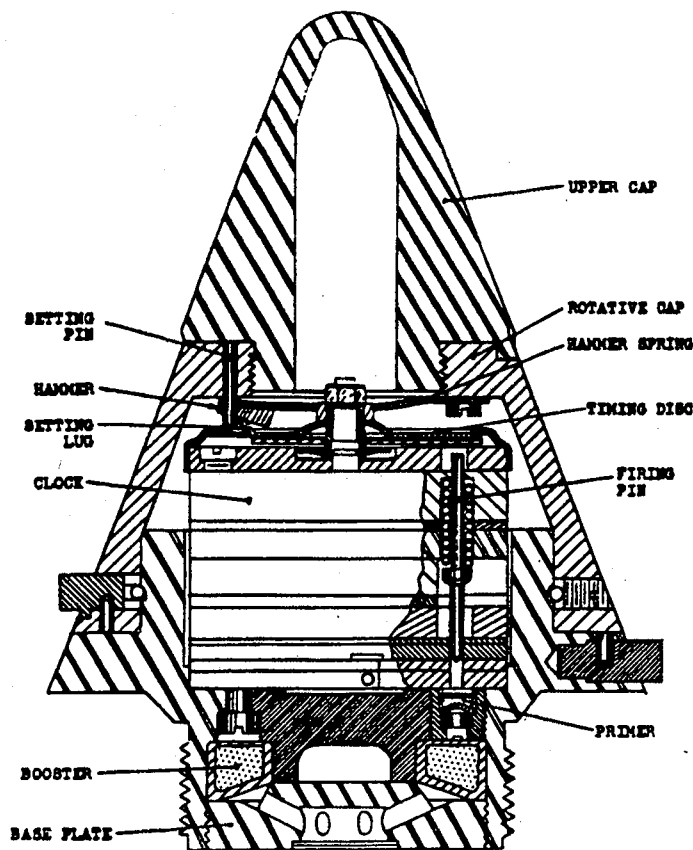
NEW PAGE.

LAST UPDATE: 09/25/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 18 Mod 4
MT Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.313 in (109.6 mm)
XSECT: 3.05 in (77.5 mm)

- INTRUSION -

DP: 0.803 in (20.4 mm)
DIA: 1.7 in (43.2 mm)

WT: 2.33 lb (1057 g)

THD: 1.7-14NS-1RH

THD DP: 0.81 in (20.6 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Army, Navy
ASSY DWG: 450 500
PARTS LIST: Unknown
SPEC: OS 2114
PUB: OP 1212

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Mk 22, Mk 25, Mk 51

REPLACES:

REPLACED BY: Mk 50

GENERAL

WEAPON: 4-in/50, 5-in/25, 5-in/38,
5-in/51, 6-in/47, 6-in/53
guns

AMMUNITION:

HC, AAC, Illumination

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 210 rps

SETBACK: 14,500 g

VELOCITY: Unknown

CREEP: Unknown

FLIGHT TIME: Unknown

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: Hand

NEW PAGE.

1-28G

FUZE: MK 18 Mod 4
MT Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 09/25/90

ARMING DATA

FIRST SAFETY:

Setback: releases separate locks on timing disc and firing arm shaft.

SECOND SAFETY:

Spin: lever unlocks escapement;
33 rps, no arm; 100 rps, all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

Unknown

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: FA70 primer mix

DETONATOR: None

LEAD: Black powder relay

BOOSTER: 40 grains (2.6 g) black powder

OTHER: None

FUNCTIONING DATA

MODES: Time

TYPE: Mechanical

CHARACTERISTICS:

0.8 to 45 s

Junghans escapement

TARGET: Aircraft

SENSITIVITY:

Unknown

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

Time

POWER SUPPLY:

None

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: 2.6 g

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

Rotation of the lower cap to the preset time turns the internal timing disc which is held in place on the main pinion with a friction clutch. Two setback features and one centrifugally operated mechanism maintain fuze safety until firing. On firing, setback and subsequent creep forces release the setting pin from the timing disk through the operation of the hammer weights and setting lug. A separate setback pin moves aft, unlocking the firing arm shaft. A centrifugal safety lever releases the escapement permitting the timer to start. After all safeties are removed, the pinion shaft turns by two sector gears which are powered by centrifugal weights and kick-off springs. The movement is governed by the escapement. At the preset time, a notch in the timing disk engages a lug on the firing arm shaft. The shaft rotates, clearing the firing pin safety plate and releasing the firing pin. The firing pin initiates the percussion primer which subsequently initiates the rest of the explosive train. A safety disk covers the notch in the timing disk when the fuze is set "safe" or below the minimum prescribed setting. Mk 54 AD Fuze used in HC rounds. Mod 4 made at Thos. A. Edison Co.

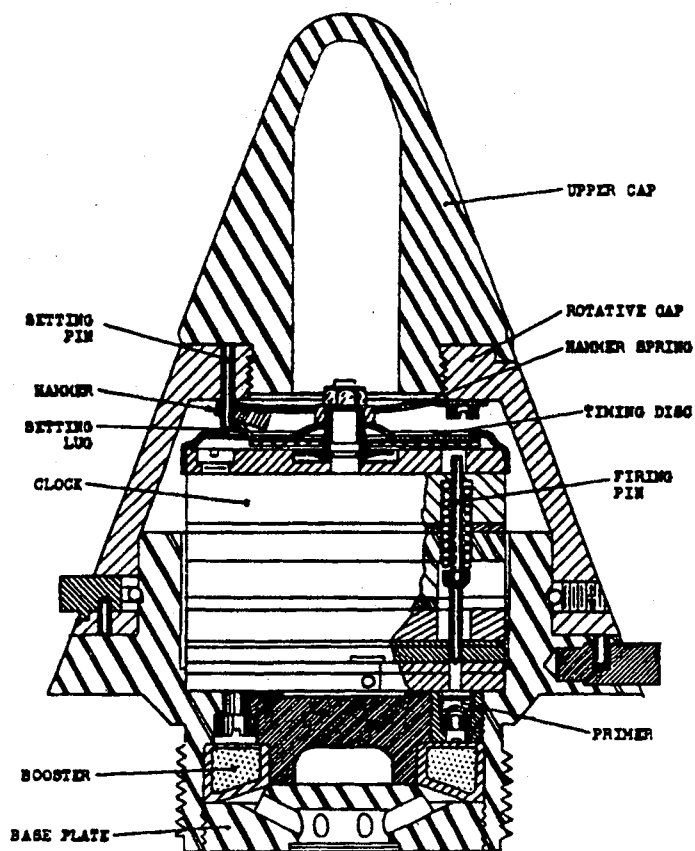
NEW PAGE.

LAST UPDATE: 09/25/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 18 Mod 5
MT Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.313 in (109.6 mm)
XSECT: 3.05 in (77.5 mm)

- INTRUSION -

DP: 0.803 in (20.4 mm)
DIA: 1.7 in (43.2 mm)

WT: 2.33 lb (1057 g)

THD: 1.7-14NS-1RH

THD DP: 0.81 in (20.6 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Army, Navy
ASSY DWG: 450 500
PARTS LIST: 1d 109 446
SPEC: OS 2114
PUB: OP 1212

NATIONAL STOCK NO:
None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Mk 22, Mk 25, Mk 51

REPLACES:

REPLACED BY: Mk 50

GENERAL

WEAPON: 4-in/50, 5-in/25, 5-in/38,
5-in/51, 6-in/47, 6-in/53
guns

AMMUNITION:

HC, AAC, Illumination

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 210 rps

SETBACK: 14,500 g

VELOCITY: Unknown

CREEP: Unknown

FLIGHT TIME: Unknown

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: Hand

NEW PAGE.

FUZE: MK 18 Mod 5
MT Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 09/25/90

ARMING DATA

FIRST SAFETY:

Setback: releases separate locks on timing disc and firing arm shaft.

SECOND SAFETY:

Spin: lever unlocks escapement;
33 rps, no arm; 100 rps, all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

Unknown

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: FA70 primer mix

DETONATOR: None

LEAD: Black powder relay

BOOSTER: 40 grains (2.6 g) black powder

OTHER: None

FUNCTIONING DATA

MODES: Time

TYPE: Mechanical

CHARACTERISTICS:

0.8 to 45 s

Junghans escapement

TARGET: Aircraft

SENSITIVITY:

Unknown

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

Time

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: 2.6 g

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

Rotation of the lower cap to the preset time turns the internal timing disc which is held in place on the main pinion with a friction clutch. Two setback features and one centrifugally operated mechanism maintain fuze safety until firing. On firing, setback and subsequent creep forces release the setting pin from the timing disk through the operation of the hammer weights and setting lug. A separate setback pin moves aft, unlocking the firing arm shaft. A centrifugal safety lever releases the escapement permitting the timer to start. After all safeties are removed, the pinion shaft turns by two sector gears which are powered by centrifugal weights and kick-off springs. The movement is governed by the escapement. At the preset time, a notch in the timing disk engages a lug on the firing arm shaft. The shaft rotates, clearing the firing pin safety plate and releasing the firing pin. The firing pin initiates the percussion primer which subsequently initiates the rest of the explosive train. A safety disk covers the notch in the timing disk when the fuze is set "safe" or below the minimum prescribed setting. Mk 54 AD Fuze used in HC rounds. Mod 5 made at Elgin Watch Co. Waterproofed.

NEW PAGE.

MIL-HDBK-146
NOTICE 2

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**Data for the M21A4 Booster
may be found in MIL-HDBK-145B.**

Supersedes pages 1-35 and 1-36 of MIL-HDBK 146

1-35/1-36

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MIL-HDBK-146
NOTICE 2

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**Data for the Mk 21 Mod 3 BD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-37 and 1-38 of MIL-HDBK 146

1-37/1-38

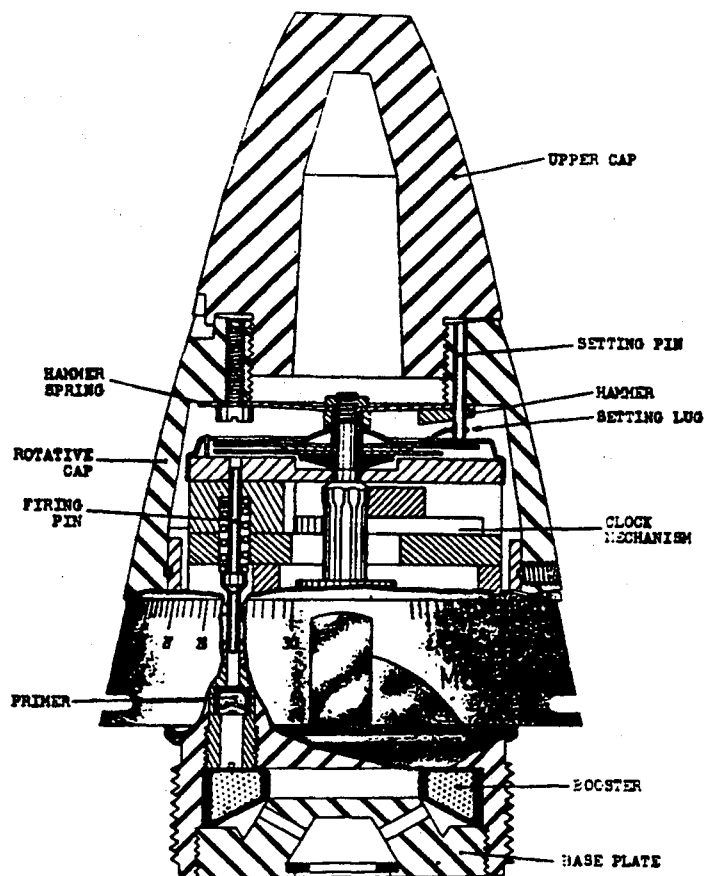
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LAST UPDATE: 09/26/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 22 Mod 0-3
MT Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.55 in (115.6 mm)
XSECT: 2.4 in (61.0 mm)

- INTRUSION -

DP: 0.803 in (20.4 mm)
DIA: 1.7 in (43.2 mm)

WT: 1.38 lb (626 g)

THD: 1.7-14NS-1RH

THD DP: 0.81 in (20.6 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Army, Navy
ASSY DWG: 281 980
PARTS LIST: Unknown
SPEC: OS 3004
PUB: OP 1212

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Mk 18, Mk 25, Mk 50

REPLACES:

REPLACED BY: Mk 51

GENERAL

WEAPON: 3-in/23, 3-in/50 & 4-in/50
guns

AMMUNITION:

HC, AA, Illumination

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 338 rps

SETBACK: 20,600 g

VELOCITY: Unknown

CREEP: Unknown

FLIGHT TIME: Unknown

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: Lower cap has slots.

Supersedes page 1-41 of MIL-HDBK-146.

ARMING DATA

FIRST SAFETY:

Setback: releases separate locks on timing disc and firing arm shaft.

SECOND SAFETY:

Spin: lever unlocks escapement;
33 rps, no arm; 100 rps, all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

Unknown

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: FA70 primer mix

DETONATOR: None

LEAD: Black powder relay

BOOSTER: 40 grains (2.6 g) black powder

OTHER: None

FUNCTIONING DATA

MODES: Time

TYPE: Mechanical

CHARACTERISTICS:

1.4 to 30 s; Junghans escapement.
Movement does not have kick-spring to help start timer as does Mk 18 MT Fuze

TARGET: Aircraft

SENSITIVITY:

Unknown

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

Time

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: 2.6 g

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

Rotation of the lower cap to the preset time turns the internal timing disc which is held in place on the main pinion with a friction clutch. Two setback features and one centrifugally operated mechanism maintain fuze safety until firing. On firing, setback and subsequent creep forces release the setting pin from the timing disk through the operation of the hammer weights and setting lug. A separate setback pin moves aft, unlocking the firing arm shaft. A centrifugal safety lever releases the escapement permitting the timer to start. After all safeties are removed, the pinion shaft turns by two sector gears which are powered by centrifugal weights. The movement is governed by the escapement. At the preset time, a notch in the timing disk engages a lug on the firing arm shaft. The shaft rotates, clearing the firing pin safety plate and releasing the firing pin. The firing pin initiates the percussion primer which subsequently initiates the rest of the explosive train. A safety disk covers the notch in the timing disk when the fuze is set "safe" or below the minimum prescribed setting. Mk 54 AD Fuze used in HC rounds. Mod 0 made by NTS, Newport, RI; Mods 1, 2, & 3 by Bendix.

LAST UPDATE: 09/26/90

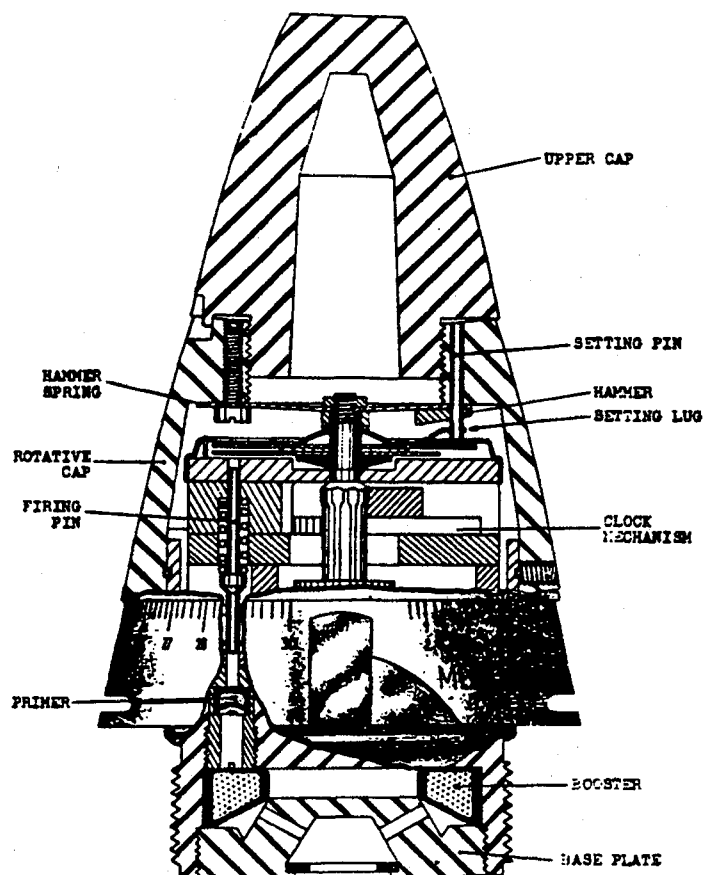
MIL-HDBK-146

NOTICE 2

FUZE: MK 22 Mod 4-6

MT Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.55 in (115.6 mm)

XSECT: 2.4 in (61.0 mm)

- INTRUSION -

DP: 0.803 in (20.4 mm)

DIA: 1.7 in (43.2 mm)

WT: 1.38 lb (626 g)

THD: 1.7-14NS-1RH

THD DP: 0.81 in (20.6 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402

CONTACT: Bagnall, J

PHONE: DSN 290-2791

STATUS: Obsolete

USER: Army, Navy

ASSY DWG: 439 795, -797, 561 992

PARTS LIST: LD 109 333, -438, -512

SPEC: OS 3004

PUB: OP 1212

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Mk 18, Mk 25, Mk 50

REPLACES:

REPLACED BY: Mk 51

GENERAL

WEAPON: 3-in/23, 3-in/50 & 4-in/50 guns

AMMUNITION:

HC, AA, Illumination

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 338 rps

SETBACK: 20,600 g

VELOCITY: Unknown

CREEP: Unknown

FLIGHT TIME: Unknown

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: Lower cap has slots.

NEW PAGE.

1-42A

FUZE: MK 22 Mod 4-6
MT Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 09/26/90

ARMING DATA

FIRST SAFETY:

Setback: releases separate locks on timing disc and firing arm shaft.

SECOND SAFETY:

Spin: lever unlocks escapement; 33 rps, no arm; 100 rps, all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

Unknown

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: FA70 primer mix

DETONATOR: None

LEAD: Black powder relay

BOOSTER: 40 grains (2.6 g) black powder

OTHER: None

FUNCTIONING DATA

MODES: Time

TYPE: Mechanical

CHARACTERISTICS:

0.8 to 30 s; Junghans escapement.
Movement does not have kick-spring to help start timer as does Mk 18 MT Fuze

TARGET: Aircraft

SENSITIVITY:

Unknown

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

Time

POWER SUPPLY:

None

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: 2.6 g

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

Rotation of the lower cap to the preset time turns the internal timing disc which is held in place on the main pinion with a friction clutch. Two setback features and one centrifugally operated mechanism maintain fuze safety until firing. On firing, setback and subsequent creep forces release the setting pin from the timing disk through the operation of the hammer weights and setting lug. A separate setback pin moves aft, unlocking the firing arm shaft. A centrifugal safety lever releases the escapement permitting the timer to start. After all safeties are removed, the pinion shaft turns by two sector gears which are powered by centrifugal weights. The movement is governed by the escapement. At the preset time, a notch in the timing disk engages a lug on the firing arm shaft. The shaft rotates, clearing the firing pin safety plate and releasing the firing pin. The firing pin initiates the percussion primer which subsequently initiates the rest of the explosive train. A safety disk covers the notch in the timing disk when the fuze is set "safe" or below the minimum prescribed setting. Mk 54 AD Fuze used in HC rounds. Mods 4, 5 & 6 made by Bendix, Elgin & Hamilton.

NEW PAGE.

MIL-HDBK-146
NOTICE 2

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**Data for the M25 Booster
may be found in MIL-HDBK-145B.**

Supersedes pages 1-49 and 1-50 of MIL-HDBK 146

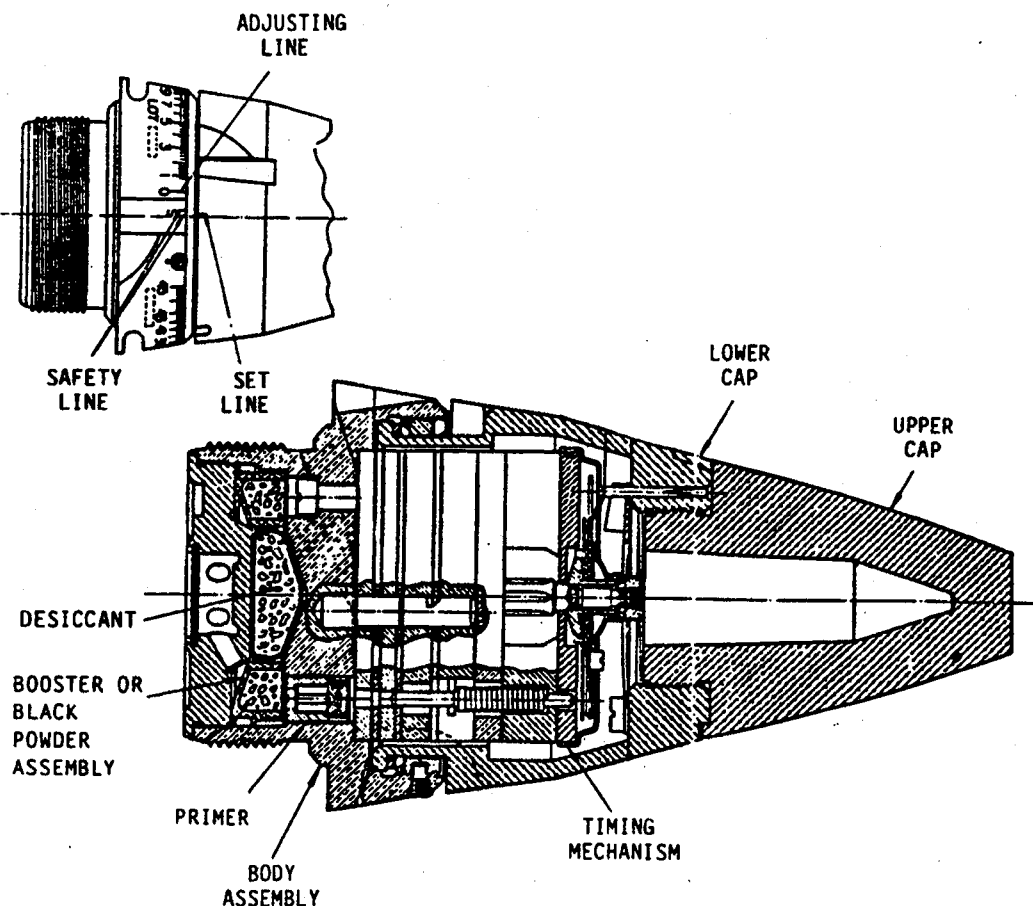
1-49/1-50

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MIL-HDBK-146
NOTICE 2

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ILLUSTRATION:



- OVERALL SIZE -

LG: 4.55 in (115.6 mm)

XSECT: 2.40 in (61.0 mm)

- INTRUSION -

DP: 0.805 in (20.4 mm)

DIA:

WT: 1.45 lb (657.7 g)

THD: 1.70-14NS-1

THD DP: 0.805 in (20.4 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G41

CONTACT: Pomeroy, S

PHONE: DSN 290-1995

STATUS: Obsolete

USER: Navy

ASSY DWG: 1 378 972

PARTS LIST: LD 293 347

SPEC: OS 5832, OS 1 402 953

PUB: SW030-AA-MMO-010

NATIONAL STOCK NO:

Not a separate issue

DODIC: Not a separate issue

PRIOR MODEL NO: None

SIMILAR TO: Mk 18, Mk 50, Mk 51,
Mk 342

REPLACES: Mk 25 Mods 0-4

REPLACED BY: Mk 342-0

GENERAL

WEAPON: 5-in/54, and 6-in/47 guns

AMMUNITION:

AAC, Illuminating, WP, dummy

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 254 rps

SETBACK: 14,000 g

VELOCITY: 2,650 ft/s

CREEP: NA

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: Fuze wrench

FUZE: MK 25 Mod 5
MT Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 12/12/91

ARMING DATA

FIRST SAFETY:

Spin: 33 rps, no arm
100 rps, all arm

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: 28.5 mg FA 70

DETONATOR: None

LEAD: None

BOOSTER: 1.944 g black powder in
plastic container
(dwg 1 246 291)

OTHER: None

FUNCTIONING DATA

MODES: Time

TYPE: Mechanical

CHARACTERISTICS:

Jughans escapement, settable from
0.6 to 45 s

TARGET: Aircraft, ground, ships

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

None

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO:

US HCSDS:

UN CL/DIV SCG: 1.4 S

US DOT SHIP CL: C

NET EXPL WT: 0.0285 g

NET PROP WT: 1.944 g

STORAGE TEMP:

REMARKS/DESCRIPTION:

Time is set by rotating lower cap and setting pin which rotates timing disc. Upon firing, setback of the hammer spring releases the timer disc and moves the setback pin back which partially releases the firing shaft and safety lever plate. Centrifugal force releases a detent on the escapement lever and with the help of a kick-spring rotates the two drive gears which, in turn, drive the main pinion. When the timing disc has rotated to the set time, the firing shaft rotates into a notch, releasing the safety plate which releases the spring-loaded firing pin to function the primer. The primer ignites the black powder relay charge and, in turn, the aux det or magazine charge.

MIL-HDBK-146
NOTICE 2

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**Data for the MK 26 Mods 0-2 PD Fuzes
may be found in Chapter 7.**

Supersedes pages 1-55 and 1-56 of MIL-HDBK-146.

1-55/1-56

MIL-HDBK-146
NOTICE 2

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**Data for the Mk 28 Mod 17 BD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-57 and 1-58 of MIL-HDBK 146

1-57/1-58

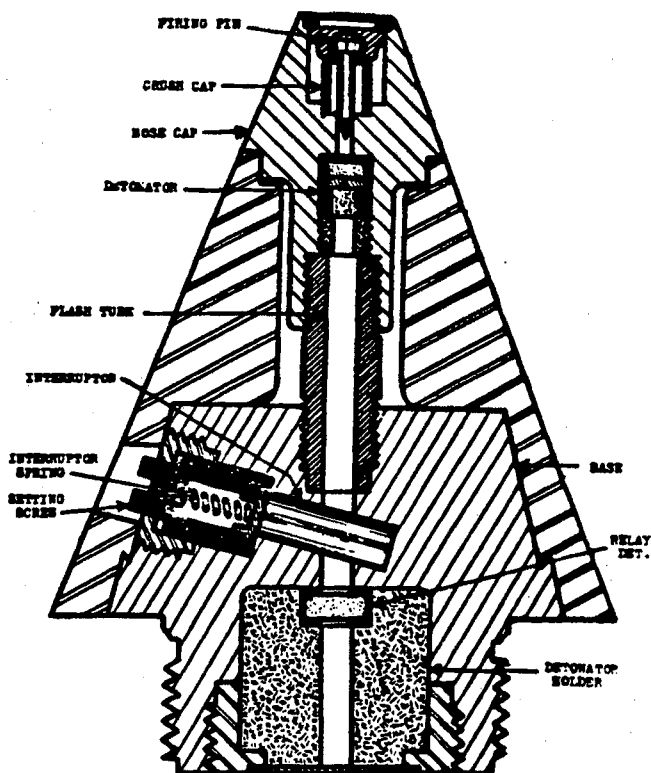
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LAST UPDATE: 09/27/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 29 Mod 0-2
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.14 in (105 mm)

XSECT: 2.99 in (75.7 mm)

- INTRUSION -

DP: 0.81 in (20.4 mm)

DIA: 1.70 in (43.2 mm)

WT: 1.49 lb (676 g)

THD: 1.70-14NS-1

THD DP: 0.713 in (18.1 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G41

CONTACT: Niemeyer, R

PHONE: DSN 290-2750

STATUS: Obsolete

USER: Navy

ASSY DWG: 328 557

PARTS LIST: LD 91 154

SPEC: MIL-O-18521, OS 3303, 3013 & 4541

PUB: None

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: XP-14A

SIMILAR TO: Mk 30, Mk 66

REPLACES:

REPLACED BY: Mk 29-3

GENERAL

WEAPON: 5"/25, 5"/38, 5"/51, 6"/47
8"/55, 12"/50, 14"/45, 14"/50
16"/45 & 16"/50 guns

AMMUNITION:

HC, AAC, WP

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 208 rps

SETBACK: 16,200 g

VELOCITY: 2600 ft/s (792 m/s)

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: Doesn't meet MIL-ST-1316

SETTERS: Manually with screwdriver

Supersedes page 1-59 of MIL-HDBK-146.

FUZE: MK 29 Mod 0-2
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 09/27/90

ARMING DATA

FIRST SAFETY:

Spin: 25 rps no arm,
33 rps all arm

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER: None

DETONATOR: Mk 25 Mod 0 Stab
Mk 29 Mod 0 Relay

LEAD: None

BOOSTER: None

OTHER: None

FUNCTIONING DATA

MODES: PD SQ

TYPE: Mechanical

CHARACTERISTICS:

See remarks.

TARGET: Surf, Pers, Lt Material

SENSITIVITY:

1 in (25.4 mm) plywood,

Obliquity: 0 deg.

Water 45 deg obliquity

FUNCTION TEMP:

-7 to +54 deg C

MODE ON DELIVERY:

"OFF"

POWER SUPPLY:

None

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO: 0257

US HCSDS:

UN CL/DIV SCG: 1.4 B

US DOT SHIP CL: C

NET EXPL WT: 0.438 g

NET PROP WT: None

STORAGE TEMP: -7 to +54 deg C

REMARKS/DESCRIPTION:

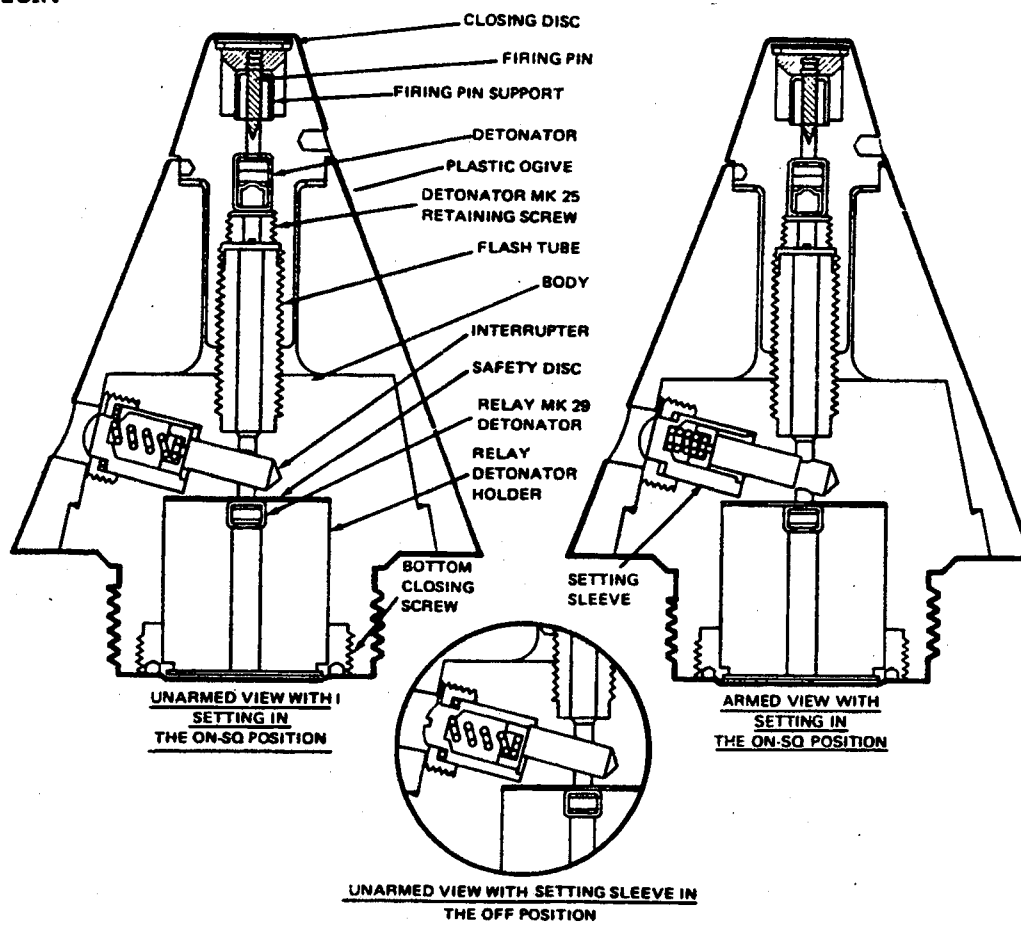
The Mk 29 Fuze requires a Mk 54 or Mk 55 AD Fuze for handling and in-bore safety. An externally settable ON/OFF lock prevents movement of the slider in the OFF position. It must be set to ON before loading the gun, otherwise the round will dud. On firing, centrifugal force moves the slider outward against its spring unblocking the flash tube. This happens after the projectile has left the gun. On impact, the firing pin is driven into the nose detonator. The flash from the nose detonator passes down the flash tube initiating the relay detonator and, in turn, the AD Fuze and main charge. The Mk 29 Fuze is the same as the Mk 30 except for contour. All mods detonate on 3.175 mm mild steel, water, or soft and hard terrain at angles up to 82 deg. Mod 0 has green, asbestos plastic ogive. Mod 1 has yellow, chip proof, resin-impregnated cloth covered plastic ogive. Mod 2 has strengthened flash channel. Mods 0 thru 2 are sensitive to rain.

LAST UPDATE: 10/12/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 29 Mod 3
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.14 in (105 mm)
XSECT: 2.99 in (75.7 mm)

- INTRUSION -

DP: 0.81 in (20.4 mm)
DIA: 1.70 in (43.2 mm)

WT: 1.49 lb (676 g)

THD: 1.70-14NS-1

THD DP: 0.713 in (18.1 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G41
CONTACT: Niemeyer, R
PHONE: DSN 290-2750
STATUS: Obsolete
USER: Navy
ASSY DWG: 422 325
PARTS LIST: LD 109 112
SPEC: MIL-F-18699
PUB: None

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: XP-14A

SIMILAR TO: Mk 30, Mk 66

REPLACES: Mk 29 Mods 0-2

REPLACED BY: Mk 29-3 RFM, -5

GENERAL

WEAPON: 5-in/38, 6-in/47, 8-in/55 &
16"/50 guns; 5-in, spin-
stabilized rockets

AMMUNITION:

HC, AAC, WP;
Mk 7 Rocket

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 208 rps

SETBACK: 16,200 g

VELOCITY: 2600 ft/s (792 m/s)

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: Doesn't meet MIL-ST-1316

SETTERS: Manually with screwdriver

NEW PAGE.

1-60A

FUZE: MK 29 Mod 3
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/12/90

ARMING DATA

FIRST SAFETY:

Spin: 25 rps no arm,
33 rps all arm

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER: None

DETONATOR: Mk 25 Mod 0 Stab
Mk 29 Mod 0 Relay

LEAD: None

BOOSTER: None

OTHER: None

FUNCTIONING DATA

MODES: PD SQ

TYPE: Mechanical

CHARACTERISTICS:

See remarks.

TARGET: Surf, Pers, Lt Material

SENSITIVITY:

1 in (25.4 mm) plywood,

Obliquity: 0 deg.

Water 45 deg obliquity

FUNCTION TEMP:

-7 to +54 deg C

MODE ON DELIVERY:

"OFF"

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0257

US HCSDS:

UN CL/DIV SCG: 1.4 B

US DOT SHIP CL: C

NET EXPL WT: 0.438 g

NET PROP WT: None

STORAGE TEMP: -7 to +54 deg C

REMARKS/DESCRIPTION:

The Mk 29 Fuze requires a Mk 54 or Mk 55 AD Fuze for handling and in-bore safety. An externally settable ON/OFF lock prevents movement of the slider in the OFF position. It must be set to ON before loading the gun, otherwise the round will dud. On firing, centrifugal force moves the slider outward against its spring unblocking the flash tube. This happens after the projectile has left the gun. On impact, the firing pin is driven into the nose detonator. The flash from the nose detonator passes down the flash tube initiating the relay detonator and, in turn, the AD Fuze and main charge. The Mk 29 Fuze is the same as the Mk 30 except for contour. All mods detonate on 3.175 mm mild steel, water, or soft and hard terrain at angles up to 82 deg. Mod 3 has a 0.010-in thick aluminum disk between the flash tube and relay detonator for added safety. The fuze is sensitive to rain. Remaining fuzes are being modified with a rain baffle in the nose, are then designated Mk 29 Mod 3 RFM and are identical to Mk 29 Mod 5.

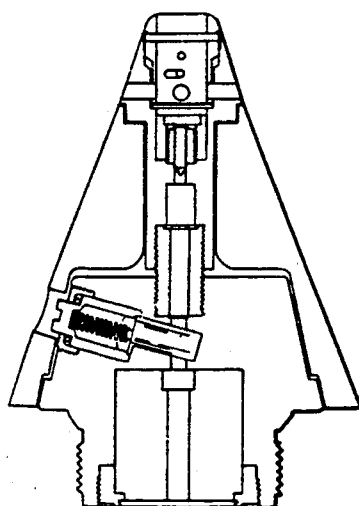
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LAST UPDATE: 09/27/90

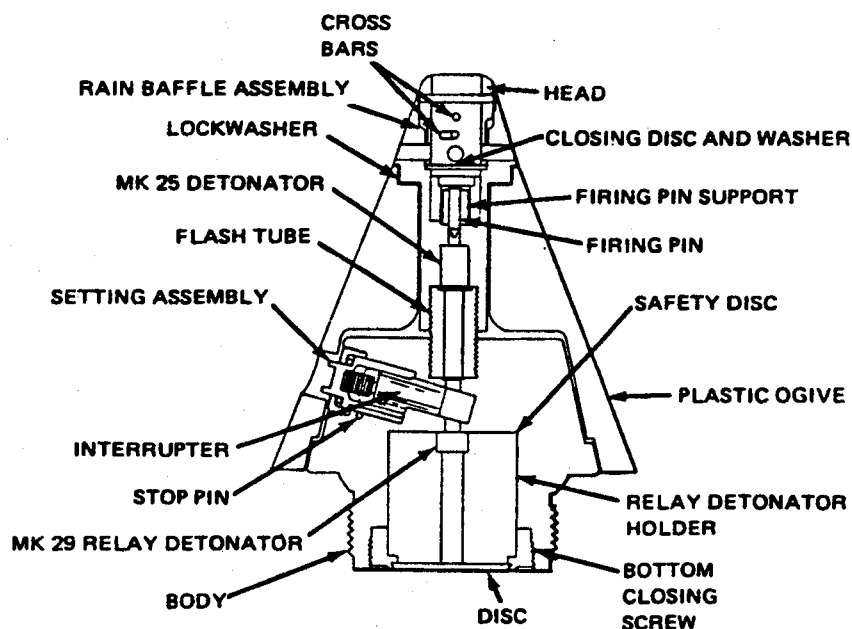
NOTICE 2

PD Fuze

ILLUSTRATION:



UNARMED VIEW WITH
SETTING SCREW IN
THE OFF POSITION



ARMED VIEW WITH
SETTING SCREW IN
THE ON POSITION

- OVERALL SIZE -

LG: 4.14 in (105 mm)

XSECT: 2.99 in (75.7 mm)

- INTRUSION -

DP: 0.81 in (20.4 mm)

DIA: 1.70 in (43.2 mm)

WT: 1.49 lb (676 g)

THD: 1.70-14NS-1

THD DP: 0.713 in (18.1 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G41

CONTACT: Niemeyer, R

PHONE: DSN 290-2750

STATUS: Obsolete

USER: Navy

ASSY DWG: 2 501 613

PARTS LIST: PL 2 401 613

SPEC: Unknown

PUB: SW030-AA-MMO-010

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: XP-14A

SIMILAR TO: Mk 30, Mk 66

REPLACES: Mk 29 Mods 0-3

REPLACED BY: Mk 29 Mod 5

GENERAL

WEAPON: 16-in/50 Mk 7 Gun

AMMUNITION:

HC, Mk 13

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 208 rps

SETBACK: 16,200 g

VELOCITY: 2600 ft/s (792 m/s)

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: Doesn't meet MIL-ST-1316

SETTERS: Manually with screwdriver

NEW PAGE.

FUZE: MK 29 Mod 4
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 09/27/90

ARMING DATA

FIRST SAFETY:

Spin: 25 rps no arm,
33 rps all arm

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER: None

DETONATOR: Mk 25 Mod 1 Stab
Mk 29 Mod 0 Relay

LEAD: None

BOOSTER: None

OTHER: None

FUNCTIONING DATA

MODES: PD SQ

TYPE: Mechanical

CHARACTERISTICS:

See remarks.

TARGET: Surf, Pers, Lt Material

SENSITIVITY:

2 in (50.8 mm) plywood,

Obliquity: 0 deg.

Water 45 deg obliquity

FUNCTION TEMP:

-7 to +54 deg C

MODE ON DELIVERY:

"OFF"

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0257

US HCSDS:

UN CL/DIV SCG: 1.4 B

US DOT SHIP CL: C

NET EXPL WT: 0.438 g

NET PROP WT: None

STORAGE TEMP: -7 to +54 deg C

REMARKS/DESCRIPTION:

The Mk 29 Fuze requires a Mk 54, Mk 55, or Mk 379 AD Fuze for handling and in-bore safety. An externally settable ON/OFF lock prevents movement of the slider in the OFF position. It must be set to ON before loading the gun, otherwise the round will dud. On firing, centrifugal force moves the slider outward against its spring unblocking the flash tube. This happens after the projectile has left the gun. On impact, the firing pin is driven into the nose detonator. The flash from the nose detonator passes down the flash tube initiating the relay detonator and, in turn, the AD Fuze and main charge. The Mod 4 and 5 incorporate a rain baffle in the nose which prevents the fuze from functioning in heavy rain. The baffle has been incorporated in many Mod 3 fuzes which are then designated Mod 3 Rain Fix Modification (RFM). Mod 4 had an aluminum baffle found to be unsuitable for use in 5-in/38 guns. The Mk 29 Fuze is the same as the Mk 30 except for contour. Early mods detonate on 25.4 mm wood; Mods 4 and 5 on 50.8 mm wood. All mods detonate on 3.175 mm mild steel, water, or soft and hard terrain at angles up to 82 deg.

NEW PAGE.

1-60D

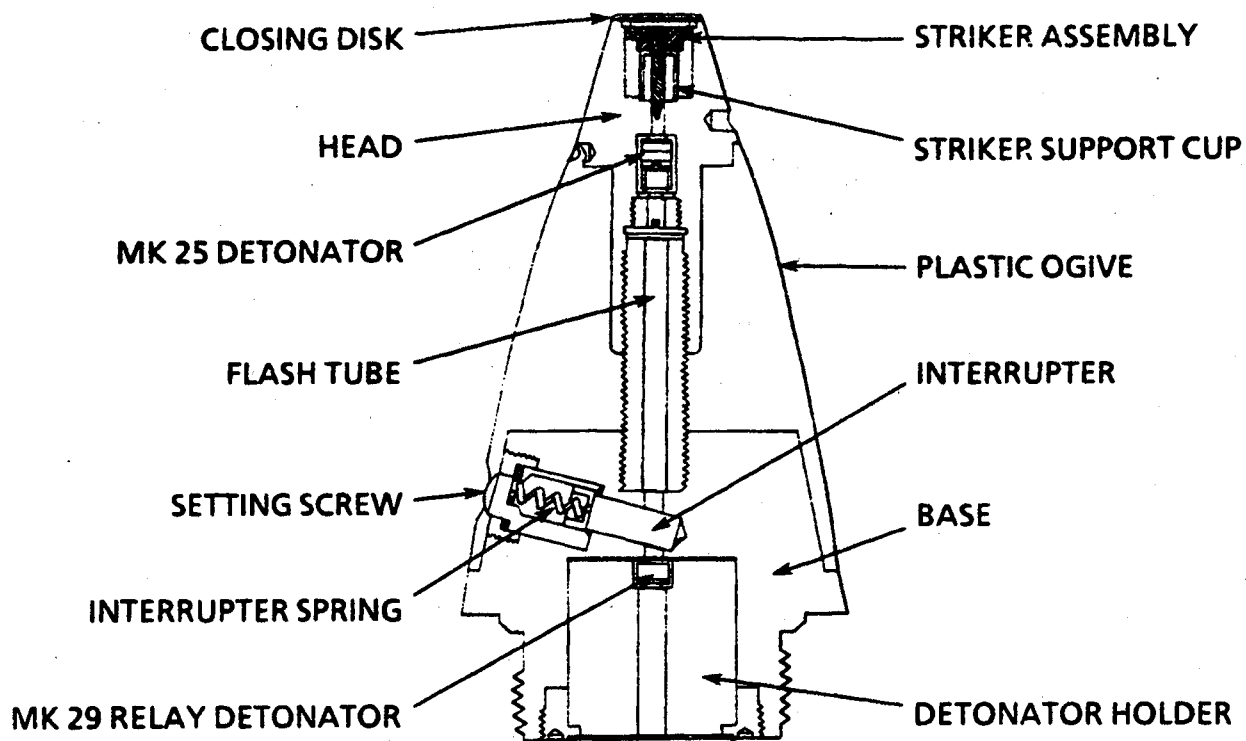
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LAST UPDATE: 10/12/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 30 Mod 0-2
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.57 in (116 mm)
XSECT: 2.41 in (61 mm)

- INTRUSION -

DP: 0.81 in (20 mm)
DIA: 1.70 in (43.2 mm)

WT: 1.38 lb (640 g)

THD: 1.70-14NS-1

THD DP: 0.713 in (18.1 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Navy
ASSY DWG: 328 822
PARTS LIST: LD 91 162
SPEC: OS 3014
PUB:

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: XP-15A, XP-16A

SIMILAR TO: Mk 29, Mk 66

REPLACES: Nothing

REPLACED BY: Mk 30 Mod 3

GENERAL

WEAPON: 3-in/23, 3-in/50, 4-in/50,
5-in/54, 6-in/47 guns

AMMUNITION:

HC, AAC

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 338 rps

SETBACK: 20,600 g

VELOCITY: 2700 ft/s (823 m/s)

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: Doesn't meet MIL-STD-1316B

SETTERS: Manually by screwdriver

NEW PAGE.

1-60E

FUZE: MK 30 Mod 0-2
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/12/90

ARMING DATA

FIRST SAFETY:

Spin: 25 rps no arm,
33 rps all arm

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER: None

DETONATOR: Mk 25 Mod 0 Stab
Mk 29 Mod 0 Relay

LEAD: None

BOOSTER: None

OTHER: None

FUNCTIONING DATA

MODES: SQ

TYPE: Mechanical

CHARACTERISTICS:

TARGET: Surf, Pers, Lt Material

SENSITIVITY:

1 in (25.4 mm) plywood; obliquity,
0 deg.; Velocity, 2625 ft/s
(800 mps); Water 45 deg obliquity

FUNCTION TEMP:

-29 to +54 deg C

MODE ON DELIVERY:

OFF

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL: C

NET EXPL WT: 0.438 g

NET PROP WT: None

STORAGE TEMP: -29 to +54 deg C

REMARKS/DESCRIPTION:

The Mk 30 Fuze requires a Mk 44 or Mk 54 AD fuze in HE rounds for handling and in-bore safety. Prior to launch, the fuze is set to ON for PD SQ action. On firing, centrifugal force moves the slider outward against its spring and into the setting sleeve, unblocking the flash tube. This action takes place after the projectile has left the gun. On impact, the firing pin support collapses and the firing pin is driven into the nose detonator. The flash from the nose detonator passes down the flash tube and initiates the relay detonator which, in turn, causes the AD fuze to function and explode the burster charge of the projectile. The round will dud if fired in the OFF setting. The Mk 30 is the same as the Mk 29 except for contour. The Mk 66 is similar except for contour and the addition of an out-of-line rotor in place of the relay detonator holder. Mods 0 thru 3 were rain sensitive. Mod 0 had a dark green asbestos plastic ogive; Mod 1, a chip-proof, resin-impregnated, light green ogive; Mod 2 a strengthened flash channel.

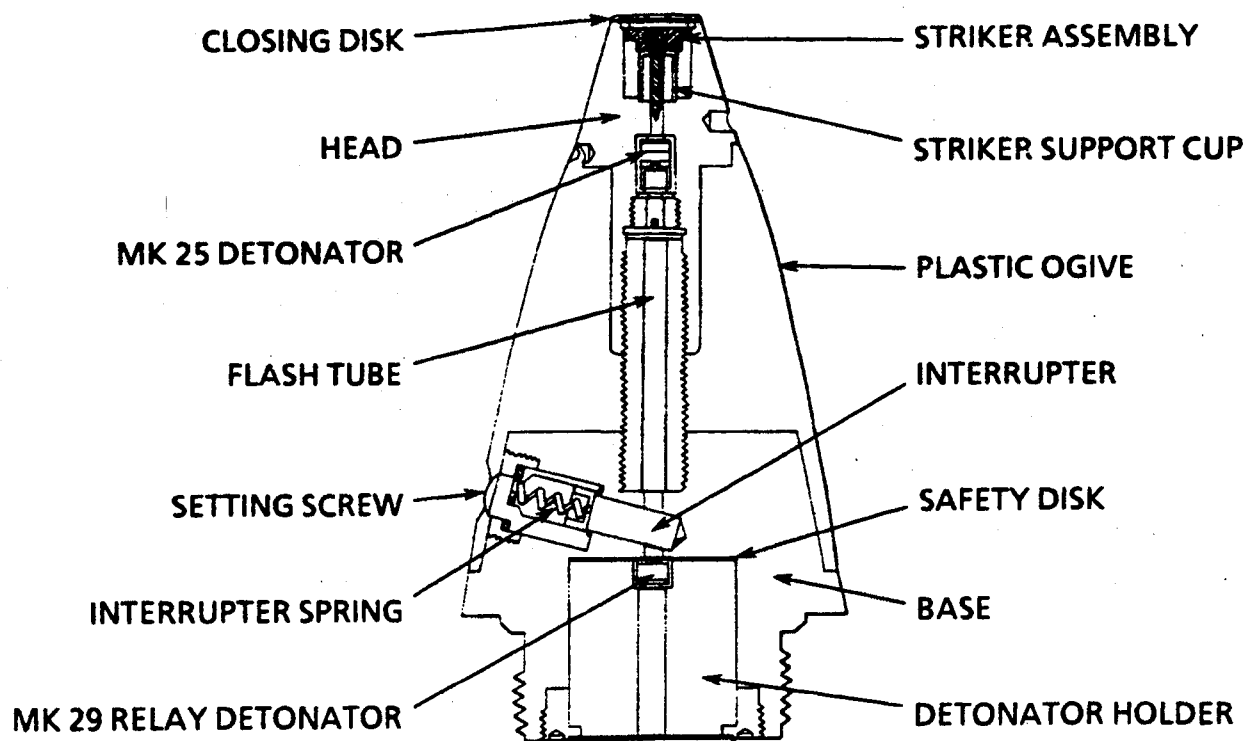
NEW PAGE.

LAST UPDATE: 10/12/90

MIL-HDBK-146
NOTICE2

FUZE: MK 30 Mod 3
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.57 in (116 mm)
XSECT: 2.41 in (61 mm)

- INTRUSION -

DP: 0.81 in (20 mm)
DIA: 1.70 in (43.2 mm)

WT: 1.38 lb (640 g)

THD: 1.70-14NS-1

THD DP: 0.713 in (18.1 mm)

IDENTIFICATION

AGENCY: NSW, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Navy
ASSY DWG: 422 326
PARTS LIST: LD 109 113
SPEC: MIL-F-18699
PUB: SW030-AA-MMO-010

NATIONAL STOCK NO:

1390-00-478-935; 1390-00-640-8727

DODIC: N304

PRIOR MODEL NO: XP-15A, XP-16A

SIMILAR TO: Mk 29, Mk 66

REPLACES: Mk 30 Mods 0 thru 2

REPLACED BY: Mk 30 Mod 5

GENERAL

WEAPON: 3-in/23, 3-in/50, 4-in/50,
5-in/54, 6-in/47 guns; 5-in
spin stabilized rockets

AMMUNITION:

HC, AAC gun projectiles;
Mk 10, 12 & 13 Rockets

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 338 rps

SETBACK: 20,600 g

VELOCITY: 2700 ft/s (823 m/s)

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: Doesn't meet MIL-STD-1316B

SETTERS: Manually by screwdriver

NEW PAGE.

FUZE: MK 30 Mod 3
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/12/90

ARMING DATA

FIRST SAFETY:

Spin: 25 rps no arm,
33 rps all arm

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER: None

DETONATOR: Mk 25 Mod 1 Stab
Mk 29 Mod 0 Relay

LEAD: None

BOOSTER: None

OTHER: None

FUNCTIONING DATA

MODES: SQ

TYPE: Mechanical

CHARACTERISTICS:

TARGET: Surf, Pers, Lt Material

SENSITIVITY:

1 in (25.4 mm) plywood; obliquity,
0 deg.; Velocity, 2625 ft/s
(800 mps); Water 45 deg obliquity

FUNCTION TEMP:

-29 to +54 deg C

MODE ON DELIVERY:

OFF

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL: C

NET EXPL WT: 0.438 g

NET PROP WT: None

STORAGE TEMP: -29 to +54 deg C

REMARKS/DESCRIPTION:

The Mk 30 Fuze requires a Mk 44 or Mk 54 AD fuze in HE rounds for handling and in-bore safety. Prior to launch, the fuze is set to ON for PD SQ action. On firing, centrifugal force moves the slider outward against its spring and into the setting sleeve, unblocking the flash tube. This action takes place after the projectile has left the gun. On impact, the firing pin support collapses and the firing pin is driven into the nose detonator. The flash from the nose detonator passes down the flash tube and initiates the relay detonator which, in turn, causes the AD fuze to function and explode the burster charge of the projectile. The round will dud if fired in the OFF setting. The Mk 30 is the same as the Mk 29 except for contour. The Mk 66 is similar except for contour and the addition of an out-of-line rotor in place of the relay detonator holder. Mods 3 is rain sensitive. The fuze has a dark green, plastic ogive. A 0.01 in metal disk is has been added between the relay detonator and flash channel for added safety.

NEW PAGE.

1-60H

MIL-HDBK-146
NOTICE 2

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**Data for the Mk 31 Mod 2 BD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-61 and 1-62 of MIL-HDBK 146

1-61/1-62

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MIL-HDBK-146
NOTICE 2

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LAST UPDATE: 10/03/90

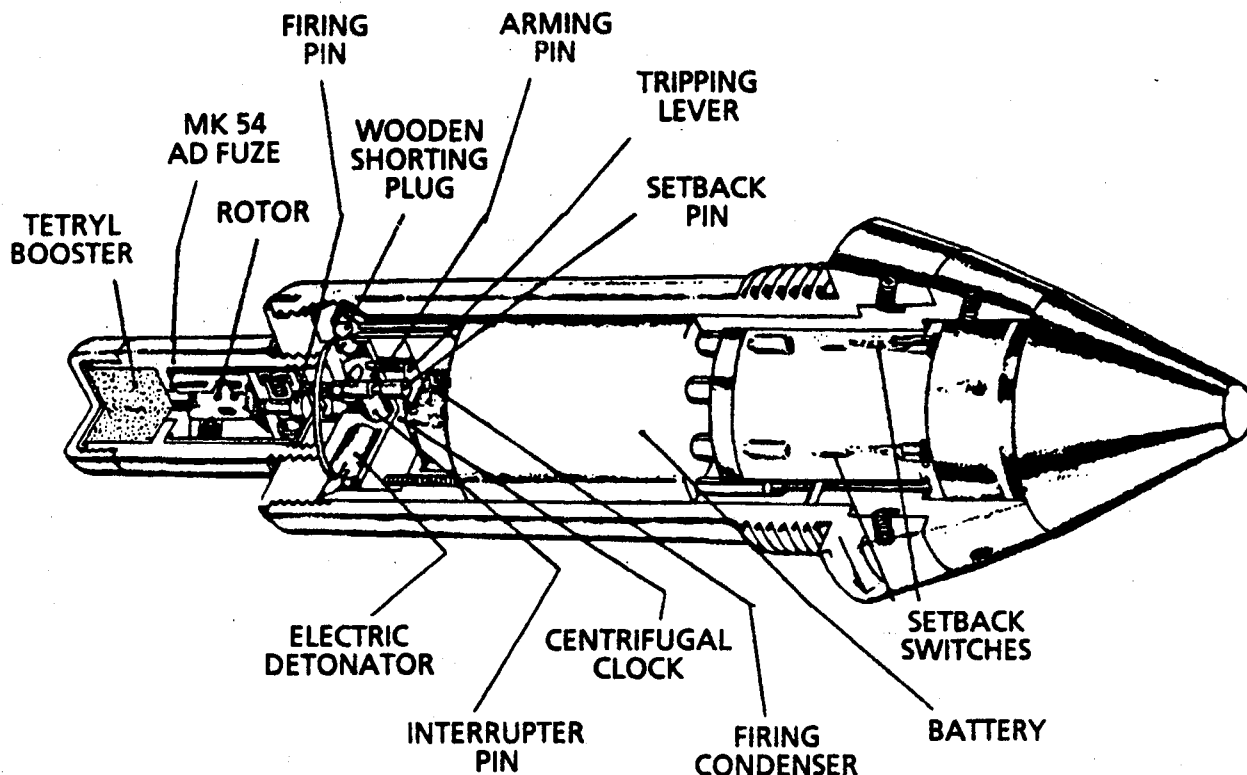
MIL-HDBK-146

NOTICE 2

FUZE: MK 32 Mod 0-40

Proximity Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 12 in (304.8 mm) *

XSECT: 3.3 in (83.8 mm)

- INTRUSION -

DP: 8.25 in (209.6 mm)

DIA: 2.3 in (58.4 mm)

WT: 6.81 lb (3089 g)

THD: 6RH

THD DP: 0.6 in (15.2 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402

CONTACT: Bagnall, J

PHONE: DSN 290-2791

STATUS: Obsolete

USER: Navy

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Mk 40

REPLACES: Nothing

REPLACED BY: Mk 53

GENERAL

WEAPON: 5-in/25, 5-in/38, 5-in/51
caliber guns

AMMUNITION:

AAC

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS:

NEW PAGE.

1-62A

FUZE: MK 32 Mod 0-40
Proximity Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/03/90

ARMING DATA

FIRST SAFETY:
Setback

SECOND SAFETY:

Spin: 50 rps, no arm; 75 rps, all
arm (Mk 54 AD Fuze)

OTHER SAFETY:
None

SAFE/ARM INDICATION:
None

ARMING TIME OR DISTANCE:

0.6 to 0.8 s for dry battery mods;
0.8 to 1.1 s for reserve energizer.

FUNCTIONING DATA

MODES: Proximity

TYPE: Electronic

CHARACTERISTICS:

1800 ft (550 m) minimum range to
target. Maximum influence radius,
about 60 ft (18.3 m)

TARGET: Aircraft

SENSITIVITY:
NA

FUNCTION TEMP:

MODE ON DELIVERY:
Proximity

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: Yes, composition unknown

DETONATOR: None

LEAD: None

BOOSTER: None

OTHER: None

POWER SUPPLY:

Mods 0-20 & 30, dry battery; 50%
reliability after 8 months storage.
Mod 40 has reserve energizer.

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: None

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

All models require Mk 54 AD Fuze. Mods 0-20 and 40 have dry batteries. On firing, acceleration causes three setback switches to close connecting the dry battery to the electrical mechanism and initiating firing condenser charging through a high resistance delay circuit. Simultaneously, the setback pin in the centrifugal clock moves back against its spring starting the clock escapement. Centrifugal force drives the clock through its 0.4-0.6 s setting after which the tripping lever moves over the spring-loaded arming pin. The arming pin moves forward, withdrawing from the interrupter cavity allowing the interrupter pin to move outward by centrifugal force. This clears to flash channel between the electric primer and AD fuze and clears the short on the primer leads. After the firing condenser is charged, the fuze is fully armed. A target detection signal fires the primer and, in turn, the AD fuze. Mod 30 has a reserve energizer with an electrolyte ampoule which is broken by setback. The electrolyte is distributed around the electrodes by centrifugal force. There is no SD feature. Mod 40 has a wave suppression feature. * Length includes Mk 54 AD Fuze.

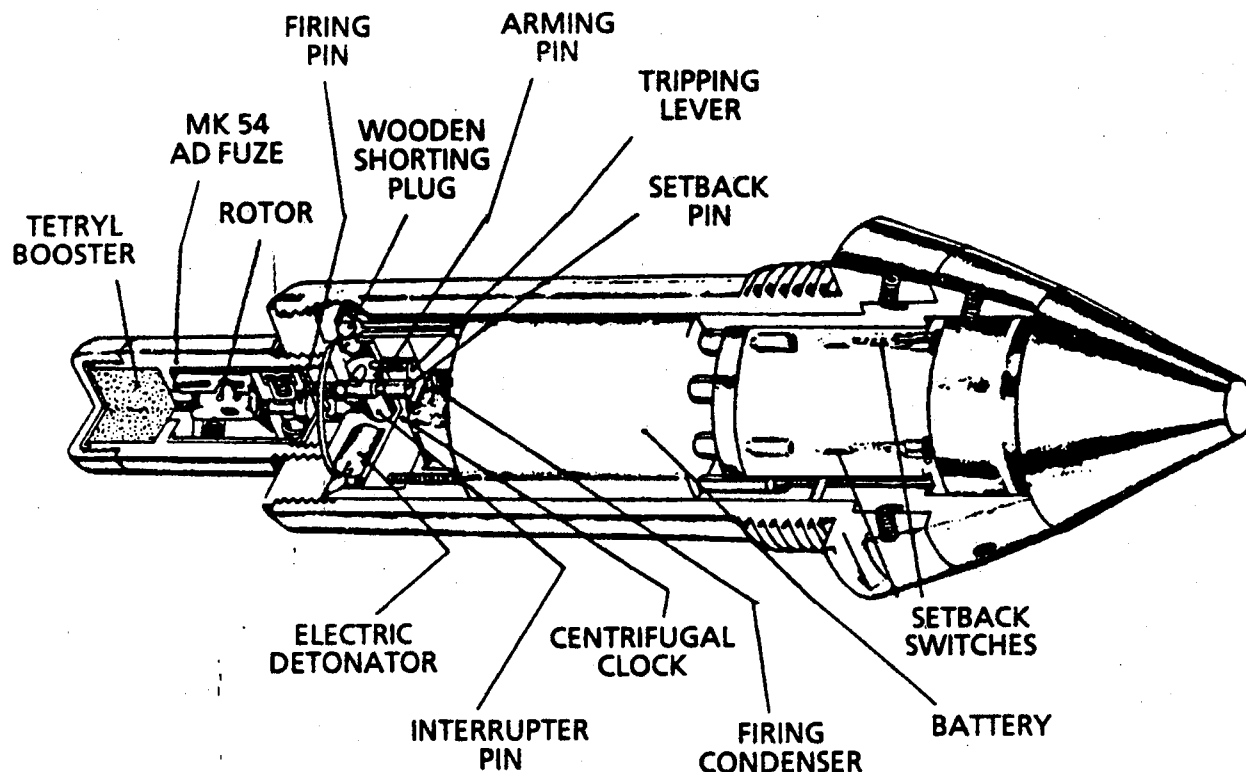
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LAST UPDATE: 10/04/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 40
Proximity Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 12 in (304.8 mm) *
XSECT: 3.3 in (83.8 mm)

- INTRUSION -

DP: 8.25 in (209.6 mm)
DIA: 2.3 in (58.4 mm)

WT: 6.81 lb (3089 g)

THD: 6RH

THD DP: 0.6 in (15.2 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Navy
ASSY DWG:
PARTS LIST:
SPEC:
PUB:

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Mk 32

REPLACES: Nothing

REPLACED BY: Mk 53

GENERAL

WEAPON: 5-in/25 & 5-in/38 caliber guns

AMMUNITION:
AAC

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316
SETTERS:

NEW PAGE.

1-74A

FUZE: MK 40
Proximity Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/04/90

ARMING DATA

FIRST SAFETY:

Setback

SECOND SAFETY:

Spin: 50 rps, no arm; 75 rps, all
arm (Mk 54 AD Fuze)

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

0.8 to 1.1 s

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: Yes, composition unknown

DETONATOR: None

LEAD: None

BOOSTER: None

OTHER: None

FUNCTIONING DATA

MODES: Proximity

TYPE: Electronic

CHARACTERISTICS:

2400 ft (732 m) minimum range to
target. Maximum influence radius,
about 70 ft (21.3 m)

TARGET: Aircraft

SENSITIVITY:

NA

FUNCTION TEMP:

MODE ON DELIVERY:

Proximity

POWER SUPPLY:

Reserve energizer. Eighteen month
normal shelf life.

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: None

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

The fuze requires a Mk 54 AD Fuze. On firing, setback force breaks an ampoule containing electrolyte. Centrifugal force distributes the electrolyte around the battery electrodes. Acceleration causes three setback switches to close connecting the battery to the electrical mechanism and initiating firing condenser charging through a high resistance delay circuit. Simultaneously, the setback pin in the centrifugal clock moves back against its spring starting the clock escapement. Centrifugal force drives the clock through its 0.4-0.6 s setting after which the tripping lever moves over the spring-loaded arming pin. The arming pin moves forward, withdrawing from the interrupter cavity allowing the interrupter pin to move outward by centrifugal force. This clears to flash channel between the electric primer and AD fuze and clears the short on the primer leads. After the firing condenser is charged, the fuze is fully armed. A target detection signal fires the primer and, in turn, the AD fuze. There is no SD feature. The fuze has a wave suppression feature. * Length includes Mk 54 AD Fuze.

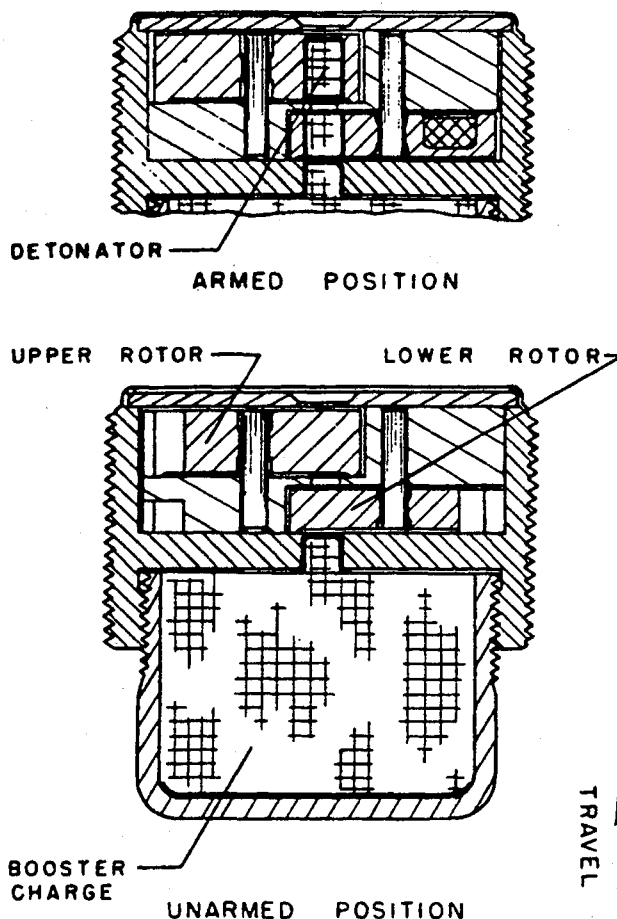
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LAST UPDATE: 03/06/92

MIL-HDBK-146
NOTICE 2

FUZE: MK 44 Mod 1,2
Aux Det Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.819 in (46.2 mm)
XSECT: 1.31 in (33.3 mm)

- INTRUSION -

DP:
DIA:

WT: 0.471 lb (214 g)
THD: 1.561-20NS-2 (LH)
THD DP:

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G41
CONTACT: Niemeyer, R
PHONE: DSN 290-2750
STATUS: Obsolete
USER: Navy
ASSY DWG: 1 200 862 (MOD 3)
PARTS LIST: LD 292270 (MOD 3)
SPEC: MIL-F-18905 (NORD)
PUB: SW030-AA-MMO-010

NATIONAL STOCK NO:
1390-00-653-9778

DODIC: N221

PRIOR MODEL NO: None

SIMILAR TO: Mk 52

REPLACES: Mk 44 Mod 0

REPLACED BY:

GENERAL

WEAPON: 5-in/38 & 5-in/54
Mk 16 & Mk 18 Guns

AMMUNITION:

VT-RF & VT-IR Fuzes
MT & PD Fuzes

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 338 rps
SETBACK: 20,600 g
VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316B
SETTERS:

Supersedes page 1-81 of MIL-HDBK-146.

FUZE: MK 44 Mod 1,2
Aux Det Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/06/92

ARMING DATA

FIRST SAFETY:

Spin: 50 rps no arm,
75 all arm

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

1.5 to 1.8 m
13.7 to 41.1 m

FUNCTIONING DATA

MODES: See fuze

TYPE: Mechanical

CHARACTERISTICS:

TARGET: See fuze

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

EXPLOSIVE COMPONENTS

S&A DEVICE: Spin rotors

PRIMER: None

DETONATOR: MK 37 Mod 0

LEAD: Tetryl

BOOSTER: 25 g tetryl

OTHER: None

POWER SUPPLY:

None

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO: 0408

US HCSDS:

UN CL/DIV SCG: 1.1 D

US DOT SHIP CL: A

NET EXPL WT: 1.6329 g

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

Used in early VT, PD, and MT nose fuzes to provide inbore safety. On firing, after setback, centrifugal force activates two center rotors. Weights in rotors tend to move them outboard overcoming springs in detents. Rotors turn until each is halted by its stop pin. In this position, each rotor has placed its explosive charge in line with booster lead-in and hole in cover disc. Rotors are held in this position by torque of weights tending to reach a position farther outboard. The torque is resisted by the stop pins. When nose fuze in projectile fires, shock wave from explosion passes through cover disc to detonator in upper rotor. The detonator initiates lead charge in lower rotor and, in turn, booster lead-in and booster charge. If either explosive charge in rotors is accidentally initiated when fuze is unarmed, booster lead-in and booster will not be activated. Mod 1 used with tube-type proximity fuzes, now replaced with Mk 18 and Mk 42 RFSDs. The Mod 2 was developed and used with M51A2 PD Army nose fuze in spin-stabilized rocket. Later used in 5-in/38 & 5-in/54 projectiles with PD and MT fuzes.

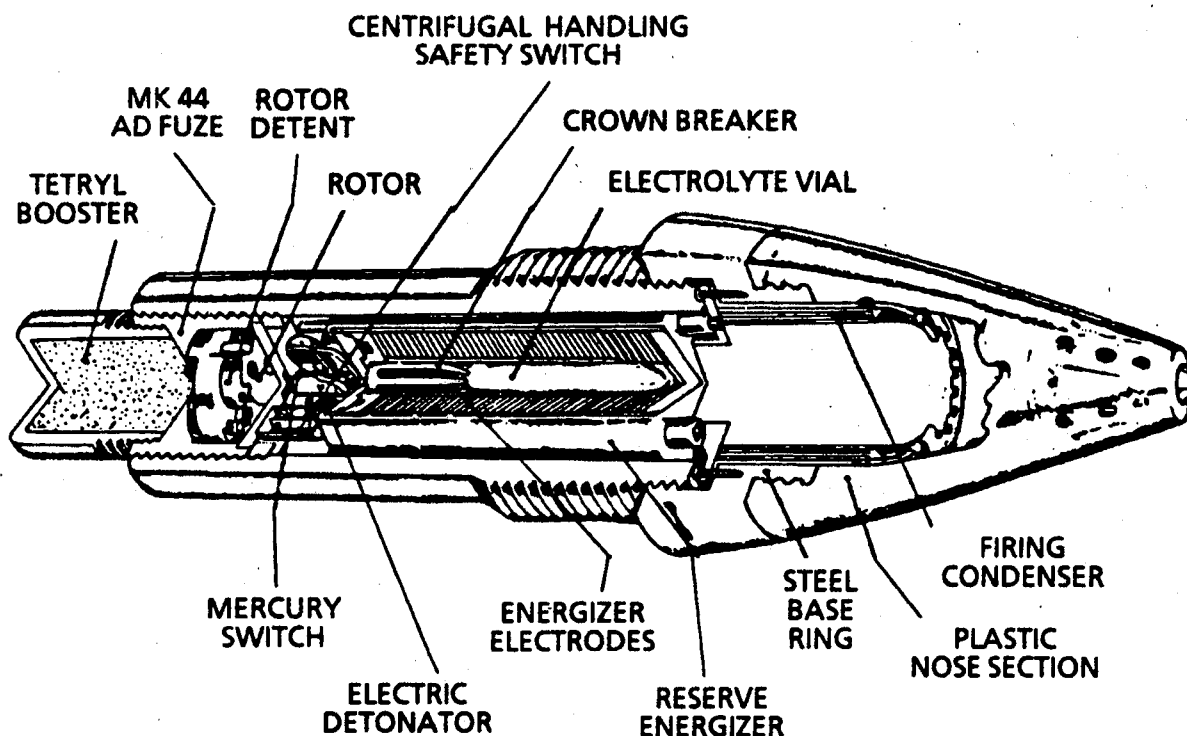
Supersedes page 1-82 of MIL-HDBK-146.

LAST UPDATE: 10/04/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 45 Mods 1-12
Proximity Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 7.7 in (195.6 mm) *
XSECT: 2.4 in (61.0 mm)

- INTRUSION -

DP:
DIA:

WT: 2.72 lb (1234 g)

THD: 12 RH

THD DP: 1.0 in (25.4 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Army, Navy
ASSY DWG:
PARTS LIST:
SPEC:
PUB: Navy Projectiles and Fuzes, 1945

NATIONAL STOCK NO:
None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Mk 47, Mk 53, Mk 58,
Mk 59

REPLACES:

REPLACED BY: Mk 58

GENERAL

WEAPON: Army: 55, 90, 105, 120,
155, 240-mm & 8-in guns.
Navy: 3-in/50 caliber guns

AMMUNITION:

HE, AA

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS:

Supersedes page 1-85 of MIL-HDBK-146.

FUZE: MK 45 Mods 1-12
Proximity Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/04/90

ARMING DATA

FIRST SAFETY:

Setback ruptures reserve energizer electrolyte ampoule.

SECOND SAFETY:

Spin distributes electrolyte around battery electrodes and removes short from primer.

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

2100 ft (640 m)
0.6 to 1.0 s

FUNCTIONING DATA

MODES: Proximity

TYPE: Electronic

CHARACTERISTICS:

50 ft (15 m) maximum influence radius; 1800 ft (550 m) minimum range.

TARGET: Aircraft

SENSITIVITY:

NA

FUNCTION TEMP:

MODE ON DELIVERY:

Proximity

EXPLOSIVE COMPONENTS

S&A DEVICE: None, requires Mk 44 AD Fuze for bore safety.

PRIMER: Yes, composition unknown

DETONATOR: None

LEAD: None

BOOSTER: None

OTHER: None

POWER SUPPLY:

Reserve energizer.

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

On firing, acceleration causes the fingers of the crown breaker to open up, allowing the electrolyte vial to break against the bottom of the breaker. Centrifugal force distributes the electrolyte throughout the energizer, activating it in 0.2 to 0.3 s. Centrifugal force also opens the handling safety switch, which previously had been shorting the firing condenser. The firing condenser begins to accumulate a charge through its high resistance electrical delay and current is supplied to the VT element. Centrifugal force causes the mercury switch to open a short across the primer leads. The fuze is fully armed in 0.6 to 1.0 s. On target approach, the reflected electromagnetic signal causes the VT element to discharge the firing condenser through the electric primer. The output of the primer functions the Mk 44 AD Fuze and, in turn, the projectile main charge. Mk 45 and Mk 58 Fuzes have single mercury switches; Mk 47, Mk 53 and Mk 59 have two. * Length includes Mk 44 AD Fuze.

LAST UPDATE: 10/04/90

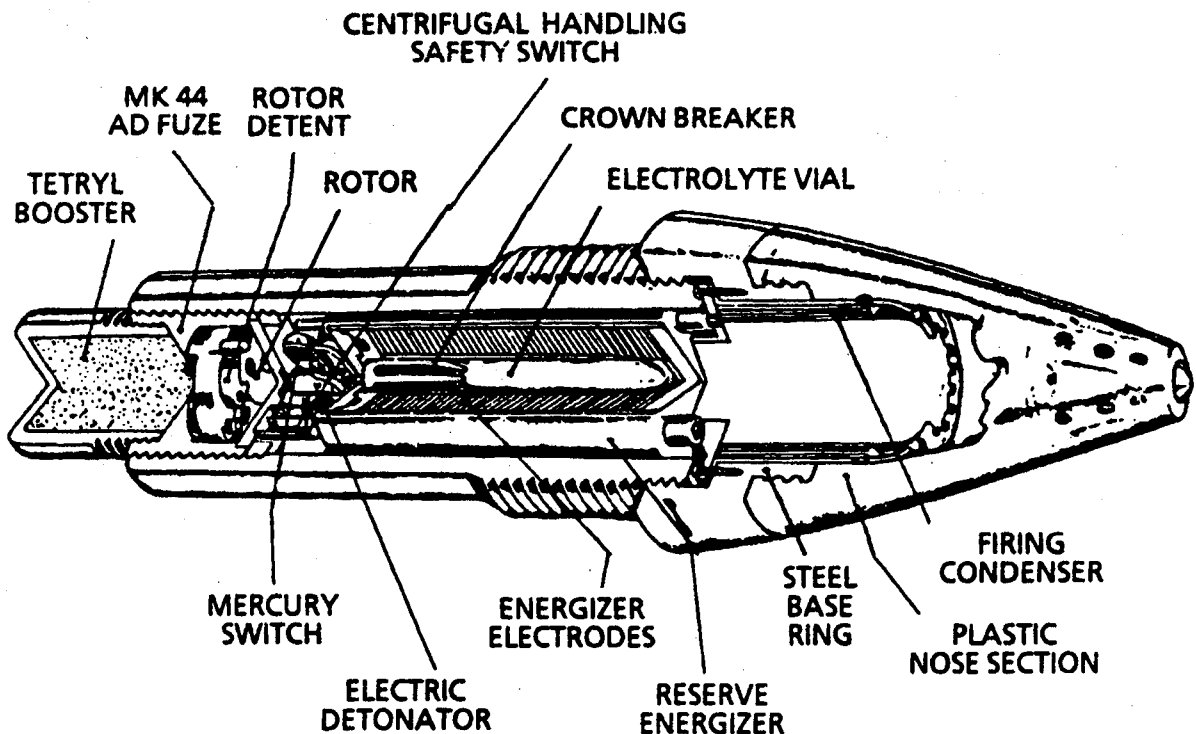
MIL-HDBK-146

NOTICE 2

FUZE: MK 47 Mod 0

Proximity Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 8.9 in (226.1 mm) *

XSECT: 3.3 in (83.8 mm)

- INTRUSION -

DP:

DIA:

WT: 4.28 lb (1941 g)

THD: 6 RH

THD DP: 0.5 in (12.7 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402

CONTACT: Bagnall, J

PHONE: DSN 290-2791

STATUS: Obsolete

USER: Navy

ASSY DWG:

PARTS LIST:

SPEC:

PUB: Navy Projectiles and Fuzes, 1945

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Mk 45, Mk 53, Mk 58,
Mk 59

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 6-in/47 caliber guns

AMMUNITION:

HE

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316
SETTERS:

NEW PAGE.

1-92A

FUZE: MK 47 Mod 0
Proximity Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/04/90

ARMING DATA

FIRST SAFETY:

Setback ruptures reserve energizer electrolyte ampoule.

SECOND SAFETY:

Spin distributes electrolyte around battery electrodes and removes short from primer.

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

2100 ft (640 m)
0.6 to 1.0 s

FUNCTIONING DATA

MODES: Proximity

TYPE: Electronic

CHARACTERISTICS:

2400 ft (732 m) minimum range.

TARGET: Shore bombardment

SENSITIVITY:

NA

FUNCTION TEMP:

MODE ON DELIVERY:

Proximity

EXPLOSIVE COMPONENTS

S&A DEVICE: None, requires Mk 44 AD Fuze for bore safety.

PRIMER: Yes, composition unknown

DETONATOR: None

LEAD: None

BOOSTER: None

OTHER: None

POWER SUPPLY:

Reserve energizer.

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

On firing, acceleration causes the fingers of the crown breaker to open up, allowing the electrolyte vial to break against the bottom of the breaker. Centrifugal force distributes the electrolyte throughout the energizer, activating it in 0.2 to 0.3 s. Centrifugal force also opens the handling safety switch, which previously had been shorting the firing condenser. The firing condenser begins to accumulate a charge through its high resistance electrical delay and current is supplied to the VT element. Centrifugal force causes the mercury switch to open a short across the primer leads. The fuze is fully armed in 0.6 to 1.0 s. On target approach, the reflected electromagnetic signal causes the VT element to discharge the firing condenser through the electric primer. The output of the primer functions the Mk 44 AD Fuze and, in turn, the projectile main charge. Mk 45 and Mk 58 Fuzes have single mercury switches; Mk 47, Mk 53 and Mk 59 have two. * Length includes Mk 44 AD Fuze.

NEW PAGE.

MIL-HDBK-146
NOTICE 2

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**Data for the M48A3 PD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-93 and 1-94 of MIL-HDBK 146

1-93/1-94

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MIL-HDBK-146
NOTICE 2

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MIL-HDBK-146
NOTICE 2

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**Data for the Mk 48 Mod 4 BD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-97 and 1-98 of MIL-HDBK 146.

1-97/1-98

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MIL-HDBK-146
NOTICE 2

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LAST UPDATE: 02/11/92

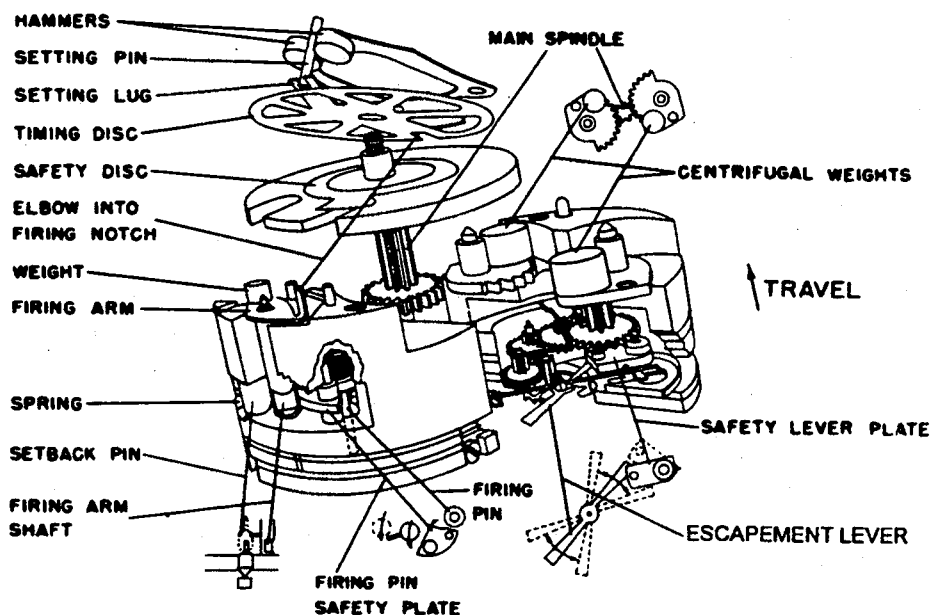
MIL-HDBK-146

NOTICE 2

FUZE: MK 50 Mod 8

MT Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.308 in (109.5 mm)

XSECT: 2.98 in (75.7 mm)

- INTRUSION -

DP: 0.803 in (20.4 mm)

DIA: 1.700 in (43.2 mm)

WT: 2.280 lb (1034 g)

THD: 1.700-14NS-1

THD DP: 0.724 in (18.4 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G41

CONTACT: Niemeyer, R

PHONE: DSN 290-2750

STATUS: Obsolete

USER: Navy

ASSY DWG: 1 378 979 (Mod 8)

PARTS LIST: LD 295 860 (Mod 8)

SPEC: RTP 1 418 645 (Mod 8)

PUB: SW030-AA-MMO-010

NATIONAL STOCK NO:

1390-00-986-7520

DODIC: N212

PRIOR MODEL NO: None

SIMILAR TO: Mk 25-5, 51-5, 61-1,

Mk 342-0, Mk 349-1

REPLACES: Mk 50-0 thru 7

REPLACED BY: Mk 349

GENERAL

WEAPON: 5-in/38 gun

AMMUNITION:

ACC, Mk 34, Mk 35; WP Mk 74-1;

Chaff Mk 78-0; HE; Illum; Dummy

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 208 rps

SETBACK: 16,000 g

VELOCITY: 2,600 ft/sec (792 m/s)

CREEP: NA

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: Hand

Supersedes page 1-99 of MIL-HDBK-146.

FUZE: MK 50 Mod 8
MT Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 02/11/92

ARMING DATA

FIRST SAFETY:

Spin: 33 rps, no arm
100 rps, all arm *

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

No

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: Mk 104-0

DETONATOR: None

LEAD: None

BOOSTER: 2.59 g Black powder

OTHER: Mk 44 ADF required for HE
projectiles

FUNCTIONING DATA

MODES: Time, settable

TYPE: Mechanical

CHARACTERISTICS:

0.8 to 45 s delay

TARGET: Aircraft, ground

SENSITIVITY:

NA

FUNCTION TEMP:

MODE ON DELIVERY:

Safe (S)

POWER SUPPLY:

Helper spring

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0349

US HCSDS:

UN CL/DIV SCG: 1.4 S

US DOT SHIP CL: A

NET EXPL WT: 0.028 g

NET PROP WT: 2.59 g

STORAGE TEMP:

REMARKS/DESCRIPTION:

The Mk 50 Fuze was used with a Mk 44 Aux Det Fuze to provide handling and in-bore safety. Time is set by rotating lower cap and setting pin which rotates timing disc. Upon firing, setback of the hammer spring releases the timer disc and moves the setback pin back which partially releases the firing shaft and safety lever plate. Centrifugal force releases a detent on the escapement lever and with the help of a kick-spring rotates the two drive gears which, in turn, drive the main pinion. When the timing disc has rotated to the set time, the firing shaft rotates into a notch, releasing the safety plate which releases the spring-loaded firing pin to function the primer. The primer ignites the relay charge and, in turn, the aux det or magazine charge. In an HE-loaded projectile, this fuze must be used with an aux det fuze.

* This safety feature relates to the fuze timer only. Explosive train interruption must be provided by a separate aux det fuze.

MIL-HDBK-146
NOTICE 2

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**Data for the M51A5 PD Fuze
may be found in MIL-HDBK-145B.**

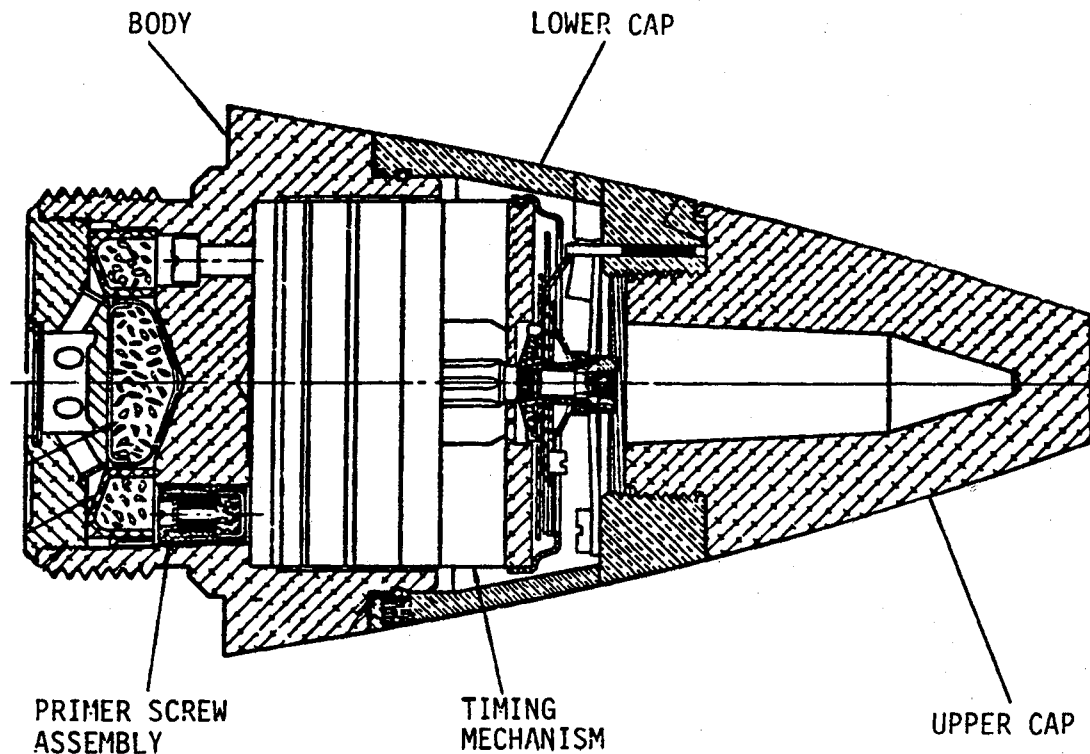
Supersedes pages 1-101 and 1-102 of MIL-HDBK 146.

1-101/1-102

MIL-HDBK-146
NOTICE 2

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ILLUSTRATION:



- OVERALL SIZE -

LG: 4.54 in (118 mm)

XSECT: 2.4 in (61 mm)

- INTRUSION -

DP: 0.803 in (20 mm)

DIA: 1.700 in (43.2 mm)

WT: 1.3 lb (599 g)

THD: 1.70-14NS-1

THD DP: 0.724 in (18.4 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G41

CONTACT: Pomeroy, S

PHONE: DSN 290-1995

STATUS: Obsolete

USER: Navy

ASSY DWG: 1 475 145

PARTS LIST: LD 299218

SPEC: OS 7165

PUB: SW030-AA-MMO-010

NATIONAL STOCK NO:

1390-00-540-9201

DODIC: N247

PRIOR MODEL NO:

SIMILAR TO: Mk 50, Mk 25, Mk 342

REPLACES: Mods 0-4

REPLACED BY: Mk 342

GENERAL

WEAPON: 3-in/50 Mk 21 & 22 Guns

AMMUNITION:

AA Mk 27, I11 Mk 25

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 338 rps

SETBACK: 21,000 g

VELOCITY: 2700 ft/s (823 m/s)

CREEP: NA

FLIGHT TIME: 30 s

SAFETY STD: Doesn't meet MIL-STD-1316B

SETTERS: Hand set

NEW PAGE.

1-104A

FUZE: MK 51 Mod 5
MT Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 02/11/92

ARMING DATA

FIRST SAFETY:

Spin: 33 rps, non-function
100 rps, all-function *

SECOND SAFETY:

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

None

FUNCTIONING DATA

MODES: Time, Settable

TYPE: Mechanical, Junghans Escapement

CHARACTERISTICS:

Settable from 1 to 30 s
in 0.20 s increments

TARGET: Surface - ship

SENSITIVITY:

NA

FUNCTION TEMP:

-29 to +54 deg C

MODE ON DELIVERY:

Safe (

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER: Mk 104

DETONATOR:

LEAD:

BOOSTER: 2.59 g Black powder,
Aux Det Fuze Mk 54
required for HE Proj.

OTHER:

POWER SUPPLY:

Helper spring

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0349

US HCSDS: 40455

UN CL/DIV SCG: 1.4 S

US DOT SHIP CL: C

NET EXPL WT: 0.028 g

NET PROP WT: 2.59 g

STORAGE TEMP: -29 to +54 deg C

REMARKS/DESCRIPTION:

The Mk 51 Fuze was used with a Mk 54 Aux Det Fuze to provide handling and in-bore safety in HE projectiles. Time is set by rotating lower cap and setting pin which rotates timing disc. Upon firing, setback of the hammer spring releases the timer disc and moves the setback pin back which partially releases the firing shaft and safety lever plate. Centrifugal force releases a detent on the escapement lever and with the help of a kick-spring rotates the two drive gears which, in turn, drive the main pinion. When the timing disc has rotated to the set time, the firing shaft rotates into a notch, releasing the safety plate which releases the spring-loaded firing pin to function the primer. The primer ignites the relay charge and, in turn, the aux det or magazine charge. In an HE-loaded projectile, this fuze must be used with an aux det fuze.

* This safety feature relates to the fuze timer only. Explosive train interruption must be provided by a separate aux det fuze.

NEW PAGE.

1-104B

MIL-HDBK-146
NOTICE 2

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**Data for the M52A2 PD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-105 and 1-106 of MIL-HDBK 146.

1-105/1-106

MIL-HDBK-146
NOTICE 2

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**Data for the Mk 52 Mod 0 AD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-107 and 1-108 of MIL-HDBK 146.

1-107/1-108

LAST UPDATE: 10/04/90

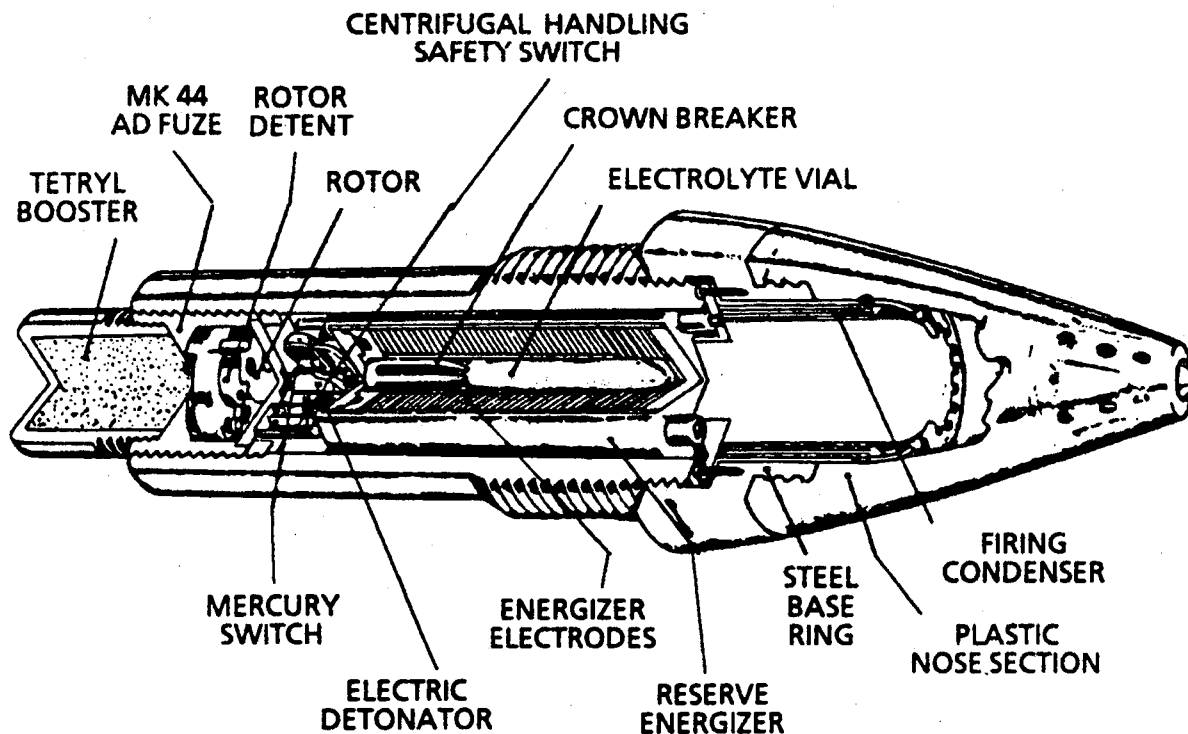
MIL-HDBK-146

NOTICE 2

FUZE: MK 53 Mods 0-6

Proximity Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 9.0 in (228.6 mm) *
XSECT: 3.31 in (84.1 mm)

- INTRUSION -

DP: 5.1 in (129.5 mm)
DIA:

WT: 4.79 lb (2172 g)

THD: 2.65-10NS-2

THD DP: 0.5 in (12.7 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Navy
ASSY DWG: 584 004
PARTS LIST:
SPEC:
PUB: Navy Projectiles and Fuzes, 1945

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Mk 45, Mk 47, Mk 58,
Mk 59

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 5-in/25, 5-in/38, 5-in/51
caliber guns

AMMUNITION:

AA

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS:

Supersedes page 1-111 of MIL-HDBK-146.

1-111

FUZE: MK 53 Mods 0-6
Proximity Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/04/90

ARMING DATA

FIRST SAFETY:

Setback ruptures reserve energizer electrolyte ampoule.

SECOND SAFETY:

Spin distributes electrolyte around battery electrodes and removes short from primer.

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

2100 ft (640 m)
0.6 to 1.0 s

FUNCTIONING DATA

MODES: Proximity

TYPE: Electronic

CHARACTERISTICS:

2100 ft (640 m) minimum range, Mods 0-2; 1500 ft (457 m) minimum range, Mods 3 and up.
80 ft (24.4 m) influence radius.

TARGET: Aircraft

SENSITIVITY:

NA

FUNCTION TEMP:

MODE ON DELIVERY:

Proximity

EXPLOSIVE COMPONENTS

S&A DEVICE: Mk 8 RFSD

PRIMER: Yes, composition unknown

DETONATOR: None

LEAD: None

BOOSTER: None

OTHER: None

POWER SUPPLY:

Reserve energizer.

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

On firing, acceleration causes the fingers of the crown breaker to open up, allowing the electrolyte vial to break against the bottom of the breaker. Centrifugal force distributes the electrolyte throughout the energizer, activating it in 0.2 to 0.3 s. Centrifugal force also opens the handling safety switch, which previously had been shorting the firing condenser. The firing condenser begins to accumulate a charge through its high resistance electrical delay and current is supplied to the VT element. Centrifugal force causes the mercury switch to open a short across the primer leads. The fuze is fully armed in 0.6 to 1.0 s. On target approach, the reflected electromagnetic signal causes the VT element to discharge the firing condenser through the electric primer. The output of the primer functions the Mk 44 AD Fuze and, in turn, the projectile main charge. Mk 45 and Mk 58 Fuzes have single mercury switches; Mk 47, Mk 53 and Mk 59 have two. * Length includes Mk 44 AD Fuze.

MIL-HDBK-146.
NOTICE 2

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**Data for the Mk 55 Mod 0 AD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-119 and 1-120 of MIL-HDBK 146.

1-119/1-120

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MIL-HDBK-146
NOTICE 2

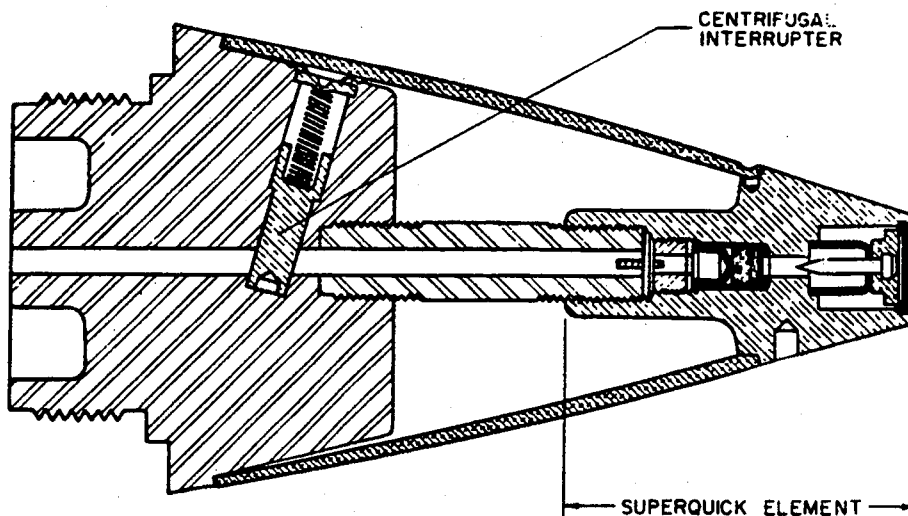
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LAST UPDATE: 02/11/92

MIL-HDBK-146
NOTICE 2

FUZE: M57
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.53 in (115 mm)

XSECT: 2.38 in (61.3 mm)

- INTRUSION -

DP: 0.81 in (20.6 mm)

DIA:

WT: 1.41 lb (640 g)

THD: 1.7-14UNS-1A

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F

CONTACT: Eckstein, G

PHONE: DSN 880-4216

STATUS: Obsolete

USER: NATO

ASSY DWG: 73-2-138

PARTS LIST:

SPEC:

PUB: TM 9-1300-204

NATIONAL STOCK NO:

1390-00-935-2095

DODIC: N303

PRIOR MODEL NO: T18E2

SIMILAR TO: M48A3, M51A5, M557, M572

REPLACES: M48A3 for Chem Proj

REPLACED BY:

GENERAL

WEAPON: 90 mm Tank Gun &
105 mm Howitzer

AMMUNITION:

90 mm Cart Smoke WP M313

105 mm Cart Smoke WP M60A3

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 550 rps

SETBACK: 21,000 g

VELOCITY: 3100 ft/s (945 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: None

Supersedes page 1-123 of MIL-HDBK-146.

FUZE: M57
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 02/11/92

ARMING DATA

FIRST SAFETY:

Spin: 25 rps no arm, 33 all arm

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

0.2 m approx
Bore safe only

FUNCTIONING DATA

MODES: SQ

TYPE: Mechanical

CHARACTERISTICS:

170 microseconds SQ

TARGET: Ground - screening

SENSITIVITY:

1 in (25.4 mm) wood screen

FUNCTION TEMP:

-40 to +52 deg C

MODE ON DELIVERY:

SQ

EXPLOSIVE COMPONENTS

S&A DEVICE: Spin interrupter

PRIMER: None

DETONATOR: M24 Stab

LEAD: None

BOOSTER: None

OTHER: None

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0106

US HCSDS:

UN CL/DIV SCG: 1.1 B

US DOT SHIP CL: C

NET EXPL WT: 0.253 g

NET PROP WT: None

STORAGE TEMP: -62 deg C 3 days max
+71 deg C 4 hrs/day max

REMARKS/DESCRIPTION:

Fuze safety is obtained by means of a crush cup under the firing pin and an angled interrupter in the flash tube. On firing, acceleration keeps the interrupter in the inward, rearward position. After setback is finished, centrifugal force moves the interrupter outward against its spring, opening the SQ flash tube. On impact, the firing pin is forced rear-ward crushing the support cup and functioning the M24 Detonator which flashes down the tube to the explosive components in the projectile.

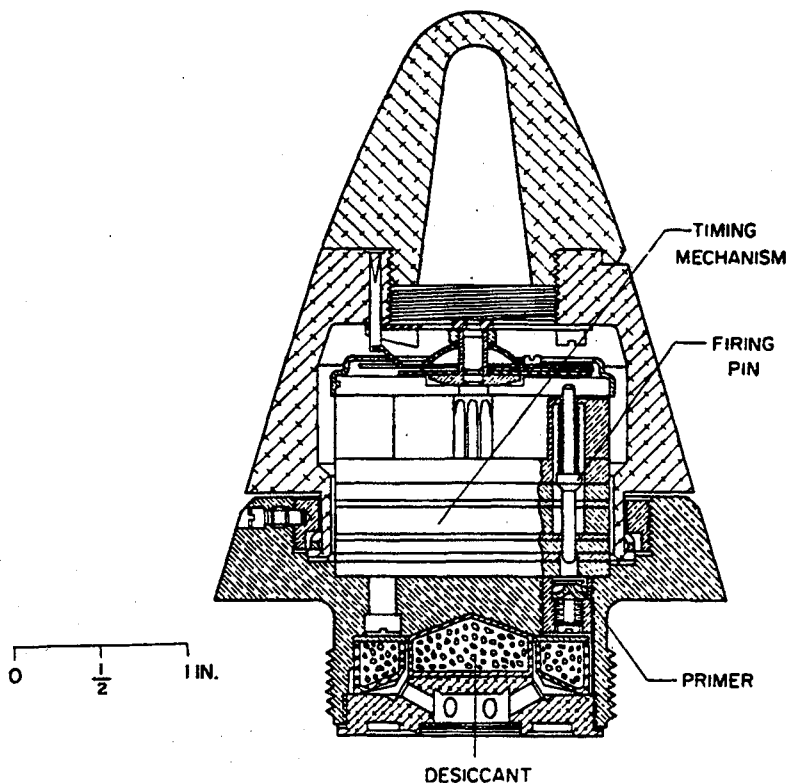
For some projectiles, the M57 must use a booster pellet and the M21A4 Booster is used. The M57 is the same as the M48A3 except that it does not have the M1 Delay Plunger and is SQ only. The later M508A1 was an M57 Fuze with an M125A1 Booster.

LAST UPDATE: 03/06/92

MIL-HDBK-146
NOTICE 2

FUZE: MK 57 Mod 0-3
MT Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.335 in (110.1 mm)
XSECT: 2.98 in (75.7 mm)

- INTRUSION -

DP: 0.805 in (20.4 mm)
DIA:

WT: 1.92 lb (871 g)

THD: 1.70-14NS-1

THD DP:

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G41
CONTACT: Pomeroy, S
PHONE: DSN 290-1995
STATUS: Obsolete
USER:
ASSY DWG: 863 160 (Mod 2)
PARTS LIST: LD 272 859, LD 299 837
SPEC: OS 6583
PUB:

NATIONAL STOCK NO:
1390-00-038-9721 (Mod 2)
DODIC: N241
PRIOR MODEL NO:
SIMILAR TO:

REPLACES:
REPLACED BY:

GENERAL

WEAPON: 8-in/55 Gun

AMMUNITION:
HE or GP

LOCATION: Nose
BALLISTIC LEVELS:
ROTATION: 170 rps
SETBACK: 7800 g
VELOCITY:

CREEP:
FLIGHT TIME:
SAFETY STD:
SETTERS:

Supersedes page 1-125 of MIL-HDBK-146.

FUZE: MK 57 Mod 0-3
MT Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/06/92

ARMING DATA

FIRST SAFETY:

Spin: Setback
28 rps no arm, 100 all arm

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:
No

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR:

LEAD:

BOOSTER: Black powder

OTHER: Mk 55 Aux Det

FUNCTIONING DATA

MODES: Time

TYPE: Mechanical

CHARACTERISTICS:

Mech., Junghans Esc.
0.8 - 45 s

TARGET: Antiaircraft, ground
SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0257

US HCSDS:

UN CL/DIV SCG: 1.4 B

US DOT SHIP CL: C

NET EXPL WT: 3.23865 g

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

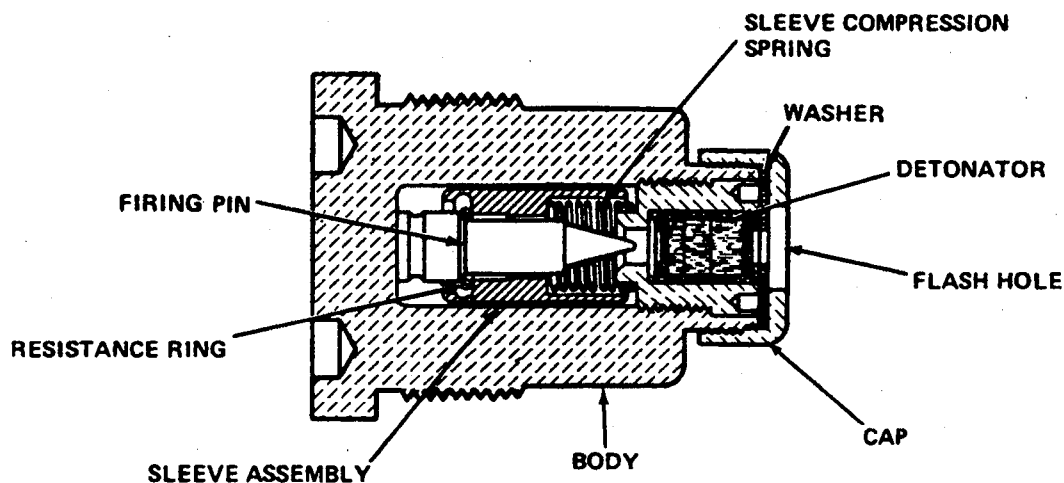
Mod 3 has setback pin, slider escapement release, hardened firing arm and premature trap.

LAST UPDATE: 02/11/92

MIL-HDBK-146
NOTICE 2

FUZE: M58
BD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.61 in (40.9 mm)
XSECT: 1.0 in (25.4 mm)

- INTRUSION -

DP: 1.39 in (35.3 mm)
DIA: 0.94 in (23.9 mm)

WT: 0.203 lb (92.3 g)
THD: 1.02-18NS-3(LH)
THD DP: 0.50 in (12.7 mm)

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F
CONTACT:
PHONE: DSN 880-
STATUS: Obsolete
USER: Army
ASSY DWG: 73-1-191
PARTS LIST:
SPEC:
PUB: TM 43-0001-28

NATIONAL STOCK NO:

DODIC:
PRIOR MODEL NO:
SIMILAR TO: M58 (HE)

REPLACES:
REPLACED BY:

GENERAL

WEAPON: M3A1 and M6 37 mm Guns

AMMUNITION:
M63 Mod 1 Practice Shell

LOCATION: Base
BALLISTIC LEVELS:
ROTATION:
SETBACK:
VELOCITY:

CREEP:
FLIGHT TIME:
SAFETY STD: Doesn't meet MIL-STD-1316
SETTERS: None

Supersedes page 1-127 of MIL-HDBK-146.

FUZE: M58
BD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 02/11/92

ARMING DATA

FIRST SAFETY:

Setback: 8,000 g no arm
13,000 g all arm

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

None

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: M18

LEAD: None

BOOSTER: None (HE version had
tetryl)

OTHER: None

FUNCTIONING DATA

MODES: BD

TYPE: Mechanical

CHARACTERISTICS:

TARGET:

SENSITIVITY:

FUNCTION TEMP:

-40 to +52 deg C

MODE ON DELIVERY:

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT: 0.337 g

NET PROP WT:

STORAGE TEMP: -62 deg C, 3 days max
+71 deg C, 4 hr/day max

REMARKS/DESCRIPTION:

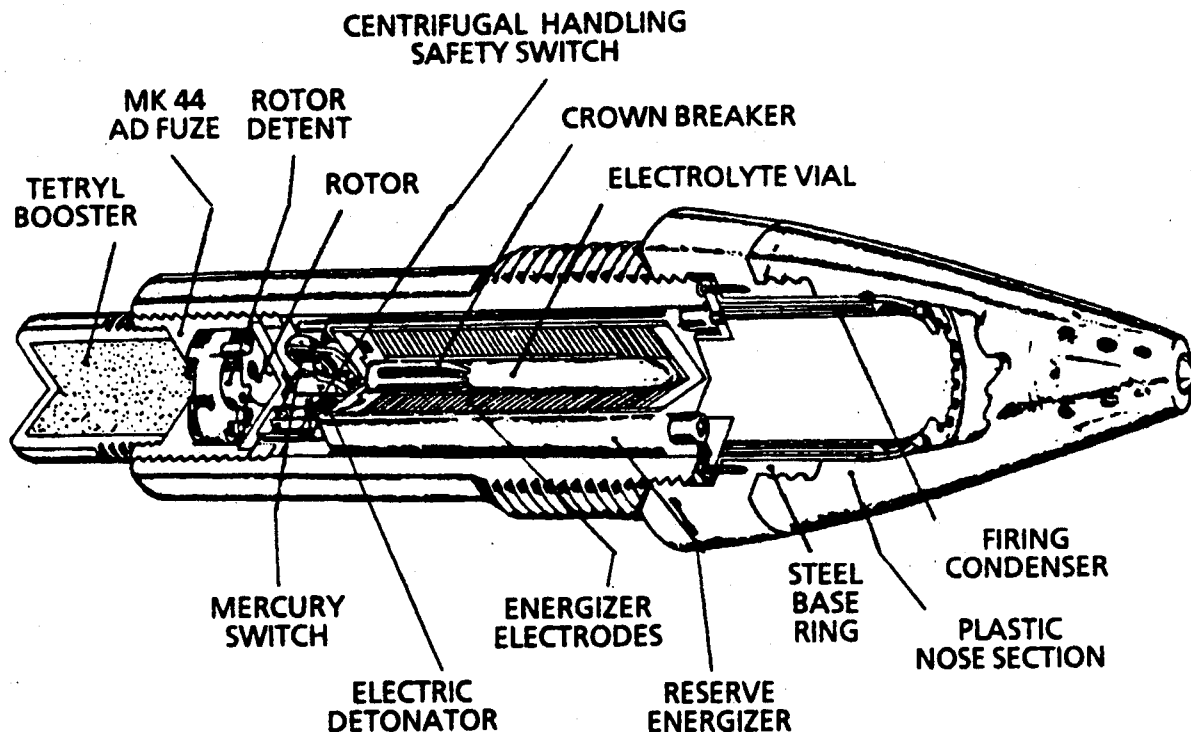
Setback from weapon firing forces the resistance ring back over the shoulder of the firing pin and into a groove near the back of the firing pin, locking the pin in a more forward position in the sleeve. During the flight of the projectile, the combined firing pin and sleeve assembly is held out of contact with the detonator by the sleeve compression spring. On impact, inertia of the sleeve and firing pin overcomes the spring and drives the pin into the detonator.

LAST UPDATE: 10/04/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 58 Mod 0
Proximity Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 8.5 in (215.9 mm) *
XSECT: 2.4 in (61.0 mm)

- INTRUSION -

DP:
DIA:

WT: 1.98 lb (898.1 g)
THD: 12 RH
THD DP: 1.0 in (25.4 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Navy
ASSY DWG:
PARTS LIST:
SPEC:
PUB: Navy Projectiles and Fuzes, 1945

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Mk 45, Mk 47, Mk 53,
Mk 59

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 3-in/50 caliber guns

AMMUNITION:

AA

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316
SETTERS:

NEW PAGE.

1-128A

FUZE: MK 58 Mod 0
Proximity Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/04/90

ARMING DATA

FIRST SAFETY:

Setback ruptures reserve energizer electrolyte ampoule.

SECOND SAFETY:

Spin distributes electrolyte around battery electrodes and removes short from primer.

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

1500 ft (457 m)

FUNCTIONING DATA

MODES: Proximity

TYPE: Electronic

CHARACTERISTICS:

1500 ft (457 m) minimum range.

40 to 100 ft (12 to 30 m) influence radius.

TARGET: Aircraft

SENSITIVITY:

NA

FUNCTION TEMP:

MODE ON DELIVERY:

Proximity

EXPLOSIVE COMPONENTS

S&A DEVICE: Mk 8 RFSD

PRIMER: Yes, composition unknown

DETONATOR: None

LEAD: None

BOOSTER: None

OTHER: None

POWER SUPPLY:

Reserve energizer.

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

On firing, acceleration causes the fingers of the crown breaker to open up, allowing the electrolyte vial to break against the bottom of the breaker. Centrifugal force distributes the electrolyte throughout the energizer, activating it in 0.2 to 0.3 s. Centrifugal force also opens the handling safety switch, which previously had been shorting the firing condenser. The firing condenser begins to accumulate a charge through its high resistance electrical delay and current is supplied to the VT element. Centrifugal force causes the mercury switch to open a short across the primer leads. The fuze is fully armed in 0.6 to 1.0 s. On target approach, the reflected electromagnetic signal causes the VT element to discharge the firing condenser through the electric primer. The output of the primer functions the Mk 44 AD Fuze and, in turn, the projectile main charge. Mk 45 and Mk 58 Fuzes have single mercury switches; Mk 47, Mk 53 and Mk 59 have two. * Length includes Mk 44 AD Fuze.

NEW PAGE.

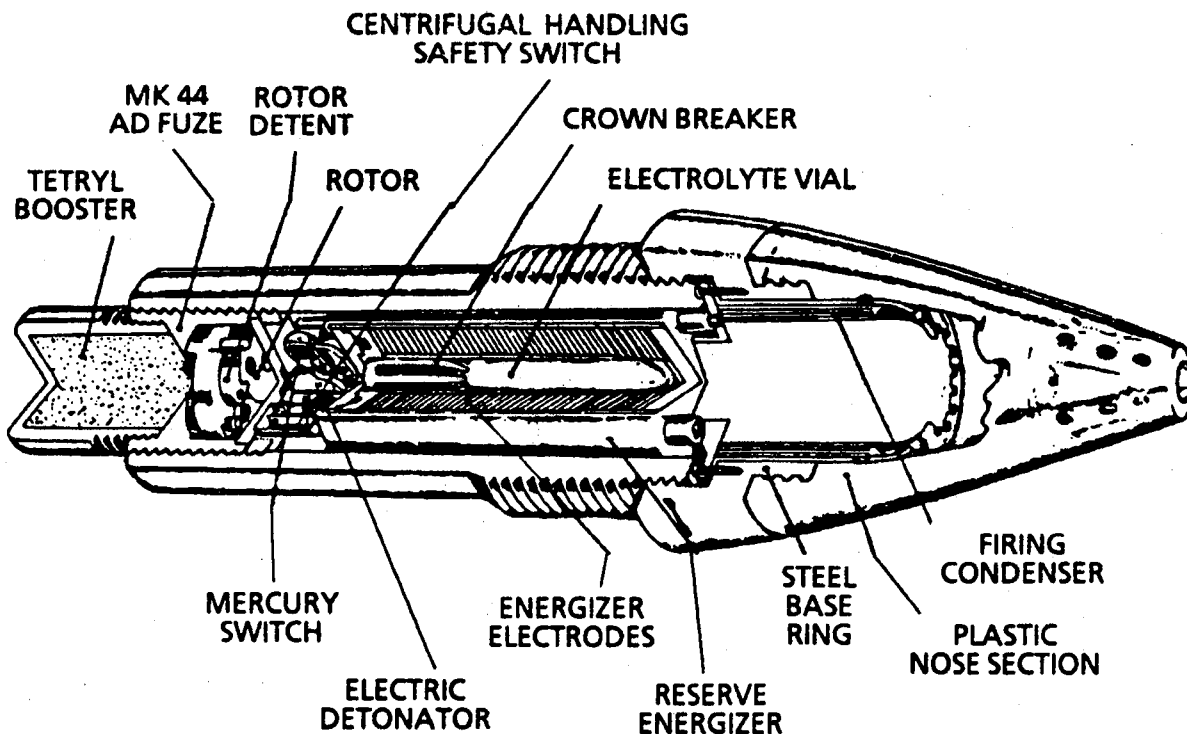
1-128B

LAST UPDATE: 10/04/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 59 Mod 0
Proximity Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 9.8 in (248.9 mm) *
XSECT: 2.71 in (68.8 mm)

- INTRUSION -

DP: 5.0 in (127 mm)
DIA: 2.0 in (50.8 mm)

WT: 4.05 lb (1837 g)

THD: 2.35-10-2

THD DP: 0.5 in (12.7 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Navy
ASSY DWG: 459 699
PARTS LIST:
SPEC:
PUB: Navy Projectiles and Fuzes, 1945

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Mk 45, Mk 47, Mk 53,
Mk 58

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 5-in/54 caliber guns

AMMUNITION:

HC

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316
SETTERS:

Supersedes page 1-131 of MIL-HDBK-146.

FUZE: MK 59 Mod 0
Proximity Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/04/90

ARMING DATA

FIRST SAFETY:

Setback ruptures reserve energizer electrolyte ampoule.

SECOND SAFETY:

Spin distributes electrolyte around battery electrodes and removes short from primer.

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

1500 ft (457 m)

FUNCTIONING DATA

MODES: Proximity

TYPE: Electronic

CHARACTERISTICS:

1500 ft (457 m) minimum range.

TARGET: Shore bombardment

SENSITIVITY:

NA

FUNCTION TEMP:

MODE ON DELIVERY:

Proximity

EXPLOSIVE COMPONENTS

S&A DEVICE: Mk 8 RFSD

PRIMER: Yes, composition unknown

DETONATOR: None

LEAD: None

BOOSTER: None

OTHER: None

POWER SUPPLY:

Reserve energizer.

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

On firing, acceleration causes the fingers of the crown breaker to open up, allowing the electrolyte vial to break against the bottom of the breaker. Centrifugal force distributes the electrolyte throughout the energizer, activating it in 0.2 to 0.3 s. Centrifugal force also opens the handling safety switch, which previously had been shorting the firing condenser. The firing condenser begins to accumulate a charge through its high resistance electrical delay and current is supplied to the VT element. Centrifugal force causes the mercury switch to open a short across the primer leads. The fuze is fully armed in 0.6 to 1.0 s. On target approach, the reflected electromagnetic signal causes the VT element to discharge the firing condenser through the electric primer. The output of the primer functions the Mk 44 AD Fuze and, in turn, the projectile main charge. Mk 45 and Mk 58 Fuzes have single mercury switches; Mk 47, Mk 53 and Mk 59 have two. * Length includes Mk 44 AD Fuze.

LAST UPDATE: 02/11/92

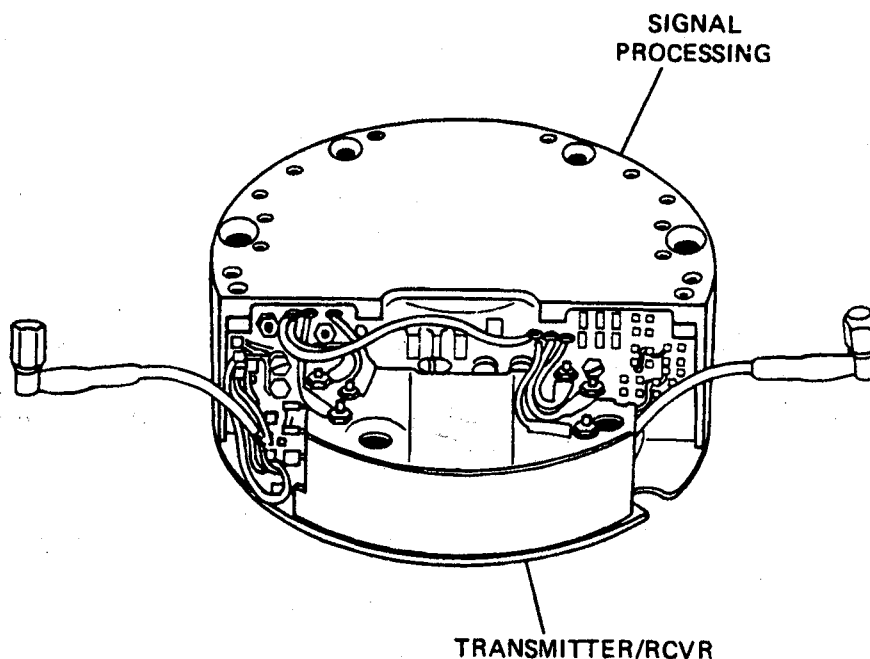
MIL-HDBK-146

NOTICE 2

FUZE: EX 60

Target Detecting Device

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.5 in (38.1 mm)

XSECT: 4 in (101.6 mm)

- INTRUSION -

DP: NA

DIA: NA

WT: 1.3 lb (590 g)

THD: NA

THD DP:

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402

CONTACT: Bagnall, J

PHONE: DSN 290-2791

STATUS: Terminated

USER: Navy

ASSY DWG: 5 510 310

PARTS LIST:

SPEC: XWS 16699(GP)

PUB:

NATIONAL STOCK NO:

Not yet assigned

DODIC: Not yet assigned

PRIOR MODEL NO: EX-406 Fuze

SIMILAR TO:

REPLACES: Nothing

REPLACED BY:

GENERAL

WEAPON: 5-in/54 Mk 18 & 19 Guns

AMMUNITION:

HE, Ex 106

IR-guided projectile

LOCATION: Base of Warhead

BALLISTIC LEVELS:

ROTATION: 20 rps

SETBACK: 7,500 g

VELOCITY: 2030 ft/s (619 m/s)

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: NA

SETTERS: None

NEW PAGE.

1-136A

FUZE: EX 60
Target Detecting Device

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 02/11/92

ARMING DATA

FIRST SAFETY:

Safety provided by EX-18 ASD
(not in TDD)

SECOND SAFETY:

Magnetic impulse sensors sense gun
ejection

OTHER SAFETY:

Contains logic circuitry for
second environmental safety
in EX-18 ASD

SAFE/ARM INDICATION:

NA

ARMING TIME OR DISTANCE:

NA

EXPLOSIVE COMPONENTS

S&A DEVICE: EX-18 ASD
(not in TDD)

PRIMER: NA

DETONATOR: NA

LEAD: NA

BOOSTER: NA

OTHER: No explosives in TDD,
electrical output only

FUNCTIONING DATA

MODES: Proximity/PD

TYPE: RF

CHARACTERISTICS:

Short range radar senses approach
to target

TARGET: Air Targets

SENSITIVITY:

FUNCTION TEMP:

-7 to +54 deg C

MODE ON DELIVERY:

Prox, PD backup

POWER SUPPLY:

Uses guided projectile system

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT: None

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

Radar sensor detects near approach to air target and delivers electrical firing pulse to warhead detonator (not in TDD). Electronics package is mounted on warhead bulkhead in mid-section of guided projectile and attached to wrap-around antenna by two short coaxial cables. Antenna is 2 mm thick, 127 mm diameter, and 152 mm long. Input/output cabling is permanently attached to the electronics package.

NEW PAGE.

1-136B

MIL-HDBK-146
NOTICE 2

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**Data for the Mk 61 Mod 0-1 MT Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-139 and 1-140 of MIL-HDBK 146.

1-139/1-140

MIL-HDBK-146
NOTICE 2

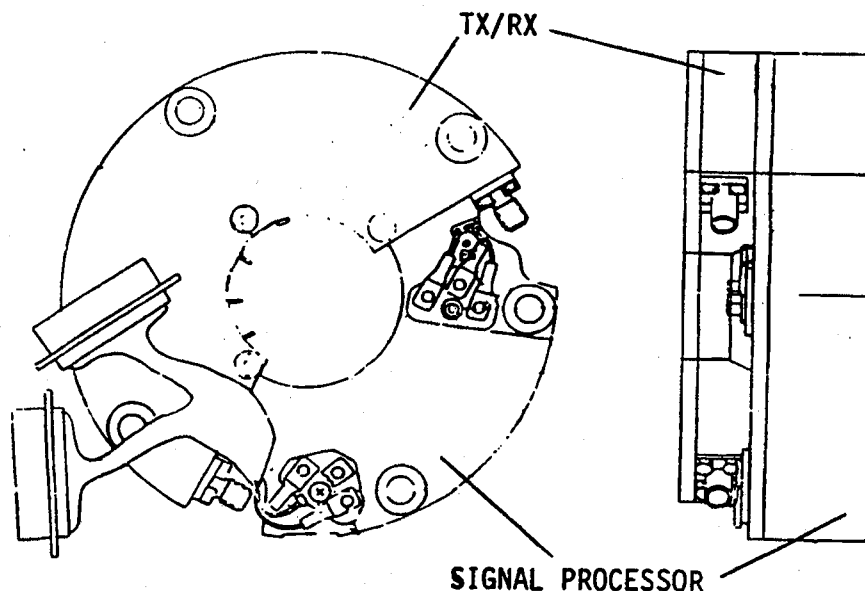
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LAST UPDATE: 02/11/92

MIL-HDBK-146
NOTICE 2

FUZE: EX 61
Target Detecting Device

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.5 in (38.1 mm)
XSECT: 4. in (101.6 mm)

- INTRUSION -

DP: NA
DIA: NA

WT: 1.0 lb (454 g)

THD: NA
THD DP:

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Terminated
USER: Navy
ASSY DWG: 5 258 395
PARTS LIST:
SPEC: XWS 16699(GP)
PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO: EX-406 Fuze
SIMILAR TO:

REPLACES: None
REPLACED BY:

GENERAL

WEAPON: 5-in/54 Mk 18 & 19 Guns

AMMUNITION:

HE, Ex 105
SAL guided projectile

LOCATION: Mid-body

BALLISTIC LEVELS:

ROTATION: 20 rps
SETBACK: 7,500 g
VELOCITY: 2030 ft/s (619 m/s)

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: NA

SETTERS: None

NEW PAGE..

1-140A

FUZE: EX 61
Target Detecting Device

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 02/11/92

ARMING DATA

FIRST SAFETY:

Safety provided by EX 18 ASD
(not in TDD)
1000 g setback

SECOND SAFETY:

Magnetic impulse sensors sense
gun ejection

OTHER SAFETY:

Contains logic circuitry for
second environmental safety in
EX 18 ASD.

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

None

EXPLOSIVE COMPONENTS

S&A DEVICE: EX 18 ASD (in system)

PRIMER: NA

DETONATOR: NA

LEAD: NA

BOOSTER: NA

OTHER: No explosive in TDD
Electrical output only

FUNCTIONING DATA

MODES: Proximity/PD

TYPE: RF

CHARACTERISTICS:

Shor-range radar senses approach
to surface target

TARGET: Surface

SENSITIVITY:

FUNCTION TEMP:

-7 to +54 deg C

MODE ON DELIVERY:

Prox with PD backup

POWER SUPPLY:

Uses guided projectile system

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT: None

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

Radar sensor detects near approach to surface target and delivers electrical firing pulse to warhead detonator (not in TDD). Guided projectile system may be electrically set to preclude radar fuzing, providing impact mode only from trembler switches in TDD package. Electronic package is mounted on warhead bulkhead in midsection of guided projectile, and attached to wrap-around antenna by two short coaxial cables. Antenna is 2 mm thick, 127 mm in diameter, and 152 mm long. Input and output cabling is permanently attached to the electronics package.

NEW PAGE.

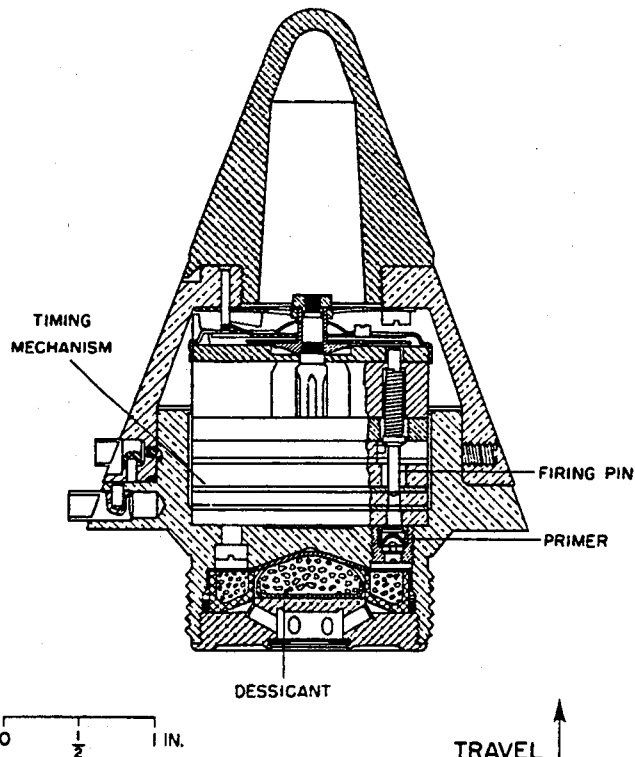
1-140B

LAST UPDATE: 03/06/92

MIL-HDBK-146
NOTICE 2

FUZE: MK 62 Mod 0,1
MT Fuze

ILLUSTRATION:



- OVERALL SIZE -
LG: 4.31 in (109.5 mm)
XSECT:

- INTRUSION -
DP: 0.803 in (20.4 mm)
DIA:

WT: 2.28 lb (1034 g)
THD: See GA 561 996
THD DP:

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G41
CONTACT: Pomeroy, S
PHONE: DSN 290-1995
STATUS: Obsolete
USER: Navy
ASSY DWG: 561 996, 561 519
PARTS LIST: LD 165 620 (Mod 0)
SPEC: LD 165 255 (Mod 1)
PUB:

NATIONAL STOCK NO:
1390-00-038-9725

DODIC: N243

PRIOR MODEL NO:

SIMILAR TO: Mk 61 Mod 2

REPLACES: Mk 42

REPLACED BY: XP-69, 70 (Mod 1)

GENERAL

WEAPON: 8-, 12- and 14-in Guns

AMMUNITION:
HE or GP

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 170 rps

SETBACK: 7,800 g

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

Supersedes page 1-141 of MIL-HDBK-146.

1-141

FUZE: MK 62 Mod 0,1
MT Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/06/92

ARMING DATA

FIRST SAFETY:

Spin, setback

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR: Mk 104 Mod 0

LEAD:

BOOSTER: Black powder

OTHER:

FUNCTIONING DATA

MODES: Time

TYPE: Mechanical

CHARACTERISTICS:

Junghans escapement 0.8 to 45 s

TARGET: Antiaircraft, ground

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0257

US HCSDS: None

UN CL/DIV SCG: 1.4 B

US DOT SHIP CL: C

NET EXPL WT: 3.23865 g

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

Has safety post under hammer spring. Fuze must be set before hammer spring will operate. Requires Mk 55 ADF.

MIL-HDBK-146
NOTICE 2

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**Data for the Mk 64 Mods 2, 3 BD Fuzes
may be found in MIL-HDBK-145B.**

Supersedes pages 1-147 and 1-148 of MIL-HDBK 146.

1-147/1-148

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MIL-HDBK-146
NOTICE 2

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**Data for the M65A1 Time Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-151 and 1-152 of MIL-HDBK 146.

1-151/1-152

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Check the source to verify that this is the current version before use.

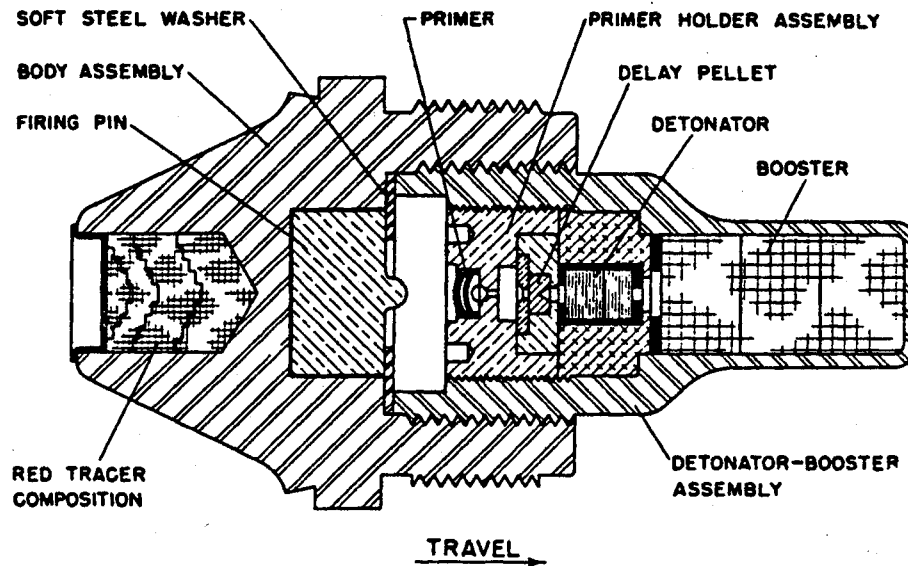
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LAST UPDATE: 11/05/92

MIL-HDBK-146
NOTICE 2

FUZE: M66A1, A2
BD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 3.532 in (89.7 mm)
XSECT: 1.798 in (45.7 mm)

- INTRUSION -

DP: 2.156 in (54.8 mm)
DIA: 1.65 in (41.9 mm)

WT: 1.040 lb (471 g)
THD: 1.650-10NS-1 (LH)
THD DP: 0.70 in (17.8 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G41
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Navy
ASSY DWG: 73-2-178 (M66A2)
PARTS LIST: 73-2-158A (M66A2)
SPEC: MIL-F-20455 (M66A2)
PUB: SW030-AA-MMO-010

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO: T8
SIMILAR TO: M68A1

REPLACES: M66
REPLACED BY:

GENERAL

WEAPON: 3

AMMUNITION:
AP, Mk 29

LOCATION: Base

BALLISTIC LEVELS:

ROTATION: 338 rps
SETBACK: 21,000 g
VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316
SETTERS: None

Supersedes page 1-153 of MIL-HDBK-146.

FUZE: M66A1, A2
BD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 11/05/92

ARMING DATA

FIRST SAFETY:

Safety disc between firing pin and
primer. Fuze is always armed.
In-line firing train.

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

NA

EXPLOSIVE COMPONENTS

S&A DEVICE: None, in-line train

PRIMER: No. 26 (FA 70)

DETONATOR: M71

LEAD: None

BOOSTER: Tetryl

OTHER: Black powder delay,
Tracer

FUNCTIONING DATA

MODES: BD

TYPE: Mechanical

CHARACTERISTICS:

0.016 s delay

TARGET: Armor

SENSITIVITY:

0.5 in (12.7 mm) special-treated
steel (STS) at 20 deg obliquity
1400 ft/s (427 m/s)

FUNCTION TEMP:

MODE ON DELIVERY:

Impact

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

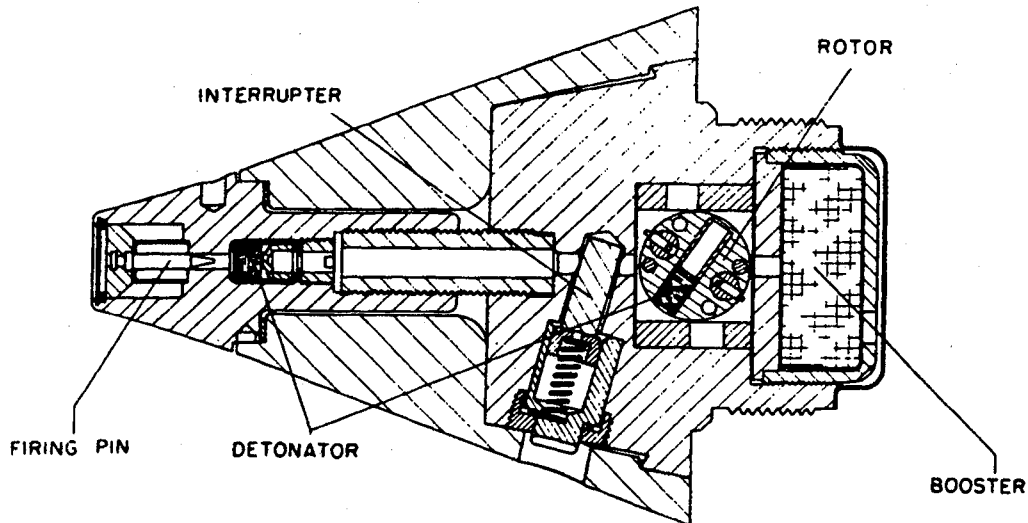
The fuze has an in-line explosive train and is always armed. On impact, the heavy firing pin is driven forward, overcoming a safety disc between itself and the primer. The point of the firing pin drives against the percussion primer, pressing the primer mixture against the anvil. This fires the primer and the primer ignites the delay element. The black powder burns through its length and initiates the detonator. The explosion of the detonator develops enough shock and heat to initiate the booster. Dimensions given on the illustration are for the M66A2. Length of the M66A1 is 3.458 in (87.8 mm). The M66A1 and M66A2 are similar except the M66A1 has an integral tracer and the M66A2 tracer is a separate, threaded device. The fuze is not bore safe, and should be used only in case of emergency.

LAST UPDATE: 10/10/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 66 Mod 0
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.400 in (111.8 mm)

XSECT:

- INTRUSION -

DP: 1.075 in (27.3 mm)

DIA: 1.70 in (43.2 mm)

WT: 1.54 lb (699 g)

THD: 1.70-14NS-1

THD DP: 0.713 in (18.1 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402

CONTACT: Bagnall, J

PHONE: DSN 290-2791

STATUS: Obsolete

USER: Navy

ASSY DWG: 562 461

PARTS LIST: LD 165566

SPEC: MIL-F-18701

PUB: SW030-AA-MMO-010

NATIONAL STOCK NO:

1390-00-038-9726

DODIC: N615

PRIOR MODEL NO: None

SIMILAR TO: Mk 29-3, Mk 30

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 5-in/38 Mk 12 Gun

AMMUNITION:

WP Mk 73 Mod 0

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 210 rps

SETBACK: 16,200 g

VELOCITY: 2600 ft/s (792 m/s)

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: Doesn't meet MIL-STD-1316B

SETTERS: Screwdriver

Supersedes page 1-155 of MIL-HDBK-146.

1-155

FUZE: MK 66 Mod 0
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/10/90

ARMING DATA

FIRST SAFETY:

Spin: 50 rps no arm,
75 rps all arm

SECOND SAFETY:

Out-of-line interrupter and rotor

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

1.5 m from muzzle
Bore safe only

FUNCTIONING DATA

MODES: SQ

TYPE: Mechanical

CHARACTERISTICS:

TARGET: Ground or water

SENSITIVITY:

1/8 in (3.175 mm) mild steel,
20 deg obliq., 1500 ft/s (457 m/s)

FUNCTION TEMP:

-7 to +54 deg C

MODE ON DELIVERY:

Safe (

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR: Mk 25 Mod 0 Stab
Mk 48 Mod 0 Relay

LEAD:

BOOSTER: 6.7 g black powder
(expellant charge)

OTHER: None

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0349

US HCSDS:

UN CL/DIV SCG: 1.4 S

US DOT SHIP CL: C

NET EXPL WT: 0.459 g

NET PROP WT: 6.700 g

STORAGE TEMP: -7 to +54 deg C

REMARKS/DESCRIPTION:

The Mk 66 Fuze is made bore safe by having a spring-loaded interrupter and an out-of-line detonator in a rotor. The Mk 66 is normally set to the OFF position with the interrupter bearing against one shoulder of the setting sleeve locking it in position and blocking the flash tube. For SQ PD action, fuze is set to ON. This frees the interrupter, allowing it to move outward with sufficient spin, freeing the flash tube and partially arming the fuze. Initially, the longitudinal axis of the rotor is 55 deg to the longitudinal axis of the fuze, held in position by two spring-loaded rotor detents. On firing, detents move outward with spin, releasing the rotor so it can align itself with the booster lead-in and flash tube, arming the fuze. Arming occurs several feet beyond the muzzle of the gun. On impact, the firing pin is driven into the nose detonator. The explosion passes down the flash tube, initiating the relay in the rotor, and, in turn, the magazine charge. The flash from the magazine charge of black powder passes through six holes in the magazine cover initiating the expelling charge of the projectile. The Mod 0 is sensitive to rain.

Supersedes page 1-156 of MIL-HDBK-146.

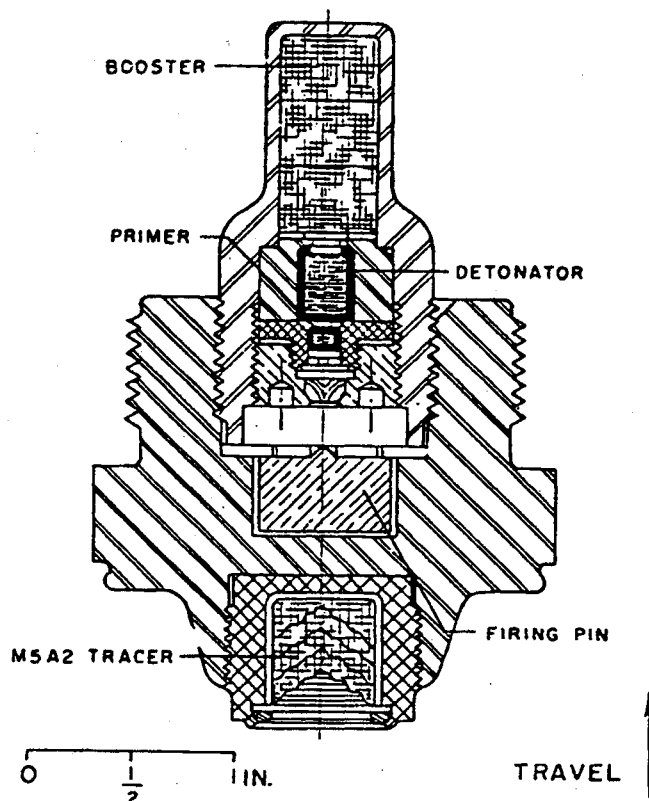
1-156

LAST UPDATE: 02/11/92

MIL-HDBK-146
NOTICE 2

FUZE: M68A1
BD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 3.527 in (89.6 mm)
XSECT: 2.285 in (58.0 mm)

- INTRUSION -

DP: 0.845 in (21.5 mm)
DIA: 1.85 in (47.0 mm)

WT: 1.44 lb (654.5 g)

THD: 2.0-10NS-1(LH)
THD DP: 0.772 in (19.6 mm)

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-C
CONTACT: Bisson, E
PHONE: DSN 880-5591
STATUS: Obsolete
USER: Army
ASSY DWG: 73-2-181
PARTS LIST:
SPEC:
PUB: TM 43-0001-28

NATIONAL STOCK NO:
1315-00-028-4452
DODIC: C260
PRIOR MODEL NO: T8
SIMILAR TO: M66A2

REPLACES:
REPLACED BY:

GENERAL

WEAPON: 90 mm gun

AMMUNITION:

Armor-piercing cupped w/tracer
(APC-T), M28 Cartridge

LOCATION: Base

BALLISTIC LEVELS:

ROTATION:
SETBACK:
VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316
SETTERS: None

Supersedes page 1-159 of MIL-HDBK-146.

FUZE: M68A1
BD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 02/11/92

ARMING DATA

FIRST SAFETY:
Setback

SECOND SAFETY:
None

OTHER SAFETY:
None

SAFE/ARM INDICATION:
None

ARMING TIME OR DISTANCE:
None

EXPLOSIVE COMPONENTS

S&A DEVICE: In-line explosive
train

PRIMER: No. 31

DETONATOR: M17

LEAD: None

BOOSTER: Tetryl

OTHER: M5 Tracer, black powder delay
pellet

FUNCTIONING DATA

MODES: BD, Delay

TYPE: Mechanical

CHARACTERISTICS:

0.01 s delay

TARGET: Tank

SENSITIVITY:

FUNCTION TEMP:

-40 to 0 + 52 deg C

MODE ON DELIVERY:

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP: -62 deg C, 3 days max
+71 deg C, 4 hr/day max

REMARKS/DESCRIPTION:

The tracer composition in the base of the fuze is ignited by the flash of the propelling charge and provides a visible trace for at least 3 s. There is no other action until impact, when the inertia of the firing pin breaks the soft steel washer, and the firing pin point strikes the primer. The primer flash ignites the black powder delay pellet. After a burning time of 0.01 s, the delay pellet ignites the detonator which fires the booster charge to detonate the filler of the projectile.

MIL-HDBK-146
NOTICE 2

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**Data for the Mk 71 Mods 11 & 12 VT-RF Fuzes
may be found in MIL-HDBK-145B.**

Supersedes pages 1-171 and 1-172 of MIL-HDBK 146.

1-171/1-172

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MIL-HDBK-146
NOTICE 2

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MIL-HDBK-146
NOTICE 2

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**Data for the M77 Time/PD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-183 and 1-184 of MIL-HDBK 146.

1-183/1-184

MIL-HDBK-146
NOTICE 2

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**Data for the M78A1 CP Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-185 and 1-186 of MIL-HDBK 146.

1-185/1-186

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MIL-HDBK-146
NOTICE 2

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**Data for the Mk 83 Mod 0 BD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-199 and 1-200 of MIL-HDBK 146.

1-199/1-200

MIL-HDBK-146
NOTICE 2

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MIL-HDBK-146
NOTICE 2

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**Data for the Mk 89 Mod 0 AD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-207 and 1-208 of MIL-HDBK 146.

1-207/1-208

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MIL-HDBK-146
NOTICE 2

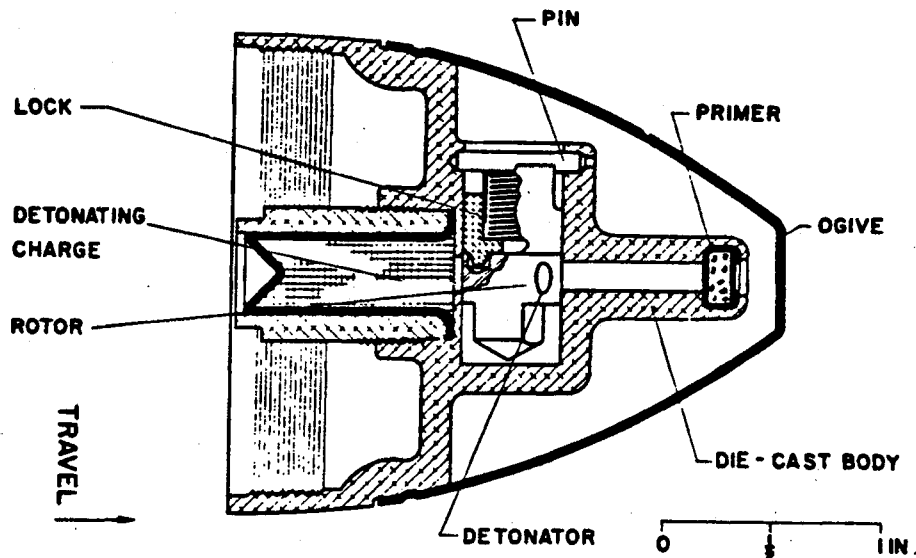
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LAST UPDATE: 10/27/92

MIL-HDBK-146
NOTICE 2

FUZE: M90, M90A1
PI Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 2.52 in (64.0 mm)

XSECT:

- INTRUSION -

DP: 0.4 in (10.2 mm)

DIA:

WT: 0.256 in (116 g)

THD: 2.095-18NS-1

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR

CONTACT:

PHONE: DSN 880-

STATUS: Obsolete

USER: Army, Navy

ASSY DWG: 73-2-236

PARTS LIST:

SPEC: 50-40-16

PUB: TM 9-1300-204, 43-0001-28

NATIONAL STOCK NO:

1310-00-028-4588 (Ctg)

DODIC: B587 (Ctg)

PRIOR MODEL NO: T123

SIMILAR TO: M89

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 57 mm gun and recoilless rifle

AMMUNITION:

HEAT, M307A1 Cartridge

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 214 rps

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: None

Supersedes page 1-209 of MIL-HDBK-146.

FUZE: M90, M90A1
PI Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/27/92

ARMING DATA

FIRST SAFETY:

Spin: 50 rps no arm,
100 rps all arm

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: M56

DETONATOR: M30A1

LEAD:

BOOSTER: M122

OTHER:

FUNCTIONING DATA

MODES: PI SQ

TYPE: Mechanical

CHARACTERISTICS:

TARGET: Arm vehc, light structure

SENSITIVITY:

2 in (50.8 mm) wood screen

FUNCTION TEMP:

-40 to +52 deg C

MODE ON DELIVERY:

SQ

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT: 2.863 g

NET PROP WT: None

STORAGE TEMP: -62 deg C, 3 days max

+71 deg C, 4 hr/day max

REMARKS/DESCRIPTION:

The M90 and M90A1 have an internal thread for mounting over the projectile. On firing, centrifugal force causes the rotor lock to move outward against the lock spring. The rotor cannot move while setback forces are present, but after setback, it turns to the armed position aligning the detonator with the primer and booster. On impact, the thin steel ogive is crushed firing the primer and, in turn the other explosive components.

MIL-HDBK-146
NOTICE 2

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**Data for the Mk 90 Mod 1 VT-IR Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-211 and 1-212 of MIL-HDBK 146.

1-211/1-212

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MIL-HDBK-146
NOTICE 2

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**Data for the Mk 91 Mod 1 VT-IR Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-213 and 1-214 of MIL-HDBK 146.

1-213/1-214

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MIL-HDBK-146
NOTICE 2

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**Data for the Mk 92 Mod 1 VT-IR Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-217 and 1-218 of MIL-HDBK 146.

1-217/1-218

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MIL-HDBK-146
NOTICE 2

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MIL-HDBK-146
NOTICE 2

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**Data for the M125A1 Booster
may be found in MIL-HDBK-145B.**

Supersedes pages 1-221 and 1-222 of MIL-HDBK 146.

1-221/1-222

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MIL-HDBK-146
NOTICE 2

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MIL-HDBK-146
NOTICE 2

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**Data for the Mk 349 Mod 1 MT Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-367 and 1-368 of MIL-HDBK 146.

1-367/1-368

Source: <https://assist.dla.mil> -- Downloaded: 2016-05-28T20:39Z
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MIL-HDBK-146
NOTICE 2

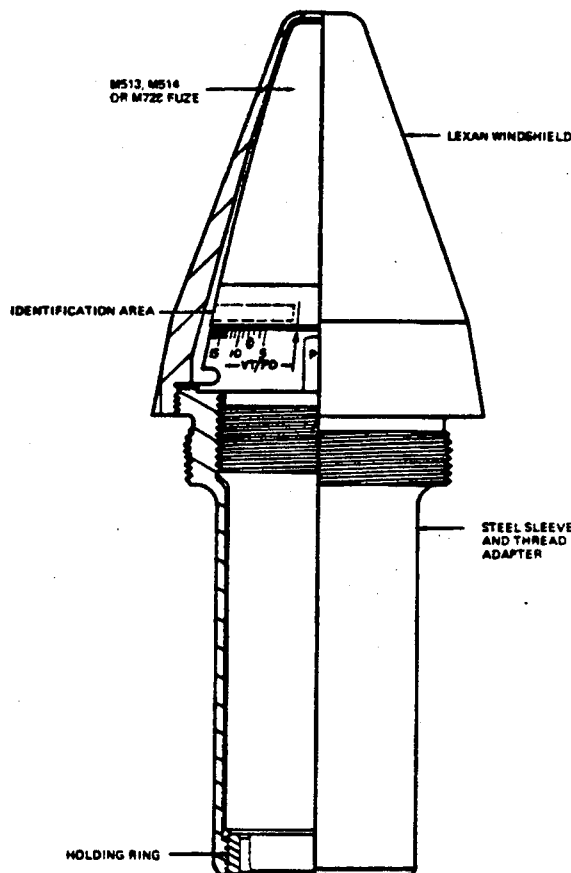
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LAST UPDATE: 02/20/92

MIL-HDBK-146
NOTICE 2

FUZE: MK 357 Mod 0
Fuze & Adapter Assembly

ILLUSTRATION:



- OVERALL SIZE -

LG: 8.88 in (225 mm)
XSECT: 3.3 in (83.8 mm)

- INTRUSION -

DP: 4.7 in (119.4 mm)
DIA: 2.0 in (50.8 mm)

WT: 3.6 lb (1633 g)

THD: 2.65-10UNS-2A

THD DP: 0.687 in (17.4 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G42
CONTACT: Campbell, L
PHONE: DSN 290-1667
STATUS: Obsolete
USER: Navy
ASSY DWG: 5 177 421
PARTS LIST: PL 5177421
SPEC: OD 28654
PUB: SW030-AA-MMO-010,
SW300-BO-ORD-020
NATIONAL STOCK NO:
1390-00-839-1312 (Mod 0)
DODIC: N356 (Mod 1), N350 (Mod 0)
PRIOR MODEL NO: None
SIMILAR TO: Mk 360 Mod 0

REPLACES:

REPLACED BY: Mk 357 Mod 1

GENERAL

WEAPON: 5-in/38 Mk 12 Gun

AMMUNITION:

Fuze for HE-CVT Mk 35, 47, 49,
51, 56, 66 standard and rocket-
assisted projectiles

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 208 rps
SETBACK: 16,200 g
VELOCITY: 2497 ft/s (761 m/s)

CREEP: NA

FLIGHT TIME: 100 s

SAFETY STD: Waiver for MIL-STD-1316B

SETTERS: None

Supersedes page 1-371 of MIL-HDBK-146.

ARMING DATA

FIRST SAFETY:

Setback: 800 g no arm;
1385 g, all arm

SECOND SAFETY:

Spin: 27 rps no arm;
38 rps all arm

OTHER SAFETY:

RC delay of firing capacitor
voltage buildup

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

1.9 to 3.6 s

EXPLOSIVE COMPONENTS

S&A DEVICE: Mk 15 RFSD & Mk 52 AFD or
Proj Bstr Assy 11713497

PRIMER: Mk 124 Electric

DETONATOR: Mk 37 Flash

LEAD: 150 mg Tetryl

BOOSTER: 25 g tetryl booster

OTHER: None

FUNCTIONING DATA

MODES: Proximity, PD

TYPE: Electrical - CVT-RF

CHARACTERISTICS:

Settable turn-on time from
5 to 100 s. Max useful
Reserve Energizer life is
50 s after turn-on.

TARGET: Ground Targets, Personnel

SENSITIVITY:

Height: 7 to 66 ft (2 to 20 m),
3 to 33 ft (1 to 10 m) w/desensi-
tivity cap

FUNCTION TEMP:

-7 to +54 deg C

MODE ON DELIVERY:

Std (28 s); RAP (35 s)

POWER SUPPLY:

Mk 16-0 Reserve Energizer (Mod 0);

PS 116 Reserve Energizer

Dwg 11 707 601 (Mod 1)

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0408

US HCSDS:

UN CL/DIV SCG: 1.1 D

US DOT SHIP CL: A

NET EXPL WT: 25.364 g

NET PROP WT: None

STORAGE TEMP: -54 to +60 deg C

REMARKS/DESCRIPTION:

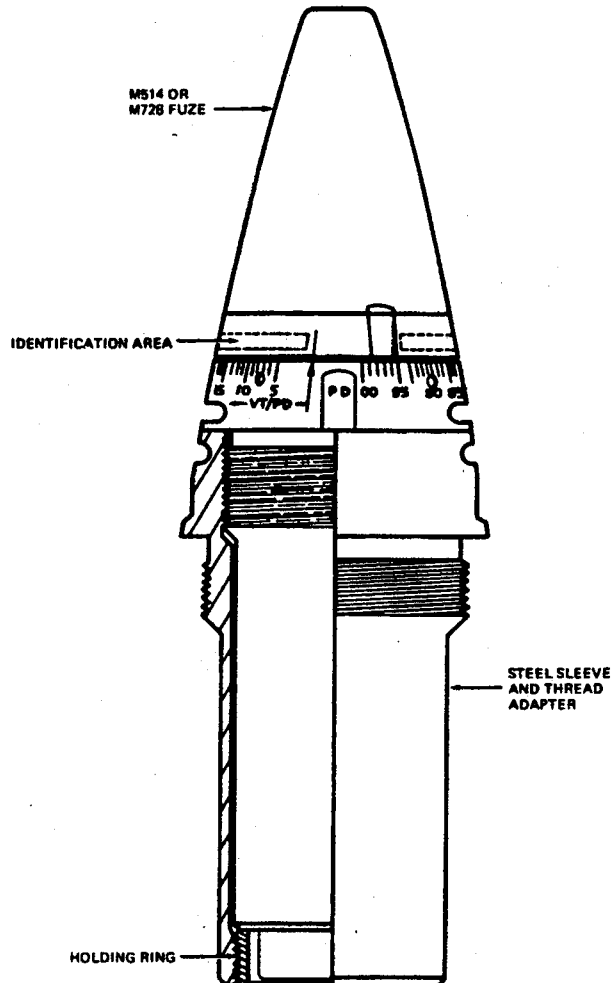
Mk 15-type RFSD and booster combination ensure fuze safety. Time normally set at depot. Certain tactical situations requiring other settings must be made manually. On firing, setback and spin forces break ampule & distribute electrolyte between reserve energizer plates. Simultaneously, clock in RFSD begins to run. Since ground or common return to RE is not complete, variable time circuit is not actuated. After about 2.75 s, S&A removes short from across primer activating impact firing circuit. 5.0 s before set time, S&A completes ground circuit to RE, activating VT circuits. 3.0 s before set time, S&A removes short allowing VT capacitor to charge. VT function fully activated 2.6 s before set time. From this time through end of flight, device functions as a VT fuze to detonate projectile above target. If VT circuit fails, impact device in nose detonates projectile by discharging 2nd independently-charged capacitor through primer. OD 28654 & 41548 specify Fuze & Adapter Assy. (FAA) for M728 or M514 CVT Fuze. Booster assy replaced Mk 52 ADF in Mod 1 & has a setback pin locking one of the upper spin detents. Mk 357-0 (M514) and Mk 365-367 (M513) are for 5"/38 gun; Mk 369-371 (M514) are for 8"/55 gun.

LAST UPDATE: 02/20/92

MIL-HDBK-146
NOTICE 2

FUZE: MK 360 Mod 0
Fuze & Adapter Assembly

ILLUSTRATION:



- OVERALL SIZE -

LG: 8.77 in (223 mm)
XSECT: 2.73 in (69.3 mm)

- INTRUSION -

DP: 4.01 in (101.6 mm)
DIA: 2.00 in (50.8 mm)

WT: 3.8 lb (1725 g)

THD: 2.35-10UNS-2A

THD DP: 0.790 in (20.1 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G42
CONTACT: Campbell, L
PHONE: DSN 290-1667
STATUS: Obsolete
USER: Navy
ASSY DWG: 2 429 024(0) & 5177422(1)
PARTS LIST: 550013(0) & 5177422(1)
SPEC: OD 28655 (Assy Proc)
PUB: SW030-AA-MMO-010,
SW300-BO-ORD-020
NATIONAL STOCK NO:
1390-01-060-8582
DODIC: N352
PRIOR MODEL NO: None
SIMILAR TO: Mk 357 Mod 0

REPLACES:

REPLACED BY: Mk 360 Mod 1

GENERAL

WEAPON: 5-in/54 Mk 18 and 19 Guns

AMMUNITION:

HE-CVT Mk 41, 55, 64, 65,
81 & 127 standard and rocket-
assisted projectiles

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 254 rps
SETBACK: 13,700 g
VELOCITY: 2650 ft/s (808 m/s)

CREEP: NA

FLIGHT TIME: 100 s

SAFETY STD: Waiver for MIL-STD-1316B

SETTERS: None

NEW PAGE.

1-372A

FUZE: MK 360 Mod 0
Fuze & Adapter Assembly

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 02/20/92

ARMING DATA

FIRST SAFETY:

Setback: 800 g no arm;
1385 g, all arm

SECOND SAFETY:

Spin: 27 rps no arm;
38 rps, all arm

OTHER SAFETY:

RC delay of firing capacitor
voltage buildup

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

1.9 to 3.6 s

EXPLOSIVE COMPONENTS

S&A DEVICE: Mk 15 RFSD & Mk 52 AFD or
Proj Bstr Assy 11713497

PRIMER: Mk 124 Electric

DETONATOR: Mk 37 Flash

LEAD: 150 mg Tetryl

BOOSTER: 25 g tetryl booster

OTHER: None

FUNCTIONING DATA

MODES: Proximity, PD

TYPE: Electrical - CVT-RF

CHARACTERISTICS:

Setable turn-on time
5 to 100 s. Max useful
Reserve Energizer life is
50 s after turn-on.

TARGET: Ground Targets, personnel

SENSITIVITY:

Height: 7 to 66 ft (2 to 20 m),
3 to 33 ft (1 to 10 m) w/desensi-
tivity cap

FUNCTION TEMP:

-7 to +54 deg C

MODE ON DELIVERY:

Std (21 s); RAP (35 s)

POWER SUPPLY:

Mk 16-0 Reserve Energizer (Mod 0);
PS 116 Reserve Energizer
Dwg 11 707 601 (Mod 1)

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO: 0409

US HCSDS:

UN CL/DIV SCG: 1.2 D

US DOT SHIP CL: A

NET EXPL WT: 25.364 g

NET PROP WT: None

STORAGE TEMP: -54 to +60 deg C

REMARKS/DESCRIPTION:

Mk 15-type RFSD and booster combination ensure fuze safety. Time normally set at depot. Certain tactical situations requiring other settings must be made manually. On firing, setback and spin forces break ampule & distribute electrolyte between reserve energizer plates. Simultaneously, clock in RFSD begins to run. Since ground or common return to RE is not complete, variable time circuit is not actuated. After about 2.75 s, S&A removes short from across primer activating impact firing circuit. 5.0 s before set time, S&A completes ground circuit to RE, activating VT circuits. 3.0 s before set time, S&A removes short allowing VT capacitor to charge. VT function fully activated 2.6 s before set time. From this time through end of flight, device functions as a VT fuze to detonate projectile above target. If VT circuit fails, impact device in nose detonates projectile by discharging 2nd independently-charged capacitor through primer. OD 28655 specifies Fuze & Adapter Assy. (FAA) as M728 or M514 CVT Fuze, adapter, holding ring, and windshield. Booster assy replaced Mk 52 ADF of M514 (Mk 360-0 FAA) & has a setback pin locking one of the spin detents which in turn locks the upper rotor. Mod 0 is obsolescent.

NEW PAGE.

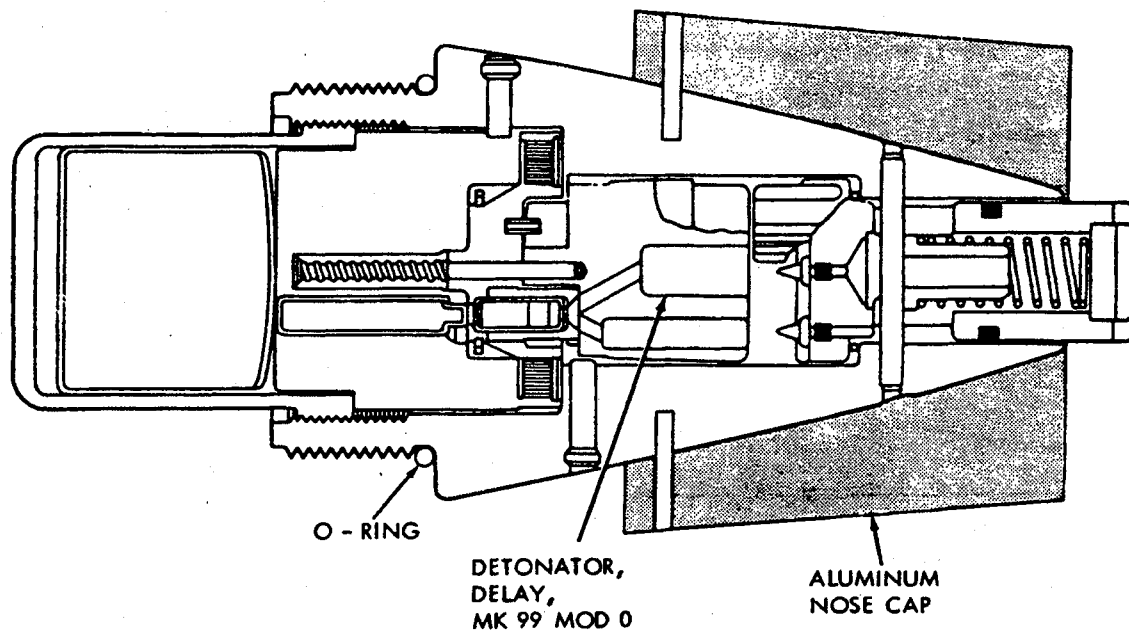
1-372B

LAST UPDATE: 04/19/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 363 Mod 0
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 6.01 in (152.7 mm)
XSECT: 2.125 in (54 mm)

- INTRUSION -

DP: 2.21 in (56.1 mm)
DIA: 1.70 in (43.2 mm)

WT: 1.27 lb (576 g)

THD: 2-12UNS-1A

THD DP:

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-1970
STATUS: Obsolete
USER: Navy
ASSY DWG: 2 421 712
PARTS LIST:
SPEC:
PUB: NAVORD OP 3588

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO: M524A6 NAVY MOD 0
SIMILAR TO: M524A5

REPLACES: Nothing
REPLACED BY:

GENERAL

WEAPON: 81mm Mortar Mk 2 Mod 0

AMMUNITION:

HE, M362 & M374 Series

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 32 rps

SETBACK: 10,000 g

VELOCITY: 180 to 876 ft/s (55 to
267 m/s)

CREEP: NA

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: None

Supersedes page 1-373 of MIL-HDBK-146.

1-373

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FUZE: MK 363 Mod 0
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 04/19/90

ARMING DATA

FIRST SAFETY:

Pull wire

SECOND SAFETY:

Setback: 240 g no arm,

390 g all arm

Acc - time boost

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

0.3 to 0.6 s

15 m (50 ft) minimum

FUNCTIONING DATA

MODES: PD

TYPE: Mechanical

CHARACTERISTICS:

1.5 s Delay allows round to sub-merge before detonation.

TARGET: Anti-swimmer operations

SENSITIVITY:

FUNCTION TEMP:

-40 to +52 deg C

MODE ON DELIVERY:

SQ

EXPLOSIVE COMPONENTS

S&A DEVICE: Sequential leaf

PRIMER: in M2 delay element

DETONATOR: Mk 99-0 Delay Detonator &
M80 Detonator

LEAD: 538 mg RDX

24 mg RDX

BOOSTER: 35.9 g comp A-5

OTHER: Delay Element M2 (M54 Stab
Primer, Boron-Barium Chromate.
Delay and M7 Relay)

POWER SUPPLY:

Wound rotor spring

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0408

US HCSDS: 667

UN CL/DIV SCG: 1.1 D

US DOT SHIP CL: A

NET EXPL WT: 37.158 g

NET PROP WT: None

STORAGE TEMP: -62 deg C 3 days max

+71 deg C 4 hr/day

REMARKS/DESCRIPTION:

Fuze safety is obtained by restraining the rotor by means of a sequential leaf setback device which is locked in turn by a pull pin. The pull pin is removed freeing the setback device and the graze plunger. On firing, the multiple-leaf sequential setback device senses a proper acceleration-time relationship and releases the spring-driven rotor which rotates to the armed position driving a runaway escapement to obtain 0.3 to 0.6 s delay arming. On impact, the striker firing pins function the delay detonators. If graze impact occurs, the plunger moves forward so that the detonators strike the firing pins. Should impact occur at an angle in which the striker assembly is not driven rearward, inertial forces will drive the plunger forward and force the delay element against the firing pins of the striker and set off the explosive train.

MIL-HDBK-146
NOTICE 2

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**Data for the Mk 384 Mod 0 AD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-377 and 1-378 of MIL-HDBK 146.

1-377/1-378

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MIL-HDBK-146
NOTICE 2

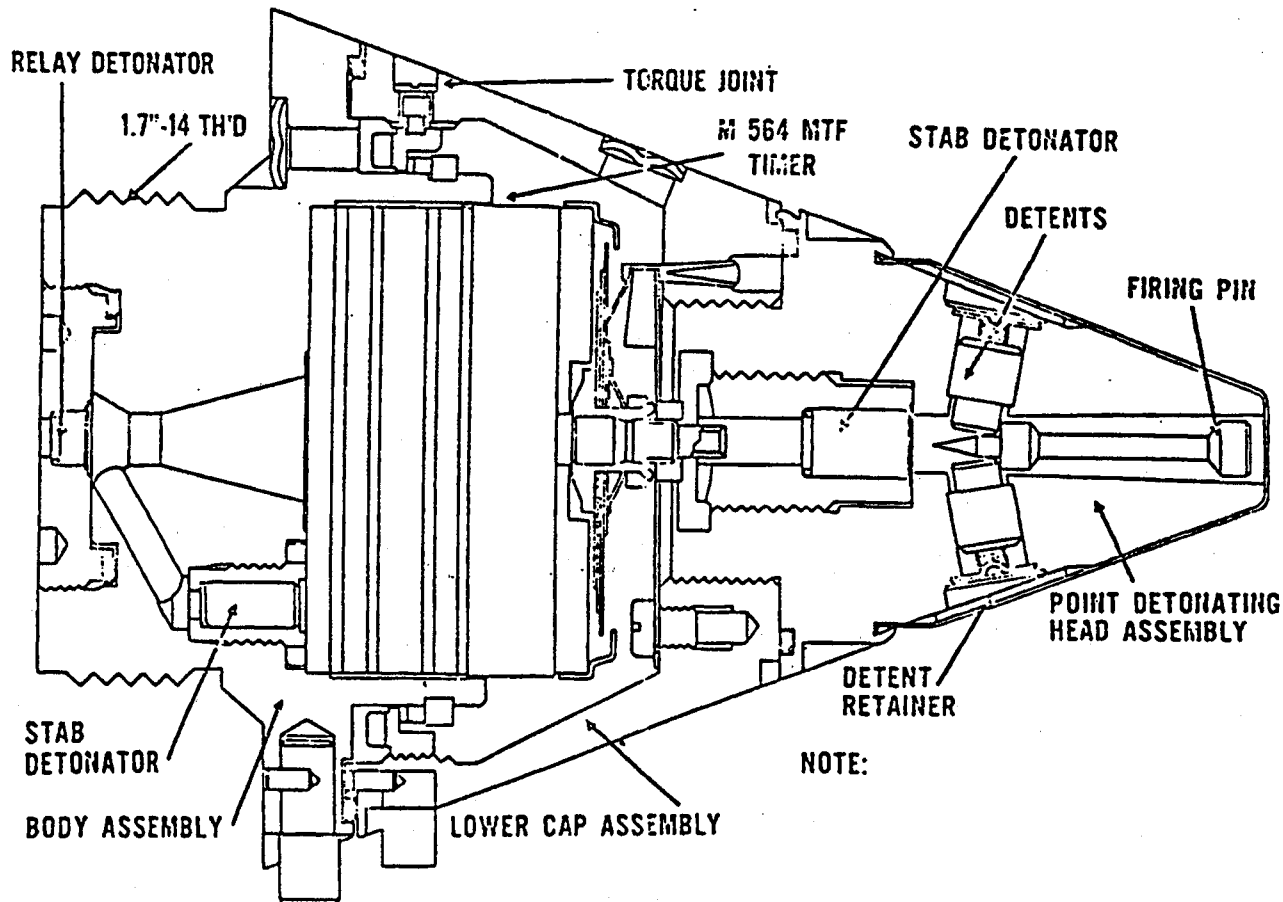
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LAST UPDATE: 11/05/92

MIL-HDBK-146
NOTICE 2

FUZE: MK 392 Mod 0
MT Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.5 in (114.3 mm)
XSECT: 3.0 in (76.2 mm)

- INTRUSION -

DP:
DIA:

WT: 1.25 lb (567 g)

THD: 1.7-14

THD DP:

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G41
CONTACT: Pomeroy, S
PHONE: DSN 290-1995
STATUS: Terminated
USER: Navy
ASSY DWG: 2 512 330
PARTS LIST: DL 2512330
SPEC: WS 13927
PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 5 in/38 gun

AMMUNITION:

Projectile FCL (VT)
HE and Illumination

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 208 rps
SETBACK: 12,800 g
VELOCITY: 2600 ft/s (792 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

Supersedes page 1-379 of MIL-HDBK-146.

FUZE: MK 392 Mod 0
MT Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 11/05/92

ARMING DATA

FIRST SAFETY:

Setback

SECOND SAFETY:

Spin: 33 rps, no arm;
100 rps, all arm

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:

37.5 to 52.5 turns to arm

FUNCTIONING DATA

MODES: Time, Settable

TYPE: Mechanical

CHARACTERISTICS:

Settable from 5 to 95 s

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

EXPLOSIVE COMPONENTS

S&A DEVICE: In Aux. Det. Fuze

PRIMER:

DETONATOR: WOX 87A, Mk 44-1,
WOX E0-A

LEAD:

BOOSTER: Black Powder for Illum.

OTHER:

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

MIL-HDBK-146
NOTICE 2

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**Data for the Mk 396 Mod 0 AD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-381 and 1-382 of MIL-HDBK 146.

1-381/1-382

MIL-HDBK-146
NOTICE 2

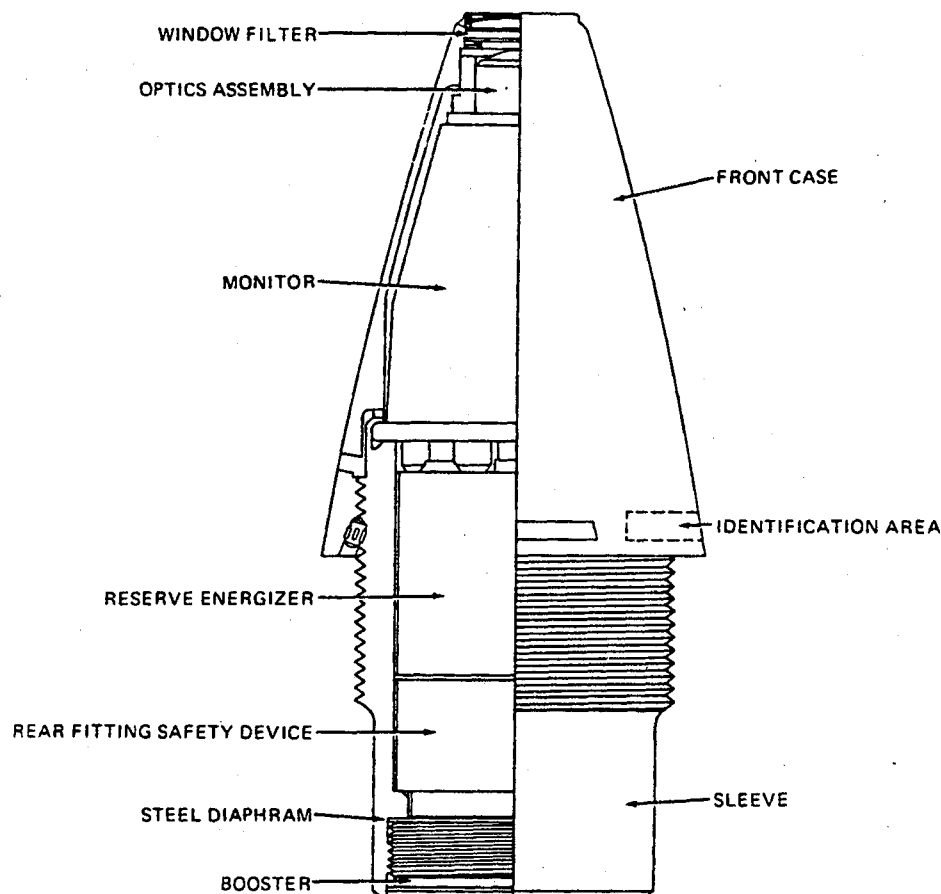
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LAST UPDATE: 03/06/92

MIL-HDBK-146
NOTICE 2

FUZE: MK 400
Proximity Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 5.7 in (144.8 mm)
XSECT: 2.4 in (61.0 mm)

- INTRUSION -

DP: 2.2 in (55.9 mm)
DIA:

WT: 2.1 lb (953 g)

THD: 2-12UN-2A

THD DP:

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G41
CONTACT: Campbell, L
PHONE: DSN 290-1667
STATUS: Terminated
USER: Navy
ASSY DWG: 2 512 165
PARTS LIST: DL 2512165
SPEC: WS 14374
PUB:

NATIONAL STOCK NO:

None

DODIC:

PRIOR MODEL NO: EX-400

SIMILAR TO:

REPLACES:

REPLACED BY: Mk 404

GENERAL

WEAPON: 5 in/54 Gun

AMMUNITION:

HE

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 254 rps

SETBACK: 14,500 g

VELOCITY: 2650 ft/s (808 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

Supersedes page 1-383 of MIL-HDBK-146.

FUZE: MK 400
Proximity Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/06/92

ARMING DATA

FIRST SAFETY:
Setback

SECOND SAFETY:

Spin: 40 rps, no arm;
254 rps, all arm

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:
780 to 1330 ft

FUNCTIONING DATA

MODES: Proximity, PD
TYPE: Passive Infrared
CHARACTERISTICS:

TARGET: Air Targets
SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

EXPLOSIVE COMPONENTS

S&A DEVICE: Mk 42-1

PRIMER:

DETONATOR: Mk 71 Elec

LEAD: Tetryl

BOOSTER: 11 g CH-6

OTHER: Mk 64 Relay

POWER SUPPLY:

Mk 39-0 Reserve Energizer

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:
US HCSDS:
UN CL/DIV SCG:
US DOT SHIP CL:
NET EXPL WT:
NET PROP WT:
STORAGE TEMP:

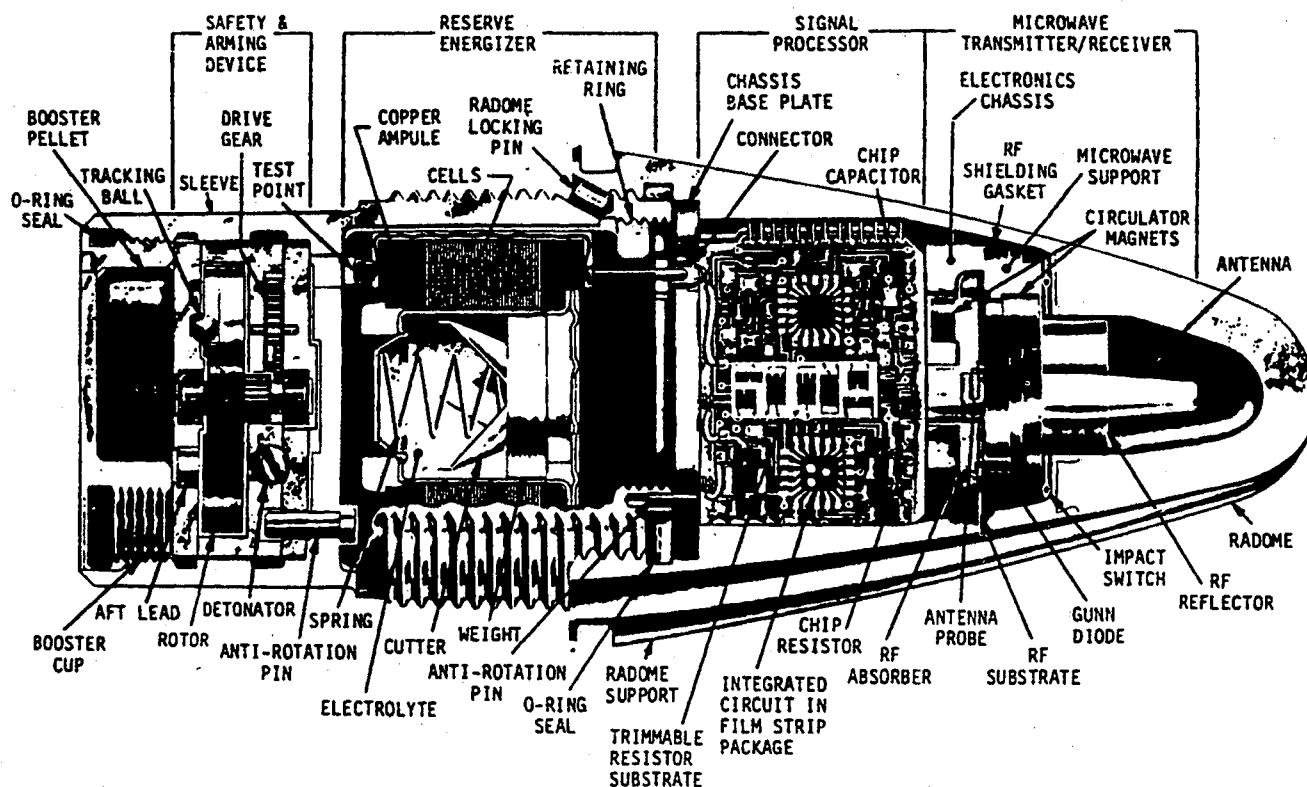
REMARKS/DESCRIPTION:

Supersedes page 1-384 of MIL-HDBK-146.

1-384

LAST UPDATE: 11/05/92

ILLUSTRATION:



- OVERALL SIZE -

LG: 5.7 in (144.8 mm)
XSECT: 2.42 in (61.5 mm)

- INTRUSION -

DP: 2.21 in (56.1 mm)
DIA:

WT: 2.0 lb (907 g)

THD: 2-12UNS-1A

THD DP:

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Terminated
USER: Navy
ASSY DWG: 2 500 153
PARTS LIST: DL 2500153
SPEC: WS 14157
PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 76mm, 3 in/50, 5 in/54 guns

AMMUNITION:

HE

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 408 rps

SETBACK: 20,900 g

VELOCITY: 3034 ft/s (925 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

Supersedes page 1-385 of MIL-HDBK-146.

FUZE: EX 402
Proximity Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 11/05/92

ARMING DATA

FIRST SAFETY:

Setback

SECOND SAFETY:

Spin: 130 rps, all arm

OTHER SAFETY:

S&A cannot be installed armed

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE: DWG 3226320

PRIMER:

DETONATOR: Mk 70-0 Electric

LEAD: PBXN5 (DWG 3226025)

BOOSTER: CH-6

OTHER:

FUNCTIONING DATA

MODES: Proximity, PD

TYPE: Electronic, RF

CHARACTERISTICS:

Automatically adjusts burst
position for engagement velocity

TARGET: Air, Surface Targets

SENSITIVITY:

Classified

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

EX-41 Reserve Energizer,
12 W, copper ampule

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

LAST UPDATE: 11/05/92

MIL-HDBK-146
NOTICE2

FUZE: EX 416
ET Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP: ABCA

DIA:

WT: 2.1 lb (953 g)

THD: 2-12 NS

THD DP:

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402

CONTACT: Bagnall, J

PHONE: DSN 290-2791

STATUS: Canceled

USER: Navy

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 5

AMMUNITION:

Cargo and HE

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

NEW PAGE.

1-386A

FUZE: EX 416
ET Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 11/05/92

ARMING DATA

FIRST SAFETY:
Setback

SECOND SAFETY:
Spin

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE: Mk 42

PRIMER:

DETONATOR: Mk 71 Mod 0 (elec)
Mk 64 Mod 0 (flash)

LEAD: 100 mg PBXN-5; 166 mg PBXN-5

BOOSTER: 17 g CH-6

OTHER:

FUNCTIONING DATA

MODES: Precision Time, Settable
TYPE: Electronic
CHARACTERISTICS:
Settable from 3 to 200 s via
Remote Inductive Link

TARGET: Surface and Illum.
SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

Modified Mk 38 RE or Mk 40 Mod 1

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:
US HCSDS:
UN CL/DIV SCG:
US DOT SHIP CL:
NET EXPL WT:
NET PROP WT:
STORAGE TEMP:

REMARKS/DESCRIPTION:

NEW PAGE.

1-386B

LAST UPDATE: 03/06/92

MIL-HDBK-146
NOTICE 2

FUZE: MK 424 Mod 0
ET Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402

CONTACT: Bagnall, J

PHONE: DSN 290-2791

STATUS: Terminated

USER: Navy

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: Mortar

AMMUNITION:

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: Meets MIL-STD-1316

SETTERS:

NEW PAGE.

1-386C

FUZE: MK 424 Mod 0
ET Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/06/92

ARMING DATA

FIRST SAFETY:

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR:

LEAD:

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES:

TYPE:

CHARACTERISTICS:

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

STORAGE AND
TRANSPORTATION
SAFETY DATA

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

NEW PAGE.

1-386D

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MIL-HDBK-146
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**Data for the M500A1 MT Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-387 and 1-388 of MIL-HDBK 146.

1-387/1-388

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MIL-HDBK-146
NOTICE 2

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**Data for the M501A1 MT Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-389 and 1-390 of MIL-HDBK 146.

1-389/1-390

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MIL-HDBK-146
NOTICE 2

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**Data for the M503A2 PD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-393 and 1-394 of MIL-HDBK 146.

1-393/1-394

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MIL-HDBK-146
NOTICE 2

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MIL-HDBK-146
NOTICE 2

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**Data for the M508A1 PD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-401 and 1-402 of MIL-HDBK 146.

1-401/1-402

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MIL-HDBK-146
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LAST UPDATE: 11/05/92

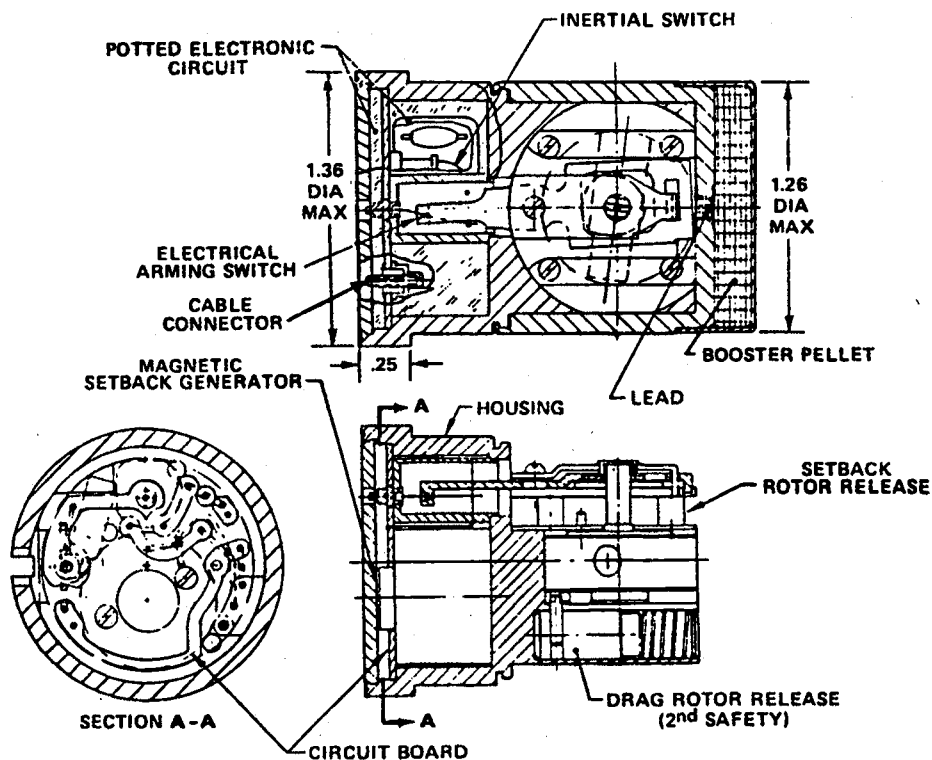
MIL-HDBK-146

NOTICE 2

FUZE: M509A2E1

PI BD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.96 in (49.8 mm)

XSECT: 1.35 in (34.3 mm)

- INTRUSION -

DP: 1.96 in (49.8 mm)

DIA: 1.26 in (32.0 mm)

WT: 0.4 lb (180 g) approx

THD: None

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-CCH-V

CONTACT: Mandala, C

PHONE: DSN 880-6717

STATUS: Terminated

USER: Army, Marines

ASSY DWG: Not available

PARTS LIST:

SPEC: Not available

PUB: TM 43-0001-28

NATIONAL STOCK NO:

Not assigned

DODIC:

PRIOR MODEL NO: None

SIMILAR TO:

REPLACES: M509A1, M509A2

REPLACED BY:

GENERAL

WEAPON: 105mm Tank Guns, M68

AMMUNITION:

105mm HEAT-MP-T, M456 Series

LOCATION: Front and Base

BALLISTIC LEVELS:

ROTATION: Negligible

SETBACK: 60,000 g

VELOCITY: 3850 ft/s (1173 m/s)

CREEP: 32 g

FLIGHT TIME: NA

SAFETY STD:

SETTERS:

NEW PAGE.

1-402A

FUZE: M509A2E1
PI BD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 11/05/92

ARMING DATA

FIRST SAFETY:

setback 2500 g no arm,
4300 g all arm

SECOND SAFETY:

Creep est. 4 g no arm,
8 g all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

Meets MIL-STD-1316B

ARMING TIME OR DISTANCE:

5 to 21 ms delay

EXPLOSIVE COMPONENTS

S&A DEVICE: Sequential Leaf Setback &
Creep Mechanism

PRIMER: None

DETONATOR:

LEAD: Unknown mg PBXN-5

BOOSTER: Unknown g comp A-5

OTHER: NA

FUNCTIONING DATA

MODES: PIBD, graze

TYPE: Electric, Mechanical

CHARACTERISTICS:

SQ, graze

TARGET: Ground-Tank

SENSITIVITY:

NA

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

Magnetic Setback Power Supply

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

Fuze safety is ensured by a three-leaf setback device. Upon firing, the three leaves of the sequential leaf setback device rotate in series, releasing the rotor and the third leaf is locked. The rotor spring rotates the rotor 90 degrees to the armed position, removing the detonator electric short and closing the firing circuit to the piezo-electric nose crystal. On impact, a charge is generated in the crystal and functions the M69 Det. The M509A1 is the same except that it has a leaf instead of a button contact on the rotor, and M48 Det and tetryl lead and booster. The M509A2 is used with a setback piezo-electric power supply in the spike of the Full Frontal Area Impact Switch (FFAIS) in the 105 mm M456A2 instead of the nose impact crystal. The M530A1 is similar to the M509A2 except that it has 270 degrees of rotation of the rotor, a runaway escapement delaying the rotor, and a mechanical graze element. The M509A1E1, XM754, XM763, and XM764 are similar to the M509A2 except a drag sensor is added and the rotor rotates 270 degrees.

NEW PAGE.

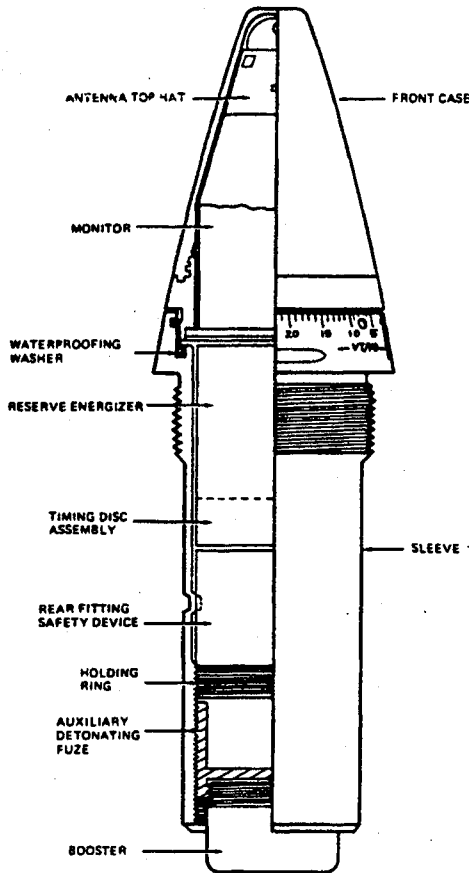
1-402B

LAST UPDATE: 11/05/92

MIL-HDBK-146
NOTICE 2

FUZE: M513
Proximity Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 8.60 in (218.4 mm)
XSECT: 2.40 in (61.0 mm)

- INTRUSION -

DP: 4.91 in (124.7 mm)
DIA: 1.78 in (45.2 mm)

WT: 2.35 lb (1066 g)

THD: 2-12UNS-1

THD DP: 0.90 in (22.9 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G42
CONTACT: Campbell, L
PHONE: DSN 290-1667
STATUS: Obsolete
USER: Army
ASSY DWG: 795 240
PARTS LIST: LD 291 818
SPEC: RTP 11 706 697
PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO: T226

SIMILAR TO:

REPLACES: T226E3, M513

REPLACED BY:

GENERAL

WEAPON: 105 mm Howitzers (all models); 4.2-in Mortar M2 & M30

AMMUNITION:

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 286 rps

SETBACK: 16,300 g

VELOCITY: 2700 ft/s (823 m/s)

CREEP:

FLIGHT TIME: 100 s

SAFETY STD: Waiver for MIL-STD-1316B

SETTERS: M28 (M14 & M27 w/cap)

Supersedes page 1-407 of MIL-HDBK-146.

1-407

FUZE: M513
Proximity Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 11/05/92

ARMING DATA

FIRST SAFETY:

Setback: 800 g no arm,
1300 g all arm

SECOND SAFETY:

Spin: 28 rps no arm,
32 rps all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

1.5 m min Mechanical
1.9 s min Electrical

EXPLOSIVE COMPONENTS

S&A DEVICE: Mk 15-0 RFSD &
Mk 52 Booster (Aux Det)

PRIMER: Mk 124-0 Elec in Mk 15

DETONATOR: Mk 37-0 Flash in Mk 52

LEAD: 150 mg Tetryl (80 & 70 mg
Tetryl pellets in Mk 52

BOOSTER: 25 g Tetryl in Mk 52

OTHER: None

FUNCTIONING DATA

MODES: Prox imp backup or imp

TYPE: Electronic, Mechanical

CHARACTERISTICS:

Can be set between 5 & 100 s in
1.0 s incr. Res energizer on 5 s
before set time & oscillator on
2.6 s before set time

TARGET: Ground - personnel

SENSITIVITY:

Height: 7 to 66 ft (2 to 20 m),
3 to 33 ft (1 to 10 m)
w/desensitivity cap

FUNCTION TEMP:

MODE ON DELIVERY:

Safe (Shipping line)

POWER SUPPLY:

Mk 16 Reserve Energizer

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO: 0409

US HCSDS: Unknown

UN CL/DIV SCG: 1.2 D

US DOT SHIP CL: A

NET EXPL WT: 25.364 g

NET PROP WT: None

STORAGE TEMP: -51 to +71 deg C

REMARKS/DESCRIPTION:

Fuze safety is obtained by restraining two rotors each with two spin detents. On firing, setback removes a pin from one spin detent of the Mk 15 RFSD & breaks the glass ampoule containing the electrolyte. Centrifugal force (CF) opens two spin detents on the escapement of the timer in the Mk 15, distributes the electrolyte to the battery plates, and removes the four detents from the rotors of the Mk 52 Aux Det or Booster. CF rotates these rotors to the armed position and aided by kick-off springs, drives sector gears of the Mk 15 timer. At 2.75 s, the timer removes the short from the Mk 124 Primer and at 5 and 3 s before set time releases two pellets which CF moves into the switch ring in sequence completing the circuit and initiating radio transmission. When the doppler signal between the transmitted and reflected wave reach the proper amplitude, the firing circuit functions the Mk 124 Primer, and, in turn, the Mk 37 Det, leads and booster. Set fuze at 90 s for PD. Do not fire fuze at charge 7 in 105 mm Howitzer, except under combat emergency. The M513A2 is the same as the M514A1 except for oscillator required in small dia projectiles. M513A2 has wider temperature range than M513 and M513A1.

Supersedes page 1-408 of MIL-HDBK-146.

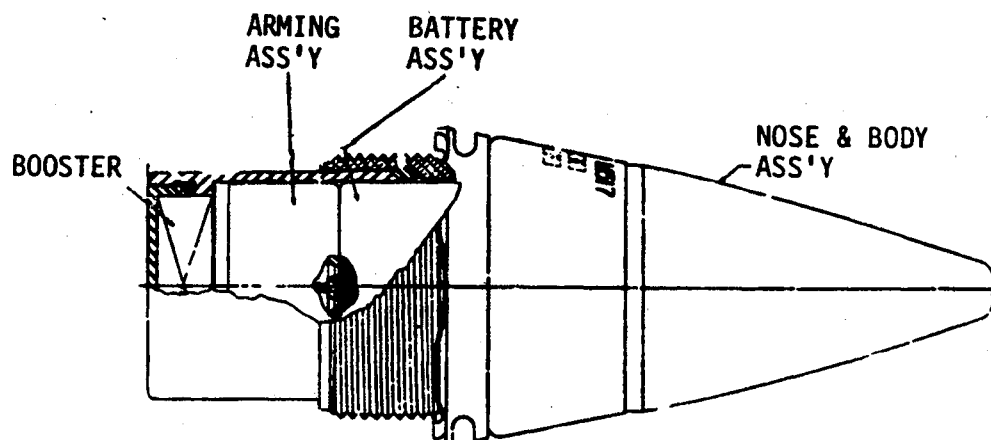
1-408

LAST UPDATE: 03/03/92

MIL-HDBK-146
NOTICE 2

FUZE: M517
Proximity Fuze

ILLUSTRATION:



- OVERALL SIZE -
LG: 6.19 in (157 mm)
XSECT:

- INTRUSION -
DP: 2.21 in (56.1 mm)
DIA:

WT: 1.28 lb (580 g)
THD: 2.00-12NS-1
THD DP:

IDENTIFICATION

AGENCY: LABCOM
CONTACT:
PHONE: DSN 290-
STATUS: Obsolete
USER: Army
ASSY DWG: 7 542 838
PARTS LIST:
SPEC: TL-PD-81
PUB: TM 43-0001-28

NATIONAL STOCK NO:
1390-00-324-1420
DODIC: N417
PRIOR MODEL NO: T178E3
SIMILAR TO:

REPLACES:
REPLACED BY: M532

GENERAL

WEAPON: 81-mm mortar

AMMUNITION:
HE, M362

LOCATION: Nose
BALLISTIC LEVELS:
ROTATION: None
SETBACK: 8,000 g
VELOCITY: 831 ft/s (253 m/s)

CREEP:
FLIGHT TIME:
SAFETY STD: Doesn't meet MIL-STD-1316
SETTERS: None

Supersedes page 1-417 of MIL-HDBK-146.

1-417

FUZE: M517
Proximity Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/03/92

ARMING DATA

FIRST SAFETY:

Setback: 385 g no arm;
385 to 670 g all arm

SECOND SAFETY:

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

1.5 s PD; 4 s proximity

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER: None

DETONATOR: M36A1

LEAD:

BOOSTER: Tetryl

OTHER:

FUNCTIONING DATA

MODES: Proximity, PD backup
TYPE: Electronic, mechanical
CHARACTERISTICS:

TARGET: Personnel, light equipment
SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

Proximity

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:
US HCSDS:
UN CL/DIV SCG:
US DOT SHIP CL: A
NET EXPL WT: 26.3764 g
NET PROP WT:
STORAGE TEMP:

REMARKS/DESCRIPTION:

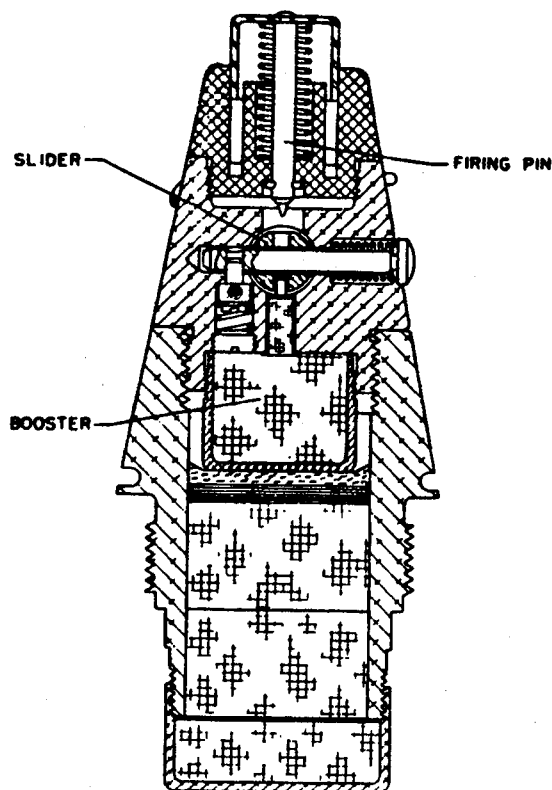
On firing, setback force initiates both electrical and mechanical arming. Electrical arming occurs by a required degree of setback to activate power generation in the power supply. Mechanical arming occurs through the sequential setback to the rear of three setback leaves to release the rotor in the base. The rotor is then turned by centrifugal force to align the detonator. Minimum times for arming are 1.5 s for PD action and 4 s for proximity action. When the power supply has generated sufficient energy, the transceiver is activated. Reflection of any part of the wave pulse back to the fuze results in a ripple or beat interference with the transmitted wave to close an electrical circuit and initiate the explosive train to the projectile. In event the proximity mode does not function, the PD mode will detonate the projectile. Clearance of at least 100 feet over obstacles is required for maximum reliability. Heavy precipitation or temperature extremes may result in premature functioning.

LAST UPDATE: 05/01/91

MIL-HDBK-146
NOTICE 2

FUZE: M519
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 5.88 in (149.9 mm)
XSECT: 2.403 in (61.0 mm)

- INTRUSION -

DP: 2.21 in (56.1 mm)
DIA:

WT: 1.25 lb (567 g)

THD: 2-12UNS-1A

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F
CONTACT: Zacharin, A
PHONE: DSN 880-5652
STATUS: Obsolete
USER: Army
ASSY DWG: 73-2-393
PARTS LIST:
SPEC:
PUB:

NATIONAL STOCK NO:
1315-00-028-5004 (Ctg)
DODIC: C222 (Ctg)
PRIOR MODEL NO: T319
SIMILAR TO: M52A2, XM719

REPLACES: Nothing
REPLACED BY:

GENERAL

WEAPON: 81 mm mortar, M29A1,
and M252

AMMUNITION:
HE, M362

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION:

SETBACK: 8000 g

VELOCITY: 1000 ft/s (305 m/s)

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: None

Supersedes page 1-421 of MIL-HDBK-146.

1-421

FUZE: M519
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 05/01/91

ARMING DATA

FIRST SAFETY:

Safety wire in setback pin

SECOND SAFETY:

Setback: 600 g all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

Yes

ARMING TIME OR DISTANCE:

0.6 to 1.52 m

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: M44

LEAD: Tetryl

BOOSTER: 16.8 g Tetryl

OTHER: 101.3 g Tetryl adapter
booster (4 pellets)

FUNCTIONING DATA

MODES: PD, SQ

TYPE: Mechanical

CHARACTERISTICS:

TARGET: Personnel

SENSITIVITY:

FUNCTION TEMP:

-40 to +52 deg C

MODE ON DELIVERY:

PD

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG: 1.1 D

US DOT SHIP CL: A

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

Safety is maintained by a bore-riding pin which holds a slider and its detonator out of line. On firing, the setback pin is forced back against its spring and free of the bore-riding pin. The bore-riding pin is ejected by its spring after the fuze has passed the muzzle. This allows the slider spring to move the slider and align the detonator with the firing pin and lead. On impact, the striker drives the firing pin against its spring and into the detonator, initiating the explosive train. The M525A1 and M526A1 are similar except they have a three-second delay arming mechanism and the firing pin provides an additional interlock on the slider. The M52A2 is an M519 without an adapter-booster. All remaining M519 Fuzes are installed in the mortar rounds and reserved for combat only.

MIL-HDBK-146
NOTICE 2

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**Data for the M520A1 MT SQ Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-423 and 1-424 of MIL-HDBK-146.

1-423/1-424

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MIL-HDBK-146
NOTICE 2

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**Data for the M521 PD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-425 and 1-426 of MIL-HDBK 146.

1-425/1-426

MIL-HDBK-146
NOTICE 2

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**Data for the M524A6 PD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-429 and 1-430 of MIL-HDBK 146.

1-429/1-430

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MIL-HDBK-146
NOTICE 2

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**Data for the M525A1 PD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-431 and 1-432 of MIL-HDBK 146.

1-431/1-432

MIL-HDBK-146
NOTICE 2

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**Data for the M526A1 PD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-433 and 1-434 of MIL-HDBK 146.

1-433/1-434

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**Data for the M527B1 PD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-435 and 1-436 of MIL-HDBK 146.

1-435/1-436

MIL-HDBK-146
NOTICE 2

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**Data for the M532 Proximity Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-437 and 1-438 of MIL-HDBK 146.

1-437/1-438

MIL-HDBK-146
NOTICE 2

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**Data for the M534A1 BD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-439 and 1-440 of MIL-HDBK 146.

1-439/1-440

MIL-HDBK-146
NOTICE 2

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**Data for the M539A1 PIBD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-443 and 1-444 of MIL-HDBK 146.

1-443/1-444

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MIL-HDBK-146
NOTICE 2

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Data for the M548 MTSQ Fuze
may be found in MIL-HDBK-145B.

Supersedes pages 1-447 and 1-448 of MIL-HDBK 146.

1-447/1-448

MIL-HDBK-146
NOTICE 2

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**Data for the M557 PD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-449 and 1-450 of MIL-HDBK 146.

1-449/1-450

MIL-HDBK-146
NOTICE 2

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**Data for the M562 MTSQ Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-461 and 1-462 of MIL-HDBK 146.

1-461/1-462

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MIL-HDBK-146
NOTICE 2

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**Data for the M563 MT Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-463 and 1-464 of MIL-HDBK 146.

1-463/1-464

MIL-HDBK-146
NOTICE 2

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Data for the M571 MT Fuze
may be found in MIL-HDBK-145B.

Supersedes pages 1-473 and 1-474 of MIL-HDBK 146.

1-473/1-474

MIL-HDBK-146
NOTICE 2

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**Data for the M572 PD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-475 and 1-476 of MIL-HDBK 146.

1-475/1-476

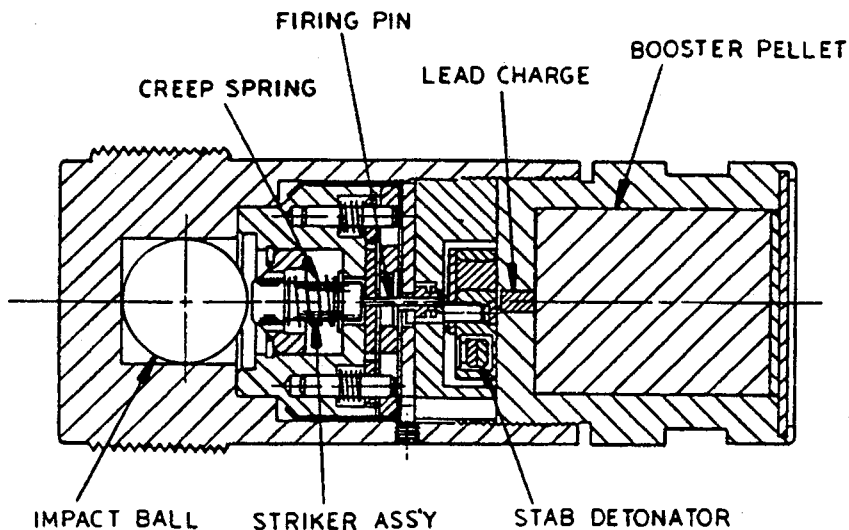
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LAST UPDATE: 11/05/92

MIL-HDBK-146
NOTICE 2

FUZE: M578A1
BD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.50 in (114.2 mm)
XSECT: 1.68 in (42.7 mm)

- INTRUSION -

DP: 4.08 in (103.6 mm)
DIA: 1.68 in (42.7 mm)

WT: 1.876 lb (851 g)
THD: 1.8-12UNS-2A (LH)
THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F
CONTACT: Nash, A
PHONE: DSN 880-2017
STATUS: Obsolete
USER: Army
ASSY DWG: 9 323 961
PARTS LIST: 9323961
SPEC: MIL-F-60041, 60042
PUB:

NATIONAL STOCK NO:
1390-00-182-3132

DODIC:
PRIOR MODEL NO: M578
SIMILAR TO:

REPLACES:
REPLACED BY:

GENERAL

WEAPON: 105mm Tank Gun, M68

AMMUNITION:
Cartridge, HEP-T, M393A2

LOCATION: Base
BALLISTIC LEVELS:
ROTATION: 400 rps
SETBACK: 12,800 g
VELOCITY: 2400 ft/s (732 m/s)

CREEP:
FLIGHT TIME:
SAFETY STD:
SETTERS:

NEW PAGE.

1-480A

FUZE: M578A1
BD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 11/05/92

ARMING DATA

FIRST SAFETY:

Spin: 100 rps no arm,
150 rps all arm

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

6 m Delay Arming

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER: None

DETONATOR: M61 Stab

LEAD: 70 mg Comp A5

BOOSTER: 36 g RDX,
1.10 dia x 1.44 in

OTHER:

FUNCTIONING DATA

MODES: BD

TYPE: Mechanical, Inertial

CHARACTERISTICS:

Non Delay, 400 micro s

TARGET: Ground-Tank, Personnel

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

None

STORAGE AND
TRANSPORTATION
SAFETY DATA

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

NEW PAGE.

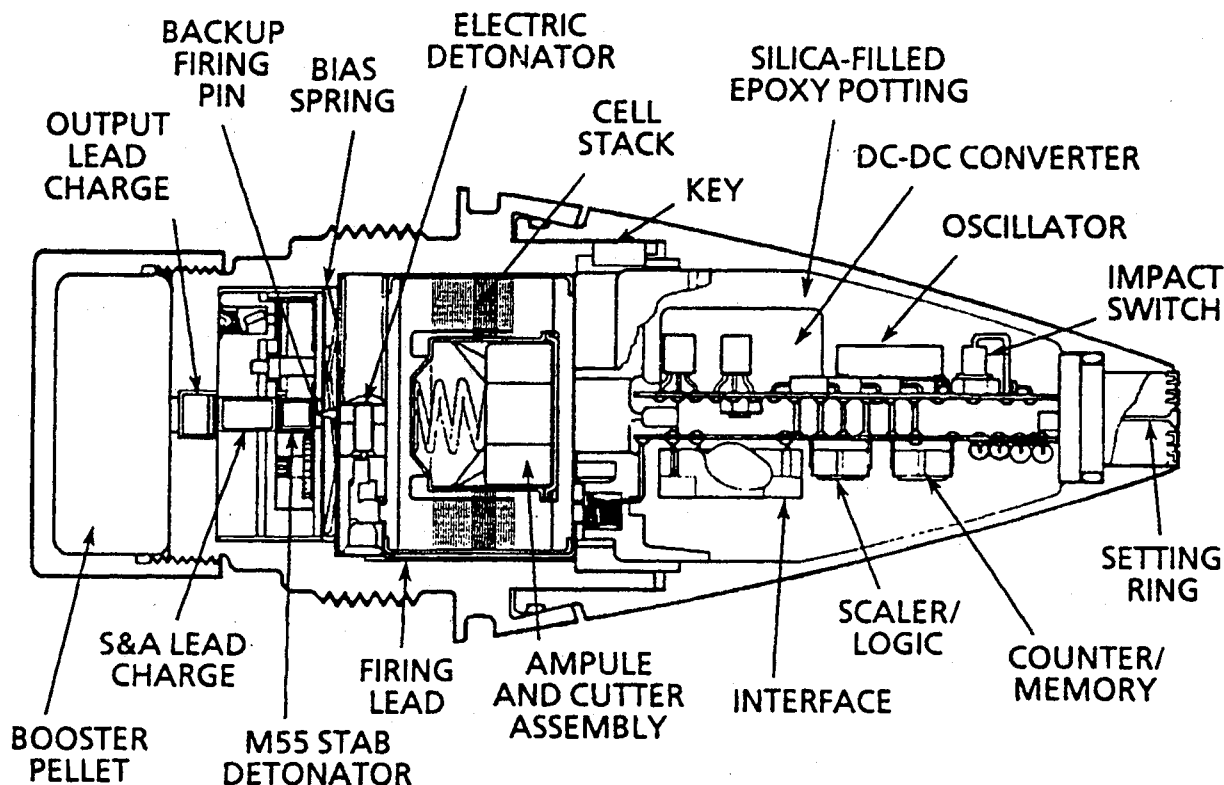
1-480B

LAST UPDATE: 03/06/92

MIL-HDBK-146
NOTICE 2

FUZE: M587
ET/PD Fuze

ILLUSTRATION:



NOTE: S&A MODULE IS SHOWN WITH THE ROTOR IN THE ARMED POSITION

- OVERALL SIZE -

LG: 5.97 in (151.6 mm)
XSECT: 2.41 in (61.3 mm)

- INTRUSION -

DP: 2.21 in (56.1 mm)
DIA: 1.71 in (43.4 mm)

WT: 1.81 lb (821.0 g)

THD: 2.0-12UNS-1A

THD DP: 0.880 in (22.4 mm)

IDENTIFICATION

AGENCY: LABCOM, SLCHD-TA-ES
CONTACT: Harrison, E
PHONE: DSN 290-3710
STATUS: Terminated
USER: Army
ASSY DWG: 11 711 435
PARTS LIST: 11711435
SPEC: MIL-F-48700
PUB:

NATIONAL STOCK NO:
1390-01-062-4574

DODIC: N60G

PRIOR MODEL NO: XM587E2
SIMILAR TO: M724, Mk 423

REPLACES: M548, M564
REPLACED BY:

GENERAL

WEAPON: 105 mm, 155 mm & 8 in
Howitzers

AMMUNITION:

105mm HE M1, & HE RA M548, 155mm
HE M107, HE RA M549, Agent GB VX,
M121A1&WP M110, 8-in HE M106

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 500 rps
SETBACK: 30,000 g
VELOCITY: 3300 ft/s (1006 m/s)

CREEP: 7 g

FLIGHT TIME: 200 s (max settable)

SAFETY STD: MIL-STD-1316

SETTERS: M36 Setter/M744 Trng Fuze

NEW PAGE.

1-486A

FUZE: M587
ET/PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/06/92

ARMING DATA

FIRST SAFETY:

Setback: 800 g no arm,
1200 g all arm

SECOND SAFETY:

Spin: 18 rps no arm,
28.4 rps all arm

OTHER SAFETY:

Elec arming 3 to 4 s
before set time

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

42 to 124 m
400 to 800 calibers

FUNCTIONING DATA

MODES: Time and Impact, Settable

TYPE: Electronic, mechanical

CHARACTERISTICS:

0.2 to 199.9 s by 0.1 incr.
mechanical impact backup

TARGET: Ground-Personnel, Materiel

SENSITIVITY:

8 in (203 mm) plywood, 0 degree
obliquity, 400 ft/s (122 m/s)

FUNCTION TEMP:

-40 to +63 deg C

MODE ON DELIVERY:

PD

EXPLOSIVE COMPONENTS

S&A DEVICE: M724 type, 11 720 300

PRIMER: None

DETONATOR: Mod M100 Elec. 11722405
M55 Stab

LEAD: 182 mg PBXN-5, 11720258
134 mg PBXN-5, 11720310

BOOSTER: 27 g comp A5, 11720213

OTHER: None

POWER SUPPLY:

PS-127, Liquid Reserve, 11720216

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO:

US HCSDS: 1482, 1483 w/o booster

UN CL/DIV SCG:

US DOT SHIP CL: A

NET EXPL WT: 27.432 g

NET PROP WT: None

STORAGE TEMP: -54 deg C 3 days max
+71 deg C 4 hr/day max

REMARKS/DESCRIPTION:

The M36 Fuze Setter is used to program the M587 fuze to function at a set time or on impact. On firing, the setback pin moves rearward, partially freeing the rotor. Centrifugal force (CF) rotates the spin detents allowing the rotor to turn to the armed position delayed by a runaway escapement. Setback also ruptures the copper electrolyte ampule and CF forces the electrolyte into the battery plates. Electronic timing is accomplished with an oscillator, a binary divider, and a counter. A short on the firing capacitor is removed 3.4 s before the set time or, in the case of impact setting, 0.1 s after power supply activation. At set time, the counter circuit triggers the firing capacitor functioning the modified M100 Electric Detonator which initiates the M55 Stab Detonator in the rotor and, in turn, the leads and booster. Impact switch closure will fire the electric detonator if the fuze is set to impact or as a backup for timer failure. If the fuze fails electronically, inertia moves the safety device forward and the M55 Detonator strikes a firing pin. The M724 and Mk 423 are similar, but do not have a backup mechanical firing pin. The M724 does not have a booster.

NEW PAGE.

1-486B

MIL-HDBK-146
NOTICE 2

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Data for the M592A1 MT Fuze
may be found in MIL-HDBK-145B.

Supersedes pages 1-493 and 1-494 of MIL-HDBK 146.

1-493/1-494

MIL-HDBK-146
NOTICE 2

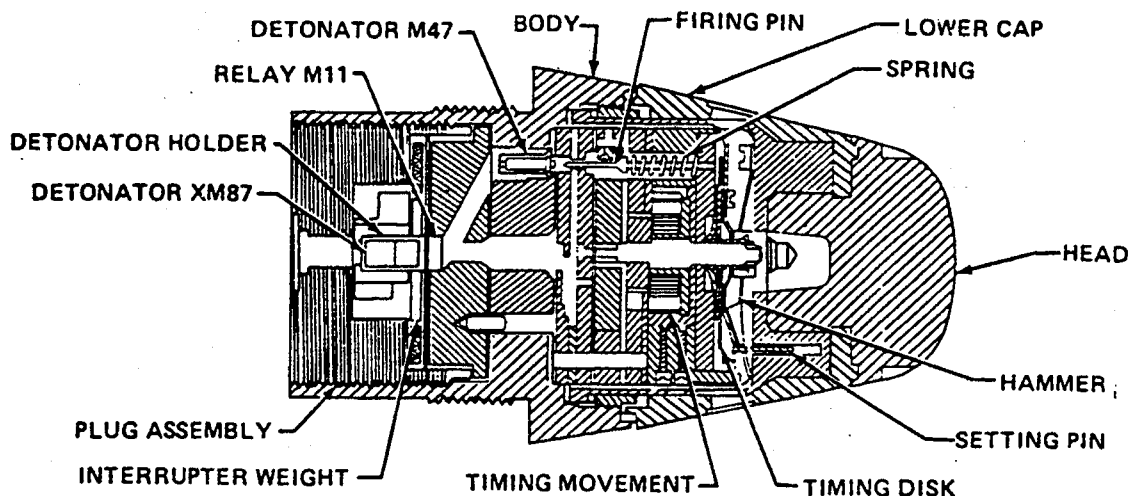
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LAST UPDATE: 10/28/92

MIL-HDBK-146
NOTICE 2

FUZE: M711
MT Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.166 in (105.8 mm)
XSECT: 2.4 in (61.0 mm)

- INTRUSION -

DP: 1.5 in (38.1 mm)
DIA:

WT: 1.32 lb (599 g)

THD: 1.9-16UNS-1A (non std)
THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F
CONTACT:
PHONE: DSN 880-
STATUS: Obsolete
USER: Army
ASSY DWG: 10 542 845
PARTS LIST: PL10542845
SPEC: MIL-F-60589
PUB: TM 43-0001-28

NATIONAL STOCK NO:
1315-00-143-8235; 1315-00-926-9328
DODIC: C275
PRIOR MODEL NO: XM711
SIMILAR TO:

REPLACES:
REPLACED BY:

GENERAL

WEAPON: 90 mm recoilless rifle

AMMUNITION:

Flechette-loaded, M580
Beehive (muzzle action)

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 19,050 rps
SETBACK: 20,660 g
VELOCITY: 3000 ft/s (914 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316
SETTERS: Hand

Supersedes page 1-503 of MIL-HDBK-146.

1-503

FUZE: M711
MT Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/28/92

ARMING DATA

FIRST SAFETY:

Setback: 1000 g no arm
5600 g all arm

SECOND SAFETY:

Spin: 100 rps no arm
333 rps all arm

OTHER SAFETY:

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

10 ms after setback

FUNCTIONING DATA

MODES: Muzzle or time action

TYPE: Mechanical

CHARACTERISTICS:

Popovitch escapement 200-400 m
100 m increments

TARGET: Anitpersonnel

SENSITIVITY:

NA

FUNCTION TEMP:

-40°C to +52°C

MODE ON DELIVERY:

EXPLOSIVE COMPONENTS

S&A DEVICE: Dwg. 10 533 945

PRIMER: None

DETONATOR: M47 stab, M11 relay,
XM87 percussion

LEAD: None

BOOSTER: None

OTHER:

POWER SUPPLY:

None

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP: +71°C < 4 hr/day
-62°C less than 3 days

REMARKS/DESCRIPTION:

The fuze provides selectable muzzle action (MA) or set time. When MA is selected, setback causes the setback pins to move down and allow centrifugal force to move the weight above the timer, uncovering a notch in the timing disk. At the same time, centrifugal force moves aside the weights between the M11 Relay and XM87 Detonator in the base. With the notch in the timing disk uncovered, the firing arm slides in and turns, permitting the spring-loaded firing pin to strike the M47 Detonator and initiate the explosive train as the projectile leaves the muzzle. If the fuze is set for time, rotation of the lower cap turns the timing disk by means of a setting pin lodged in an upraised lug on the disk. Setback permits a hammer spring to strike the upraised lug, thus releasing the timing disk from the setting pin. Centrifugal force releases the timing movement. When the disk has turned the preset time, the disk notch engages the firing arm. The firing arm turns to allow the firing pin to strike the detonator. The fuze functions for optimum payload dispersion for the range set (100 m short for 200-500 m; 75 m short for 600-4400 m).

MIL-HDBK-146

NOTICE 2

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Data for the M716 PD Fuze
may be found in MIL-HDBK-145B.

Supersedes pages 1-507 and 1-508 of MIL-HDBK 146.

1-507/1-508

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MIL-HDBK-146
NOTICE 2

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**Data for the M717 PD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-509 and 1-510 of MIL-HDBK 146.

1-509/1-510

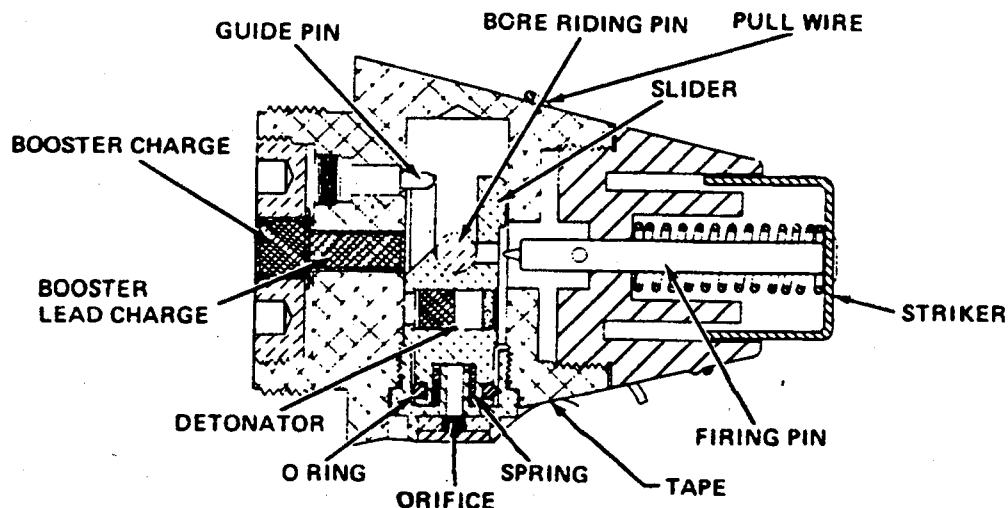
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MIL-HDBK-146
NOTICE 2

FUZE: M719
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 2.95 in (74.9 mm)
XSECT: 1.93 in (49.0 mm)

- INTRUSION -

DP: 0.5 in (12.7 mm)
DIA:

WT: 0.25 lb (113.4 g)
THD: 1.5-12NF-(non-std)
THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F
CONTACT:
PHONE: DSN 880-
STATUS: Obsolete
USER: Army
ASSY DWG: 9 220 850; 73-1-161
PARTS LIST: PL 9 220 850
SPEC: PA-PD-2961
PUB: TM 43-0001-28

NATIONAL STOCK NO:
1390-00-143-7035
DODIC: N332
PRIOR MODEL NO:
SIMILAR TO: M52A2, M519E1, M527,
M716, M717

REPLACES:
REPLACED BY:

GENERAL

WEAPON: 60 and 81 mm mortars

AMMUNITION:

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION:

SETBACK: 8000 g

VELOCITY: 1000 ft/s (304 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: None

Supersedes page 1-513 of MIL-HDBK-146.

FUZE: M719
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/28/92

ARMING DATA

FIRST SAFETY:

Arming wire

SECOND SAFETY:

Setback: 600 to 1200 g all arm
(estimated)

OTHER SAFETY:

None

SAFE/ARM INDICATION:

Yes

ARMING TIME OR DISTANCE:

1.5 to 6.0 s

EXPLOSIVE COMPONENTS

S&A DEVICE: Out-of-line explosive
train

PRIMER: None

DETONATOR: M44E1

LEAD: Tetryl

BOOSTER: Tetryl

OTHER: None

FUNCTIONING DATA

MODES: PD SQ

TYPE: Mechanical

CHARACTERISTICS:

Dashpot

TARGET: Personnel

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

SQ

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

Setback from weapon firing forces the setback pin rearward against the pin spring and releases the bore-riding pin. The bore-riding pin then contacts the bore of the mortar and is ejected when the cartridge leaves the muzzle. Ejection of the bore-riding pin unlocks the slider. The slider is moved by a compression spring. A vacuum is created behind the slider due to an o-ring seal. The vacuum is relieved gradually by the bleed air orifice. The metered pressure relief through the orifice provides 1.5 to 6 s delay before the slider completes the movement necessary to align the detonator with the firing pin and arm the fuze. On impact, the striker and firing pin are depressed, and inertia throws the slider with detonator forward into the firing pin. Detonation is on superquick action through the booster lead charge and tetryl booster charge. The M717 is the same except it has a much larger tetryl booster.

MIL-HDBK-146
NOTICE 2

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**Data for the M720E1 PD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-515 and 1-516 of MIL-HDBK 146.

1-515/1-516

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MIL-HDBK-146
NOTICE 2

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MIL-HDBK-146
NOTICE 2

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**Data for the M728 CVT Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 1-519 and 1-520 of MIL-HDBK 146.

1-519/1-520

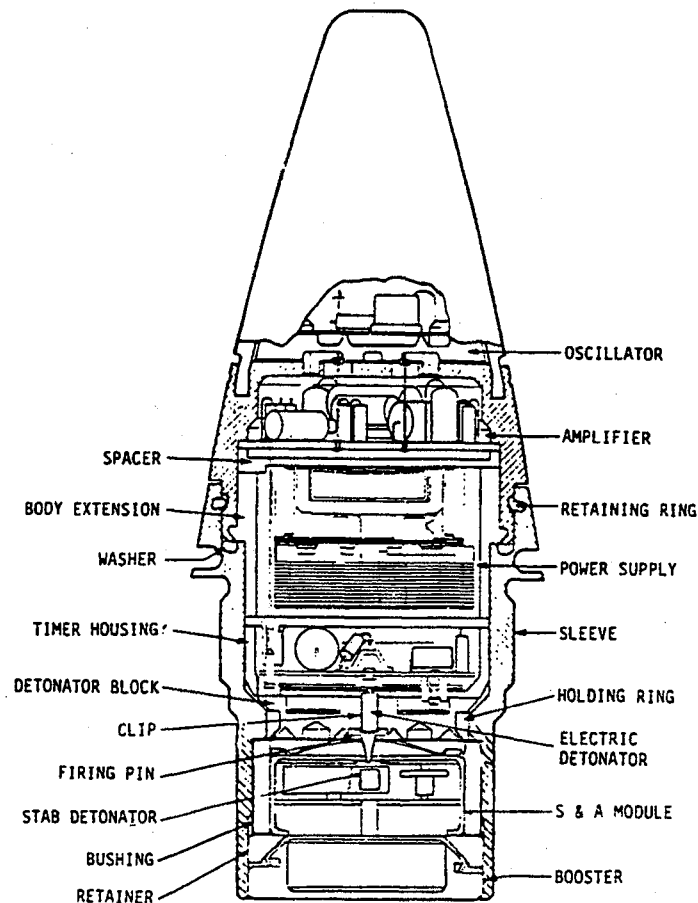
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LAST UPDATE: 10/28/92

MIL-HDBK-146
NOTICE 2

FUZE: M732A1
Proximity Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 5.97 in (151.6 mm)
XSECT: 2.42 in (61.4 mm)

- INTRUSION -

DP: 2.21 in (56.1 mm)
DIA: 1.79 in (45.5 mm)

WT: 1.76 lb (798.3 g)

THD: 2.0-12UNS-1A

THD DP: 0.75 in (19.1 mm)

IDENTIFICATION

AGENCY: LABCOM, SLCHD-TA-ME
CONTACT: Beard, J
PHONE: DSN 290-2420
STATUS: Terminated
USER: Army, Marines
ASSY DWG: 11 741 889
PARTS LIST: 11 741 889
SPEC: MIL-F-48712, -48713
PUB:

NATIONAL STOCK NO:

1390-01-020-0096, 1390-01-137-5444

DODIC: N464

PRIOR MODEL NO: M732

SIMILAR TO: M514A1, M728, M732

REPLACES: M728, M514A1, M732

REPLACED BY:

GENERAL

WEAPON: 4.2-in Mortar, 105mm,
155mm & 8-in Howitzers &
175mm Gun

AMMUNITION:

4.2in HE M329A2, 105mm HE M1, 155
mm HE M107&GB UX M121A1, 8in HE
M106 & GBM UX M426, 175mm HE M437

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 50 rps to 360 rps

SETBACK: 1600 g to 20,000 g

VELOCITY: 328 to 3280 ft/s

(100 m/s to 1000 m/s)

CREEP: 6 g max

FLIGHT TIME: 140 s (approx)

SAFETY STD: Waiver for MIL-STD-1316B

SETTERS: M27

NEW PAGE.

1-520A

FUZE: M732A1
Proximity Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/28/92

ARMING DATA

FIRST SAFETY:

Setback: 800 g no arm,
1200 g all arm

SECOND SAFETY:

Spin: 17 rps no arm,
28 rps all arm

OTHER SAFETY:

Electric arming 5 s before
expected functioning

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

37 to 111 m, mechanical
5 s before function, electric

FUNCTIONING DATA

MODES: Proximity or PD

TYPE: Electronic, RF CW

CHARACTERISTICS:

Mechanical impact back-up
5 to 150 s setting for
prox mode

TARGET: Ground-Personnel, Materiel

SENSITIVITY:

2.3 ft (0.7 m) plywood, 0 degree
obliquity, 640 ft/s (195 m/s),
105 mm Howitzer

FUNCTION TEMP:

-37 to +63 deg C

MODE ON DELIVERY:

PD

EXPLOSIVE COMPONENTS

S&A DEVICE: M724 type,
Dwg 11 720 300

PRIMER: None

DETONATOR: Mod 100 Elec, 11 722 405
M55 Stab

LEAD: 134 mg PBXN-5

BOOSTER: 11.0 g CH-6

OTHER: None

POWER SUPPLY:

PS-115,
Liquid Reserve, 11007046
NSN 1390-01-054-5139

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO: 0409
US HCSDS: 846, 984 w/o booster
UN CL/DIV SCG: 1.2 D
US DOT SHIP CL: A
NET EXPL WT: 11.250 g
NET PROP WT: None
STORAGE TEMP: -46 to +71 deg C

REMARKS/DESCRIPTION:

Fuze safety is obtained by a setback detent and two spin detents on the safety device rotor and setback and spin requirements for the power supply. On firing, acceleration moves the setback pin rearward, partially releasing the safety rotor and breaks the copper ampoule, releasing the electrolyte in the power supply. Centrifugal force (CF) rotates the spin detents completely releasing the unbalanced rotor and rotates it to the armed position, delayed by a runaway escapement. CF also forces the electrolyte between the plates of the battery which powers the electronic timer, arms the proximity circuitry 5 s before the set time, and transmits the CW RF. When the doppler signal between the transmitted and reflected waves reaches the proper value, the firing circuit functions the Mod M100 Det which initiates the M55 Det in the safety rotor and the lead and booster. The M732A1 differs from the M732 in that it has an M724 type S&A device instead of an M125A1 type, a sliding S&A type impact backup system, and a large booster pellet which can initiate cast TNT bursting charges. This type impact backup system provides proper function on rocket-assisted projectiles.

NEW PAGE.

1-520B

LAST UPDATE: 01/01/87

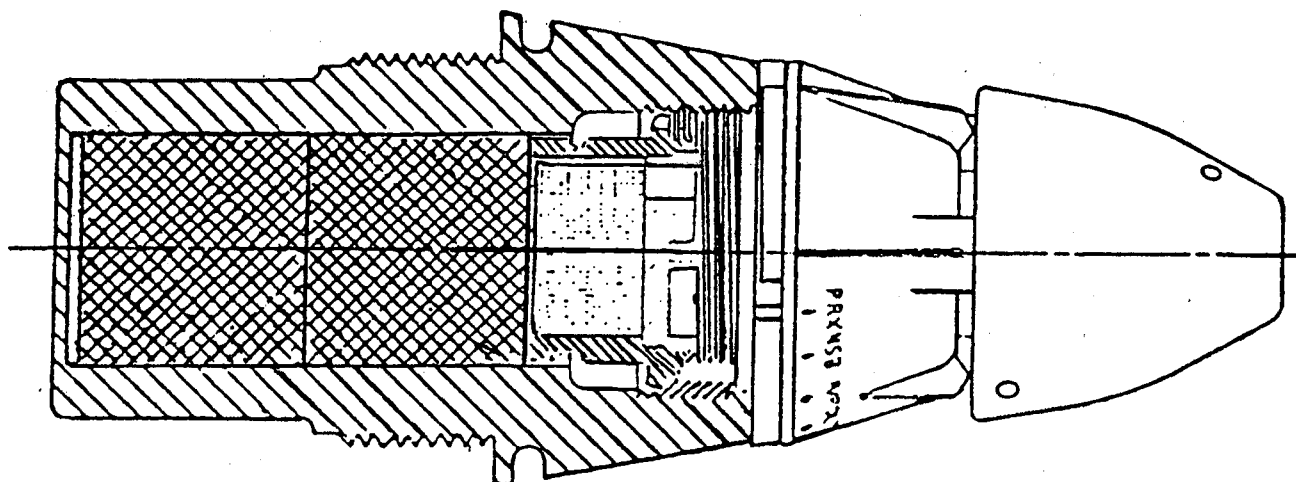
MIL-HDBK-146

NOTICE 2

FUZE: XM741

Multi-Option Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 6.083 in (154.5 mm)

XSECT: 2.41 in (61.2 mm)

- INTRUSION -

DP: 2.20 in (55.9 mm)

DIA: 17.4 in (44.2 mm)

WT: 1.10 lb (499.0 g)

THD: 2-12UNS-1A

THD DP: 0.78 in (19.8 mm)

IDENTIFICATION

AGENCY: LABCOM, SLCHD-TA-ME

CONTACT: Beard, J

PHONE: DSN 290-2420

STATUS: Terminated

USER: Army, Marines

ASSY DWG: 11 723 140

PARTS LIST: 11723140

SPEC: MIL-F-50828

PUB:

NATIONAL STOCK NO:

Not yet assigned

DODIC: Not yet assigned

PRIOR MODEL NO: None

SIMILAR TO: M734

REPLACES: M524A6, M526, M532, M567

REPLACED BY:

GENERAL

WEAPON: 81mm Mortar, M1 & M29A1 &
4.2-in Mortar
M2 & M30

AMMUNITION:

81mm Cart, HE, M374 Series &
Smoke, M375 Series; 4.2-in
Cartridge M329 Series

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 0 to 130 rps

SETBACK: 1000 to 12000 g

VELOCITY: 217 to 1100 ft/s
(66 to 335 m/s)

CREEP:

FLIGHT TIME: 8.5 to 55 s

SAFETY STD: MIL-STD-1316B

SETTERS: Manual

NEW PAGE.

1-520C

FUZE: XM741
Multi-Option Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 01/01/87

ARMING DATA

FIRST SAFETY:

Setback: 225 g no arm,
375 g all arm

Boost: 8 ms at 375 g

SECOND SAFETY:

Sustained air flow
25 m/s minimum velocity

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

100 m mech, 2 to 3 s
more elec

EXPLOSIVE COMPONENTS

S&A DEVICE: Zig-zag & airflow type

PRIMER: In delay

DETONATOR: Mod M100 micro elec,
11722405, M61 Stab

LEAD: 413 mg PBXN-5, 11722542

BOOSTER: 8 g Comp A-5 (in 734)
65.4 g Comp A-5
(in adapter)

OTHER: Delay for M734 .05 to .15 s,
11730630 (11722790 alt)

FUNCTIONING DATA

MODES: Prox, near burst, SQ or DEL

TYPE: Electronic, Mechanical

CHARACTERISTICS:

Prox: 1 to 4 m HOB

Near burst: 0 to 1 m HOB

SQ: 200 to 700 microsec

Delay: 100 ms

TARGET: Gnd-Personnel and Material

SENSITIVITY:

0.4 ft (0.12 m) plywood, 0 degree
obliquity, 630 ft/s (192 m/s),

105 mm Howitzer

FUNCTION TEMP:

-46 to +63 deg C

MODE ON DELIVERY:

Proximity

POWER SUPPLY:

Turbine Alternator, 11722760

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL: A

NET EXPL WT: 74.0978 g

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

The fuze is made safe by restraining the rotor by an acceleration-time sensing device and an air flow operated jackscrew detent. The fuze is set by rotating the head for proximity, near burst, impact, or delay functioning. On firing, a setback weight moves rearward oscillating in a zig-zag track to sense a proper acceleration-time propulsion. This partially releases the rotor and frees a turbine alternator. Sustained air flow into the turbine in flight slowly unscrews the jackscrew, completely releasing the rotor. The rotor is spring-driven to the armed position unshorting the detonator and completing the electrical circuits. The alternator powers the transceiver and a timing circuit which delays the firing circuit for 2 to 3 s after rotor arming. When the CW RF doppler signal reaches the proper value, the firing circuit functions the Mod M100 Det which initiates the lead and booster. When set SQ, an elect switch closes at impact and functions the Mod M100. When set delay, an inertia firing pin functions the stab delay which initiates the M61 Detonator. The XM741 is the same as the M734 but has a 1.5 to 2-in adapter booster.

NEW PAGE.

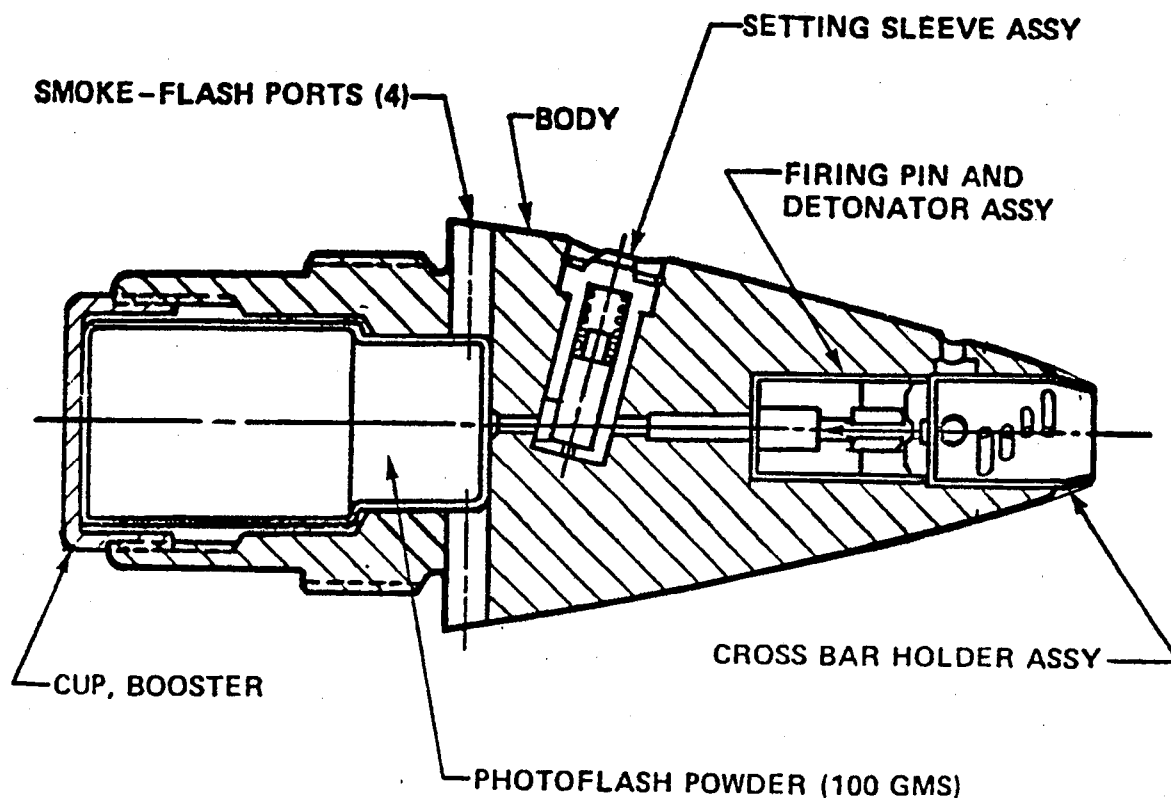
1-520D

LAST UPDATE: 03/04/92

MIL-HDBK-146
NOTICE 2

FUZE: M747E2
PD Practice Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 5.97 in (151.6 mm)
XSECT: 2.41 in (61.0 mm)

- INTRUSION -

DP: 2.21 in (56.1 mm)
DIA: 17.3 in (44.0 mm)

WT: 1.50 lb (680.4 g)

THD: 2-12UNS-1A

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F
CONTACT:
PHONE: DSN 880-
STATUS: Terminated
USER: Army
ASSY DWG: 9 331 823
PARTS LIST:
SPEC:
PUB:

NATIONAL STOCK NO:

DODIC:
PRIOR MODEL NO: None
SIMILAR TO:

REPLACES: M739 practice use
REPLACED BY:

GENERAL

WEAPON: 105mm, 155mm, & 8
How & 4.2 in Mortar

AMMUNITION:
Training Proj. 155mm XM804

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 500 rps
SETBACK: 25,000 g
VELOCITY: 3000 ft/s (914 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

NEW PAGE.

1-522A

FUZE: M747E2
PD Practice Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/04/92

ARMING DATA

FIRST SAFETY:

Spin: 18.3 rps no arm,
28.3 rps all arm,
Interrupter

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

Yes

ARMING TIME OR DISTANCE:

None - bore safe only

EXPLOSIVE COMPONENTS

S&A DEVICE: None except interrupter

PRIMER: None

DETONATOR: M99 Stab

LEAD: None

BOOSTER: None

OTHER: Spotting chg: 52 g ZnKClO(3),
KNO(3), & AL

FUNCTIONING DATA

MODES: PD

TYPE: Mechanical

CHARACTERISTICS:

SQ action only

TARGET: None - Indirect Fire Practice

SENSITIVITY:

1 in (25.4 mm) plywood, 70 degree
obliquity, 1000 ft/s (305 m/s),
155 mm Howitzer

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

NEW PAGE.

1-522B

LAST UPDATE: 03/04/92

MIL-HDBK-146
NOTICE 2

FUZE: M748
PD Practice Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG: 5.97 in (151.6 mm)
XSECT: 2.41 in (61.0 mm)

- INTRUSION -

DP: 2.21 in (56.1 mm)
DIA: 17.3 in (44.0 mm)

WT: 1.50 lb (680.4 g)
THD: 2-12UNS-1A
THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F
CONTACT:
PHONE: DSN 880-
STATUS: Terminated
USER: Army
ASSY DWG:
PARTS LIST:
SPEC:
PUB:

NATIONAL STOCK NO:

DODIC:
PRIOR MODEL NO: None
SIMILAR TO:

REPLACES: M739 practice use
REPLACED BY:

GENERAL

WEAPON: 1/10 range 4.2 inch
practice mortar

AMMUNITION:
Training projectile

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 100 rps
SETBACK: 5,000 g
VELOCITY: 279 ft/s (85 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

NEW PAGE.

1-522C

FUZE: M748
PD Practice Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/04/92

ARMING DATA

FIRST SAFETY:

To be determined

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:

None - bore safe only

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: To be determined

LEAD: None

BOOSTER: None

OTHER: Spotting chg:
To be determined

FUNCTIONING DATA

MODES: PD

TYPE: Mechanical

CHARACTERISTICS:

SQ action only

TARGET: None - Indirect Fire Practice

SENSITIVITY:

Ground impact at 279 ft/s (85 m/s)

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

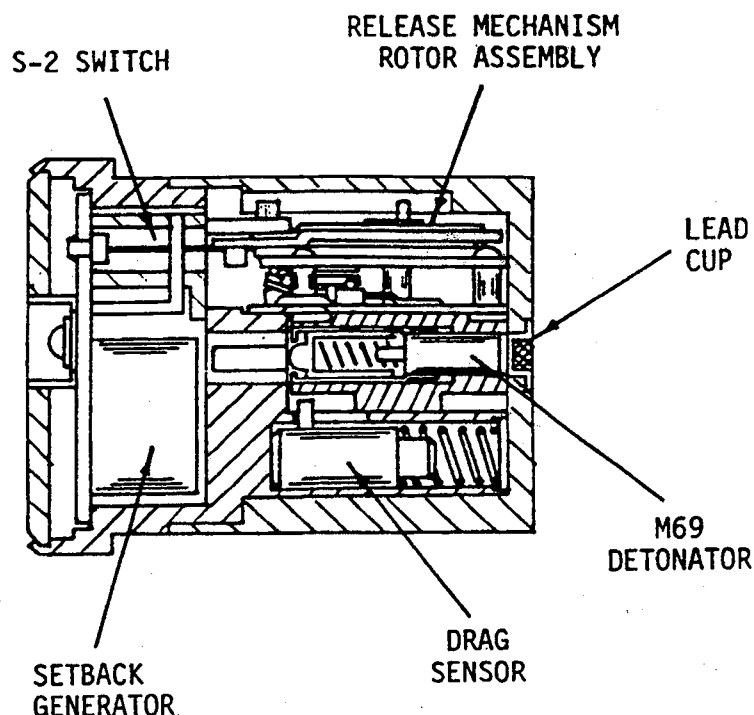
REMARKS/DESCRIPTION:

NEW PAGE.

1-522D

LAST UPDATE: 03/04/92

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.76 in (44.7 mm)
XSECT: 1.35 in (34.5 mm)

- INTRUSION -

DP: 1.35 in (34.2 mm)
DIA: 1.26 in (32.0 mm)

WT: 0.27 lb (122 g)

THD: None
THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-C
CONTACT: Bisson, E
PHONE: DSN 880-5591
STATUS: Terminated
USER: Army, Marines
ASSY DWG: 9 362 000
PARTS LIST:
SPEC: In preparation
PUB:

NATIONAL STOCK NO:
Not assigned
DODIC: Not assigned
PRIOR MODEL NO: None
SIMILAR TO: M509A2, M530A1, XM754,
M764
REPLACES: None
REPLACED BY:

GENERAL

WEAPON: 105mm Tank Cannon, M68

AMMUNITION:

Projectile, HEAT-MP-T,
XM815

LOCATION: Nose and base

BALLISTIC LEVELS:

ROTATION: Negligible
SETBACK: 42,000 g
VELOCITY: 3850 ft/s (1173 m/s)

CREEP: 15 g

FLIGHT TIME: 8 s max

SAFETY STD: Meets MIL-STD-1316B

SETTERS: None

NEW PAGE.

1-522E

FUZE: XM763
PI BD Fuze

MIL-HDBK-146
NOTICE2

LAST UPDATE: 03/04/92

ARMING DATA

FIRST SAFETY:

Setback: 2500 g no arm, 4500 g all arm (sequential leaves); 10000 g no arm, 15000 g all arm (generator)

SECOND SAFETY:

Creep: 2 g no arm, 4 g all arm estimated

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

11 to 26 m

EXPLOSIVE COMPONENTS

S&A DEVICE: Sequential leaf and creep

PRIMER: None

DETONATOR: M69 Elec

LEAD: 30 mg PBXN-5

BOOSTER: None

OTHER: Precision Initiating Coupler (PIC) in projectile

FUNCTIONING DATA

MODES: SQ and Graze

TYPE: Electric

CHARACTERISTICS:

SQ, 50 microsec (graze)

Graze, 600 microsec

TARGET: Gnk-Tank, lt armor, bunkers

SENSITIVITY:

1 in (25.4 mm) plywood

FUNCTION TEMP:

-37 to +52 deg C

MODE ON DELIVERY:

SQ

POWER SUPPLY:

Magnetic setback power supply, 78 V min on 0.56 mfd. Wound rotor spring.

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL: C

NET EXPL WT: 0.226 g

NET PROP WT: None

STORAGE TEMP: -54 to +71 deg C

REMARKS/DESCRIPTION:

The rotor is prevented from arming by a detent in the sequential setback device, & a detent from a drag sensor. On firing, acceleration holds the unbalanced rotor in the unarmed position, but rotates the three leaves of the setback device in sequence to release the rotor. Setback also causes a magnet to shear a disc and move rearward through the armature coil generating a charge for the firing capacitor. The spring driven rotor turns 270 deg toward the armed position, but can only arm if a drag sensor has removed a second detent before 220 deg rotation. Arming of the rotor unshorts the detonator and puts it in the firing circuit with the capacitor. On impact, the frontal area crush switch (FACS) closes the firing circuit and functions the M69 Det. On graze, a trembler switch closes the circuit. If either switch is closed during the arming cycle, the det will fire at 180 degrees out of line, its safest position. The XM763 is similar to the M764. Graze (trembler switch) 300 g sensitivity in the forward hemisphere. Stocked as part of XM815 Projectile.

NEW PAGE.

1-522F

LAST UPDATE: 03/04/92

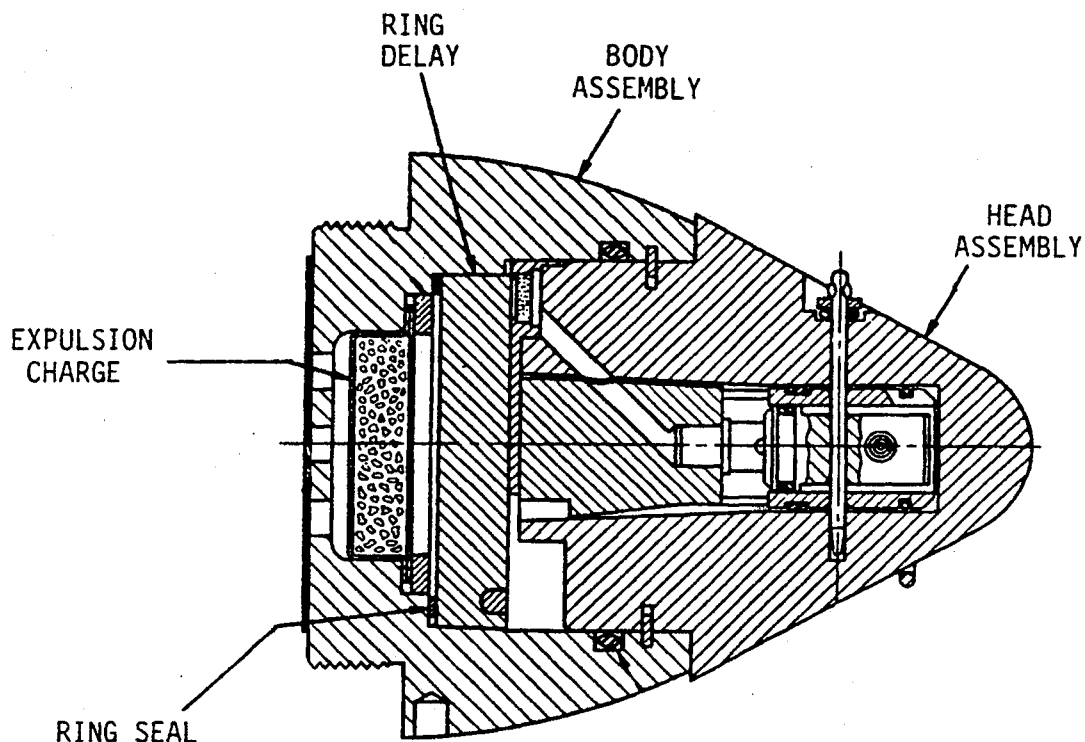
MIL-HDBK-146

NOTICE 2

FUZE: XM768

Time Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 3.85 in (97.8 mm)

XSECT: 3.00 in (76.2 mm)

- INTRUSION -

DP: 0.60 in (15.2 mm)

DIA: Thread

WT: 1.93 lb (875.4 g)

THD: 2.4-18UNS-1A

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-C

CONTACT: Cohen, S

PHONE: DSN 880-5584

STATUS: Terminated

USER: Army, Marines

ASSY DWG: 9 349 500

PARTS LIST:

SPEC: MIL-F-63089

PUB:

NATIONAL STOCK NO:

1315-01-199-8689

DODIC: C871

PRIOR MODEL NO: M84A1E1

SIMILAR TO: M84A1, M84A1E1, XM769

REPLACES: M84A1

REPLACED BY:

GENERAL

WEAPON: 81mm Mortar, M1, M29A1, M252 and L16/A2

AMMUNITION:

Cartridge, Illuminating, M301A3 & XM853, & Smoke, XM819

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 32 rps

SETBACK: Not determined

VELOCITY: 961 ft/s (293 m/s)

CREEP: NA

FLIGHT TIME: 45 s

SAFETY STD: Waiver for MIL-STD-1316B

SETTERS: Hand or wrench, 9 349 539

NEW PAGE..

1-524A

FUZE: XM768
Time Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/04/92

ARMING DATA

FIRST SAFETY:

Pull wire

SECOND SAFETY:

Setting

OTHER SAFETY:

Setback: 500 g non-fire,
1000 g fire

Shear wire on firing pin

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

3 s

EXPLOSIVE COMPONENTS

S&A DEVICE: Shear wire

PRIMER: M39A1 Perc

DETONATOR: None

LEAD: None

BOOSTER: Expulsion: 4.8 g Class 5
black powder

OTHER: 141mg AlA Ign Pdr, 7.5mg Tun-
gsten del comp, 227 mg Boron-
pot Nitrate

FUNCTIONING DATA

MODES: Time, Settable

TYPE: Pyrotechnic

CHARACTERISTICS:

5 to 62 s x 1 s incr

POWER SUPPLY:

None

TARGET: Ground-Illum & screening

SENSITIVITY:

NA

FUNCTION TEMP:

-46 to +63 deg C

MODE ON DELIVERY:

Safe

STORAGE AND
TRANSPORTATION
SAFETY DATA

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL: C

NET EXPL WT: 0.4015 g

NET PROP WT: 4.8 g

STORAGE TEMP: -54 to +71 deg C

REMARKS/DESCRIPTION:

Fuze safety is provided by a pull wire and a shear pin in the firing pin and non alignment of the firing train until the fuze is set. It is set by rotating the fuze head relative to the time ring in the body. The pull wire is removed before firing.

On firing, acceleration moves the firing pin rearward, shearing the shear wire and functioning the M39A1 Primer. The primer ignites the AlA Ignition Powder which ignites the Tungsten Delay Composition in the time ring. After the set delay, the time train ignites a Boron-Potassium Nitrate pellet which ignites the Black Powder expulsion charge. The XM768 differs from the M84A1 in that it is waterproof, burns for up to 62 s, has only one time ring, uses tungsten delay composition instead of black powder, and has a simpler construction. The XM768 is the same as the M84A1E1. The XM768 is similar to the XM769, except that it is larger.

NEW PAGE.

1-524B

LAST UPDATE: 03/04/92

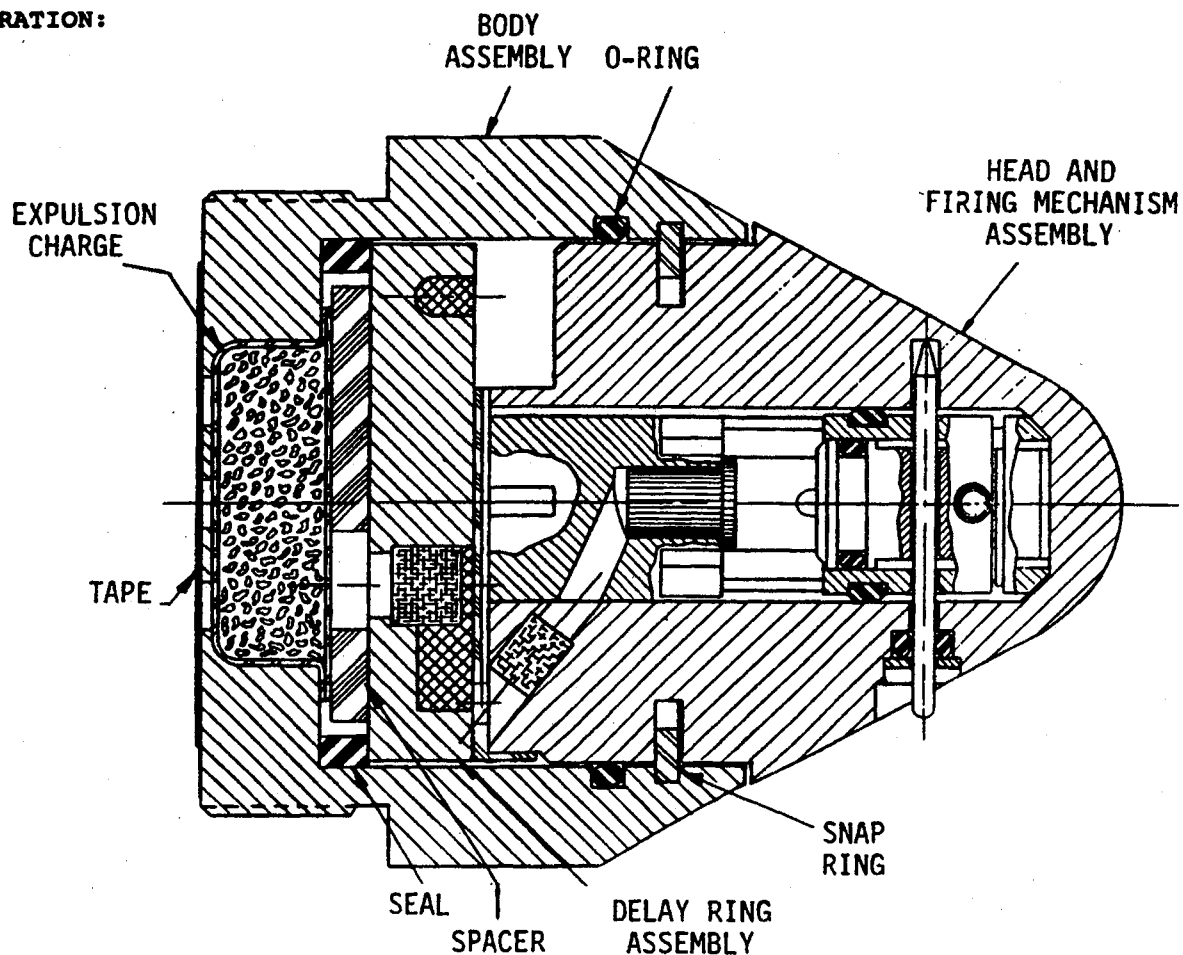
MIL-HDBK-146

NOTICE 2

FUZE: XM769

Time Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 2.54 in (64.5 mm)

XSECT: 2.28 in (57.9 mm)

- INTRUSION -

DP: 0.48 in (12.2 mm)

DIA: Thread

WT: 0.74 lb (335.7 g)

THD: 2-20 UNS-1A

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F

CONTACT: Ragonese, W

PHONE: DSN 880-2019

STATUS: Terminated

USER: Army, Marines

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

Not assigned

DODIC: T007

PRIOR MODEL NO: Nothing

SIMILAR TO: M65A1E1, M84A1, M84A1E1,
XM768

REPLACES: M65A1

REPLACED BY:

GENERAL

WEAPON: 60mm Mortar, M2, M19 & M224

AMMUNITION:

Cartridge, Illuminating,
M83A3, and XM721

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: None

SETBACK: 1900 to 3300 g

VELOCITY: 453 ft/s (138 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS:

NEW PAGE.

1-524C

FUZE: XM769
Time Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/04/92

ARMING DATA

FIRST SAFETY:

Pull wire

SECOND SAFETY:

Setback: 500 g non-fire,
900 g fire

OTHER SAFETY:

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

No delay arming

EXPLOSIVE COMPONENTS

S&A DEVICE: Shear wire

PRIMER: M39A1 Perc

DETONATOR: None

LEAD: None

BOOSTER: Expulsion: 2.59 g Class 5
Black powder

OTHER: 141 mg AlA Ign Pdr, 7.5 mg
Tungsten Delay Comp, 227 mg
Boron-Potassium Nitrate

FUNCTIONING DATA

MODES: Time, settable

TYPE: Pyrotechnic

CHARACTERISTICS:

3 to 45 s
in 1 s increments

TARGET: Ground - Illum

SENSITIVITY:

NA

FUNCTION TEMP:

-46 to +63 deg C

MODE ON DELIVERY:

Safe

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG: 1.4 S

US DOT SHIP CL: C

NET EXPL WT: 0.4015 g

NET PROP WT: 2.59 g + delay

STORAGE TEMP: -46 to +63 deg C

REMARKS/DESCRIPTION:

Fuze safety is achieved by restraining the firing plunger with a pull wire and two shear pins and by having the pyrotechnic train out of line until set time. Time is set by rotating the nose of the fuze with respect to the fixed time rings and withdrawing the pull wire. On firing, acceleration moves the firing plunger rearward cutting the shear wires and functioning the M39A1 Primer which ignites the AlA ignition powder, and, in turn, the tungsten delay composition time ring. The delay burns the length of time set in the ring and ignites the Boron-Barium Nitrate pellet which ignites the black powder expelling charge in the base of the fuze. This ignites and ejects the parachute flare. The XM769 is the same as the M65A1E1 Fuze. It is similar to the M65A1 except that it has a simpler design, has tungsten delay rings instead of black powder, is settable from 3 to 45 s instead of a fixed 15 s, and is waterproof. It is similar in design to the XM768 except that it is smaller.

NEW PAGE.

1-524D

LAST UPDATE: 10/31/92

MIL-HDBK-146

NOTICE 2

FUZE: XM770

Medium-Altitude Proximity Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG: 6.0 in (152 mm)

XSECT: 2.4 in (61 mm)

- INTRUSION -

DP: 2.2 in (56 mm)

DIA: 1.8 in (46 mm)

WT:

THD: 2.0-12UNS-1A

THD DP:

IDENTIFICATION

AGENCY: LABCOM, SLCHD-DE-OS

CONTACT: Goodman, R

PHONE: DSN 290-3710

STATUS: Terminated

USER: Army

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Nothing

REPLACES: Nothing

REPLACED BY:

GENERAL

WEAPON: 155 mm & 8-in howitzers

AMMUNITION:

155 mm GB M687

8-in GB XM836

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 500 rps

SETBACK: 30,000 g

VELOCITY:

CREEP:

FLIGHT TIME: 200 s

SAFETY STD: MIL-STD-1316

SETTERS: Auto-inductive

NEW PAGE.

1-524E

FUZE: XM770
Medium-Altitude Proximity Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/31/92

ARMING DATA

FIRST SAFETY:
Setback

SECOND SAFETY:
Spin

OTHER SAFETY:
Overhead safety of prox and time
modes

SAFE/ARM INDICATION:
None

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR:

LEAD:

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES: Prox, time

TYPE: Electronic

CHARACTERISTICS:

Prox: Selectable HOB to 75 in

Time: 0.5 to 200 s in 0.1 s
increments

TARGET: Ground

SENSITIVITY:

FUNCTION TEMP:

-32 to +44 deg C

MODE ON DELIVERY:

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP: -51 to +69 deg C

REMARKS/DESCRIPTION:

The XM770 is no longer being developed. The functional capabilities planned for the XM770 will be provided by the XM773, now in development.

NEW PAGE.

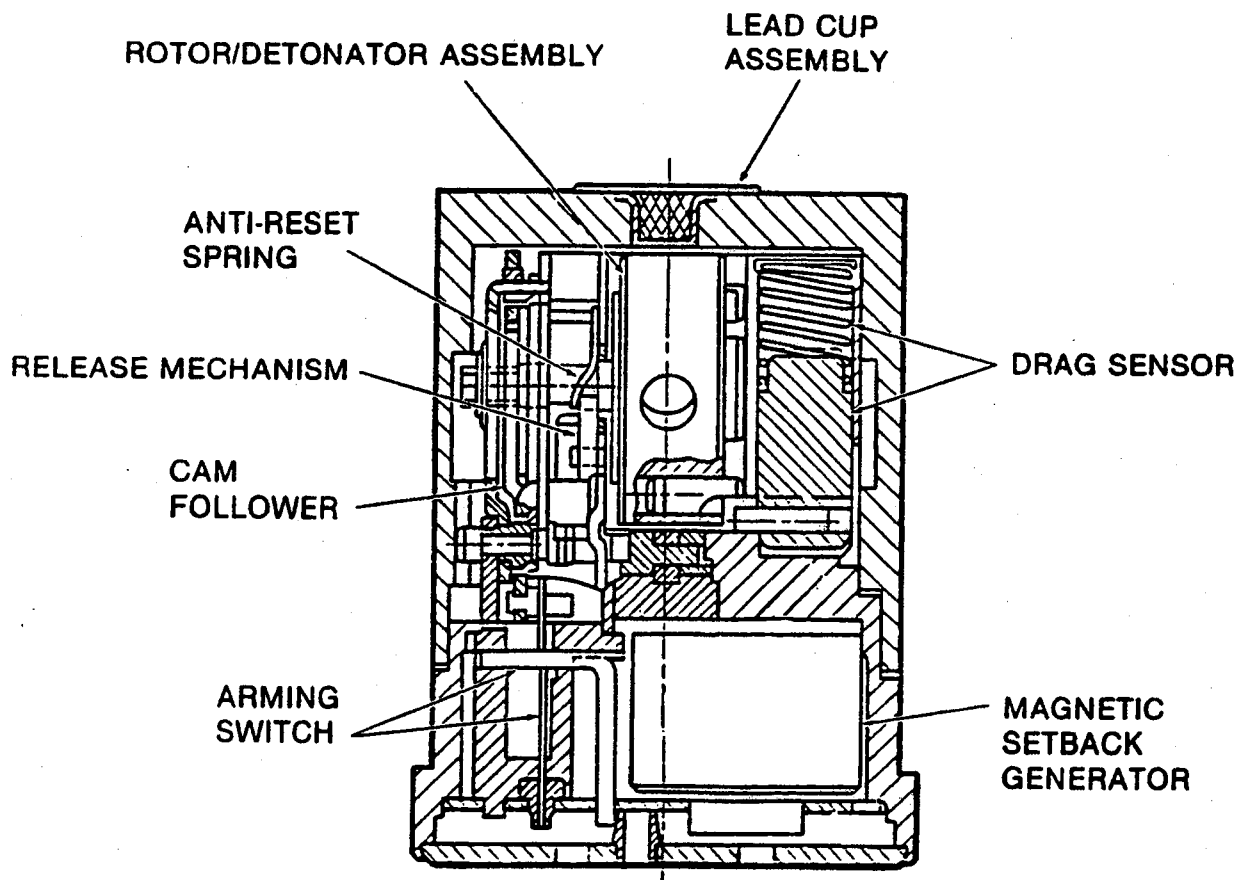
1-524F

LAST UPDATE: 03/04/92

MIL-HDBK-146
NOTICE 2

FUZE: M777
PI BD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.77 in (44.9 mm)
XSECT: 1.25 in (34.3 mm)

- INTRUSION -

DP: 1.52 in (38.6 mm)
DIA: 1.25 in (31.8 mm)

WT: 0.27 lb (122 g)

THD: None

THD DP: None

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-C
CONTACT: Hubal, R
PHONE: DSN 880-5589
STATUS: Terminated
USER: NATO
ASSY DWG: 12 575 000
PARTS LIST: PL 12 575 000
SPEC:
PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO: None

SIMILAR TO: XM763, XM764

REPLACES: Nothing

REPLACED BY:

GENERAL

WEAPON: 106 mm Recoilless Rifle

AMMUNITION:

HEAT, M344A1E1

LOCATION: Base

BALLISTIC LEVELS:

ROTATION: 15 rps

SETBACK: 8000 to 12000 g

VELOCITY: 2200 ft/s (671 m/s)

CREEP: 10 g

FLIGHT TIME: 8 s

SAFETY STD: MIL-STD-1316

SETTERS: None

NEW PAGE..

1-524G

FUZE: M777
PI BD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/04/92

ARMING DATA

FIRST SAFETY:

Setback: 2000 g no arm
4000 g all arm
(sequential leaves)

SECOND SAFETY:

Drag sensor - rotor will lock up at
220 deg rotation unless drag sensor
has moved to armed position

OTHER SAFETY:

Generator not in firing circuit
when armed. Duds if graze or front-
al impact sw shorted before arming.

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

10 to 20 m

EXPLOSIVE COMPONENTS

S&A DEVICE: Sequential leaf
drag sensor

PRIMER: None

DETONATOR: Mk 96

LEAD: 30 mg PBXN-5

BOOSTER: None

OTHER: Precision-initiating coupler
(PIC) in projectile

FUNCTIONING DATA

MODES: SQ and graze

TYPE: Electric

CHARACTERISTICS:

Functions SQ on impact after
frontal impact sw closure. Backup
graze functioning.

TARGET: Armor

SENSITIVITY:

To be determined

FUNCTION TEMP:

-40 to + 51 deg C

MODE ON DELIVERY:

SQ

POWER SUPPLY:

Magnetic setback generator

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL: C

NET EXPL WT: 0.226 g

NET PROP WT: None

STORAGE TEMP: -54 to +71 deg C

REMARKS/DESCRIPTION:

The rotor is prevented from arming by a detent in the sequential setback device, and a detent from a drag sensor. On firing, acceleration holds the unbalanced rotor in the unarmed position, but rotates the three leaves of the setback device in sequence to release the rotor. Setback also causes a magnet to shear a disc and move rearward through the armature coil generating a charge for the firing capacitor. The spring-driven rotor turns 270 deg toward the armed position, but can only arm if a drag sensor has removed a second detent before 220 deg rotation. Rotor arming unshorts the detonator and puts it in the firing circuit with the capacitor. On impact, the frontal area crush switch (FACS) closes the firing circuit and functions the Mk 96 Detonator. On graze, a trembler switch closes the circuit. If either switch is closed during the arming cycle, the detonator will fire safe, 180 deg out of line. The XM763 and XM764 generators and drag sensors function at higher setback and drag levels and they have a longer arming time.

NEW PAGE.

1-524H

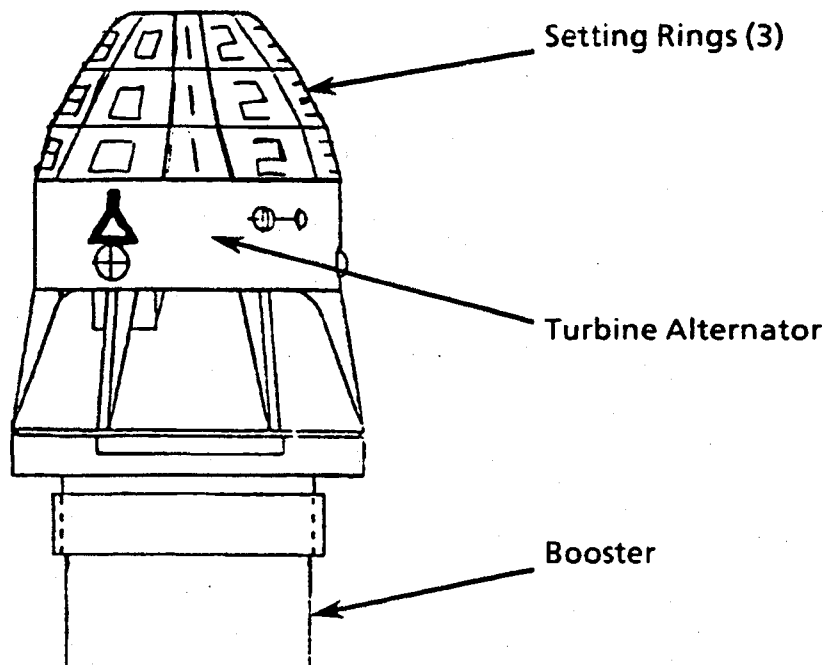
Source: <https://assist.dla.mil> -- Downloaded: 2016-05-28T20:39Z
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LAST UPDATE: 11/04/92

MIL-HDBK-146
NOTICE 2

FUZE: XM778
Electronic Time Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 3.800 in (96.5 mm)

XSECT: 1.9330 in (49.1 mm)

- INTRUSION -

DP: 1.145 in (29.1 mm)

DIA: 1.375 in (34.9 mm)

WT:

THD: 1.5-12UNF-2A

THD DP: 0.50 in (12.7 mm)

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-C

CONTACT: McKimm, T

PHONE: DSN 880-3060

STATUS: Terminated

USER: Army, Marines

ASSY DWG: 12 926 500

PARTS LIST: 12 926 500

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO: NA

SIMILAR TO:

REPLACES: M772, M776

REPLACED BY:

GENERAL

WEAPON: 81 mm Mortar, M252

60 mm Mortar, M224

AMMUNITION:

81 mm, RP smoke, M819

81 mm, illum, M853A1

60 mm, illum, M721

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: NA

SETBACK: 15,000 g

VELOCITY: 320 m/s (1050 ft/s)
charge 1-4 only

CREEP:

FLIGHT TIME:

SAFETY STD: Meets MIL-STD-1316C

SETTERS: Hand

NEW PAGE.

1-5241

ARMING DATA

FIRST SAFETY:

Setback: all arm pulse duration must be equal to or greater than 1 millisecond.

SECOND SAFETY:

Piston actuator lock - controlled by analog timer, turbine alternator > 39 m/s and setting = or > 3.0 s.

OTHER SAFETY:

SAFE/ARM INDICATION:

Green dot visible thru lead hole prior to boosting.

ARMING TIME OR DISTANCE:

Greater than 100 m
2.0 s

FUNCTIONING DATA

MODES: Time (air burst); PD backup

TYPE: Electronic

CHARACTERISTICS:

Time set with three rings: 3.0 to 99.8 s in 0.1 s increments.

Fuze functions PD only when set to 99.9 s.

TARGET:

SENSITIVITY:

FUNCTION TEMP:

-45 to +63 deg C

MODE ON DELIVERY:

Time, with PD backup

EXPLOSIVE COMPONENTS

S&A DEVICE: Out-of-line explosive train

PRIMER: None

DETONATOR: M100

LEAD: M55 Stab Detonator used as transfer lead

BOOSTER: 2.99 or 4.85 g black powder

OTHER: Auxiliary lead 0.164 g PBXN-5 and booster, 5.56 g CH-6, used to initiate HE test projectile

POWER SUPPLY:

Turbine alternator

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT: 3.13 to 5.0 g

NET PROP WT:

STORAGE TEMP: -45 to +71 deg C

REMARKS/DESCRIPTION:

The XM778 Electronic Precision Time Fuze is hand-settable from 3 s to 99.8 s. The fuze has dual independent locks on the rotor. A zig-zag setback device is the primary lock; the secondary lock is controlled by a piston actuator to provide a safe arming distance in excess of 100 m. This is obtained with a 2-s arming delay. The delay is a combination of 0.4 s when the setting rings are checked for valid time equal to or greater than 3.0 s, followed by a 1.6 +/- 15% s analog timer which is started if the first condition is true. The digital board is in the upper half of the fuze. The lower board, containing the analog timer and power circuits, is just above the S&A.

LAST UPDATE: 11/05/90

MIL-HDBK-146
NOTICE 2

FUZE: DSU-23/B
Target Detecting Device

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY: NWC, Code 333

CONTACT:

PHONE: DSN 437-3283

STATUS: Terminated

USER: Navy

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: Fuel-air explosive
(FAE) bomb

AMMUNITION:

BLU-95/B Bomb

LOCATION:

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

Supersedes page 2-5 of MIL-HDBK-146.

FUZE: DSU-23/B
Target Detecting Device

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 11/05/90

ARMING DATA

FIRST SAFETY:

Pull wire for batter firing device

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE: NA

PRIMER: NA

DETONATOR: NA

LEAD: NA

BOOSTER: NA

OTHER: NA

FUNCTIONING DATA

MODES: Proximity

TYPE:

CHARACTERISTICS:

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

Thermal battery, + & - 16 Vdc

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

MIL-HDBK-146
NOTICE 2

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**Data for the FMU-26/B, A/B, B/B Bomb Impact/Airburst Fuzes
may be found in MIL-HDBK-145B.**

Supersedes pages 2-7 and 2-8 of MIL-HDBK 146.

2-7/2-8

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MIL-HDBK-146
NOTICE 2

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LAST UPDATE: 11/05/90

MIL-HDBK-146
NOTICE2

FUZE: DSU-29/B
Target Detecting Device

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY: NWC, Code 333

CONTACT:

PHONE: DSN 437-3283

STATUS: Terminated

USER: Navy

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: Fuel-air explosive (FAE)
bombs

AMMUNITION:

BLU-96/B, FAE II Weapon

LOCATION:

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: MIL-STD-1316 is NA

SETTERS:

NEW PAGE.

2-12A

FUZE: DSU-29/B
Target Detecting Device

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 11/05/90

ARMING DATA

FIRST SAFETY:

Pull wire for battery firing device

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

None

EXPLOSIVE COMPONENTS

S&A DEVICE: NA

PRIMER: NA

DETONATOR: NA

LEAD: NA

BOOSTER: NA

OTHER: NA

FUNCTIONING DATA

MODES: Proximity

TYPE:

CHARACTERISTICS:

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

Thermal battery + and - 16 Vdc

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

NEW PAGE.

LAST UPDATE: 03/20/90

MIL-HDBK-146

NOTICE 2

FUZE: DSU-30/B

Target Detecting Device

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY: NWC, Code 333

CONTACT:

PHONE: DSN 437-3283

STATUS: Terminated

USER: Navy

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES: M20, M20A1, Mk 43

REPLACED BY:

GENERAL

WEAPON: GP Bombs

AMMUNITION:

Mk 80 Series Bombs

LOCATION:

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: MIL-STD-1316 is NA

SETTERS: None

NEW PAGE.

2-14A

FUZE: DSU-30/B
Target Detecting Device

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/20/90

ARMING DATA

FIRST SAFETY:
NA

SECOND SAFETY:
NA

OTHER SAFETY:
NA

SAFE/ARM INDICATION:
NA

ARMING TIME OR DISTANCE:
NA

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER: NA

DETONATOR: NA

LEAD: NA

BOOSTER: NA

OTHER: NA

FUNCTIONING DATA

MODES: Proximity
TYPE:
CHARACTERISTICS:

TARGET:
SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:
US HCSDS:
UN CL/DIV SCG:
US DOT SHIP CL:
NET EXPL WT:
NET PROP WT:
STORAGE TEMP:

REMARKS/DESCRIPTION:

NEW PAGE.

MIL-HDBK-146
NOTICE 2

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**Data for the FMU-56B/B, A-D/B Bomb Proximity Fuzes
may be found in MIL-HDBK-145B.**

Supersedes pages 2-27 and 2-28 of MIL-HDBK 146.

2-27/2-28

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MIL-HDBK-146
NOTICE 2

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LAST UPDATE: 10/10/90

MIL-HDBK-146
NOTICE 2

FUZE: FMU-67/B
Bomb Proximity Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY: Eglin AFB, ASD/YGP

CONTACT:

PHONE:

STATUS: Terminated

USER: Air Force, Navy

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: GP retarded bombs

AMMUNITION:

M117, M118, Mk 81, Mk 82

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: NA

SETBACK: NA

VELOCITY: NA

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS:

NEW PAGE.

2-36A

FUZE: FMU-67/B
Bomb Proximity Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/10/90

ARMING DATA

FIRST SAFETY:

Lanyard

SECOND SAFETY:

Retarding g sensor

OTHER SAFETY:

None

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:

1 to 3 s in 0.25 s intervals

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR:

LEAD:

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES: Proximity

TYPE: Electronic

CHARACTERISTICS:

Burst heights settable to 15, 30 or
50 ft (4.6, 9.1 or 15.2 m)

TARGET: Surface

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

Proximity

POWER SUPPLY:

Thermal reserve battery

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

On launch, removal of the lanyard initiates the thermal reserve battery which powers the fuze. Retardation force, integrated with time, moves a sensor forward releasing a ball lock which allows a g weight to move forward. If the retardation force continues for 0.6 s, the drive block will have moved sufficiently to allow the release pin to unblock the arming timing mechanism. The proximity sensor is activated on thermal battery startup. The proximity sensor output provides the fire signal. The fuze incorporate a dud-on-jam feature.

NEW PAGE.

2-36B

MIL-HDBK-146
NOTICE 2

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**Data for the FMU-72/B Bomb Impact Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 2-41 and 2-42 of MIL-HDBK 146.

2-41/2-42

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MIL-HDBK-146
NOTICE 2

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MIL-HDBK-146
NOTICE 2

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**Data for the FMU-81/B Bomb Impact Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 2-45 and 2-46 of MIL-HDBK 146.

2-45/2-46

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MIL-HDBK-146
NOTICE 2

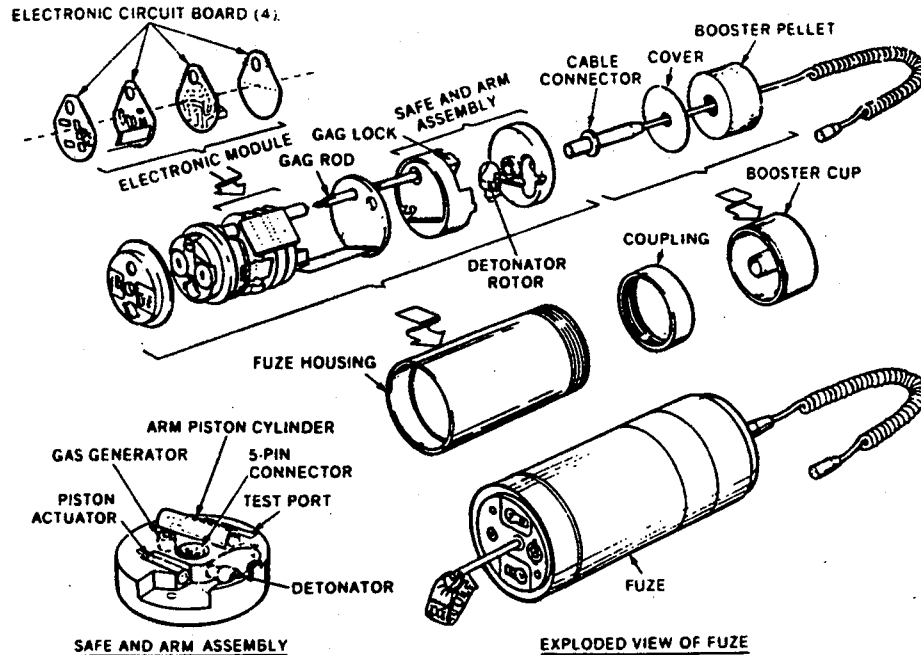
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LAST UPDATE: 08/06/90

MIL-HDBK-146
NOTICE 2

FUZE: FMU-112/B
Bomb Impact Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 7.25 in (184.2 mm)
XSECT: 3.0 in (76.2 mm)

- INTRUSION -

DP: 7.25 in (184.2 mm)
DIA:

WT: 4.5 lb (2041 g)

THD: 3.5-12UNS-2A closure rng
THD DP:

IDENTIFICATION

AGENCY: Eglin AFB, AD/YN
CONTACT: Stewart, D
PHONE: DSN 872-8371
STATUS: Terminated
USER: AF
ASSY DWG: 728 020
PARTS LIST:
SPEC: SP 728 020
PUB:

NATIONAL STOCK NO:

Not assigned

DODIC: Not assigned

PRIOR MODEL NO: None

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: GP and laser guided bombs

AMMUNITION:

HE, Mk 80 Series (LD & HD)
HE, M117 (LD & HD)

LOCATION: Nose and tail

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP: High drag

FLIGHT TIME:

SAFETY STD: MIL-STD-1316

SETTERS: Screwdriver

NEW PAGE.

2-78A

ARMING DATA

FIRST SAFETY:

Lanyard to FZU-37A/B Initiator;
Initiator output: 100 kts no go;
200 kts all go

SECOND SAFETY:

Turbine release signal

OTHER SAFETY:

Turbine release signal and voltage
must be present before 10 s (min) &
2.5 min (max) after lanyard pull

SAFE/ARM INDICATION:

Safe if safing pin in place or
safing pin port is not red

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE: Out-of-line explosive
train

PRIMER:

DETONATOR: Dwg 728065

LEAD: 200 mg CH-6
Dwg 728054

BOOSTER: 125 g CH-6
Dwg 790AS505

OTHER:

FUNCTIONING DATA

MODES: Impact or delay

TYPE: Electronic

CHARACTERISTICS:

0.000, 0.005, 0.010, 0.025, 0.050,
0.100, 0.200 s delay; preflight
selectable

TARGET: Ground

SENSITIVITY:

40 g no go; 80 g all go

FUNCTION TEMP:

-54 to +71 deg C

MODE ON DELIVERY:

POWER SUPPLY:

FZU-37A/B Bomb Fuze Initiator

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

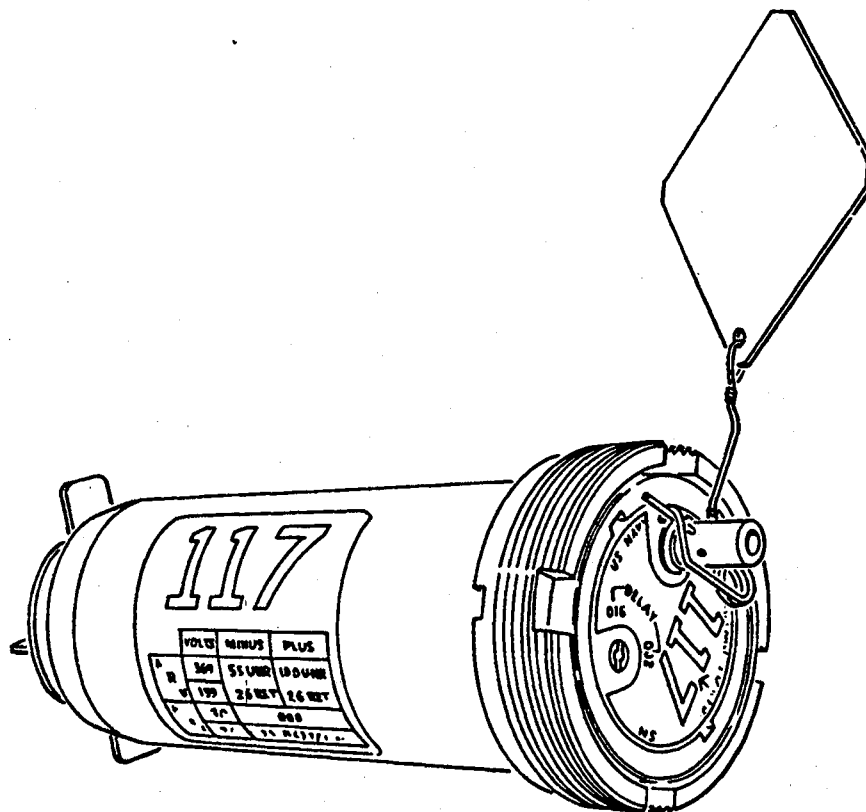
Power and turbine release signals are supplied by the FZU-37A/B Bomb Fuze Initiator. The FMU-112/B Fuze starts on receipt of 10 Vdc and turbine release signal. These must occur before 10 s (min) and 2.5 min (max) after lanyard pull or the fuze will dud. Redundant drogue sensors monitor bomb deceleration for 2.45 s after release and will select the retard arm time if the proper g level is sensed for 1.2 s. At 2.25 s (high drag), and 3.63 s (low drag) after timer start, the gag rod is removed from the rotor by a piston actuator unlocking the rotor. At the proper arming (selected LD or HD as determined by the drogue sensors), a gas generator is fired turning the rotor and aligning the detonator with the rest of the explosive train and connecting it to the firing circuit. The fuze will function on receipt of a proximity signal or at impact. Impact and proximity inputs are ignored during the first second after timer start, preventing the fuze from functioning. Proximity inputs after 1 s but before arming cause the fuze to function on impact only.

LAST UPDATE: 02/20/92

MIL-HDBK-146
NOTICE 2

FUZE: FMU-117/B
Bomb Impact Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 8.5 in (216 mm)

XSECT: 3.5 in (90.3 mm)

- INTRUSION -

DP: 7.5 in (190.5 mm)

DIA:

WT: 4.3 lb (1950 g)

THD: 3.5-12

THD DP:

IDENTIFICATION

AGENCY: PMTC, Point Mugu

CONTACT:

PHONE: DSN

STATUS: Terminated

USER: Navy

ASSY DWG: 790-AS-500

PARTS LIST: PL 790AS500

SPEC: AS 3290

PUB: NAVAIR 11-5A-17

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES: Mk 344, Mk 376

REPLACED BY:

GENERAL

WEAPON: GP and laser-guided bombs

AMMUNITION:

Mk 80 series GP (LD and HD)

and Laser Guided Bombs

HE

LOCATION: Tail

BALLISTIC LEVELS:

ROTATION: Free Fall

SETBACK:

VELOCITY: 550 KIAS

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

Supersedes page 2-89 of MIL-HDBK-146.

FUZE: FMU-117/B
Bomb Impact Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 02/20/92

ARMING DATA

FIRST SAFETY:

Arming wire

SECOND SAFETY:

Requires high voltage electrical
signal from A/C

OTHER SAFETY:

Retardation must be sensed to
obtain 2.6 s arm time,
HERO safe.

SAFE/ARM INDICATION:

Pop-out pin extended;
Black/Red stripes visible

ARMING TIME OR DISTANCE:

5.5 s; 10 s; 2.6 s automatic
for high drag bomb

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR: Mk 100 Mod 0

LEAD: Tetryl

BOOSTER: CH-6, 4.4 oz (125 g)

OTHER: Expl. Driver Mk 20 Mod 0 (1)

FUNCTIONING DATA

MODES: Impact, Delay

TYPE: Electric

CHARACTERISTICS:

In-flight selection of one of 2
func times; 0 or delay (remarks)

TARGET: Surface

SENSITIVITY:

Functions on water
40 to 80 g

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

None; Energy from A/C transferred
during release cycle.

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

LAST UPDATE: 01/01/87

MIL-HDBK-146
NOTICE2

FUZE: FMU-123/B
Bomb Proximity Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG: 18 in (457.2 mm)

XSECT: 8.0 in (203.2 mm)

- INTRUSION -

DP:

DIA:

WT: 16 lb (7258 g)

THD: 3.5-12UNS-2A

THD DP:

IDENTIFICATION

AGENCY: Eglin AFB, AD/YN

CONTACT: Smith, E

PHONE: DSN 872-5988

STATUS: Terminated

USER: AF

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: Cluster bomb

AMMUNITION:

SUU-54 Dispenser/GBU-15

STANDOFF Guided CBU

LOCATION: Between SUU-54 & guidance

BALLISTIC LEVELS:

ROTATION: Free Fall

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

NEW PAGE.

2-98A

FUZE: FMU-123/B
Bomb Proximity Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 01/01/87

ARMING DATA

FIRST SAFETY:

Lanyard Safing Pin

SECOND SAFETY:

Electronic Signal from Weapon

OTHER SAFETY:

Arm Times of 3, 4, 5, 6, 7,
8, 9, 10 and 18 s

SAFE/ARM INDICATION:

Yes

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR: D74B1

LEAD:

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES: Proximity

TYPE: Electronic, Pulse Doppler Radar

CHARACTERISTICS:

Ground selectable HOB from
300 to 3000 feet

TARGET: Surface

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

Thermal Battery

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

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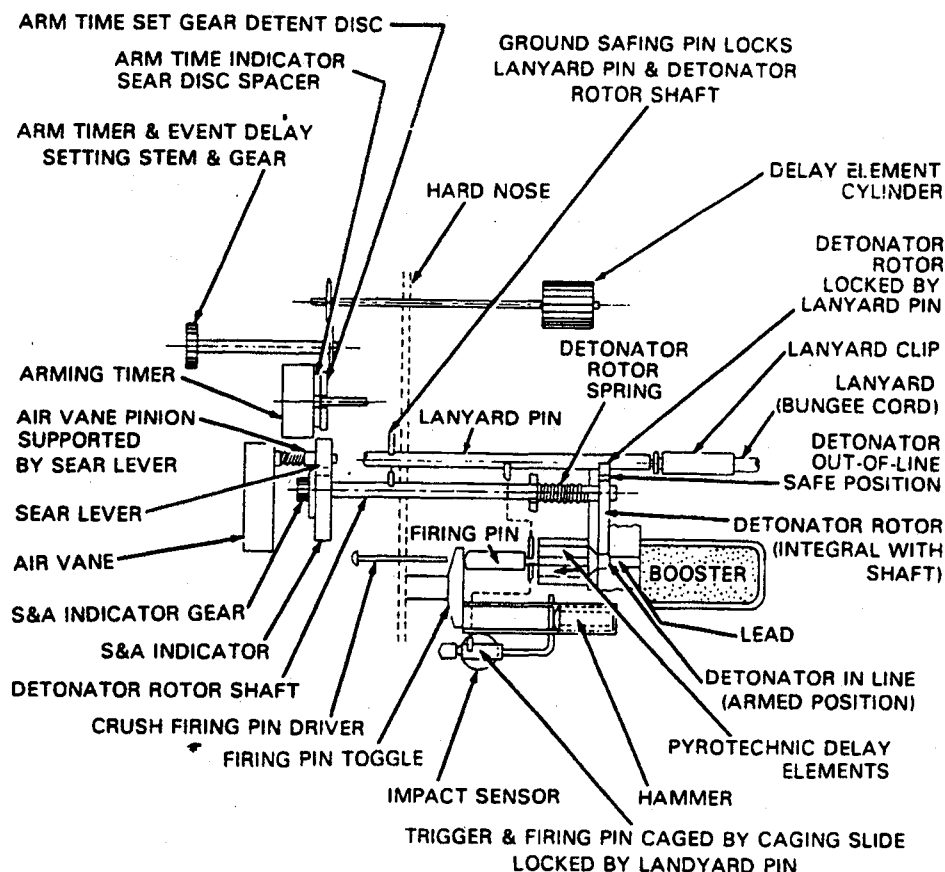
2-98B

LAST UPDATE: 08/06/90

MIL-HDBK-146
NOTICE 2

FUZE: FMU-130/B
Bomb Impact Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 11.83 in (300.48 mm)
XSECT: 4.6 in (116.8 mm)

- INTRUSION -

DP: 6.9 in (247.14 mm)
DIA: 2.83 in (71.88 mm)

WT: 10 lb (4536 g)

THD: 3.5-12UNS-2A

THD DP:

IDENTIFICATION

AGENCY: Eglin AFB, AD/YGE
CONTACT: Folsom, E
PHONE: DSN 872-4261
STATUS: Terminated
USER: AF
ASSY DWG: IMF-200-605 (Contractor)
PARTS LIST:
SPEC: SP 747 878A
PUB:

NATIONAL STOCK NO:
Not assigned
DODIC: Not assigned
PRIOR MODEL NO: None
SIMILAR TO: Nothing

REPLACES: M904, M905
REPLACED BY: FMU-139A/B

GENERAL

WEAPON: GP bomb

AMMUNITION:
M117 and Mk 80 Series

LOCATION: Nose
BALLISTIC LEVELS:
ROTATION:
SETBACK:
VELOCITY:

CREEP: Free Fall
FLIGHT TIME:
SAFETY STD: MIL-STD-1316
SETTERS: None

NEW PAGE.

2-112A

FUZE: FMU-130/B
Bomb Impact Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 08/06/90

ARMING DATA

FIRST SAFETY:

Lanyard

SECOND SAFETY:

Vane: no arm 118 KCAS,
all arm 142 KCAS

OTHER SAFETY:

Fuze will dud if impact occurs
before arming

SAFE/ARM INDICATION:

Safe if safety interlock pin in
place or arm/safe indicator not red

ARMING TIME OR DISTANCE:

4, 6, 8, 10, 12, 14, 16, 18 s;
preflight selectable

FUNCTIONING DATA

MODES: Impact or delay

TYPE: Mechanical

CHARACTERISTICS:

0.000, 0.010, 0.025, 0.060 s
+/- 20%, preflight selectable

TARGET: Ground

SENSITIVITY:

Crush or graze

40 g - 30 to 85 deg

200 g - 85 to 95 deg

FUNCTION TEMP:

-54 to +71 deg C

MODE ON DELIVERY:

EXPLOSIVE COMPONENTS

S&A DEVICE: Out-of-line explosive
train

PRIMER: 5.0 grains total weight

DETONATOR: 2 grains lead azide,
4 grains RDX

LEAD: 8.34 grains - CH6

BOOSTER: 174 g - CH6

OTHER: Multiple delay elements. Two
each selected for each
impact delay.

POWER SUPPLY:

None

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT:

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

On bomb release, the lanyard pulls the lanyard pin aft which opens the nose input port and four exit ports permitting vane rotation, removes a latch from the rotor, starts the arming timer and unlocks the trigger and firing pin. Vane rotation overcomes a bias spring and thus provides the torque to drive the rotor into the in-line position. At the preselected arm time, a latch is removed from the rotor and, if there is sufficient air speed, the rotor will move to the armed position. On nose impact, the firing pin initiates two adjacent pyrotechnic delays (i.e., inst & 0.010 s, 0.010 & 0.025 s, 0.025 s & 0.060 s, or 0.060 & 0.060 s). On graze impact, an inertial sensor and mechanism triggers the firing pin. Each delay initiates output charges which, in turn initiate the detonator, lead and booster.

NEW PAGE.

MIL-HDBK-146
NOTICE 2

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**Data for the AN-M147A1 Bomb Time Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 2-143 and 2-144 of MIL-HDBK 146.

2-143/2-144

MIL-HDBK-146
NOTICE 2

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MIL-HDBK-146
NOTICE 2

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**Data for the AN-M152A1 Bomb Time Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 2-153 and 2-154 of MIL-HDBK 146.

2-153/2-154

MIL-HDBK-146
NOTICE 2

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NOTICE 2

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**Data for the M155A1 Bomb Time Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 2-157 and 2-158 of MIL-HDBK 146.

2-157/2-158

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MIL-HDBK-146
NOTICE 2

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MIL-HDBK-146
NOTICE 2

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**Data for the AN-M158 Bomb Impact Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 2-165 and 2-166 of MIL-HDBK 146.

2-165/2-166

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MIL-HDBK-146
NOTICE 2

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**Data for the AN-M159 Bomb Impact Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 2-167 and 2-168 of MIL-HDBK 146.

2-167/2-168

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MIL-HDBK-146
NOTICE 2

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**Data for the AN-M173A1 Bomb Impact Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 2-195 and 2-196 of MIL-HDBK 146.

2-195/2-196

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MIL-HDBK-146
NOTICE 2

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MIL-HDBK-146
NOTICE 2

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**Data for the Mk 374 Mod 0 Bomb Impact Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 2-275 and 2-276 of MIL-HDBK 146.

2-275/2-276

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**MIL-HDBK-146
NOTICE 2**

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MIL-HDBK-146
NOTICE 2

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**Data for the M905 Bomb Impact Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 2-297 and 2-298 of MIL-HDBK 146.

2-297/2-298

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MIL-HDBK-146
NOTICE 2

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MIL-HDBK-146
NOTICE 2

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**Data for the M907 Bomb MT Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 2-303 and 2-304 of MIL-HDBK 146.

2-303/2-304

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MIL-HDBK-146
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MIL-HDBK-146
NOTICE 2

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**Data for the M909 Bomb MT Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 2-309 and 2-310 of MIL-HDBK 146.

2-309/2-310

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NOTICE 2

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**Data for the M990 Bomb Impact Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 2-317 and 2-318 of MIL-HDBK 146.

2-317/2-318

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MIL-HDBK-146
NOTICE 2

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MIL-HDBK-146
NOTICE 2

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**Data for the FMU-74/B Submunition Impact Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 3-13 and 3-14 of MIL-HDBK 146.

3-13/3-14

MIL-HDBK-146
NOTICE 2

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MIL-HDBK-146
NOTICE 2

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**Data for the M206A2E2 Grenade Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 3-17 and 3-18 of MIL-HDBK 146.

3-17/3-18

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MIL-HDBK-146
NOTICE 2

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**Data for the M218 Submunition Time Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 3-19 and 3-20 of MIL-HDBK 146.

3-19/3-20

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MIL-HDBK-146
NOTICE 2

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**Data for the M219, M219A1 & M219A2 Submunition Impact Fuzes
may be found in MIL-HDBK-145B.**

Supersedes pages 3-21 and 3-22 of MIL-HDBK 146.

3-21/3-22

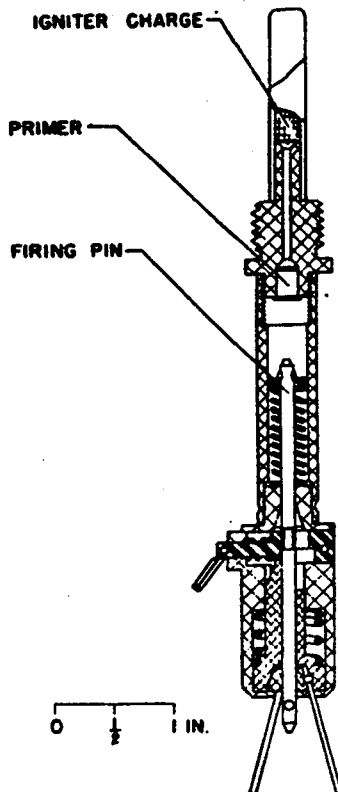
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LAST UPDATE: 12/10/91

MIL-HDBK-146
NOTICE 2

FUZE: M6A1
Mine Combination Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 6.62 in (168.1 mm)
XSECT: 1.103 in (28.0 mm)

- INTRUSION -

DP: 1.91 in (48.5 mm)
DIA: 0.56 in (14.3 mm)

WT: 0.375 lb (170 g)

THD: 9/16-12UNC-1A

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-
CONTACT:
PHONE: DSN 880-
STATUS: Obsolete
USER: Army
ASSY DWG: 73-9-13
PARTS LIST:
SPEC:
PUB: TM 43-0001-36

NATIONAL STOCK NO:
1345-00-028-5110

DODIC: K091
PRIOR MODEL NO: T12E2
SIMILAR TO: M7A1

REPLACES:
REPLACED BY:

GENERAL

WEAPON: Combination AP mines

AMMUNITION:
M2 AP Mine

LOCATION: Mounting tube, side of mine

BALLISTIC LEVELS:

ROTATION: NA
SETBACK: NA
VELOCITY: NA

CREEP: NA
FLIGHT TIME: NA
SAFETY STD: MIL-STD-1316 is NA
SETTERS: None

Supersedes page 4-3 of MIL-HDBK-146.

FUZE: M6A1
Mine Combination Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 12/10/91

ARMING DATA

FIRST SAFETY:

Two safety pins

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

Two safety pins installed

ARMING TIME OR DISTANCE:

NA

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: No. 3 Western

DETONATOR: None

LEAD: None

BOOSTER: None

OTHER: 10 gr (0.648 g) black powder
igniter

FUNCTIONING DATA

MODES: Pressure or pull

TYPE: Mechanical

CHARACTERISTICS:

TARGET: Personnel

SENSITIVITY:

8 to 20 lb pressure on prongs or

3 to 10 lb pull on the release pin

FUNCTION TEMP:

-40 to +52 deg C

MODE ON DELIVERY:

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0410

US HCSDS:

UN CL/DIV SCG: 1.4 D

US DOT SHIP CL: C

NET EXPL WT: Unknown

NET PROP WT: 0.648 g

STORAGE TEMP: -51 to +71 deg C

REMARKS/DESCRIPTION:

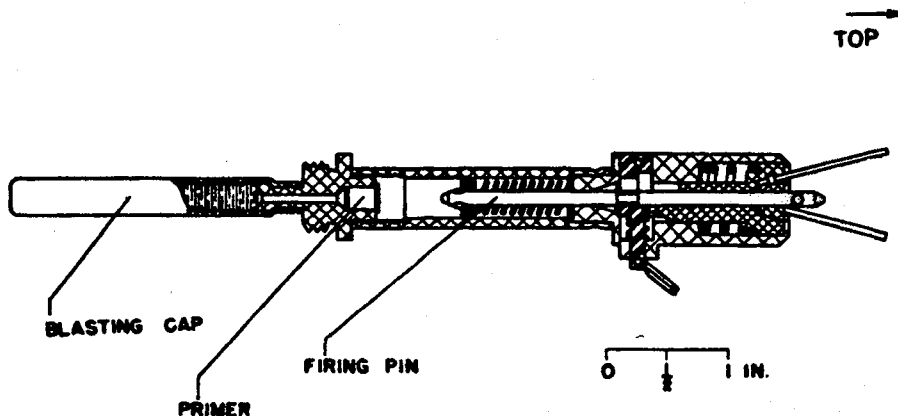
The fuze has a three-pronged pressure firing device and a pull wire release pin. The fuze body houses a spring-loaded firing pin and a cocking mechanism. The firing mechanism consists of a cylindrical metal case containing a trigger pin, release pin and firing pin each fitted with a coil spring. Two safety pins render the fuze safe during shipment and handling. A cotter pin fits through the release pin and bears against the body of the fuze. A safety firing pin passes through the end of the firing pin that protrudes above the top of the fuze. Either pressure on the prongs or pull on the release pin frees the spring-loaded firing pin causing it to strike the primer. The primer initiates the igniter charge and, in turn, the firing train of the mine. Similar to M7A1 which has a blasting cap instead of an igniter charge.

LAST UPDATE: 12/10/91

MIL-HDBK-146
NOTICE 2

FUZE: M7A1
Mine Combination Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 6.37 in (162 mm)
XSECT: 1.103 in (28 mm)

- INTRUSION -

DP: 2.9 in (74 mm)
DIA:

WT: 0.375 lb (170 g)

THD: 0.563-12UNC-1A

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-
CONTACT:

PHONE: DSN 880-

STATUS: Obsolete

USER: Army

ASSY DWG: 73-9-13-7

PARTS LIST:

SPEC:

PUB: TM 43-0001-36

NATIONAL STOCK NO:

1345-00-28-5079

DODIC: K054

PRIOR MODEL NO: T13E2

SIMILAR TO: M6A1

REPLACES:

REPLACED BY:

GENERAL

WEAPON: Combination AP mines

AMMUNITION:

M3 AP Mine

LOCATION: Top of mine

BALLISTIC LEVELS:

ROTATION: NA

SETBACK: NA

VELOCITY: NA

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: MIL-STD-1316 is NA

SETTERS: None

Supersedes page 4-5 of MIL-HDBK-146.

FUZE: M7A1
Mine Combination Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 12/10/91

ARMING DATA

FIRST SAFETY:
Two safety pins

SECOND SAFETY:
None

OTHER SAFETY:
None

SAFE/ARM INDICATION:
Two safety pins installed

ARMING TIME OR DISTANCE:
NA

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: No. 3 Western

DETONATOR: None

LEAD: None

BOOSTER: Blasting Cap Type I

OTHER: None

FUNCTIONING DATA

MODES: Pressure or pull
TYPE: Mechanical
CHARACTERISTICS:

TARGET: Personnel

SENSITIVITY:
8 to 20 lb pressure on prongs or
3 to 10 lb pull on the release pin

FUNCTION TEMP:
-40 to +52 deg C
MODE ON DELIVERY:

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

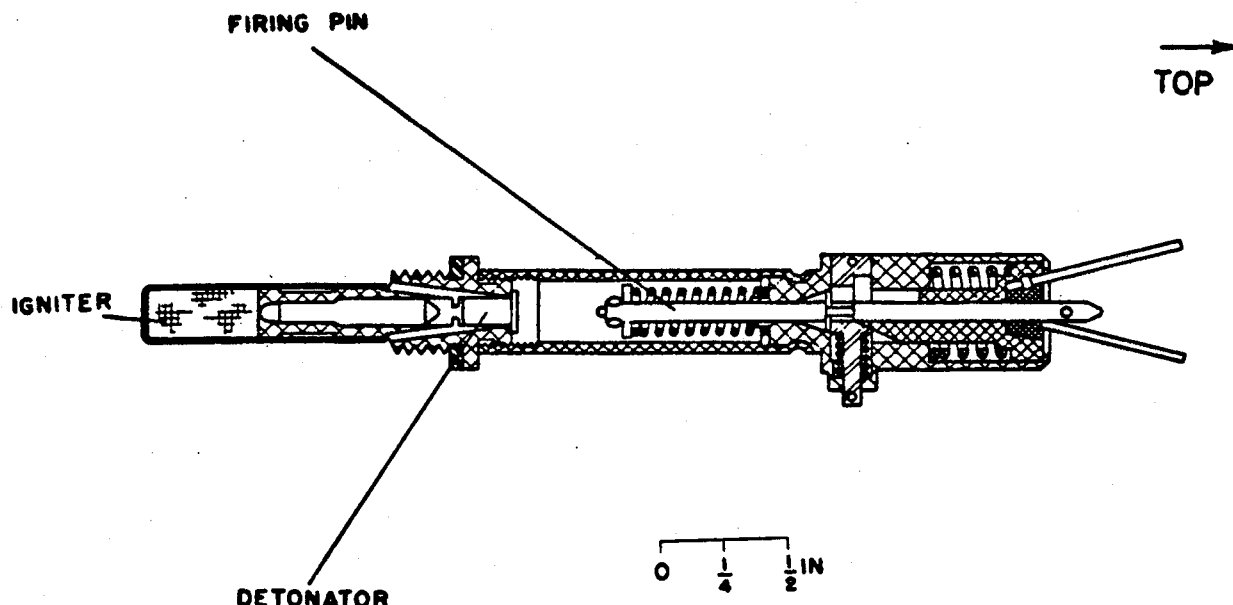
UN SER NO: 0409
US HCSDS:
UN CL/DIV SCG: 1.2 D
US DOT SHIP CL: C
NET EXPL WT: Unknown
NET PROP WT: None
STORAGE TEMP: -51 to + 71 deg C

REMARKS/DESCRIPTION:

The fuze has a three-pronged pressure firing device and a pull wire release pin. The fuze body houses a spring-loaded firing pin and a cocking mechanism. The firing mechanism consists of a cylindrical metal case containing a trigger pin, release pin and firing pin each fitted with a coil spring. Two safety pins render the fuze safe during shipment and handling. A cotter pin fits through the release pin and bears against the body of the fuze. A safety firing pin passes through the end of the firing pin that protrudes above the top of the fuze. Either pressure on the prongs or pull on the release pin frees the spring-loaded firing pin causing it to strike the primer. The primer initiates the blasting cap and, in turn, the firing train of the mine. Similar to the M6A1 which has an igniter charge instead of a blasting cap.

LAST UPDATE: 12/12/91

ILLUSTRATION:



- OVERALL SIZE -

LG: 6.875 in (174.6 mm)
XSECT: 1.103 in (28.0 mm)

- INTRUSION -

DP: 2.34 in (59.4 mm)
DIA: 0.31 in (7.8 mm)

WT: 0.375 lb (170 g)
THD: 0.5625-12UNC-1A
THD DP: 0.35 in (8.9 mm)

IDENTIFICATION

AGENCY: ARDEC, SMCAR-FSM-M
CONTACT: Devine, D
PHONE: DSN 880-6163
STATUS: Obsolete
USER: Army, Marines
ASSY DWG: 73-9-25 (M10); 82-1-46 (A3)
PARTS LIST:
SPEC: MIL-F-20481B
PUB: TM 43-0001-36

NATIONAL STOCK NO:
1345-00-538-5448 (M10A2)
DODIC: K055 (M10A2)
PRIOR MODEL NO: T14
SIMILAR TO: M6A1, M7A1

REPLACES: Nothing
REPLACED BY:

GENERAL

WEAPON: AP Practice Mine

AMMUNITION:

M8 (M10), M8A3 (M10A2)
AP Training Mines

LOCATION: Top of mine

BALLISTIC LEVELS:

ROTATION: NA
SETBACK: NA
VELOCITY: NA

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: MIL-STD-1316 is NA

SETTERS: None

Supersedes page 4-7 of MIL-HDBK-146.

ARMING DATA

FIRST SAFETY:

Two safety pins

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

Safety pins installed

ARMING TIME OR DISTANCE:

NA

EXPLOSIVE COMPONENTS

S&A DEVICE: In-line explosive
train

PRIMER: Mk 5 (M10, A3), M39A1 (M10A2)

DETONATOR: See remarks

LEAD: None

BOOSTER: None

OTHER: 972mg blk pdr ign chg (M10),
725mg smk comp ign chg (M10A2)

FUNCTIONING DATA

MODES: Delay

TYPE: Mechanical/pressure

CHARACTERISTICS:

4 to 5 s delay

TARGET: Personnel

SENSITIVITY:

8-20 lb (3.6-9.1 kg) on any prongs
or 3-10 lb (1.4-4.5 kg) on release
pin

FUNCTION TEMP:

-40 to + 52 deg C

MODE ON DELIVERY:

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0409

US HCSDS:

UN CL/DIV SCG: 1.2 D

US DOT SHIP CL: C

NET EXPL WT: 2.1 g

NET PROP WT: None

STORAGE TEMP: -51 to +71 deg C

REMARKS/DESCRIPTION:

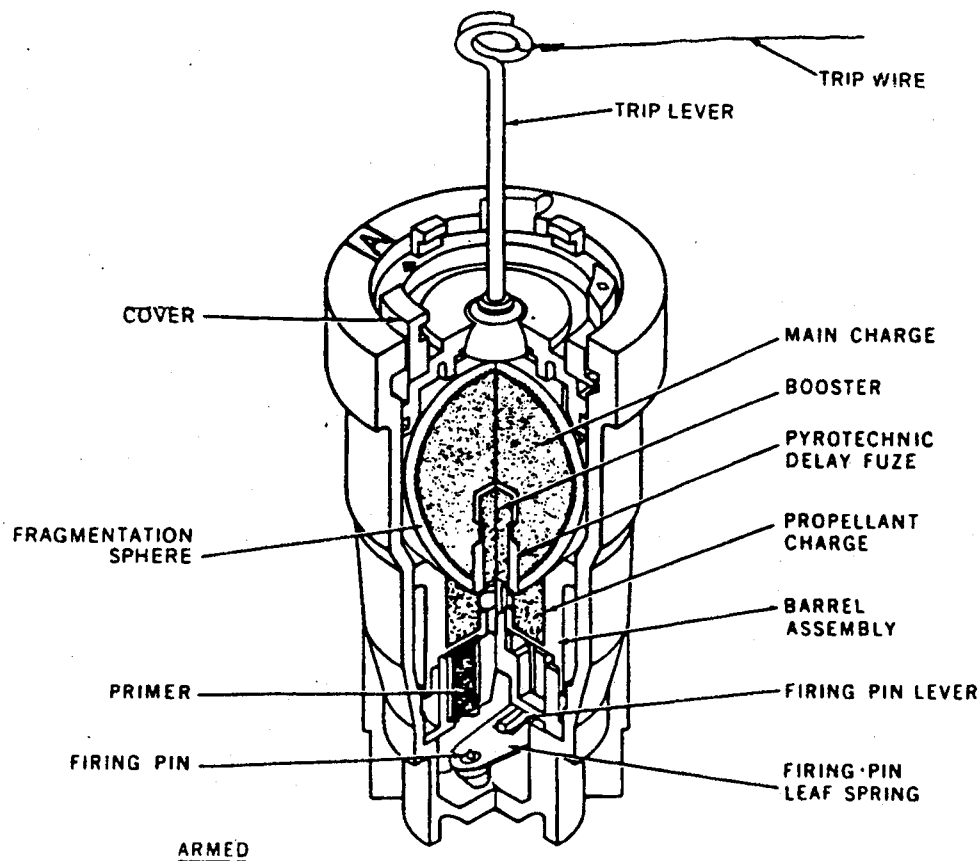
M10 series combination fuzes have a three-pronged pressure firing device at the top and a pull wire release pin ring at the side. The body houses a spring-loaded firing pin and a cocking mechanism. The base contains a primer and a length of safety fuse. The firing mechanism consists of a cylindrical metal case containing a trigger pin, a release pin, and a firing pin, each fitted with a coil spring. Two safety pins render the fuze safe during shipment and handling. A cotter pin passes through the end of the release pin and bears against the body of the fuze. A second pin, called the safety firing pin, passes through the end of the firing pin that protrudes above the top of the fuze. The fuze igniter assemblies are replaceable. The fuzes may be used many times by replacing the fired igniter assembly and recocking the firing mechanism. The firing mechanism is activated by a force on any of the prongs or a pull on the release pin. Either action causes the firing pin to strike the primer which initiates the delay fuse and after 4 or 5 s, the igniter charge. M10 has safe fuze, 4.5 s delay; M10A2 has 100 mg Type I comp and 650 mg Type III comp delays.

LAST UPDATE: 01/01/87

MIL-HDBK-146
NOTICE 2

FUZE: F/M26 AP Mine
Land Mine, Fuze for

ILLUSTRATION:



- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-FSM-M

CONTACT: Devine, D

PHONE: DSN 880-6163

STATUS: Obsolete

USER: Army

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: Land Mines

AMMUNITION:

M26 AP Mine

LOCATION: Integral

BALLISTIC LEVELS:

ROTATION: NA

SETBACK: NA

VELOCITY: NA

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: MIL-STD-1316 is NA

SETTERS: None

NEW PAGE.

FUZE: F/M26 AP Mine
Land Mine, Fuze for

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 01/01/87

ARMING DATA

FIRST SAFETY:

Rotation of barrel

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

Yes

ARMING TIME OR DISTANCE:

1.0 s

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR:

LEAD:

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES: Delay

TYPE: Mechanical

CHARACTERISTICS:

TARGET: Personnel

SENSITIVITY:

14 to 28 lb (6.4 to 12.7 kg)

FUNCTION TEMP:

-40 to +71 deg C

MODE ON DELIVERY:

Safe

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

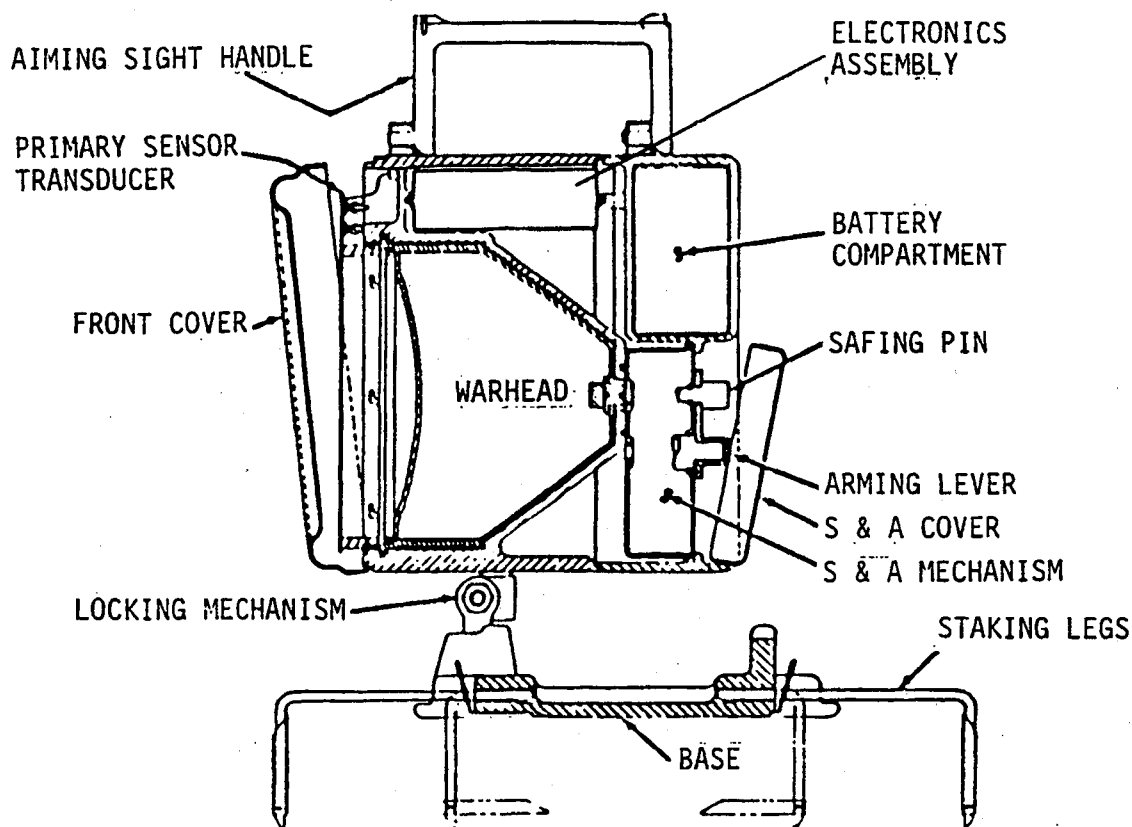
NEW PAGE.

LAST UPDATE: 10/27/92

MIL-HDBK-146
NOTICE 2

FUZE: XM84
AT/AV Mine, fuze for

ILLUSTRATION:



- OVERALL SIZE -

LG: To be determined

XSECT: To be determined

- INTRUSION -

DP: To be determined

DIA:

WT: 35 lb (15.876 g)

THD: None

THD DP:

IDENTIFICATION

AGENCY: ARDEC, AMCPM-MCD
CONTACT: Andrejkovics, R
PHONE: DSN 880-3981
STATUS: Terminated
USER: Army, Marines
ASSY DWG: Not yet assigned
PARTS LIST:
SPEC: Not yet prepared
PUB:

NATIONAL STOCK NO:

Not yet assigned

DODIC:

PRIOR MODEL NO: STORMS

SIMILAR TO:

REPLACES: None

REPLACED BY:

GENERAL

WEAPON: AT/AV Mine

AMMUNITION:

XM 84 Wide Area Side
Penetrating Mine (WASPM)

LOCATION: Face

BALLISTIC LEVELS:

ROTATION: None

SETBACK: None

VELOCITY: None

CREEP: None

FLIGHT TIME:

SAFETY STD: MIL-STD-1316

SETTERS:

NEW PAGE.

FUZE: XM84
AT/AV Mine, fuze for

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/27/92

ARMING DATA

FIRST SAFETY:

Switch & pull wire

SECOND SAFETY:

Electronic Timeout

OTHER SAFETY:

Barrier removal

SAFE/ARM INDICATION:

Yes

ARMING TIME OR DISTANCE:

Classified

EXPLOSIVE COMPONENTS

S&A DEVICE: Out-of-line explosive
train

PRIMER: None

DETONATOR: In design

LEAD: In design

BOOSTER: In design

OTHER:

FUNCTIONING DATA

MODES: Remote, Acoustic w/IR or RF

TYPE: See Remarks

CHARACTERISTICS:

Acoustic alerter signature

RF or IR final signature

TARGET: Ground-Tank, Vehicle

SENSITIVITY:

Classified

FUNCTION TEMP:

See AR 70-38

MODE ON DELIVERY:

POWER SUPPLY:

Primary lithium battery

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

The XM84 Mine cover is removed and the system deployed. Pulling the safety pin removes the arming lever (spring winder) barrier, and connects the battery to the Command Link Receiver (CLR). An SD timer is set using the safing pin as a tool. The CLR can be programmed. The arming lever is rotated 90 deg and locked. This winds a rotor torsion spring and applies power to the safe separation timers, SD circuits, piston actuators and their fire circuits. The capacitors of the initial and final safe separation timers (ISST and FSST) are charged. The first piston actuator fires when the ISST times out shearing a wire and removing the first lock. The second actuator fires when the FSST times out shearing a second wire removing the second lock and completely unlocking the rotor. The rotor turns 60 degrees under torsion spring force aligning the detonator with the explosive train, removing shorts on the detonator and permitting the firing circuit to charge. The Pre-alerter/alerter circuit checks for alert criteria. If the criteria are met, the signal processor validates the signal. A primary sensor monitors target range and angular position initiating a fire signal when the target crosses the aimpoint.

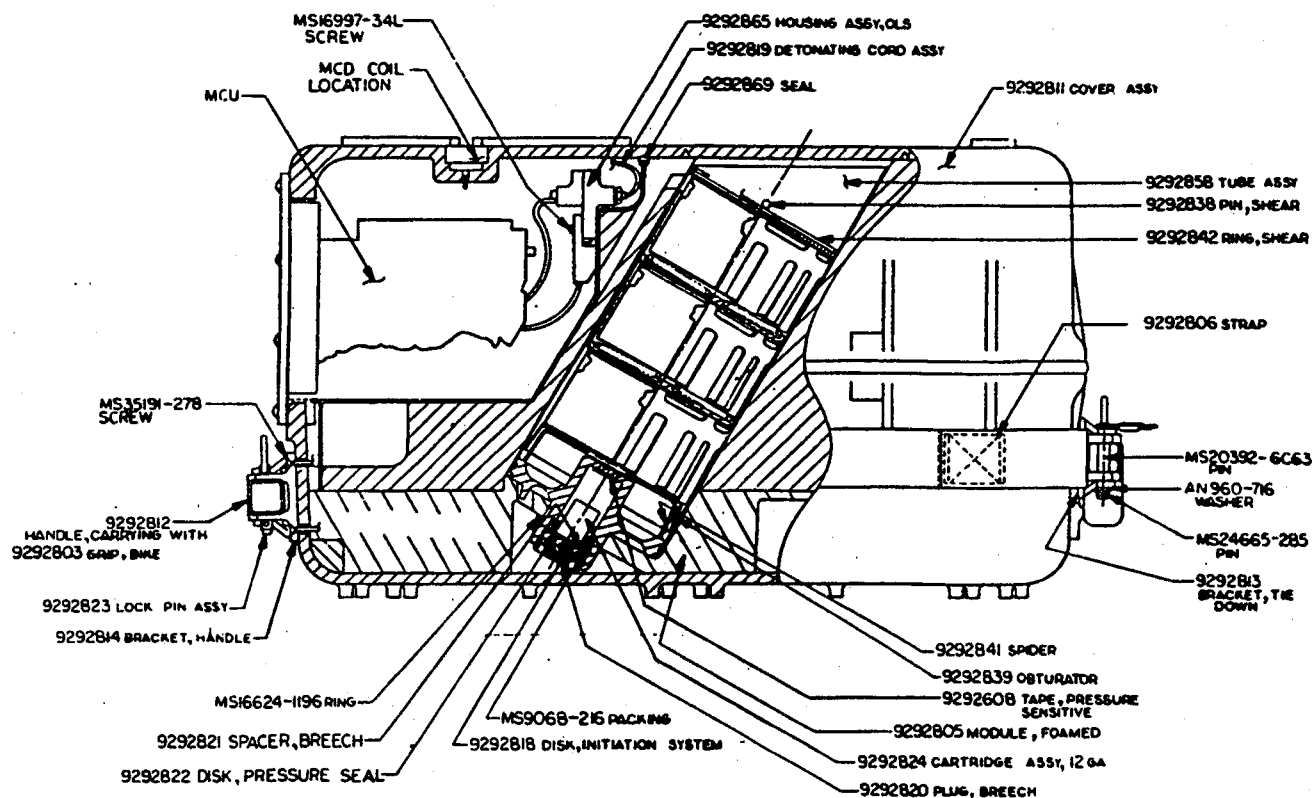
NEW PAGE.

LAST UPDATE: 01/01/87

MIL-HDBK-146
NOTICE 2

FUZE: XM132
AT Mine System, fuze for

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.75 in (44.5 mm)
XSECT: 1.17 in (29.7 mm)

- INTRUSION -

DP: 1.75 in (44.5 mm)
DIA: 1.17 in (29.7 mm)

WT: 0.22 lb (99.8 g) S&A

THD: None
THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-FSM-S
CONTACT: Smith, K
PHONE: DSN 880-6101, -6129
STATUS: Terminated
USER: Army
ASSY DWG: 9 328 692
PARTS LIST:
SPEC:
PUB:

NATIONAL STOCK NO:

Not assigned

DODIC: Not assigned

PRIOR MODEL NO: None

SIMILAR TO:

REPLACES: None

REPLACED BY:

GENERAL

WEAPON: AT Mines

AMMUNITION:

Scatterable Land Mines
System Manually Emplaced
Dispenser, XM132

LOCATION: Center and Face of Mine

BALLISTIC LEVELS:

ROTATION: Neg

SETBACK: Neg

VELOCITY: Neg

CREEP: Neg

FLIGHT TIME:

SAFETY STD:

SETTERS:

NEW PAGE.

FUZE: XM132
AT Mine System, fuze for

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 01/01/87

ARMING DATA

FIRST SAFETY:

RF or hard wire signal

SECOND SAFETY:

Bore rider, ejection from Dispenser

OTHER SAFETY:

Magnetic inductive coupling
Digital Electronic Timer

SAFE/ARM INDICATION:

Yes, S & A

ARMING TIME OR DISTANCE:

Yes, Classified

EXPLOSIVE COMPONENTS

S&A DEVICE: Same as BLU-91 PEP 2

PRIMER: Elec Bat F/M74 Mine, 9292624

DETONATOR: M100 Elec
PA506 Elec Delay

LEAD: PA513 center, PA517 main 4 ea
PA516 transfer 4 ea (in mine)

BOOSTER: 13.6 g PBXN-5 (in mine)

OTHER: MDF, PBXN-5 and HMX 2 ea
(in mine) Clear Chg: 750 mg
M5 Prop 2 ea (in mine)

FUNCTIONING DATA

MODES: Influence, SD

TYPE: Magnetic

CHARACTERISTICS:

Senses Tracked & Wheeled Vehicles
Digital Elec SD, Fixed Time,
RF recycleable.

TARGET: Gnd-Tank Vehicle

SENSITIVITY:

Classified
SD's on low voltage

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

Lithium Reserve Cell 9275567
High Energy Density Cell
9328787, 2 each

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None
US HCSDS: None
UN CL/DIV SCG: None
US DOT SHIP CL: None
NET EXPL WT:
NET PROP WT:
STORAGE TEMP:

REMARKS/DESCRIPTION:

The XM132 nomenclature has been terminated. AT mines are now incorporated into the M131 Modular Pack Mine System (MOPMS). See MIL-HDBK-145.

NEW PAGE.

MIL-HDBK-146
NOTICE 2

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**Data for the M604 AT Mine Practice Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 4-15 and 4-16 of MIL-HDBK 146.

4-15/4-16

MIL-HDBK-146
NOTICE 2

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**Data for the M608 AT Mine Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 4-17 and 4-18 of MIL-HDBK 146.

4-17/4-18

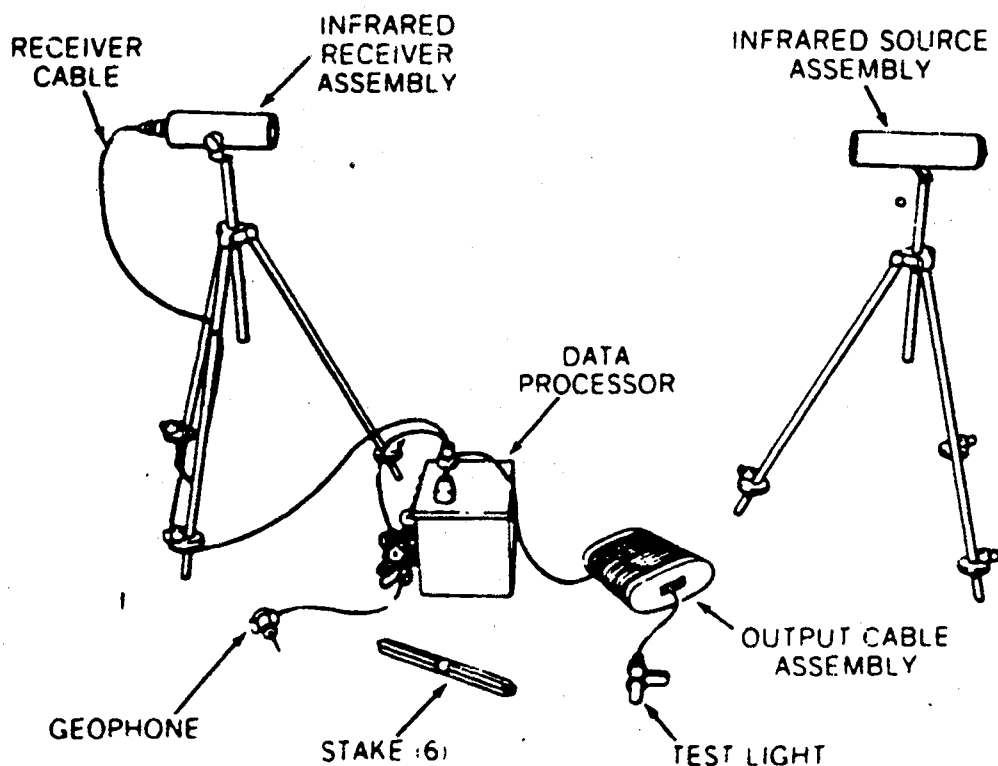
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LAST UPDATE: 03/03/92

MIL-HDBK-146
NOTICE 2

FUZE: M619
AT Mine Influence Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG:
XSECT:

- INTRUSION -

DP:
DIA:

WT:
THD:
THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-FSM-M
CONTACT: Devine, D
PHONE: DSN 880-6163
STATUS: Obsolete
USER: Army
ASSY DWG: 9 235 367
PARTS LIST: 9 235 367
SPEC: MIL-F-50807
PUB:

NATIONAL STOCK NO:
1345-00-182-3146

DODIC: K060
PRIOR MODEL NO:
SIMILAR TO:

REPLACES:
REPLACED BY:

GENERAL

WEAPON: XM66 Mine

AMMUNITION:
HE, 3.5-in rocket

LOCATION:
BALLISTIC LEVELS:
ROTATION:
SETBACK:
VELOCITY:

CREEP:
FLIGHT TIME:
SAFETY STD: MIL-STD-1316 is NA
SETTERS: None

Supersedes page 4-29 of MIL-HDBK-146.

FUZE: M619
AT Mine Influence Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/03/92

ARMING DATA

FIRST SAFETY:

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:
Lamp

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR:

LEAD:

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES: Infrared-seismic
TYPE: Electronic
CHARACTERISTICS:

TARGET: Heavy vehicles
SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

2 batteries

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0410
US HCSDS: None
UN CL/DIV SCG: 1.4 D
US DOT SHIP CL: C
NET EXPL WT:
NET PROP WT:
STORAGE TEMP:

REMARKS/DESCRIPTION:

This fuze is an electronic detector/discriminator which operates on the principle of remote detection and automatic functioning and consists of five components: (1) Source assembly is a tripod mounted infra red (IR) beam generator; (2) receiver assembly is a tripod mounted IR beam receiver; (3) stabilizing stakes is for source and receiver assemblies; (4) geophone is a seismic device; and (5) data processor receives inputs from receiver and geophone. The output cable transmits firing command to the rocket. Functioning sequence is as follows: Geophone detects an approaching vehicle through ground vibration and signals the data processor that a target is enroute. When the target vehicle breaks the infrared (IR) beam generated by the source assembly, the receiver signals the data processor. The processor releases electrical energy to fire the rocket only under conditions of a broken IR beam and a proper seismic signal. This system is inhibited against personnel and animals by a filter in the data processor. Influence of small vehicles on system functioning increases in some areas depending on closeness to geophones, speed of vehicle and terrain at the emplacement site. Fuze in the 3.5 in. rocket is M404A2.

Supersedes page 4-30 of MIL-HDBK-146.

LAST UPDATE: 01/15/93

MIL-HDBK-146

NOTICE 2

FUZE: T3

Rocket PD Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG: 5.545 in (140.8 mm)

XSECT:

- INTRUSION -

DP:

DIA:

WT: 3 lb (1360.8 mm)

THD:

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF

CONTACT:

PHONE:

STATUS: Terminated

USER: Army

ASSY DWG: FF 7642

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO: T332

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 760 mm rocket

AMMUNITION:

Honest John Rocket

LOCATION: Internal

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: None

NEW PAGE.

5-4A

FUZE: T3
Rocket PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 01/15/93

ARMING DATA

FIRST SAFETY:

Setback, deceleration

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

2.5 s before set time

EXPLOSIVE COMPONENTS

S&A DEVICE: Inert

PRIMER:

DETONATOR:

LEAD:

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES: Time

TYPE: Mechanical

CHARACTERISTICS:

7 to 100 s

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

Can be used as either a safety device or arming mechanism and has an initiating switch,.

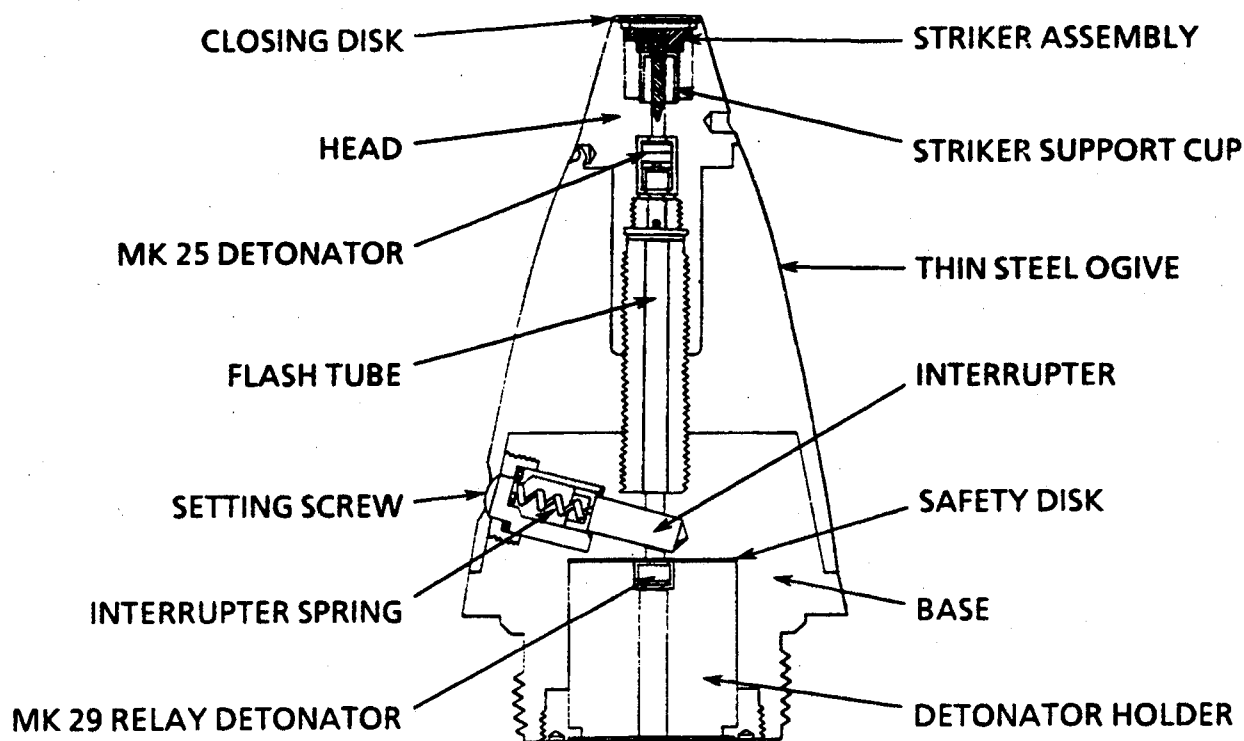
NEW PAGE.

LAST UPDATE: 10/12/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 30 Mod 4
Rocket PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.57 in (116 mm)
XSECT: 2.41 in (61 mm)

- INTRUSION -

DP: 0.81 in (20 mm)
DIA: 1.70 in (43.2 mm)

WT: 1.38 lb (640 g)

THD: 1.70-14NS-1

THD DP: 0.713 in (18.1 mm)

IDENTIFICATION

AGENCY: NSWG, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Navy
ASSY DWG: 562 339
PARTS LIST: LD 165 551
SPEC: Unknown
PUB: SW030-AA-MMO-010; OP 2211

NATIONAL STOCK NO:

1340-00-038-9057

DODIC: J300

PRIOR MODEL NO: XP-15A, XP-16A

SIMILAR TO: Mk 29, Mk 66

REPLACES: Nothing

REPLACED BY: Nothing

GENERAL

WEAPON: 5-in, spin-stabilized
rockets

AMMUNITION:

Mk 10, 12 & 13 Rockets

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 338 rps

SETBACK: 20,600 g

VELOCITY: 2700 ft/s (823 m/s)

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: Doesn't meet MIL-STD-1316B

SETTERS: Manually by screwdriver

NEW PAGE.

5-22A

FUZE: MK 30 Mod 4
Rocket PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/12/90

ARMING DATA

FIRST SAFETY:

Spin: 25 rps no arm,
33 rps all arm

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER: None

DETONATOR: Mk 25 Mod 0 Stab
Mk 29 Mod 0 Relay

LEAD: None

BOOSTER: None

OTHER: None

FUNCTIONING DATA

MODES: SQ

TYPE: Mechanical

CHARACTERISTICS:

TARGET: Surf, Pers, Lt Material

SENSITIVITY:

1 in (25.4 mm) plywood; obliquity,
0 deg.; Velocity, 2625 ft/s
(800 mps); Water 45 deg obliquity

FUNCTION TEMP:

-29 to +54 deg C

MODE ON DELIVERY:

OFF

POWER SUPPLY:

None

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL: C

NET EXPL WT: 0.438 g

NET PROP WT: None

STORAGE TEMP: -29 to +54 deg C

REMARKS/DESCRIPTION:

The Mk 30 Mod 4 requires a Mk 44 AD fuzes for handling and in-bore safety. Prior to launch, the fuze is set to ON for PD SQ action. On firing, centrifugal force moves the slider outward against its spring and into the setting sleeve, unblocking the flash tube. This action takes place after the projectile has left the gun. On impact, the firing pin support collapses and the firing pin is driven into the nose detonator. The flash from the nose detonator passes down the flash tube and initiates the relay detonator which, in turn, causes the AD fuze to function and explode the burster charge of the projectile. The round will dud if fired in the OFF setting. The Mk 30 is the same as the Mk 29 except for contour. The Mk 66 is similar except for contour and the addition of an out-of-line rotor in place of the relay detonator holder. Mods 4 is rain sensitive. The fuze has a thin steel ogive. A 0.01 in metal disk is has been added between the relay detonator and flash channel for added safety.

NEW PAGE.

LAST UPDATE: 03/06/92

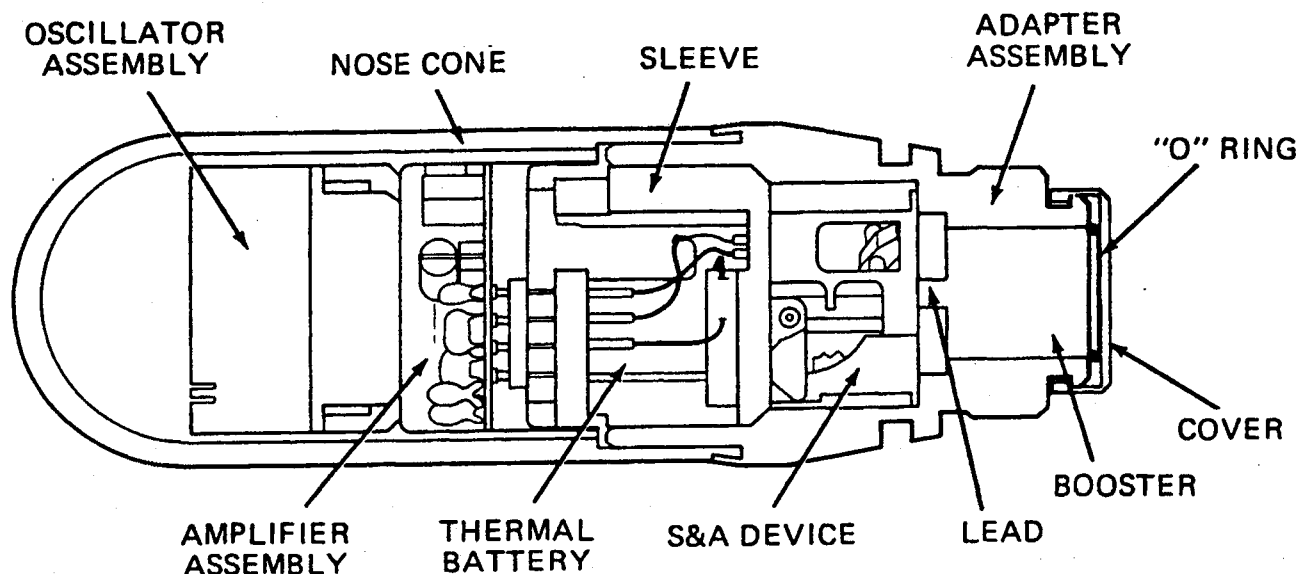
MIL-HDBK-146

NOTICE 2

FUZE: FMU-98/B

Rocket Proximity Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 5.91 in (150.0 mm)

XSECT: 1.89 in (48.0 mm)

- INTRUSION -

DP: 0.90 (22.9 mm)

DIA: maj thread

WT: 0.939 lb (426 g)

THD: 1 7/16-16UNS-2A

THD DP: 0.615 in (15.6 mm)

IDENTIFICATION

AGENCY: LABCOM, SLCHD-TA-ES

CONTACT: McNally, G

PHONE: DSN 290-3710

STATUS: Terminated

USER: Army, Navy, AF, Marines

ASSY DWG: 11 004 808

PARTS LIST: 11004808

SPEC: MIL-F-60971

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO: None

SIMILAR TO: M429

REPLACES: M414A1, M429, Mk 93

REPLACED BY:

GENERAL

WEAPON: 2.75-in Rocket

5-in Rocket (ZUNI)

AMMUNITION:

2.75-in M151 & M229 HE;

5-in Mk 24 HE, Mk 32 AT AP

& Mk 63 HE FRAG

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: (Zuni) 50 rps

SETBACK: 65 g

VELOCITY: 2200 ft/s (671 m/s)

(ZUNI); 3660 f/s

(1116 m/s) HS A/C

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: None

Supersedes page 5-33 of MIL-HDBK-146.

ARMING DATA

FIRST SAFETY:

Acceleration: 12 g no arm,
20 all arm
Boost 1.04 to 1.34 s at 27 g

SECOND SAFETY:

Battery voltage rise delay

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

150-300 m, explosive train in line;
500-700 m, impact enabled

FUNCTIONING DATA

MODES: Proximity, impact backup

TYPE: CW doppler

CHARACTERISTICS:

5 m nominal burst height

TARGET: Ground-Personnel

SENSITIVITY:

FUNCTION TEMP:

-54 to +71 deg C

MODE ON DELIVERY:

Proximity

EXPLOSIVE COMPONENTS

S&A DEVICE: Double integrating
accelerometer

PRIMER: M42G (in Battery)

DETONATOR: M84 Elec

LEAD: 300 mg Tetryl

BOOSTER: 9 g Tetryl

OTHER: BBU-15/B Adapter Booster
required for 5 in Zuni

POWER SUPPLY:

PS113A Thermal Battery, 11001712
initiated by setback

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL: A

NET EXPL WT: 9.457 g

NET PROP WT: None

STORAGE TEMP: -54 to +71 deg C

REMARKS/DESCRIPTION:

The FMU-98/B Fuze arms on the acceleration-time integration principle. On launch, acceleration moves the setback weight to the rear, releasing the unbalanced rotor which turns towards the armed position, delayed by a runaway escapement. After 25 degrees of rotation (0.5 to 0.7 s after launch), the rotor releases a spring-driven firing pin which functions the primer of the thermal battery. The battery is activated and begins to power the fuze electronics. If acceleration is sustained for at least 500 feet, the rotor reaches the armed position; otherwise it returns to the safe position. When armed, the rotor detonator is aligned with the lead and booster, and the firing circuit for the proximity mode is closed. A doppler signal having the proper amplitude can now cause the fuze to function. Following rocket motor burnout, an inertia switch is enabled permitting the fuze to function on impact. A fire signal initiates the electric detonator and, in turn, the lead and booster. Failure of the proximity system will cause the detonator to fire through the inertia switch on impact. The M429 is the same except the impact mode is enabled when the rotor is fully armed instead of after rocket motor burnout.

MIL-HDBK-146
NOTICE 2

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**Data for the MK 176 Mods 0 & 1 Rocket PD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 5-111 and 5-112 of MIL-HDBK 146.

5-111/5-112

MIL-HDBK-146
NOTICE 2

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MIL-HDBK-146
NOTICE 2

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**Data for the MK 178 Mod 2 Rocket PD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 5-115 and 5-116 of MIL-HDBK 146.

5-115/5-116

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**Data for the M404A2 Rocket BD Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 5-153 and 5-154 of MIL-HDBK 146.

5-153/5-154

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NOTICE 2

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MIL-HDBK-146
NOTICE 2

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**Data for the M414A1 Rocket Proximity Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 5-165 and 5-166 of MIL-HDBK 146.

5-165/5-166

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LAST UPDATE: 04/19/91

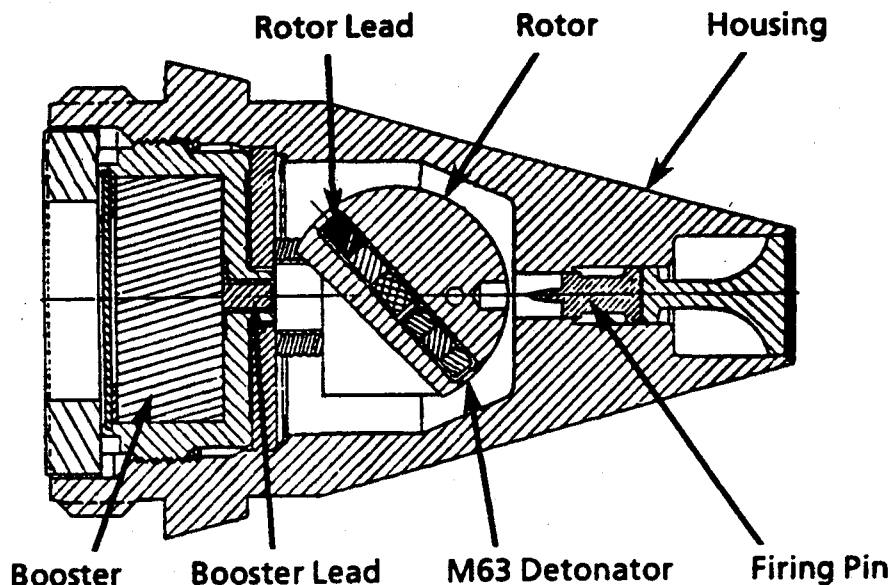
MIL-HDBK-146

NOTICE 2

FUZE: M417

Rocket PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 3 in (76.2 mm)

XSECT:

- INTRUSION -

DP: 0.92 in (23.4 mm)

DIA:

WT: 0.6 lb (272 g)

THD: 1.4315-16NS-2

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-C

CONTACT: Chevalaz, R

PHONE: DSN 880-5697

STATUS: Obsolete

USER: Army

ASSY DWG: 86 903 (T2058)

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

1340-00-716-1450, 1340-00-724-3567

DODIC: H520, H521

PRIOR MODEL NO: T2058

SIMILAR TO: T2044E3

REPLACES:

REPLACED BY:

GENERAL

WEAPON: Rocket

AMMUNITION:

M55, Chemical

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION:

SETBACK: 45 g

VELOCITY: 2,400 ft/s (732 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't Meet MIL-STD-1316

SETTERS: None

Supersedes page 5-171 of MIL-HDBK-146.

5-171

FUZE: M417
Rocket PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 04/19/91

ARMING DATA

FIRST SAFETY:

Setback: 13 g, no arm; 20 g all arm

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

300 ft (91 m)

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: M63, plus 0.180 g RDX
rotor lead, Dwg B90-4-85

LEAD: 0.074 g RDX

BOOSTER: 12 g of RDX, Dwg C90-4-33

OTHER: None

FUNCTIONING DATA

MODES: PDSQ

TYPE: Mechanical

CHARACTERISTICS:

TARGET: Personnel

SENSITIVITY:

All terrain,

Maximum obliquity 75 deg

FUNCTION TEMP:

MODE ON DELIVERY:

Safe

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT: 12.468 g

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

The rotor is restrained in the unarmed position by a setback weight and a gear sector engaged with a gear train of a runaway escapement. On firing acceleration moves setback weight rearward releasing the unbalanced rotor which rotates to the armed position delayed by the runaway escapement. If sufficient acceleration-time boost is not obtained, the setback weight drives the rotor back to the unarmed position. At arming, a spring-loaded pin locks the rotor in the armed position. On impact the windshield striker drives the firing pin directly rearward functioning the M63 Detonator which initiates the rotor detonator and in turn the lead and booster. Housing, Dwg. D90-4-27; S&A, Dwg. C90-4-83. Mechanical, Junghans escapement.

Supersedes page 5-172 of MIL-HDBK-146.

5-172

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**Data for the M423 Rocket Impact Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 5-175 and 5-176 of MIL-HDBK 146.

5-175/5-176

MIL-HDBK-146
NOTICE 2

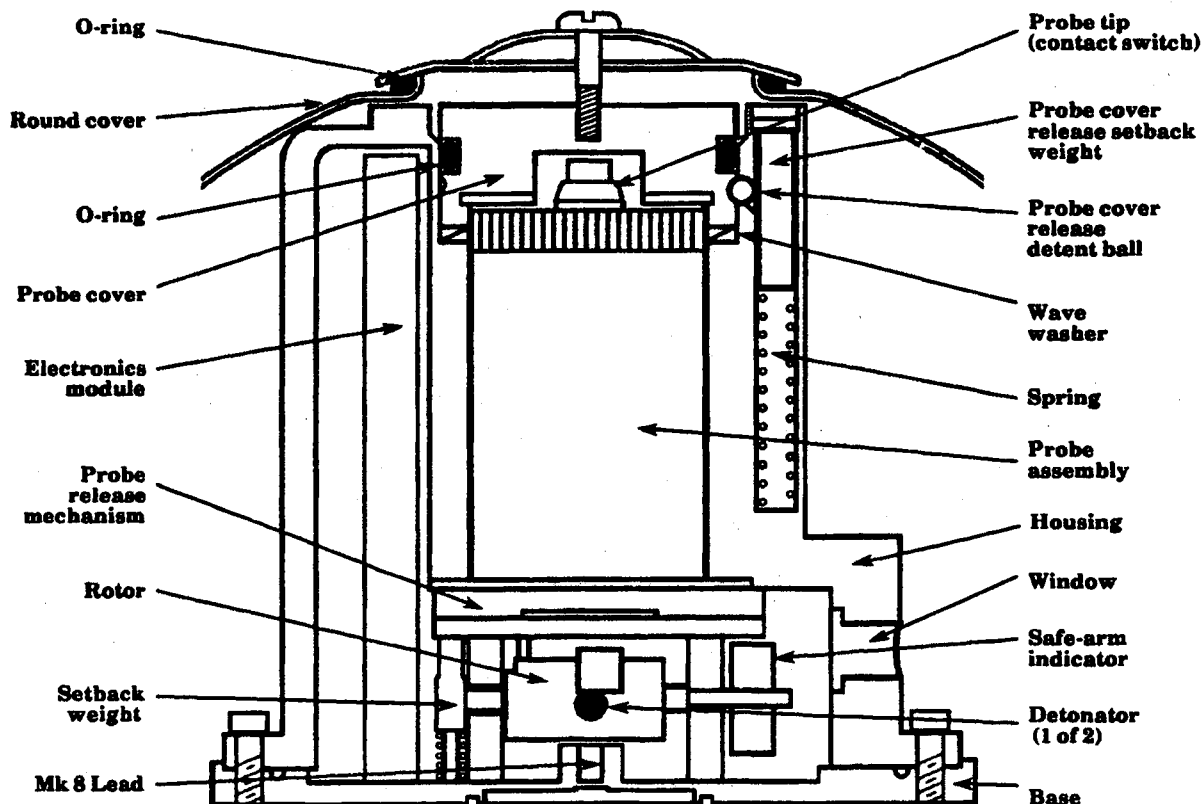
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LAST UPDATE: 03/10/92

MIL-HDBK-146
NOTICE 2

FUZE: EX 427 Mod 0
Electronic Time Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 6 in (152 mm)

XSECT: 6.5 in (165 mm)

- INTRUSION -

DP: 6 in (152 mm)

DIA: 6.5 in (165 mm)

WT: 8 lb (3630 g)

THD: None

THD DP: NA

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G411

CONTACT: Munach, A

PHONE: DSN 290-1970

STATUS: Terminated

USER: Marine Corps

ASSY DWG: KD04500 (Bulova)

PARTS LIST: Not yet determined

SPEC: Not yet determined

PUB: None

NATIONAL STOCK NO:

Issued with round

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: XM750 SLUF AE Fuze

REPLACES: Nothing

REPLACED BY: None

GENERAL

WEAPON: Amphibious Assault, Mine Countermeasure System

AMMUNITION:

Catapult-Launched Fuel-Air Explosive (CATFAE)

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: NA

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME: 25 seconds

SAFETY STD: Meets MIL-STD-1316C

SETTERS: Launch vehicle fire control

Supersedes page 5-181 of MIL-HDBK-146.

5-181

ARMING DATA

FIRST SAFETY:

Launch sensing switch starts two electronic timers

SECOND SAFETY:

Acceleration of setback weight unlocks rotor

OTHER SAFETY:

Cessation of acceleration causes setback weight to drive rotor to fully armed position

SAFE/ARM INDICATION:

"S" or "A" indicator;
anti-malassembly feature

ARMING TIME OR DISTANCE:

246 ft (75 m) from launcher

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: Dwg KD04776 (Bulova) (2ea)
(self-shorting contacts)

LEAD: Dwg KD04503 (Bulova) (Cloud det)
Mk 8 (warhead burster)

BOOSTER: None

OTHER: BBU-24/B Actuator repositions piston which unlocks rotor and releases probe

FUNCTIONING DATA

MODES: Proximity, 8 ft from ground

TYPE: Electronic

CHARACTERISTICS:

Helical spring probe with contact switch initiates round 8 ft from ground. Switch in electronic module provides backup on round impact.

TARGET: Land and shallow water mines

SENSITIVITY:

1.5 lb closes probe switch (70 to 105 ft/s velocity on impact)

FUNCTION TEMP:

MODE ON DELIVERY:

NA

POWER SUPPLY:

Eight electrolytic capacitors are charged by fire control and used to power electronics and fire dets.

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT:

NET PROP WT:

STORAGE TEMP: -54 to +71 deg C

REMARKS/DESCRIPTION:

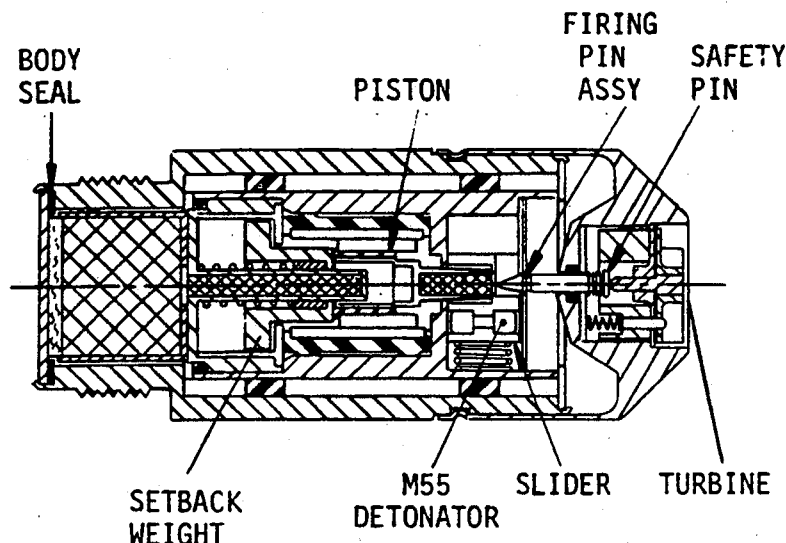
The fire control charges fuze capacitors and transmits the retarding parachute deployment time to the fuze prior to launch. On launch, the fuze g-switch closes starting two electronic timers. Setback repositions detent balls unlocking the probe cover and drives the S&A setback weight aft allowing the unbalanced rotor to turn to the first-stage armed position. At the programmed time, a fire signal is sent to the parachute S&A and 1.5 s later an explosive actuator repositions a piston allowing the rotor to continue turning. The piston also releases the 8-ft contact probe. After acceleration, springs drive the setback weight forward, turning the rotor toward the fully armed position. The rotor is governed part way by a 0.5 s escapement. In the armed position, the two detonators are unshorted and aligned with their respective leads. An electronic delay enables the firing circuits 50 ms later. Probe contact or round impact will initiate the cloud detonator firing circuit and deploy the detonators. After an additional 12 ms another fire pulse initiates the main burster charge rupturing the warhead and disseminating the fuel. The fuel air cloud quickly overtakes the cloud detonators, and is initiated.

LAST UPDATE: 03/10/92

MIL-HDBK-146
NOTICE 2

FUZE: M431
Rocket PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 4.617 in (117.3 mm)
XSECT: 1.755 in (44.6 mm)

- INTRUSION -

DP: 1.032 in (26.2 mm)
DIA: Threads

WT: 9.73 oz (275.8 g)
THD: 1 7/16-16UNS-2A
THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-C
CONTACT: Sitara, R
PHONE: DSN 880-4909
STATUS: Terminated
USER: Army
ASSY DWG: 9 224 063
PARTS LIST: 9224063
SPEC: MIL-F-50253
PUB:

NATIONAL STOCK NO:
None assigned

DODIC:
PRIOR MODEL NO: XM431
SIMILAR TO:

REPLACES: M423
REPLACED BY:

GENERAL

WEAPON: 2.75-in Rocket for
Helicopters

AMMUNITION:
Warhead HE M151

LOCATION: Nose of Warhead

BALLISTIC LEVELS:

ROTATION: 10 rps
SETBACK: 25 g
VELOCITY: 1950 ft/s (594 m/s)
rocket; 2149 ft/s
(655 m/s) w/heli

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316B
SETTERS: None

NEW PAGE.

5-182A

FUZE: M431
Rocket PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/10/92

ARMING DATA

FIRST SAFETY:

Setback: 11.25 g no arm,
20.5 all arm

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

43 to 92 m
Boost: 0.63 to .82 s at 27 g

FUNCTIONING DATA

MODES: SQ

TYPE: Mechanical, pneumatic

CHARACTERISTICS:

SQ

TARGET: Grd - Personnel, Lt Mat
SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

SQ

EXPLOSIVE COMPONENTS

S&A DEVICE: Air Dash Pot

PRIMER: None

DETONATOR: M55 Stab

LEAD: 640 mg RDX

BOOSTER: 14.9 g RDX

OTHER: None

POWER SUPPLY:

Compressed slider spring

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL: A

NET EXPL WT: 15.625 g

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

The fuze is made safe by restraining the slider by means of the firing pin and a detent attached to a pneumatic integrating device. On launch, acceleration moves a setback weight to the rear releasing the piston of the pneumatic annular orifice device (PAOD). The piston moves rearward during acceleration delayed by the flow of air through the small annular orifice between piston and cylinder. Setback also removes a detent from an air turbine at the nose. Air flow rotates the turbine and it unscrews moving forward allowing the firing pin spring to remove the pin from the slider. If an insufficient rocket boost is obtained, the setback weight forces the piston back to the detenting position. When the PAOD piston releases the slider, its spring moves it to the armed position. On direct or graze impact, the nose ogive moves rearward and the firing pin functions the M55 Det, and, in turn, the lead in the piston, the second lead in the fuze body and the booster. Fuze has never been produced.

NEW PAGE.

5-182B

LAST UPDATE: 01/01/87

MIL-HDBK-146
NOTICE 2

FUZE: XM448
Rocket ET Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY: LABCOM, SLCHD-DE-OS
CONTACT: Croakin, J; Morrow, D
PHONE: DSN 290-3720, -3710
STATUS: Terminated
USER:
ASSY DWG:
PARTS LIST:
SPEC:
PUB:

NATIONAL STOCK NO:

DODIC:
PRIOR MODEL NO:
SIMILAR TO:

REPLACES:
REPLACED BY:

GENERAL

WEAPON:

AMMUNITION:

LOCATION:
BALLISTIC LEVELS:
ROTATION:
SETBACK:
VELOCITY:

CREEP:
FLIGHT TIME:
SAFETY STD:
SETTERS:

NEW PAGE.

5-188A

FUZE: XM448
Rocket ET Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 01/01/87

ARMING DATA

FIRST SAFETY:

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR:

LEAD:

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES:

TYPE:

CHARACTERISTICS:

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

NEW PAGE.

5-188B

LAST UPDATE: 03/06/92

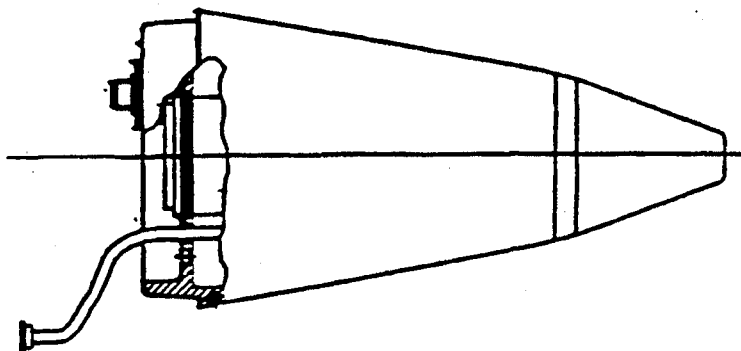
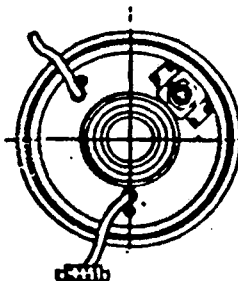
MIL-HDBK-146

NOTICE 2

FUZE: XM450

Rocket Prox/Time Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 9.5 in (242.2 mm)

XSECT: 4.8 in (122.5 mm)

- INTRUSION -

DP: 0.9 in (23.0 mm)

DIA: 4.5 in (113.8 mm)

WT: 3.5 lb (1600 g)

THD: None

THD DP: NA

IDENTIFICATION

AGENCY: LABCOM, SLCHD-TA-ES

CONTACT: McNally, G

PHONE: DSN 290-3710

STATUS: Terminated

USER: Army, NATO

ASSY DWG: 11 743 500

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO: None

SIMILAR TO: M445, M447

REPLACES: Nothing

REPLACED BY:

GENERAL

WEAPON: 228 mm rocket

AMMUNITION:

Multiple Launch Rocket
System (MLRS); Submunition
Dispensing Warhead

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 12 rps

SETBACK: 40 to 100 g

VELOCITY: 3300 ft/s (1000 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD: MIL-STD-1316

SETTERS: MLRS Fire Control System

NEW PAGE.

5-188C

FUZE: XM450
Rocket Prox/Time Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/06/92

ARMING DATA

FIRST SAFETY:

Setback: 10 g no arm,
24 g all arm
Boost: 1.25 s at 31 g min

SECOND SAFETY:

Umbilical disconnect

OTHER SAFETY:

Input time setting

SAFE/ARM INDICATION:

Electrical but no visual;
Has antimalassembly feature

ARMING TIME OR DISTANCE:

Mechanical: 800 ms
Electrical: set time

FUNCTIONING DATA

MODES: Proximity, time

TYPE: Electronic, Digital

CHARACTERISTICS:

Prox: 300, 190, & 75 m; Time: 5.0
to 199.9 s in 0.1 s increments.
Accuracy: larger of 0.2 s or 0.5%
of set time.

TARGET: To be determined

SENSITIVITY:

NA

FUNCTION TEMP:

-40 to +71 deg C

MODE ON DELIVERY:

Safe

EXPLOSIVE COMPONENTS

S&A DEVICE: Acc-driv rotor locked by
zig-zag & elec-exp act.

PRIMER: None

DETONATOR: M84 Elec

LEAD: 740 mg CH-6
Dwg 11 733 886

BOOSTER: None

OTHER: Electro-explosive Actuator
5 mg 50/50 BS/KDNBF

POWER SUPPLY:

Thermal battery, dwg 11 743 760

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL: C

NET EXPL WT: 0.880 g

NET PROP WT: None

STORAGE TEMP: -40 to +71 deg C

REMARKS/DESCRIPTION:

On firing, a setback weight moves rearward oscillating in a zig-zag path if a proper rocket motor boost is obtained. This partially releases the rotor, and closes a switch to an electronic timer. In flight, ram air passes through an annular orifice into a resonating cavity and the acoustic vibrations oscillate a diaphragm connected to a reed in a magnetic field generating an emf. After 1024 cycles of the diaphragm, a capacitor is charged, and after 1536 cycles, discharged into the piston actuator. The piston rotates the second lock, completely releasing the rotor. Setback rotates the unbalanced rotor to the armed position, unshorting the detonator and closing the firing circuit. Timing is accomplished with a twin-t oscillator, a divider circuit, and a counter. At 3.4 s before set time, the firing capacitor is charged, and, at set time, functions the Mk 84 Det which initiates the lead.

NEW PAGE.

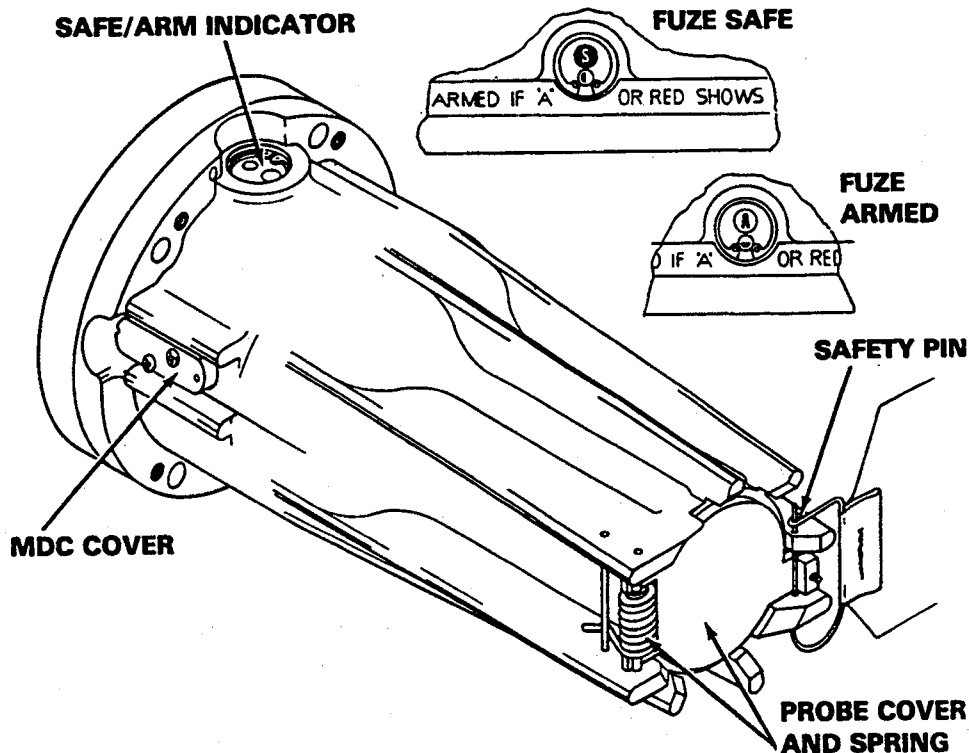
5-188D

LAST UPDATE: 03/13/92

MIL-HDBK-146
NOTICE 2

FUZE: XM750
Rocket ET Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 8.42 in (213.9 mm)

XSECT: 5.125 in (130.3 mm)

- INTRUSION -

DP: None

DIA:

WT: 7.0 lb (3.175 kg)

THD: None

THD DP:

IDENTIFICATION

AGENCY: BRDC, DRDME-NEZ

CONTACT: Millman, W

PHONE: DSN 354-4272

STATUS: Terminated

USER: Army

ASSY DWG: 13220E9836

PARTS LIST:

SPEC: MIL-F-53005

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO: None

SIMILAR TO:

REPLACES: None

REPLACED BY:

GENERAL

WEAPON: Surface Launched Unit Fuel
Air Expl Mine Neutraliza-
tion Sys, M134 (SLUF AE)

AMMUNITION:

Rocket, HE, 345 mm, M130

LOCATION: Nose of Warhead

BALLISTIC LEVELS:

ROTATION: None

SETBACK: 44.5 g f/0.3 s nominal

VELOCITY: 413 ft/s (126 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD: MIL-STD-1316B

SETTERS: Selec Checkout Assy (SCA)

NEW PAGE..

5-190A

FUZE: XM750
Rocket ET Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/13/92

ARMING DATA

FIRST SAFETY:

Electrical charging during launch cycle provides energy for BBU-24/B Actuator

SECOND SAFETY:

Setback: 18 g no arm, 25 g all arm
Boost for 0.3 s nominal

OTHER SAFETY:

In-bore arming precluded by setback weight runaway notch. Armed fuze cannot be charged.

SAFE/ARM INDICATION:

Yes

ARMING TIME OR DISTANCE:

0.58 to 0.73 s

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER: None

DETONATOR: Mk 96-0 Elec, 3 ea

LEAD: Mk 8-0 (1 ea); Transfer (142 mg PBXN-301) (2 ea)

BOOSTER: None

OTHER: BBU-24/B Actuator

FUNCTIONING DATA

MODES: Time, PD and Delay

TYPE: Electronic, Mechanical

CHARACTERISTICS:

1 to 12 s x 0.1 s time

PD/standoff dispersion w/.010 s
funct delay, back up inertia
for dispensation & function

TARGET: Ground-Mine clearance

SENSITIVITY:

All surfaces except light snow

FUNCTION TEMP:

-32 to +52 deg C

MODE ON DELIVERY:

Time, 12 s

POWER SUPPLY:

External 24.5 Vdc

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO: 0247

US HCSDS:

UN CL/DIV SCG: 1.3 J

US DOT SHIP CL: A

NET EXPL WT: 0.939 g

NET PROP WT: None

STORAGE TEMP: -35 to +71 deg C

REMARKS/DESCRIPTION:

The fuze rotor contains 3 Mk 96 Detonators and is locked by the spring-biased setback weight. An explosive-actuator operated piston also blocks the rotor. Fuze setting for round chute deployment is made at the Selection Check-out Assembly (SCA) which sequentially charges all fuzes and initiates all rocket motor ignitors. Chute time is a fixed 12 s time in every fuze. Variable time is obtained by changing fuze from 0 to 11 s before launch. At launch, rotor is unlocked by setback weight and rotates partially towards armed position, being delayed by an escapement. Switch closure during rotation causes actuator to fire and unblock rotor. At motor burnout, weight drives rotor balance of travel to armed position and closes detonator firing contacts. At set time, first det. functions, initiating first transfer lead leading to chute deployment. At same time, extendible target probe delay timer is released. At 2.3 sec. probe extends approx. 2 meters. At impact, probe nose switch closes, or one of two inertia backup switches closes to function the second det. and transfer lead, leading to expulsion of warhead fuel detonation devices. Ten ms later, last det. fires, initiating Mk 8 Lead and burster charge.

NEW PAGE.

LAST UPDATE: 01/15/93

MIL-HDBK-146
NOTICE 2

FUZE: SHAWL (F)
PI BD Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG: 2.10 (53.3 mm)

XSECT: 1.250 (31.75 mm)

- INTRUSION -

DP: 2.10 (53.3 mm)

DIA: 1.25 (31.75 mm)

WT: 0.20 lb (90.7 g)

THD: None

THD DP:

IDENTIFICATION

AGENCY: MICOM, DRSMI-OT

CONTACT: Zecher, W

PHONE: DSN 746-1245

STATUS: Terminated

USER: Army

ASSY DWG: KD 88884 mod.

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

Not assigned

DODIC:

PRIOR MODEL NO: None

SIMILAR TO:

REPLACES: None

REPLACED BY:

GENERAL

WEAPON: 70mm Assault Rocket

AMMUNITION:

Special Hard Target Assault
Weapon, LAW (SHAWL); Forward
HEAT penetrating warhead

LOCATION: Base of Fwd Warhead

BALLISTIC LEVELS:

ROTATION: 10 rps

SETBACK: 4000 g

VELOCITY: 700 ft/s
(213 m/s)

CREEP: 3 g

FLIGHT TIME:

SAFETY STD:

SETTERS:

NEW PAGE.

5-257-

FUZE: SHAWL (F)
PI BD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 01/15/93

ARMING DATA

FIRST SAFETY:

Launch signal, piston
actuated rotor lock

SECOND SAFETY:

Setback: 2500 g no arm,
3400 g all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No, but can't assemble armed

ARMING TIME OR DISTANCE:

.030 to .060 s

EXPLOSIVE COMPONENTS

S&A DEVICE: M530 setback type

PRIMER: None

DETONATOR: M84 Elec

LEAD: Precision Initiator Coupler
(PIC)

BOOSTER: 8 g Comp A-5

OTHER:

FUNCTIONING DATA

MODES: PIBD, Graze

TYPE: Electric, Mechanical

CHARACTERISTICS:

SQ crush switch less than 50 u s
Graze-electric inertial

TARGET: Gnd-Fortification, Vehicles
SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

Capacitor charged at launch signal
from thermal battery
Wound rotor spring

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:
US HCSDS:
UN CL/DIV SCG:
US DOT SHIP CL:
NET EXPL WT:
NET PROP WT:
STORAGE TEMP:

REMARKS/DESCRIPTION:

NEW PAGE.

LAST UPDATE: 01/15/93

MIL-HDBK-146
NOTICE 2

FUZE: SHAWL (R)
BD Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG: 1.53 in (38.9 mm)

XSECT: 1.25 (31.8 mm)

- INTRUSION -

DP: 1.53 (38.9 mm)

DIA: 1.25 (31.8 mm)

WT: 0.18 lb (81.6 g)

THD: None

THD DP:

IDENTIFICATION

AGENCY: MICOM, DRSMI-OT

CONTACT: Zecher, W

PHONE: DSN 746-1245

STATUS: Terminated

USER: Army

ASSY DWG: 11 733 501 mod

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

Not assigned

DODIC:

PRIOR MODEL NO: None

SIMILAR TO:

REPLACES: None

REPLACED BY:

GENERAL

WEAPON: 70mm Assault Rocket

AMMUNITION:

Special Hard Target Assault
Weapon, LAW (SHAWL); Follow
thru Bursting Charge Warhead

LOCATION: Base of Rear Warhead

BALLISTIC LEVELS:

ROTATION: 10 rps

SETBACK: 4000 g

VELOCITY: 700 ft/s (213 m/s)

CREEP: 3 g

FLIGHT TIME:

SAFETY STD:

SETTERS:

NEW PAGE.

5-259-

FUZE: SHAWL (R)
BD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 01/15/93

ARMING DATA

FIRST SAFETY:

Launch signal on rotor lock

SECOND SAFETY:

Setback: 2500 g no arm,
3400 g all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No, but can't be assembled armed

ARMING TIME OR DISTANCE:

.030 to .060 s

EXPLOSIVE COMPONENTS

S&A DEVICE: M530 type

PRIMER: M97 & Stab Dly 11730630

DETONATOR: M55 Stab

LEAD: 85 mg PBXN-5

BOOSTER: 8 g Comp A-5

OTHER:

FUNCTIONING DATA

MODES: BD Delay, Graze

TYPE: Mechanical

CHARACTERISTICS:

Delay - .010 s nominal

Graze - 85 degrees obliq.

TARGET: Ground-Fort. and Lt Targets

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

Wound rotor spring

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

NEW PAGE.

LAST UPDATE: 12/19/92

MIL-HDBK-146
NOTICE2

FUZE: MK 1 Mod 0
Safety-Arming Device

ILLUSTRATION:

- OVERALL SIZE -

LG: 24 in g (609.6 mm)

XSECT: 1.8 in (45.7 mm)

- INTRUSION -

DP:

DIA:

WT: 10.4 lb (4717 g)

THD:

THD DP:

IDENTIFICATION

AGENCY: NWC, Code 335

CONTACT:

PHONE:

STATUS: Obsolete

USER: Navy

ASSY DWG:

PARTS LIST: LD 477 334

SPEC: OS 7126

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: Guided Missile

AMMUNITION:

Terrier BW

HE, Mk 5 Mod 0 W/H

LOCATION: Forward

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: None

NEW PAGE.

6-2A

FUZE: MK 1 Mod 0
Safety-Arming Device

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 12/19/92

ARMING DATA

FIRST SAFETY:

Acceleration: 13.5 s no arm

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

Viewing window

ARMING TIME OR DISTANCE:

7.75 s

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR: T79 (two)

LEAD: Mk 1-0 (four)

BOOSTER: Mk 33-0

OTHER: The commit-to-arm function mus

FUNCTIONING DATA

MODES: Prox, SD

TYPE: Electric

CHARACTERISTICS:

Instantaneous

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

28.0 Vdc from missile

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

NEW PAGE.

LAST UPDATE: 12/19/92

MIL-HDBK-146
NOTICE 2

FUZE: MK 3 Mod 3
Safety-Arming Device

ILLUSTRATION:

- OVERALL SIZE -

LG: 2.4 in (60.96 mm)

XSECT:

- INTRUSION -

DP:

DIA:

WT: 0.81 lb (368 g)

THD:

THD DP:

IDENTIFICATION

AGENCY: NWC, Code 3355

CONTACT: Janson, J

PHONE: DSN 437-7414

STATUS: Obsolete

USER: Navy

ASSY DWG:

PARTS LIST: LD 521 892

SPEC: WS 1638

PUB: Fuzing Sys for Air Launched
Weapons

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: Nothing

SIMILAR TO: Nothing

REPLACES: Mk 3 Mod 4

REPLACED BY:

GENERAL

WEAPON: Air-air missile

AMMUNITION:

AIM-9, Sidewinder 1A Missile
HE

LOCATION: Base of Warhead

BALLISTIC LEVELS:

ROTATION: NA

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

NEW PAGE.

FUZE: MK 3 Mod 3
Safety-Arming Device

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 12/19/92

ARMING DATA

FIRST SAFETY:

Clevis Latch Activated by
Electric Solenoid

SECOND SAFETY:

Acceleration: 18.0 g all arm

OTHER SAFETY:

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

480 to 840 ft (146 to 256 m)

EXPLOSIVE COMPONENTS

S&A DEVICE: Out-of-Line Expl Train

PRIMER: Mk 140-0

DETONATOR: M30A1

LEAD: Mk 7-0

BOOSTER: Mk 34-0 (supplied
separately)

OTHER: Mk 5-0 Expl Driver

FUNCTIONING DATA

MODES: Proximity, Impact

TYPE: Mechanical/electric

CHARACTERISTICS:

Instantaneous

Uses Mk 303 Proximity fuze

TARGET: Air

SENSITIVITY:

200 g to 350 g (Impact Sensor)

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

25-32 VDC Thermal Battery,
from proximity fuze

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

The Mk 3-3 is an acceleration discrimination electro/mechanical S-A device. Minimum acceleration of 18 g for approximately 1.4 s causes the setback weight to move eliminating a short which allows an explosive driver to fire and lock the setback weight in the aft position. This starts a self-destruct clock. The arming rotor, released by the movement of the setback weight, turns under the influence of missile acceleration at a rate governed by an escapement. The armed position of the rotor (alignment of the explosive train) occurs at 480-840 ft of missile travel. Just before arming, the electric primer shorting wire is broken by a pin on the rotor. The acceleration switch, which is closed during missile boost, maintains a short across the primer until the end of boost. The S-A is not electrically armed until deceleration occurs at rocket motor burnout or 2500-3000 ft separation. When the missile passes within lethal proximity of the target, the influence fuze develops a firing pulse initiating the S-A primer. If the missile fails to intercept the target within 30 s, the warhead will be initiated by switch closure in the self-destruct clock. S-A fits into Mk 303 Proximity Fuze.

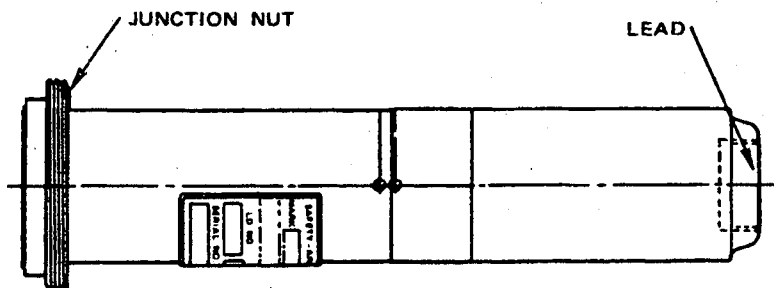
NEW PAGE.

LAST UPDATE: 02/21/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 13 Mod 0
Safety-Arming Device

ILLUSTRATION:



- OVERALL SIZE -

LG: 7.109 in (182 mm)

XSECT: 1.500 in (41.3 mm)

- INTRUSION -

DP:

DIA:

WT: 1.40 lb (635 g)

THD: 2 1/8-16UN-2A

THD DP:

IDENTIFICATION

AGENCY: NWC, Code 3351

CONTACT: Leach, R

PHONE: DSN 437-7611

STATUS: Obsolete

USER: Navy, AF, Marines

ASSY DWG:

PARTS LIST:

SPEC:

PUB: Fuzing Sys for Air Launched
Weapons

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES: Nothing

REPLACED BY: Mk 13 Mod 2

GENERAL

WEAPON: Air-air missile

AMMUNITION:

AIM-9, Sidewinder (early
Version; Chaparral

HE, WDU-17/B Warhead

LOCATION: Forward end of warhead

BALLISTIC LEVELS:

ROTATION: Not applicable

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

NEW PAGE.

6-16A

FUZE: MK 13 Mod 0
Safety-Arming Device

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 02/21/90

ARMING DATA

FIRST SAFETY:

Launch latch activated by
electric solenoid

SECOND SAFETY:

Acceleration 4 g no arm

OTHER SAFETY:

Parallel Electronic Timer
(mounted in the target detector)

SAFE/ARM INDICATION:

Visual Indicator

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE: Out-of-Line Expl Train

PRIMER:

DETONATOR: Mk 71 Mod 0 (2)

LEAD: Mk 8 Mod 0, Mk 16 Mod 0,
Mk 14 Mod 0

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES: Proximity, Contact

TYPE: Mechanical/electric

CHARACTERISTICS:

Instantaneous

TARGET: Air

SENSITIVITY:

100 - 200 g (Impact Sensor,
mounted elsewhere in the missile)

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

28 VDC from missile
(G and C thermal battery)

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO: 0349

US HCSDS: None

UN CL/DIV SCG: 1.4 S

US DOT SHIP CL: C

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

The Mk 13-0 is an arm-during-boost S-A. Before launch, a solenoid is energized retracting the launch latch from the setback weight. After launch, acceleration in excess of 8 g drives the setback weight aft freeing the control rotor and allowing the eccentrically weighted control and lead rotors to turn and arm at a rate governed by an escapement. During acceleration, an activating pin contacts the stopface of the setback weight, a rotary switch closes electrical circuits to the two Mk 71-0 Detonators, the rotor lead is aligned with the block lead and detonators, and the steel barrier in the rotor between the two leads is removed. Commit-to-arm occurs at 400 ft of missile travel. Lack of sustained acceleration before this point will return the rotors to the safe position. Full rotation to arm is at 600-1100 ft of missile travel depending on missile acceleration. Acceleration decay causes the setback weight to move forward capturing the activating pin in the arm pocket, locking the S-A in the armed position. The Mk 71-0 Detonators are initiated with a signal from the impact or proximity fuze, and, in turn initiate the rotor and block leads.

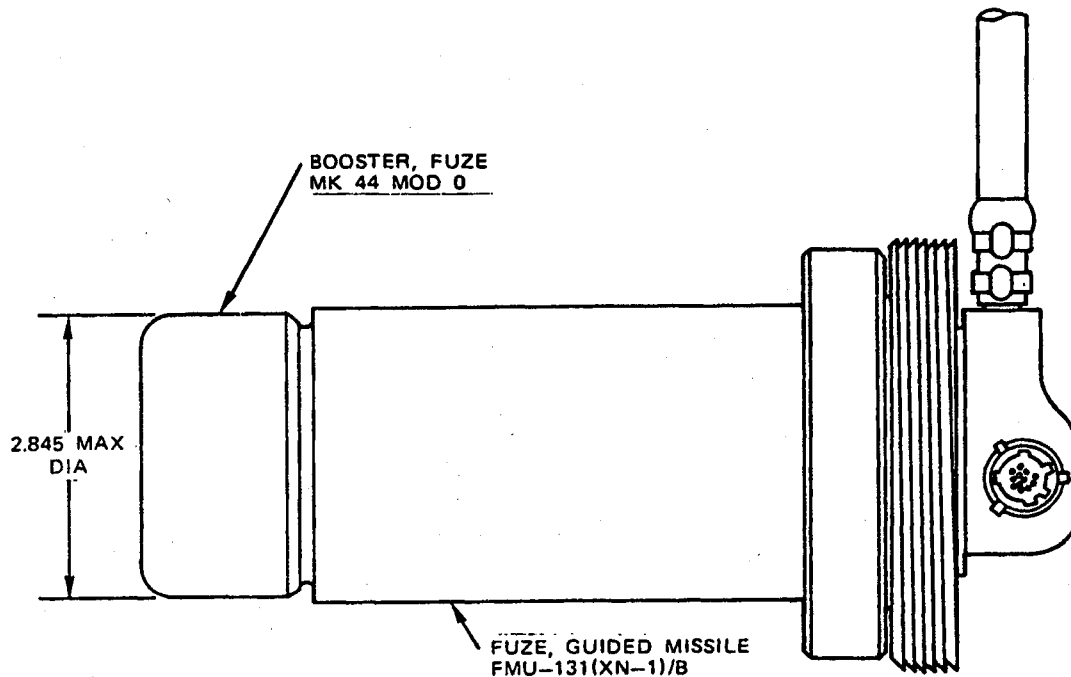
NEW PAGE.

LAST UPDATE: 12/19/92

MIL-HDBK-146
NOTICE 2

FUZE: FMU-131/B
GM Impact Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 7.9 in (200.7 mm)
XSECT: 2.91 in (73.9 mm)

- INTRUSION -

DP: 5.2 in (132.1 mm)
DIA:

WT: 6.8 lb (3087 g)
THD: 4.25-10 Buttrass
THD DP:

IDENTIFICATION

AGENCY: NWC, Code 3354
CONTACT: Dean, C
PHONE: DSN 437-7232
STATUS: Terminated
USER: Navy, AF
ASSY DWG: 1186-AS-200
PARTS LIST: DL SK1186AS200
SPEC: AS-2361
PUB:

NATIONAL STOCK NO:

Not assigned

DODIC: Not assigned

PRIOR MODEL NO: None

SIMILAR TO: FMU-109/B

REPLACES: Nothing

REPLACED BY:

GENERAL

WEAPON: Surface-surface missile

AMMUNITION:

BGM-109B Tomahawk
HE

LOCATION: Base of Warhead

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

NEW PAGE.

6-38A

FUZE: FMU-131/B
GM Impact Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 12/19/92

ARMING DATA

FIRST SAFETY:
Weapon power

SECOND SAFETY:
Air pressure

OTHER SAFETY:
Rotor Lever Lock

SAFE/ARM INDICATION:
Viewing window

ARMING TIME OR DISTANCE:
Classified

FUNCTIONING DATA

MODES: Impact
TYPE: Electric
CHARACTERISTICS:
14-ms pyrotechnic delay

TARGET: Surface
SENSITIVITY:
350 to 450 g

FUNCTION TEMP:

MODE ON DELIVERY:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR: Mk 85-0 (2)
Mk 71-0 (2)

LEAD: Mk 9-0 (4)

BOOSTER: Mk 44 Mod 0

OTHER:

POWER SUPPLY:

28 VDC from missile

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None
US HCSDS: None
UN CL/DIV SCG: None
US DOT SHIP CL: None
NET EXPL WT:
NET PROP WT:
STORAGE TEMP:

REMARKS/DESCRIPTION:

NEW PAGE.

6-38B

LAST UPDATE: 12/19/92

MIL-HDBK-146

NOTICE 2

FUZE: FMU-133/B

GM Impact Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG: 6.13 in (156 mm)

XSECT: 3.35 in (85 mm)

- INTRUSION -

DP:

DIA:

WT: 7.5 lb (3400 g)

THD:

THD DP:

IDENTIFICATION

AGENCY: NWC, Code 3351

CONTACT: Peterson, B

PHONE: DSN 437-7444

STATUS: Terminated

USER: Air Force, Navy

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO: None

SIMILAR TO: FMU-135/B

REPLACES: Nothing

REPLACED BY: FMU-135/B

GENERAL

WEAPON: Air-surface missile

AMMUNITION:

AGM-65E Maverick Missile,

WDU-24/B Penetrator Warhead

LOCATION: Aft end of warhead

BALLISTIC LEVELS:

ROTATION: NA

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD: MIL-STD-1316

SETTERS: None

NEW PAGE.

6-38C

FUZE: FMU-133/B
GM Impact Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 12/19/92

ARMING DATA

FIRST SAFETY:

Launch signal applied to setback
mass and rotor latch solenoids

SECOND SAFETY:

Setback: sustained 8g
acceleration

OTHER SAFETY:

Missile guidance or battery
failure will dud fuze

SAFE/ARM INDICATION:

Viewing window

ARMING TIME OR DISTANCE:

2.5 to 4.7 s

EXPLOSIVE COMPONENTS

S&A DEVICE: Out-of-line expl. train

PRIMER: None

DETONATOR: Electric delay (4 ea)

LEAD: Mk 9-0 (2 ea in rotor)
425 mg CH-6 (2 ea)

BOOSTER: BBU-40/B

OTHER: None

FUNCTIONING DATA

MODES: Impact

TYPE: Mechanical, electronic

CHARACTERISTICS:

Contact sensor in Guidance & Con-
trol Section and Mk 4-0 Impact
Switch in Fuze. Selectable long,
medium, or short impact delays.

TARGET: Ground - tanks

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

30 Vdc thermal battery between
missile warhead and rocket motor.

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: 1.4 S

US DOT SHIP CL: C

NET EXPL WT: 2.02 g

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

At launch the missile battery supplies an enable signal to the FMU-133/B Fuze activating the setback mass lock solenoid, unlocking the setback mass. On 8 g constant acceleration, setback mass movement stores energy in timer and rotor springs and unlocks the rotor and two timers. Both spring-driven timers are governed by escapements. One timer is influenced by acceleration through setback mass motion. Commit-to-arm occurs 0.4 s after setback mass displacement. The firing circuit is completed and rotor solenoid partially powered 2.5 s after mass displacement. Arming occurs after 4.7 s for the fixed timer or sooner if the acceleration-influenced timer times out first. A ground signal on the rotor solenoid is applied removing the rotor lock allowing it to turn to the armed position where it is again locked. The fuze electronics control all electrical arming and firing functions, sensing various switch settings and operating the mass and rotor solenoid locks at appropriate times. On impact, the electronics senses impact sensor closure and fires one of the preselected delays. In case of a guidance or battery malfunction, the electronics will discharge the firing capacitors irreversibly dudding the fuze.

NEW PAGE.

LAST UPDATE: 12/19/92

MIL-HDBK-146
NOTICE 2

FUZE: FMU-137/B
Safety-Arming Device

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY:

CONTACT:

PHONE:

STATUS:

USER:

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON:

AMMUNITION:

LOCATION:

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

NEW PAGE.

6-38E

FUZE: FMU-137/B
Safety-Arming Device

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 12/19/92

ARMING DATA

FIRST SAFETY:

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR:

LEAD:

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES:

TYPE:

CHARACTERISTICS:

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

STORAGE AND
TRANSPORTATION
SAFETY DATA

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

NEW PAGE.

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Data for the Mk 328 Mod 0 GM Impact Fuze
may be found in MIL-HDBK-145B.

Supersedes pages 6-49 and 6-50 of MIL-HDBK 146.

6-49/6-50

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MIL-HDBK-146
NOTICE 2

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**Data for the M805 Safety-Arming Device
may be found in MIL-HDBK-145B.**

Supersedes pages 6-63 and 6-64 of MIL-HDBK 146.

6-63/6-64

MIL-HDBK-146
NOTICE 2

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**Data for the M812 GM Impact Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 6-65 and 6-66 of MIL-HDBK 146.

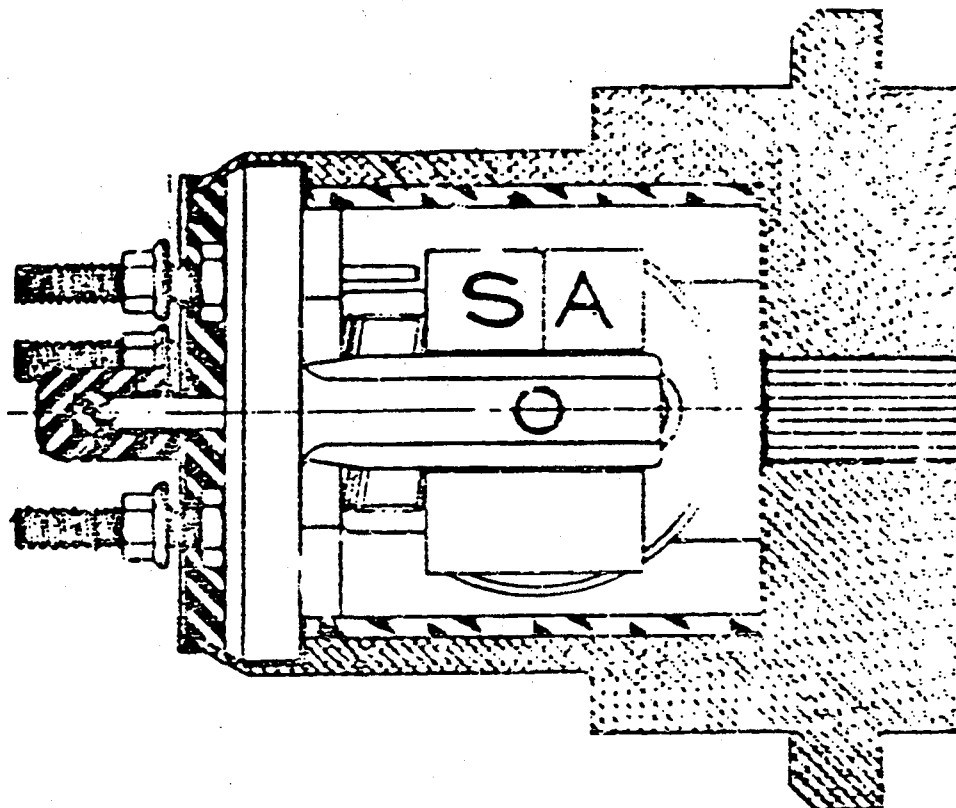
6-65/6-66

LAST UPDATE: 01/15/93

MIL-HDBK-146
NOTICE 2

FUZE: M813
Safety-Arming Device

ILLUSTRATION:



- OVERALL SIZE -

LG: 2 in (50.8 mm)

XSECT: 1.75 in (44.5 mm)

- INTRUSION -

DP:

DIA:

WT: 0.38 lb (172.4 g)

THD:

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-C

CONTACT: Hoganson, H

PHONE: DSN 880-3919

STATUS: Terminated

USER: Army

ASSY DWG: 9 206 960

PARTS LIST: PL 9 206 960

SPEC: MIL-S-18702

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: Surface-surface missile
MGM-51C Shillelagh Missile

AMMUNITION:

HEAT

LOCATION: Warhead boattail

BALLISTIC LEVELS:

ROTATION:

SETBACK: 280 g

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

Supersedes page 6-67 of MIL-HDBK-146.

FUZE: M813
Safety-Arming Device

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 01/15/93

ARMING DATA

FIRST SAFETY:

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR: M78

LEAD: RDX

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES: PI

TYPE: Electrical

CHARACTERISTICS:

Impact crush switch

TARGET: Tanks

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

BA-621 30 Vdc Thermal Battery

STORAGE AND
TRANSPORTATION
SAFETY DATA

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

The M813 was an improved but smaller version of the M805 Fuze. It used the 2.75 inch rocket fuze escapement (M423) but with extra latches, and so forth. It was never produced.

MIL-HDBK-146
NOTICE 2

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**Data for the M814 GM Impact Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 6-69 and 6-70 of MIL-HDBK 146.

6-69/6-70

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LAST UPDATE: 12/19/92

MIL-HDBK-146
NOTICE 2

FUZE: M819
GM ET Practice Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY:

CONTACT:

PHONE:

STATUS:

USER:

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON:

AMMUNITION:

LOCATION:

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

NEW PAGE.

6-72A

ARMING DATA

FIRST SAFETY:

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR:

LEAD:

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES:

TYPE:

CHARACTERISTICS:

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

STORAGE AND
TRANSPORTATION
SAFETY DATA

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

The M819 Fuze is the same precision electronic timing device as the M811, except there are no explosives. Only one switch closure is used which is for the missile guidance section and effects sustainer engine cutoff at any one of 10 fixed times allowing the missile to impact the ground at the predetermined time.

LAST UPDATE: 12/19/92

MIL-HDBK-146
NOTICE 2

FUZE: T1407
GM Impact Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-

CONTACT:

PHONE: DSN 880-

STATUS: Terminated

USER: Army

ASSY DWG: D-1100 (T1403)

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES: T1403, FMU-5/B

REPLACED BY:

GENERAL

WEAPON: Air-air missile

AMMUNITION:

AIM-4E Falcon Guided Missile

LOCATION:

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

NEW PAGE.

6-78A

FUZE: T1407
GM Impact Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 12/19/92

ARMING DATA

FIRST SAFETY:

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR:

LEAD:

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES:

TYPE:

CHARACTERISTICS:

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

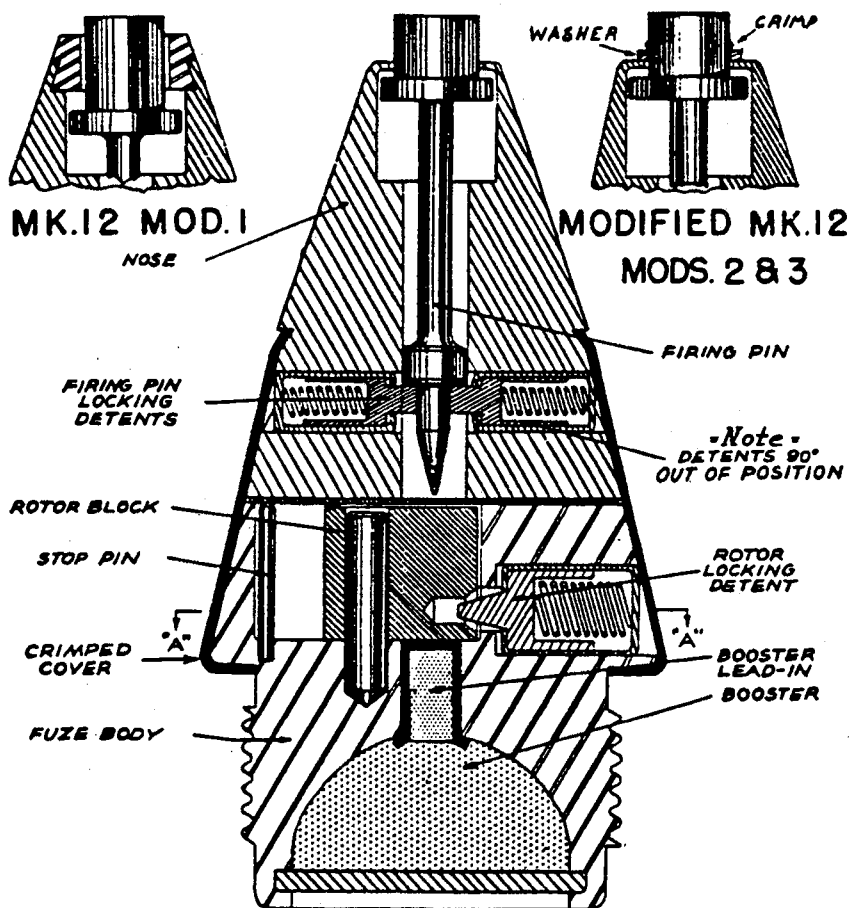
NEW PAGE.

LAST UPDATE: 09/24/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 12 Mod 0
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 2.125 in (54.0 mm)
XSECT: 1.08 in (27.4 mm)

- INTRUSION -

DP: 0.505 in (12.8 mm)
DIA:

WT: 0.188 lb (85.3 g)

THD: 0.875-20NS-3RH

THD DP: 0.62 in (15.7 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Navy
ASSY DWG: 141 660
PARTS LIST: LD 54 899
SPEC: OS 510
PUB: None

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO:

REPLACES:

REPLACED BY: Mk 34

GENERAL

WEAPON: 37 mm guns

AMMUNITION:

HE

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 980 rps

SETBACK: 42,000 g

VELOCITY: Unknown

CREEP: Unknown

FLIGHT TIME: Unknown

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: None

Supersedes page 7-3 of MIL-HDBK-146.

FUZE: MK 12 Mod 0
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 09/24/90

ARMING DATA

FIRST SAFETY:

Spin: 80 rps, no arm;
200 rps, all arm. Two detents for
firing pin; one for rotor.

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

Unknown

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: Yes, composition unknown

LEAD: Tetryl

BOOSTER: Tetryl

OTHER: None

FUNCTIONING DATA

MODES: PD

TYPE: Mechanical

CHARACTERISTICS:

TARGET: Ground

SENSITIVITY:

0.032 in (0.81 mm) aluminum

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

PD

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: None

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

In the unarmed position, the striker is held in place by a pair of detents and the detonator rotor is held out of alignment with a separate detent. On firing, centrifugal force moves the detents outward against their springs, unlocking the firing pin and rotor. Centrifugal force turns the rotor to its armed position aligning the detonator with the firing pin and lead charge. On impact, the exposed firing pin is driven into the detonator which initiates the lead and booster. Mods differ in method of firing pin support. A washer and crimp in the firing pin were added to Mods 2 and 3 to decrease sensitivity. Mod 0 was never produced.

LAST UPDATE: 09/24/90

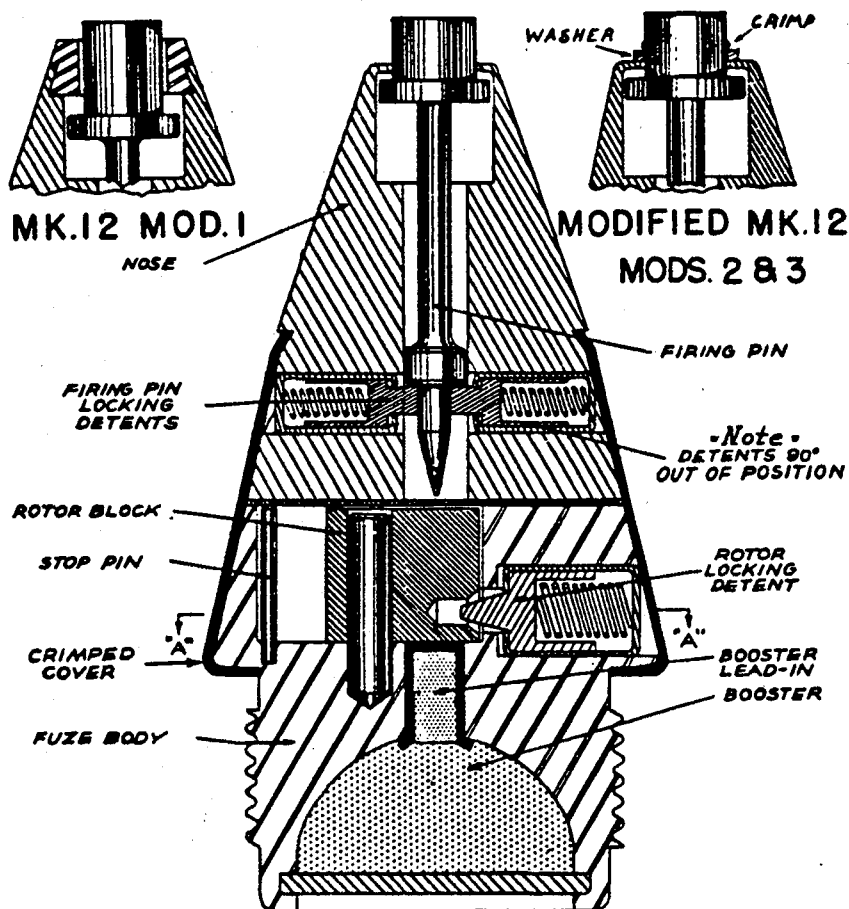
MIL-HDBK-146

NOTICE 2

FUZE: MK 12 Mod 1

PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 2.125 in (54.0 mm)

XSECT: 1.08 in (27.4 mm)

- INTRUSION -

DP: 0.505 in (12.8 mm)

DIA:

WT: 0.188 lb (85.3 g)

THD: 0.875-20NS-3RH

THD DP: 0.62 in (15.7 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402

CONTACT: Bagnall, J

PHONE: DSN 290-2791

STATUS: Obsolete

USER: Navy

ASSY DWG: 181 759

PARTS LIST: LD 59 153

SPEC: Unknown

PUB: None

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO:

REPLACES:

REPLACED BY: Mk 34

GENERAL

WEAPON: 1.1-inch AA

AMMUNITION:

HE

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 980 rps

SETBACK: 42,000 g

VELOCITY: Unknown

CREEP: Unknown

FLIGHT TIME: Unknown

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: None

NEW PAGE.

FUZE: MK 12 Mod 1
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 09/24/90

ARMING DATA

FIRST SAFETY:

Spin: 80 rps, no arm;
200 rps, all arm. Two detents for
firing pin; one for rotor.

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

Unknown

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: Yes, composition unknown

LEAD: Tetryl

BOOSTER: Tetryl

OTHER: None

FUNCTIONING DATA

MODES: PD

TYPE: Mechanical

CHARACTERISTICS:

TARGET: Ground

SENSITIVITY:

0.032 in (0.81 mm) aluminum

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

PD

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: None

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

In the unarmed position, the striker is held in place by a pair of detents and the detonator rotor is held out of alignment with a separate detent. On firing, centrifugal force moves the detents outward against their springs, unlocking the firing pin and rotor. Centrifugal force turns the rotor to its armed position aligning the detonator with the firing pin and lead charge. On impact, the exposed firing pin is driven into the detonator which initiates the lead and booster. Mods differ in method of firing pin support. A washer and crimp in the firing pin were added to Mods 2 and 3 to decrease sensitivity.

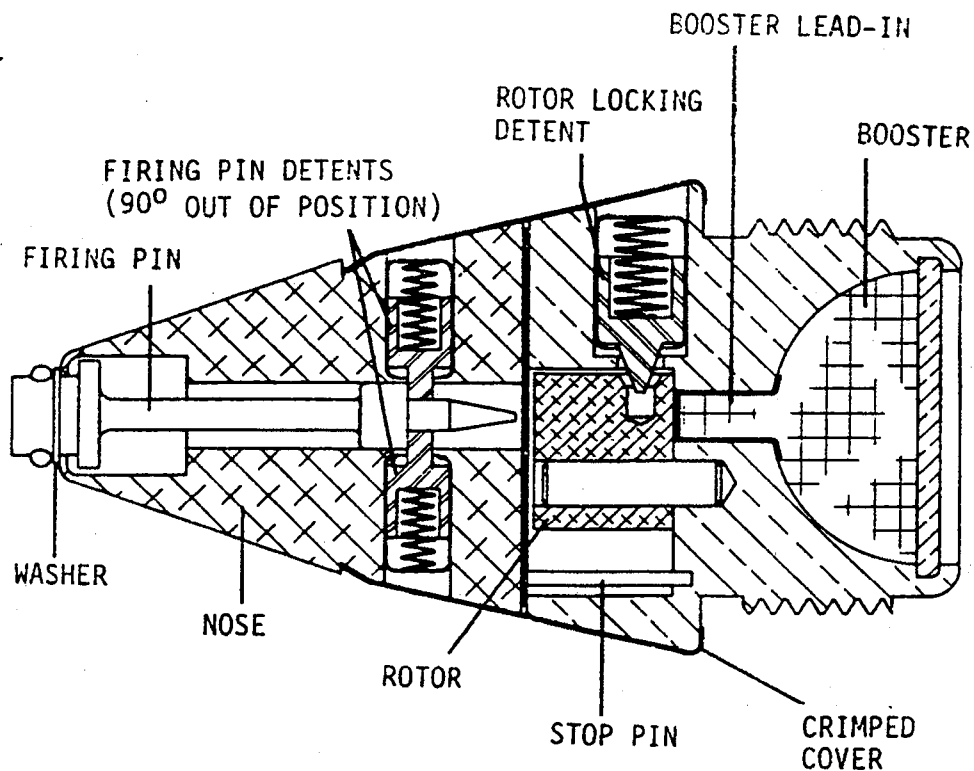
NEW PAGE.

LAST UPDATE: 09/24/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 12 Mod 2
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 2.125 in (54.0 mm)
XSECT: 1.08 in (27.4 mm)

- INTRUSION -

DP: 0.505 in (12.8 mm)
DIA:

WT: 0.188 lb (85.3 g)

THD: 0.875-20NS-3RH

THD DP: 0.62 in (15.7 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Navy
ASSY DWG: 181 781
PARTS LIST: LD 59 161
SPEC: OS 1001
PUB: None

NATIONAL STOCK NO:
None

DODIC: None
PRIOR MODEL NO: None
SIMILAR TO:

REPLACES:
REPLACED BY: Mk 34

GENERAL

WEAPON: 1.1-inch AA

AMMUNITION:
HE

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 980 rps
SETBACK: 42,000 g
VELOCITY: Unknown

CREEP: Unknown
FLIGHT TIME: Unknown
SAFETY STD: Doesn't meet MIL-STD-1316
SETTERS: None

NEW PAGE.

FUZE: MK 12 Mod 2
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 09/24/90

ARMING DATA

FIRST SAFETY:

Spin: 80 rps, no arm;
200 rps, all arm. Two detents for
firing pin; one for rotor.

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

Unknown

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: Yes, composition unknown

LEAD: Tetryl

BOOSTER: Tetryl

OTHER: None

FUNCTIONING DATA

MODES: PD

TYPE: Mechanical

CHARACTERISTICS:

TARGET: Ground

SENSITIVITY:

0.032 in (0.81 mm) aluminum

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

PD

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: None

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

In the unarmed position, the striker is held in place by a pair of detents and the detonator rotor is held out of alignment with a separate detent. On firing, centrifugal force moves the detents outward against their springs, unlocking the firing pin and rotor. Centrifugal force turns the rotor to its armed position aligning the detonator with the firing pin and lead charge. On impact, the exposed firing pin is driven into the detonator which initiates the lead and booster. Mods differ in method of firing pin support. A washer and crimp in the firing pin were added to Mods 2 and 3 to decrease sensitivity.

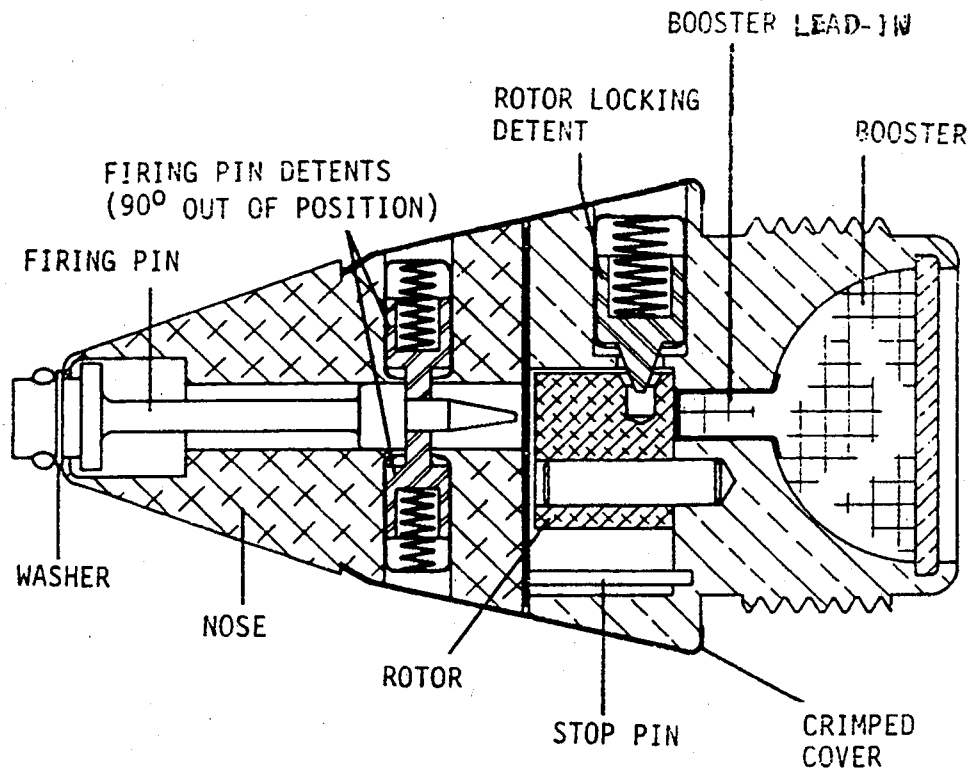
NEW PAGE.

LAST UPDATE: 09/24/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 12 Mod 3
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 2.125 in (54.0 mm)
XSECT: 1.08 in (27.4 mm)

- INTRUSION -

DP: 0.505 in (12.8 mm)
DIA:

WT: 0.188 lb (85.3 g)

THD: 0.875-20NS-3RH

THD DP: 0.62 in (15.7 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Navy
ASSY DWG: Unknown
PARTS LIST: LD 70 490
SPEC: Unknown
PUB: None

NATIONAL STOCK NO:
None

DODIC: None
PRIOR MODEL NO: None
SIMILAR TO:

REPLACES:
REPLACED BY: Mk 34

GENERAL

WEAPON: 1.1-inch AA

AMMUNITION:
HE

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 980 rps
SETBACK: 42,000 g
VELOCITY: Unknown

CREEP: Unknown
FLIGHT TIME: Unknown
SAFETY STD: Doesn't meet MIL-STD-1316
SETTERS: None

NEW PAGE.

FUZE: MK 12 Mod 3
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 09/24/90

ARMING DATA

FIRST SAFETY:

Spin: 80 rps, no arm;
200 rps, all arm. Two detents for
firing pin; one for rotor.

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

Unknown

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: Yes, composition unknown

LEAD: Tetryl

BOOSTER: Tetryl

OTHER: None

FUNCTIONING DATA

MODES: PD

TYPE: Mechanical

CHARACTERISTICS:

TARGET: Ground

SENSITIVITY:

0.032 in (0.81 mm) aluminum

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

PD

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: None

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

In the unarmed position, the striker is held in place by a pair of detents and the detonator rotor is held out of alignment with a separate detent. On firing, centrifugal force moves the detents outward against their springs, unlocking the firing pin and rotor. Centrifugal force turns the rotor to its armed position aligning the detonator with the firing pin and lead charge. On impact, the exposed firing pin is driven into the detonator which initiates the lead and booster. Mods differ in method of firing pin support. A washer and crimp in the firing pin were added to Mods 2 and 3 to decrease sensitivity.

NEW PAGE.

LAST UPDATE: 09/27/90

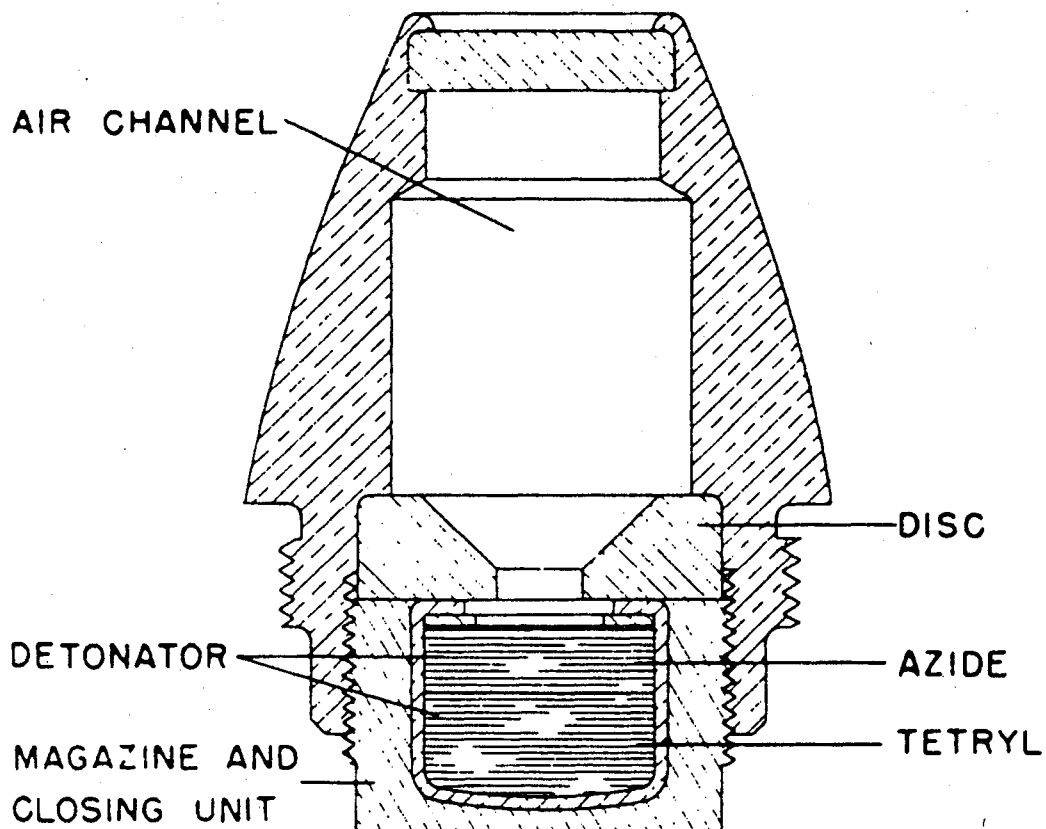
MIL-HDBK-146

NOTICE2

FUZE: MK 26 Mod 0

PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.016 in (25.8 mm)

XSECT: 0.8 in (20.3) mm

- INTRUSION -

DP: 0.406 in (10.3 mm)

DIA: Unknown

WT: 0.054 lb (24.7 g)

THD: 0.635-36NS-2

THD DP: 0.18 in (4.6 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402

CONTACT: Bagnall, J

PHONE: DSN 290-2791

STATUS: Obsolete

USER: Navy

ASSY DWG: 294 296

PARTS LIST: LD 90 707

SPEC: OS 2347

PUB: None

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Nothing

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 20 mm guns

AMMUNITION:

HE, HEI, HET

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 1,150 rps

SETBACK: 96,600 g

VELOCITY: 1,350 fps (411 m/s)

CREEP: Unknown

FLIGHT TIME: Unknown

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: None

NEW PAGE.

7-4G

FUZE: MK 26 Mod 0
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 09/27/90

ARMING DATA

FIRST SAFETY:

None, in-line explosive train

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

NA

ARMING TIME OR DISTANCE:

NA

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: Mk 36 Mod 0

LEAD: None

BOOSTER: None

OTHER: None

FUNCTIONING DATA

MODES: PD, SQ

TYPE: Mechanical

CHARACTERISTICS:

Instantaneous

TARGET: Ground

SENSITIVITY:

0.125 in (3.2 mm) aluminum at
1,350 ft/s (411 m/s); will not fire
on water impact.

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

PD

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: None

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

The fuze has an in-line explosive train and, therefore, is always armed. On impact the nose cap is crushed causing air in the channel to be compressed and forced through the hole in the concave disc. This generates sufficient pressure and heat to set off the detonator. Mods 1 and 2 are initiated by shock of impact and have a booster. Mods 0 and 2 are all brass; Mod 1 is zinc.

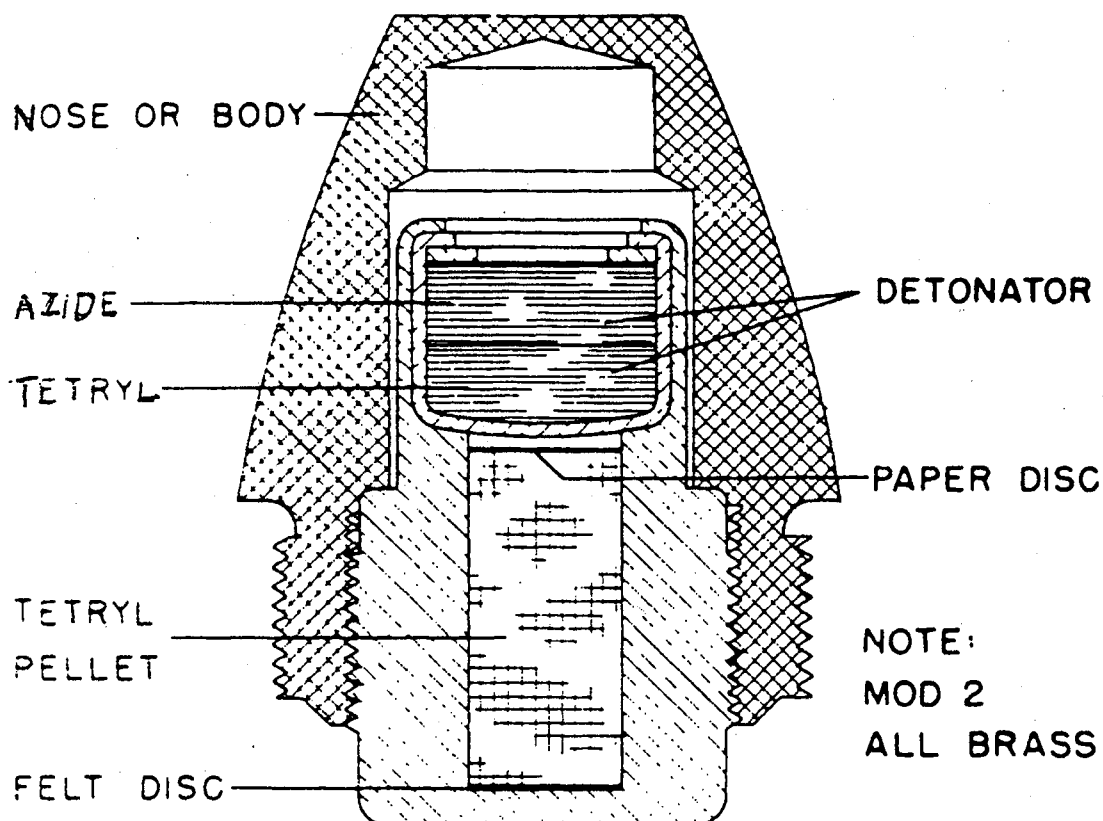
NEW PAGE.

LAST UPDATE: 10/12/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 26 Mod 1
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.016 in (25.8 mm)
XSECT: 0.8 in (20.3) mm

- INTRUSION -

DP: 0.406 in (10.3 mm)
DIA: Unknown

WT: 0.051 lb (23.4 g)

THD: 0.635-36NS-2

THD DP: 0.26 in (6.5 mm)

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Navy
ASSY DWG: 329 208
PARTS LIST: LD 101 343
SPEC: MIL-F-18662
PUB: None

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Nothing

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 20 mm guns

AMMUNITION:

HE, HEI, HET

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 1,150 rps

SETBACK: 96,600 g

VELOCITY: 1,350 fps (411 m/s)

CREEP: Unknown

FLIGHT TIME: Unknown

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: None

NEW PAGE.

FUZE: MK 26 Mod 1
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/12/90

ARMING DATA

FIRST SAFETY:

None, in-line explosive train

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

NA

ARMING TIME OR DISTANCE:

NA

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: Mk 36 Mod 0

LEAD: None

BOOSTER: Teteryl

OTHER: None

FUNCTIONING DATA

MODES: PD, SQ

TYPE: Mechanical

CHARACTERISTICS:

Instantaneous

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: None

STORAGE TEMP: Unknown

TARGET: Ground

SENSITIVITY:

0.125 in (3.2 mm) aluminum at
1,350 ft/s (411 m/s); will not fire
on water impact.

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

PD

REMARKS/DESCRIPTION:

The fuze has an in-line explosive train and, therefore, is always armed. Mods 1 and 2 are initiated by shock of impact. On Mod 0, the force of impact crushes the nose cap compressing air in the channel which is forced through the hole in the concave disc. This generates sufficient pressure and heat to set off the detonator. Mods 0 and 2 are all brass; Mod 1 is zinc.

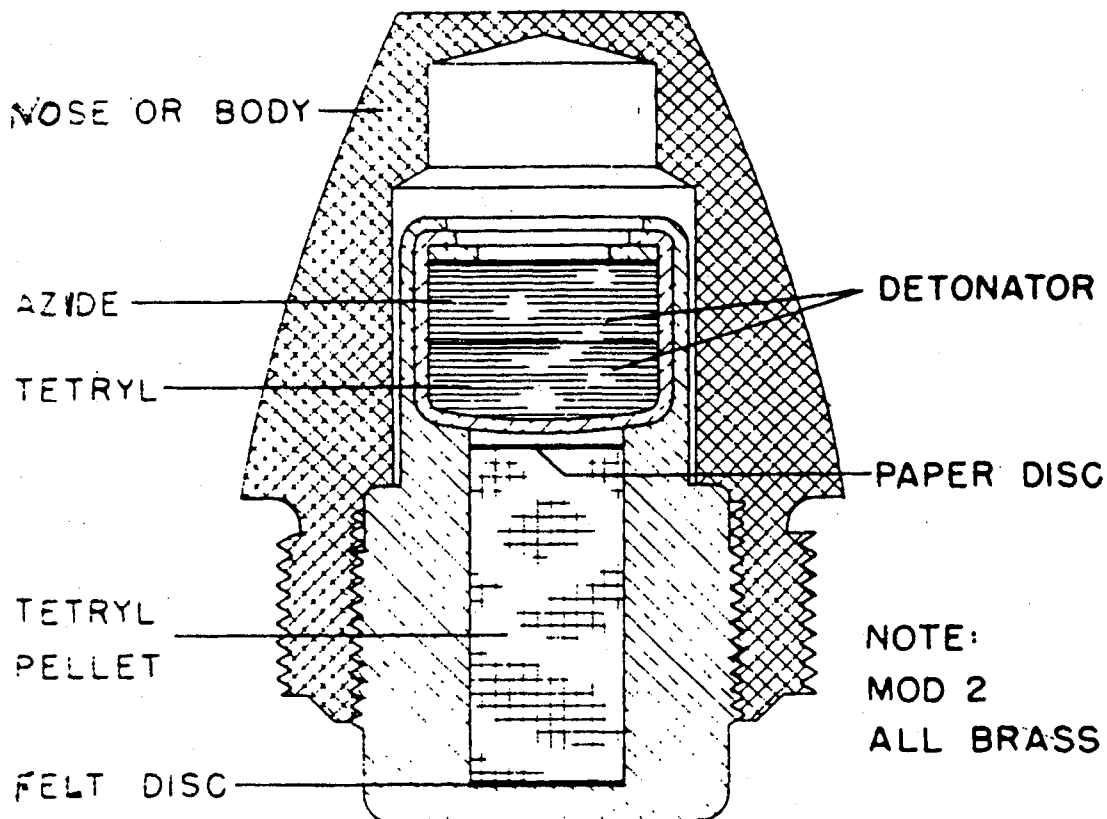
NEW PAGE.

LAST UPDATE: 10/12/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 26 Mod 2
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -
LG: 1.016 in (25.8 mm)
XSECT: 0.8 in (20.3) mm

- INTRUSION -
DP: 0.406 in (10.3 mm)
DIA: Unknown

WT: 0.063 lb (28.7 g)
THD: 0.635-36NS-2
THD DP: 0.26 in (6.5 mm)

IDENTIFICATION

AGENCY: NSWG, White Oak, Code G402
CONTACT: Bagnall, J
PHONE: DSN 290-2791
STATUS: Obsolete
USER: Navy
ASSY DWG: 329 208
PARTS LIST: Unknown
SPEC: OS 2347
PUB: None

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO: None

SIMILAR TO: Nothing

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 20 mm guns

AMMUNITION:

HE, HEI, HET

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 1,150 rps

SETBACK: 96,600 g

VELOCITY: 1,350 fps (411 m/s)

CREEP: Unknown

FLIGHT TIME: Unknown

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS: None

NEW PAGE.

7-4K

FUZE: MK 26 Mod 2
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/12/90

ARMING DATA

FIRST SAFETY:

None, in-line explosive train

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

NA

ARMING TIME OR DISTANCE:

NA

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: Mk 36 Mod 0

LEAD: None

BOOSTER: Tetryl

OTHER: None

FUNCTIONING DATA

MODES: PD, SQ

TYPE: Mechanical

CHARACTERISTICS:

Instantaneous

TARGET: Ground

SENSITIVITY:

0.125 in (3.2 mm) aluminum at
1,350 ft/s (411 m/s); will not fire
on water impact.

FUNCTION TEMP:

Unknown

MODE ON DELIVERY:

PD

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: None

US HCSDS: None

UN CL/DIV SCG: None

US DOT SHIP CL: None

NET EXPL WT: Unknown

NET PROP WT: None

STORAGE TEMP: Unknown

REMARKS/DESCRIPTION:

The fuze has an in-line explosive train and, therefore, is always armed. Mods 1 and 2 are initiated by shock of impact. On Mod 0, the force of impact crushes the nose cap compressing air in the channel which is forced through the hole in the concave disc. This generates sufficient pressure and heat to set off the detonator. Mods 0 and 2 are all brass; Mod 1 is zinc.

NEW PAGE.

LAST UPDATE: 10/17/90

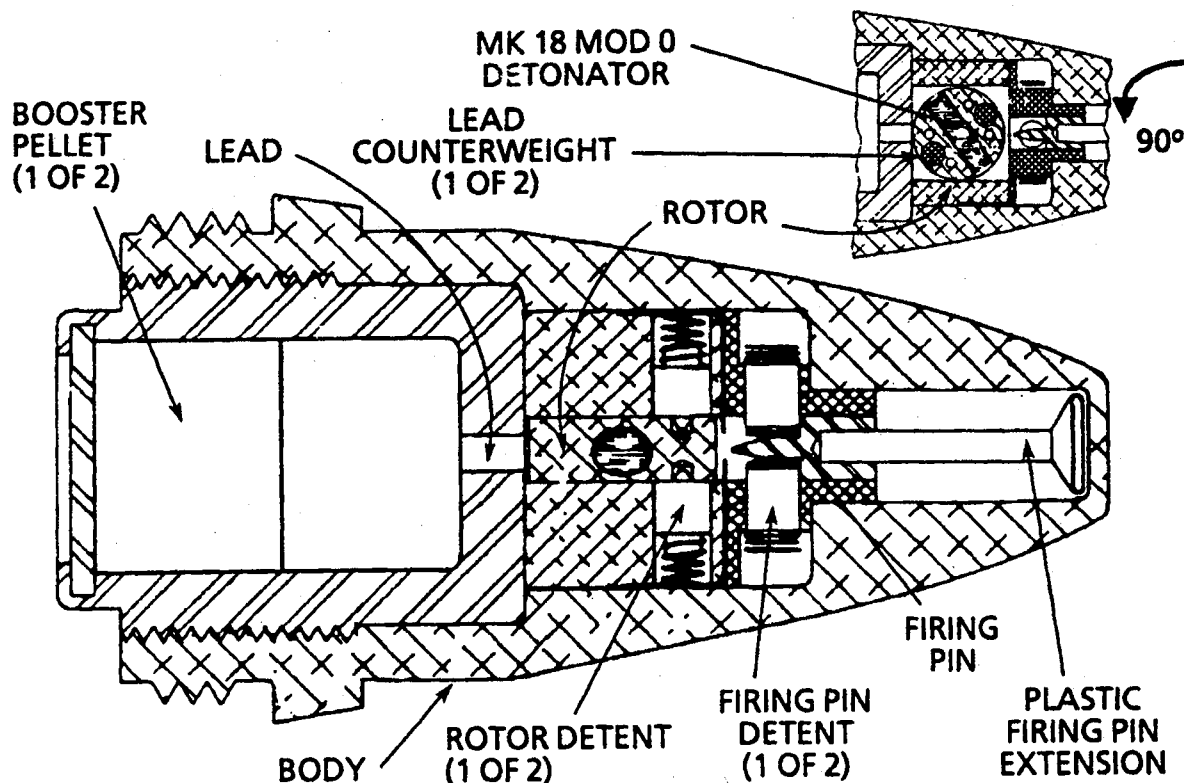
MIL-HDBK-146

NOTICE 2

FUZE: MK 27 Mod 0

PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 2.45 in (62.2 mm)

XSECT: 1.29 in (32.8 mm)

- INTRUSION -

DP: 0.55 in (13.8 mm)

DIA: 1.18 in (30.0 mm)

WT: 0.23 lb (106 g)

THD: 1.18-14NS-2A

THD DP: 0.545 in (13.8 mm)

IDENTIFICATION

AGENCY: NSW, White Oak, Code G402

CONTACT: Bagnall, J

PHONE: DSN 290-2791

STATUS: Obsolete

USER: Army, Navy, Air Force

ASSY DWG: 300 423

PARTS LIST:

SPEC: MIL-F-18698

PUB: SW030-AA-MMO-010, TM 43-0001-28

NATIONAL STOCK NO:

None

DODIC: None

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 40 mm, Mk 2 & 3 all
mods; Navy guns, Mk 2A1 AF

AMMUNITION:

HE, HEI, HEIT, HE-SD, HEI-SD,
HEIT-SD

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 730 rps

SETBACK: 43,200 g

VELOCITY: 2870 ft/s (875 m/s)

CREEP: NA

FLIGHT TIME: 8 to 10 s

SAFETY STD: Doesn't meet MIL-STD-1316B

SETTERS: None

Supersedes page 7-5 of MIL-HDBK-146.

FUZE: MK 27 Mod 0
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/17/90

ARMING DATA

FIRST SAFETY:

Spin: 115 rps no arm,
333 all arm

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

0.6 to 0.9 m

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER: None

DETONATOR: Mk 18 Mod 0 Stab

LEAD: 70 mg Tetryl

BOOSTER: 5.4 g Tetryl

OTHER: None

FUNCTIONING DATA

MODES: SQ

TYPE: Mechanical

CHARACTERISTICS:

SQ

SD in 8-10 s by shell
destroying tracer

TARGET: Aircraft

SENSITIVITY:

0.138 in (3.5 mm) chipboard,
2870 ft/s (875 m/s), 40 mm

FUNCTION TEMP:

-29 to +54 deg C

MODE ON DELIVERY:

SQ

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0409

US HCSDS:

UN CL/DIV SCG: 1.2 D

US DOT SHIP CL: A

NET EXPL WT: 5.601 g

NET PROP WT: None

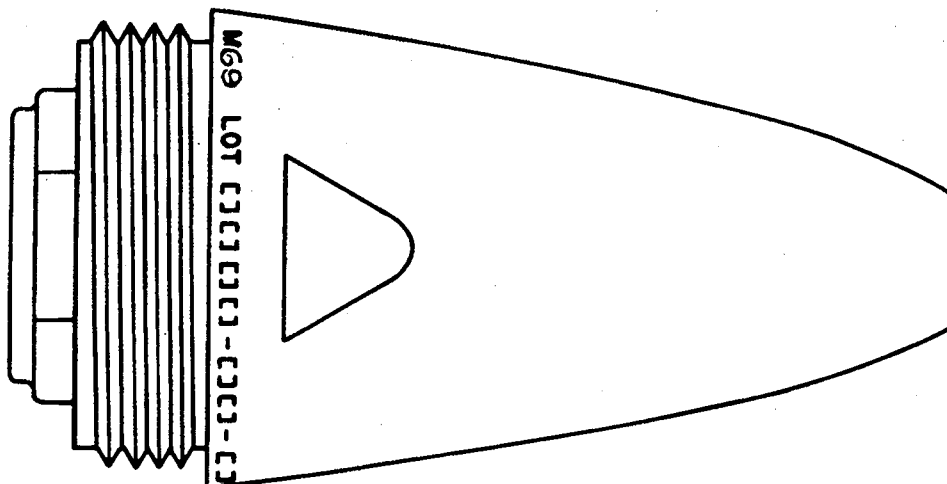
STORAGE TEMP: -62 deg C 3 days max

+71 deg C 4 hr/day max

REMARKS/DESCRIPTION:

Fuze safety is maintained by pairs of detents which restrict the firing pin and rotor. Centrifugal force moves the firing pin and rotor detents outward. Lead counterweights in the rotor turn it to the armed position where the detonator is aligned with the firing pin and booster. The rotor is retained in this position of equilibrium by centrifugal force. On impact, the plastic hammer and firing pin are driven aft into the detonator causing it to fire, thereby initiating the lead and booster. Mod 0 is obsolete; its cylindrically shaped firing pin detents move outward as soon as the round is fired arming the fuze while it is still in the bore.

ILLUSTRATION:



- OVERALL SIZE -

LG: 2.375 in (60.3 mm)
XSECT: 1.29 in (32.8 mm)

- INTRUSION -

DP: 0.55 in (13.8 mm)
DIA: 1.18 in (30.0 mm)

WT: 0.225 lb (102 g)

THD: 1.18-14NS-1

THD DP: 0.545 in (13.8 mm)

IDENTIFICATION

AGENCY: ARDEC, SMCAR-CCL-C

CONTACT: Maile, C

PHONE: DSN 880-6437

STATUS: Obsolete

USER: Army

ASSY DWG: 75-5-9

PARTS LIST:

SPEC:

PUB: TM 43-0001-28

NATIONAL STOCK NO:

1390-00-517-9858

DODIC: N208

PRIOR MODEL NO: T34

SIMILAR TO: Simulates Mk 27

REPLACES: Nothing

REPLACED BY:

GENERAL

WEAPON: 40 MM Mk II Gun

AMMUNITION:

TP-T, M91;

Dummy cartridge, M25

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: NA

SETBACK: NA

VELOCITY: NA

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: MIL-STD-1316 is NA

SETTERS: None

Supersedes page 7-13 of MIL-HDBK-146.

FUZE: M69
Dummy Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 02/11/92

ARMING DATA

FIRST SAFETY:
NA

SECOND SAFETY:
NA

OTHER SAFETY:
NA

SAFE/ARM INDICATION:
NA

ARMING TIME OR DISTANCE:
NA

EXPLOSIVE COMPONENTS

S&A DEVICE: NA

PRIMER: None

DETONATOR: None

LEAD: None

BOOSTER: None

OTHER: None

FUNCTIONING DATA

MODES: NA

TYPE: NA

CHARACTERISTICS:
NA

POWER SUPPLY:

None

TARGET: NA
SENSITIVITY:
NA

FUNCTION TEMP:
NA
MODE ON DELIVERY:
NA

STORAGE AND
TRANSPORTATION
SAFETY DATA

UN SER NO: NA

US HCSDS: NA

UN CL/DIV SCG: NA

US DOT SHIP CL: NA

NET EXPL WT: None

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

The M69 Dummy Fuze simulate the weight and ballistics of the Mk 27 PD Fuze. It is used with practice rounds for training purposes. Dummy fuzes are for use with such ammunition as target practice and drill, not requiring normal, full-functioning fuzes. Fuzes may be manufactured expressly for the purpose or may be assembled from burned-out or rejected inert parts of service fuzes. Whether assembled from service parts or specially manufactured for the purpose, the assemblies are completely inert. In general, the fuzes are intended to simulate a specific model or type of service fuze. Contour and weight of the service fuze simulated are approximated in the dummy fuze for use with practice ammunition; thus, the dummy fuze gives the proper "feel" when used with dummy ammunition. This also permits use of dummy ammunition in conjunction with fuze setters for training in preparing ammunition for firing and in servicing the piece. Most dummy fuzes are simple in construction, but essential features of the simulated service fuze are incorporated in some types, for example the M59 and M73 which have a setting screw and registration similar to that in M48 and M51 Series Fuzes.

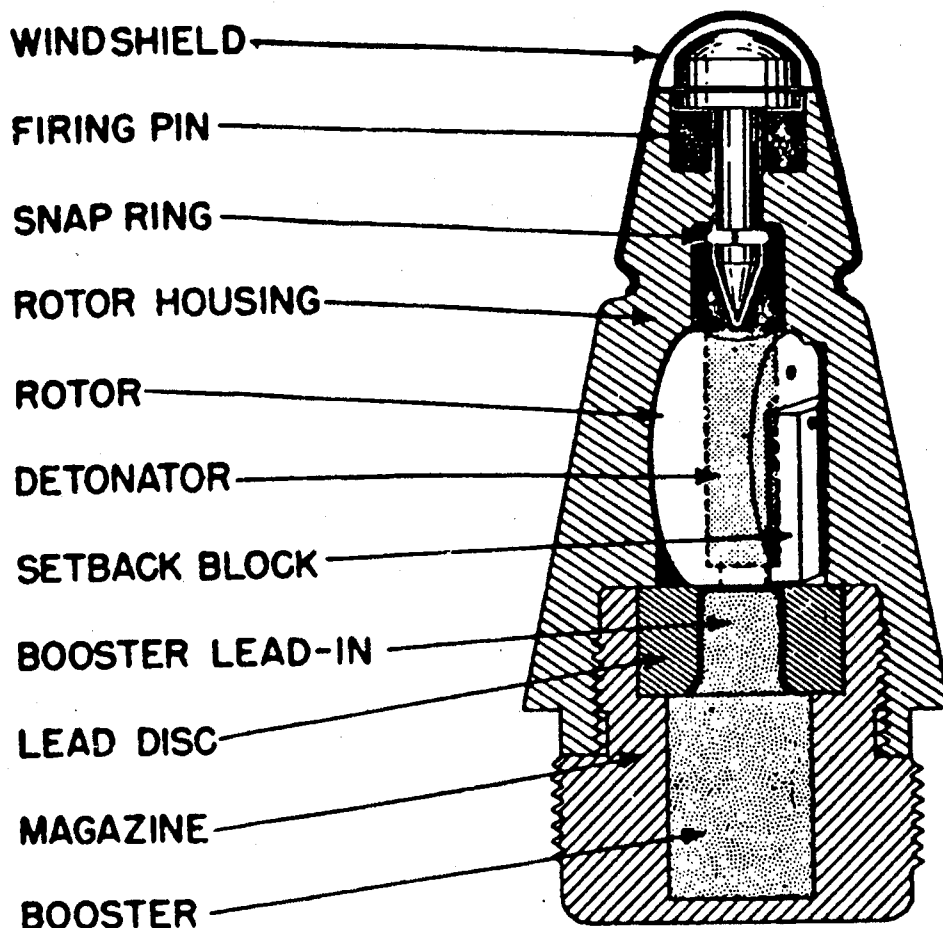
Supersedes page 7-14 of MIL-HDBK-146.

LAST UPDATE: 02/25/92

MIL-HDBK-146
NOTICE 2

FUZE: MK 78 Mod 0-2
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -
LG: 1.51 in (38.4 mm)
XSECT:

- INTRUSION -
DP: 0.385 in (9.8 mm)
DIA:

WT: 0.19 lb (86 g)
THD: 0.5625-32NS-2
THD DP:

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G411
CONTACT: Munach, A
PHONE: DSN 290-1970
STATUS: Obsolete
USER: Navy
ASSY DWG: 2 494 201 (Mod 2)
PARTS LIST: LD 550 023 (Mod 2)
SPEC: WS 7629 (Mod 2)
PUB:

NATIONAL STOCK NO:
1390-00-839-1306

DODIC: None
PRIOR MODEL NO:
SIMILAR TO:

REPLACES:
REPLACED BY:

GENERAL

WEAPON: 20-mm aircraft gun, Mk 12

AMMUNITION:
GP

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 1,950 rps
SETBACK: 100,000 g
VELOCITY: 3,300 ft/s (1,000 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316
SETTERS: None

Supersedes page 7-21 of MIL-HDBK-146.

FUZE: MK 78 Mod 0-2
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 02/25/92

ARMING DATA

FIRST SAFETY:
Setback

SECOND SAFETY:
Spin

OTHER SAFETY:

SAFE/ARM INDICATION:
None

ARMING TIME OR DISTANCE:
2-3 s

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: Mk 56 See remarks

LEAD: Tetryl

BOOSTER: Tetryl

OTHER:

FUNCTIONING DATA

MODES: PD, SQ
TYPE: Mechanical
CHARACTERISTICS:

TARGET: Antiaircraft

SENSITIVITY:
0.032 in (0.81 mm) aluminum, 80 deg
obliq, 1500 ft/s (457 mm), 20 mm.
Sensitive to water impact.

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: 0409
US HCSDS:
UN CL/DIV SCG: 1.2 D
US DOT SHIP CL: C
NET EXPL WT:
NET PROP WT:
STORAGE TEMP:

REMARKS/DESCRIPTION:

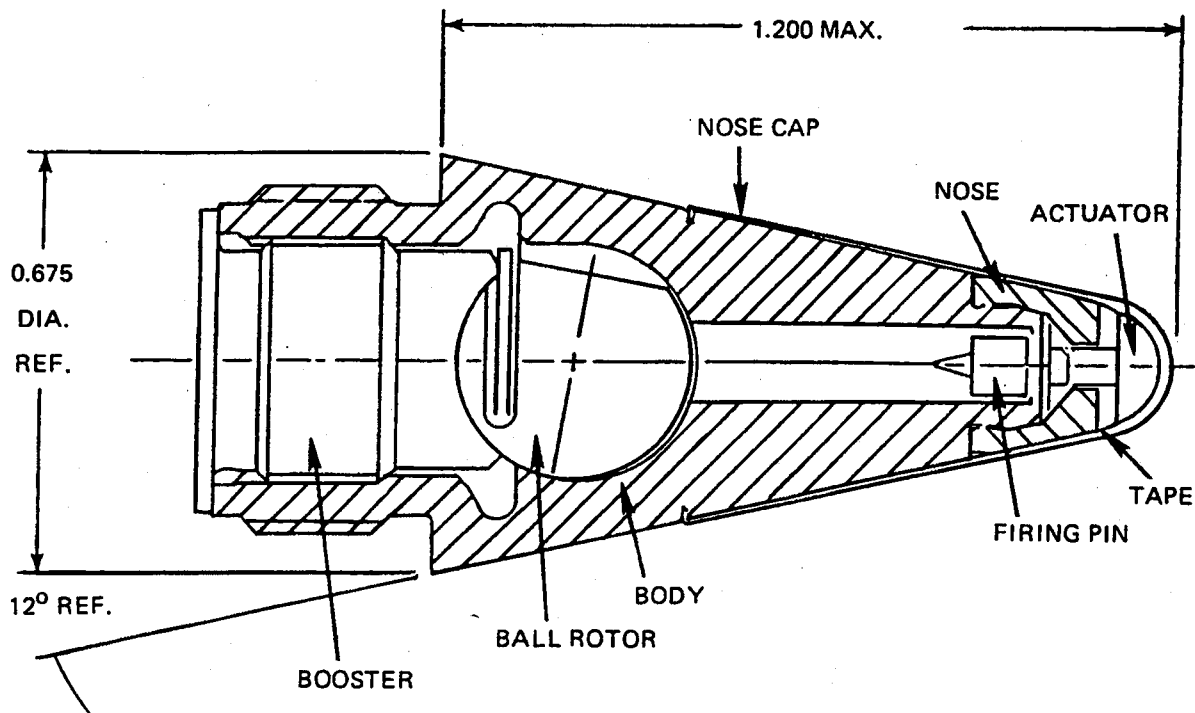
Mod 0 dwg, 883 614, LD 275 954; Mod 1 dwg, 1 236 837, LD 234 914. Mods 0 and 1 housing die-cast aluminum, Mod 2 housing forged 7075- T6 aluminum. Windshield material changed from aluminum to steel on Mod 1.

LAST UPDATE: 10/01/82

MIL-HDBK-146
NOTICE 2

FUZE: FMU-128/B
PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.525 in (38.7 mm)
XSECT: 0.678 in (17.2 mm)

- INTRUSION -

DP: 0.325 in (8.3 mm)
DIA:

WT: 0.0614 lb (27.86 g)

THD: .5625-32UNS-2A
THD DP:

IDENTIFICATION

AGENCY: Eglin AFB, ADTC/SD3
CONTACT: Slotkim, S
PHONE: DSN 872-8186
STATUS: Canceled
USER: AF
ASSY DWG: 383 250
PARTS LIST:
SPEC: SP 785043
PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO: Cimp Fuze

SIMILAR TO:

REPLACES: M505A3

REPLACED BY:

GENERAL

WEAPON: M61A1 20 mm Gun System

AMMUNITION:

HEI

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 2,030 rps

SETBACK: 124,000 g

VELOCITY: 3710 ft/s (1131 m/s)

CREEP: 76 g gun, 140 g hs a/c

FLIGHT TIME:

SAFETY STD:

SETTERS:

NEW PAGE.

7-24A

FUZE: FMU-128/B
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/01/82

ARMING DATA

FIRST SAFETY:

Spin

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR: M47

LEAD:

BOOSTER: T42

OTHER:

FUNCTIONING DATA

MODES: PD, Delay after Impact

TYPE: Mechanical

CHARACTERISTICS:

Delay Time: 100-270 ms

TARGET: Air Targets

SENSITIVITY:

Target .063 to .090 in (1.6 to
2.3 mm) 2024T3 Alum., 0 to 80
degrees obliquity

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

NEW PAGE.

LAST UPDATE: 02/27/92

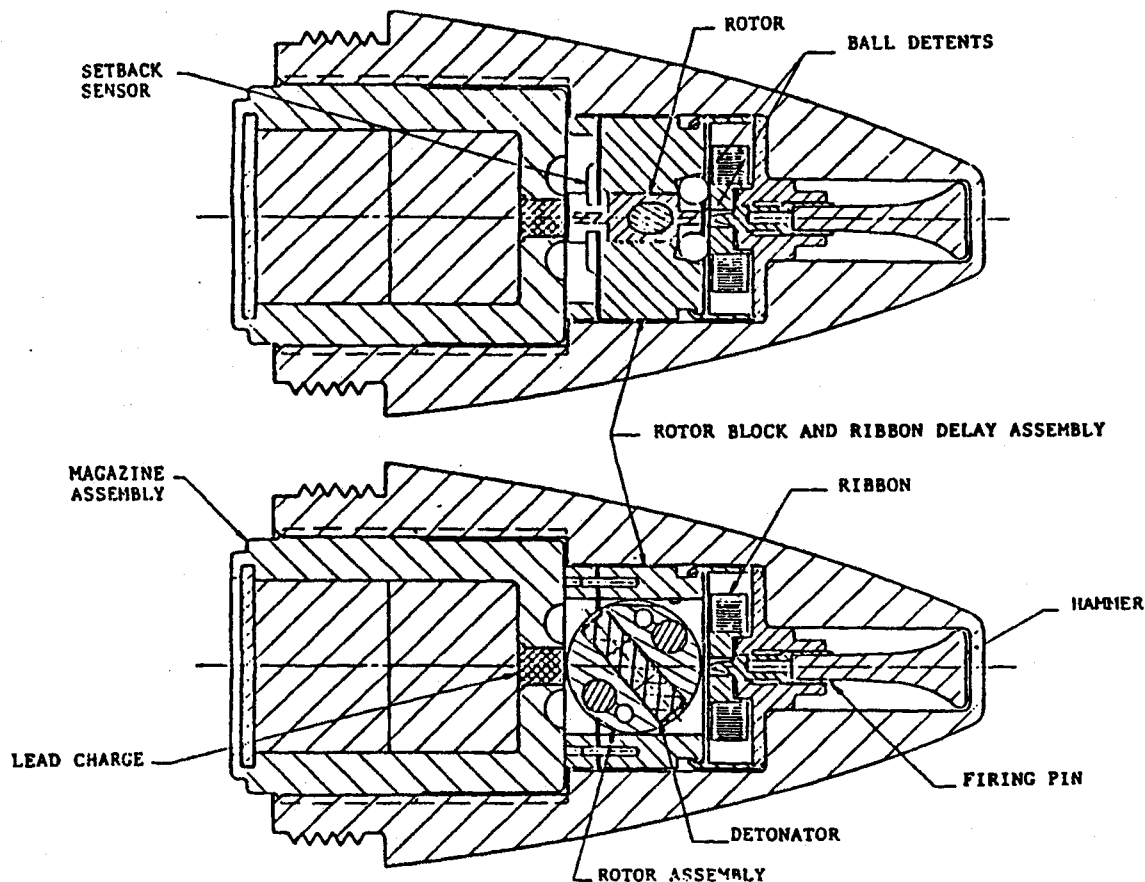
MIL-HDBK-146

NOTICE 2

FUZE: EX 421

PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 2.452 in (62.3 mm)

XSECT: 1.285 in (32.6 mm)

- INTRUSION -

DP: 0.545 in (13.8 mm)

DIA: 1.18 in (30 mm)

WT: 0.22016 lb (100 g)

THD: 1.18-14NS

THD DP:

IDENTIFICATION

AGENCY: NSW, White Oak, Code G41

CONTACT: Niemeyer, R

PHONE: DSN 290-2750

STATUS: Terminated

USER: Navy, AF

ASSY DWG: Not available

PARTS LIST: Not available

SPEC: Not available

PUB:

NATIONAL STOCK NO:

Not available

DODIC: Not available

PRIOR MODEL NO: None

SIMILAR TO: Mk 27 Mod 1

REPLACES: Mk 27 Mod 1

REPLACED BY:

GENERAL

WEAPON: Navy: Mk 2 L60-type 40 mm anti-aircraft gun

AMMUNITION:

PGU-9A/B (AF); Mk 162 Mod 0 (Navy) (identical configurations)

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 730 rps

SETBACK: 43,200 g

VELOCITY: 2870 ft/s (875 m/s)

CREEP:

FLIGHT TIME: 8 to 10 s

SAFETY STD: MIL-STD-1316

SETTERS: None

Supersedes page 7-77 of MIL-HDBK-146.

FUZE: EX 421
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 02/27/92

ARMING DATA

FIRST SAFETY:

Setback: 15,000 g

SECOND SAFETY:

Spin: instantaneous

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None. Has anti-malassembly feature.

ARMING TIME OR DISTANCE:

160 ft (49 m)

EXPLOSIVE COMPONENTS

S&A DEVICE: Out-of-line explosive
train

PRIMER: None

DETONATOR: EX 119

LEAD: 38 mg PBXN-5

BOOSTER: 6.10 g PBXN-5

OTHER:

FUNCTIONING DATA

MODES: PD

TYPE: Mechanical

CHARACTERISTICS:

TARGET: Surface, air

SENSITIVITY:

0.135 in (3.4 mm) chipboard

0.040 in (1.0 mm) 2024-T3 Aluminum

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG: 1.2 D

US DOT SHIP CL: A

NET EXPL WT: 6.249 g

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

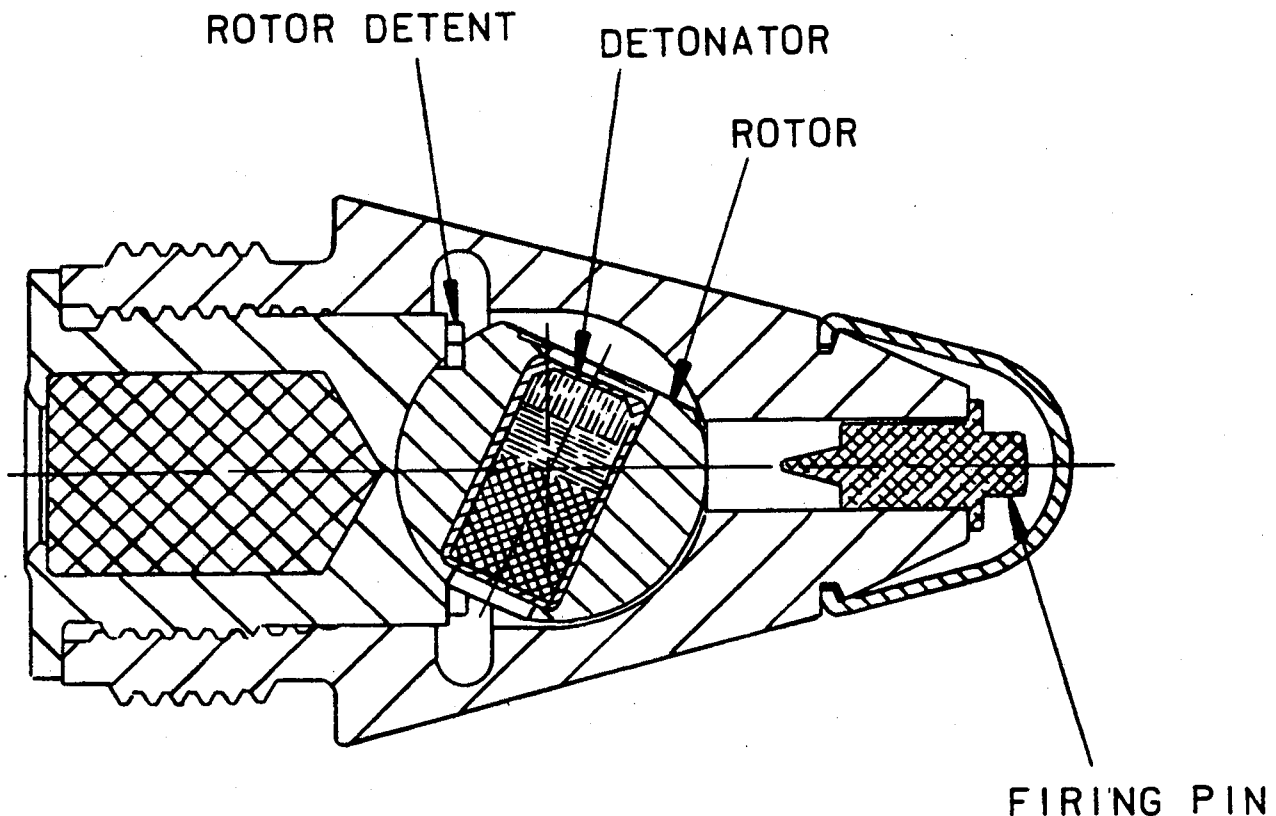
Fuze safety is assured by high-magnitude, setback-actuated locks, a spin-actuated ribbon lock and an out-of-line explosive train. On firing, setback moves the setback locks rearward and unlocks a vertical rotor. Centrifugal force acts on the lead counterweight, and arms the rotor. In the armed position, the detonator is aligned with the firing pin and booster. The firing pin is held in the forward position until the spin-actuated ribbon is unwound. The ribbon will unwind and release the firing pin when the projectile has traveled approximately 160 ft (49 m) from the gun muzzle. On impact, the plastic hammer is driven aft, propelling the firing pin. The firing pin stabs the detonator, causing it to fire and thereby initiating the lead and booster.

LAST UPDATE: 10/01/82

NOTICE2

PD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.19 in (30.2 mm)

XSECT: 0.67 in (17.0 mm)

- INTRUSION -

DP: 0.37 in (9.4 mm)

DIA: 0.50 in (12.7 mm)

WT: 0.75 oz (21.38 g)

THD: 9/16-32UNS-2A mod

THD DP:

IDENTIFICATION

AGENCY: Eglin AFB, AD/SD3E

CONTACT: Johnson, K, LT

PHONE: DSN 872-8186

STATUS: Canceled

USER: AF

ASSY DWG: 28 115 952 (Honeywell)

PARTS LIST:

SPEC: DS 30046 (Honeywell)

PUB:

NATIONAL STOCK NO:

Not assigned

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES: M505A3

REPLACED BY:

GENERAL

WEAPON: 30 mm gun GAU-8

AMMUNITION:

HEI, PGU-13/B

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 115,000 rpm

SETBACK: 71,700 g

VELOCITY: 3400 ft/s (1036 m/s)

CREEP: 33 g (gun), 57 g (hs a/c)

FLIGHT TIME:

SAFETY STD:

SETTERS:

Supersedes page 7-79 of MIL-HDBK-146.

ARMING DATA**FIRST SAFETY:**

Ball rotor w/ c-shaped detent.

Spin: 670 rps no arm,

830 rps all arm

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

Not meet MIL-STD-1316A

ARMING TIME OR DISTANCE:

10-30 m

EXPLOSIVE COMPONENTS**S&A DEVICE:** Ball Rotor**PRIMER:** Cal .22 short rim fire**DETONATOR:** M57A2 Stab**LEAD:** None**BOOSTER:** 390 mg HMX or RDX**OTHER:****FUNCTIONING DATA****MODES:** PD**TYPE:** Mechanical**CHARACTERISTICS:**

Functioning Delay

10 in

TARGET: Ground - Light Targets**SENSITIVITY:****FUNCTION TEMP:****MODE ON DELIVERY:****POWER SUPPLY:**

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA****UN SER NO:****US HCSDS:****UN CL/DIV SCG:****US DOT SHIP CL:****NET EXPL WT:****NET PROP WT:****STORAGE TEMP:****REMARKS/DESCRIPTION:**

Fuze safety is obtained because the diametral detonator in a spherical ball rotor is aligned at a large angle to the axial firing pin and lead. The ball is restrained by a C-shaped spring detent engaged in a shoulder on the ball. On firing, centrifugal force opens the detent arms releasing the ball which then aligns the detonator on the spin axis of the fuze. On impact, the shoulder on the firing pin is sheared and the firing pin strikes the M57A2 Detonator. The M505A1 is similar to the M505A3 except that the detent is a round, cantilever spring engaged with the flat on the ball at the forward end of the detonator. Centrifugal force moves the spring outward and the ball rotates to the armed position. The XM771 is similar to the M505A3, but has an additional setback safety function occurring before ball arming and a spin decay self-destruct feature.

LAST UPDATE: 03/04/92

MIL-HDBK-146
NOTICE 2

FUZE: M552
PD Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F

CONTACT:

PHONE: DSN 880-

STATUS: Obsolete

USER: Army

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO: T333

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 40 mm gun

AMMUNITION:

M381, M382, M441 Cartridges

LOCATION:

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

Supersedes page 7-85 of MIL-HDBK-146.

FUZE: M552
PD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/04/92

ARMING DATA

FIRST SAFETY:

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:
10 to 25 ft (3.0 to 7.6 m)

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR:

LEAD:

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES:

TYPE:

CHARACTERISTICS:

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

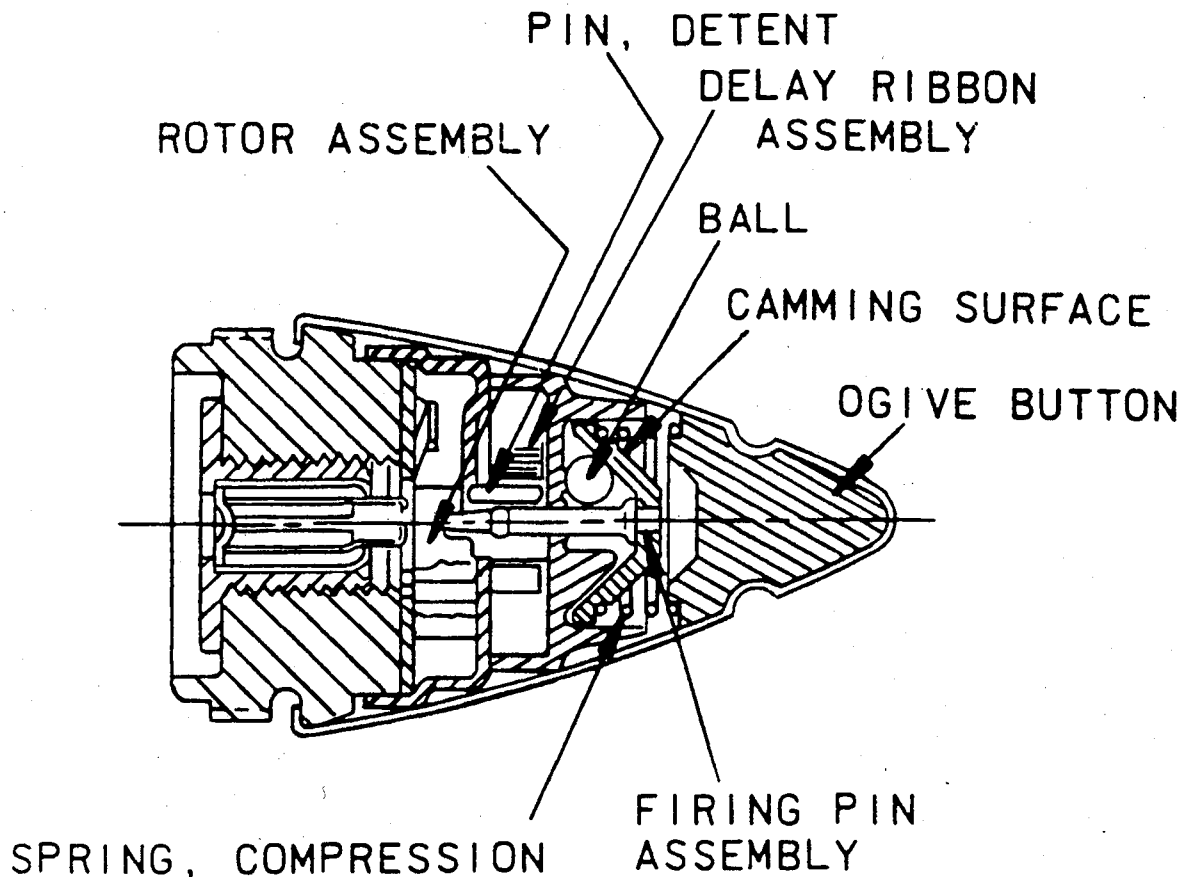
Supersedes page 7-86 of MIL-HDBK-146.

LAST UPDATE: 10/10/90

MIL-HDBK-146
NOTICE 2

FUZE: XM579
PI BD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.694 in (43.0 mm)
XSECT: 1.055 in (26.8 mm)

- INTRUSION -

DP: 0.245 in (6.2 mm)
DIA:

WT: 0.065 lb (29.5 g)

THD: 0.9638-32UNS-2A
THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-
CONTACT:
PHONE:
STATUS: Terminated
USER: Army
ASSY DWG: 9 226 650
PARTS LIST:
SPEC: AE1-452
PUB:

NATIONAL STOCK NO:
None
DODIC: None
PRIOR MODEL NO:
SIMILAR TO:

REPLACES:
REPLACED BY:

GENERAL

WEAPON: 30-mm Automatic Gun XM140
in Aircraft Armament Sub-
system XM30

AMMUNITION:
HE, XM552

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 575 rps
SETBACK: 80,000 g
VELOCITY: 2,200 ft/s (671 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD: MIL-STD-1316
SETTERS: None

Supersedes page 7-87 of MIL-HDBK-146.

FUZE: XM579
PI BD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/10/90

ARMING DATA

FIRST SAFETY:

Setback: 35,000 g, no arm;
50,000 g, all arm

SECOND SAFETY:

Spin: 250 rps, no arm;
420 rps all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

0.045 s; 164 to 328 ft (50 to
100 m)

FUNCTIONING DATA

MODES: PI BD

TYPE: Mechanical

CHARACTERISTICS:

30 microsecond delay

TARGET: Vehicles, personnel

SENSITIVITY:

1/16 in (1.6 mm) mild steel at 2200
f/s (671 m/s), 60 deg obliquity

FUNCTION TEMP:

MODE ON DELIVERY:

PD

EXPLOSIVE COMPONENTS

S&A DEVICE: Ribbon held rotor

PRIMER: None

DETONATOR: M55

LEAD: HMX spitback

BOOSTER: None

OTHER: None

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT: Unknown

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

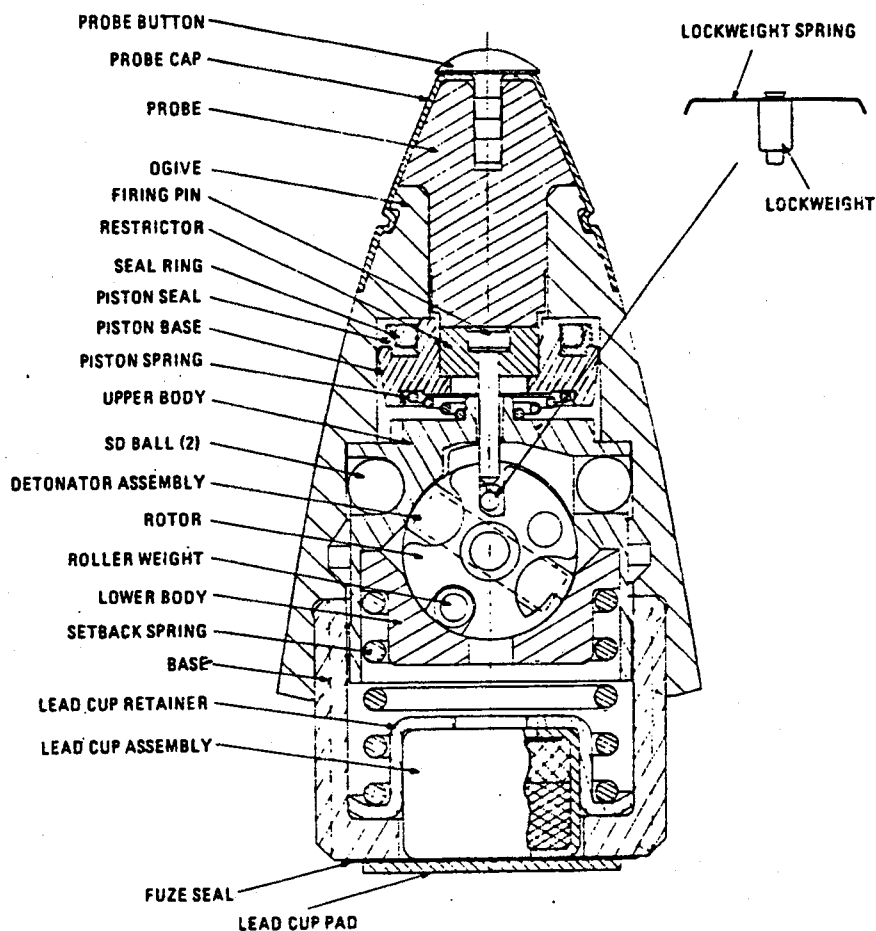
The XM579 begins to arm after setback ceases. Spin causes self-destruct arming balls to move the firing pin forward while a coiled metal tape unwinds and releases the arming rotor. The rotor locks when the explosive train is aligned. Impact drives the firing pin into the detonator. The fuze is designed to function under all conditions of direct or graze impact.

LAST UPDATE: 03/05/92

MIL-HDBK-146
NOTICE 2

FUZE: XM714E2
PD SD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.418 in (36.0 mm)
XSECT: 0.66 in (16.8 mm)

- INTRUSION -

DP: .515 in (13.1 mm)
DIA: 5.0 in (12.7 mm)

WT: 0.04 lb (18 g)

THD: 9/16-32UNS-2A (mod)
THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F
CONTACT:
PHONE: DSN 880-
STATUS: Terminated
USER: Army
ASSY DWG:
PARTS LIST:
SPEC:
PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO: XM757, M758, M759
M761

REPLACES: M505A3

REPLACED BY: XM75

GENERAL

WEAPON: 20 mm Gun, M197 f/Heli-
copter & 20 mm M61 Gun
f/winged a/c & VADS

AMMUNITION:

Cartridge, HEI, M56A3,
M242 and M246

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 2083 rps

SETBACK: 128,000 g

VELOCITY: 3400 ft/s (1036 m/s)

CREEP: 68 g

FLIGHT TIME:

SAFETY STD: Waiver for MIL-STD-1316B

SETTERS: None

NEW PAGE.

7-96A

FUZE: XM714E2
PD SD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/05/92

ARMING DATA

FIRST SAFETY:

Setback: 2000 g no arm,
2500 g all arm

SECOND SAFETY:

Spin: 200 rps no arm,
800 rps all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

10 to 100m

EXPLOSIVE COMPONENTS

S&A DEVICE: Porous air restrictor

PRIMER: None

DETONATOR: Stab, 11731341

LEAD: 285 mg HMX
Dwg 11 731 329

BOOSTER: None

OTHER: None

FUNCTIONING DATA

MODES: SQ, SD, Graze

TYPE: Mechanical

CHARACTERISTICS:

SQ, SD at 3000 m, Graze
at 80 deg obliq on macadam

TARGET: Ground-Light Targets

SENSITIVITY:

0.04 in (1.016 mm), 2024 T3 Alum.
70 degrees obliquity, 500 to
3400 ft/s (152 to 1036 m/s)

FUNCTION TEMP:

-54 to +71 deg C

MODE ON DELIVERY:

SQ & SD

POWER SUPPLY:

Loaded Piston Spring

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS: 1151

UN CL/DIV SCG: 1.2 B

US DOT SHIP CL: C

NET EXPL WT: 0.323 g

NET PROP WT: None

STORAGE TEMP: -54 to +71 deg C

REMARKS/DESCRIPTION:

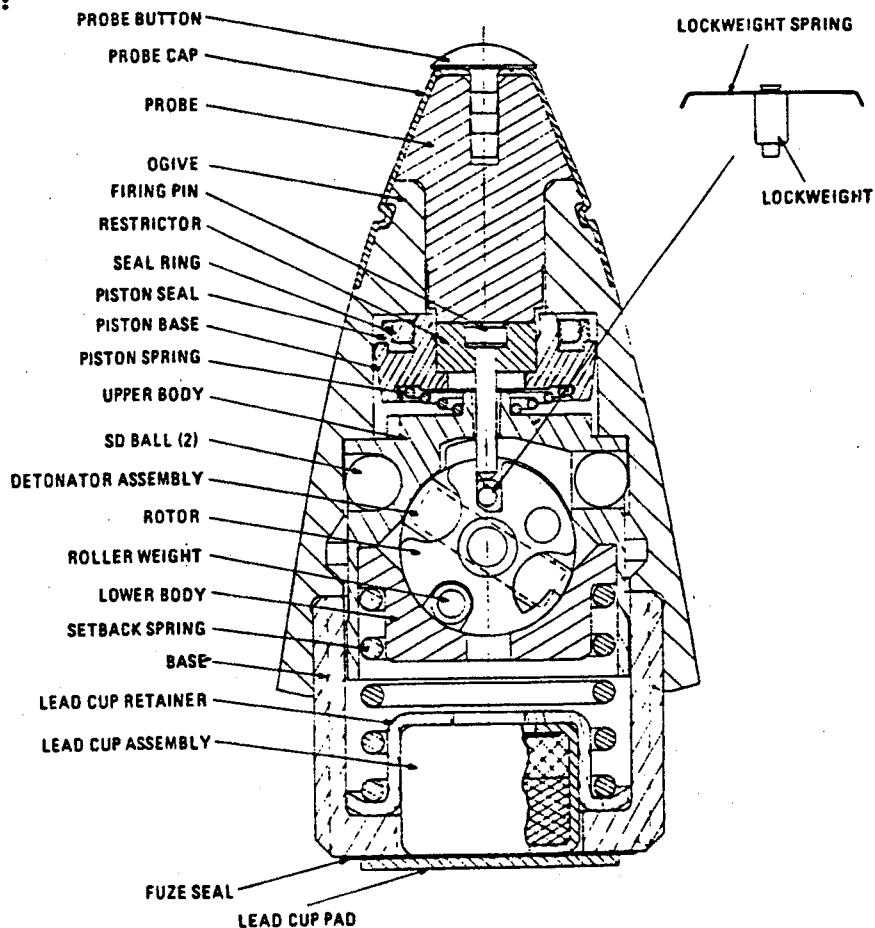
Fuze safety is obtained by restraining the rotor with two spin detents and the setback-actuated firing pin detent. On firing, setback moves body and piston assys rearward and air passes into cavity forward of piston. Centrifugal force moves two balls into groove of ogive locking body assy rearward, and removes two detents from rotor. When acceleration ceases, piston spring drives piston forward and firing pin releases rotor. Piston is delayed by air passing through its porous restrictor. Centrifugal force arms rotor and locks it with a roller weight. On impact, nose probe drives firing pin rearward. If impact does not occur, spin decay allows the setback spring to overcome centrifugal force of locking balls and the body assy is driven forward and detonator strikes the firing pin. On graze, either the nose probe is driven rearward or a combination of inertial force from velocity drop and a decrease of centrifugal force due to spin reduction, forces the body assy forward.

NEW PAGE.

7-96B

LAST UPDATE: 03/05/92

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.418 in (36.0 mm)

XSECT: 0.660 in (16.8 mm)

- INTRUSION -

DP: 0.511 in (13.0 mm)

DIA: 05.0 in (12.7 mm)

WT: 0.04 lb (18 g)

THD: M15 x 1 - 5 g

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F

CONTACT:

PHONE: DSN 880-

STATUS: Terminated

USER: Army

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO: XM757, M758, M759
M761

REPLACES: KZB 335 (Oerlikon)

REPLACED BY: M758

GENERAL

WEAPON: 25 mm Gun, M242, Bush-
master, for IFV M2, &
CFV M3

AMMUNITION:

Cartridge, HEI-T, M792,
25 mm

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 1734 rps

SETBACK: 104,000 g

VELOCITY: 3600 ft/s (1097 m/s)

CREEP: 63 g

FLIGHT TIME: 26 s

SAFETY STD: Waiver for MIL-STD-1316

SETTERS: None

NEW PAGE.

7-96C

FUZE: M714E5
PD SD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/05/92

ARMING DATA

FIRST SAFETY:

Setback: 2000 g no arm,
2500 g all arm

SECOND SAFETY:

Spin: 200 rps no arm,
800 rps all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

10 to 100 m

EXPLOSIVE COMPONENTS

S&A DEVICE: Porous air restrictor

PRIMER: None

DETONATOR: Stab, 11731341

LEAD: 285 mg HMX, 11731329

BOOSTER: None

OTHER: None

FUNCTIONING DATA

MODES: SQ, SD, Graze

TYPE: Mechanical

CHARACTERISTICS:

SQ; SD at 6 to 19 s min, 26 max
Graze, Macadam 80 - 90 deg obliq.

TARGET: Ground and Air

SENSITIVITY:

0.04 in (1.016 mm) 2024T3 Alum,
80 deg obliq., 152 to 1097 m/s
or 200 to 3000 m

FUNCTION TEMP:

-54 to +71 deg C

MODE ON DELIVERY:

SQ & SD

POWER SUPPLY:

Loaded Piston Spring

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS: 1151

UN CL/DIV SCG: 1.2 B

US DOT SHIP CL: C

NET EXPL WT: 0.323 g

NET PROP WT: None

STORAGE TEMP: -54 to +71 deg C

REMARKS/DESCRIPTION:

Fuze safety is obtained by restraining the rotor with two spin detents and the setback-actuated firing pin detent. On firing, setback moves body and piston assys rearward and air passes into cavity forward of piston. Centrifugal force moves two balls into groove of ogive locking body assy rearward, and removes two detents from rotor. When acceleration ceases, piston spring drives piston forward and firing pin releases rotor. Piston is delayed by air passing through its porous restrictor. Centrifugal force arms rotor and locks it with a roller weight. On impact, nose probe drives firing pin rearward. If impact does not occur, spin decay allows the setback spring to overcome centrifugal force of locking balls and the body assy is driven forward and detonator strikes the firing pin. On graze, either the nose probe is driven rearward or a combination of inertial force from velocity drop and a decrease of centrifugal force due to spin reduction, forces the body assy forward.

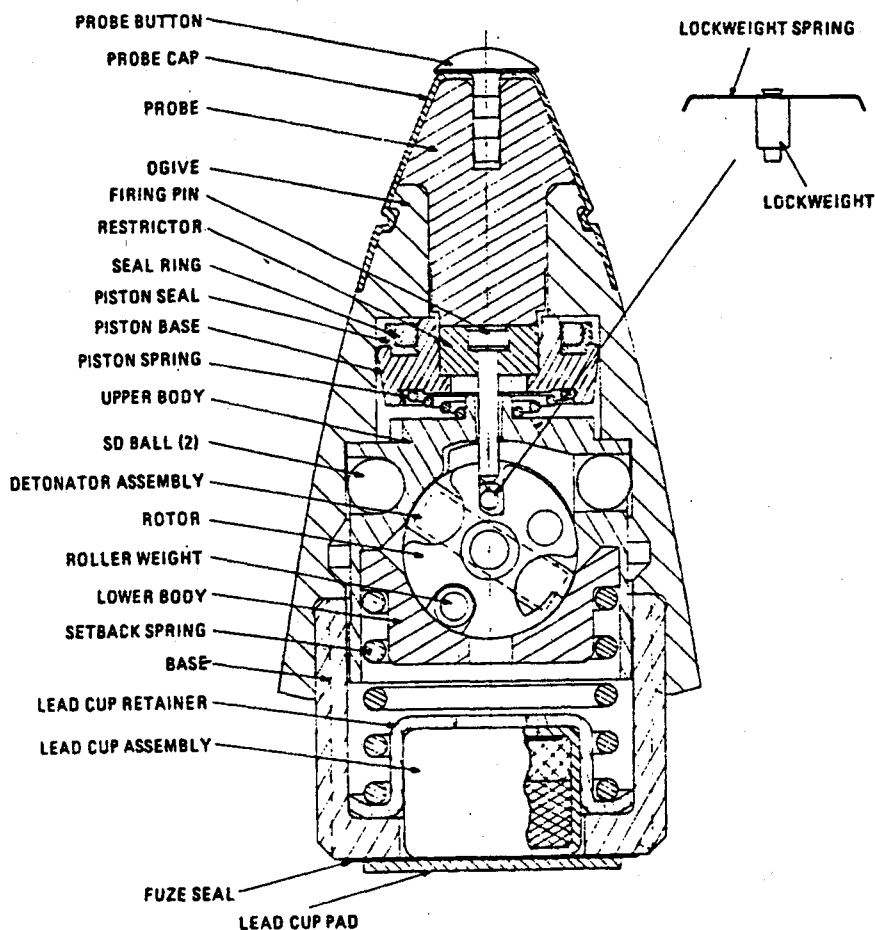
NEW PAGE.

LAST UPDATE: 03/05/92

NOTICE 2

PI BD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.879 in (47.7 mm)

XSECT: 1.065 in (27.1 mm)

- INTRUSION -

DP: 0.449 (11.2 mm)

DIA:

WT: 0.09 lb (40 g)

THD: M24.5 x 1 - 6 g

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F

CONTACT:

PHONE: DSN 880-

STATUS: Terminated

USER: Army, Marines

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO: M759

M761

REPLACES: XM579

REPLACED BY:

GENERAL

WEAPON: 30mm Gun, M230, Mk 4 Aden
& 553 Defa, in adv attack
Helicopter

AMMUNITION:

Cartridge, HE DP M789

LOCATION: Nose and base of shell

BALLISTIC LEVELS:

ROTATION: 1175 rps (Aden)

SETBACK: 84,000 g (XM230)

VELOCITY: 2641 ft/s (805 m/s)
(Defa)

CREEP: 48 g

FLIGHT TIME:

SAFETY STD: MIL-STD-1316

SETTERS:

NEW PAGE.

7-96E

FUZE: M714E6

PI BD Fuze

MIL-HDBK-146

NOTICE 2

LAST UPDATE: 03/05/92

ARMING DATA**FIRST SAFETY:**

Setback: 6000 g no arm,
10,000 g all arm

SECOND SAFETY:

Spin: 200 rps no arm,
800 rps all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

15 to 150 m

EXPLOSIVE COMPONENTS**S&A DEVICE:** Porous air restrictor**PRIMER:** None**DETONATOR:** Stab, Dwg. 11 834 323**LEAD:** Spitback, 11834355, 310mg PBXN-5
Typ 2 Cl 2, 275 mg Typ 1 Cl 3**BOOSTER:** In projectile**OTHER:** None**FUNCTIONING DATA****MODES:** SQ, Graze**TYPE:** Mechanical**CHARACTERISTICS:**

SQ, Spitback, No SD

Graze, 85 degree obliquity

TARGET: Ground-personnel & Lt Targets**SENSITIVITY:**

0.04 in (1.6 mm) 2024T3 aluminum,
80 deg obliquity, 492 to 984 ft
(150 to 300 m)

FUNCTION TEMP:

-54 to +71 deg C

MODE ON DELIVERY:

SQ

POWER SUPPLY:

Loaded piston spring

**STORAGE AND
TRANSPORTATION
SAFETY DATA****UN SER NO:****US HCSDS:** 1503**UN CL/DIV SCG:** 1.2 B**US DOT SHIP CL:** C**NET EXPL WT:** 0.625 g**NET PROP WT:** None**STORAGE TEMP:** -54 to +71 deg C**REMARKS/DESCRIPTION:**

Fuze safety is obtained by restraining the rotor with a setback-actuated firing pin detent and two spin detents. On firing, setback moves body and rotor assembly and the piston and firing pin assembly rearward and air passes into the cavity forward of the piston. Centrifugal force moves two balls into a groove of the ogive, locking the body assembly rearward. It also removes two detents from the rotor. After acceleration, the piston spring drives the piston and firing pin forward releasing the rotor. The piston is delayed by the air passing through its porous restrictor. Centrifugal force arms the rotor and locks it with a roller weight. On impact, the striker drives the firing pin rearward functioning the detonator and the spitback charge. On graze, if the striker is not driven rearward, a combination of inertial force from velocity drop and a decrease of centrifugal force caused by spin reduction, forces the body assembly forward and the detonator strikes the firing pin.

NEW PAGE.

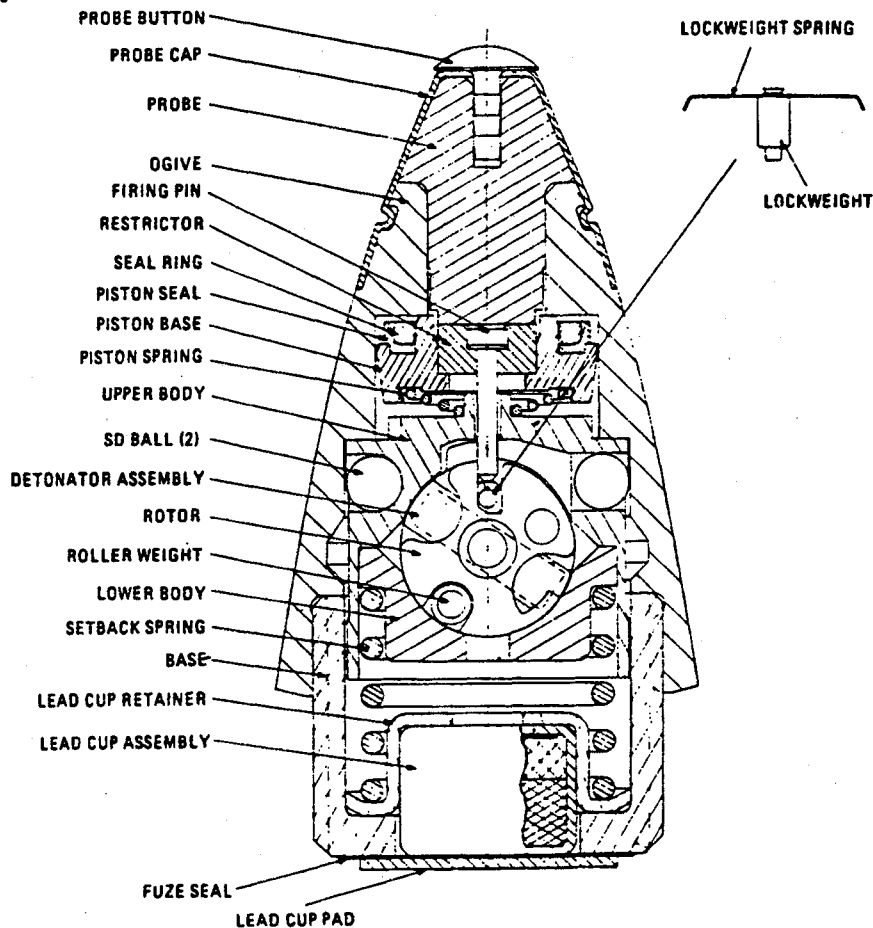
7-96F

LAST UPDATE: 03/05/92

MIL-HDBK-146
NOTICE 2

FUZE: M714E8
PD SD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 3.11 in (79.1 mm)
XSECT: 1.02 in (25.8 mm)

- INTRUSION -

DP: 1.48 in (37.7 mm)
DIA: 0.81 in (20.5 mm)

WT: 0.130 lb (59 g)
THD: M22 X1-6g
THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F
CONTACT:
PHONE: DSN 880-
STATUS: Terminated
USER: Army
ASSY DWG:
PARTS LIST:
SPEC:
PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO: M757, M758, M759
M761

REPLACES: Mk 27 Mod 1

REPLACED BY: M761

GENERAL

WEAPON: 40mm Gun, M247 (L/70)

York) 6.5 deg twist
AMMUNITION:
Cartridge, HEI, M811

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 929 rps
SETBACK: 46,000 g
VELOCITY: 3363 ft/s (1025 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD: MIL-STD-1316B

SETTERS: None

NEW PAGE.

7-96G

FUZE: M714E8
PD SD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/05/92

ARMING DATA

FIRST SAFETY:

Setback: 1000 g no arm,
1500 g all arm

SECOND SAFETY:

Spin: 200 rps no arm,
800 rps all arm in primary fuze

OTHER SAFETY:

Spin: 100 rps no arm,
500 rps all arm in delay module

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

10 to 100 m

EXPLOSIVE COMPONENTS

S&A DEVICE: Porous air restrictor

PRIMER: None

DETONATOR: Stab, 12 708 620, 91.5 mg
Stab, 11 834 323, 36.5 mg

LEAD: None

BOOSTER: 1.10 g PBXN-5,
12 708 652

OTHER: Propulsion charge: 60 mg
PBXN-5, 12 708 648

FUNCTIONING DATA

MODES: Delay, Graze, SD

TYPE: Mechanical

CHARACTERISTICS:

PD 300 microsec delay

SD time

Graze obliq

TARGET: Air-Acft, Grd-Per, Veh

SENSITIVITY:

1.016 mm 2024T3 Alum, 0 to 80 deg
obliq, 200 to 500 m; 0.63 in, 0 to
70 deg obliq, 1000 to 4000 m

FUNCTION TEMP:

-54 to +71 deg C

MODE ON DELIVERY:

Delay and SD

POWER SUPPLY:

Compressed piston spring

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO:

US HCSDS:

UN CL/DIV SCG: 1.2 B

US DOT SHIP CL: C

NET EXPL WT: 1.229 g

NET PROP WT: 0.060 g

STORAGE TEMP: -54 to +71 deg C

REMARKS/DESCRIPTION:

On firing, setback moves both the body assy and piston assy rearward and air passes into the cavity forward of the piston. Centrifugal force (CF) moves two balls into the internal groove of the ogive locking the body assy rearward. After acceleration, the piston spring drives the piston and firing pin forward, delayed by air passing through the porous restrictor. This releases the rotor. CF arms the unbalanced rotor and locks it with a roller weight. CF also opens the shutter plates between the delay plunger and the booster. On impact, the nose probe drives the firing pin rearward functioning the det in the rotor. This initiates the charge in the front of the delay plunger which shears the shoulder and drives the delay plunger rearward into the booster cavity. The firing pin in the plunger functions the det which initiates the annular booster. If impact does not occur, the setback spring overcomes CF on spin decay and drives the body assy forward functioning the det. On graze, inertial force due to velocity reduction and/or decrease of CF due to spin reduction, move the body assy forward.

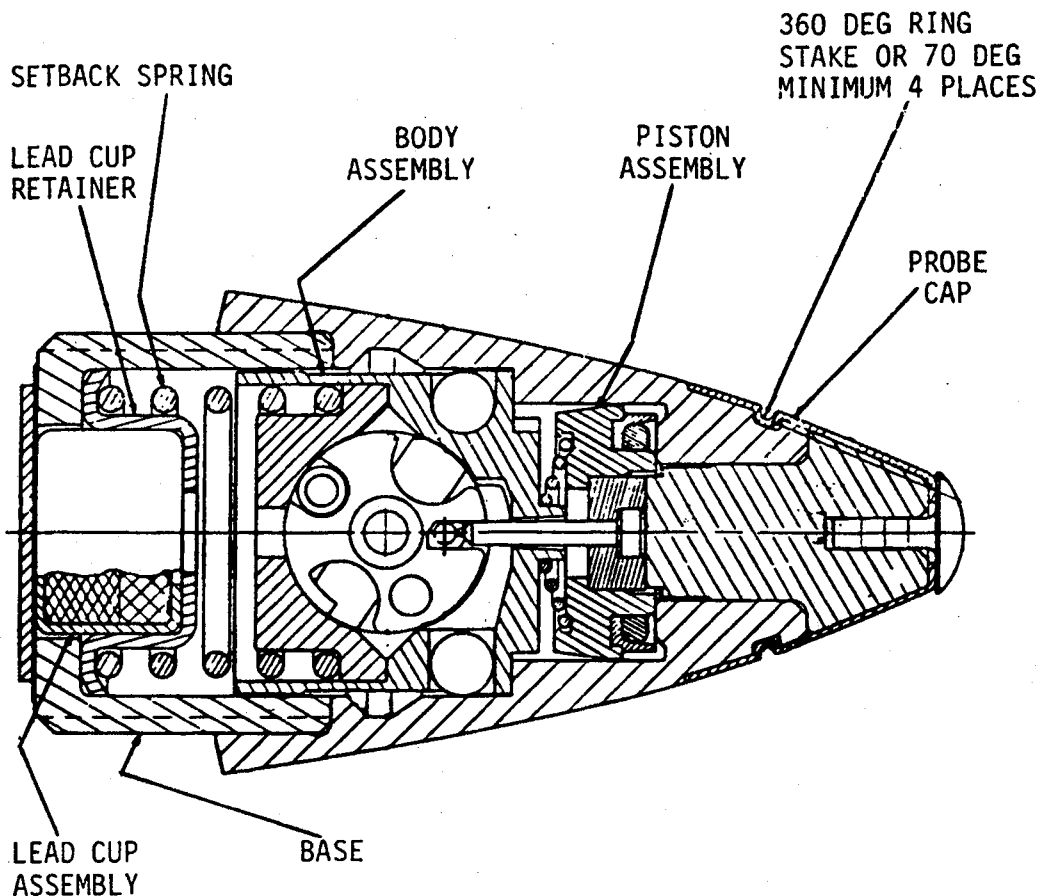
NEW PAGE.

7-96H

Source: <https://assist.dla.mil> -- Downloaded: 2016-05-28T20:39Z
Check the source to verify that this is the current version before use.

LAST UPDATE: 01/01/87

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.42 in (36.1 mm)
XSECT: 0.718 in (18.2 mm)

- INTRUSION -

DP: 0.295 in (07.5 mm)
DIA:

WT: 0.51502 (14.6 g)

THD: 9/16-32UNS-2A

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-CCL-C
CONTACT: Ghazi, E
PHONE: DSN 880-7966
STATUS: Terminated
USER: Army
ASSY DWG: 11 731 326
PARTS LIST:
SPEC: MIL-F-In Preparation
PUB:

NATIONAL STOCK NO:

None assigned

DODIC:

PRIOR MODEL NO: XM714

SIMILAR TO:

REPLACES: XM594

REPLACED BY:

GENERAL

WEAPON: 20mm Gun, M139, Interim
VRFW

AMMUNITION:

Cartridge, HEI-T, M599

LOCATION: Nose of Projectile

BALLISTIC LEVELS:

ROTATION: 1500 rps
SETBACK: 96,000 g
VELOCITY: 3500 ft/s (1067 m/s)

CREEP: 68 g

FLIGHT TIME:

SAFETY STD:

SETTERS:

Supersedes page 7-99 of MIL-HDBK-146.

FUZE: XM755
PD SD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 01/01/87

ARMING DATA

FIRST SAFETY:

Setback: 2000 g no arm,
2500 g all arm

SECOND SAFETY:

Spin: 200 rps no arm,
800 rps all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

Meets MIL-STD-1316B

ARMING TIME OR DISTANCE:

10 to 100 m

EXPLOSIVE COMPONENTS

S&A DEVICE: Porous air restrictor

PRIMER: None

DETONATOR: Stab. 11731341

LEAD: None

BOOSTER: 285 mg HMX 11731329

OTHER:

FUNCTIONING DATA

MODES: PD SD Graze

TYPE: Mechanical

CHARACTERISTICS:

SQ, SD at 6 to 19 s

TARGET: Air-Aircraft

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

Loaded piston spring

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

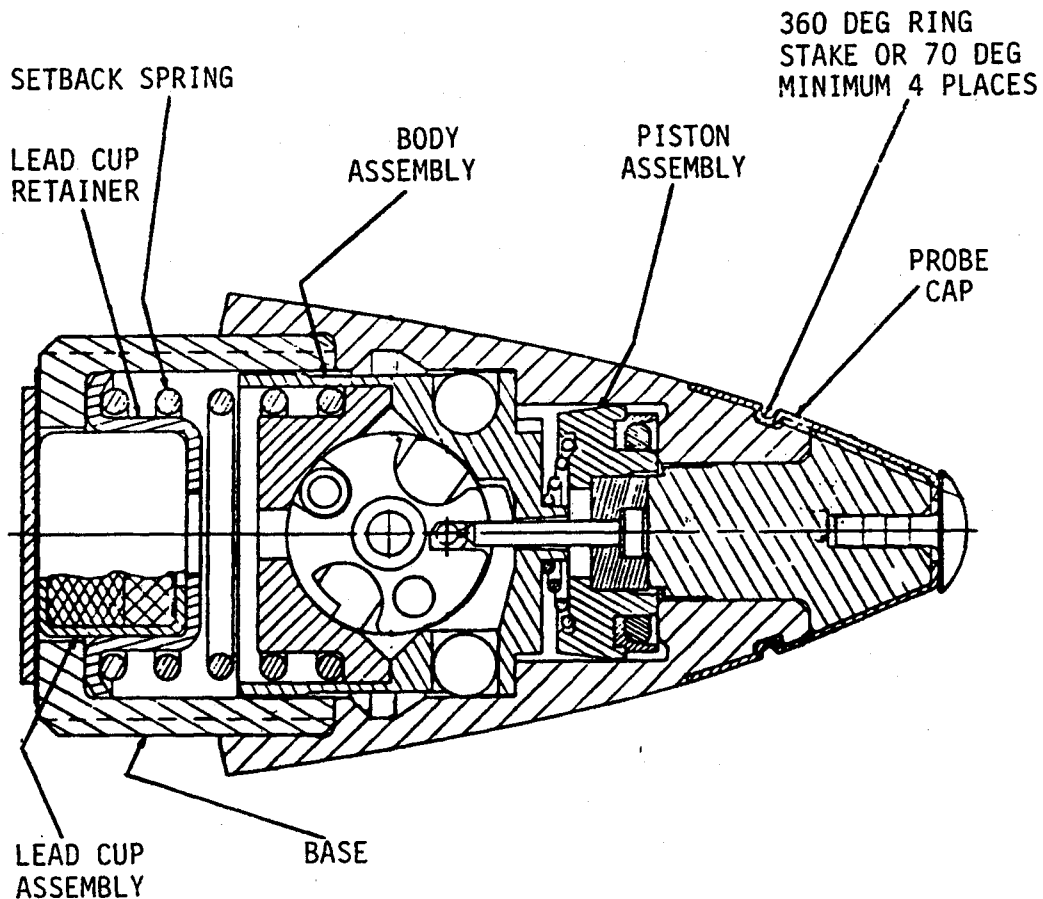
REMARKS/DESCRIPTION:

LAST UPDATE: 10/31/92

NOTICE 2

PD SD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.42 in (36.1 mm)

XSECT: 0.72 in (18.2 mm)

- INTRUSION -

DP: 0.30 in (7.5 mm)

DIA: Major thread

WT: 0.0322 lb (14.6 g)

THD: 9/16-32UNS-2A (mod)

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F

CONTACT:

PHONE: DSN 880-

STATUS: Terminated

USER: NATO FMS

ASSY DWG: 11 731 326

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO: XM714E1

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: 20 mm Guns, M139, RH202 & HS820

AMMUNITION:

Cartridge HEI-T DM51A1 & DM51A2

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 496 rps

SETBACK: 90,000 g

VELOCITY: 3445 ft/s (1050 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD: Waiver for MIL-STD-1316B

SETTERS: None

Supersedes page 7-101 of MIL-HDBK-146.

7-101

FUZE: XM756
PD SD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/31/92

ARMING DATA

FIRST SAFETY:

Setback: 2000 g no arm,
2500 g all arm

SECOND SAFETY:

Spin: 200 rps no arm,
800 rps all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

10 to 100m

EXPLOSIVE COMPONENTS

S&A DEVICE: Porous air restrictor

PRIMER: None

DETONATOR: Stab, 11731341

LEAD: None

BOOSTER: 285 mg HMX
Dwg 11 731 329

OTHER: None

FUNCTIONING DATA

MODES: SQ, SD, Graze

TYPE: Mechanical

CHARACTERISTICS:

SQ, SD at 3000 m, Graze

POWER SUPPLY:

Loaded Piston Spring

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

TARGET: Ground-Light Targets

SENSITIVITY:

0.040 in (1.016 mm), 2024 T3
aluminum, 70 degrees obliquity,
500 to 3400 ft/s (152 to 1036 m/s)

FUNCTION TEMP:

MODE ON DELIVERY:

SQ & SD

REMARKS/DESCRIPTION:

Fuze safety is obtained by restraining the rotor with two spin detents and a setback-actuated detenting firing pin. On firing, setback moves the body assembly and piston assembly rearward and air passes into the cavity forward of the piston. Centrifugal force (CF) moves two balls into the groove of the ogive, locking the body assembly rearward, and removes two detents from the rotor. When acceleration ceases, the piston spring drives the piston forward and the firing pin releases the rotor. The piston is delayed by the air passing through its porous restrictor. CF arms the rotor and locks it with a roller weight. On impact, the nose probe drives the firing pin rearward. If impact does not occur, the setback spring overcomes centrifugal force of the locking balls as the spin decays and the body assembly is driven forward and the detonator strikes the firing pin. On graze, either the nose probe is driven rearward, or a combination of inertial force due to velocity drop and a decrease of centrifugal force due to spin reduction, forces the body assembly forward. XM756 same as XM755 except thread is metric instead of English.

Supersedes page 7-102 of MIL-HDBK-146.

LAST UPDATE: 10/31/92

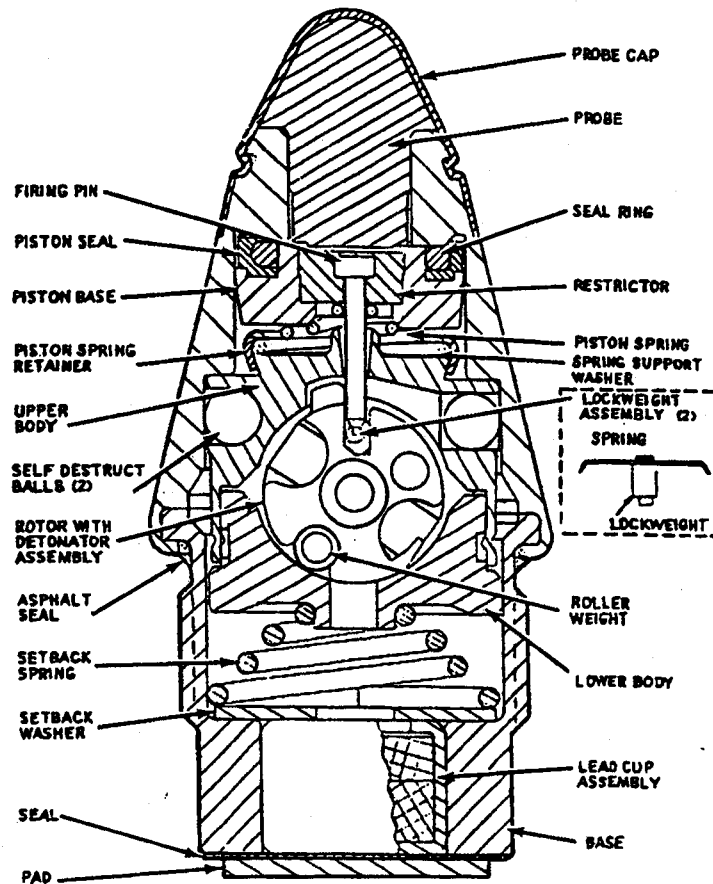
MIL-HDBK-146

NOTICE 2

FUZE: XM757

PD SD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 1.418 in (36.0 mm)

XSECT: 0.66 in (16.8 mm)

- INTRUSION -

DP: .515 in (13.1 mm)

DIA: 0.525 in (13.3 mm)

WT: 0.63 oz (17.75 g)

THD: 9/16-32UNS-2A (mod)

THD DP: 0.511 in (13.0 mm)

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F

CONTACT: Derrig, M

PHONE: DSN 880-2958

STATUS: Terminated

USER: Army

ASSY DWG: 11 820 583

PARTS LIST:

SPEC: 11 820 655

PUB:

NATIONAL STOCK NO:

Not yet assigned

DODIC: Not yet assigned

PRIOR MODEL NO: XM714E2

SIMILAR TO: M758

REPLACES: M505A3

REPLACED BY:

GENERAL

WEAPON: 20 mm Gun, M197 f/
Helicopter, 20 mm M61 Gun
f/winged a/c VADS & M168

AMMUNITION:

Cartridge, HEI, M56A3,
M242 and M246

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 2030 rps

SETBACK: 124,000 g

VELOCITY: 3400 ft/s (1040 m/s)

CREEP: 68 g

FLIGHT TIME:

SAFETY STD: Waiver for MIL-STD-1316B

SETTERS: None

Supersedes page 7-103 of MIL-HDBK-146.

7-103

FUZE: XM757
PD SD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/31/92

ARMING DATA

FIRST SAFETY:

Setback: 2000 g no arm,
2500 g all arm

SECOND SAFETY:

Spin: 200 rps no arm,
800 rps all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

10 to 100m

EXPLOSIVE COMPONENTS

S&A DEVICE: Porous air restrictor

PRIMER: None

DETONATOR: Stab, 11731341

LEAD: 285 mg HMX
Dwg 11 731 329

BOOSTER: None

OTHER: None

FUNCTIONING DATA

MODES: SQ, SD, Graze

TYPE: Mechanical

CHARACTERISTICS:

SQ, SD at 3000 m, Graze
at 80 deg obliq on macadam

TARGET: Ground-Light Targets

SENSITIVITY:

0.040 in (1.016 mm), 2024 T3
aluminum, 70 degrees obliquity,
500 to 3400 ft/s (152 to 1036 m/s)

FUNCTION TEMP:

-54 to +71 deg C

MODE ON DELIVERY:

SQ & SD

POWER SUPPLY:

Loaded Piston Spring

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS: 1151

UN CL/DIV SCG: 1.2 B

US DOT SHIP CL: C

NET EXPL WT: 0.323 g

NET PROP WT: None

STORAGE TEMP: -54 to +71 deg C

REMARKS/DESCRIPTION:

Fuze safety is obtained by restraining the rotor with two spin detents and a setback-actuated detenting firing pin. On firing, setback moves the body assembly and piston assembly rearward and air passes into the cavity forward of the piston. Centrifugal force (CF) moves two balls into the groove of the ogive, locking the body assembly rearward, and removes two detents from the rotor. When acceleration ceases, the piston spring drives the piston forward and the firing pin releases the rotor. The piston is delayed by the air passing through its porous restrictor. CF arms the rotor and locks it with a roller weight. On impact, the nose probe drives the firing pin rearward. If impact does not occur, the setback spring overcomes centrifugal force of the locking balls as the spin decays and the body assembly is driven forward and the detonator strikes the firing pin. On graze, either the nose probe is driven rearward, or a combination of inertial force due to velocity drop and a decrease of centrifugal force due to spin reduction, forces the body assembly forward. XM757 same as M758 except thread is 9/16-32 instead of metric M15 x 1.

LAST UPDATE: 10/31/92

MIL-HDBK-146
NOTICE 2

FUZE: M760
PD SD Fuze

ILLUSTRATION:

- OVERALL SIZE -	- INTRUSION -	WT: 1.414 oz (40.1 g)
LG: 1.974 in (50.1 mm)	DP: 0.503 in (12.8 mm)	THD: M22 x 15-6g
XSECT: 0.958 in (24.3 mm)	DIA: Major thread	THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F
CONTACT:
PHONE: DSN 880-
STATUS: Terminated
USER: Army
ASSY DWG: 8 114 677
PARTS LIST:
SPEC: None
PUB:

NATIONAL STOCK NO:

None

DODIC:

PRIOR MODEL NO: XM714E7

SIMILAR TO:

REPLACES: None

REPLACED BY:

GENERAL

WEAPON: 35 mm Gun XM 246 (KDA) for
DIVADS

AMMUNITION:

Cartridge, HEI-T, XM808

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 1426 rps

SETBACK: 68,000 g

VELOCITY: 3871 ft/s (1180 m/s)

CREEP: 30 g

FLIGHT TIME:

SAFETY STD:

SETTERS:

Supersedes page 7-105 of MIL-HDBK-146.

FUZE: M760
PD SD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/31/92

ARMING DATA

FIRST SAFETY:

Setback: 2000 g no arm,
2500 g all arm

SECOND SAFETY:

Spin: 200 rps no arm,
800 rps all arm

OTHER SAFETY:

None

SAFE/ARM INDICATION:

No. Waiver for MIL-STD-1316A

ARMING TIME OR DISTANCE:

10 to 100 m

EXPLOSIVE COMPONENTS

S&A DEVICE: Porous air restrictor

PRIMER: None

DETONATOR: Stab, 11731341

LEAD: None

BOOSTER: 285 mg HMX, 11731329

OTHER:

FUNCTIONING DATA

MODES: PD SD Graze

TYPE: Mechanical

CHARACTERISTICS:

SQ

SD at 6-16 s

Graze

TARGET: Air- aircraft

SENSITIVITY:

0.040 in (1.016 mm) 2020 T3
aluminum, 70 degrees obliquity

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

Loaded piston spring.

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

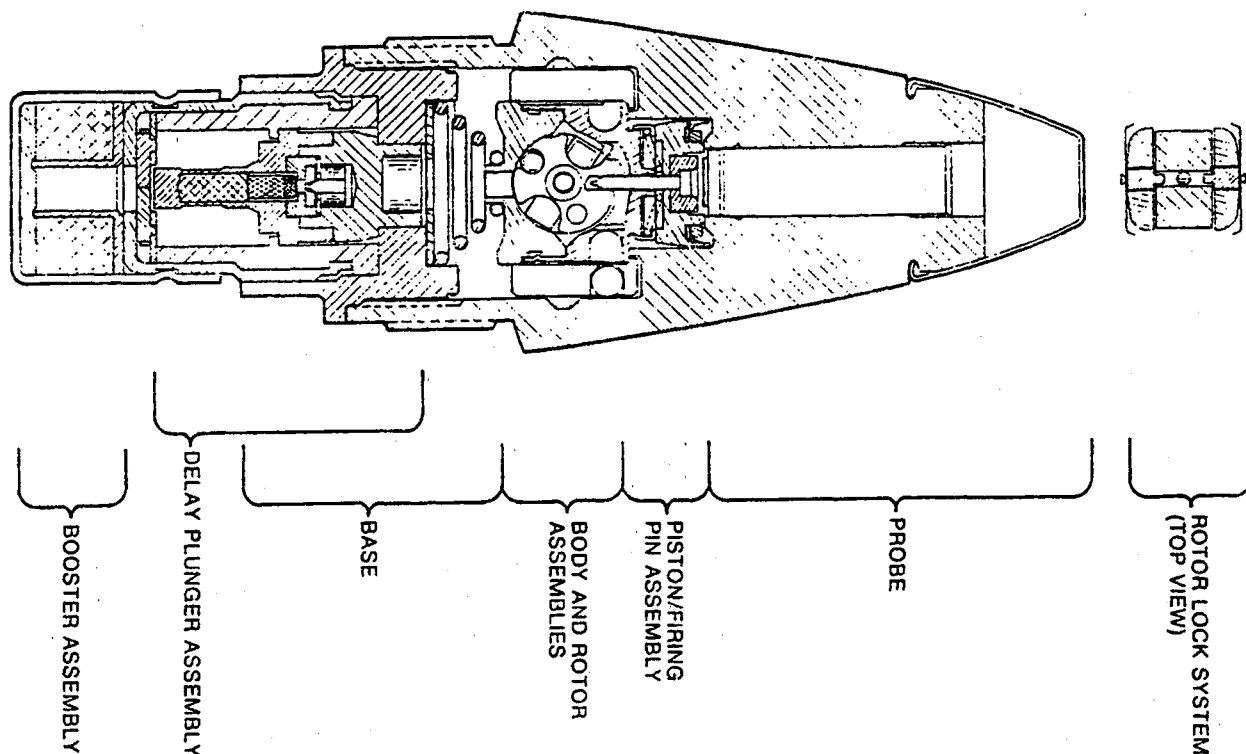
REMARKS/DESCRIPTION:

LAST UPDATE: 10/31/92

MIL-HDBK-146
NOTICE 2

FUZE: M761
PD SD Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG: 3.11 in (79.1 mm)

XSECT: 1.02 in (25.8 mm)

- INTRUSION -

DP: 1.48 in (37.7 mm)

DIA: 0.81 in (20.5 mm)

WT: 0.130 lb (0.059 kg)

THD: M22 X1-6g

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-AEF-F

CONTACT:

PHONE: DSN 880-

STATUS: Terminated

USER: Army

ASSY DWG: 12 600 049

PARTS LIST:

SPEC: MIL-F-63555

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO: XM714E8

SIMILAR TO: M757, M758, M759

REPLACES: Mk 27 Mod 1

REPLACED BY:

GENERAL

WEAPON: 40mm Gun, M247 (L/70)

York) 6.5 deg twist

AMMUNITION:

Cartridge, HEI, M811

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: 929 rps

SETBACK: 46,000 g

VELOCITY: 3363 ft/s (1025 m/s)

CREEP:

FLIGHT TIME:

SAFETY STD: MIL-STD-1316B

SETTERS: None

Supersedes page 7-107 of MIL-HDBK-146.

7-107

FUZE: M761
PD SD Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/31/92

ARMING DATA

FIRST SAFETY:

Setback: 1000 g no arm,
1500 g all arm

SECOND SAFETY:

Spin: 200 rps no arm,
800 rps all arm in primary fuze

OTHER SAFETY:

Spin: 100 rps no arm,
500 rps all arm in delay module

SAFE/ARM INDICATION:

No

ARMING TIME OR DISTANCE:

10 to 100 m

EXPLOSIVE COMPONENTS

S&A DEVICE: Porous air restrictor

PRIMER: None

DETONATOR: Stab, 12 708 620, 91.5 mg
Stab, 11 834 323, 36.5 mg

LEAD: None

BOOSTER: 1.10 g PBXN-5,
12 708 652

OTHER: Propulsion charge: 60 mg
PBXN-5, 12 708 648

FUNCTIONING DATA

MODES: Delay, Graze, SD

TYPE: Mechanical

CHARACTERISTICS:

PD 300 microsec delay

SD time

Graze obliq

TARGET: Air-Acft, Grd-Per, Veh

SENSITIVITY:

1.016 mm 2024T3 Alum, 0 to 80 deg
obliq, 200 to 500 m; 0.63 in, 0 to
70 deg obliq, 1000 to 4000 m

FUNCTION TEMP:

-54 to +71 deg C

MODE ON DELIVERY:

Delay and SD

POWER SUPPLY:

Compressed piston spring

STORAGE AND TRANSPORTATION SAFETY DATA

UN SER NO:

US HCSDS:

UN CL/DIV SCG: 1.2 B

US DOT SHIP CL: C

NET EXPL WT: 1.229 g

NET PROP WT: 0.060 g

STORAGE TEMP: -54 to +71 deg C

REMARKS/DESCRIPTION:

On firing, setback moves both the body assy and piston assy rearward and air passes into the cavity forward of the piston. Centrifugal force (CF) moves two balls into the internal groove of the ogive locking the body assy rearward. After acceleration, the piston spring drives the piston and firing pin forward, delayed by air passing through the porous restrictor. This releases the rotor. CF arms the unbalanced rotor and locks it with a roller weight. CF also opens the shutter plates between the delay plunger and the booster. On impact, the nose probe drives the firing pin rearward functioning the det in the rotor. This initiates the charge in the front of the delay plunger which shears the shoulder and drives the delay plunger rearward into the booster cavity. The firing pin in the plunger functions the det which initiates the annular booster. If impact does not occur, the setback spring overcomes CF on spin decay and drives the body assy forward functioning the det. On graze, inertial force due to velocity reduction and/or decrease of CF due to spin reduction, move the body assy forward. The M761D is similar to the M758 and M759 except that it has the delay feature.

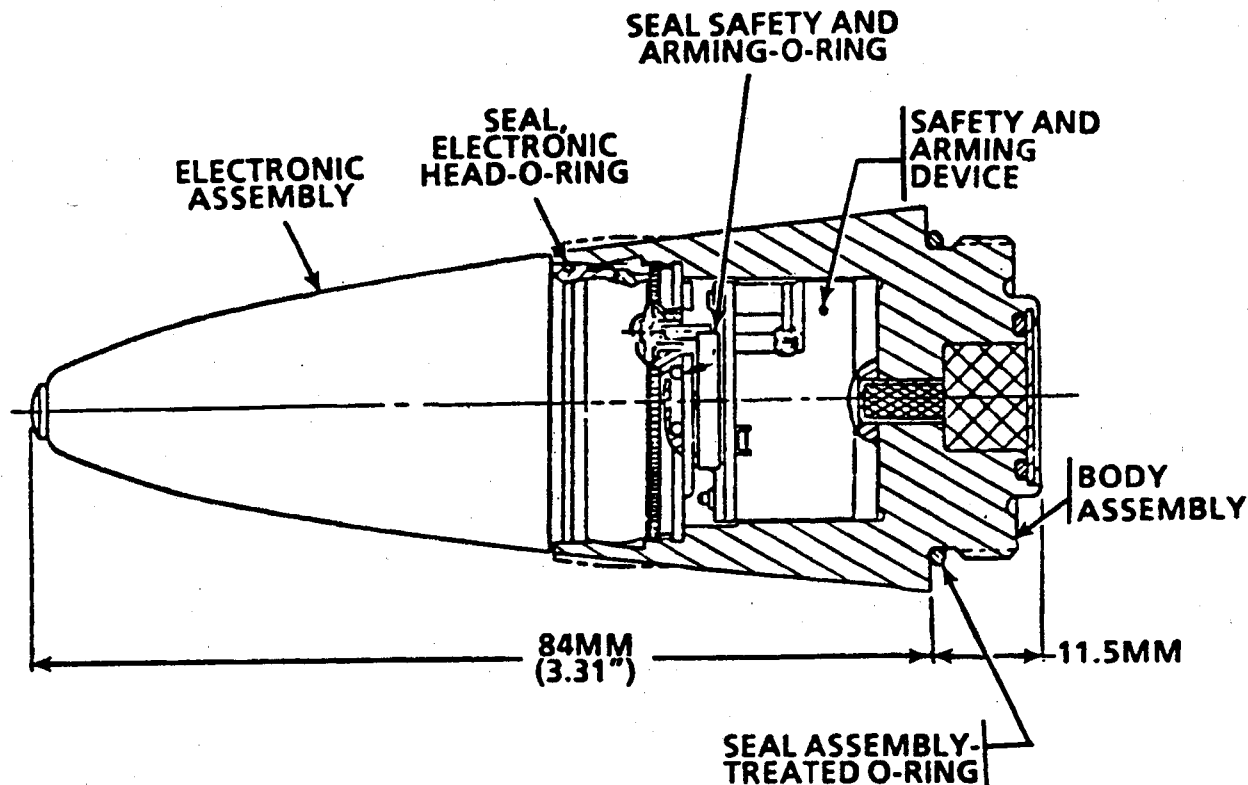
Supersedes page 7-108 of MIL-HDBK-146.

LAST UPDATE: 10/31/92

MIL-HDBK-146
NOTICE 2

FUZE: M766
Proximity Fuze

ILLUSTRATION:



- OVERALL SIZE -
LG: 3.31 in (84.0 mm)
XSECT:

- INTRUSION -
DP:
DIA:

WT: 0.24 lb (110 g)
THD:
THD DP:

IDENTIFICATION

AGENCY: ARDEC,
CONTACT:
PHONE: DSN 880-
STATUS: Terminated
USER: Army
ASSY DWG: 12 703 650
PARTS LIST:
SPEC:
PUB: TM 43-0001-28

NATIONAL STOCK NO:
None
DODIC: None
PRIOR MODEL NO:
SIMILAR TO:

REPLACES:
REPLACED BY:

GENERAL

WEAPON: 40-mm Gun, M247

AMMUNITION:
HE, M822 Cartridge, Sgt. York

LOCATION: Nose
BALLISTIC LEVELS:
ROTATION:
SETBACK:
VELOCITY:

CREEP:
FLIGHT TIME:
SAFETY STD:
SETTERS: None

Supersedes page 7-109 of MIL-HDBK-146.

7-109

FUZE: M766
Proximity Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 10/31/92

ARMING DATA

FIRST SAFETY:

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:
None

ARMING TIME OR DISTANCE:
0.2 s

EXPLOSIVE COMPONENTS

S&A DEVICE: MS470

PRIMER:

DETONATOR: Lead azide, 135 mg

LEAD: Plastic B, 120 mg

BOOSTER:

OTHER: Igniter, 2 mg
Initiator, 2 mg silver azide

FUNCTIONING DATA

MODES: Proximity, PD, SD
TYPE: Electronic, mechanical
CHARACTERISTICS:
Time to SD: 17 +/- 4 s

TARGET:

SENSITIVITY:
Regulator increases triggering
threshold as sea or ground reflec-
tion level increases.

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:
US HCSDS:
UN CL/DIV SCG:
US DOT SHIP CL:
NET EXPL WT: 259 mg
NET PROP WT: None
STORAGE TEMP:

REMARKS/DESCRIPTION:

On firing, arming is obtained approximately 0.2 s after muzzle exit by means of the sector gear being turned under the influence of the spin acceleration on the weight to such a position where the electrical igniter comes in contact with the blade contact and where its detonator is just opposite the relay charge. Ignition is obtained by proximity or impact function. At power application, the master timer begins to count the flight time. When a total time of 17 +/- 4 s has elapsed without a valid firing pulse from either proximity or impact mode, the unit will self destruct.

LAST UPDATE: 04/01/87

MIL-HDBK-146

NOTICE 2

FUZE: M1

Hand Grenade Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-FSM

CONTACT:

PHONE:

STATUS: Obsolete

USER: Army

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

NA

DODIC: NA

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY: M200

GENERAL

WEAPON: Hand Grenade

AMMUNITION:

Chemical

LOCATION:

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

NEW PAGE.

FUZE: M1
Hand Grenade Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 04/01/87

ARMING DATA

FIRST SAFETY:

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR:

LEAD:

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES: Delay

TYPE: Pyrotechnic

CHARACTERISTICS:

1.7 s delay

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

NEW PAGE.

LAST UPDATE: 01/01/87

MIL-HDBK-146

NOTICE 2

FUZE: M6A3

Hand Grenade Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY: ARDEC, SMCAR-FSA-MM

CONTACT: Probert

PHONE: DSN 880-3154

STATUS: Obsolete

USER: Army

ASSY DWG: 82-1-31 (M6A4C)

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: Hand Grenades

AMMUNITION:

Mk 2 Fragmentation,

M3A1, Mk III Hand Grenades

LOCATION:

BALLISTIC LEVELS:

ROTATION: NA

SETBACK: NA

VELOCITY: NA

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: MIL-STD-1316 is NA

SETTERS: None

NEW PAGE.

FUZE: M6A3
Hand Grenade Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 01/01/87

ARMING DATA

FIRST SAFETY:

Pull pin

SECOND SAFETY:

None

OTHER SAFETY:

None

SAFE/ARM INDICATION:

Yes

ARMING TIME OR DISTANCE:

None

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR:

LEAD:

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES: Delay

TYPE: Mechanical

CHARACTERISTICS:

4 to 5 s delay

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

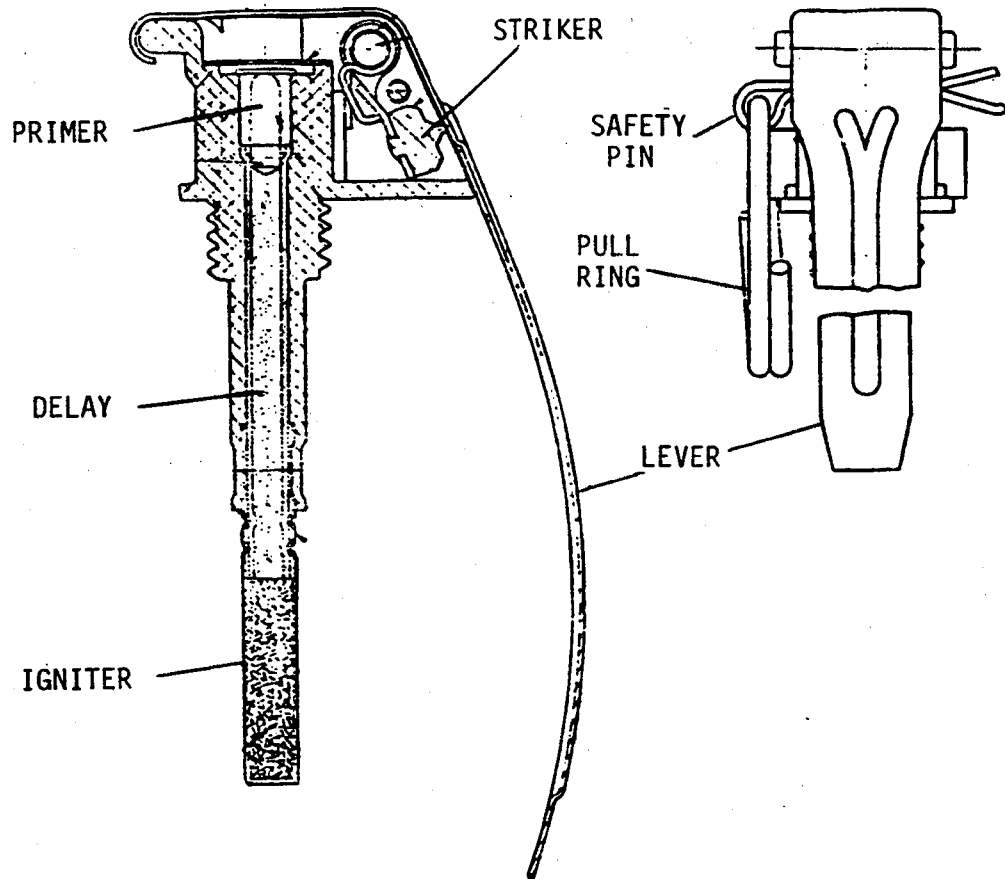
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LAST UPDATE: 12/12/91

MIL-HDBK-146
NOTICE 2

FUZE: M10A3
Hand Grenade Fuze

ILLUSTRATION:



- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY:

CONTACT:

PHONE:

STATUS: Obsolete

USER: Army, Navy

ASSY DWG: 82-1-46

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

1330-00-028-5850

DODIC: G873

PRIOR MODEL NO:

SIMILAR TO: M205A1, A2

REPLACES:

REPLACED BY:

GENERAL

WEAPON: Hand Grenade

AMMUNITION:

M21 Practice Grenade

LOCATION: Top of grenade

BALLISTIC LEVELS:

ROTATION: NA

SETBACK: NA

VELOCITY: 82 ft/s (25 m/s)

CREEP: NA

FLIGHT TIME: NA

SAFETY STD: MIL-STD-1316 is NA

SETTERS: None

NEW PAGE.

8-4A

FUZE: M10A3
Hand Grenade Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 12/12/91

ARMING DATA

FIRST SAFETY:

Pull ring of safety pin

SECOND SAFETY:

Lever

OTHER SAFETY:

None

SAFE/ARM INDICATION:

None

ARMING TIME OR DISTANCE:

None

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: < 1 g

DETONATOR: < 1 g

LEAD: None

BOOSTER: None

OTHER: Igniter < 3 g

FUNCTIONING DATA

MODES:

TYPE: Mechanical/pyrotechnic

CHARACTERISTICS:

4.5 s delay

TARGET: Personnel

SENSITIVITY:

FUNCTION TEMP:

-40 to +71 deg C

MODE ON DELIVERY:

Safe

POWER SUPPLY:

None

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT: 3 g

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

The safety pin is removed, freeing the safety lever, which is held in place manually. When the grenade is thrown, the safety lever is released, and is forced away from the grenade body by the spring-loaded striker. The striker impacts the percussion primer, igniting the 4 to 5 s delay, which initiates the black powder charge. On exploding, the black-powder charge forces the stopper from the base of the body and emits a loud report, like a firecracker, and a puff of white smoke.

NEW PAGE.

MIL-HDBK-146
NOTICE 2

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**Data for the M201A2 Hand Grenade Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 8-7 and 8-8 of MIL-HDBK 146.

8-7/8-8

MIL-HDBK-146
NOTICE 2

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**Data for the M204A2 Hand Grenade Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 8-9 and 8-10 of MIL-HDBK 146.

8-9/8-10

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MIL-HDBK-146
NOTICE 2

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Data for the M205A2 Hand Grenade Fuze
may be found in MIL-HDBK-145B.

Supersedes pages 8-11 and 8-12 of MIL-HDBK 146.

8-11/8-12

MIL-HDBK-146
NOTICE 2

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**Data for the M211 Rifle Grenade Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 8-13 and 8-14 of MIL-HDBK 146.

8-13/8-14

MIL-HDBK-146
NOTICE 2

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**Data for the M215 Hand Grenade Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 8-15 and 8-16 of MIL-HDBK 146.

8-15/8-16

MIL-HDBK-146
NOTICE 2

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LAST UPDATE: 01/15/93

MIL-HDBK-146
NOTICE 2

FUZE: MK 394 Mod 0
Hand Grenade Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG:
XSECT:

- INTRUSION -

DP:
DIA:

WT:
THD:
THD DP:

IDENTIFICATION

AGENCY:
CONTACT:
PHONE:
STATUS: Obsolete
USER: Navy
ASSY DWG:
PARTS LIST:
SPEC: WS 3029
PUB:

NATIONAL STOCK NO:

DODIC:
PRIOR MODEL NO:
SIMILAR TO:

REPLACES:
REPLACED BY:

GENERAL

WEAPON: Hand Grenade

AMMUNITION:
Mk 9 Mod 0 Hand Grenade ?
(WS 3025)

LOCATION:
BALLISTIC LEVELS:
ROTATION:
SETBACK:
VELOCITY:

CREEP:
FLIGHT TIME:
SAFETY STD:
SETTERS:

Supersedes page 8-21 of MIL-HDBK-146.

FUZE: MK 394 Mod 0
Hand Grenade Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 01/15/93

ARMING DATA

FIRST SAFETY:

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR:

LEAD:

BOOSTER:

OTHER:

FUNCTIONING DATA

MODES:

TYPE:

CHARACTERISTICS:

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

Supersedes page 8-22 of MIL-HDBK-146.

LAST UPDATE: 02/21/90

MIL-HDBK-146
NOTICE2

FUZE: F/MK15 Mod 1 SUS
Arming and Firing Mechanism

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY:

CONTACT:

PHONE:

STATUS: Obsolete

USER: Navy

ASSY DWG:

PARTS LIST:

SPEC:

PUB: NAVAIR 11-1-107

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: Signal, Underwater Sound
(SUS)

AMMUNITION:

Mk 15 Mods 0-12 Practice Depth
Charge (PDC)

LOCATION:

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

NEW PAGE.

FUZE: F/MK15 Mod 1 SUS
Arming and Firing Mechanism

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 02/21/90

ARMING DATA

FIRST SAFETY:
Pressure

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:
27 to 39 ft depth

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: Mk 43 Mod 1

LEAD: 0.115 g

BOOSTER:

OTHER: None

FUNCTIONING DATA

MODES: Pressure
TYPE: Mechanical
CHARACTERISTICS:
50 ft firing depth

TARGET:
SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:
US HCSDS:
UN CL/DIV SCG:
US DOT SHIP CL:
NET EXPL WT:
NET PROP WT:
STORAGE TEMP:

REMARKS/DESCRIPTION:

This fuze was used in Practice Depth Charge Mk 15 Mods 0, 1, 3, 4, 6, 11, and 12.
All mods are obsolete and hazardous.

NEW PAGE.

MIL-HDBK-146
NOTICE 2

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**Data for the M26 Fuze Setter
may be found in MIL-HDBK-145B.**

Supersedes pages 9-5 and 9-6 of MIL-HDBK 146.

9-5/9-6

MIL-HDBK-146
NOTICE 2

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LAST UPDATE: 02/27/90

MIL-HDBK-146

NOTICE 2

FUZE: MK 30 Mod 0

Arming and Firing Device

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY:

CONTACT:

PHONE:

STATUS: Obsolete

USER: Navy

ASSY DWG:

PARTS LIST:

SPEC:

PUB: NAVAIR 11-1-107

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: Signals, Underwater Sound
(SUS)

AMMUNITION:

Mk 54 Mod 0 and Mk 63 Mod 0 SUS

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: NA

SETBACK: NA

VELOCITY: NA

CREEP: NA

FLIGHT TIME: NA

SAFETY STD:

SETTERS:

NEW PAGE.

FUZE: MK 30 Mod 0
Arming and Firing Device

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 02/27/90

ARMING DATA

FIRST SAFETY:
Pressure

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:
15 to 25 ft depth

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: Mk 43 Mod 1

LEAD: 0.115 g Tetryl

BOOSTER: 1.1 oz Tetryl

OTHER: None

FUNCTIONING DATA

MODES:

TYPE:

CHARACTERISTICS:
60 to 300 ft depth

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

STORAGE AND
TRANSPORTATION
SAFETY DATA

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

NEW PAGE.

LAST UPDATE: 02/27/90

MIL-HDBK-146
NOTICE 2

FUZE: MK 31 Mod 0
Arming and Firing Mechanism

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY:

CONTACT:

PHONE:

STATUS: Obsolete

USER: Navy

ASSY DWG:

PARTS LIST:

SPEC:

PUB: NAVAIR 11-1-107

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: Signals, Underwater Sound
(SUS)

AMMUNITION:

Mk 57 Mod 0 SUS

LOCATION:

BALLISTIC LEVELS:

ROTATION: NA

SETBACK: NA

VELOCITY: NA

CREEP: NA

FLIGHT TIME: NA

SAFETY STD:

SETTERS:

NEW PAGE.

FUZE: MK 31 Mod 0
Arming and Firing Mechanism

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 02/27/90

ARMING DATA

FIRST SAFETY:
Pressure

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:
18 ft

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: Mk 43 Mod 1

LEAD: 0.218 g tetryl

BOOSTER: 1.1 g tetryl

OTHER: None

FUNCTIONING DATA

MODES:

TYPE:

CHARACTERISTICS:

800 +/- 80 ft depth

46 +/- 5 s firing time

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

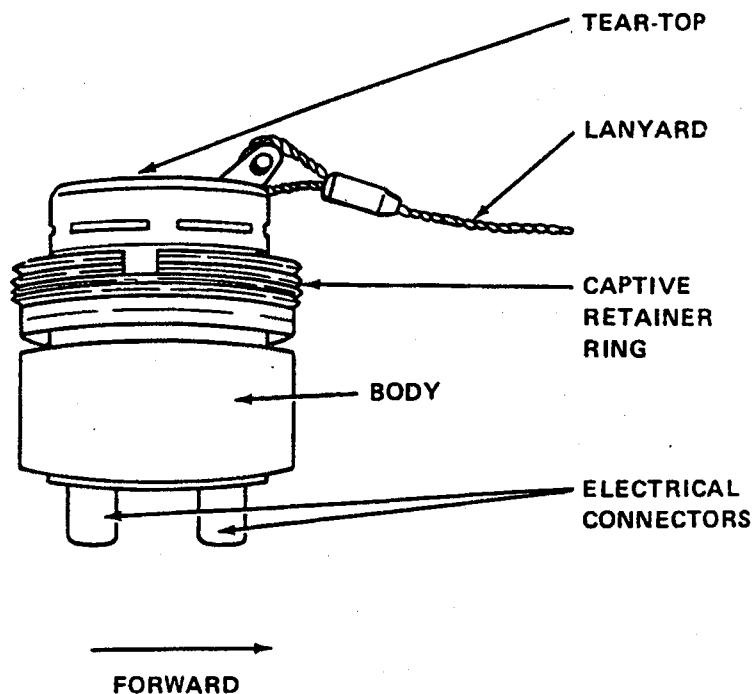
NEW PAGE.

LAST UPDATE: 01/01/87

MIL-HDBK-146
NOTICE 2

FUZE: FZU-35/B
Bomb Fuze Initiator

ILLUSTRATION:



- OVERALL SIZE -

LG: 2.81 in (71.5 mm)
XSECT: 1.87 in (47.5 mm)

- INTRUSION -

DP: 1.864 in (47.3 mm)
DIA: 1.87 in (47.5 mm)

WT: 0.5 lb (227 g)

THD: 2.0-12UN-2B

THD DP: 0.31 in (8.0 mm)

IDENTIFICATION

AGENCY: Eglin AFB, AD/YN
CONTACT: Smith, E
PHONE: DSN 872-5988
STATUS: Terminated
USER: AF
ASSY DWG:
PARTS LIST:
SPEC:
PUB:

NATIONAL STOCK NO:

DODIC:
PRIOR MODEL NO: None
SIMILAR TO: FZU-32B/B

REPLACES: Nothing
REPLACED BY:

GENERAL

WEAPON: Laser-guided bomb (LGB)

AMMUNITION:

With FMU-124A/B Fuze in
laser-guided bombs

LOCATION: Side (charging) well

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP: Free fall

FLIGHT TIME:

SAFETY STD: NA

SETTERS: NA

NEW PAGE.

FUZE: FZU-35/B
Bomb Fuze Initiator

MIL-HDEK-146
NOTICE2

LAST UPDATE: 01/01/87

ARMING DATA

FIRST SAFETY:

Lanyard

SECOND SAFETY:

260 KIAS rotational threshold
(LGB configuration)

OTHER SAFETY:

None

SAFE/ARM INDICATION:

Safe if tear-top in place

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: None

LEAD: None

BOOSTER: None

OTHER: None

FUNCTIONING DATA

MODES: NA

TYPE:

CHARACTERISTICS:

POWER SUPPLY:

FZU-35/B is a power supply for
FMU-124A/B Bomb Impact Fuze in
LGB Weapon (Navy).

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO: NA

US HCSDS: NA

UN CL/DIV SCG:

US DOT SHIP CL: NA

NET EXPL WT: None

NET PROP WT: None

STORAGE TEMP:

REMARKS/DESCRIPTION:

The FZU-35/B Bomb Fuze Initiator provides electrical power to the FMU-124A/B Guided Bomb Fuze. The Initiator is activated at bomb release by a lanyard which rips off a tear-top section, allowing an airscoop to extend and direct air flow through a turbine-driven generator. Magnetic attraction between the rotor and stator provides a velocity threshold preventing the generator from turning until air flow corresponding to a speed of 260 KIAS is reached. Generator output is approximately 50 Vac. Power from the Initiator is sufficient to operate fuzes in the bomb nose and tail. A special cable, replacing the standard M70 series fuze control cable, is required between the initiator and each fuze. Intrusion depth listed above includes a 0.264 in (6.7 mm) counterbore in the bomb strongback. Thread dimensions are for the captive retainer ring.

NEW PAGE.

LAST UPDATE: 03/06/90

MIL-HDBK-146
NOTICE2

FUZE: MK 175 Mod 0
Signal Hydrostatic Fuze

ILLUSTRATION:

- OVERALL SIZE -

LG: 127 mm (5.0 in)

XSECT: 76.2 mm (3.0 in)

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY: NSWC, White Oak, Code G41

CONTACT:

PHONE:

STATUS: Obsolete

USER: Navy

ASSY DWG: 554 892

PARTS LIST: LD 169 851

SPEC: OS 5806

PUB: NAVAIR 11-1-107

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO: XS-29A

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON: Signal, Underwater Sound
(SUS)

AMMUNITION:

Mk 22 Mods 0 and 1 SUS

LOCATION: Nose

BALLISTIC LEVELS:

ROTATION: NA

SETBACK: NA

VELOCITY: NA

CREEP: NA

FLIGHT TIME:

SAFETY STD: Doesn't meet MIL-STD-1316

SETTERS:

Supersedes page 9-13 of MIL-HDBK-146.

FUZE: MK 175 Mod 0
Signal Hydrostatic Fuze

MIL-HDBK-146
NOTICE 2

LAST UPDATE: 03/06/90

ARMING DATA

FIRST SAFETY:
Pressure

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:
8.2 to 11.9 m (27 to 39 ft) depth

FUNCTIONING DATA

MODES:

TYPE: Hydrostatic

CHARACTERISTICS:

457, 610, 767, 914, 1067 & 1220 m
(1500, 2000, 2500, 3000, 3500 and
4000 ft) depth settings

TARGET:

SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

EXPLOSIVE COMPONENTS

S&A DEVICE: None

PRIMER: None

DETONATOR: Mk 43 Mod 0

LEAD: Tetryl

BOOSTER: 31.2 g tetryl

OTHER:

POWER SUPPLY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:

US HCSDS:

UN CL/DIV SCG:

US DOT SHIP CL:

NET EXPL WT:

NET PROP WT:

STORAGE TEMP:

REMARKS/DESCRIPTION:

MIL-HDBK-146
NOTICE 2

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**Data for the M1134 Demolition Kit Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 9-21 and 9-22 of MIL-HDBK 146.

9-21/9-22

MIL-HDBK-146
NOTICE 2

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**Data for the M1147 Demolition Kit Training Fuze
may be found in MIL-HDBK-145B.**

Supersedes pages 9-23 and 9-24 of MIL-HDBK 146.

9-23/9-24

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Appendix A

Field Descriptions of Fuze Data Sheet

This appendix contains descriptions for each field in the fuze database. It should be used to interpret data appearing in MIL-HDBK-145 and MIL-HDBK-146 or when preparing material for inclusion in the catalogs. A blank data sheet has been included at the end of this appendix. It may be reproduced locally and used to submit new entries for either catalog.

Some information appearing below pertains to the use of the Fuze Automated Catalog System (FACS), the PC database used to produce the catalogs and which may be used at selected DoD facilities as an alternate means of accessing data. Field numbers, field names, field names used in the display and data size limitations and a brief description are included for each field. The field numbers, 1 through 108, should be used when performing string searches. Field names (shown in parentheses) are only used in system maintenance. All fields are character data except where indicated. Certain data fields are reserved for use in publication of the NATO fuze catalog, AOP-8. They are not displayed or printed when using FACS.

- FUZE MODEL NUMBER -

The model number of the fuze, that is, M, Mk, or FMU- number. If none is assigned, the next highest assembly is indicated. For example, "F/M600 Mine" would indicate an unnumbered fuze used in an M600 Mine. For purposes of indexing, the model number is broken down into a service prefix, core number, and modification.

1 (A102) **SERVICE PREFIX** - Data limit: 1 line, 4 characters.

M, Mk, FMU-, and so forth.

2 (A105) **BASIC NUMBER** - Data limit: 1 line, 4 characters.

0 thru 9999.

3 (A106) **MODIFICATION** - Data limit 1 line, 10 Characters.

Modifications A1, Mod 1, A/B, and so forth.

4 (A110) **TYPE** - Data limit: 1 line, 32 characters.

Basic type of fuze. For example, proximity, point detonating, time, and so forth.

5 (DOI) **Date of Information** - Data limit: 1 line, 8 characters. This is a date type field.

Date of latest revision to fuze information.

6 (NOTI) **Notice Change** - Data limit: 1 line, 9 characters.

Indicates if current data is issued as a notice change to the handbook.

- ILLUSTRATION -

Final art size not to exceed 5-in (H) x 7-in (W) inches. Cutaway line drawings used wherever possible.

7 (A120) **MIL-HDBK-Number** - Data limit: 1 line, 3 characters.

Indicates military handbook containing the data sheet - MIL-HDBK-145 for current fuzes; -146 for older fuzes.

8 (A130) **CHAPTER** - Data limit: 1 line, 2 characters.

For MIL-HDBK-145A: 1 - Small Projectiles, 2 - Large Projectiles, 3 - Submunitions, 4 - Bombs and Dispensers, 5 - Rockets, 6 - Missiles, 7 - Mines and Demolition Devices, 8 - Hand Grenades and Smoke Pots, 9 - Miscellaneous, and 10 - Tools. For MIL-HDBK-146: 1 - Projectiles, 2 - Bombs, 3 - Submunitions, 4 - Mines,

Supersedes page A-1 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

5 - Rockets, 6 - Missiles, 7 - Small Caliber (40 mm or less), 8 - Grenades, 9 - Miscellaneous, and 10 - fuzes with scant information.

10 (PAGE1) Face page - Data limit: 1 line, 4 characters.

Face page number of data sheet. **11 (PAGE2) Back page** - Data limit: 1 line, 4 characters.

Back page number of data sheet.

- IDENTIFICATION -

12 (B200) AGENCY - Data limit: 1 line 29 characters.

Name and office code of cognizant agency (not necessarily developer).

14 (B210) CONTACT - Data limit: 1 line, 28 characters.

Last name, and first initial of cognizant engineer.

15 (B212) AUTOVON - Data limit: 1 line, 28 characters.

AUTOVON phone number of cognizant engineer.

16 (B220) STATUS - Data limit: 1 line, 29 characters.

Development - fuze is in design, engineering development, or testing phase.

Development complete - all development and testing has been completed. The fuze may have been standardized or released to production but has never been procured.

Procurement Standard - fuze is being procured or is in stock as standard issue. There are no immediate plans to supercede or restrict future production.

Obsolescent - fuze is safe, reasonably reliable, and authorized for use, but it is unlikely it will ever be procured again. Obsolescent fuzes are normally issued in lieu of standard fuzes until remaining stock is consumed. Sometimes use may be restricted to practice or training.

Obsolete - fuze is unsafe, unreliable, or technically outmoded. Any remaining stock is in process of disposal.

Terminated - development or procurement was stopped before the fuze went into service.

Beginning with, Revision 1, for each handbook, fuzes determined to be in development, having completed development, procurement standard, or obsolescent will be contained in MIL-HDBK-145. Obsolete and terminated fuzes constitute MIL-HDBK-146.

17 (B230) USER - Data limit: 1 line, 31 characters.

Using Services (Army, Air Force, Marine Corps, Navy)

18 (B240) ASSY DWG - Data limit: 1 line, 27 characters.

Top level assembly drawing number.

19 (B250) PARTS LIST - Data limit: 1 line, 25 characters.

Number of parts list.

20 (B260) SPEC - Data limit: 1 line, 31 characters.

Top level procurement specification number.

21 (B265A), 22 (B265B) PUB - Data limit: 2 lines, 32 characters/line.

Reference to any technical manual or report having further information.

23 (B270) NATIONAL STOCK NO. (NSN) - Data limit: 1 line, 35 characters.

A 13-digit number consisting of the four-digit Federal Supply Class (FSC) and the nine-digit National Item Identification Number (NIIN). The NIIN, in turn, consists of the two-digit NATO code and seven nonsignificant digits. For ammunition

Supersedes page A-2 of MIL-HDBK-146.

and explosives (FSC 13XX), the last seven digits identify the specific packaging for a given item. A specific item may have several NSNs assigned. The most significant stock number is listed under this element on each data sheet. Any other important stock numbers are given in the Remarks/Description element. FSCs commonly assigned to fuzes contained in this catalog are as follows, 1305, 1310, 1315, and 1320 - small caliber, 1325 - bombs, 1330 - grenades, 1340 - rockets, 1345 - mines, 1365 - chemical, smoke pot, & pyrotechnics, 1375 - demolition materials; and 1390 - projectiles. NATO codes used for US fuzes are 00 and 01.

24 (B275) DODIC - Data limit: 1 line, 30 characters.

DoD Identification Code. A four-position code consisting of one- or two-position alpha followed by numerics. Also called Navy Ammunition Logistics Code (NALC) in the Navy and Locally Assigned Reporting Code (LARC) in the Air Force. The DoD Ammunition Codes (DODAC) may be encountered in some fuze data. These are eight-digit codes consisting of the first four digits of the NSN, known as the Federal Supply Class (FSC) (see also element 270 explanation) plus the DODIC.

25 (B280) PRIOR MODEL - Data limit: 1 line, 24 characters.

Previously used model number for the same fuze such as experimental numbers and common description names. Generally, previous modifications of the same model number are not indicated.

26 (B285A), 27 (B285B) SIMILAR TO - Data limit: 2 lines, 25 characters.

All model numbers of similar fuzes such as derivations or fuze families. Specific differences may be described in element 901. List obsolete items in element 290. Does not include modifications of the same basic model.

28 (B290) REPLACES - Data limit: 1 line, 27 characters.

Model numbers of fuzes which will not be produced as a result of this fuze's introduction. Includes modification of the same basic model.

29 (B295) REPLACED BY - Data limit: 1 line, 19 characters.

Model number of item replacing any obsolescent, obsolete, or terminated item.

- GENERAL -

30 (C300A), 31 (C300B), 32 (C300C) WEAPON - Data limit: 3 lines, 27 characters/line.

General weapon category, for example, general-purpose bomb, air-surface missile, 5-inch rocket. For projectiles, specify caliber and model; for example, 5-in/38 Mk 12 Gun.

33 (C310A), 34 (C310B), 35 (C310C) AMMUNITION - Data limit: 3 lines, 32 characters/line.

Specific nomenclature of the round; for example, Mk 49 Projectile, Mk 80 Series Bombs, AGM-122 Side ARM Missile. Application or use may be specified; for example, HE (high explosive), inert, practice, and so forth. For fuze system components or tools, specify the fuze model number.

36 (C320) LOCATION - Data limit: 1 line, 27 characters/line.

Location of the fuze on the weapon assembly (nose, base, mid-body, etc.).

- BALLISTIC LEVELS -

37 (C331) ROTATION - Data limit: 1 line, 25 characters.

Maximum rotation (in rps) the fuze can withstand and perform properly.

38 (C332) SETBACK - Data limit: 1 line, 25 characters.

Maximum acceleration (in g's) the fuze can withstand and perform properly.

39 (C333A), 40 (C333B), 41 (C333C) VELOCITY - Data limit: 3 lines, 25 characters/line.

Supersedes page A-3 of MIL-HDBK-146.

MIL-HDBK-146
NOTICE 2

Maximum velocity the fuze can withstand and perform properly. Duration is specified where it is known.

42 (C334) CREEP - Data limit: 1 line, 28 characters.

Maximum deceleration (during flight) that the fuze can withstand and perform properly.

43 (C335) FLIGHT TIME - Data limit 1 line, 24 characters.

Maximum possible time of flight. Determined by battery operating time or clock movement running time.

45 (C361) SAFETY STD - Data limit: 1 line, 25 characters.

Applicable design safety standard; for example, MIL-STD-1316.

46 (C370) SETTERS - Data limit: 1 line, 28 characters.

Model number of tool or device used to preset fuze arming or functioning characteristics.

- ARMING DATA -

47 (D401A), 48 (D401B), 49 (D401C) FIRST SAFETY - Data limit: 3 lines, 35 characters/line.

First safety feature and no-arm and all-arm levels. Examples are arming wire, spin, setback, creep, and so forth.

50 (D410A), 51 (D410B), 52 (D410C) SECOND SAFETY - Data limit: 3 lines, 35 characters/line.

Second safety feature and no-arm and all-arm levels.

53 (D420A), 54 (D420B), 55 (D420C) OTHER SAFETY - Data limit: 3 lines, 35 characters/line.

Appropriate information as given for first and second safeties.

56 (D426A), 57 (D426B) SAFE SEPARATION - Data limit: 2 lines, 35 characters/line.

Initial period of munition travel during which the fuze is safe; expressed in time, distance, or turns to arm as appropriate.

58 (D430A), 59 (D430B) SAFE/ARM INDICATION - Data limit: 2 lines, 35 characters/line.

External indication of the unarmed condition when the fuze is installed into the carrier.

- FUNCTIONING DATA -

60 (E500) MODES - Data limit: 1 line, 30 characters.

PI - point initiating; PD - point detonating; BD - base detonating; SD - self-destruct; PROX - proximity; SQ - superquick; delay after impact; time; other.

61 (E510) TYPE - Data limit: 1 line, 31 characters.

Design type such as electrical, mechanical, chemical, pyrotechnic or other.

62 (E520A), 63 (E520B), 64 (E520C), 65 (E520D) CHARACTERISTICS - Data limit: 4 lines, 35 characters/line.

Pertinent unclassified performance data such as setting range and accuracy for time fuzes, time for delay fuzes, etc.

66 (E530) TARGET - Data limit: 1 line, 29 characters.

Class of targets. For example, air, ground, light material, etc.

67 (E540A), 68 (E540B), 69 (E540C) SENSITIVITY - Data limit: 3 lines, 35 characters/line.

Test criteria for each mode, other than proximity fuzes, for evaluating proper fuze initiation such as materials, thickness, impact obliquity and velocity. All data should be specified in metric units.

70 (E550) FUNCTION TEMP - Data limit: 1 line, 35 characters.

Range of temperatures where fuze is expected to function. Expressed in degrees C.

71 (E560) MODE ON DELIVERY - Data limit: 1 line, 35 characters.

Functioning status of the fuze as delivered by the manufacturer.

PHYSICAL DATA

72 (E600) WEIGHT - Data limit: 1 line, 20 characters.

Weight in pounds (lb). Equivalent grams (g) in parentheses.

- OVERALL SIZE -

74 (E610) LG - Data limit: 1 line, 20 characters.

Maximum length in inches (in). Equivalent millimeters (mm) in parentheses.

76 (E620) XSECT - Data limit: 1 line, 20 characters.

Maximum cross-section (e.g., diameter) in inches (in). Equivalent millimeters (mm) in parentheses.

- INTRUSION -

78 (E630) DP - Data limit: 1 line, 20 characters.

Depth or distance the fuze extends into the weapon in inches (in) and millimeters (mm) in parentheses.

80 (E632) DIA - Data limit: 1 line, 20 characters.

Maximum diameter of fuze intrusion into the weapon, including thread, in inches (in) and millimeters (mm) in parentheses.

82 (E640) THD - Data limit: 1 line, 24 characters.

The basic thread size in conventional form (English units). Threads are male unless marked female and right-hand (RH) unless marked left-hand (LH).

83 (E645) THD DP - Data limit: 1 line, 20 characters.

Maximum depth or length of thread in inches (in). Equivalent millimeters (mm) in parentheses.

85 (F700A), 86 (F700B), 87 (F700C) POWER SUPPLY - Data limit: 3 lines, 35 characters/line.

Number, name designation, and type. Assembly drawing and specification numbers included where applicable.

- EXPLOSIVE COMPONENTS -

88 (G800A), 89 (G800B) S & A DEVICE - Data limit: 2 lines, 25 characters/line.

Nomenclature and type of safety and arming device.

90 (G810) PRIMER - Data limit: 1 line, 29 characters.

Number and nomenclature or materials and weights.

91 (G820A), 92 (G820B) DETONATOR - Data limit: 2 lines, 26 characters/line.

Same type of information as 810.

Supersedes page A-5 of MIL-HDBK-146.

MIL-HDBK-146
NOTICE 2

93 (G840A), 94 (G840B) LEAD - Data limit: 2 lines, 31 characters/line.

Same type of information as 810.

95 (G850A), 96 (G850B), 97 (G850C) BOOSTER - Data limit: 3 lines, 28 characters/line.

Same type of information as 810.

98 (G860A), 99 (G860B), 100 (G860C) OTHER - Data limit: 3 lines, 30 characters/line.

Items in the explosive train not listed above or other explosive components such as batter primers, rotor actuators, bellows, and so forth.

STORAGE AND TRANSPORTATION

SAFETY DATA

101 (G870) UN SER NO - Data limit: 1 line, 25 characters.

The United Nations Serial Number is a four-digit, internationally-recognized identifier which indicates specific hazardous materials; the appropriate hazardous classification, division, and compatibility group; and any special packing requirements.

For detailed information, see United Nations Economic and Social Council - Transport of Dangerous Goods, 2nd revised edition, published in 1982 by International Regulations Publishing and Distributing Organization, P.O. Box 60105, Chicago, IL 60660. For descriptions of UN Class/Division and Storage Compatibility Group (SCG), see element number 874, below. Numbers commonly assigned to fuzes include the following:

UN Serial	Description Class/Division	SCG
0042	Booster without detonator	1.1 D
0048	Demolition charge	1.1 D
0106	Detonating fuzes	1.1 B
0107	Detonating fuzes	1.2 B
0247	Incendiary ammunition, liquid or gel, with burster, expelling or propelling charge	1.3 J
0257	Detonating fuzes	1.4 B
0349	Explosive articles	1.4 S
0408	Detonating fuzes with protective features	1.1 D
0409	Detonating fuzes with protective features	1.2 D
0410	Detonating fuzes with protective features	1.4 D

102 (G872) HCSDS NO - Data limit: 1 line, 24 characters.

US Hazardous Component Safety Data Statement Number. A summary of sensitivity, hazards, and shipping/storage classification information. These data are maintained for each fuze on AMCCOM Form 47-R by the US Army.

103 (G874) UN CL/DIV SCG - Data limit: 1 line, 22 characters.

United Nations Organization Hazardous Class/Division and Storage and Compatibility Group.

Hazard Class/Division - a three-position code dividing and subdividing hazardous material into classes and divisions based on the character and predominance of the associated hazards and of the potential for causing personnel casualties or property

Supersedes page A-6 of MIL-HDBK-146.

NOTICE 2.

damage. All fuzes are in Class 1, Explosives. There are three applicable divisions:

- 1.1 - Explosives with an instantaneous explosion or mass detonation risk.
- 1.2 - Explosives that do not explode en masse and for which the principal hazards are fragment and blast.
- 1.4 - Explosives that present a fire hazard with no blast hazard and virtually no fragmentation or toxic hazard.

Storage/Compatibility Group (SCG) - Fuzes come under one of three groups:

B - Detonators and similar initiating devices. Items containing initiating explosives that are designed to initiate or continue the functioning of an explosive train.

D - Black powder, high explosives (HE) and ammunition containing HE without its own means of initiation and without propelling charge. Ammunition and explosives that can be expected to explode or detonate when any given item or component thereof is initiated.

S - Ammunition presenting no significant hazard. Ammunition so designed or packed that when in storage, all hazardous explosive effects are confined and self-contained within the item or package. An incident may destroy all items in a single pack, but must not be communicated to other packs so all are destroyed.

Criteria for assignment of the proper Class/Division and Storage Compatibility Group to each fuze are given in United Nations Economic and Social Council - Transport of Dangerous Goods, referenced in element 870, above and Department of Defense Explosive Hazard Classification Procedures, Army TB 700-2, Navy NAVSEAINST 8020.8, Air Force TO 11A-1-47, or Defense Logistics Agency DLAR 8220.1.

104 (G878) US DOT SHIP CL - Data limit: 1 line, 21 characters.

The US Department of Transportation has classified hazardous material which poses an unreasonable risk to health, safety, and property when transported in commerce. All US fuzes are either Class A or C explosive. Class A are all detonating explosives of maximum hazard. Class C contain Class A or Class B explosives, or both, as components but in restricted quantities. They present minimum hazard. The DOT Class determines package marking and any air or sea restrictions on transportation.

105 (G882) NET EXPL WT - Data limit: 1 line, 24 characters.

Net explosive weight of components such as primers, detonators, and leads. In some cases, fuzes may be shipped with or without boosters. In these cases, multiple national stock numbers will be issued and the DOT shipping class and marking may be affected.

106 (G884) NET PROP WT - Data limit: 1 line, 24 characters.

Net weight of propellant charges used in the fuze. Propellants are distinguished from explosives in that they can be made to burn at reproducible, controllable, and predetermined rates.

107 (G888A), 108 (G888B) STORAGE TEMP - Data limit: 2 lines, 23 characters/line.

Range of storage temperatures expressed in degrees C, and, when applicable, the maximum time the fuze may endure these temperatures.

109 (H901) REMARKS/DESCRIPTION - Data limit: 15 lines, 84 characters/line. This is a memo field.

Brief, operational description (safe to arm and functioning) of the fuze, including variations in settings and similarities with other fuzes.

LAST UPDATE:

ILLUSTRATION:

- OVERALL SIZE -

LG:

XSECT:

- INTRUSION -

DP:

DIA:

WT:

THD:

THD DP:

IDENTIFICATION

AGENCY:

CONTACT:

PHONE:

STATUS:

USER:

ASSY DWG:

PARTS LIST:

SPEC:

PUB:

NATIONAL STOCK NO:

DODIC:

PRIOR MODEL NO:

SIMILAR TO:

REPLACES:

REPLACED BY:

GENERAL

WEAPON:

AMMUNITION:

LOCATION:

BALLISTIC LEVELS:

ROTATION:

SETBACK:

VELOCITY:

CREEP:

FLIGHT TIME:

SAFETY STD:

SETTERS:

MIL-HDBK-146
NOTICE 2

FUZE:
See M403

LAST UPDATE:

ARMING DATA
FIRST SAFETY:

SECOND SAFETY:

OTHER SAFETY:

SAFE/ARM INDICATION:

ARMING TIME OR DISTANCE:

EXPLOSIVE COMPONENTS

S&A DEVICE:

PRIMER:

DETONATOR:

LEAD:

BOOSTER:

OTHER:

FUNCTIONING DATA
MODES:
TYPE:
CHARACTERISTICS:

POWER SUPPLY:

TARGET:
SENSITIVITY:

FUNCTION TEMP:

MODE ON DELIVERY:

**STORAGE AND
TRANSPORTATION
SAFETY DATA**

UN SER NO:
US HCSDS:
UN CL/DIV SCG:
US DOT SHIP CL:
NET EXPL WT:
NET PROP WT:
STORAGE TEMP:

REMARKS/DESCRIPTION:

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MIL-HDBK-146
NOTICE 2

INDEX					
MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.	
ADAM	See F/Mine F/M692/731 PROJ		-	10/01/82	
AMRAAM	See FZU-49/B S-A		-	10/01/82	
APAM	See FMU-88/B Fuze		-	10/01/82	
ATACMS	Electronic S&A Device	145	6-1	12/10/91	
ATACMS	Safe Arm Fuze Assembly	145	6-3	12/10/91	
Bomine	PI and Proximity Fuze	146	4-59	10/01/82	
CGLP	See XM740 Fuze		-	10/01/82	
Chapparral	See M145 S-A		-	10/01/82	
Chapparral	See M817 TDD		-	10/01/82	
Copperhead	See XM740 Fuze		-	10/01/82	
DADT	Bomblet AD SD Fuze	146	3-33	10/01/82	
Dragon	See M118 S-A		-	10/01/82	
FAE	Bomb Proximity Fuze	146	2-321	10/01/82	
FAE	See FMU-83/B Fuze		-	10/01/82	
FAE	See FSU-9A/B, -13/B S-A		-	10/01/82	
Falcon	See T1407 Fuze		-	10/01/82	
GEMSS	See F/XM74,75 Mines		-	10/01/82	
Gator	See F/BLU-91, -92 Mines		-	10/01/82	
HARM	See FMU-111/B, -129/B Fuzes		-	10/01/82	
HARM	See Mk 29 Mod 0 AFD		-	10/01/82	
Harpoon	See FMU-109/B, -141/B Fuzes		-	10/01/82	
Hawk	See M100 S-A		-	10/01/82	
Hawk	See XM821 TDD		-	10/01/82	
Hellfire	See XM820 Fuze		-	10/01/82	
LAW	See M412E1 Fuze		-	10/01/82	
Lance	See M811, M819E1 Fuzes		-	10/01/82	
MARS	Timer	146	5-255	10/01/82	
MINIRAD	Proximity Fuze	146	6-87	10/01/82	
MLRS	See M445, M447 Fuzes		-	10/01/82	
MOPMS	See XM131,132 MINE SYS		-	10/01/82	
Maverick	See FMU-133/B, -135/B Fuzes		-	10/01/82	
ORATMS	See F/XM84 Mine		-	10/01/82	
Opener	ET Opener	146	2-323	10/01/82	
Patriot	See XM143 S-A		-	10/01/82	
Patriot	See XM818E1 Fuze		-	10/01/82	
RAAMS	See M718/741 PROJ		-	10/01/82	
RAM	See Mk 13 Mod 0 S-A		-	10/01/82	
RAM	See Mk 22 FCD		-	10/01/82	
Redeye	See M814 Fuze		-	10/01/82	
SHAWL (F)	PI BD Fuze	146	5-257-	01/15/93	
SHAWL (R)	BD Fuze	146	5-259-	01/15/93	
SIR	See Mk 139 Fuze		-	10/01/82	
SLUF AE	See XM750 Fuze		-	10/01/82	
SMAW	See Mk 420 Mod 0 BD Fuze		-	04/19/90	
Shillelagh	See M805 and M813 Fuzes		-	10/01/82	
Shrike	See Mk 330 Mod 2 Fuze		-	10/01/82	
Side ARM	See Mk 13 Mod 0 S-A		-	10/01/82	
Sidewinder	See MK 13 Mod 0 S-A		-	10/01/82	
Sparrow	See Mk 33-0, Mk 35-0 S-A		-	10/01/82	
Std ARM	See Mk 29 Mod 0 AFD		-	10/01/82	
Std ARM	See Mk 34-1 S-A		-	10/01/82	
Std Miss	See Mk 17-0, 51-0, & 76-0 S-A		-	10/01/82	

Supersedes page I-1 of MIL-HDBK-146.

I-1

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
Std Miss	See Mk 30 Mod 0 AFD		-	10/01/82
Std Miss	See Mk 5-0 FCD		-	10/01/82
Stinger	See M934 Fuze		-	10/01/82
Storm	See F/XM84 Mine		-	10/01/82
TOW	See M114 S-A		-	10/01/82
TOW	See M812 Fuze		-	10/01/82
Terrier	See Mk 1 Mod 1 AFD		-	10/01/82
Tomahawk	See FMU-138/B Fuze		-	10/01/82
Viper	See XM754 Fuze		-	10/01/82
Walleye	See FMU-94/B, -125/B Fuzes		-	10/01/82
Walleye	See Mk 328 Mod 0 Fuze		-	10/01/82
M1	Hand Grenade Fuze	146	8-2A	04/01/87
M1 (Delay)	Demolition Firing Device	145	7-1	01/01/87
M1 (Press.)	Demolition Firing Device	145	7-3	01/01/87
M1 (Pull)	Demolition Firing Device	145	7-5	01/01/87
M1, A1	AT Mine Fuze	146	10-3	04/01/87
T1	AT Mine Fuze	146	10-3	04/01/87
T1	Bomb Fuze	146	10-3	04/01/87
T1	See M35 PD Fuze		-	10/01/82
T1	See T1E4 Rocket PD Fuze		-	/ /
T1E2	See T1E4 Rocket PD Fuze		-	04/01/87
T1E4	Rocket PD Fuze	146	5-3	04/01/87
EX 1 Mod 0	See MK 1 Mod 0		-	10/01/82
MK 1	Combination Fuze	146	10-3	04/01/87
MK 1	PD Fuze	146	10-3	04/01/87
MK 1 Mod 0	Safety-Arming Device	146	6-2A	12/19/92
MK 1 Mod 0	Submunition Impact Fuze	145	3-1	02/20/92
MK 1 Mod 1	Arming-Firing Device	145	6-5	01/01/87
MK 1 Mod 1	Demolition Firing Device	145	7-7	01/01/87
MK 1 Mods 0,1	BD Fuze	146	10-3	04/01/87
MK 1 Mods 0-4	Base Ignition Fuze	146	10-3	04/01/87
F/MK1-0,1 Sys	Base Fuze	145	3-3	02/20/92
F/MK1-0,1 Sys	Impact Sensing Element	145	3-5	02/20/92
HIR 1	See MK 135		-	10/01/82
LUU-1/B Flare	Target Marker Fuze	145	9-1	01/01/87
PIR-1	See MK 145 Mod 1		-	10/01/82
M2	Bomb Impact Fuze	146	2-3	04/01/87
M2	MT Fuze	146	10-3	04/01/87
M2	PD Fuze	146	10-3	04/01/87
M2A1	APERS Mine Fuze	146	10-3	04/01/87
T2	AT Mine Fuze	146	10-3	04/01/87
T2	Bomb Fuze	146	10-3	04/01/87
T2	Rocket PD Fuze	146	10-3	04/01/87
T2	See M39 PD Fuze		-	10/01/82
T2E1	See M204A2 Hand Gren Fuze		-	10/01/82
AM-2	Multipurpose Fuze	145	1-1	02/21/90
EX 2	See FMU-74/B		-	10/01/82
MK 2	Spanner Wrench	145	10-1	03/06/92
MK 2 Mod 0	BD Fuze	146	10-3	04/01/87
MK 2 Mod 0	Safety-Arming Device	146	6-3	04/01/87
MK 2 Mod 1	BD Fuze	146	10-3	04/01/87
MK 2 Mod 2	BD Fuze	146	10-3	04/01/87

Supersedes page I-2 of MIL-HDBK-146.

MIL-HDBK-146
NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
MK 2 Mod 3	BD Fuze	146	10-3	04/01/87
MK 2 Mod 9	Base Ignition Fuze	146	1-3	01/15/93
AIR-2	See MK 137 Mod 2	-	-	10/01/82
F/SM2 Missile	Fuze Contact Device	145	6-7	01/01/87
LUU-2B/B Flare	Timer	145	9-3	01/01/87
NIR-2	See MK 144	-	-	10/01/82
PIR-2	See MK 147 Mod 2	-	-	10/01/82
M3	Demolition Firing Device	145	7-9	01/01/87
M3	PD Fuze	146	10-3	04/01/87
M3A1	APERS Mine Fuze	146	10-3	04/01/87
T3	PD Fuze	146	10-3	04/01/87
T3	Rocket PD Fuze	146	5-4A	01/15/93
T3	See XM26	-	-	10/01/82
T3E1	See M12 AT Mine Fuze	-	-	10/01/82
T3E5	See AN-M103A1 Bomb Fuze	-	-	10/01/82
EX 3 Mod 2	See MK 5 Mod 2	-	-	10/01/82
MK 3	PD Fuze	146	10-3	04/01/87
MK 3	Spanner Wrench	145	10-3	03/06/92
MK 3 Mod 0	BD Fuze	146	10-3	04/01/87
MK 3 Mod 0	Base Ignition Fuze	146	10-3	04/01/87
MK 3 Mod 0	Contact Sensor	145	6-9	01/01/87
MK 3 Mod 2	BD Fuze	146	10-3	04/01/87
MK 3 Mod 3	Safety-Arming Device	146	6-4A	12/19/92
MK 3 Mod 5	Safety-Arming Device	145	6-11	01/01/87
MK 3 Mods 0-2	BD Fuze	146	1-5	04/01/87
MK 3A2	Time Fuze	146	10-3	04/01/87
AIR-3	Rocket PD Fuze	146	5-5	04/01/87
DDR-3A	See MK 162 Mod 0	-	-	10/01/82
FMU-3/B	Rocket PD SD Fuze	146	10-3	04/01/87
HIR-3	See MK 140	-	-	10/01/82
PIR-3	See MK 159 Mod 1	-	-	10/01/82
M4	AT Mine Fuze	146	10-3	10/01/82
M4A2	Rocket PD Fuze	146	5-7	10/01/82
T4	PD Fuze	146	10-3	10/01/82
T4	Rocket Practice Fuze	146	10-3	10/01/82
T4E2	See AN-M100A2, M101A2, M102A2	-	-	10/01/82
MK 4 Mod 0	Fuze Triggering Device	145	6-13	01/01/87
MK 4 Mod 1	Safety-Arming Device	146	6-5	10/01/82
DDR-4A	See MK 166 Mod 2	-	-	10/01/82
LUU-4/B Flare	Flare Fuze	145	9-5	01/01/87
WDU-4A/A W/H	Rocket Airburst Fuze	145	5-1	05/24/90
M5	AT Mine Fuze	146	10-3	10/01/82
M5	Demolition Firing Device	145	7-11	01/01/87
M5	Hand Grenade Fuze	146	10-3	10/01/82
M5	Rocket BD Fuze	146	10-4	10/01/82
M5	Time & SQ Fuze	146	1-7	10/01/82
T5	BD Fuze	146	10-4	10/01/82
T5	Hand Grenade Fuze	146	10-4	10/01/82
MK 5 Mod 0	Fuze Contact Sensor	145	6-15	01/01/87
MK 5 Mod 2	Safety-Arming Device	146	6-7	10/01/82
AIR-5	See MK 147 Mod 1	-	-	10/01/82
M6	Rocket Dummy Fuze	146	10-4	10/01/82

Supersedes page I-3 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
M6A1	Mine Combination Fuze	146	4-3	12/10/91
M6A3	Hand Grenade Fuze	146	8-2C	01/01/87
M6A4D	Hand Grenade Fuze	146	8-3	10/01/82
T6	PD Fuze	146	10-4	10/01/82
T6	See M38		-	10/01/82
MK 6 Mod 0	Demolition Firing Device	145	7-13	01/01/87
MK 6 Mod 1	Safety-Arming Device	146	6-9	10/01/82
M7	Hand Grenade Fuze	146	10-4	10/01/82
M7A1	Mine Combination Fuze	146	4-5	12/10/91
T7	BD Fuze	146	10-4	10/01/82
MK 7 Mod 0	PD Fuze	146	1-9	09/24/90
MK 7 Mod 1	PD Fuze	146	1-10A	09/24/90
MK 7 Mod 1	Safety-Arming Device	146	6-11	10/01/82
XP-7A	BD SD Fuze	146	10-4	10/01/82
AIR-7	See MK 148		-	10/01/82
BLU-7A/B	Bomblet, Fuze for	146	3-3	10/01/82
FMU-7B/B, C/B	Bomb Impact Fuze	145	4-1	12/10/91
M8	PD Fuze	146	1-11	12/10/91
M8	Rifle Grenade Fuze	146	10-4	10/01/82
T8	Rocket PD Fuze	146	10-4	10/01/82
T8	See M22, M68		-	10/01/82
MK 8 Mod 0-6	BD Fuze	146	1-13	10/01/82
XR-8	See MK 179 Mod 0		-	10/01/82
AIR-8	See MK 149 Mod 1		-	10/01/82
FMU-8/B	See FMU-30A/B		-	10/01/82
PIR-8	Rocket BD Fuze	146	5-9	10/01/82
E9R15	See M142A1		-	10/01/82
E9R22	See M157		-	10/01/82
E9R23,33	See M142A1		-	10/01/82
M9	AP Mine Fuze	146	10-4	10/01/82
M9	PD Fuze	146	1-15	12/10/91
M9	Rifle Grenade Fuze	146	10-4	10/01/82
T9	Bomb Fuze	146	10-4	10/01/82
T9E5	See M45		-	10/01/82
MK 9 Mod 0-3	BD Fuze	146	1-17	10/01/82
AIR-9-1	Rocket PD Fuze	146	5-11	10/01/82
FSU-9A/B	Safety-Arming Device	145	4-3	01/01/87
PIR-9	Rocket BD Fuze	146	5-13	10/01/82
M10, A2, A3	AP Practice Mine Fuze	146	4-7	12/12/91
M10A1	AP Practice Mine Fuze	145	7-15	12/12/91
M10A3	Hand Grenade Fuze	146	8-4A	12/12/91
T10	PD Fuze	146	10-4	10/01/82
T10	See M107		-	10/01/82
EX 10 Mod 1	See MK 6 Mod 1		-	10/01/82
MK 10	BD Fuze	146	1-19	10/01/82
MK 10 Mod 0	Safety-Arming Device	146	6-13	10/01/82
DSU-10/B	Target Detecting Device	145	6-17	01/01/87
FSU-10/A	GM Fuze	145	6-19	05/17/90
T11	MT SQ Fuze	146	10-5	10/01/82
T11	See M104		-	10/01/82
M12	AT Mine Practice Fuze	146	4-9	10/01/82
M12	Safety-Arming Device	145	6-21	01/01/87

Supersedes page I-4 of MIL-HDBK-146.

I-4

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
T12	See M43A4		-	10/01/82
T12E2	See M6A1		-	10/01/82
MK 12 Mod 0	PD Fuze	146	7-3	09/24/90
MK 12 Mod 0	Safety-Arming Device	146	6-15	10/01/82
MK 12 Mod 1	PD Fuze	146	7-4A	09/24/90
MK 12 Mod 2	PD Fuze	146	7-4C	09/24/90
MK 12 Mod 3	PD Fuze	146	7-4E	09/24/90
AIR-12-1	Rocket PD Fuze	146	5-15	10/01/82
T13	Time Fuze	146	10-5	10/01/82
T13E2	See M7A1		-	10/01/82
MK 13 Mod 0	Fire Bomb Initiator (Impact)	145	4-5	02/20/92
MK 13 Mod 0	Safety-Arming Device	146	6-16A	02/21/90
MK 13 Mod 0-7	BD Fuze	146	1-21	10/01/82
MK 13 Mod 2	Safety-Arming Device	145	6-23	01/01/87
FSU-13/B	Safety-Arming Device	145	4-7	01/01/87
M14	Fuze Setter	145	10-5	01/01/87
T14	See M54, M10A3		-	10/01/82
EX 14 Mod 1	See MK 6 Mod 1		-	10/01/82
F/M14 AP Mine	AP Mine, Fuze for	145	7-17	01/01/87
MK 14 Mod 0	Safety-Arming Device	146	6-17	10/01/82
XP-14A	See MK 29 Mod 5		-	10/01/82
PIR-14	Rocket BD Fuze	146	5-17	10/01/82
T15	MT Fuze	146	10-5	10/01/82
MK 15 Mod 0	Rear Fitting Safety Device	145	2-1	12/12/91
XP-15A	See MK 30 Mod 5		-	10/01/82
DSU-15A/B	Target Detecting Device	145	6-25	01/01/87
F/MK15 Mod 1 SUS	Arming and Firing Mechanism	146	9-2A	02/21/90
T16	Rocket PD Fuze	146	10-5	10/01/82
T16	See M48, M205		-	10/01/82
XP-16A	See MK 30 Mod 5		-	10/01/82
T17	Rocket BD Fuze	146	10-5	10/01/82
T17	See M24, M67A3, M106, M603		-	10/01/82
MK 17 Mod 0	Safety-Arming Device	145	6-27	01/01/87
MK 17 Mod 0-13	Aux Det Fuze	146	1-25	10/01/82
XP-17A	BD Fuze	146	10-5	10/01/82
E18R1	See M2		-	10/01/82
M18	Fuze Wrench	145	10-7	12/12/91
T18	Rocket PD Fuze	146	10-5	10/01/82
T18	See M105		-	10/01/82
T18E2	See M57		-	10/01/82
EX 18 Mod 0	Arming Safety Device (ASD)	146	1-26A	11/06/92
MK 18 Mod 0	MT Fuze	146	1-27	09/25/90
MK 18 Mod 1	MT Fuze	146	1-28A	09/25/90
MK 18 Mod 2	MT Fuze	146	1-28C	09/25/90
MK 18 Mod 3	MT Fuze	146	1-28E	09/25/90
MK 18 Mod 4	MT Fuze	146	1-28G	09/25/90
MK 18 Mod 5	MT Fuze	146	1-28I	09/25/90
MK 18 Mods 0-7	Rear Fitting Safety Device	145	2-3	04/19/91
L19A3	BD Fuze	146	10-5	10/01/82
M19	Fuze Setter	146	10-5	10/01/82
T19	Rocket PD Fuze	146	10-5	10/01/82
T19	See M46		-	10/01/82

Supersedes page I-5 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
MK 19	See AN-MK 219		-	10/01/82
MK 19 Mod 0-3	BD Fuze	146	1-29	10/01/82
XP-19A	BD Fuze	146	10-5	10/01/82
DSU-19A/B	Target Detecting Device	145	6-29	01/01/87
PIR-19	See MK 163 Mod 1		-	10/01/82
M20	Bomb Proximity Sensor	145	4-9	02/20/92
M20A1	Bomb Proximity Sensor	145	4-11	02/20/92
M20A2	Booster	146	1-31	10/01/82
T20	PD Fuze	146	10-5	10/01/82
T20	Rocket PD Fuze	146	10-5	10/01/82
EX 20	See MK 75 Mod 5		-	10/01/82
MK 20	Target Detecting Device	145	6-31	01/01/87
MK 20 Mod 0-5	BD Fuze	146	1-33	10/01/82
XP-20A	BD SD Fuze	146	10-5	10/01/82
PIR-20	See MK 164		-	10/01/82
M21A4	Booster	145	2-5	12/12/91
T21	Mine Fuze	146	10-6	10/01/82
T21	See M47, M108		-	10/01/82
EX 21 Mod 0	See MK 12 Mod 0		-	10/01/82
MK 21 Mod 3	BD Fuze	145	2-7	03/06/92
PIR-21	See MK 165 Mod 0		-	10/01/82
M22	Booster	146	1-39	10/01/82
M22	Fuze Setter	146	10-6	10/01/82
T22	PD Fuze	146	10-6	10/01/82
T22	See M111A2		-	10/01/82
EX 22	See T279		-	10/01/82
MK 22	Fuze Contact Device	145	6-33	01/01/87
MK 22 Mod 0-3	MT Fuze	146	1-41	09/26/90
MK 22 Mod 4-6	MT Fuze	146	1-42A	09/26/90
PIR-22	Rocket BD Fuze	146	5-19	10/01/82
M23	Booster	146	10-6	10/01/82
M23	Fuze Setter	146	9-3	10/01/82
T23E1	See M125A1		-	10/01/82
EX 23	Proximity Fuze	146	1-43	10/01/82
EX 23 Mod 1	See MK 10 Mod 0		-	10/01/82
EX 23 Mod 1	See MK 13 Mod 0		-	10/01/82
MK 23 Mod 0	BD Fuze	146	1-45	10/01/82
DSU-23/B	Target Detecting Device	146	2-5	11/05/90
PIR-23	Rocket BD Fuze	146	5-21	10/01/82
E24R1	See M196		-	10/01/82
M24	Fuze Setter	146	10-6	10/01/82
M24B1	Booster	146	1-47	10/01/82
T24	See AN-M110A1		-	10/01/82
T24	See M87		-	10/01/82
XP-24A	PD Fuze	146	10-6	10/01/82
BLU-24/B Bomblet	Bomblet Fuze	145	3-7	01/01/87
BLU-24C/B Bmblt	Bomblet Fuze	145	3-9	01/01/87
F/MK24 Mod 4	Flare Fuze	145	9-7	01/01/87
M25	Booster	145	2-9	12/12/91
M25	Fuze Setter	145	10-9	01/01/87
T25	Bomb Fuze	146	10-6	10/01/82
T25	PD Fuze	146	10-6	10/01/82

Supersedes page I-6 of MIL-HDBK-146.

MIL-HDBK-146
NOTICE 2

INDEX				
MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
T25	Rocket BD Fuze	146	10-6	10/01/82
EX 25 Mod 0	See MK 330 Mod 0		-	10/01/82
MK 25 Mod 5	MT Fuze	146	1-51	12/12/91
XP-25A	Aux Det Fuze	146	10-6	10/01/82
ABCM25A2 CS1 HG	Hand Grenade Fuze	145	8-1	01/01/87
BLU-25/B	Bomblet, Fuze for	146	3-5	10/01/82
M26	Fuze Setter	145	10-11	01/01/87
T26	Bomb Fuze	146	10-6	10/01/82
XM26	Movement	146	6-19	10/01/82
EX 26	Proximity Fuze	146	1-53	10/01/82
F/M26 AP Mine	Land Mine, Fuze for	146	4-10A	01/01/87
MK 26 Mod 0	PD Fuze	146	7-4G	09/27/90
MK 26 Mod 1	PD Fuze	146	7-4I	10/12/90
MK 26 Mod 2	PD Fuze	146	7-4K	10/12/90
BLU-26/B	See M219E1		-	10/01/82
DSU-26/B	Target Detecting Device	145	6-35	01/01/87
FMU-26/B,A/B,B/B	Bomb Impact/Airburst Fuze	145	4-13	12/12/91
M27 (T40)	Fuze Setter	145	10-13	01/01/87
T27	Bomb Barometric Fuze	146	10-6	10/01/82
T27	See M56		-	10/01/82
MK 27 Mod 0	PD Fuze	146	7-5	10/17/90
MK 27 Mod 1	PD Fuze	145	1-3	12/12/91
FMU-27/B	Rocket Proximity Fuze	146	10-6	10/01/82
E28	Bomb Fuze	146	2-9	10/01/82
M28	Fuze Setter	146	9-7	10/01/82
T28	Rocket PD Fuze	146	10-6	10/01/82
T28	See M52A2		-	10/01/82
EX 28 Mod 0	See MK 17 Mod 0		-	10/01/82
MK 28 Mod 17	BD Fuze	145	2-11	03/06/92
DSU-28/B	Target Detecting Device	145	6-37	01/01/87
FMU-28/B)	Rocket Proximity Fuze	146	10-6	10/01/82
E29	Bomb Fuze	146	2-11	10/01/82
T29	See M53A1		-	10/01/82
T29E2	See M149		-	10/01/82
EX 29 Mod 0	See MK 28 Mod 0		-	10/01/82
MK 29 Mod 0	Arming-Firing Device	145	6-39	02/21/90
MK 29 Mod 0-2	PD Fuze	146	1-59	09/27/90
MK 29 Mod 2	Arming-Firing Device	145	6-41	02/21/90
MK 29 Mod 3	PD Fuze	146	1-60A	10/12/90
MK 29 Mod 3 RFM	PD Fuze	145	2-13	12/12/91
MK 29 Mod 4	PD Fuze	146	1-60C	09/27/90
MK 29 Mod 5	PD Fuze	145	2-15	12/12/91
XS-29A	See MK 175 Mod 0		-	10/01/82
DSU-29/B	Target Detecting Device	146	2-12A	11/05/90
FMU-29/B	Bomb Long Delay Fuze	146	10-6	10/01/82
E30	Bomb Fuze	146	2-13	10/01/82
M30A1	Safety-Arming Device	146	6-21	10/01/82
T30	Rocket Proximity Fuze	146	10-6	10/01/82
T30	See M56		-	10/01/82
MK 30 Mod 0	Arming and Firing Device	146	9-8A	02/27/90
MK 30 Mod 0	Arming-Firing Device	145	6-43	01/01/87
MK 30 Mod 0-2	PD Fuze	146	1-60E	10/12/90

Supersedes page I-7 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
MK 30 Mod 3	PD Fuze	146	1-60G	10/12/90
MK 30 Mod 4	Rocket PD Fuze	146	5-22A	10/12/90
MK 30 Mod 5	PD Fuze	145	2-17	12/12/91
DSU-30/B	Target Detecting Device	146	2-14A	03/20/90
FMU-30A/B	Mine Seismic Fuze	146	4-11	10/01/82
T31	Bomb Impact Fuze	146	10-7	10/01/82
T31E1A	See MK 170		-	10/01/82
T31E2	See M61		-	10/01/82
MK 31 Mod 0	Arming and Firing Mechanism	146	9-8C	02/27/90
MK 31 Mod 2	BD Fuze	145	2-19	03/09/92
DSU-31/B	Target Detecting Device	145	6-45	01/01/87
FMU-31/B	GM Proximity Fuze	146	10-7	10/01/82
T32	See M118		-	10/01/82
XM32	Safety-Arming Device	146	6-23	10/01/82
XM32E6	Safety-Arming Device	146	6-25	10/01/82
MK 32 Mod 0-40	Proximity Fuze	146	1-62A	10/03/90
MK 32 Mod 1	Arming Device	145	9-9	01/01/87
FZU-32B/B	Bomb Fuze Initiator	145	9-11	09/18/90
T33	See M119		-	10/01/82
EX 33 Mod 0	See MK 33 Mod 0		-	10/01/82
MK 33 Mod 0	Arming and Firing Mechanism	145	9-13	02/27/90
MK 33 Mod 0	Safety-Arming Device	145	6-47	01/01/87
MK 33 Mod 1	Delay Firing Device	145	9-15	01/01/87
E34R4	Bomb Impact Fuze	146	2-15	10/01/82
M34	Fuze Setter	145	10-15	01/01/87
T34	Bomb Fuze	146	10-7	10/01/82
T34	See M69		-	10/17/90
EX 34 Mod 1	See MK 34 Mod 1		-	10/01/82
MK 34 Mod 0,1	PD Fuze	146	7-7	10/01/82
MK 34 Mod 1	Safety-Arming Device	145	6-49	02/27/90
DSU-34/B	Target Detecting Device	145	6-51	01/01/87
FZU-34/B	Proximity Fuze Sensor	145	4-15	01/01/87
M35	Fuze Setter	145	10-17	04/19/91
M35	PD Fuze	146	10-7	10/01/82
T35	Rocket PD Fuze	146	10-7	10/01/82
T35	See M121, M122		-	10/01/82
T35E7	See M124		-	10/01/82
EX 35 Mod 0	See MK 34 Mod 0		-	10/01/82
MK 35 Mod 0	BD Fuze	146	1-63	10/01/82
MK 35 Mod 0	Fuze Setter	145	10-19	07/08/92
MK 35 Mod 0	Safety-Arming Device	145	6-53	01/01/87
XP-35A	PD Fuze	146	10-7	10/01/82
FMU-35/B	Bomb Long Delay Fuze	146	2-17	10/01/82
FZU-35/B	Bomb Fuze Initiator	146	9-8E	01/01/87
M36	Fuze Setter	145	10-21	01/01/87
M36	PD Fuze	146	10-7	10/01/82
M36E1	See M36		-	10/01/82
T36	Rocket PD Fuze	146	10-7	10/01/82
T36	See M79		-	10/01/82
T36E2	Booster	146	1-65	10/01/82
MK 36 Mod 0,1	BD Fuze	146	1-67	10/01/82
XR-36	Rocket BD Fuze	146	5-23	10/01/82

Supersedes page I-8 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
M37A1	Time & SQ Fuze	146	1-69	10/01/82
T37	Bomb Fuze	146	10-7	10/01/82
T37	See M502A1		-	10/01/82
FZU-37A/B	Bomb Fuze Initiator	145	9-17	01/01/87
E38	Bomb Impact Fuze	146	2-19	10/01/82
M38A1	BD Fuze	146	7-9	10/01/82
T38	See M64, M123A1, M124A1, M125A1		-	10/01/82
M39A2	PD Fuze	146	1-71	10/01/82
T39	Percussion Fuze	146	10-7	10/01/82
T39	See M127		-	10/01/82
T39E1	See M138		-	10/01/82
MK 39 Mod 0	Demolition Safety-Arming Device	145	7-19	01/01/87
MK 39 Mod 0, 1	BD Fuze	146	1-73	10/01/82
FZU-39/B	Proximity Fuze Sensor	145	4-17	01/01/87
E40	Bomb Impact Fuze	146	2-21	10/01/82
M40	PD Fuze	146	10-7	10/01/82
T40	PD Fuze	146	10-7	10/01/82
MK 40	Proximity Fuze	146	1-74A	10/04/90
E41	Bomb Impact Fuze	146	2-23	10/01/82
T41	PD Fuze	146	10-7	10/01/82
T41	See M132, M133, M134		-	10/01/82
MK 41	Proximity Fuze	146	10-8	10/01/82
MK 41 Mods 0, 1	Delay Arming-Safety Device	145	2-21	12/19/91
M42A1	Dummy Fuze	146	10-8	10/01/82
T42	Bomb Fuze	146	10-8	10/01/82
T42	Rocket PD Fuze	146	10-8	10/01/82
MK 42	MT Fuze	146	1-75	10/01/82
MK 42 Mod 4	Firing Mechanism	145	9-19	01/01/87
MK 42 Mods 0-3	Rear Fitting Safety Device	145	2-23	12/19/91
E43	Bomb Impact Fuze	146	2-25	10/01/82
M43	Safety-Arming Device	146	5-25	01/01/87
M43A4	MT Fuze	146	1-77	10/01/82
T43	Bomb Proximity Fuze	146	10-8	10/01/82
MK 43 Mod 0	Bomb Proximity Sensor	145	4-19	02/20/92
MK 43 Mod 1	Aux Det Fuze	146	10-8	10/01/82
FMU-43/B	Proximity Fuze	146	10-8	10/01/82
M44A2	See M43		-	10/01/82
T44	Booster	146	1-79	10/01/82
XM44	Anti-Intrusion Device	146	4-13	10/01/82
MK 44 Mod 1, 2	Aux Det Fuze	146	1-81	03/06/92
M45	PD Fuze	146	1-83	10/01/82
T45	Percussion Fuze	146	10-8	10/01/82
MK 45 Mod 5-9	Target Detecting Device	145	6-55	01/01/87
MK 45 Mods 1-12	Proximity Fuze	146	1-85	10/04/90
XP-45A	BD Fuze	146	10-8	10/01/82
M46	PD Fuze	146	1-87	10/01/82
T46	Percussion Fuze	146	10-8	10/01/82
MK 46	Aux Det Fuze	146	1-89	10/01/82
XV-46	See EX 23		-	10/01/82
CBU-46	See FMU-80/B		-	10/01/82
M47	PD Fuze	146	1-91	10/01/82
T47	Rocket BD Fuze	146	10-8	10/01/82

Supersedes page I-9 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
T47E1	See M70, M129		-	10/01/82
MK 47 Mod 0	Proximity Fuze	146	1-92A	10/04/90
M48A3	PD Fuze	145	2-25	12/19/91
M48A3E2	PD Fuze	146	1-95	10/01/82
T48E2	See M70, M130A1		-	10/01/82
MK 48 Mod 0	Demolition Firing Device	145	7-21	01/01/87
MK 48 Mod 4	BD Fuze	145	2-27	03/06/92
FZU-48/B	Bomb Fuze Initiator	145	9-21	08/06/90
T49	Dummy Fuze	146	10-8	10/01/82
T49E2	See M131A1		-	10/01/82
MK 49 Mod 0, 1	Delay Arming Safety Device	145	2-29	12/19/91
MK 49 Mod 2	Delay Arming Safety Device	145	2-31	12/19/91
XR-49	See MK 180 Mod 0		-	10/01/82
BLU-49/B Bomb	Bomb Impact Fuze	145	4-21	10/27/92
FZU-49/B	Safety-Arming Device	145	6-57	12/19/91
M50	See M56		-	10/01/82
T50	Bomb Proximity Fuze	146	10-8	10/01/82
T50	PD Fuze	146	10-8	10/01/82
MK 50 Mod 8	MT Fuze	146	1-99	02/11/92
FMU-50/B	Bomb Impact Fuze	146	3-7	10/01/82
M51	GM PIBD Element	146	6-27	10/01/82
M51A5	PD Fuze	145	2-33	05/01/91
M51A5-3	PD Fuze	146	1-103	10/01/82
T51	See M71		-	10/01/82
T51E1	See M166E3		-	10/01/82
MK 51 Mod 0	Safety-Arming Device	145	6-59	01/01/87
MK 51 Mod 5	MT Fuze	146	1-104A	02/11/92
XR-51	Rocket BD Fuze	146	5-27	10/01/82
FMU-51/B	Bomb Impact Fuze	146	10-8	10/01/82
M52A2	PD Fuze	145	2-35	05/01/91
M52A2E3	See XM717		-	10/01/82
T52	Dummy Fuze	146	10-8	10/01/82
MK 52 Mod 0	Aux Det Fuze	145	2-37	03/06/92
M53A1	PD Fuze	146	1-109	01/01/87
T53	PD Fuze	146	10-8	10/01/82
T53E1	See M152A1		-	10/01/82
MK 53 Mods 0-6	Proximity Fuze	146	1-111	10/04/90
M54	Time & SQ Fuze	146	1-113	10/01/82
T54	See M74, M148		-	10/01/82
MK 54 Mod 2	Aux Det Fuze	145	2-39	03/06/92
XP-54A	ET Fuze	146	1-115	10/01/82
FMU-54A/B	Bomb Impact Fuze	145	4-23	03/06/92
M55A3	Time & SQ Fuze	146	1-117	10/01/82
T55	BD Fuze	146	10-8	10/01/82
T55	See AN-M128		-	10/01/82
T55E1	See AN-M145E1		-	10/01/82
T55E2	See AN-M146A1		-	10/01/82
T55E3	See AN-M147A1		-	10/01/82
MK 55 Mod 0	Aux Det Fuze	145	2-41	03/06/92
M56	AT Mine System, fuze for	145	7-23	02/11/92
M56	PD Fuze	146	7-11	10/01/82
T56	See M72, M135A1, M136A1		-	10/01/82

Supersedes page I-10 of MIL-HDBK-146.

MIL-HDBK-146
NOTICE 2

INDEX					
MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.	
MK 56 Mod 0	Proximity Fuze	146	10-9	10/01/82	
XP-56A	BD Fuze	146	1-121	10/01/82	
FMU-56/B Fuze	Battery Firing Device (BFD)	145	9-23	01/01/87	
FMU-56/B, A-D/B	Bomb Proximity Fuze	145	4-25	02/11/92	
M57	Firing Device	145	7-25	01/01/87	
M57	PD Fuze	146	1-123	02/11/92	
T57	BD Fuze	146	10-9	10/01/82	
MK 57 Mod 0-3	MT Fuze	146	1-125	03/06/92	
XP-57A	See MK 83 Mod 0	-	-	10/01/82	
FMU-57A/B	Bomb Proximity Fuze	146	2-29	10/01/82	
M58	BD Fuze	146	1-127	02/11/92	
T58	Bomb Fuze	146	10-9	10/01/82	
EX 58	See MK 328	-	-	10/01/82	
MK 58 Mod 0	Proximity Fuze	146	1-128A	10/04/90	
XP-58A	BD Fuze	146	1-129	10/01/82	
FMU-58/B	Bomb Inertial Fuze	146	10-9	10/01/82	
M59	See M48A3	-	-	10/01/82	
T59	BD SD Fuze	146	10-9	10/01/82	
T59	Bomb Fuze	146	10-9	10/01/82	
MK 59 Mod 0	Proximity Fuze	146	1-131	10/04/90	
XP-59	See EX 26	-	-	10/01/82	
M60	BD Fuze	146	1-133	10/01/82	
M60B1	BD Fuze	146	10-9	10/01/82	
M60B1	Dummy PD Fuze	-	-	10/01/82	
T60	Bomb Fuze	146	10-9	10/01/82	
EX 60	Target Detecting Device	146	1-136A	02/11/92	
MK 60 Mod 1	Proximity Fuze	146	1-135	10/01/82	
XP-60	See MK 28 Mod 18	-	-	10/01/82	
FMU-60/B	Bomb Impact Fuze	146	10-9	10/01/82	
M61A2	MT Fuze	146	1-137	10/01/82	
T61	PD SD Fuze	146	10-9	10/01/82	
T61	See M137	-	-	10/01/82	
EX 61	Target Detecting Device	146	1-140A	02/11/92	
MK 61 Mods 0, 1	MT Fuze	145	2-43	02/11/92	
XP-61	See MK 80 MOD0	-	-	10/01/82	
M62A2	BD Fuze	145	2-45	05/01/91	
T62	Bomb Fuze	146	10-9	10/01/82	
T62	PD SD Fuze	146	10-9	10/01/82	
EX 62	Target Detecting Device	145	6-61	01/01/87	
MK 62 Mod 0, 1	MT Fuze	146	1-141	03/06/92	
M63	Dummy Fuze	146	10-9	10/01/82	
M63	Fuze Setter	146	10-9	01/01/87	
T63	Bomb Fuze	146	10-9	10/01/82	
T63E5	See M507	-	-	10/01/82	
XM63	See XM122	-	-	10/01/82	
MK 63 Mod 0	MT Fuze	146	1-143	10/01/82	
XP-63A	BD Fuze	146	1-145	10/01/82	
FMU-63/B	Bomb Impact Fuze	146	2-31	10/01/82	
E64	Bomb MT Initiator	146	2-33	10/01/82	
M64A1	PD Fuze	145	1-5	01/01/87	
T64	PD Fuze	146	10-9	10/01/82	
T64	See M144	-	-	10/01/82	

Supersedes page I-11 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
XM64	Firing Device	146	9-9	10/01/82
MK 64 Mods 2, 3	BD Fuze	145	2-47	11/25/92
XP-64A	BD Fuze	146	1-149	10/01/82
FMU-64/B	Bomb Impact Fuze	146	10-9	10/01/82
SUU-64/B TMD	Fuze	145	4-27	01/01/87
M65A1	Time Fuze	145	2-49	05/01/91
M65A1E1	See XM769 Time Fuze	-	-	10/01/82
T65	Bomb Fuze	146	10-9	10/01/82
T65	PD Fuze	146	10-10	10/01/82
XB-65A	Bomb Impact Fuze	146	2-35	10/01/82
FMU-65/B	Bomb Impact Fuze	146	3-9	10/01/82
SUU-65/B TMD	Fuze	145	4-29	01/01/87
M66A1, A2	BD Fuze	146	1-153	11/05/92
T66	See AN-M139A1	-	-	10/01/82
EX 66 Mod 0	See MK 339 Mod 0	-	-	10/01/82
MK 66 Mod 0	PD Fuze	146	1-155	10/10/90
MK 66 Mod 1	PD Fuze	145	2-51	02/11/92
XB-66C	See MK 257 Mod 0	-	-	10/01/82
FMU-66/B	Bomb Proximity Fuze	146	10-10	10/01/82
M67A3	MT Fuze	146	1-157	10/01/82
T67	See AN-M140A1	-	-	10/01/82
MK 67	Proximity Fuze	146	10-10	10/01/82
FMU-67/B	Bomb Proximity Fuze	146	2-36A	10/10/90
M68A1	BD Fuze	146	1-159	02/11/92
T68	See M156	-	-	10/01/82
MK 68	Proximity Fuze	146	10-10	10/01/82
XP-68B	BD Fuze	146	1-161	10/01/82
FMU-68/B	Bomb Impact Fuze	146	2-37	10/01/82
M69	Dummy Fuze	146	7-13	02/11/92
T69	Bomb Impact Fuze	146	10-10	10/01/82
MK 69	Proximity Fuze	146	1-163	10/01/82
XP-69A,B	MT Fuze	146	1-165	10/01/82
FMU-69/B	Rocket Proximity Fuze	146	10-10	10/01/82
M70	PD Fuze	146	1-167	10/01/82
T70	BD Fuze	146	10-10	10/01/82
T70	See AN-M158, AN-M159	-	-	10/01/82
XM70	Demolition Firing Device	146	9-11	10/01/82
XM70 Mine	See M718 Proj, Mine for	-	-	10/01/82
XP-70A,B	MT Fuze	146	1-169	10/01/82
FMU-70/B	Bomb Impact Fuze	146	2-39	10/01/82
M71	PD Fuze	146	7-15	10/01/82
T71	See M155A1	-	-	10/01/82
T71E5	See M75	-	-	10/01/82
MK 71 Mod 11&12	Proximity Fuze	145	2-53	02/11/92
MK 71 Mod 15	Proximity Fuze	145	2-55	02/11/92
XP-71A,B	MT Fuze	146	1-173	10/01/82
FMU-71/B	GM Proximity Fuze	146	6-29	10/01/82
M72	BD Fuze	146	1-175	10/01/82
T72	Bomb MT Fuze	146	10-10	10/01/82
XM72	See M219A1 Grenade Fuze	-	-	10/01/82
XM72	See M692 Proj, Mine for	-	-	10/01/82
MK 72 Mod 12&13	Proximity Fuze	145	2-57	02/16/92

Supersedes page I-12 of MIL-HDBK-146.

I-12

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
MK 72 Mod 16&17	Proximity Fuze	145	2-59	02/19/92
FMU-72/B	Bomb Impact Fuze	145	4-31	01/01/87
FMU-72/B Fuze	Battery Firing Device (BFD)	145	9-25	01/01/87
FMU-72/B Fuze	Battery Firing Device Tool	145	10-23	01/01/87
M73	PD Dummy Fuze	145	2-61	05/01/91
T73	See M153, M516	-	-	10/01/82
T73E12	See M516	-	-	10/01/82
XM73	See M718 Proj, Mine for	-	-	10/01/82
MK 73 Mod 8-11	Proximity Fuze	145	2-63	02/19/92
MK 73 Mod 12&13	Proximity Fuze	145	2-65	02/19/92
FMU-73/B	Bomb Impact Fuze	146	3-11	10/01/82
M74	AP Mine, Fuze for	145	7-27	02/19/92
M74	PD Fuze	146	7-17	10/01/82
T74E6	See M92	-	-	10/01/82
XM74	See M219A1 Grenade Fuze	-	-	10/01/82
MK 74 Mod 0,1	Proximity Fuze	146	1-177	10/01/82
XB-74B	Bomb Long Delay Fuze	146	2-43	10/01/82
FMU-74/B	Submunition Impact Fuze	145	3-11	02/20/92
M75	AT Mine, fuze for	145	7-29	02/20/92
M75	PD Fuze	146	7-19	10/01/82
T75	Proximity Fuze	146	10-10	10/01/82
T75E2	See M167	-	-	10/01/82
XM75	Hand Grenade Igniter	146	8-5	10/01/82
XM75	See XM230 Grenade Fuze	-	-	10/01/82
MK 75 Mod 0-5	Proximity Fuze	146	1-179	10/01/82
MK 75 Mod 12	Destructor Modification Kit	145	9-27	01/01/87
FMU-75/B	GM Impact Fuze	146	10-10	10/01/82
M76	PD Fuze	146	10-10	10/01/82
T76	Bomb Fuze	146	10-10	10/01/82
T76E9	See M96	-	-	10/01/82
F/M76	Launcher Grenade, Fuze for	145	8-3	02/19/92
MK 76 Mod 0	Safety-Arming Device	145	6-63	01/01/87
MK 76 Mod 0,3	Proximity Fuze	146	1-181	10/01/82
FMU-76/B	Bomb Proximity Fuze	146	10-10	10/01/82
M77	PD, Time & SQ Fuze	145	2-67	08/06/90
T77	Bomb MT Fuze	146	10-10	10/01/82
FMU-77/B	GM Proximity Fuze	146	10-10	10/01/82
M78A1	CP Fuze	145	2-69	05/01/91
T78	Bomb Impact Fuze	146	10-10	10/01/82
T78	See M84	-	-	10/01/82
MK 78 Mod 0-2	PD Fuze	146	7-21	02/25/92
XR-78	Rocket BD Fuze	146	5-29	10/01/82
FMU-78/B	GM PI BD Fuze	146	10-11	10/01/82
M79	See M61A2	-	-	10/01/82
T79	MT SQ Fuze	146	10-11	10/01/82
T79E1	See M151E2	-	-	10/01/82
XM79	Safety-Arming Device	146	5-31	10/01/82
MK 79 Mod 0	BD Safety-Arming Device	145	6-65	06/05/91
MK 79 Mod 0,1	Proximity Fuze	146	1-187	10/01/82
XP-79	See MK 81 Mod 0	-	-	10/01/82
FMU-79/B	Bomb Proximity Fuze	146	10-11	10/01/82
M80	PD Dummy Fuze	145	2-71	01/01/87

Supersedes page I-13 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
T80	Bomb Fuze	146	10-11	10/01/82
T80E9	See M97		-	10/01/82
MK 80 Mod 0	PD Fuze	146	1-189	10/01/82
FMU-80/B	Bomb Time Fuze	146	10-11	10/01/82
M81A1	PD Fuze	146	1-191	01/01/87
T81	See M160, M161, M162		-	10/01/82
MK 81 Mod 0	PD Fuze	146	7-23	10/01/82
FMU-81/B	Bomb Impact Fuze	145	4-33	01/01/87
M82A1	PD Fuze	146	1-193	10/01/82
T82	Bomb Proximity Fuze	146	10-11	10/01/82
T82	See M85		-	10/01/82
MK 82 Mod 0	Aux Det Fuze	146	1-195	10/01/82
FMU-82/B	Bomb Proximity Fuze	146	2-47	10/01/82
M83	CP Fuze	146	1-197	10/01/82
T83	Bomb Fuze	146	10-11	10/01/82
T83	PD Fuze	146	10-11	10/01/82
MK 83 Mod 0	BD Fuze	145	2-73	03/06/92
FMU-83/B	MT Fuze	145	4-35	02/25/92
M84A1	Time Fuze	145	2-75	05/01/91
M84A1E1	See XM768 Time Fuze		-	10/01/82
T84	Bomb Fuze	146	10-11	10/01/82
XM84	AT/AV Mine, fuze for	146	4-14A	10/27/92
MK 84	MT Fuze	146	10-11	10/01/82
FMU-84/B	GM Training Fuze	146	10-11	10/01/82
M85	PD Fuze	146	1-201	10/01/82
T85	See M171		-	10/01/82
MK 85 Mod 0	MT Fuze	146	10-11	10/01/82
XR-85	See MK 191 Mod 1		-	10/01/82
FMU-85/B	GM Proximity Fuze	146	10-11	10/01/82
M86	See M91A2		-	10/01/82
M86E1	PD Fuze	146	1-203	10/01/82
T86	See M86E1		-	10/01/82
F/M86 AP Mine	Safety-Arming Device for	145	7-31	02/20/92
MK 86	MT Fuze	146	10-11	10/01/82
FMU-86/B	Bomb MT Fuze	146	10-11	10/01/82
M87	PD Fuze	146	10-11	10/01/82
FMU-87(XCR-1)/B	Target Detecting Device	145	5-3	01/01/87
M88	See M91A2		-	10/01/82
T88	Bomb MT Fuze	146	10-11	10/01/82
T88	See M77		-	10/01/82
FMU-88/B	Submunition Impact Fuze	145	3-13	02/20/92
M89	PD Fuze	146	1-205	10/01/82
T89	PD Fuze	146	10-12	10/01/82
MK 89 Mod 0	Aux Det Fuze	145	2-77	03/06/92
M90, M90A1	PI Fuze	146	1-209	10/27/92
T90	See M30A1		-	10/01/82
T90E3	Safety-Arming Device	146	6-31	10/01/82
XM90	Safety-Arming Device	146	6-33	10/01/82
MK 90 Mod 1	Proximity Fuze	145	2-79	03/06/92
FMU-90/B	Rocket Impact Fuze	145	5-5	02/20/92
M91A2	BD Fuze	145	2-81	05/01/91
T91E1	See M168E2		-	10/01/82

Supersedes page I-14 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
MK 91 Mod 1	Proximity Fuze	145	2-83	03/06/92
BLU-91/B	AT Mine, fuze for	145	7-33	10/27/92
FMU-91/B	GM Proximity Fuze	146	10-12	10/01/82
M92	Proximity Fuze	146	10-12	10/01/82
XM92	Safety-Arming Device	146	1-215	10/01/82
MK 92 Mod 1	Proximity Fuze	145	2-85	02/20/92
BLU-92/B	AP Mine, Fuze for	145	7-35	10/27/92
FMU-92/B	PD Fuze	146	10-12	10/01/82
M93	Proximity Fuze	146	10-12	10/01/82
T93	Bomb Proximity Fuze	146	2-49	10/01/82
T93	See M91	-	-	10/01/82
T93E8	Safety-Arming Device	146	6-35	10/01/82
MK 93 Mod 0	Rocket Proximity Fuze	145	5-7	02/20/92
M94	Proximity Fuze	146	10-12	10/01/82
T94	See M163, M164, M165	-	-	10/01/82
FMU-94/B	Guided Weapon Impact Fuze	145	6-67	03/06/90
M95	Proximity Fuze	146	10-12	10/01/82
T95	See M142A1	-	-	10/01/82
FMU-95/B	Submunition Impact Fuze	145	3-15	02/20/92
M96	Proximity Fuze	146	10-12	10/01/82
M97A1	Proximity Fuze	146	10-12	10/01/82
BLU-97/B	Bomblet, Fuze for	145	3-17	02/20/92
M98	Proximity Fuze	146	10-12	10/01/82
FMU-98/B	Rocket Proximity Fuze	146	5-33	03/06/92
M99	Proximity Fuze	146	10-12	10/01/82
FMU-99/B	Dispenser MT Fuze	146	10-12	10/01/82
M100	Safety-Arming Device	145	6-69	10/27/92
EX 100	See MK 176 Mod 1	-	-	10/01/82
MK 100 Mod 0-2	Rocket PD Fuze	146	5-35	10/01/82
AN-M100A2	Bomb Impact Fuze	146	2-51	10/01/82
FMU-100/B	Bomb Impact Fuze	146	10-12	10/01/82
M101	Rocket PI Fuze	146	10-12	10/01/82
T101	Time & SQ Fuze	146	10-12	10/01/82
EX 101	See MK 183 Mod 0	-	-	10/01/82
AN-M101A2	Bomb Impact Fuze	146	2-53	10/01/82
FMU-101/B	Bomb Impact Fuze	146	10-13	10/01/82
T102	PD Fuze	146	10-13	10/01/82
EX 102	See MK 177 Mod 1	-	-	10/01/82
AN-M102A2	Bomb Impact Fuze	146	2-55	10/01/82
FMU-102/B	Bomb impact Fuze	146	10-13	10/01/82
T103	PD Fuze	146	10-13	10/01/82
AN-M103A2	Bomb Impact Fuze	146	2-57	10/01/82
FMU-103/B	Bomblet Impact Fuze	146	10-13	10/01/82
T104	PD Fuze	146	10-13	10/01/82
T104	Safety-Arming device	146	6-37	10/01/82
EX 104 Mod 0	Rocket Time Fuze	146	5-37	10/01/82
AN-M104	Bomb Impact Fuze	146	2-59	10/01/82
FMU-104/B	Bomblet Impact Fuze	146	10-13	10/01/82
M105	Bomb Impact Fuze	146	2-61	10/01/82
T105	See M78	-	-	10/01/82
EX 105	See MK 178 Mod 2	-	-	10/01/82
FMU-105/B	Bomb Proximity Fuze	145	4-37	01/01/87

Supersedes page I-15 of MIL-HDBK-146.

MIL-HDBK-146
NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
M106A2	Bomb Impact Fuze	146	2-63	10/01/82
FMU-106/B	GM Proximity Fuze	146	10-13	10/01/82
M107	Bomb MT Fuze	146	2-65	10/01/82
EX 107	Rocket Time & SQ Fuze	146	5-39	10/01/82
FMU-107/B	Bomb MT Fuze	145	4-39	02/20/92
M108	Bomb Impact Fuze	146	2-67	10/01/82
FMU-108/B	GM Proximity Fuze	146	10-13	10/01/82
M109	Bomb Impact Fuze	146	2-69	10/01/82
T109	PD Fuze	146	10-13	10/01/82
XM109	Bomb MT Initiator	146	2-71	10/01/82
EX 109	See MK 184	-	-	10/01/82
EX 109	See MK 188 Mod 1	-	-	10/01/82
FMU-109/B	GM Impact Fuze	145	6-71	06/15/90
EX 110A	Rocket MT Fuze	146	5-41	10/01/82
AN-M110A1	Bomb Impact Fuze	146	2-73	10/01/82
FMU-110/B	Proximity Fuze	145	4-41	02/20/92
FMU-110/B Fuze	Battery Firing Device	145	9-29	01/01/87
M111A2	Bomb MT Fuze	146	2-75	10/01/82
EX 111	Rocket PD Fuze	146	5-43	10/01/82
FMU-111/B	GM Fuze	145	6-73	03/06/90
M112A1	Bomb Impact Fuze	146	2-77	10/01/82
T112	Time & PD Fuze	146	10-13	10/01/82
EX 112	See MK 182 Mod 0	-	-	10/01/82
FMU-112/B	Bomb Impact Fuze	146	2-78A	08/06/90
M113A1	Bomb Impact Fuze	146	2-79	10/01/82
XB-113A	See MK 255 Mod 0	-	-	10/01/82
FMU-113/B	Bomb Proximity Fuze	145	4-43	01/01/87
M114	Safety-Arming Device	145	6-75	04/19/91
M114A1	Bomb Impact Fuze	146	2-81	10/01/82
T114	PD Fuze	146	10-13	10/01/82
FMU-114/B	Bomb Impact Fuze	146	10-13	10/01/82
M115	Bomb Impact Fuze	146	2-83	10/01/82
T115	See M500	-	-	10/01/82
FMU-115/B	Time Fuze	146	10-14	10/01/82
M116	Bomb Impact Fuze	146	2-85	10/01/82
T116	MT Fuze	146	10-14	10/01/82
FMU-116/B	Rocket Dummy Fuze	146	10-14	10/01/82
M117	Bomb Impact Fuze	146	2-87	10/01/82
FMU-117/B	Bomb Impact Fuze	146	2-89	02/20/92
M118	Bomb Impact Fuze	146	10-14	10/01/82
M118	Safety-Arming Device	145	6-77	10/27/92
T118	Time & SQ Fuze	146	10-14	10/01/82
M119	Bomb Impact Fuze	146	10-14	10/01/82
T119	See M89	-	-	10/01/82
M120	Bomb Impact Fuze	146	10-14	10/01/82
T120	PD Fuze	146	10-14	10/01/82
AN-M120A1	Bomb Impact Fuze	146	2-91	10/01/82
FMU-120/B	Bomb Impact Fuze	146	10-14	10/01/82
M121	Bomb Impact Fuze	146	2-93	10/01/82
T121	Dummy BD Fuze	146	10-14	10/01/82
M122	Bomb Impact Fuze	146	10-14	10/01/82
M122	Booster	146	10-14	10/01/82

Supersedes page I-16 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX				
MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
M122	Firing Device	145	7-37	10/27/92
FMU-122/B	Bomb Proximity Fuze	146	2-95	10/01/82
M123A1	Bomb Long Delay Fuze	146	2-97	10/01/82
T123	See M90	-	-	10/01/82
FMU-123/B	Bomb Proximity Fuze	146	2-98A	01/01/87
NOTS123	See MK 185	-	-	10/01/82
M124	Booster	146	1-219	10/01/82
M124A1	Bomb Long Delay Fuze	146	2-99	10/01/82
FMU-124A/B	Guided Bomb Impact Fuze	145	4-45	01/01/87
M125A1	Bomb Long Delay Fuze	146	2-101	10/01/82
M125A1 (Ver 1)	Booster	145	2-87	10/27/92
M125A1 (Ver 2)	Booster	145	2-89	10/27/92
M125A1 (Ver 3)	Booster	145	2-91	10/27/92
T125	PD Fuze	146	10-14	10/01/82
XB-125A	See MK 256	-	-	10/01/82
FMU-125/B	Guided Weapon Impact Fuze	145	6-79	03/06/90
AN-M126A1	Bomb Impact Fuze	146	2-103	10/01/82
FMU-126/B	Bomb Fuze	146	2-105	10/01/82
FMU-126/B	See FSU-9A/B	-	-	10/01/82
M127	Bomb MT Fuze	146	2-107	10/01/82
MK 127	Ejector Fuze	146	10-14	10/01/82
T128	PD Fuze	146	10-14	10/01/82
XM128	See XM74, XM75 Dispenser	-	-	10/01/82
XW128A	See MK 193 Mod 0	-	-	10/01/82
AN-M128	Bomb Impact Fuze	146	2-109	10/01/82
FMU-128/B	PD Fuze	146	7-24A	10/01/82
NOTS128	See MK 189 Mod 1	-	-	10/01/82
M129	Bomb Impact Fuze	146	2-111	10/01/82
FMU-129/B	GM Fuze	145	6-81	03/06/90
M130A1	Bomb MT Fuze	146	3-15	10/01/82
T130	Proximity Fuze	146	10-14	10/01/82
FMU-130/B	Bomb Impact Fuze	146	2-112A	08/06/90
M131 Dispenser	S&A for AP/AT Mines	145	7-39	01/01/87
M131A1	Bomb AD Fuze	146	2-113	10/01/82
T131	PI Fuze	146	10-15	10/01/82
MK 131	Rocket PD Fuze	146	5-45	10/01/82
FMU-131/B	GM Impact Fuze	146	6-38A	12/19/92
M132	Bomb Time Fuze	146	2-115	10/01/82
T132	Proximity Fuze	146	10-15	10/01/82
XM132	AT Mine System, fuze for	146	4-14C	01/01/87
MK 132 Mod 0	Rocket PD Fuze	146	5-47	10/01/82
FMU-132/B	GM Impact Fuze	146	10-15	01/01/87
M133	Bomb Time Fuze	146	2-117	10/01/82
MK 133	Rocket PD Fuze	146	5-49	10/01/82
FMU-133/B	GM Impact Fuze	146	6-38C	12/19/92
M134	Bomb Time Fuze	146	2-119	10/01/82
MK 134 Mod 0	Rocket Time Fuze	146	5-51	10/01/82
FMU-134/B	See FMU-109/B	-	-	10/01/82
M135A1	Bomb MT Fuze	146	2-121	10/01/82
T135	PD Fuze	146	10-15	10/01/82
MK 135	Rocket PD Fuze	146	5-53	10/01/82
FMU-135/B	GM Impact Fuze	145	6-83	04/16/90

Supersedes page I-17 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
M136A1	Bomb MT Fuze	146	2-123	10/01/82
T136	BD Fuze	146	10-15	10/01/82
MK 136	Rocket PD Fuze	146	5-55	10/01/82
FMU-136/B	Rocket Time Fuze	145	5-9	02/20/92
M137	Bomb Impact Fuze	146	2-125	10/01/82
T137	BD Fuze	146	10-15	10/01/82
MK 137 Mod 0-2	Rocket PD Fuze	146	5-57	10/01/82
FMU-137/B	Safety-Arming Device	146	6-38E	12/19/92
M138	Bomb MT Fuze	146	2-127	10/01/82
T138	PD Fuze	146	10-15	10/01/82
FMU-138/B	GM Impact Fuze	145	6-85	04/16/90
WOX-138B	See MK 346 Mod 0		-	10/01/82
T139	PD Fuze	146	10-15	10/01/82
MK 139	Rocket PD Fuze	146	5-59	10/01/82
AN-M139A1	Bomb Impact Fuze	146	2-129	10/01/82
FMU-139/B (Navy)	Bomb Impact Fuze	145	4-47	01/01/87
FMU-139A/B (AF)	Bomb Impact Fuze	145	4-49	02/20/92
T140	BD Fuze	146	10-15	10/01/82
MK 140	Bomb Hydrostatic Fuze	146	2-131	10/01/82
AN-M140A1	Bomb Impact Fuze	146	2-133	10/01/82
FMU-140/B	Proximity Fuze	145	4-51	05/01/91
MK 141 Mod 0	Rocket PD Fuze	146	5-61	10/01/82
FMU-141/B	GM Impact Fuze	145	6-87	08/06/90
M142	Demolition Firing Device	145	7-41	01/01/87
M142A1	Bomb Impact Fuze	146	2-135	10/01/82
NOTS142B	See MK 190 Mod 0		-	10/01/82
M143	Bomblet Time Fuze	146	10-15	10/01/82
M143	Safety-Arming Device	145	6-89	02/20/92
M143E1	Safety-Arming Device	145	6-91	02/20/92
T143	BD Fuze	146	10-15	10/01/82
FMU-143A/B	Bomb Impact Fuze	145	4-53	01/01/87
FMU-143B/B	Bomb Impact Fuze	145	4-55	02/20/92
M144	Bomb MT Fuze	146	2-137	10/01/82
MK 144	Rocket PD Fuze	146	5-63	10/01/82
M145	Safety-Arming Device	145	6-93	01/01/87
MK 145 Mod 0,1	Rocket PD Fuze	146	5-65	10/01/82
AN-M145A1	Bomb MT Fuze	146	2-139	10/01/82
T146	PD Fuze	146	10-15	10/01/82
MK 146 Mod 1	Rocket BD Fuze	146	5-67	10/01/82
AN-M146A1	Bomb MT Fuze	146	2-141	10/01/82
XM147	Demolition Firing Device	145	7-43	10/27/92
MK 147 Mod 0,1	Rocket PD Fuze	146	5-69	10/01/82
AN-M147A1	Bomb Time Fuze	145	4-57	02/20/92
M148	Bomb Impact Fuze	146	2-145	10/01/82
T148	PD Fuze	146	10-15	10/01/82
MK 148	Rocket PD Fuze	146	5-71	10/01/82
M149	Bomb Impact Fuze	146	2-147	10/01/82
T149	See M95		-	10/01/82
MK 149 Mod 0,1	Rocket PD Fuze	146	5-73	10/01/82
M150A1	Bomb Impact Fuze	146	2-149	10/01/82
T150E2	PI Fuze	146	10-15	10/01/82
M151E2	Bomb Impact Fuze	146	2-151	10/01/82

Supersedes page I-18 of MIL-HDBK-146.

I-18

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INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
T151	PI Fuze	146	10-15	10/01/82
T152	See M93		-	10/01/82
MK 152	Rocket PD Fuze	146	5-75	10/01/82
AN-M152A1	Bomb Time Fuze	145	4-59	01/01/87
M153	Bomb MT Fuze	146	2-155	10/01/82
T153	MT SQ Fuze	146	10-15	10/01/82
M154	Bomb Impact Fuze	146	10-15	10/01/82
T154	CP Fuze	146	10-16	10/01/82
MK 154 Mod 0,2,3	Rocket PD Fuze	146	5-77	10/01/82
M155A1	Bomb Time Fuze	145	4-61	01/01/87
T155E2	PD Fuze	146	1-223	10/01/82
MK 155 Mod 0	Rocket PD Fuze	146	5-79	10/01/82
M156	Bomb Impact Fuze	146	2-159	10/01/82
T156	Rocket BD Fuze	146	10-16	10/01/82
MK 156	Rocket PD Fuze	146	5-81	10/01/82
M157	Bomb Impact Fuze	146	2-161	10/01/82
XM157	Arming Assembly	146	2-163	10/01/82
MK 157 Mod 0-2	Rocket BD Fuze	146	5-83	10/01/82
T158	Rocket BD Fuze	146	10-16	10/01/82
MK 158	Rocket BD Fuze	146	5-85	10/01/82
AN-M158	Bomb Impact Fuze	145	4-63	01/01/87
MK 159 Mod 0,1	Rocket BD Fuze	146	5-87	10/01/82
AN-M159	Bomb Impact Fuze	145	4-65	01/01/87
M160	Bomb Impact Fuze	146	2-169	10/01/82
T160E6	See M404		-	10/01/82
MK 160	Rocket BD Fuze	146	5-89	10/01/82
M161	Bomb Impact Fuze	146	2-171	10/01/82
T161	Rocket BD Fuze	146	10-16	10/01/82
MK 161 Mod 0	Rocket BD Fuze	146	5-91	10/01/82
M162	Bomb Impact Fuze	146	2-173	10/01/82
T162	Rocket PI BD Fuze	146	10-16	10/01/82
MK 162 Mod 0	Rocket BD Fuze	146	5-93	10/01/82
M163	Bomb Impact Fuze	146	2-175	10/01/82
T163	CP Fuze	146	10-16	10/01/82
MK 163 Mod 0,1	Rocket BD Fuze	146	5-95	10/01/82
M164	Bomb Impact Fuze	146	2-177	10/01/82
T164	PD Fuze	146	10-16	10/01/82
MK 164	Rocket BD Fuze	146	5-97	10/01/82
M165	Bomb Impact Fuze	146	2-179	10/01/82
T165E7	BD Fuze	146	1-225	10/01/82
MK 165 Mod 0	Rocket BD Fuze	146	5-99	10/01/82
M166E3	Bomb Proximity Fuze	146	2-181	10/01/82
T166	Time Fuze	146	10-16	10/01/82
MK 166 Mod 0-2	Rocket BD SD Fuze	146	5-101	10/01/82
M167	Bomb Impact Fuze	146	2-183	10/01/82
T167	PD Fuze	146	10-16	10/01/82
M168E2	Bomb Proximity Fuze	146	2-185	10/01/82
T168	PI BD Fuze	146	10-16	10/01/82
M169	Bomb Impact Fuze	146	2-187	10/01/82
M170	Bomb Impact Fuze	146	2-189	10/01/82
MK 170	Rocket Proximity Fuze	146	5-103	10/01/82
M171	Bomb Impact Fuze	146	2-191	10/01/82

Supersedes page I-19 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
T171	Proximity Fuze	146	10-16	10/01/82
M172	Bomb Impact Fuze	146	2-193	10/01/82
T172	See M504		-	10/01/82
MK 172 Mod 0-2	Rocket Proximity Fuze	146	5-105	10/01/82
T173	PI Fuze	146	10-16	10/01/82
MK 173 Mod 0-4	Rocket Proximity Fuze	146	5-107	10/01/82
AN-M173A1	Bomb Impact Fuze	145	4-67	10/27/92
M174	Bomb Impact Fuze	146	2-197	10/01/82
T174	BD Fuze	146	10-16	10/01/82
MK 174 Mod 0-3	Rocket Proximity Fuze	146	5-109	10/01/82
M175	Bomb Impact Fuze	146	2-199	10/01/82
T175E3	CP Fuze	146	1-227	10/01/82
MK 175 Mod 0	Signal Hydrostatic Fuze	146	9-13	03/06/90
M176	Bomb Impact Fuze	146	2-201	10/01/82
T176E3	See M506		-	10/01/82
MK 176 Mod 0 & 1	Rocket PD Fuze	145	5-11	02/20/92
T177E3	See M535		-	10/01/82
MK 177 Mod 0,1	Rocket PD Fuze	146	5-113	10/01/82
AN-M177	Bomb Impact Fuze	146	2-203	10/01/82
M178	Bomb Impact Fuze	146	2-205	10/01/82
T178E3	See M517		-	10/01/82
MK 178 Mod 2	Rocket PD Fuze	145	5-13	02/20/92
M179	Bomb Impact Fuze	146	2-207	10/01/82
MK 179 Mod 0	Rocket BD Fuze	146	5-117	10/01/82
M180	Bomb Impact Fuze	146	2-209	10/01/82
MK 180 Mod 0	Rocket BD Fuze	146	5-119	10/01/82
M181	Bomb Impact Fuze	146	2-211	10/01/82
MK 181 Mod 3	Rocket Impact Fuze	145	5-15	02/20/92
M182	Bomb Impact Fuze	146	2-213	10/01/82
MK 182 Mod 0	Signal Hydrostatic Fuze	146	9-15	10/01/82
M183	Bomb Impact Fuze	146	2-215	10/01/82
T183E4	PD Fuze	146	1-229	10/01/82
MK 183 Mod 0	Signal Hydrostatic Fuze	146	9-17	10/01/82
M184	Bomb Impact Fuze	146	2-217	10/01/82
T184E11	PD Fuze	146	1-231	10/01/82
MK 184	Rocket PD Fuze	146	5-121	10/01/82
M185	Bomb Impact Fuze	146	2-219	10/01/82
T185E3	See M524A6		-	10/01/82
MK 185	Rocket PD Fuze	146	5-123	10/01/82
M186	Bomb Impact Fuze	146	2-221	10/01/82
T186	See M524A6		-	10/01/82
M187	Bomb Impact Fuze	146	2-223	10/01/82
T187	PD Fuze	146	10-16	10/01/82
M188	Bomb Proximity Fuze	146	2-225	10/01/82
T188	PD Practice Fuze	146	1-233	10/01/82
T188	See XM713		-	10/01/82
MK 188 Mod 1	Rocket Impact Fuze	145	5-17	02/20/92
M189	Bomb Impact Fuze	146	2-227	10/01/82
T189	PI Fuze	146	10-16	10/01/82
MK 189 Mod 0,1	Rocket PD Fuze	146	5-125	10/01/82
M190	Bomb Impact Fuze	146	2-229	10/01/82
T190	See M503		-	10/01/82

Supersedes page I-20 of MIL-HDBK-146.

I-20

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
MK 190 Mod 0	Rocket PI BD Fuze	146	5-127	10/01/82
M191	Bomb Impact Fuze	146	2-231	10/01/82
T191E6	PD Fuze	146	1-235	10/01/82
MK 191 Mod 1	Rocket Impact Fuze	145	5-19	02/20/92
M192	Bomb Impact Fuze	146	2-233	10/01/82
T192E1	See T191E6	-	-	10/01/82
MK 192 Mod 0-2	Rocket MT Fuze	146	5-129	10/01/82
M193	Bomb Impact Fuze	146	2-235	10/01/82
T193	PD Fuze	146	1-237	10/01/82
MK 193 Mod 0	Rocket Time Fuze	145	5-21	02/20/92
M194	Bomb Impact Fuze	146	2-237	10/01/82
T194	PD Fuze	146	1-239	10/01/82
M195	Bomb Impact Fuze	146	2-239	10/01/82
T195E11	PD Fuze	146	7-25	10/01/82
M196	Bomb Impact Fuze	146	2-241	10/01/82
T196E4	See M505A3	-	-	10/01/82
M197	Bomb Impact Fuze	146	10-17	10/01/82
T197E1	See M564	-	-	10/01/82
M198	Bomb MT Fuze	146	2-243	10/01/82
T198E1	PD Fuze	146	1-241	10/01/82
MK 198	Rocket MT Fuze	146	5-131	10/01/82
T199E5	BD Fuze	146	1-243	10/01/82
M200A1	Hand Grenade Fuze	146	10-17	10/01/82
T200E16	PD Fuze	146	7-27	10/01/82
EX 200 Mod 4	Bomb Impact Fuze	146	2-245	10/01/82
M201A1	Hand Grenade Fuze	145	8-5	09/21/90
M201A1E2	Hand Grenade Fuze	145	8-7	09/05/90
M201A2	Hand Grenade Fuze	145	8-9	09/05/90
T201E6	See T200E13	-	-	10/01/82
M202	Rifle Grenade Fuze	146	10-17	10/01/82
T202	Proximity Fuze	146	1-245	10/01/82
M203	Rifle Grenade Fuze	146	10-17	10/01/82
T203	See M86E1	-	-	10/01/82
M204A2	Hand Grenade Fuze	145	8-11	08/06/90
T204	PD Fuze	146	1-247	10/01/82
M205A2	Hand Grenade Fuze	145	8-13	08/06/90
T205	PD Fuze	146	10-17	10/01/82
M206A2	Hand Grenade Fuze	145	8-15	08/06/90
M206A2 (MOD)	See M206A2E2 Fuze	-	-	04/17/90
M206A2E2	Grenade Fuze	145	3-19	08/06/90
T206E4	PD Fuze	146	1-249	10/01/82
M207A1	Floating Smoke Pot Fuze	145	8-17	01/01/87
T207	PD Fuze	146	10-17	10/01/82
M208	Time Fuze	145	8-19	01/01/87
T208	See M509	-	-	10/01/82
M209	Smoke Pot Fuze	145	8-21	01/01/87
T209E3	PI BD Fuze	146	1-251	10/01/82
M210	Time Fuze	145	8-23	01/01/87
T210E2	PD Fuze	146	1-253	10/01/82
M211	Rifle Grenade Fuze	145	8-25	08/06/90
M212	Grenade Fuze	146	10-17	10/01/82
T212	PD Fuze	146	1-255	10/01/82

Supersedes page I-21 of MIL-HDBK-146.

I-21

MIL-HDBK-146
NOTICE 2

INDEX					
MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.	
M213	Hand Grenade Fuze	145	8-27	08/06/90	
T213	PD Fuze	146	10-17	10/01/82	
T214	Rocket MT SQ Fuze	146	5-133	10/01/82	
XM214	Hand Grenade Fuze	146	10-17	10/01/82	
M215	Hand Grenade Fuze	145	8-29	08/06/90	
T215	See M511		-	10/01/82	
T216	PD Fuze	146	1-257	10/01/82	
M217	Hand Grenade Fuze	146	8-17	10/01/82	
T217	PD Fuze	146	10-17	10/01/82	
M218	Submunition Time Fuze	145	3-21	01/01/87	
M219	Submunition Impact Fuze	145	3-23	02/20/92	
M219A1	Submunition Impact Fuze	145	3-25	02/20/92	
M219A2	Submunition Impact Fuze	145	3-27	03/12/92	
T219	PD SD Fuze	146	1-259	10/01/82	
ANMK219	Bomb Impact Fuze	146	2-247	10/01/82	
M220	Bomb Time Fuze	146	2-249	10/01/82	
T220	See M510		-	10/01/82	
T221	BD Fuze	146	1-261	10/01/82	
XM221	General Purpose Grenade Fuze	146	3-23	10/01/82	
MK 221	Bomb Impact Fuze	146	2-251	10/01/82	
XM222	General Purpose Grenade Fuze	146	3-25	10/01/82	
M223	Grenade Fuze	145	3-29	04/17/90	
T223	PD Fuze	146	10-17	10/01/82	
MK 223	Bomb Impact Fuze	146	2-253	10/01/82	
M224	Submunition Time Fuze	145	3-31	01/01/87	
T224	PI BD Fuze	146	1-263	10/01/82	
T225	See M515		-	10/01/82	
XM225	Hand Grenade Fuze	146	8-19	10/01/82	
M226	Hand Grenade Fuze	145	8-31	08/06/90	
T226	See M513		-	10/01/82	
M227	Hand Grenade Fuze	145	8-33	01/01/87	
T227	See M514		-	10/01/82	
MK 227	Bomb Impact Fuze	146	2-255	10/01/82	
M228	Hand Grenade Fuze	145	8-35	08/06/90	
T228	PD Fuze	146	1-265	10/01/82	
T228E1	See M520		-	10/01/82	
ANMK228	Bomb Impact Fuze	146	2-257	10/01/82	
M229	Grenade Fuze	146	10-17	10/01/82	
T229	PD SD Fuze	146	10-17	10/01/82	
MK 229	Bomb Hydrostatic Fuze	146	10-17	10/01/82	
M230	Submunition Impact Fuze	145	3-33	02/20/92	
T230	PD Fuze	146	1-267	10/01/82	
MK 230 Mod 4B	Bomb Hydrostatic Fuze	146	2-259	10/01/82	
M231	Submunition Impact Fuze	145	3-35	02/20/92	
T231E3	PD Fuze	146	7-29	10/01/82	
MK 231	Bomb Hydrostatic Fuze	146	10-18	10/01/82	
XM233	Grenade Self-destruct (SD) Fuze	145	3-37	04/18/90	
MK 233	Bomb Hydrostatic Fuze	146	10-18	10/01/82	
T234E2	PD SD Fuze	146	1-269	10/01/82	
XM234	Grenade Self-destruct (SD) Fuze	145	3-39	04/18/90	
T235	PI BD Fuze	146	1-271	10/01/82	
MK 235	Bomb Impact Fuze	146	10-18	10/01/82	

Supersedes page I-22 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
T236	PI BD Fuze	146	1-273	10/01/82
MK 236	Bomb Impact Fuze	146	10-18	10/01/82
T237E1	See M508A1		-	10/01/82
MK 237	Bomb Long Delay Fuze	146	10-18	10/01/82
T238	Time Fuze	146	7-31	10/01/82
MK 238	Bomb Long Delay Fuze	146	10-18	10/01/82
MK 239	Bomb Impact Fuze	146	10-18	10/01/82
T240	MT SQ Fuze	146	1-275	10/01/82
MK 240	Bomb Hydrostatic Fuze	146	10-18	10/01/82
T241	PD Fuze	146	10-18	10/01/82
T243	PD SD Fuze	146	10-18	10/01/82
MK 243 Mod 0	Bomb Impact Fuze	146	2-261	10/01/82
T244	PD Fuze	146	1-277	10/01/82
MK 244 Mod 1	Bomb Impact Fuze	146	2-263	10/01/82
MK 245	Bomb Impact Fuze	146	10-18	10/01/82
T246	PD Fuze	146	1-279	10/01/82
XM246 PROJ	SD FOR	146	7-33	10/01/82
T247	See M521		-	10/01/82
MK 247 Mod 0	Bomb Impact Fuze	146	2-265	10/01/82
T248	PD Fuze	146	10-18	10/01/82
T250E1	MT SQ Fuze	146	1-281	10/01/82
T251	PD Fuze	146	10-18	10/01/82
T252	MT Fuze	146	1-283	10/01/82
T253	PD Fuze	146	7-35	10/01/82
T254	PD Fuze	146	10-18	10/01/82
MK 255 Mod 0	Bomb Impact Fuze	146	2-267	10/01/82
MK 256	Bomb MT Fuze	146	2-269	10/01/82
T257	BD Fuze	146	1-285	10/01/82
MK 257 Mod 0	Bomb Proximity Fuze	146	2-271	10/01/82
T258	See T264E9		-	10/01/82
T259E4	See T263E14		-	10/01/82
MK 259 Mod 0	PIBD Fuze	145	5-23	06/05/91
T262	PD Fuze	146	7-37	10/01/82
T263E14	PD Fuze	146	7-39	10/01/82
T264E9	PD Fuze	146	7-41	10/01/82
T265	PD Fuze	146	1-287	10/01/82
T267	PI BD Fuze	146	1-289	10/01/82
T268	PD SD Fuze	146	10-18	10/01/82
T270	PD SD Fuze	146	7-43	10/01/82
T271	PD SD Fuze	146	1-291	10/01/82
T272	PD SD Fuze	146	1-293	10/01/82
T273	PD SD Fuze	146	1-295	10/01/82
T274	Rocket MT SQ Fuze	146	5-135	10/01/82
F/M274 Warhead	Rocket PD Fuze	145	5-25	02/20/92
T275	See M562		-	10/01/82
T275E1	See M565		-	10/01/82
T277	PI BD Fuze	146	1-297	10/01/82
T278E8	See M530A1		-	10/01/82
T279	Proximity Fuze	146	1-299	10/01/82
T280	PI BD Fuze	146	1-301	10/01/82
T282	ET SQ Fuze	146	1-303	10/01/82
T283	See XM587E1		-	10/01/82

Supersedes page I-23 of MIL-HDBK-146.

I-23

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
T284	MT SQ Fuze	146	1-305	10/01/82
T285	PD Fuze	146	1-307	10/01/82
T286E1	See M518		-	10/01/82
T287	PD Fuze	146	1-309	10/01/82
T289	MT SQ Fuze	146	1-311	10/01/82
T290	Time Fuze	146	10-19	10/01/82
T291E3	PD Fuze	146	1-313	10/01/82
T292	PD Fuze	146	7-45	10/01/82
T293	Proximity Fuze	146	1-315	10/01/82
T294	Proximity Fuze	146	1-317	10/01/82
T295	ET SQ Fuze	146	10-19	10/01/82
T296	BD Fuze	146	1-319	10/01/82
T297	PD Fuze	146	1-321	10/01/82
T298	PD Fuze	146	1-323	10/01/82
T299	BD Fuze	146	1-325	10/01/82
T300	BD SD Fuze	146	7-47	10/01/82
T301	BD Fuze	146	7-49	10/01/82
MK 301	GM Proximity Fuze	146	10-19	10/01/82
T302	MT SQ Fuze	146	1-327	10/01/82
T303	BD Fuze	146	1-329	10/01/82
MK 303 Mod 2	GM Proximity Fuze	146	10-19	10/01/82
MK 304 Mod 2	GM Impact Fuze	146	6-39	10/01/82
T305	Proximity Fuze	146	1-331	10/01/82
MK 305 Mod 2	GM Impact Fuze	146	10-19	10/01/82
T306	BD SD Fuze	146	7-51	10/01/82
T307	BD Fuze	146	7-53	10/01/82
T308	BD Fuze	146	7-55	10/01/82
MK 308 Mod 3	GM Proximity Fuze	146	10-19	10/01/82
T309	See M522		-	10/01/82
MK 309 Mod 2	GM Proximity Fuze	146	10-19	10/01/82
MK 310 Mod 0	GM Impact Fuze	146	6-41	10/01/82
T311	PD Fuze	146	1-333	10/01/82
MK 311	GM Dummy Fuze	146	10-19	10/01/82
T312	PD Fuze	146	1-335	10/01/82
MK 312 Mod 0,1	GM Impact Fuze	146	6-43	10/01/82
MK 312 Mod 2	GM Impact Fuze	146	6-45	10/01/82
MK 312 Mod 3	GM Impact Fuze	146	6-47	10/01/82
T313	PD Fuze	146	1-337	10/01/82
MK 313 Mod 1	GM Dummy Fuze	146	10-19	10/01/82
T314	PD Fuze	146	1-339	10/01/82
T315	PD Fuze	146	1-341	10/01/82
MK 315	GM Proximity Fuze	146	10-19	10/01/82
T316E1	See M543		-	10/01/82
MK 316	GM Proximity Fuze	146	10-19	10/01/82
T317	MT Fuze	146	10-19	10/01/82
MK 317	GM Impact Fuze	146	10-19	10/01/82
T318	MT SQ Fuze	146	10-19	10/01/82
T319	See M519		-	10/01/82
MK 319 Mod 2	GM Proximity Fuze	146	10-19	10/01/82
T320	PD Fuze	146	7-57	10/01/82
T321	PD Fuze	146	7-59	10/01/82
T322	PD Fuze	146	7-61	10/01/82

Supersedes page I-24 of MIL-HDBK-146.

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
MK 322 Mod 2	GM Proximity Fuze	146	10-20	10/01/82
T323	PD Fuze	146	7-63	10/01/82
MK 323 Mod 2	GM Proximity Fuze	146	10-20	10/01/82
T324	PI BD Fuze	146	1-343	10/01/82
T325	BD Fuze	146	1-345	10/01/82
MK 325 Mod 3	GM Proximity Fuze	146	10-20	10/01/82
T326	BD Fuze	146	1-347	10/01/82
T327E1	BD Fuze	146	1-349	10/01/82
MK 327 Mod 0	Bomb Proximity Fuze	146	10-20	10/01/82
T328	PD Fuze	146	7-65	10/01/82
MK 328 Mod 0	GM Impact Fuze	145	6-95	04/18/90
T329	PD SD Fuze	146	7-67	10/01/82
T330	MT SQ Fuze	146	10-20	10/01/82
MK 330 Mod 0	GM Impact Fuze	146	6-51	10/01/82
MK 330 Mod 1	GM Impact Fuze	146	6-53	10/01/82
MK 330 Mod 2	GM Impact Fuze	145	6-97	01/01/87
T331	PD Fuze	146	1-351	10/01/82
T332	Rocket MT Fuze	146	5-137	10/01/82
MK 334 Mod 0	GM Proximity or Impact Fuze	145	6-99	04/18/90
T335	Proximity Fuze	146	1-353	10/01/82
EX 335 Mod 0	Rocket Proximity Fuze	146	5-139	10/01/82
T336E7	See M525A1	-	-	10/01/82
MK 336 Mod 0	MT Fuze	146	1-355	10/01/82
T337	BD Fuze	146	1-357	10/01/82
EX 337 Mod 0	Proximity Fuze	146	1-359	10/01/82
T338	PD Fuze	146	1-361	10/01/82
EX 338	See MK 338 Mod 0	-	-	10/01/82
MK 338 Mod 0	Proximity Fuze	146	1-363	10/01/82
T339	PD Fuze	146	1-365	10/01/82
MK 339 Mod 1	MT Fuze	145	4-69	02/20/92
T341	Time Fuze	146	10-20	10/01/82
T342E1	See M543	-	-	10/01/82
MK 342 Mod 0 & 1	MT Fuze	145	2-93	03/06/92
F/MK342 Fuze	Aux Fuze Setting Wrench	145	10-25	03/09/92
T343	See M530A1	-	-	10/01/82
MK 343 Mod 0	Bomb Impact Fuze	145	4-71	02/20/92
T344	MT Fuze	146	10-20	10/01/82
MK 344 Mod 0	Bomb Impact Fuze	145	4-73	02/20/92
MK 344 Mod 1	Bomb Fuze	145	4-75	02/20/92
T345	MT Fuze	146	10-20	10/01/82
T346E7	PD Fuze	146	7-69	10/01/82
MK 346 Mod 0	Bomb Fuze	145	4-77	03/05/92
MK 347 Mod 0	Bomb Impact Fuze	146	2-273	10/01/82
MK 349 Mod 0 & 1	MT Fuze	145	2-95	03/06/92
F/MK349 Fuze	Aux Fuze Setting Wrench	145	10-27	03/06/92
MK 352 Mod 2	Rocket Impact Fuze	145	5-27	02/20/92
EX 353	MT PD Fuze	146	10-20	10/01/82
EX 354	MT PD Fuze	146	10-20	10/01/82
T355	MT Fuze	146	1-369	10/01/82
EX 355	PD Fuze	146	10-20	10/01/82
T356	PD Fuze	146	10-20	10/01/82
EX 356	MT PD Fuze	146	10-20	10/01/82

Supersedes page I-25 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
MK 357 Mod 0	Fuze & Adapter Assembly	146	1-371	02/20/92
MK 357 Mod 1	Fuze & Adapter Assembly	145	2-97	02/20/92
F/MK357-0,-1 Fuze	Windshield Wrench	145	10-29	03/06/92
MK 358	See MK 357 Mod 1		-	10/01/82
T359	See M551		-	10/01/82
MK 359	See MK 357 Mod 1		-	10/01/82
MK 360 Mod 0	Fuze & Adapter Assembly	146	1-372A	02/20/92
MK 360 Mod 1	Fuze & Adapter Assembly	145	2-99	02/20/92
MK 361	See MK 357 Mod 1		-	10/01/82
MK 362	See MK 357 Mod 1		-	10/01/82
T363	BD Fuze	146	7-71	10/01/82
MK 363 Mod 0	PD Fuze	146	1-373	04/19/90
T364	BD Fuze	146	7-73	10/01/82
EX 364	Rocket Time Fuze	146	10-20	10/01/82
MK 364 Mod 0	Flare Fuze	145	9-31	01/01/87
MK 365	See MK 357 Mod 1		-	10/01/82
MK 366	See MK 357 Mod 1		-	10/01/82
MK 367	See MK 357 Mod 1		-	10/01/82
T368E2	See XM718		-	10/01/82
EX 368	Target Detecting Device	146	10-20	10/01/82
T369	See M563		-	10/01/82
MK 369	See MK 357 Mod 1		-	10/01/82
T370E1	PI BD Fuze	146	1-375	10/01/82
MK 370	See MK 357 Mod 1		-	10/01/82
MK 371	See MK 357 Mod 1		-	10/01/82
MK 372 Mod 0	Hand Grenade Fuze	145	8-37	01/01/87
EX 373	Aux Det Fuze	146	10-21	10/01/82
MK 374 Mod 0	Bomb Impact Fuze	145	4-79	02/20/92
MK 374 Mod 1	Bomb Impact Fuze	145	4-81	02/20/92
MK 375	See FMU-136		-	10/01/82
MK 376 Mod 0	Bomb Impact Fuze	145	4-83	02/20/92
EX 377	See FMU-83/B		-	10/01/82
MK 378 Mod 0,1	Rocket Proximity Fuze	146	5-141	10/01/82
MK 379 Mod 0 & 1	Aux Det Fuze	145	2-101	03/06/92
EX 380 Mod 0	PD Fuze	146	7-75	10/01/82
EX 382	See FMU-88/B		-	10/01/82
MK 383 Mod 0	GM Impact Fuze	146	6-55	10/01/82
MK 384 Mod 0	Aux Det Fuze	145	2-103	03/06/92
EX 385	PD Fuze	146	10-21	10/01/82
EX 386	PD Fuze	146	10-21	10/01/82
MK 387 Mods 0-2	Proximity Fuze	146	5-143	03/06/92
MK 388 Mod 0	Flare Fuze	145	9-33	01/01/87
MK 392 Mod 0	MT Fuze	146	1-379	11/05/92
MK 393 Mod 0	MT/PD Fuze	145	2-105	02/25/92
MK 394 Mod 0	Hand Grenade Fuze	146	8-21	01/15/93
MK 395 Mod 0 & 1	Aux Det Fuze	145	2-107	03/06/92
MK 396 Mod 0	Aux Det Fuze	145	2-109	03/06/92
EX 397	Proximity Fuze	146	10-21	10/01/82
MK 399 Mod 0	PD/Delay Fuze	145	2-111	02/25/92
MK 399 Mod 1	PD/Delay Fuze	145	2-113	02/25/92
M400	Rocket BD Fuze	146	5-145	10/01/82
MK 400	Proximity Fuze	146	1-383	03/06/92

Supersedes page I-26 of MIL-HDBK-146.

I-26

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
M401	Rocket BD Fuze	146	5-147	10/01/82
MK 401	GM Proximity Fuze	146	10-21	10/01/82
M402A2	Rocket Proximity Fuze	146	5-149	10/01/82
EX 402	Proximity Fuze	146	1-385	11/05/92
M403A2	Rocket Proximity Fuze	146	5-151	10/01/82
MK 403 Mod 0	MT/PD Fuze	145	2-115	10/27/92
MK 403 Mod 1	MT/PD Fuze	145	2-117	10/27/92
M404A2	Rocket BD Fuze	145	5-29	02/25/92
MK 404 Mod 0	Proximity Fuze	145	2-119	02/25/92
MK 404 Mod 1	Proximity Fuze	145	2-121	02/25/92
M405	See M404A2	-	-	10/01/82
MK 405	See MK 339 Mod 0, 1	-	-	10/01/82
M406	Rocket PI BD Fuze	146	5-155	10/01/82
M407	See MK 181 Mod 0-3	-	-	10/01/82
MK 407 Mod 0	PD/D Fuze	145	2-123	11/06/92
MK 407 Mod 1	PD/D Fuze	145	2-125	09/03/92
MK 407 Mod 2	PD/D Fuze	145	2-127	02/25/92
M408E1	Rocket PI BD Fuze	146	5-157	10/01/82
EX 408	Proximity Fuze	146	10-21	10/01/82
M409	Rocket PI BD Fuze	146	5-159	10/01/82
EX 409	GM Proximity Fuze	146	10-21	10/01/82
M410	See M409	-	-	10/01/82
EX 410	Proximity Fuze	146	10-21	10/01/82
M411	Rocket MT Fuze	146	5-161	10/01/82
MK 411 Mod 0	Aux Det Fuze	145	2-129	03/06/92
M412E1	Rocket PI BD Fuze	145	5-31	05/01/91
EX 412	Target Detecting Device	145	6-101	01/01/87
XM413	Rocket Proximity Fuze	146	5-163	10/01/82
MK 413 Mod 0	Aux Det Fuze	145	2-131	03/06/92
M414A1	Rocket Proximity Fuze	145	5-33	02/20/92
M415	Rocket PD Fuze	146	5-167	10/01/82
MK 415 Mod 0	MT/PD Fuze	145	2-133	02/25/92
XM416	Rocket MT Fuze	146	5-169	10/01/82
EX 416	ET Fuze	146	1-386A	11/05/92
M417	Rocket PD Fuze	146	5-171	04/19/91
MK 417 Mod 0	Proximity Fuze	145	2-135	02/27/92
MK 417 Mod 1	Proximity Fuze	145	2-137	02/27/92
M418	Rocket MT Fuze	146	10-21	10/01/82
MK 418 Mod 0	Proximity Fuze	145	2-139	02/27/92
M419	Rocket MT Fuze	146	10-21	10/01/82
EX 419 Mod 0	Multifunction Fuze	145	2-141	02/27/92
M420	See M421	-	-	10/01/82
MK 420 Mod 0	BD Fuze	145	5-35	06/05/91
M421	Rocket MT Fuze	146	5-173	10/01/82
EX 421	PD Fuze	146	7-77	02/27/92
XM422	Rocket MT Training Fuze	146	10-21	10/01/82
EX 422 Mod 0	BD Fuze	145	2-143	01/01/87
M423	Rocket Impact Fuze	145	5-37	02/27/92
M423 Alternate	Rocket Impact Fuze	145	5-39	02/27/92
MK 423 Mod 0	ET/PD Fuze	145	2-145	06/05/91
XM424	See M411	-	-	10/01/82
MK 424 Mod 0	ET Fuze	146	1-386C	03/06/92

Supersedes page I-27 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
XM425	Rocket Proximity Fuze	146	5-177	10/01/82
MK 425 Mod 0	ET Training Fuze	145	2-147	06/05/91
XM426E4	Rocket MT Fuze	146	5-179	10/01/82
EX 426 Mod 0	MT/PD Fuze	145	2-149	02/27/92
M427	Rocket Impact Fuze	145	5-41	02/27/92
M427 Alternate	Rocket PD Fuze	145	5-43	02/27/92
EX 427 Mod 0	Electronic Time Fuze	146	5-181	03/10/92
XM428	See M414A1	-	-	10/01/82
M429	Rocket Proximity Fuze	145	5-45	03/06/92
XM430	Rocket Proximity Fuze	146	10-21	10/01/82
M431	Rocket PD Fuze	146	5-182A	03/10/92
XM432	Rocket ET Fuze	146	5-183	10/01/82
M433	Rocket Impact Fuze	145	5-47	02/27/92
M434E1	Rocket BD Fuze	145	5-49	05/01/91
M435	Dummy Rocket Fuze	145	5-51	05/24/90
XM436	See WDU-4/A Warhead	-	-	10/01/82
XM437	Rocket Practice Fuze	146	10-21	10/01/82
M438 Type I	Rocket Impact Fuze	145	5-53	05/24/90
M438 Type II	Rocket Impact Fuze	145	5-55	05/24/90
M439	Rocket Time Fuze	145	5-57	10/27/92
M440	Rocket Impact Fuze	145	5-59	02/27/92
XM441	Rocket PD Fuze	146	10-21	10/01/82
M442	Rocket Airburst Fuze	145	5-61	05/24/90
XM443	Rocket ET Fuze	146	5-185	10/01/82
XM444	Rocket Multi-option Fuze	146	5-187	10/01/82
M445	Rocket ET Fuze	145	5-63	03/06/92
M446	Rocket Airburst Fuze	145	5-65	05/01/91
M447	Rocket ET Fuze	145	5-67	03/06/92
XM448	Rocket ET Fuze	146	5-188A	01/01/87
XM450	Rocket Prox/Time Fuze	146	5-188C	03/06/92
XM451	Rocket ET Fuze	145	5-69	03/03/92
M500A1	MT SQ Fuze	145	2-151	05/02/91
M501A1	MT SQ Fuze	145	2-153	05/01/91
M502A1	MT SQ Fuze	146	1-391	10/01/82
M503A2	PD Fuze	145	2-155	03/03/92
M504A2	Proximity Fuze	146	1-395	10/01/82
M505A3	PD Fuze	145	1-7	01/01/87
M505A3E2	PD Fuze	146	7-79	10/01/82
M506	MT SQ Fuze	146	1-397	10/01/82
M507	PD Fuze	146	1-399	10/01/82
M508A1	PD Fuze	145	2-157	01/01/87
M509A2	PI BD Fuze	145	2-159	05/01/91
M509A2E1	PI BD Fuze	146	1-402A	11/05/92
M510	MT SQ Fuze	146	1-403	10/01/82
M511	MT Fuze	146	1-405	10/01/82
M512	MT Fuze	146	10-21	10/01/82
M513	Proximity Fuze	146	1-407	11/05/92
M513A2	Proximity Fuze	145	2-161	11/05/92
M514	Proximity Fuze	146	1-409	10/01/82
M514A1	Proximity Fuze	145	2-163	11/05/92
M514A3	Proximity Fuze	146	1-411	10/01/82
M515	Proximity Fuze	146	1-413	10/01/82

Supersedes page I-28 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
M516	Proximity Fuze	146	1-415	10/01/82
M517	Proximity Fuze	146	1-417	03/03/92
M518A1	MT SQ Fuze	146	1-419	10/01/82
M519	PD Fuze	146	1-421	05/01/91
M520A1	MT SQ Fuze	145	2-165	05/01/91
M521	PD Fuze	145	2-167	03/03/92
M522	MT SQ Fuze	146	1-427	10/01/82
M523	MT SQ Fuze	146	10-22	10/01/82
M524A6	PD Fuze	145	2-169	03/03/92
M524A6 Mod 0	See Mk 363 Mod 0	-	-	/ /
M525A1	PD Fuze	145	2-171	10/27/92
M526A1	PD Fuze	145	2-173	10/27/92
M527B1	PD Fuze	145	2-175	10/27/92
M528	See M505A3	-	-	10/01/82
XM529	MT SQ Fuze	146	10-22	10/01/82
M530A1	PI BD Fuze	145	2-177	05/01/91
M531	PD Training Fuze	145	2-179	05/01/91
M532	Proximity Fuze	145	2-181	03/06/92
M533	PD Fuze	145	1-9	05/01/91
M534A1	BD Fuze	145	2-183	05/01/91
M535	PD Fuze	146	1-441	01/01/87
M536A1	PD Fuze	145	1-11	01/01/87
XM537	PD Fuze	146	7-81	10/01/82
XM538E1	PD Fuze	146	7-83	10/01/82
M539A1	PI BD Fuze	145	2-185	03/03/92
XM540	MT Fuze	146	5-189	10/01/82
XM541	See M539	-	-	10/01/82
M542	MT Fuze	146	10-22	10/01/82
M543	MT Fuze	146	1-445	10/01/82
XM544E1	PD Fuze	146	10-22	10/01/82
XM545	Dummy Fuze	146	10-22	10/01/82
XM546	Proximity Fuze	146	10-22	10/01/82
XM547	MT Fuze	146	10-22	10/01/82
M548	MT SQ Fuze	145	2-187	05/01/91
M549	PI BD Fuze	145	1-13	11/04/92
M549E1	PI BD Fuze	145	1-15	11/04/92
M550	PI BD Fuze	145	1-17	05/01/91
M551	PD Fuze	145	1-19	01/01/87
M552	PD Fuze	146	7-85	03/04/92
M553	BD Dummy Fuze	145	2-189	05/01/91
XM554	MT SQ Fuze	146	10-22	10/01/82
XM556	MT SQ Fuze	146	10-22	10/01/82
M557	PD Fuze	145	2-191	10/27/92
M557E1	PD Fuze	146	1-451	10/01/82
XM558	MT Fuze	146	1-453	10/01/82
XM559E1	PI BD Fuze	146	1-455	10/01/82
XM560	MT SQ Fuze	146	1-457	10/01/82
XM561	Time & SQ Fuze	146	1-459	10/01/82
M562	MT SQ Fuze	145	2-193	05/01/91
M563	MT Fuze	145	2-195	05/01/91
M564	MT SQ Fuze	145	2-197	11/04/92
M565	MT Fuze	145	2-199	10/28/92

Supersedes page I-29 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
XM566	PD Fuze	146	1-465	10/01/82
M567	PD Fuze	145	2-201	10/28/92
XM568	MT Fuze	146	1-467	10/01/82
XM569	PI BD Fuze	146	1-469	10/01/82
XM570	MT Fuze	146	1-471	10/01/82
M571	MT Fuze	145	2-203	05/01/91
M572	PD Fuze	145	2-205	10/28/92
M572A2	See M739	-	-	10/01/82
M572E1	PD Fuze	146	1-477	10/01/82
XM573	See M62A2	-	-	10/01/82
XM574	ET Fuze	146	1-479	10/01/82
XM575	MT SQ Fuze	146	10-22	10/01/82
M576	PD Fuze	146	10-22	10/01/82
M577	MT SQ Fuze	145	2-207	05/01/91
M577A1	MT SQ Fuze	145	2-209	08/06/90
M578	BD Fuze	145	2-211	05/01/91
M578A1	BD Fuze	146	1-480A	11/05/92
XM579	PI BD Fuze	146	7-87	10/10/90
XM580	See M594	-	-	10/01/82
M581E1	PD Fuze	146	7-89	10/01/82
M582	MT SQ Fuze	145	2-213	05/01/91
M582A1	MT SQ Fuze	145	2-215	09/05/90
XM583	Proximity Fuze	146	1-481	10/01/82
XM584	ET Fuze	146	1-483	10/01/82
XM585E4	PD Fuze	146	1-485	10/01/82
M587	ET/PD Fuze	146	1-486A	03/06/92
XM588	Proximity Fuze	146	1-487	10/01/82
XM589	Proximity Fuze	146	1-489	10/01/82
XM590E2	Time Fuze	146	2-277	10/01/82
M591	MT Fuze	146	1-491	10/01/82
M592	MT Fuze	146	1-495	10/01/82
M592A1	MT Fuze	145	2-217	05/02/91
XM593E1	PD Fuze	146	1-497	10/01/82
M594	PD SD Fuze	146	7-91	10/01/82
XM595	MT Fuze	146	10-22	10/01/82
M596	Proximity Fuze	146	7-93	10/01/82
XM597	PD Fuze	146	1-499	10/01/82
XM598	See M526A2E1	-	-	10/01/82
XM599	MT Fuze	146	1-501	10/01/82
M600	AT Mine Fuze	146	10-22	10/01/82
M601	AT Mine Fuze	146	10-23	10/01/82
M602	AT Mine Fuze	146	10-23	10/01/82
M603	AT Mine Fuze	145	7-45	03/03/92
M604	AT Mine Practice Fuze	145	7-47	03/03/92
M605	Mine Combination Fuze	145	7-49	03/03/92
M606	AT Mine Fuze	145	7-51	03/03/92
M607	AT Mine Fuze	145	7-53	03/03/92
M608	AT Mine Fuze	145	7-55	03/03/92
M609	AT Mine Influence Fuze	146	4-19	10/01/82
XM610	AT Mine Fuze	146	10-23	10/01/82
XM611	AP Mine Combination Fuze	146	4-21	10/01/82
M612	AT Mine Fuze	146	4-23	10/01/82

Supersedes page I-30 of MIL-HDBK-146.

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
XM613	AT Mine Fuze	146	10-23	10/01/82
XM614	AT Mine Fuze	146	10-23	10/01/82
XM615	AT Mine Fuze	146	10-23	10/01/82
M616	AT Mine Fuze	146	4-25	01/01/87
XM617	AP Mine Influence Fuze	146	4-27	10/01/82
XM618	AT Mine Influence Fuze	146	10-23	10/01/82
M619	AT Mine Influence Fuze	146	4-29	03/03/92
XM621	Anti Disturb Device	146	4-31	10/01/82
XM622	See M56 SYSTEM	-	-	10/01/82
XM623	AT Mine Fuze	146	10-23	10/01/82
M624	AT Mine Fuze	145	7-57	03/04/92
M692/731 Proj	AP Mine Fuze	145	7-59	03/03/92
T702E1	Bomb Proximity Fuze	146	2-279	10/01/82
T704	Bomb Proximity Fuze	146	2-281	10/01/82
T708	See M169	-	-	10/01/82
T709	See M904E2	-	-	10/01/82
M711	MT Fuze	146	1-503	10/28/92
XM712E2	PD Fuze	146	1-505	10/01/82
XM713	See M524A6	-	-	10/01/82
M714E5	PD SD Fuze	146	7-96C	03/05/92
M714E6	PI BD Fuze	146	7-96E	03/05/92
M714E8	PD SD Fuze	146	7-96G	03/05/92
XM714	PD SD Fuze	146	7-95	10/01/82
XM714E2	PD SD Fuze	146	7-96A	03/05/92
XM714E3	PD SD Fuze	146	10-23	10/01/82
XM714E4	PD SD Fuze	146	10-23	10/01/82
XM715	MT Fuze	146	9-19	10/01/82
M716	PD Fuze	145	2-219	05/01/91
M717	PD Fuze	145	2-221	03/03/92
M718/741 Proj	AT Mine Fuze	145	7-61	10/28/92
XM718	Proximity Fuze	146	1-511	10/01/82
M719	PD Fuze	146	1-513	10/28/92
M720E1	PD Fuze	145	2-223	05/01/91
XM721	MT Fuze	146	10-23	10/01/82
XM722	PD SD Fuze	146	7-97	10/01/82
XM723E1	PD Fuze	146	1-517	10/01/82
M724	ET/PD Fuze	145	2-225	03/06/92
XM725	PD Fuze	146	10-23	10/01/82
XM726	See M577	-	-	10/01/82
M728	Proximity Fuze	145	2-227	03/06/92
XM729	PD Fuze	146	10-23	10/01/82
T730	See M198	-	-	10/01/82
T730E4	See M907	-	-	10/01/82
XM730	See M735	-	-	10/01/82
XM731	See M735	-	-	10/01/82
M732	Proximity Fuze	145	2-229	10/28/92
M732A1	Proximity Fuze	146	1-520A	10/28/92
M732A2	Proximity Fuze	145	2-231	10/28/92
M733	Impact Fuze	145	1-21	05/01/91
M734	Multi-Option Fuze	145	2-233	10/28/92
M736	See M735	-	-	10/01/82
T736	Bomb MT Fuze	146	2-283	10/01/82

Supersedes page I-31 of MIL-HDBK-146.

I-31

MIL-HDBK-146

NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
XM737	Impact Fuze	146	3-27	10/01/82
T738	See M172		-	10/01/82
M739	PD Fuze	145	2-235	10/28/92
M739A1	PD Fuze	145	2-237	10/28/92
T739	See M184		-	10/01/82
F/M739 Fuze	Delay Arming Mechanism	145	2-239	10/28/92
M740	PI BD Fuze	145	2-241	05/01/91
T740	See M185		-	10/01/82
XM741	Multi-Option Fuze	146	1-520C	01/01/87
XM742	ET Fuze	146	1-521	10/01/82
XM743	See M757		-	10/01/82
M744	ET Training Fuze	145	2-243	03/06/92
M745	PD Fuze	145	2-245	10/28/92
XM746	See M747		-	10/01/82
M747E2	PD Practice Fuze	146	1-522A	03/04/92
T747	See M178, M179, M180		-	10/01/82
M748	PD Practice Fuze	146	1-522C	03/04/92
T750E2	See M910		-	10/01/82
XM750	Rocket ET Fuze	146	5-190A	03/13/92
M751	PD Practice Fuze	145	2-247	10/28/92
XM752	See XM752		-	10/01/82
XM753	See M762		-	10/01/82
XM754	Rocket PI BD Fuze	145	5-71	01/01/87
XM755	PD SD Fuze	146	7-99	01/01/87
XM756	PD SD Fuze	146	7-101	10/31/92
XM757	PD SD Fuze	146	7-103	10/31/92
M758	PD SD Fuze	145	1-23	03/03/92
M758E1	PD SD Fuze	145	1-25	03/03/92
M759	PI BD Fuze	145	1-27	03/03/92
T759E1	See M190		-	10/01/82
M760	PD SD Fuze	146	7-105	10/31/92
T760E1	See M191		-	10/01/82
XM760	PD SD Fuze	146	10-23	10/01/82
M761	PD SD Fuze	146	7-107	10/31/92
T761E1	See M192		-	10/01/82
M762	ET Fuze	145	2-249	04/18/90
T763	Bomb ET Fuze	146	2-285	10/01/82
XM763	PI BD Fuze	146	1-522E	03/04/92
M764	PI BD Fuze	145	2-251	05/10/91
T765	See M188		-	10/01/82
XM765	PI BD Fuze	146	1-523	10/01/82
M766	Proximity Fuze	146	7-109	10/31/92
T766	Bomb Proximity Fuze	146	2-287	10/01/82
M767	ET Fuze	145	2-253	04/18/90
T768	See M913		-	10/01/82
XM768	Time Fuze	146	1-524A	03/04/92
XM769	Time Fuze	146	1-524C	03/04/92
T770	See M903		-	10/01/82
XM770	Medium-Altitude Proximity Fuze	146	1-524E	10/31/92
T771	See M905		-	10/01/82
XM771	See M758E1		-	03/03/92
M772	MT SQ Fuze	145	2-255	03/04/92

Supersedes page I-32 of MIL-HDBK-146.

MIL-HDBK-146.
NOTICE 2

INDEX				
MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
XM773	Multi-option Fuze, Artillery	145	2-257	08/06/90
M774	PI BD Fuze	145	2-259	03/12/92
M775	Multioption Practice Fuze	145	2-261	10/28/92
M775E1	See XM779		-	10/27/92
M776	MT SQ Fuze	145	2-263	03/04/92
M777	PI BD Fuze	146	1-524G	03/04/92
T777	See M900		-	10/01/82
T778	See M193		-	10/01/82
XM778	Electronic Time Fuze	146	1-524I	11/04/92
M779	Multioption Practice Fuze	145	2-265	11/04/92
T779	Bomb Proximity Fuze	146	2-289	10/01/82
T781	See M181		-	10/01/82
T782	See M182		-	10/01/82
T783	See M183		-	10/01/82
T784	See M901, M908		-	10/01/82
T785	See M902, M909		-	10/01/82
T787E4	Bomb Long Delay Fuze	146	2-291	10/01/82
T788E3	See M906		-	10/01/82
T789	See M189		-	10/01/82
T791	See M194		-	10/01/82
T792	See M195		-	10/01/82
T796	Bomb Proximity Fuze	146	2-293	10/01/82
M800	GM BD Fuze	146	6-57	10/01/82
XM801	GM BD SD Fuze	146	10-23	10/01/82
XM802	GM BD SD Fuze	146	6-59	10/01/82
XM803	GM Impact Fuze	146	10-23	10/01/82
XM804E1	GM Impact Fuze	146	6-61	10/01/82
M805	Safety-Arming Device	145	6-103	01/01/87
XM806	GM Proximity Fuze	146	10-24	10/01/82
M807	GM Proximity Fuze	146	10-24	10/01/82
XM808	GM Proximity Fuze	146	10-24	10/01/82
XM809	GM MT Fuze	146	10-24	10/01/82
XM810	GM Proximity Fuze	146	10-24	10/01/82
M811	GM ET Fuze	145	6-105	01/01/87
M812	GM Impact Fuze	145	6-107	03/04/92
M813	Safety-Arming Device	146	6-67	01/15/93
M814	GM Impact Fuze	145	6-109	04/19/91
XM815	GM Impact Fuze	146	6-71	10/01/82
M816	See M811		-	10/01/82
M817	Target Detecting Device	145	6-111	01/01/87
M818E1	GM Proximity Fuze	145	6-113	01/01/87
M819	GM ET Practice Fuze	146	6-72A	12/19/92
M819E1	GM ET Practice Fuze	145	6-115	01/01/87
M820	GM Impact Fuze	145	6-117	01/01/87
M821	Target Detecting Device	145	6-119	01/01/87
M900	Bomb Impact Fuze	146	10-24	10/01/82
M901	See M908		-	10/01/82
M902	See M909		-	10/01/82
M903	Bomb AD Fuze	146	2-295	10/01/82
M904E4	Bomb Impact Fuze	145	4-85	02/20/92
M905	Bomb Impact Fuze	145	4-87	01/01/87
M906	Bomb Impact Fuze	146	2-299	10/01/82

Supersedes page I-33 of MIL-HDBK-146.

MIL-HDBK-146
NOTICE 2

INDEX

MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.
T906	Bomb ET Fuze	146	2-301	10/01/82
M907E2	Bomb MT Fuze	145	4-89	10/28/92
M908	Bomb MT Fuze	146	2-305	10/01/82
T908E4	Bomb Impact Fuze	146	2-307	10/01/82
M909	Bomb MT Fuze	145	4-91	03/04/92
M910	Bomb Proximity Fuze	146	2-311	10/01/82
XM911	Bomblet Impact Fuze	146	10-24	10/01/82
M912	See M212	-	-	10/01/82
M913	Bomb Proximity Fuze	146	2-313	01/01/87
M914E1	Bomb Proximity Fuze	146	2-315	10/01/82
XM915	See M219	-	-	10/01/82
XM917	See BLU-7A/B Bomblet	-	-	10/01/82
M918	Bomb Impact Fuze	145	4-93	10/28/92
F/M918 Cartridge	PD Fuze	145	1-29	05/10/91
XM919	Bomb MT Fuze	146	10-24	10/01/82
XM920E2	Bomb MT Fuze	146	10-24	10/01/82
XM921	Bomb MT Fuze	146	10-24	10/01/82
XM922	Bomblet Impact Fuze	146	3-29	10/01/82
XM923	Bomb Impact Fuze	146	10-24	10/01/82
XM924	Bomb Impact Fuze	146	10-24	10/01/82
M925	Bomb Impact Fuze	146	10-24	10/01/82
XM926	Bomblet AD Fuze	146	10-25	10/01/82
XM927	Bomblet AD Fuze	146	10-25	10/01/82
XM928	Bomblet Impact Fuze	146	3-31	10/01/82
XM929	Bomb Impact Fuze	146	10-25	10/01/82
XM930, E1	Bomb MT Fuze	145	4-95	01/01/87
M931	See M577	-	-	10/01/82
XM932	See XM441	-	-	10/01/82
M934E2	GM Fuze	145	6-121	05/31/90
M934E3	GM Fuze	145	6-123	05/31/90
M934E5	GM Fuze	145	6-125	05/31/90
M934E6	GM Fuze	145	6-127	05/31/90
M935	PD Fuze	145	2-267	10/28/92
M936	PD Fuze	145	2-269	10/28/92
M990E4	Bomb Impact Fuze	145	4-97	02/20/92
T1010	Rifle Grenade Fuze	146	10-25	10/01/82
T1011E2	See M213	-	-	10/01/82
T1011E3	See M215	-	-	10/01/82
T1012E1	See M217	-	-	10/01/82
T1013	Hand Grenade Fuze	146	10-25	10/01/82
T1014E1	See M10A3, M211	-	-	10/01/82
T1015	Hand Grenade Fuze	146	8-23	10/01/82
T1016	Hand Grenade Fuze	146	10-25	10/01/82
T1018	Hand Grenade Fuze	146	10-25	10/01/82
T1019	Hand Grenade Fuze	146	10-25	10/01/82
T1020	Hand Grenade Fuze	146	8-25	10/01/82
T1021	Rifle Grenade Fuze	146	8-27	10/01/82
T1022E2	Rifle Grenade Fuze	146	8-29	10/01/82
T1023	Rifle Grenade Fuze	146	8-31	10/01/82
T1025	Hand Grenade Fuze	146	8-33	10/01/82
M1117	BD Fuze	146	1-525	10/01/82
XM1133	Rocket Time Fuze	146	5-191	10/01/82

Supersedes page I-34 of MIL-HDBK-146.

MIL-HDBK-146
NOTICE 2

INDEX					
MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.	
M1134A2	Demolition Kit Fuze	145	7-63	05/16/91	
M1134A3	Demolition Kit Fuze	145	7-65	05/16/91	
XM1146	See XM1133		-	10/01/82	
M1147	Demolition Kit Training Fuze	145	7-67	03/12/92	
T1200E1	AP Mine Fuze	146	4-33	10/01/82	
T1201	AP Mine Fuze	146	10-25	10/01/82	
T1202	See M606		-	10/01/82	
T1204	AP Mine Fuze	146	10-25	10/01/82	
T1205	GP Mine Fuze	146	4-35	10/01/82	
T1209	AT Mine Influence Fuze	146	10-25	10/01/82	
T1210	See M604		-	10/01/82	
T1212E1	See M609		-	10/01/82	
T1214	AT Mine Fuze	146	4-37	10/01/82	
T1215	AT Mine Practice Fuze	146	4-39	10/01/82	
T1216	AT Mine Fuze	146	4-41	10/01/82	
T1217E2	See M612		-	10/01/82	
T1221E1	Mine Combination Practice Fuze	146	4-43	10/01/82	
T1222	AT Mine Influence Fuze	146	10-25	10/01/82	
T1223	AT Mine Influence Fuze	146	4-45	10/01/82	
T1224E1	AT Mine Influence Fuze	146	4-47	10/01/82	
T1225	AT Mine Influence Fuze	146	10-25	10/01/82	
T1226	AT Mine Fuze	146	4-49	10/01/82	
T1227	AT Mine Influence Fuze	146	10-25	10/01/82	
T1228	AT Mine Fuze	146	4-51	10/01/82	
T1229	AT Mine Fuze	146	4-53	10/01/82	
T1230	AP Mine Fuze	146	10-26	10/01/82	
T1231	AT Mine Fuze	146	4-55	10/01/82	
T1232	AT Mine Fuze	146	10-26	10/01/82	
T1233	AT Mine Influence Fuze	146	4-57	10/01/82	
T1234	See T1233		-	10/01/82	
T1235	See T1233		-	10/01/82	
T1301	Bomb Proximity Fuze	146	2-319	10/01/82	
T1302E1	See M1134		-	10/01/82	
T1302E2	See XM1147		-	10/01/82	
T1304	Line Charge Time Fuze	146	9-25	10/01/82	
T1400	See M800		-	10/01/82	
T1402E5	GM PD Fuze	146	6-73	10/01/82	
T1403E2	GM Impact SD Fuze	146	6-75	10/01/82	
T1404	GM MT Fuze	146	6-77	10/01/82	
T1405	See M51		-	10/01/82	
T1407	GM Impact Fuze	146	6-78A	12/19/92	
T1408	GM Fuze	146	10-26	10/01/82	
T1409	GM Impact Fuze	146	6-79	10/01/82	
T1410	GM PI BD Fuze	146	6-81	10/01/82	
T1411	GM Impact Fuze	146	6-83	10/01/82	
T1412	GM Impact Fuze	146	6-85	10/01/82	
M1907M	Fuze Combination	146	1-527	10/01/82	
T2000E3	Rocket PI BD Fuze	146	5-193	10/01/82	
T2003	Rocket PI BD Fuze	146	10-26	10/01/82	
T2004	See M403		-	10/01/82	
T2006	Rocket PD Fuze	146	10-26	10/01/82	
T2008	See M405		-	10/01/82	

Supersedes page I-35 of MIL-HDBK-146.

MIL-HDBK-146
NOTICE 2

INDEX					
MODEL	TYPE	HDBK	CH/PG	DATE OF INFO.	
T2009	Rocket PI BD Fuze	146	10-26	10/01/82	
T2013	Rocket PD Fuze	146	10-26	10/01/82	
T2017	Rocket Proximity Fuze	146	10-26	10/01/82	
T2019	Rocket PD Fuze	146	5-195	10/01/82	
T2021E6	Rocket PD SD Fuze	146	5-197	10/01/82	
T2022E8	Rocket BD Fuze	146	5-199	10/01/82	
T2023E1	See MK 181 Mod 1		-	10/01/82	
T2024	Rocket PD SD Fuze	146	5-201	10/01/82	
T2025E2	Rocket PD Fuze	146	5-203	10/01/82	
T2026	Rocket PD Fuze	146	10-26	10/01/82	
T2027	Rocket PD Fuze	146	5-205	10/01/82	
T2028	Rocket PI BD Fuze	146	5-207	10/01/82	
T2029	Rocket PI BD Fuze	146	5-209	10/01/82	
T2030E4	See M408		-	10/01/82	
T2031E1	See M414A1		-	10/01/82	
T2032	Rocket ET Fuze	146	10-26	10/01/82	
T2033E1	See M406, M409		-	10/01/82	
T2034	Rocket PI BD SD Fuze	146	5-211	10/01/82	
T2035	Rocket Proximity Fuze	146	10-26	10/01/82	
T2036	Rocket PD SD Fuze	146	5-213	10/01/82	
T2037	Rocket Time Fuze	146	5-215	10/01/82	
T2039	Rocket Proximity Fuze	146	5-217	10/01/82	
T2040	Rocket PD Fuze	146	5-219	10/01/82	
T2041	Rocket PD SD Fuze	146	5-221	10/01/82	
T2043	Rocket PD SD Fuze	146	5-223	10/01/82	
T2044E5	Rocket PD Fuze	146	5-225	10/01/82	
T2045	Rocket Time Fuze	146	10-26	10/01/82	
T2046	Rocket Proximity Fuze	146	5-227	10/01/82	
T2047	Rocket PD SD Fuze	146	5-229	10/01/82	
T2048	Rocket PD Fuze	146	5-231	10/01/82	
T2049	Rocket PD Fuze	146	5-233	10/01/82	
T2051	Rocket PD Fuze	146	5-235	10/01/82	
T2052	Rocket BD SD Fuze	146	5-237	10/01/82	
T2053	Rocket PI BD Fuze	146	5-239	10/01/82	
T2054	Rocket BD SD Fuze	146	5-241	10/01/82	
T2055	Rocket BD SD Fuze	146	5-243	10/01/82	
T2056	Rocket BD Fuze	146	5-245	10/01/82	
T2057	Rocket BD Fuze	146	5-247	10/01/82	
T2058	See M417		-	10/01/82	
T2059	Rocket PD Fuze	146	10-26	10/01/82	
T2061	See XM79		-	10/01/82	
T2061E1	See M414A1		-	10/01/82	
T2062	See M410		-	10/01/82	
T2063	Rocket PI BD Fuze	146	5-249	10/01/82	
T2065	See M411		-	10/01/82	
T2066	Rocket Fuze	146	5-251	10/01/82	
T2067	Rocket Time Fuze	146	10-26	10/01/82	
T2069	Rocket Time Fuze	146	5-253	10/01/82	
T2100E2	See M607		-	10/01/82	
T2275E1	See M421		-	10/01/82	

Supersedes page I-36 of MIL-HDBK-146.

I-36