



Document Cover Sheet

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By *LB* NARA Date *10-24-05*

fuzes etc. *1945*

FOR VICTORY

WEAPON DATA

PHYSICAL CHARACTERISTICS OF AMERICAN
ROCKET PROJECTILES, FUZES, & LAUNCHERS

1A22
ROCKETS

Only Standard and Limited-Standard rocket projectiles are listed. Development type, limited procurement, and experimental projectiles are not included. See reverse side of this sheet for fuses and launchers.

Velocity given is average velocity at end of burning. Dispersion is mean dispersion of projectile when fired from launcher commonly used with that projectile, and does not include dispersion due to aiming errors, wind, etc.

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DESIGNATION				TOTAL WEIGHT		PROPEL- LANT		HEAD CHARACTERISTICS				TERMINAL VELOCITY ft/sec	MAXIMUM RANGE yd	DISPER- SION mile	
COMPLETE ROUND	HEAD	MOTOR	FUSE	Base Nose	lb	lb	in	in	in	lb	FILLER type				FILLER lb
NAVY ROCKETS															
3.5in AR	Mk1-2	41-Mk7	none		53.8	8.5	54.7	3.5	9.7	20.0	solid	0	1200+	5*	
3.5in AR	Mk3-5	41-Mk7	Mk118, 119		53.7	8.5	58.9	3.5	13.8	19.9	TNT	2.2	1200+	5*	
3.5in AR	Mk1	41-Mk7	Mk118		53.9	8.5	58.5	3.5	13.4	20.2	TNT	1.0	1200+	5*	
3.5in AR	Mk6	41-Mk7	Mk155		53.8	8.5	66.5	3.5	19.6	20.0	FS	9.4	1200+	5*	
3.5in AR	Mk8	41-Mk7	none		53.8	8.5	57.8	3.5	11.8	20.0	solid	0	1200+	5*	
3.5in AR	Mk9	41-Mk7	Mk118, 119		53.8	8.5	68.0	3.5	21.2	20.0	FS	9.4	1200+	5*	
3.5in BR	Mk13	41-Mk13	Mk155, aux. det.												
4.5in BR	Mk3	21-Mk9	Mk157, 115		29.2	1.4	30.0	4.5	11.5	20.7	TNT	6.9			
4.5in BR	Mk7	21-Mk9	Mk157, 115		29.9	1.4	30.0	4.5	11.5	21.4	TPX	7.6			
4.5in BR	Mk7	21-Mk9	Mk157, 150-3		28.5	1.4	37.0	4.5	21.5	19.8	FS	12.1			
4.5in BR	Mk9	21-Mk9	Mk158		28.2	1.4	39.4	4.5	21.1	19.8	PT Incand	10.3			
4.5in BR	Mk10	21-Mk9	Mk154		27.7	1.4	37.0	4.5	21.5	19.8	FS or WP	11.5			
5.0in AR	Mk1-0	41-Mk7	Mk118, 119		85.0	8.5	67.0	4.97	19.7	46.5	TNT	8.6	800+		
5.0in AR	Mk1-1	41-Mk7	Mk172		85.0	8.5	67.0	4.97	19.7	46.5	TNT	8.6	800+		
5.0inVAR	Mk0-0	5-Mk2	Mk118, 119		140	24	69.0	4.97	20.3	48	TNT	8.0	1300+?		
5.0inVAR	Mk0-1	5-Mk2	Mk157, 159		140	24	69.0	4.97	20.3	48	TNT	8.0	1300+?		
5.0inVAR	Mk8	5-Mk3	Mk158, 161		140	24	69.0	4.97	20.3	48	TNT	8.0	1300+?		
5.0inVAR	Mk7	5-Mk3	Mk157, 159		140	24	69.0	4.97	20.3	48	TNT	8.0	1300+?		
5.0in HOSR	Mk10	5-Mk4	Mk50-3		50.2	5.8	55.0	4.89	14.6	29.0	TNT	9.5	5,250		
7.2in Ship	Mk1	21-Mk3	Mk131, 135, 140		65	1.5	34	7.2	23	50	TNT	30			
7.2inShip	Mk5	21-Mk3	Mk131, 140		62	1.5	35	7.2	20	49	TPX	35			
7.2inShip	Mk6	21-Mk3	Mk151, 156		65	1.5	39	7.2	19	49	TNT	31			
7.2inShip	Mk7	21-Mk3	Mk151, 156		67	1.5	39	7.2	19	51	TPX	33			
7.2inShip	Mk9	21-Mk3	Mk151, 156		67	1.5	39	7.2	19	51	TPX	33			
7.2inShip	Mk10	21-Mk3	Mk151, 156		65	1.5	39	7.2	19	49	TNT	31			
7.2inShip	Mk15	21-Mk3	Mk151, 156		65	1.5	39	7.2	19	49	TNT	31			
7.2inShip	Mk17	21-Mk3	Mk157, 147		65	1.5	39	7.2	19	49	TNT	31			
7.2inDemo	Mk5	21-Mk3	Mk151, 158		58	1.4	35	7.2	20	47	FS	19.7	3500		
7.2inDemo	Mk10	21-Mk3	Mk151, 158		58	1.4	35	7.2	19	50	TNT	32	175	10	
7.2inDemo	Mk16	21-Mk3	Mk151, 158		60	1.4	35	7.2	19	52	Comp-G-2	33	175		
7.2inDemo	Mk10	21-Mk3	Mk151, 158		60	1.4	35	7.2	19	50	TNT	31			
11.75inAR	Mk1-0 114-Mk1		Mk157-1, 2		125.9	14.7	123.5	11.8	47.5	590	TNT	152	300+?		
11.75inAR	Mk2-0 114-Mk2		Mk157-2, 153-3 (uses 3 fuzes)		125.9	14.7	125.5	11.8	49.5	590	TNT	150	800+?		
ARMY ROCKETS															
2.36in M41	Integral				3.4	0.136	21.6	2.36	8.8	1.57	Pentolite	0.5	265	600	4.5
2.36in M43	Integral				3.4	0.136	19.4	2.36	8.8	1.64	Pentolite	0.5	265	600	6
2.36in M40	Integral				3.4	0.136	17.1	2.36	5.9	1.64	WP	0.9	265	600	6
4.5in M41	Integral				38.1	4.65	31.1	4.5	7.5	17.5-15.5	TNT	4.3	350	4000	15
4.5in M42	Integral				38.1	4.65	31.1	4.5	7.5	15.5-16	TNT	4.3	340	4000	15
4.5in M43	Integral				38.2	4.65	30.5	4.5	7.4	15.5-16	TNT	4.3	340	4000	15
4.5in M46	Integral				38.2	4.65	30.5	4.5	7.4	15.5-16	TNT	4.3	340	4000	15
4.5in M40	Integral				40.5	4.75	28.7	4.5	9.4	17.0	TNT	5.2	340	5250	9
4.5in M40	Integral				40.5	4.75	28.7	4.5	9.4	17.0	TNT	5.2	340	5250	9

* Cone-end hollow charge head. Hollow false ogive of light sheet metal.
* Spin stabilized. All others are fin stabilized.
* Velocity relative to plane when forward fired from aircraft. Add plane speed in ft/sec for true air velocity.
* Dispersion when forward fired from aircraft at 200 - 250 mph.

NATIONAL DEFENSE RESEARCH COMMITTEE, DIVISION 2, PRINCETON UNIVERSITY STATION
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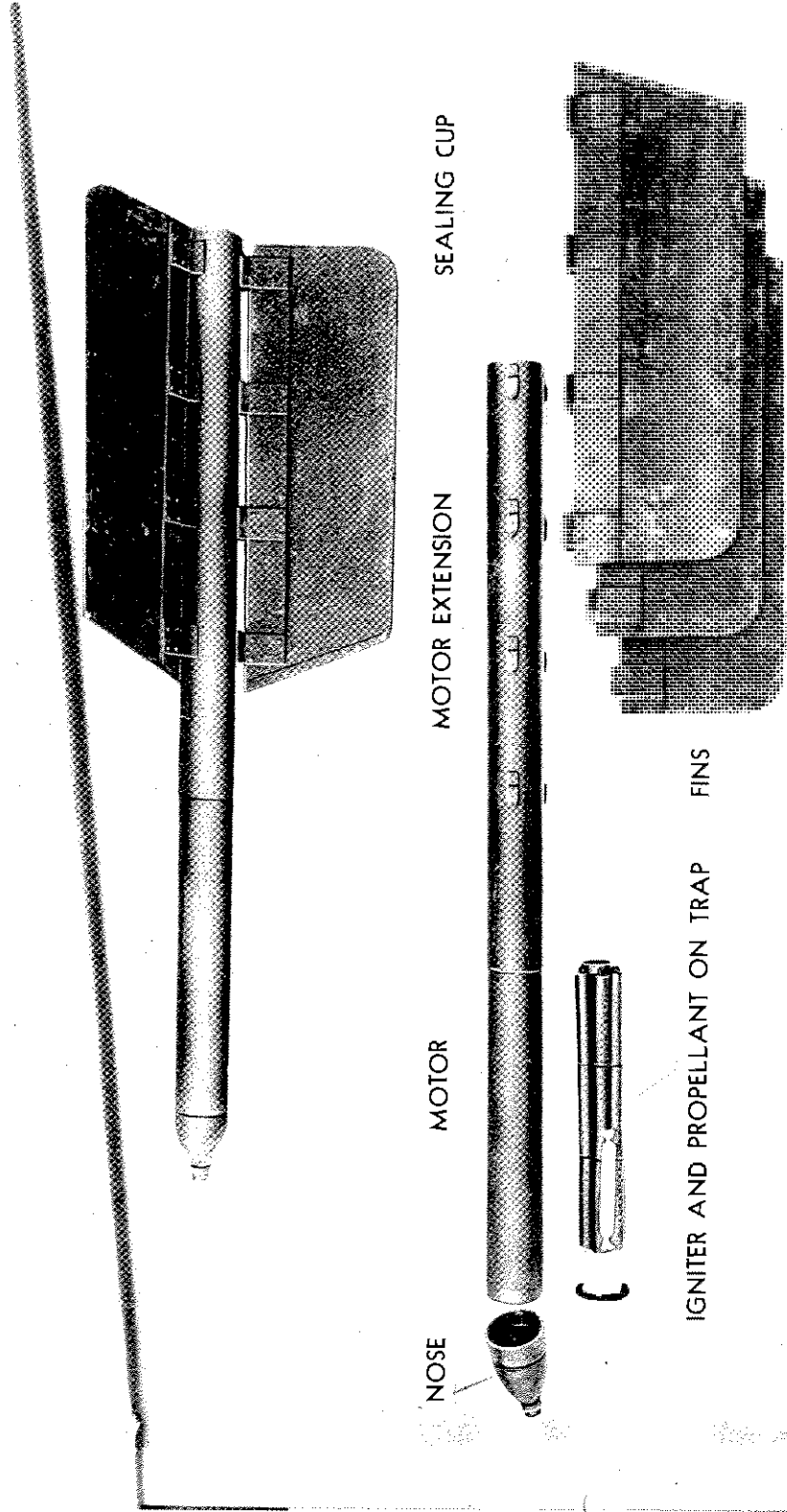
ROCKET FUZES

ROCKET LAUNCHERS

RUZE	5-Base	FUNCTIONING	METHOD OF ARMING	ROCKETS USED IN	LAUNCHER	NUMBER & TYPE	TYPE OF CRAFT
NAVY FUZZES	TIME				REGISTRATION	ROCKETS USED	USED WITH
Mk 30-3	N	Inst.	Creep and Centrifugal force.	5.0inHCSR Mk10	Mk 1-0,1-1	12-4.5 in BR	Landing craft, LGS
Mk 31	N	Inst.	Creep and Centrifugal force	5.0inHCSR Mk8	Mk 2-1	3-4.5 in BR	Landing craft, LGS
Mk 100	N	Inst. or .05 sec	Creep and Centrifugal force	5.0inHCSR Mk7	Mk 4-0	1-4.5 in BR	Carried by hand
Mk 131	N	Inst.	Water travel	7.2inShip Mk4, 5, 6, 7, 9.	Mk 5	10-4.5 in BR	Trucks, etc.
Mk 132	N	Inst.		4.5inBR Mk9	Mk 7	12-4.5 in BR	Landing craft, tanks
Mk 135	N	Inst.	Hydrostatic pressure	7.2inShip Mk4			Trucks, etc.
Mk 137	N	Inst.	Air travel	4.5inBR Mk3, 7, 9			Landing craft, tanks
Mk 140	N	Inst.	Hydrostatic pressure	7.2inShip Mk4, 5, 6, 10, 15			Trucks, etc.
Mk 141	N	Inst. *	Air travel	7.2inDemo Mk5			Landing craft, tanks
Mk 145	N	.02 sec	Air travel	4.5inBR Mk3			Trucks, etc.
Mk 146	N	Inst.	Gas pressure	3.5inAR Mk4			Landing craft, tanks
Mk 147	N	Inst.	Air travel	5.0inAR Mk1-0, 1-1			Trucks, etc.
Mk 148	N	Inst.	Air travel	7.2inChem Mk7			Landing craft, tanks
Mk 149	N	Inst.	Air travel	3.5inAR Mk3, 5, 9			Trucks, etc.
Mk 152	N	Inst.	Air travel	5.0inHVAR Mk6-0, 6-1			Landing craft, tanks
Mk 154	N	Inst.	Air travel	7.2inDemo Mk5			Trucks, etc.
Mk 155	N	Inst.	Air travel	4.5inBR Mk7, 10			Landing craft, tanks
Mk 156	N	Inst.	Air travel	3.5inAR Mk6			Trucks, etc.
Mk 157	B	.02 sec	Gas pressure	7.2inShip Mk6, 7, 8, 9, 10, 15.			Landing craft, tanks
Mk 159	B	.015 sec	Gas pressure	5.0inAR Mk1-0, 1-1			Trucks, etc.
Mk 161	B	Inst.	Gas pressure	11.75inAR Mk1-0, 2-0			Landing craft, tanks
Mk 163	B	.02 sec	Gas pressure	5.0inHVAR Mk6-0, 6-1			Trucks, etc.
Mk 164	B	.015 sec	Gas pressure	7.2inDemo Mk10-1			Landing craft, tanks
Mk 165	B	.02 sec	Gas pressure	11.75inAR Mk2-0			Trucks, etc.
Mk 172	N	VT	Air travel	5.0inHVAR Mk6-1			Landing craft, tanks
Mk 173	N	VT	Air travel	5.0inAR Mk1-0, 1-1			Trucks, etc.
Mk 174	N	VT	Air travel	5.0inAR Mk1-1			Landing craft, tanks
Mk 44-1	N	Inst.	Centrifugal force	5.0inHCSR Mk10			Trucks, etc.
Mk 44-2	N	Inst.	Centrifugal force	5.0inHCSR Mk7			Landing craft, tanks
Mk 44-3	N	Inst.	Centrifugal force	5.0inHCSR Mk4			Trucks, etc.
Mk 44-4	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Landing craft, tanks
Mk 44-5	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Trucks, etc.
Mk 44-6	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Landing craft, tanks
Mk 44-7	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Trucks, etc.
Mk 44-8	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Landing craft, tanks
Mk 44-9	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Trucks, etc.
Mk 44-10	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Landing craft, tanks
Mk 44-11	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Trucks, etc.
Mk 44-12	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Landing craft, tanks
Mk 44-13	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Trucks, etc.
Mk 44-14	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Landing craft, tanks
Mk 44-15	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Trucks, etc.
Mk 44-16	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Landing craft, tanks
Mk 44-17	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Trucks, etc.
Mk 44-18	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Landing craft, tanks
Mk 44-19	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Trucks, etc.
Mk 44-20	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Landing craft, tanks
Mk 44-21	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Trucks, etc.
Mk 44-22	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Landing craft, tanks
Mk 44-23	N	Inst.	Centrifugal force	5.0inHCSR Mk1			Trucks,

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3.25 INCH A.A. TARGET ROCKET, M2

The 3.25 inch A.A. Target Rocket, M2, is designed to simulate low flying aircraft in the training of antiaircraft gun crews. The large fins act as a target.

This rocket has not been fired for specific data on range and dispersion.

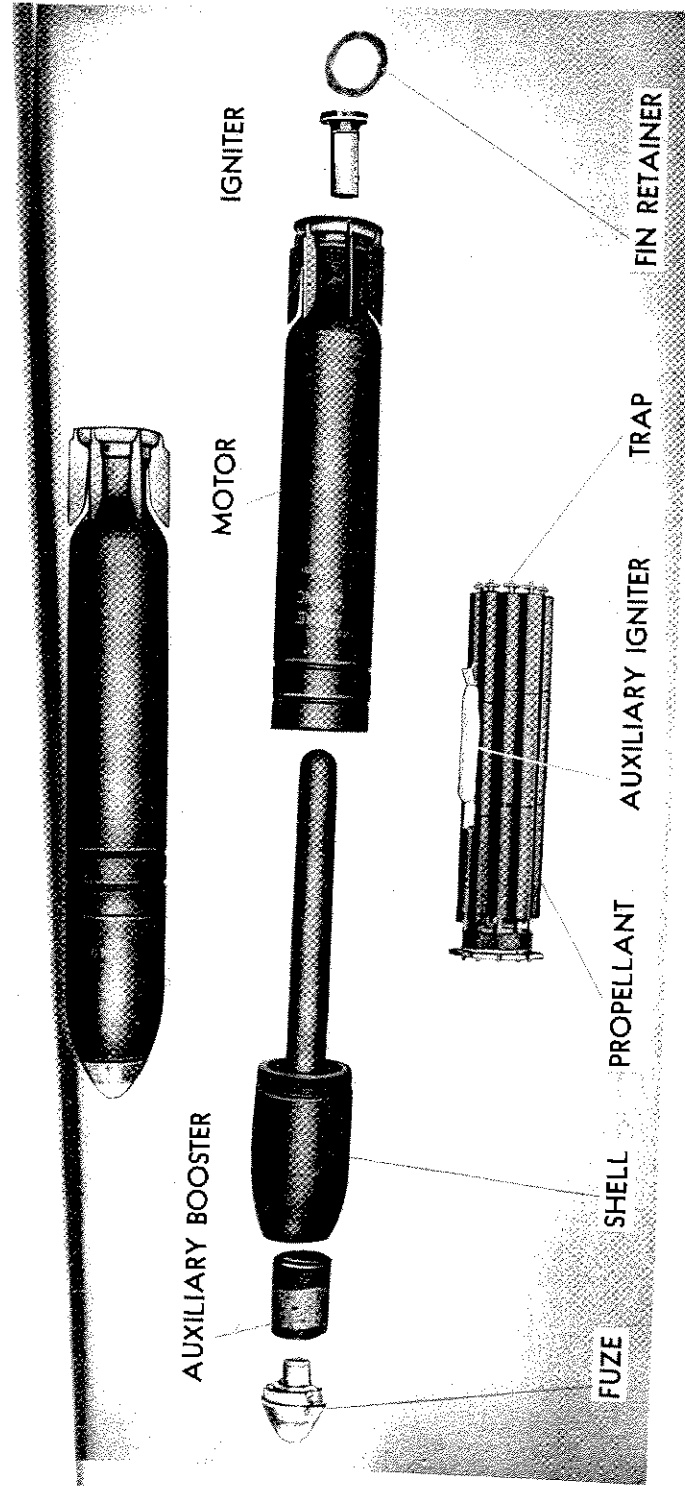
CHARACTERISTICS

Range.....1,700 yd. (estimated)
Dispersion.....No data
Velocity.....530 f/s (estimated)
Service temperature limits.....30° to 120° F.

Burning time:
At 30° F.....0.25 sec. (estimated)
At 120° F.....0.10 sec. (estimated)
Type of stabilization.....Fixed fins
Length, overall.....59.1 in.
Weight of round, loaded.....35.1 lb.
Fuze.....No fuze
Motor assembly:
Diameter, outside.....3.25 in.
Length.....25.25 in.
Weight (less propellant).....8.44 lb.
Material.....WD 1010 to WD 1025 steel tubing
Propellant.....3.2 lb. solvent extruded double base powder, 0.875 in. O.D. by 0.281 in. I.D. by 5 in. long

Type of loading.....18 sticks strung on a 6-wire cage
Shell assembly:
Caliber.....3.25 in.
Length.....4.1 in.
Filler.....Solid cast nose except for 1 1/8 in. axial hole
Weight, filler.....None
Weight, total.....5.83 lb.
Type of ignition.....Electric squib contained in cardboard cartridge in nose. Ignition aided by auxiliary igniter bag tied to cage
Launchers.....Target Rocket Projector, M1
Packaging.....Either two or three rounds per wooden box

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4.5 INCH H.E. ROCKET, M8

The 4.5 inch H.E. Rocket, M8, is used for attacking lightly fortified ground targets and against personnel from aircraft or ground launchers.

The practice round, inert loaded to conform to the live round, is the 4.5 inch Practice Rocket, M9.

CHARACTERISTICS

Range.....4,000 yd.
 Dispersion.....15 mils
 Velocity:
 Full charge.....850 f/s
 Reduced charge.....760 f/s
 Service temperature limits:
 20° to 90° F.—Full Charge
 50° to 130° F.—Reduced Charge
 Burning time:
 At 20° F.....0.3 sec. (estimated)
 At 130° F.....0.12 sec. (estimated)

Type of stabilization..... Folding fins opened by acceleration
 Length, overall.....31.1 in. w/o fuze
 Weight of round, loaded.....38.1 lb.
 Fuze.....P.D. M4, M4A1, M4A2, selective SQ or delay, P.D. T4

Motor assembly:

Diameter, outside.....4.5 in.
 Length.....23.29 in.
 Weight (less propellant).....11.65 lb.
 Material.....WD 1025 welded steel tubing

Propellant:

Full charge.....4.65 lb. solvent extruded double base powder $\frac{7}{8}$ in. O.D. by $\frac{3}{8}$ in. I.D. by 5 in. long
 Reduced charge.....4.2 lb. solvent extruded double base powder $\frac{7}{8}$ in. O.D. by $\frac{5}{8}$ in. I.D. by 5 in. long

Type of loading:

Full charge.....30 sticks strung on 10-wire cage
 Reduced charge.....27 sticks strung on 10-wire cage

Shell assembly:

Caliber.....4.5 in.
 Length.....7.5 in.
 Filler.....TNT
 Weight, filler.....4.3 lb.
 Weight, total.....14.5 lb. to 15.25 lb.

Type of ignition:

Cardboard igniter cartridge containing electric squib and backed by plastic cup pressed into motor venturi. Two auxiliary ignition bags tied to wire cage

Launchers.....M10, M12, M14, T97, T97E1, T31, T33, T34, T36, T38, T46, T46E1, T47, T57, T38, T60, T61

Packaging:

Packed unfuzed, one per fiber container, two containers per wooden box. One fuze and one auxiliary booster per fiber container or metal can, 15 containers or cans per metal box