Fuzes Handbook

Part 1 – Artillery, Mortar, Recoilless Gun and Rocket Fuzes

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FOREWORD

The fuzes handbook gives details of common FSU (Former Soviet Union) artillery, mortar , aircraft bomb, rocket and recoilless gun fuzes in addition to some fuzes of Chinese (PRC – Peoples Republic of China) design.

In the handbook are included some RSP (Render Safe Procedures) for certain aircraft bomb and rocket fuzes.

This handbook is not a complete inventory of FSU fuzes for (LSA) Land Service Ammunition or aircraft bombs but it is a practical handbook for the field use of EOD operators who are facing the most commonly encountered FSU (Former Soviet Union) and some Chinese PRC or US ammunition.

The handbook does not, in itself, qualify the EOD operator to dispose of the fuzes (or munitions they are used in) covered by this book . Only those EOD Operators holding the appropriate IMAS (International Mine Action Standards) qualifications or military equivalent should attempt RSPs (Render Safe Procedures). Many of the RSPs covered in this handbook have not been tested, but are based on the best technical data available.

INTRODUCTION TO FSU (Former Soviet Union) FUZES

Many Artillery, Mortar and Rocket fuzes of the FSU (Former Soviet Union) follow a similar pattern of Arming and Safety Devices incorporated within the fuze, one of the most common encountered mechanisms is the setback sleeve and three locking ball configuration.

This mechanism works as follows: Two locking balls lock the striker in position and are themselves locked in position by a spring loaded setback sleeve. There is a third locking ball which sits between the striker head and the top of the setback sleeve, this ensures that the setback sleeve is held down in a position where it holds the two striker locking balls. On Firing, setback causes the setback sleeve to drop downwards overcoming the setback sleeve spring, this enables the top locking ball to drop out and on creep forward the setback sleeve moves upwards sufficiently to release the two striker locking balls, allowing the striker to move upwards, so it can be driven onto the detonator on impact.

The setback sleeve and three locking ball configuration is used on the following models of PD (Point Detonating) and PIBD fuze: M6, MRV-U, V229, BM, GPV-2, V429, V429E, M12, M50, GK2, GK2M. This series of fuzes covers many of the Soviet artillery and Mortar systems currently in use.

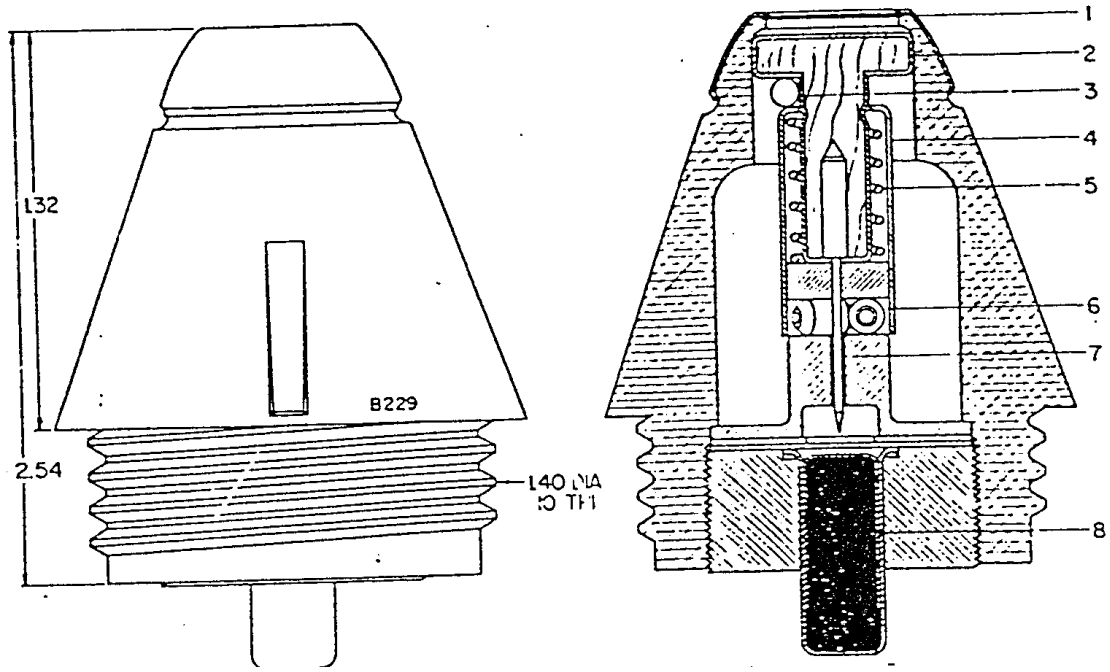
Several models of Artillery fuze, as a secondary safety mechanism, use a rotary shutter held in position by a locking pin. A spring loaded sleeve holds the locking ball which holds the locking pin downwards into a recess in the fuze lower body. On Firing, setback forces the sleeve to drop downwards permitting the locking ball to drop out. This allows the locking pin to be pushed upwards by the locking pin spring, which in turn releases the rotary shutter. The rotary shutter mechanism is used in the following fuzes RGM series, D1, V429 and V429E (the V429E using a clockwork mechanism to move the shutter).

Generally Russian fuzes which incorporate a self destruct mechanism such as fuzes for Cannon ammunition (23mm and 30mm) and light anti aircraft artillery (37mm and 57mm) use fuzes which incorporate a pyrotechnic burning delay to provide the Self destruct mechanism. The delay is ignited by a primer held away from a fixed firing pin by a strong spring. On Firing setback causes the primer to drop downwards onto the firing pin, overcoming the strong spring. This mechanism is also used on the VP-9 fuze for the PG 7 series of HEAT Rocket Propelled Grenades, and fuzes for PG-9, PG-18, series of Rocket propelled grenades or rocket assisted projectiles.

Base fuzes for various APHE shells (e.g. 57mm, 76mm, 85mm, 100mm) use a setback sleeve to hold the primer carrier away from a fixed firing pin. On firing, setback cause the setback sleeve to move rearwards over the primer carrier and lock in position, so that the only mechanism holding the primer carrier and fixed firing pin apart is the creep spring.

The KTM series of fuzes uses a stirrup and ferrule type mechanism to hold the primer carrier away from the firing pin. On Firing, setback causes a spring loaded setback sleeve to move downwards breaking or bending the hooks of the stirrup. Hooks at the rear of the setback sleeve lock onto the rear of the primer carrier so that the primer carrier moves upwards, on creep forward, into a position where it is held away from the striker by the celluloid disc and the striker spring.

1.1 PIBD Fuze Model V-229



Fuze Info

Type: Impact (Direct Action) Spitback
Model: V-229
Body Material: Plastic
Weight : 163g
Markings: B-229
Length: 64.5 mm

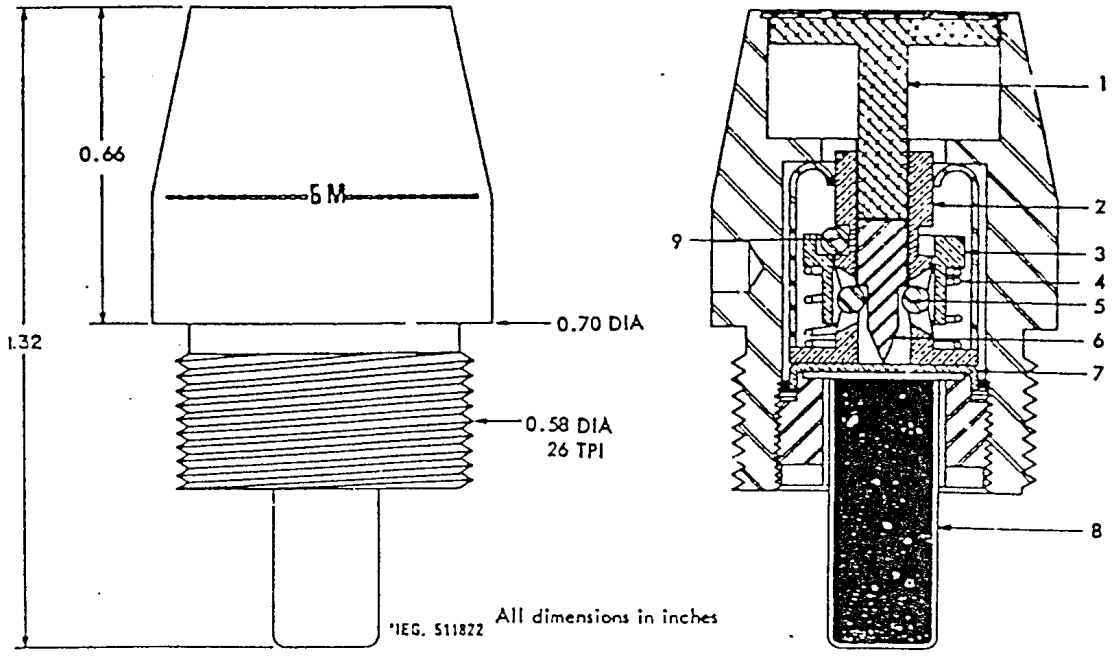
Functioning Info:
Arming Forces used: Setback , Creep forward
Self Destruct: Nil
Safety Devices: Spring loaded Setback sleeve and locking balls (3)

Artillery Gun used in
122mm Howitzer M1938

Projectile Model and type used in:
122mm HEAT OP 460A

EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile

1.2 PIBD Fuze Model BM



Fuze Info

Type: Impact (Direct Action) for Spitback action
Model: BM
Body Material: Steel
Weight : 27.2g
Markings: БМ
Length: 33.5 mm

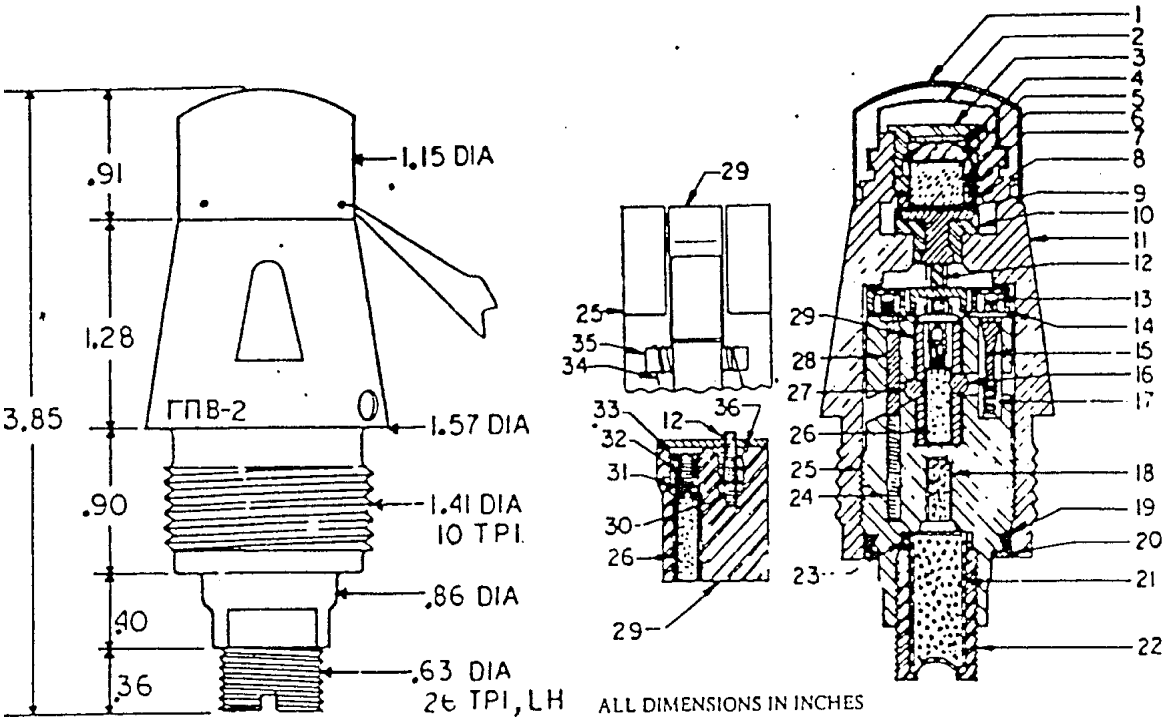
Functioning Info:
Arming Forces used:
Setback , Creep forward
Self Destruct: None
Safety Devices: Setback Sleeve, locking balls (x3),

Artillery Guns used in:
76mm Field Gun M1942/43
SU-76 Support Gun
PT-76 Tank

Projectile Models and types used in:
76mm HEAT, BP-350M and BP-353A

EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.3 PIBD Fuze Model GPV-2



Fuze Info

Type: Impact (Direct Action) for Spitback action
Model: GPV-2
Body Material: Steel
Weight : g
Markings: ГПВ-2
Length: mm

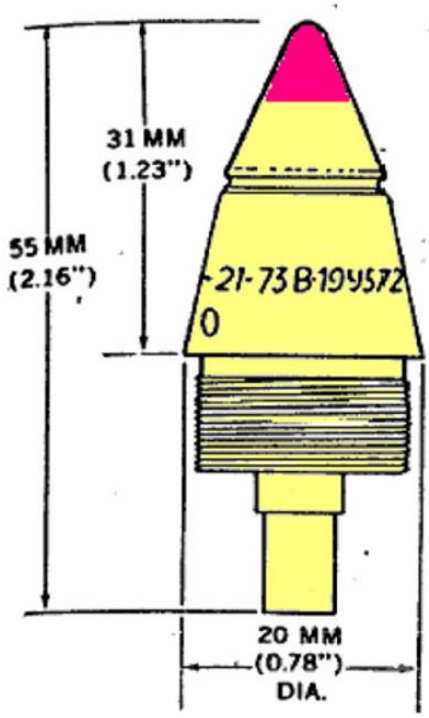
Functioning Info:
Arming Forces used:
Setback , Creep forward
Self Destruct: None
Safety Devices: Setback Sleeve, locking balls (x3),

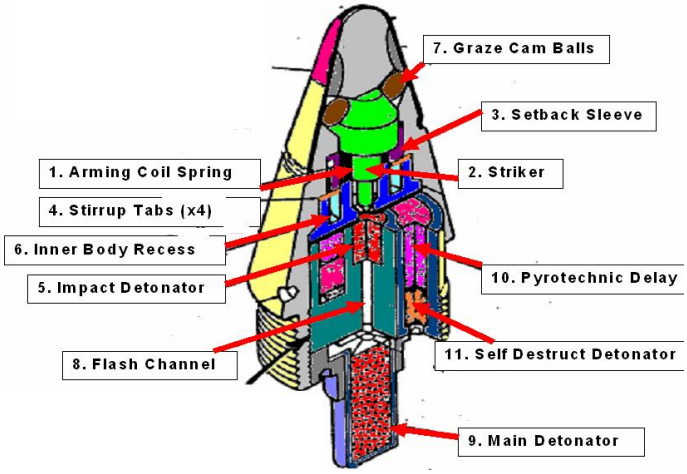
Artillery Gun used in:
76,85 and 100mm Tank and Field Guns.
115mm Gun U-5TS on T62 Tank
122mm Howitzer Model D-30

Projectile Models and types used in:
76mm HEAT-FS Model BK-354 M
85mm HEAT-FS Model BK-2 M
100mm HEAT-FS Model ZBK-5 M
115mm HEAT-FS Model BK-4 M
122mm HEAT-FS Model BK-6

EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.4 PD and SD Fuze A-670M





Fuze Info

Type: Impact **(** Direct Action) and Self Destruct
Model: A-670M
Body Material: Steel
Weight : Not Known
Markings: A-670M
Length: 55 mm

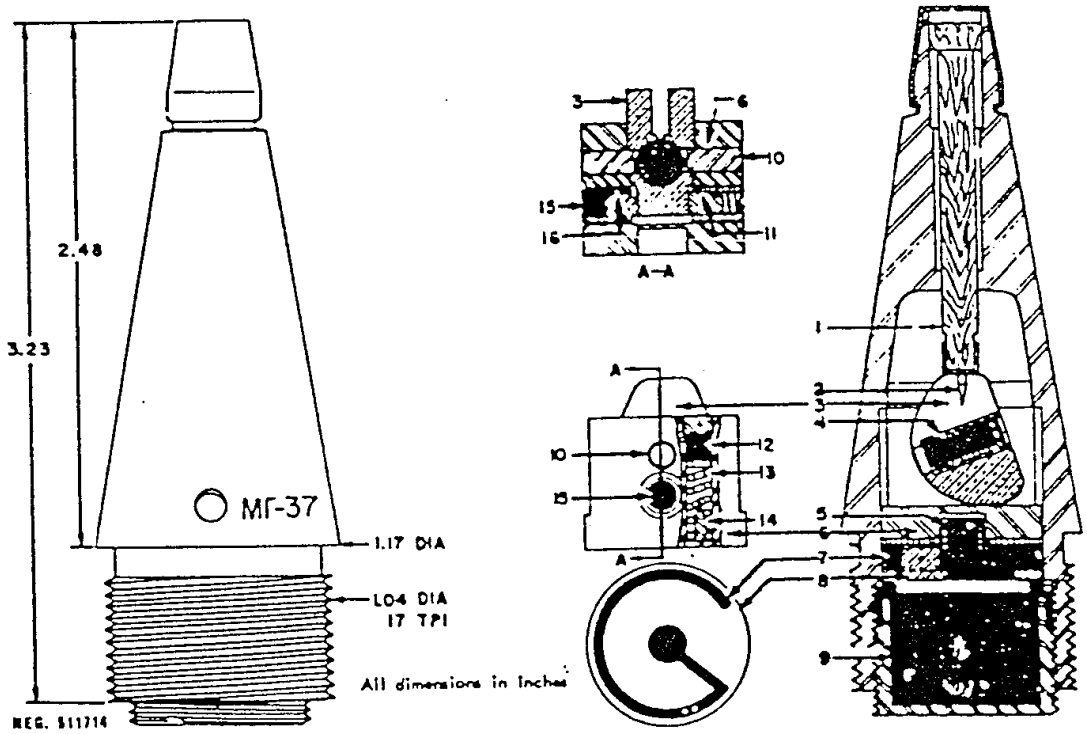
Functioning Info:
Arming Forces used:
Setback , Centrifugal Force
Self Destruct: Setback primer and pyrotechnic delay train
Safety Devices: Striker held by Arming Coil spring, arming coil spring held by setback sleeve

Artillery Gun used in:
23mm AA Cannon

Projectile Models and types used in:
23mm HEI Model OZ

EOD Action for Fired Shell :
Blow in Situ

1.5 PD and SD Fuze MG-37



Fuze Info

Type: Impact **(** Direct Action) and Self Destruct
Model: MG-37
Body Material: Steel
Weight : 172g
Markings: МГ-37
Length: 82.5 mm

Artillery Gun used in

37mm, Antiaircraft Gun M1939

Functioning Info:

Arming Forces used:
Setback , Centrifugal Force
Self Destruct: Setback primer and pyrotechnic delay train
Safety Devices: Rotor Ball (out of Line detonator) Centrifugal bolts for rotor, setback spring (for SD Primer)

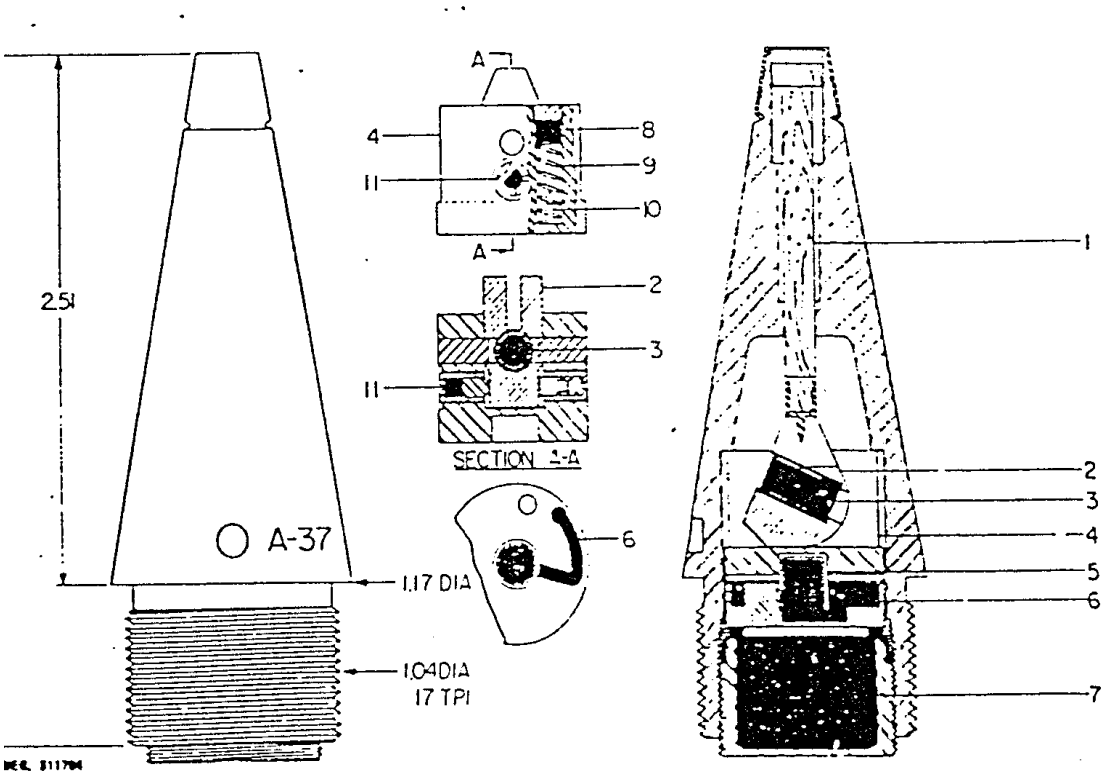
Projectile Models and types used in:

37mm FRAG-T OR-167
37mm FRAG-T OR-167 N

EOD Action for Fired Shell :

Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.6 PD and Self Destruct Fuze A-37



Fuze Info

Type: Impact (Direct Action) and Self destruct
Model: A-37
Body Material: Steel
Weight : 176.9g
Markings: A-37
Length: 83.3 mm

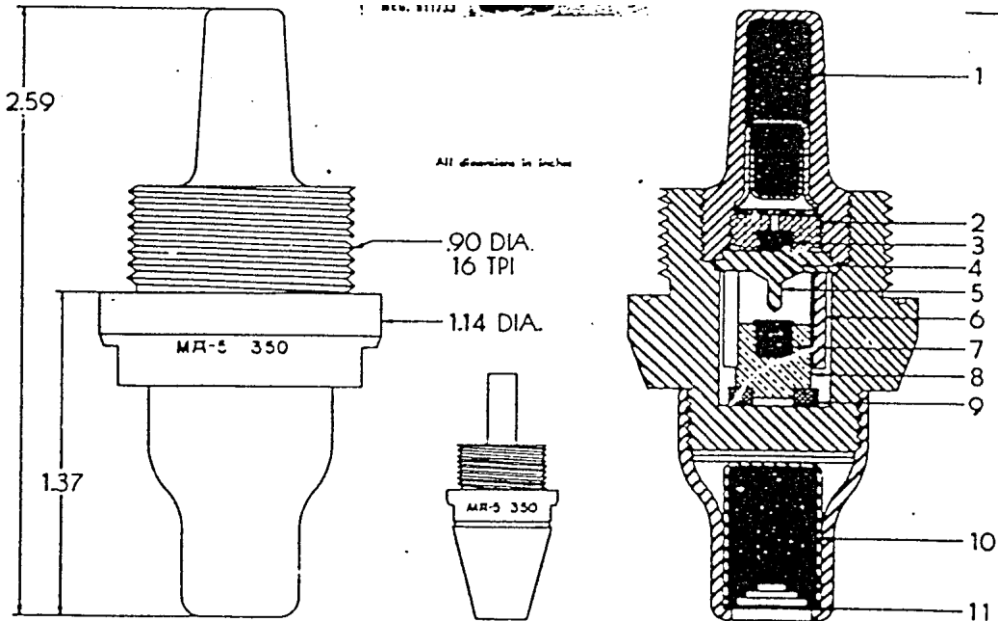
Functioning Info:
Arming Forces used:
Setback , and centrifugal force
Self Destruct: Setback primer and Pyrotechnic Delay train
Safety Devices: Rotor Ball, centrifugal locking bolts, setback spring (for SD Primer)

Artillery Gun used in:
37mm AA Cannon Model N-37

Projectile Models and types used in:
37mm HE-I Cartridge Type OZT

EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.7 BD Fuze MD-5



Fuze Info

Type: Inertia Impact (Base Detonating)
Model: MD-5
Body Material: Steel
Weight : 122.4g
Markings: МД-5
Length: 64.5 mm

Functioning Info:
Arming Forces used: Setback
Self Destruct: Nil
Safety Devices: Setback Sleeve , Creep Spring

Artillery Guns used in

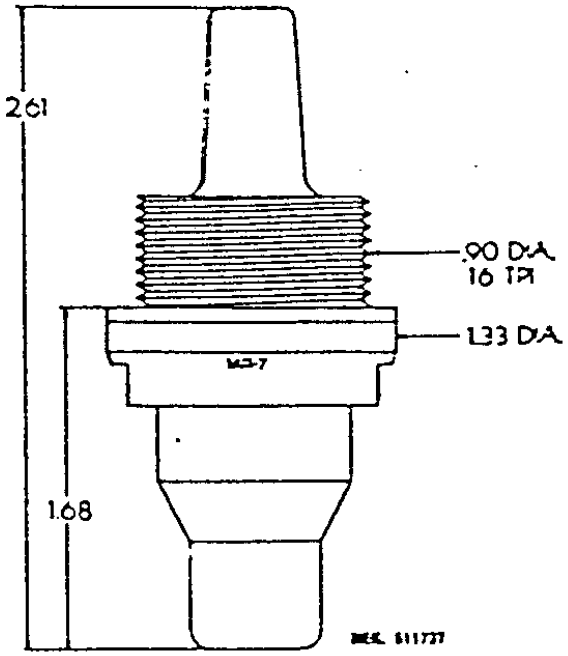
45mm Antitank Gun 1942
ASU-57 Assault Gun
57mm Antitank Gun
76mm Field Gun M1942
SU-76 Support Gun

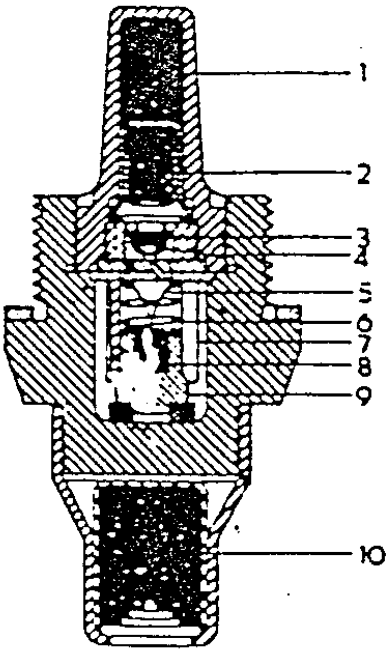
Projectile Model and type used in:

45mm,API-T BZR-240
57mm,AP-T,BR-271
76mm,AP-T, BR-350, BR350AC,BR-350B

EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.8 BD Fuze MD-7





Fuze Info

Type: Inertia Impact (Base Detonating)
Model: MD-7
Body Material: Steel
Weight : 140.6g
Markings: МД-7
Length: 66.2 mm

Functioning Info:
Arming Forces used: Setback
Self Destruct: Nil
Safety Devices: Setback Sleeve , Creep Spring

Artillery Gun used in

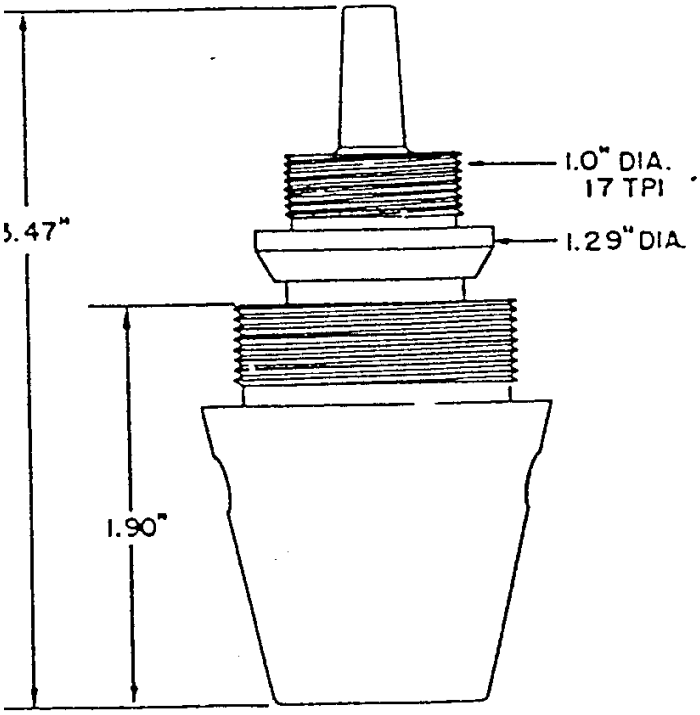
45mm Antitank Gun 1942
ASU-57 Assault Gun
57mm Antitank Gun
76mm Field Gun M1942
SU-76 Support Gun

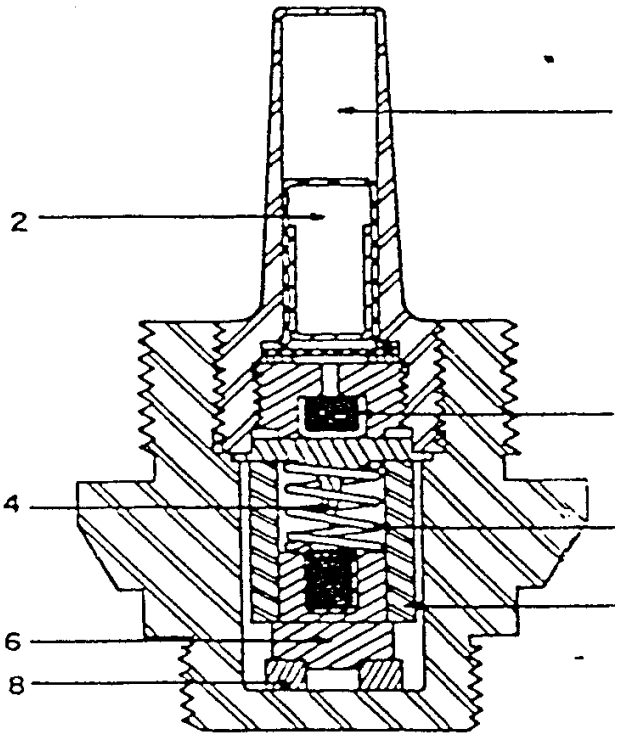
Projectile Model and type used in:

45mm,API-T BZR-240
57mm,AP-T,BR-271
76mm,AP-T, BR-350,

EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.9 BD Fuze MD-8





Fuze Info

Type: Inertia Impact (Base Detonating)
Model: MD-8
Body Material: Steel
Weight : 348.7g
Markings: МД-8
Length: 64.5 mm

Functioning Info:
Arming Forces used:
Setback
Self Destruct: Nil
Safety Devices: Setback Sleeve , Creep Spring

Artillery Guns used in

76mm DIV. Gun
76mm,Tank Gun M1940/41
85mm AA Gun M1939/44
85mm,Tank Gun M1943/44
100m Field Gun M1944
100mm Tank Gun M1944
122mm Tank Gun M1943

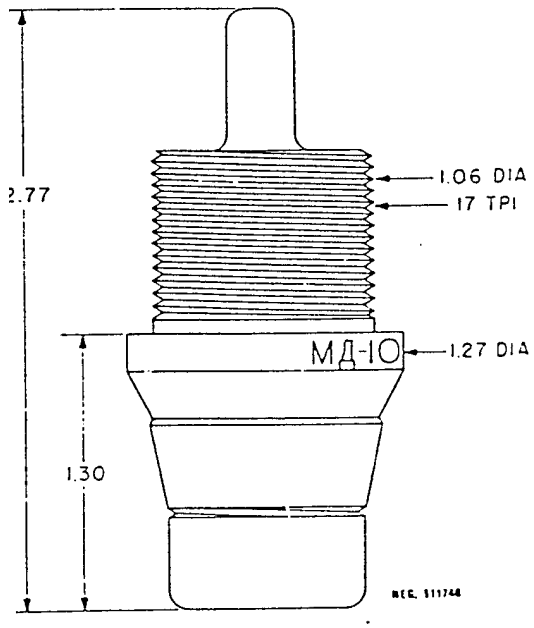
Projectile Models and types used in:

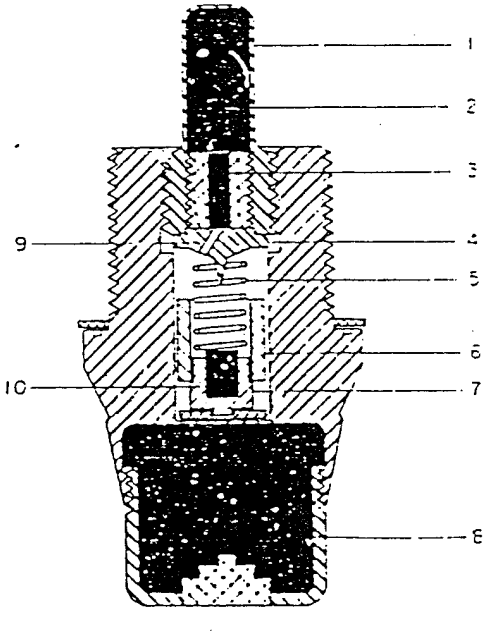
76mm,AP-T,BR-350B
85mm,AP-T,BR-365 and BR-365K
100mm,AP-T,BR-412B
122mm AP-T,BR-471B

EOD Action for Fired Shell :

Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.10 BD Fuze MD-10





Fuze Info

Type: Inertia Impact (Base Detonating)
Model: MD-10
Body Material: Steel
Weight : 163g
Markings: МД-10
Length: 70.3 mm

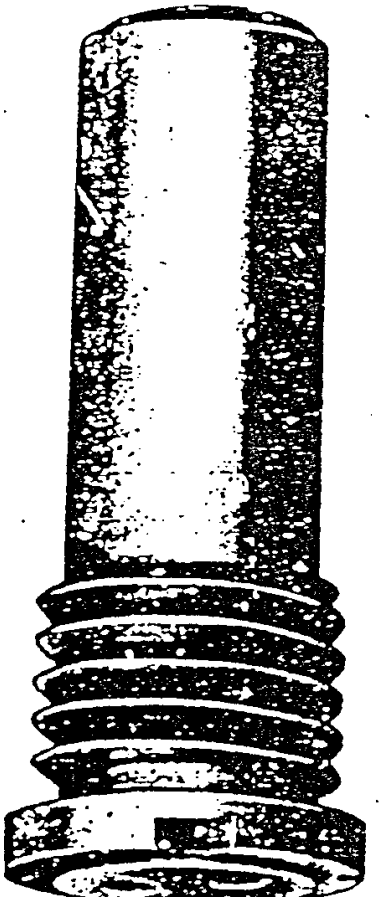
Functioning Info:
Arming Forces used:
Setback
Self Destruct: Nil
Safety Devices: Setback Sleeve , Creep Spring

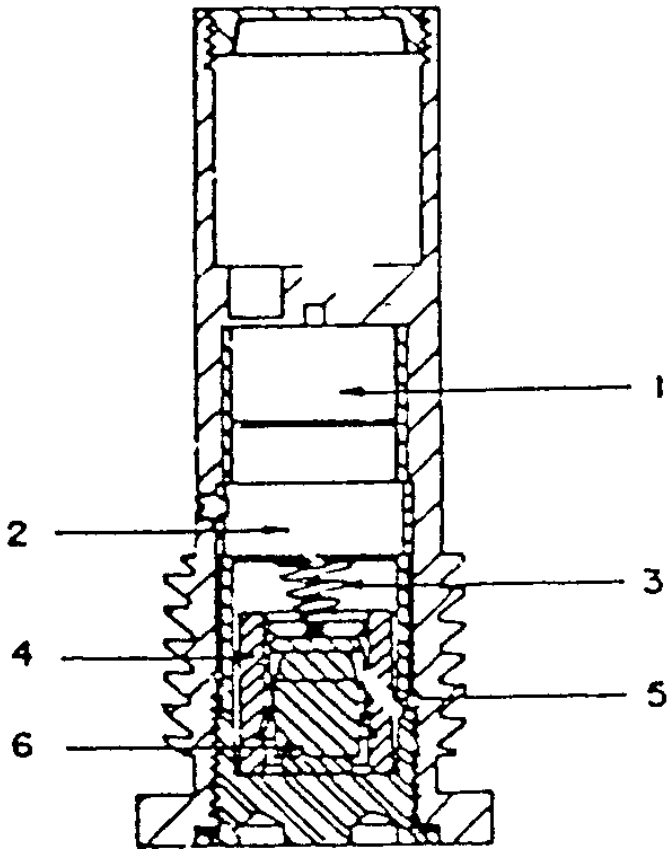
Artillery Guns used in

57mm Antitank Gun M1941/43
ASU-57 ASSULT Gun
57mm AA Gun S-60 and ZSU-57-2

Projectile Models and types used in:
57mm AP-T,BR-271, BR-271K,BR-281 and BR-281 U
EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.11 Base detonating MR-Z





Fuze Info

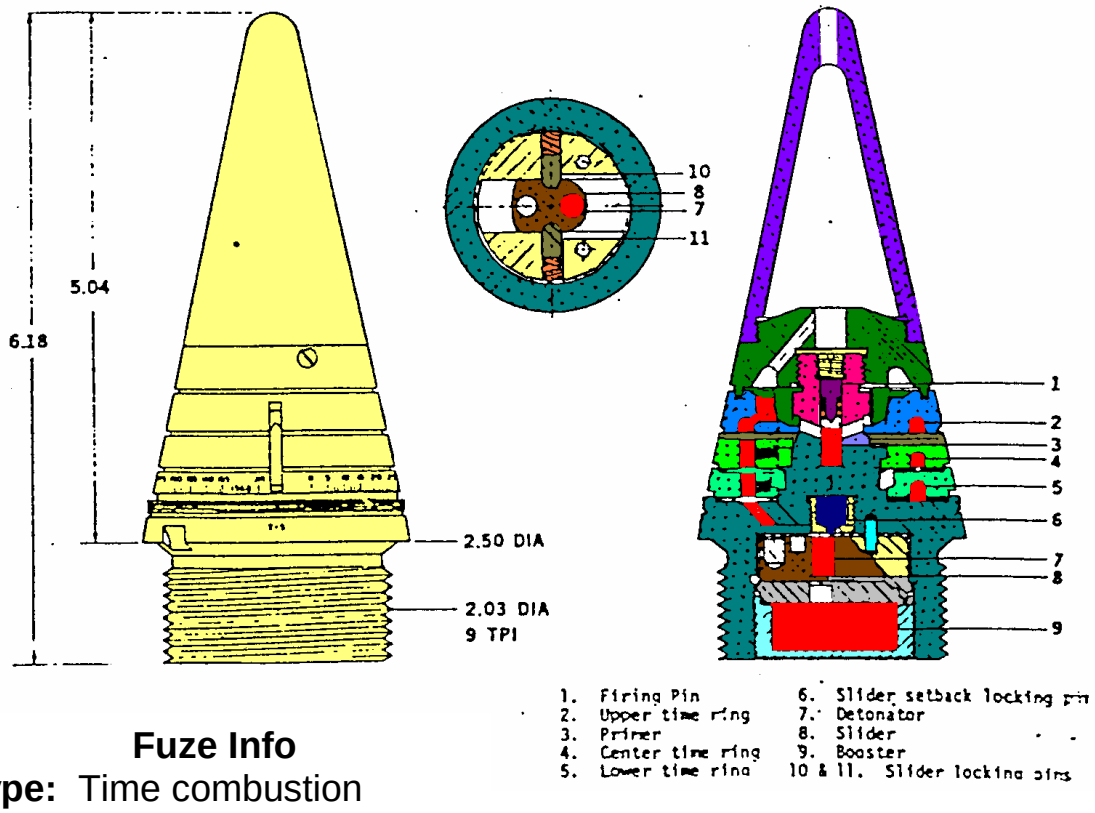
Type: Inertia Impact (Base Detonating
Model: MR-Z
Body Material: Steel
Weight : 285.7g
Markings: MR-3
Length: 89.1 mm

Artillery Gun used in:
130mm Field Gun M-46

Functioning Info:
Arming Forces used:
Setback , Centrifugal force
Self Destruct: None
Safety Devices: Setback sleeve , Creep spring , out of line detonator

Projectile Models and types used in:
130mm AP, BR-482
130mm CP, G-7
EOD Action for Fired Shell :
Blow in Situ

1.12 Time Combustion Fuze T-5



Fuze Info

Type: Time combustion
Model: T-5
Body Material: Aluminium
Weight : 708g
Markings: T-5
Length: 156.9 mm

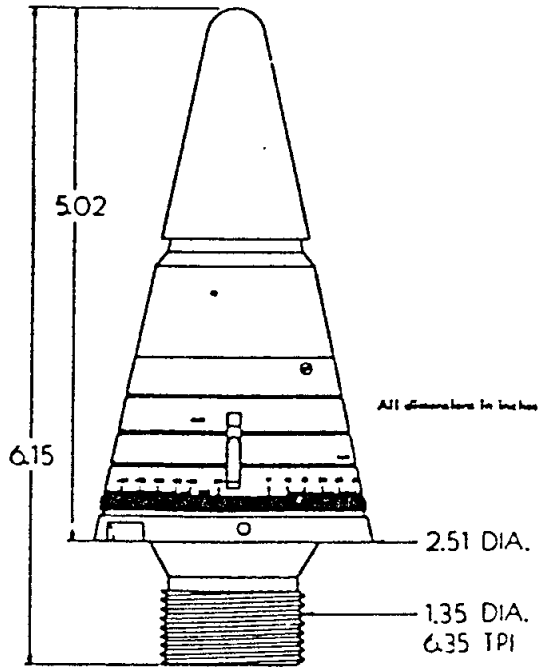
Functioning Info:
Arming Forces used:
Setback , Centrifugal force
Self Destruct: Time delay setting for Fuze
Safety Devices: Detonator held out of line in slider, Centrifugal Bolts locking Slider

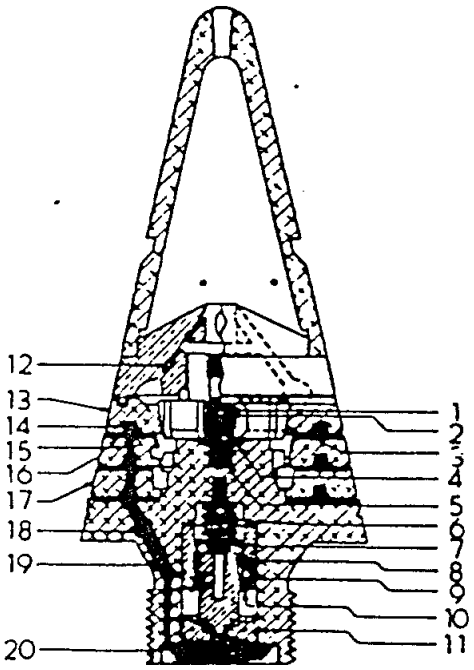
Artillery Guns used in

76mm,Antiaircraft Gun M1939
85mm,Antiaircraft Gun KS-12

Projectile Models and types used in:
76mm FRAG O-361 and O361D
85mm FRAG O365
EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.13 Time Combustion and Superquick Fuze T-6





Fuze Info

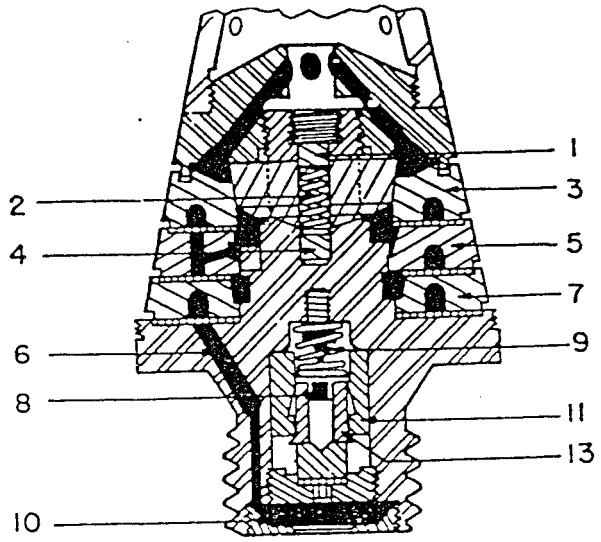
Type: Time combustion / Inertia Impact
Model: T-6
Body Material: Aluminium
Weight : 540g
Markings: T-6
Length: 156.2 mm

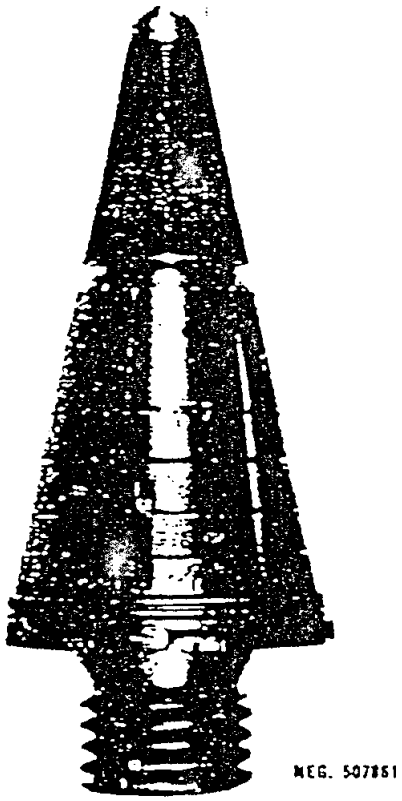
Functioning Info:
Arming Forces used:
Setback , Centrifugal force
Self Destruct: Time delay setting for Fuze
Safety Devices: Detonator held out of line in slider, Centrifugal Bolts locking Slider

Artillery Guns used in
76mm Field Gun M1939/42
122mm Howitzer M1938
152mm Howitzer M1943
SU-76 SUPPORT Gun

Projectile Model and type used in:
76mm,SHRAP,SH-354T/354U
122mm,ILLUM,S-462
122mm PROP,A-462
122mm,SHRAP,SH-460/SH-460T
152mm,SHRAP,SH-501T
EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.14 Time Combustion and Superquick Fuze T-7





Fuze Info

Type: Time combustion / Impact (Direct Action)
Model: T-7
Body Material: Aluminium
Weight : 540g
Markings: T-7
Length: 157.4 mm

Artillery Guns used in

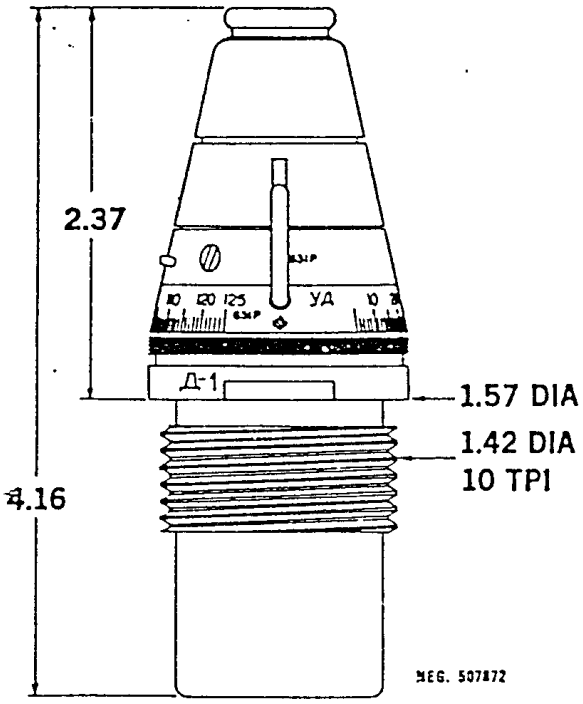
122mm Howitzer M1938
152mm Howitzer M1943

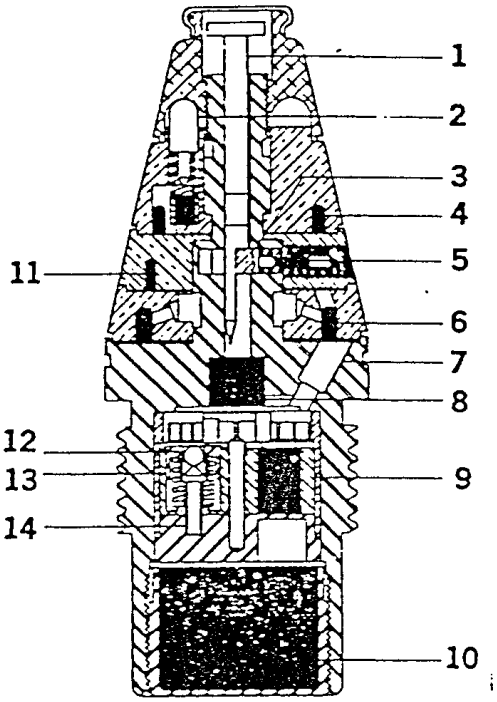
Functioning Info:
Arming Forces used:
Setback , Centrifugal force
Self Destruct: Time delay setting for Fuze
Safety Devices: Shipping Cap, Detonator held out of line in slider, Centrifugal Bolts locking Slider

Projectile Model and type used in:

122mm SHRAP,SH-460T
122mm ILLUM,5-462
122mm,PROP,A-462
152mm SHRAP,SH-501T
EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.15 Time Combustion and PD Fuze D-1





Fuze Info

Type: Time Combustion Impact (Direct Action)
Model: D-1
Body Material: Steel
Weight : 431g
Markings: Д-1
Length: 105.6 mm

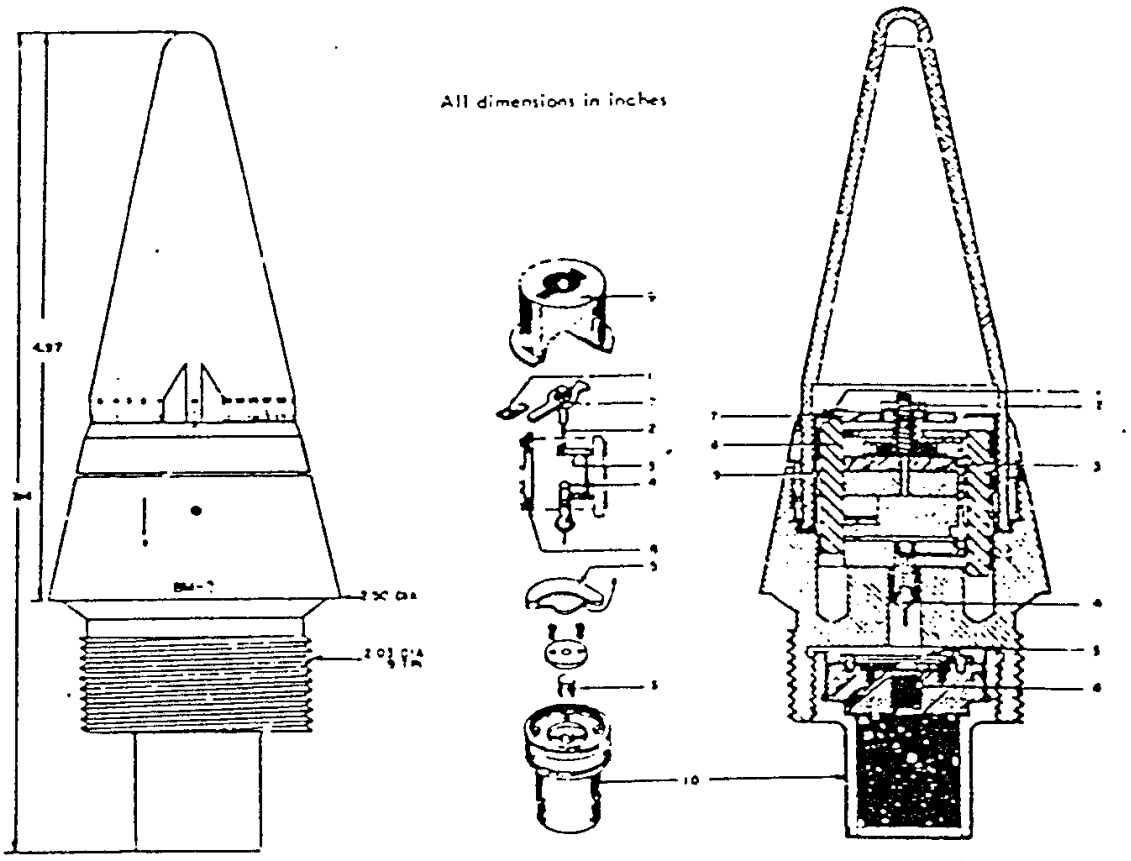
Functioning Info:
Arming Forces used:
Setback , Centrifugal force
Self Destruct: Time delay on fuze
Safety Devices: Shipping Cap, Setback Sleeve, locking balls, shutter locking pin, rotary shutter, centrifugal locking bar (for impact striker)

Artillery Guns used in:
122mm Field Gun M1931/37
122mm Howitzer M1938
122m Tank Gun M1943
152mm Howitzer M1937/43

Projectile Models and types used in:
122mm FRAG-HE OF-462,OF-471 and 471N
152mm FRAG,O-530A,OF-530, OF-530A,OF-540 and OF-540B

EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.16 Mechanical Time Fuze VM-2



Fuze Info

Type: Time Mechanical
Model: VM-2
Body Material: Aluminium
Weight : Not Known
Markings: BM-2
Length: 181.3 mm

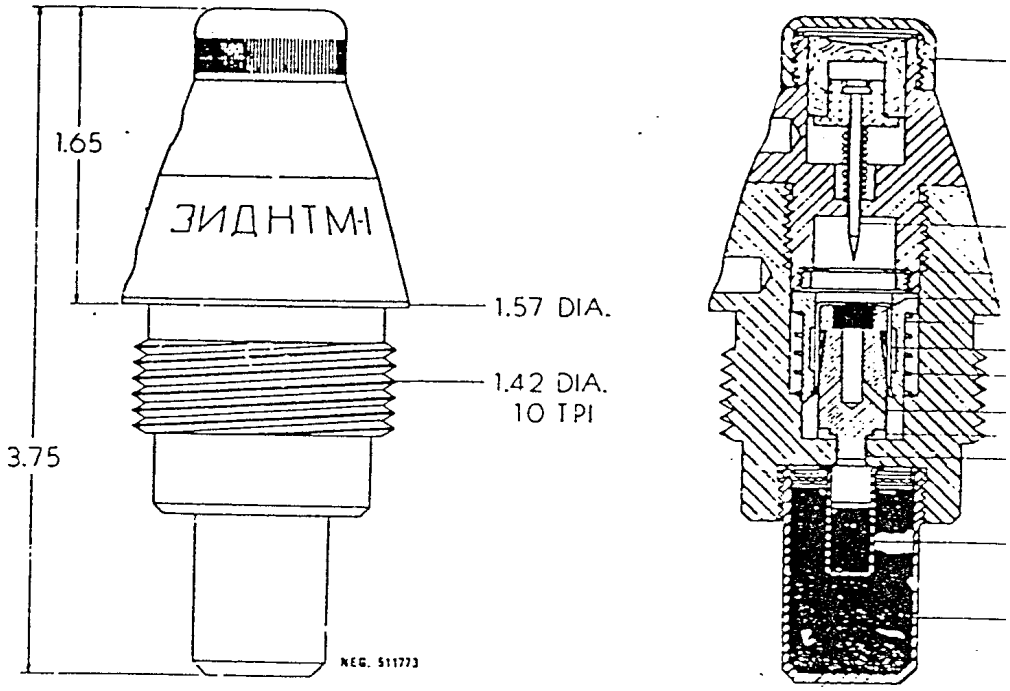
Functioning Info:
Arming Forces used:
Setback , and centrifugal force
Self Destruct: Time delay set
Safety Devices: blocking shutter to detonator

Artillery Gun used in:
85mm AA Guns KS-12 and KS-18

Projectile Models and types used in:
85mm FRAG,O-365M

EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.17 PD and Graze Action Fuze KTM-1



Fuze Info

Type: Impact (Direct Action) and Graze (Inertia Impact)
Model: KTM-1
Body Material: Steel
Weight : 367.4g
Markings: ЗИДКТМ-1
Length: 95.2 mm

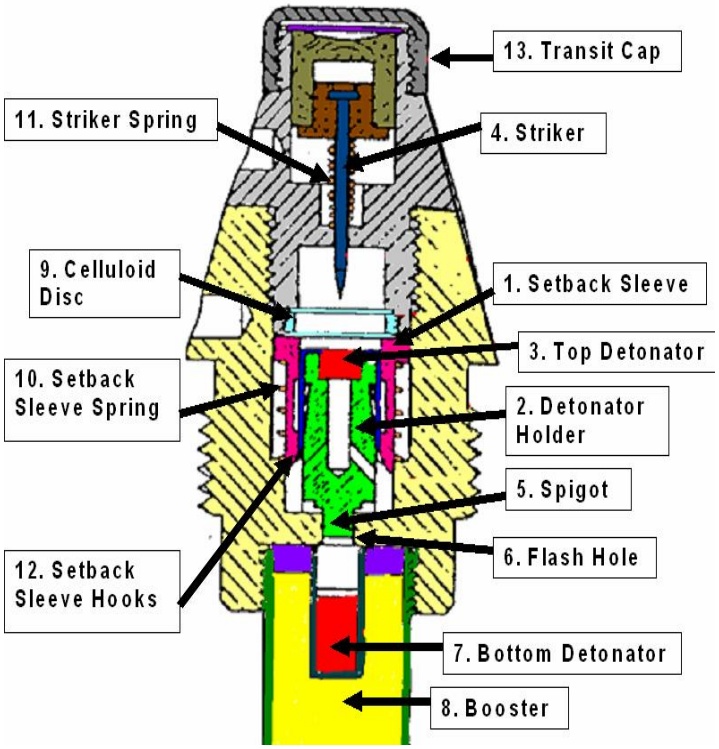
Functioning Info:
Arming Forces used:
Setback , Creep forward
Self Destruct: None
Safety Devices: Shipping Cap, Setback Sleeve holding detonator away from Striker, Flash path of detonator blocked

Artillery Guns used in
45mm AA Gun M1942
57mm AA and Assult Guns
76mm Guns various models
85mm Guns Various models

Projectile Model and type used in:
45mm FRAG,O-240,O-240A and O-240M
57mm FRAG,0271 and O271U
76mm FRAG-HE,OF-343,OF-350 and OF-350A 76mm FRAG,O350A
76mm Smoke,D-350A
76mm FRAG-GAS
85mm FRAG,O-365 and O-365K

EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.18 PD and Graze Action Fuze KTM-1U



Fuze Info

Type: Impact (Direct Action) and Graze (Inertia Impact)
Model: KTM-1-U
Body Material: Steel
Weight : 367.4g
Markings: ЗИДКТМ-1-У
Length: 95.2 mm

Artillery Guns used in

57mm Antitank Gun M1943
76mm Divisional Gun M1942
85mm AA Gun M1939
85mm Tank Gun M1944

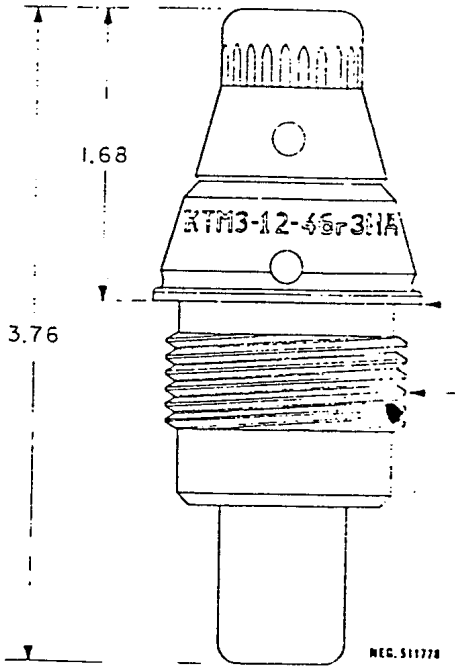
Functioning Info:
Arming Forces used:
Setback , Creep forward
Self Destruct: None
Safety Devices: Shipping Cap, Setback Sleeve holding detonator away from Striker, Flash path of detonator blocked

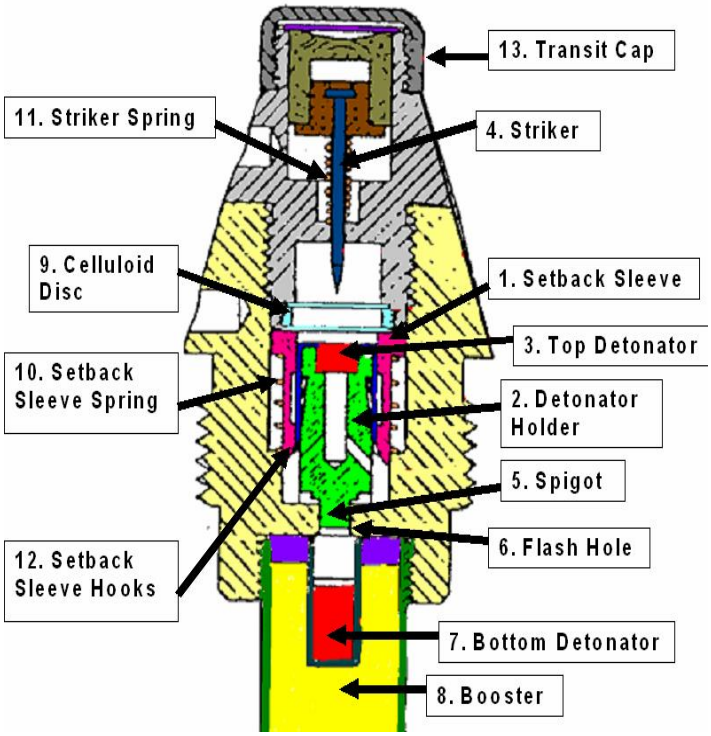
Projectile Models and types used in:

57mm FRAG,0271 and O271U
76mm,FRAG O-350,O350A,
76mm,FRAG HE OF-343,OF350,
85mm FRAG, O-365K

EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.19 PD and Graze Action Fuze KTMZ-1





Fuze Info

Type: Impact (Direct Action) and Graze (Inertia Impact)
Model: KTMZ-1
Body Material: Steel
Weight : 358.3g
Markings: ЗИДКТМЗ-1
Length: 95.5 mm

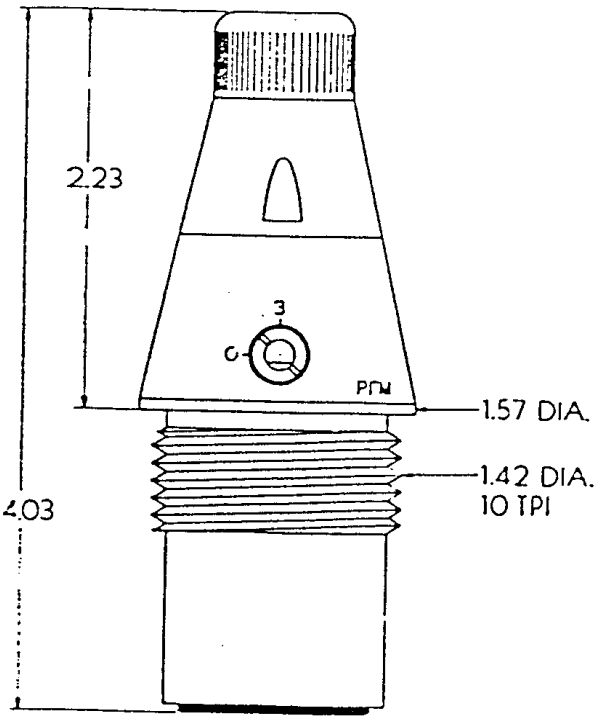
Functioning Info:
Arming Forces used:
Setback , Creep forward
Self Destruct: None
Safety Devices: Shipping Cap, Setback Sleeve holding detonator away from Striker, Flash path of detonator blocked

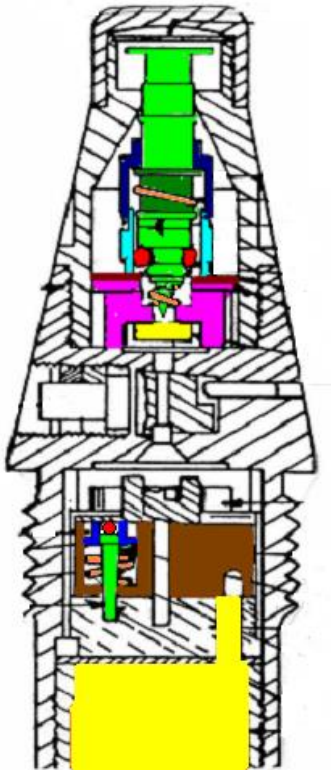
Artillery Guns used in
45mm Antitank Gun M1942
57mm various models
76mm guns various models
85mm guns various models

Projectile Models and types used in:
45mm,FRAG,O-240A and O-240M
57mm FRAG,0271 and O271U
76mm,FRAG HE OF-350,OF350A,
85mm FRAG, 0-365, O-365K

EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.20 PD and Graze Action Fuze RGM





Fuze Info

Type: Impact (Direct Action) and Graze (Inertia Impact)
Model: RGM
Body Material: Steel
Weight : 459g
Markings: РГМ
Length: 102.3 mm

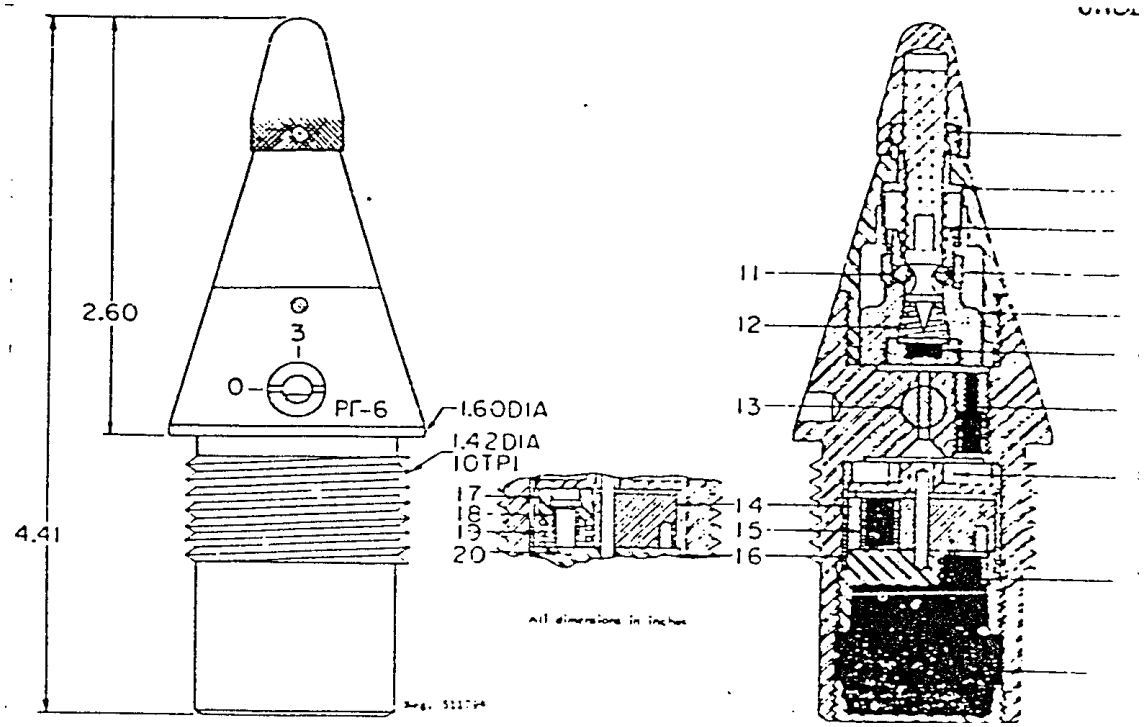
Functioning Info:
Arming Forces used:
Setback , Creep forward, Centrifugal force
Self Destruct: None
Safety Devices: Shipping Cap, Setback Sleeve, locking balls, shutter locking pin, rotary shutter

Artillery Guns used in:
100mm Field Gun M1944
100mm Tank Gun D-10T
122mm Howitzer M1938
152mm Howitzer M1943
152mm Gun Howitzer

Projectile Models and types used in:
100mm HE, F-412 100mm FRAG, O-415
122mm FRAG-HE,OF-471, OF-471N And OF 462
152mm FRAG, O-530A and O-530

EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.21 PD and Graze Action Fuze RG-6



Fuze Info

Type: Impact (Direct Action) and Graze (Inertia Impact)
Model: RG-6
Body Material: Steel
Weight : 459g
Markings: РГ-6

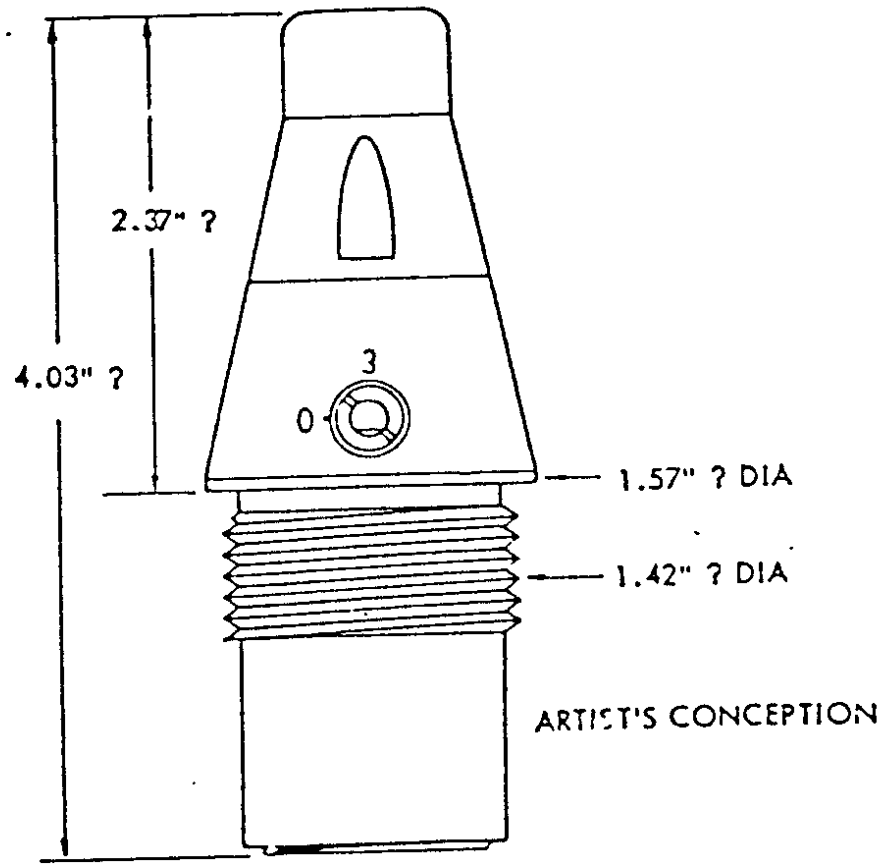
Functioning Info:
Arming Forces used:
Setback , Creep forward, Centrifugal force
Self Destruct: None
Safety Devices: Shipping Cap, Setback Sleeve, locking balls, shutter locking pin, rotary shutter

Artillery Guns used in:
122mm Howitzer M1938
152mm Howitzer M1938/43
152mm Howitzer Gun M1937

Projectile Models and types used in:
122mm FRAG-HE , OF-462
122mm FRAG, O-452A
152mm FRAG-HE, OF-530
152mm FRAG, O530A

EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.22 PD Fuze RGM 6



Fuze Info

Type: Impact (Direct Action)
Model: RGM-6
Body Material: Steel
Weight : 456g
Markings: РГМ-6
Length: 102.3 mm

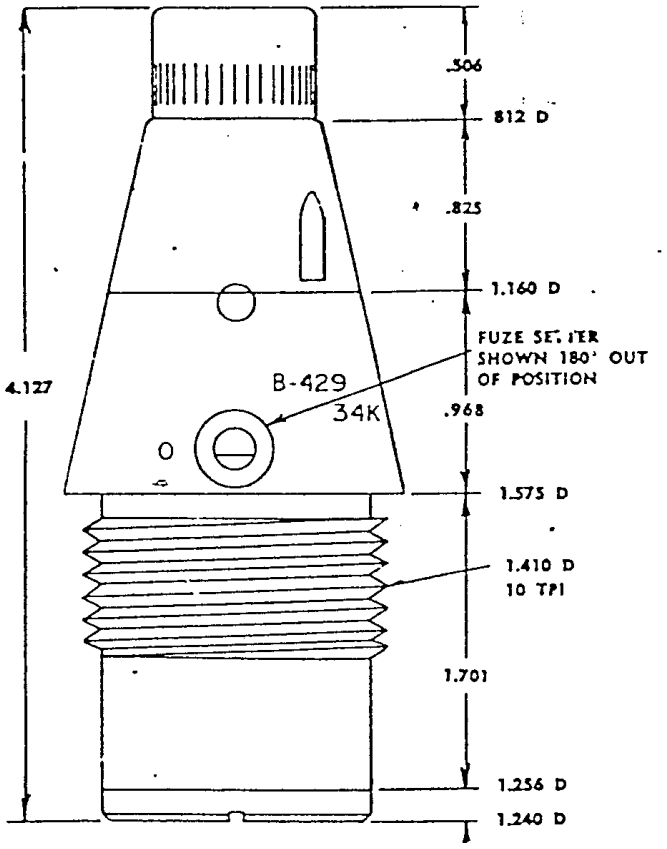
Functioning Info:
Arming Forces used:
Setback , and centrifugal force
Self Destruct: None
Safety Devices: Setback sleeve and locking balls (2) Shutter locking pin, Rotary shutter

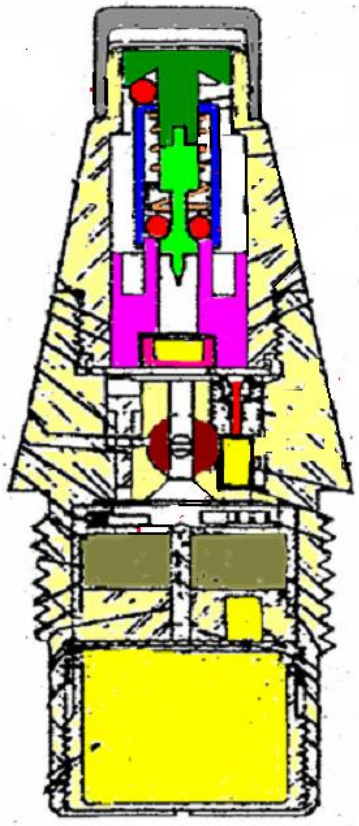
Artillery Gun used in:
122mm Howitzer M1938
152mm Howitzer M1943

Projectile Models and types used in:
122mm HE Frag , OF-462,OF-462A
122mm HE, F-460 and F-460A
152mm HE Frag, OF-530, OF-530A
152mm HE, F-530, F-530A

EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.23 PD and Graze Fuze V-429





Fuze Info

Type: Impact (Direct Action) and Graze action (Inertia Impact)
Model: V-429
Body Material: Steel
Weight : 440g
Markings: B-429
Length: 105 mm

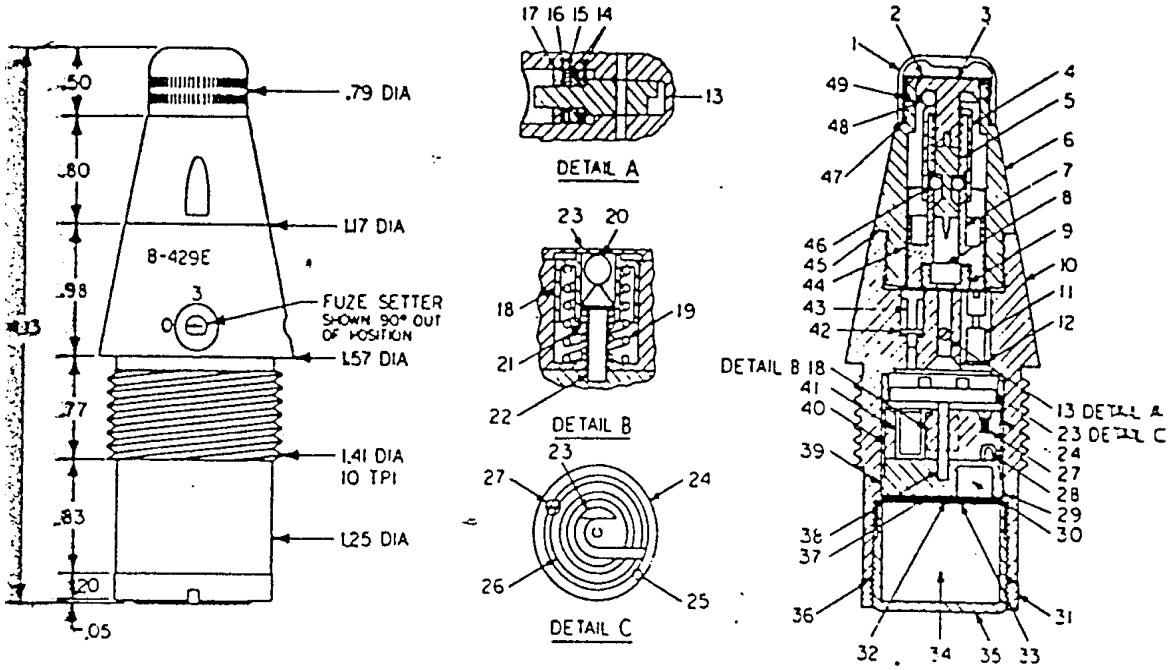
Functioning Info:
Arming Forces used:
Setback , Centrifugal force
Self Destruct: None
Safety Devices: Setback sleeve , Locking Balls (3) Creep spring , Shutter locking pin, Rotary shutter

Artillery Guns used in:
122mm D 74 Field Gun
122mm D 30 Howitzer
130mm M46 Field Gun
152mm D20 Howitzer

Projectile Models and types used in:
100mm FRAG-HE OF-412 and OF-412U
122mm FRAG-HE OF-472
130mm FRAG-HE OF-482
152mm FRAG-HE OF-540

EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.24 PD and Graze Fuze V-429E



Fuze Info

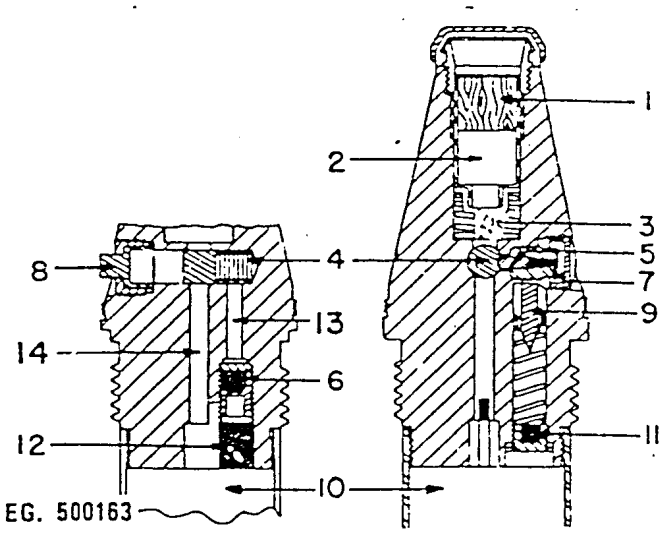
Type: Impact (Direct Action) and Graze action (Inertia Impact)
Model: V-429E
Body Material: Steel
Weight : 436g
Markings: B-429E
Length: 106 mm

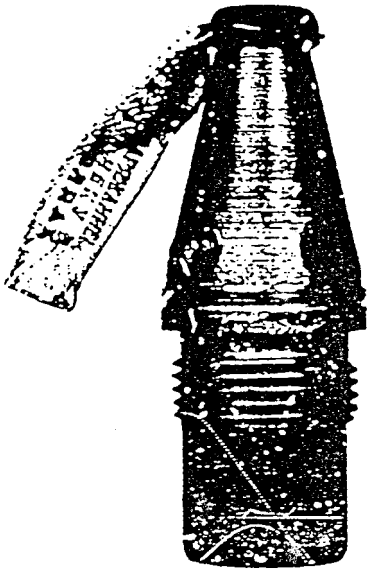
Functioning Info:
Arming Forces used:
Setback
Self Destruct: None
Safety Devices: Setback sleeve , Locking Balls (3) Creep spring , Shutter locking pin, Rotary shutter (Clockwork operation)

Artillery Gun used in:
115mm Gun Model U-5TS on T-62 Tank

Projectile Models and types used in:
115mm FRAG-HE Model OF-11 and OF-18
EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

1.25 PD Fuze GVMZ-7





Fuze Info

Type: Impact (Direct Action) and Graze action (Inertia Impact)
Model: GVMZ-7
Body Material: Steel
Weight : 481g
Markings: ГВМ3-7
Length: 106.4 mm

Artillery Gun used in:
122mm Howitzer M1938
152mm Howitzer M1943

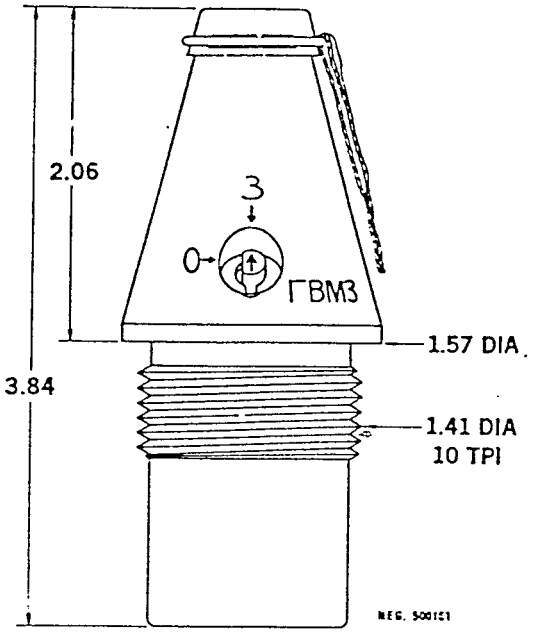
Projectile Models and types used in:
122mm FRAG, OF-462A
152mm FRAG-HE, OF-534G and OF-534AG

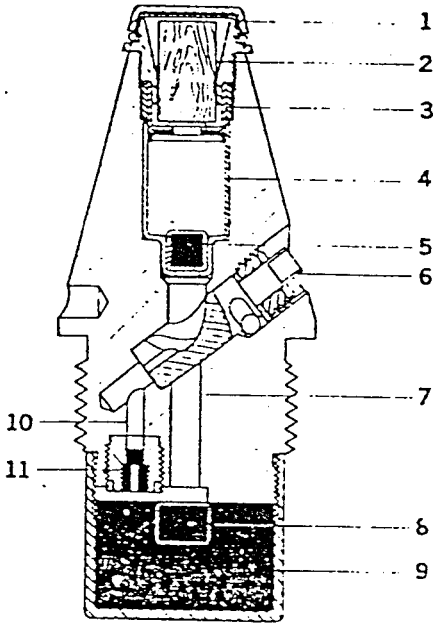
EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

Functioning Info:
Arming Forces used:
Setback
Self Destruct: None
Safety Devices: Shipping cap with wire and interrupter

2. MORTAR FUZES

2.1 PD Fuze GVMZ





Fuze Info

Type: Impact (Direct Action)
Model: GVMZ
Body Material: Steel
Weight : 430.9g
Markings: ГВМЗ
Length: 97.5 mm

Mortars used in

120mm Mortar M1938
120mm Mortar M1943

Functioning Info:

Arming Forces used:
None ?
Self Destruct: None
Safety Devices: Shipping cap ?

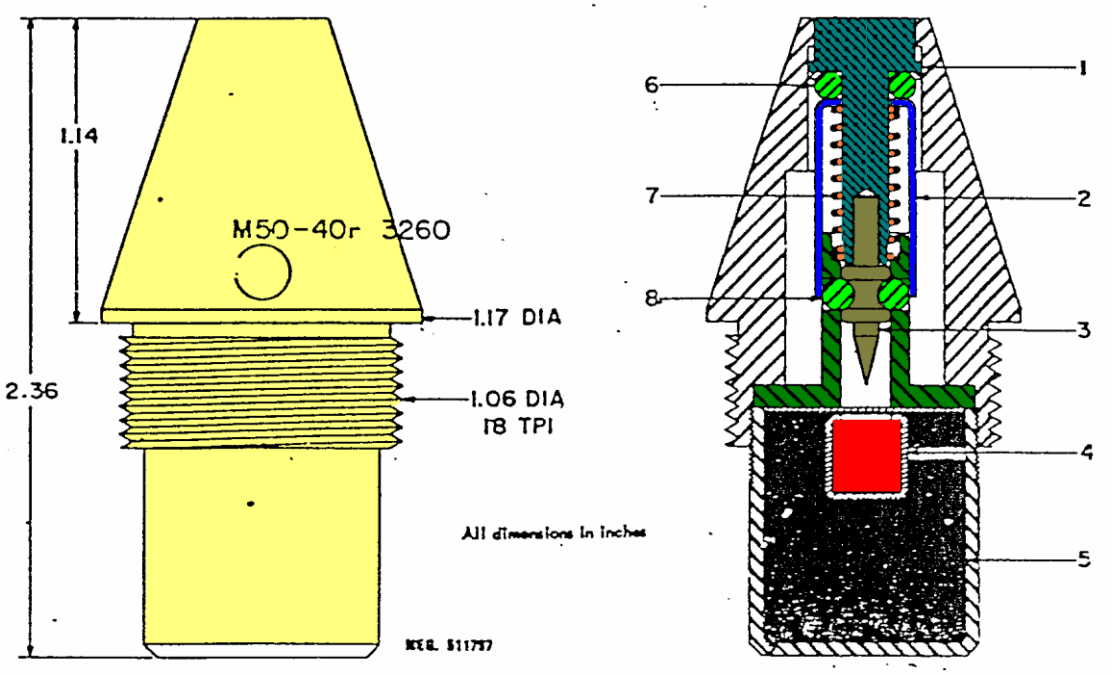
Mortar bomb model and types used in

120mm FRAG-HE, OF-843 & OF-843A
120mm SMOKE, D-843A

EOD Action for Fired Mortar Bomb :

Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

2.2 PD Fuze M-50



Fuze Info

Type: Impact (Direct Action)
Model: M-50
Body Material: Steel
Weight : 113g
Markings: M50-40
Length: 59.9 mm

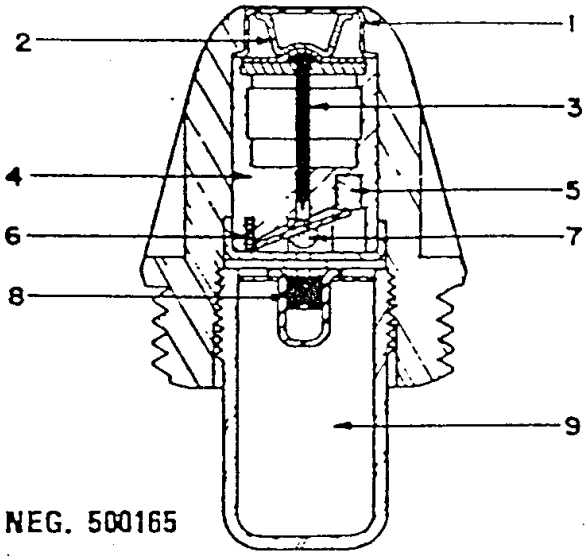
Mortars used in
50mm Mortar M1938 / 40/ 41

Mortar bomb model and types used in
50mm FRAG O-822, O822A, and O822SH

EOD Action for Fired Mortar Bomb :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

Functioning Info:
Arming Forces used:
Setback
Self Destruct: None
Safety Devices: Setback sleeve , Locking Balls (4)

2.3 PD Fuze MP-82



Fuze Info

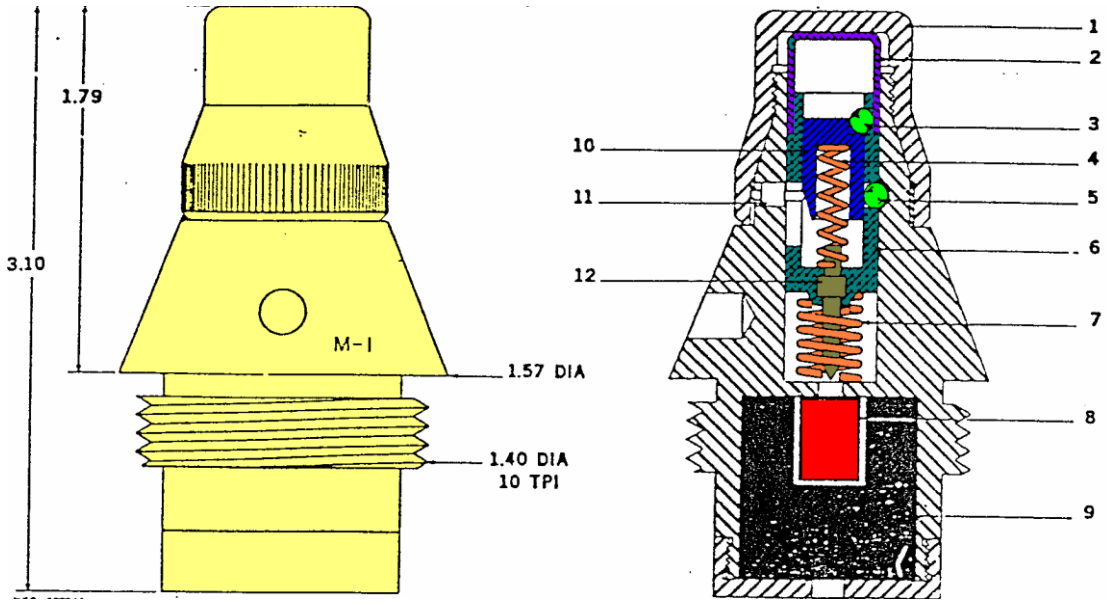
Type: Impact (Direct Action)
Model: MP-82
Body Material: Phenolic plastic
Weight : 68g
Markings: МП-82
Length: 65.5 mm

Functioning Info:
Arming Forces used:
Setback
Self Destruct: None
Safety Devices:
Mechanical block (slider)

Mortars used in
82mm Mortar M1937 / 41/ 43

Mortar bomb model and types used in
82mm FRAG O-832
EOD Action for Fired Mortar Bomb :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

2.4 PD Fuze M-1



Fuze Info

Type: Impact (Direct Action)
Model: M-1
Body Material: Steel
Weight : 249.5g
Markings: M-1
Length: 78.7 mm

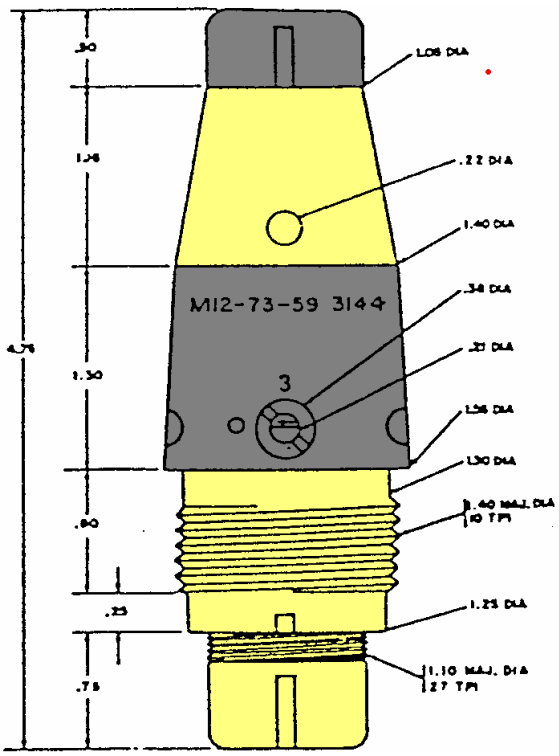
Functioning Info:
Arming Forces used:
Setback
Self Destruct: None
Safety Devices: Setback sleeve , Locking Balls (2)

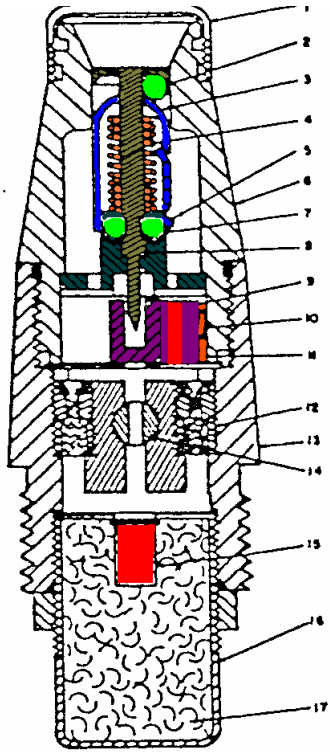
Mortars used in
50mm Mortar M1940
82mm Mortar M1937/42/43
120mm Mortar M1943

Mortar bomb model and types used in
50mm FRAG, O-822A,O-822SH
82mm FRAG O-832 D, O-832
82mmSMOKE DDD-832
120mm INCENDIARY Z-843A

EOD Action for Fired Mortar Bomb :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

2.5 PD Fuze M-12





Fuze Info

Type: Impact (Direct Action)
Model: M-12
Body Material: Steel
Weight : 536g
Markings: M-12
Length: 119mm

Mortars used in

120mm Mortar M1943

Functioning Info:

Arming Forces used:
Setback
Self Destruct: None
Safety Devices: Setback sleeve , Locking Balls (3) sliding Shutter (detonator held out of line)

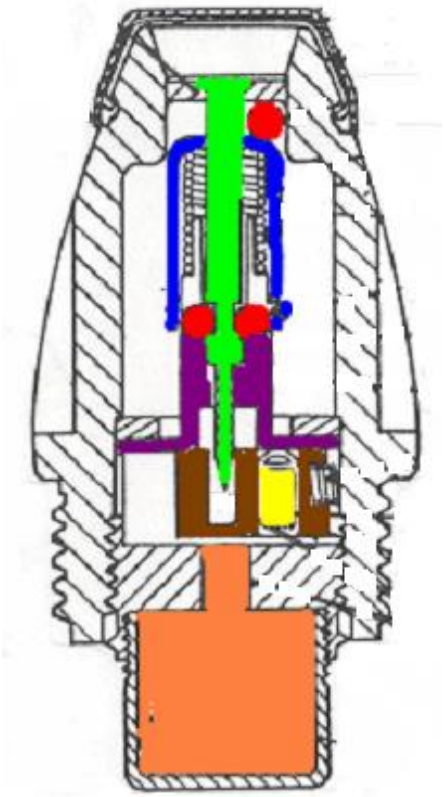
Mortar bomb model and types used in

120mm FRAG-HE, OF-843A
120mm HE, F-843

EOD Action for Fired Mortar Bomb :

Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

2.6 PD Fuze M-6



Fuze Info

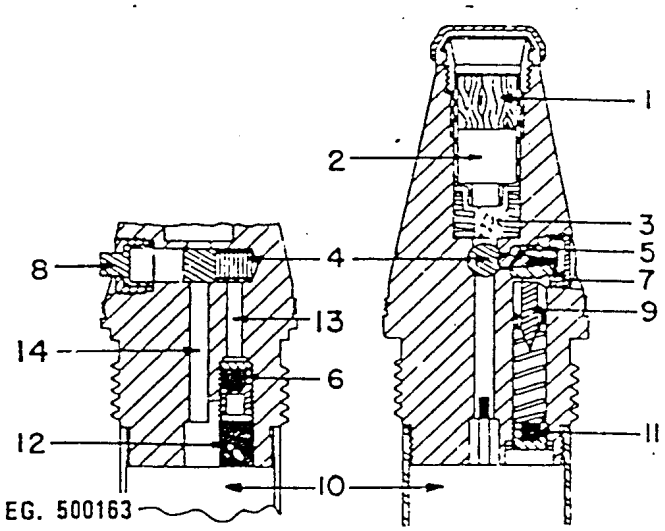
Type: Impact (Direct Action)
Model: M-6
Body Material: Plastic (Bakelite)
Weight : 155.9g
Markings: M-6
Length: 82.6 mm

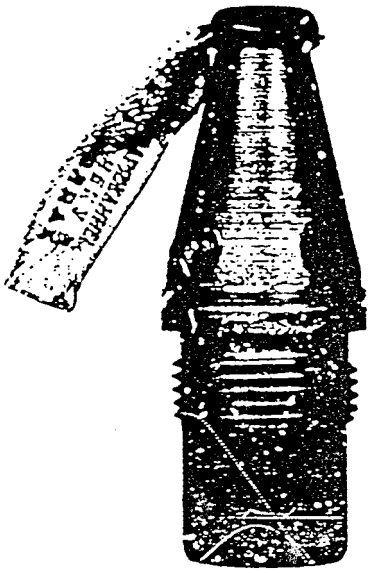
Functioning Info:
Arming Forces used:
Setback
Self Destruct: None
Safety Devices: Setback sleeve , Locking balls (3), sliding shutter (detonator out of line with striker)

Mortars used in:
82mm Mortar M1937/42/43

Mortar Bomb Models and types used in:
82mm FRAG, O-832D and O-832DU
EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

2.7 PD Fuze GVMZ-7





Fuze Info

Type: Impact (Direct Action) and Graze action (Inertia Impact)
Model: GVMZ-7
Body Material: Steel
Weight : 481g
Markings: ГВМ3-7
Length: 106.4 mm

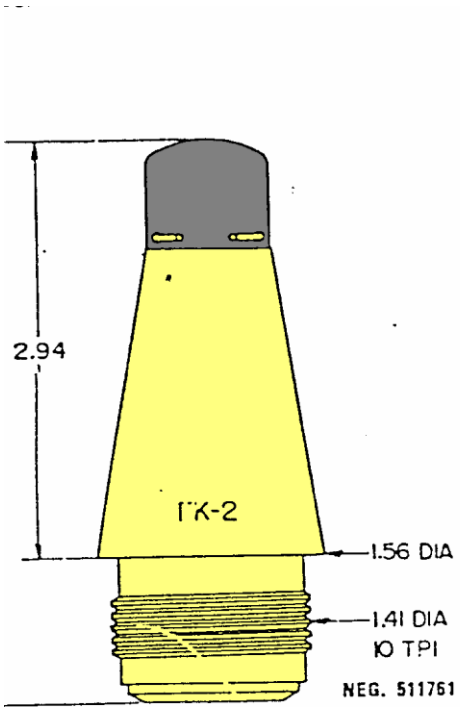
Mortars used in
107mm Mortar M1938
120mm Mortar M1938/43
160mm Mortar M1943
160mm Mortar M-160

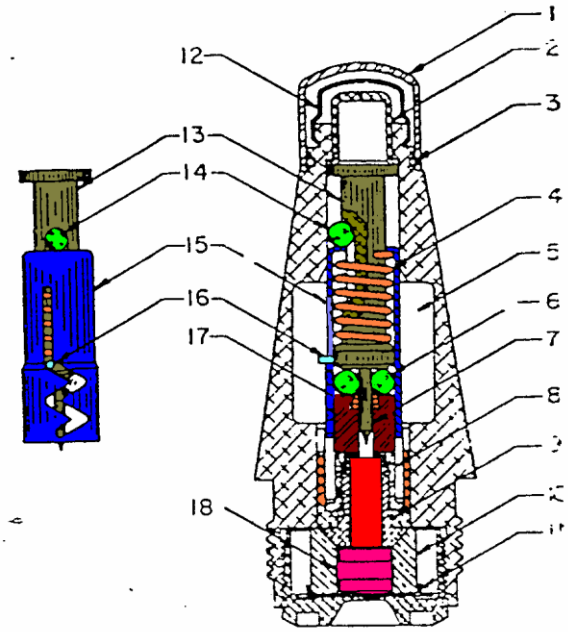
Mortar bomb model and types used in
107mm FRAG-HE, OF-841A
120mm FRAG-HE, OF-843
120mm HE, F-843
160mm HE, F-852,F-853U and F-853A

Functioning Info:
Arming Forces used:
Setback, Creep Forward
Self Destruct: None
Safety Devices: Shipping cap with wire and interrupter

EOD Action for Fired Mortar Bomb :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and

3. RECOILLESS AMMUNITION FUZES
3.1 PIBD Fuze GK-2





Fuze Info

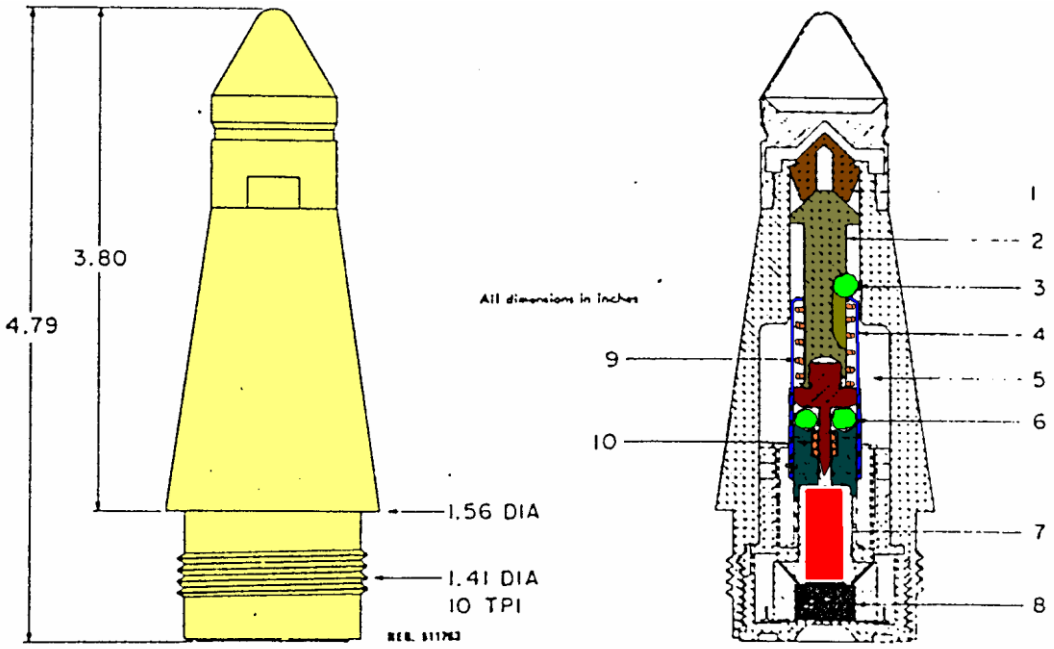
Type: Impact (Direct Action) and PIBD Spitback
Model: GK-2
Body Material: Aluminium
Weight : 170.1g
Markings: ГК-2
Length: 101.3mm

Functioning Info:
Arming Forces used:
Setback, Creep Forward
Self Destruct: None
Safety Devices: Safety cap, Setback sleeve , Locking balls (3),

Recoilless Guns used in:
82mm Recoilless gun M-10
107mm Recoilless gun M-11

Projectile Models and types used in:
82mm FRAG, O-881A
82mm FRAG, O-881A
82mm HEAT, BK-881
107mm FRAG-HE, OF-883A
107mm HEAT, BK-883
EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

3.2 PIBD Fuze GK-2M



Fuze Info

Type: Impact (Direct Action) and PIBD Spitback
Model: GK-2M
Body Material: Aluminium
Weight : 209.9g
Markings: ГК-2М
Length: 121.7mm

Recoilless Guns used in:
82mm Recoilless gun M-10
107mm Recoilless gun M-11

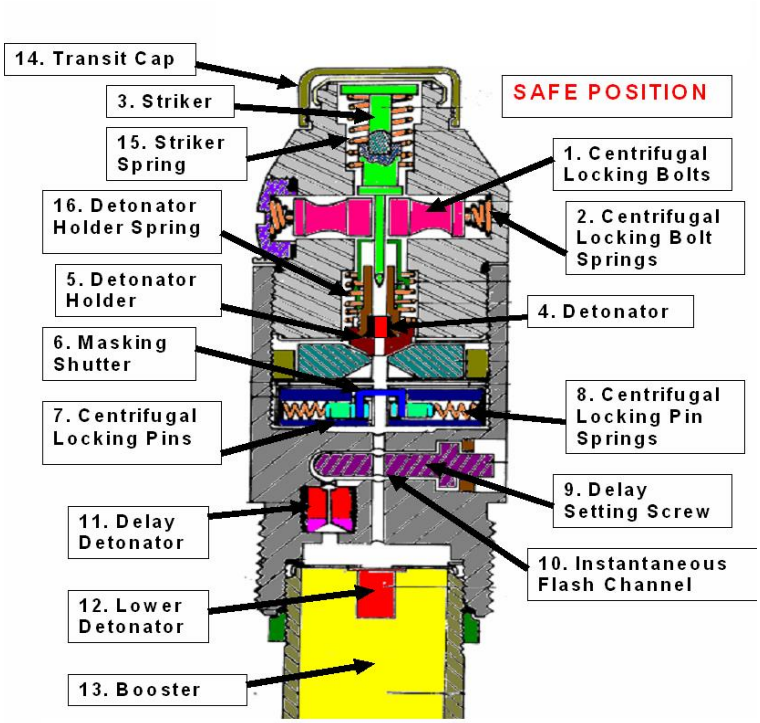
Functioning Info:
Arming Forces used:
Setback ,Creep Forward
Self Destruct: None
Safety Devices: Safety cap, Setback sleeve , Locking balls (3),

Projectile Models and types used in:
82mm FRAG, O-881A
82mm HEAT, BK-881
107mm FRAG-HE, OF-883A
107mm HEAT, BK-883

EOD Action for Fired Shell :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and projectile body

4. ROCKET FUZES

4.1 PD Fuze JM-1(Chinese)



Fuze Info

Type: Impact (Direct Action)
Model: MJ-1 (Chinese)
Body Material: steel
Weight : 681g
Markings: MJ-1
Length: 122mm
Exposed Length: 78mm
Diameter: 40mm
Explosive : 26g Tetryl

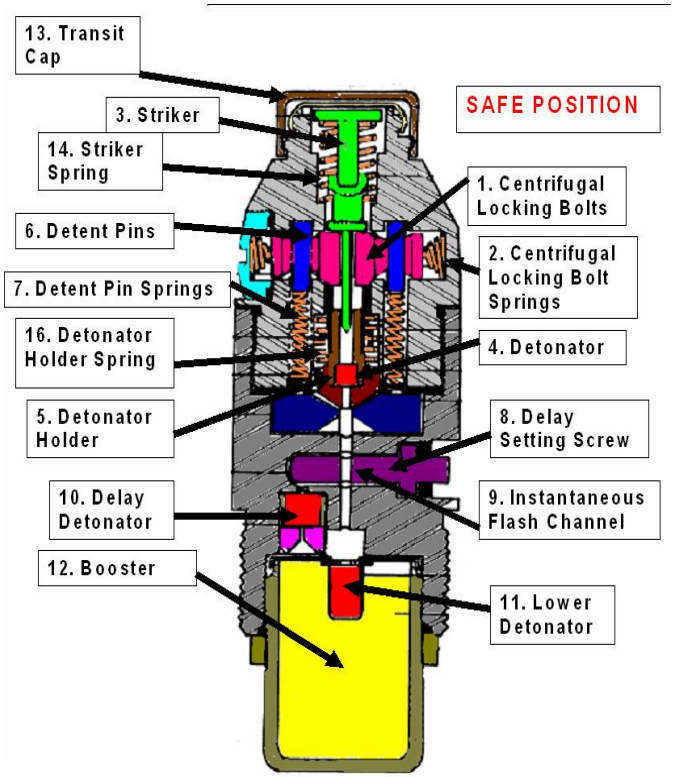
Rocket Models and types used in:

107mm HE FRAG, Type 63
107mm HE FRAG, Type 63-2
107mm Incendiary Type 63

EOD Action for Fired rocket :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and Warhead body

Functioning Info:
Arming Forces used:
Centrifugal force
Self Destruct: None
Safety Devices:
Centrifugal locking bolts (upper bolts holding striker, lower bolts holding masking shutter) Masking shutter

4.2 PD Fuze V-25M



Fuze Info

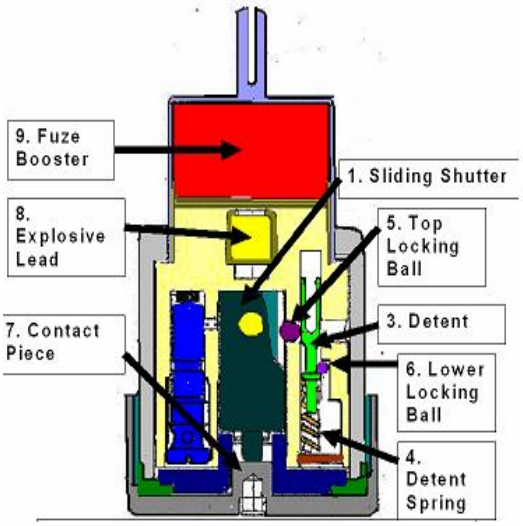
Type: Impact (Direct Action) And Graze (Inertia Impact)
Model: V-25M
Body Material: steel
Weight : Not Known
Markings: B-25M
Length: 113mm
Exposed Length: 68mm
Diameter: 40mm
Explosive : 25g Tetryl

Functioning Info:
Arming Forces used:
Centrifugal force and setback
Self Destruct: None
Safety Devices:
Centrifugal locking bolts (upper bolts holding striker)
Detents holding Centrifugal locking bolts

Rocket Models and types used in: (not confirmed but believed to be)
140mm HE Frag OF-14
240mm HE F-561
240mm HE F-561U

EOD Action for Fired rocket :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and Warhead body

4.3 PIBD Fuze VP-9



Fuze Info

Type: Impact (PIBD) Piezo Electric and SD
Model: VP-9
Body Material: bakelite and aluminium
Weight : Not Known
Markings: ВП-9
Length: 74mm
Exposed Length: 68mm
Diameter: 37mm
Explosive : 11g PETN

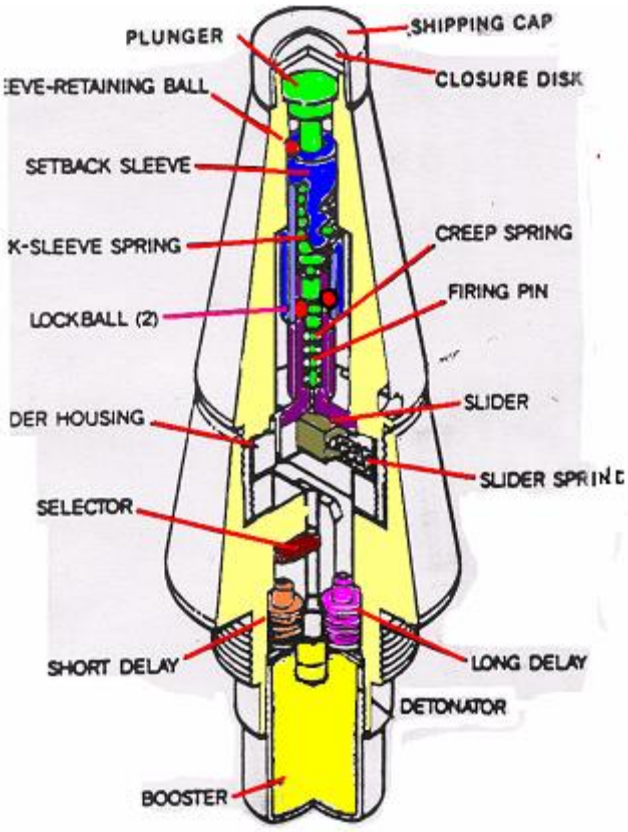
Functioning Info:
Arming Forces used:
Setback and Creep forward
Self Destruct: Pyrotechnic delay
Safety Devices:
Detent holding Locking ball holding sliding shutter

Rocket launchers used in:
RPG-7

Rocket Models and types used in:
PG-7G HEAT
PG-7M HEAT
PG-7V HEAT

EOD Action for Fired rocket :
Blow in Situ or De-Armer aimed at Warhead body 10mm above joint between Rocket motor and Warhead body

4.4 PD Fuze MRV-U



Fuze Info

Type: Impact (Direct Action)
Model: MRV-U
Body Material: steel
Weight : Not Known
Markings: МРВ-У
Length: 195mm
Exposed Length: 141mm
Diameter: 64mm
Explosive : 29g Tetryl

Functioning Info:
Arming Forces used:
Setback ,Creep Forward
Self Destruct: None
Safety Devices: Setback sleeve , Locking balls (3), Slider (Sliding shutter)

Rocket Models and types used in:
122mm HE FRAG 9M22U
122mm HE FRAG 9M22F
122mm HE FRAG 9M28F

EOD Action for Fired rocket :
Blow in Situ or De-Armer aimed at Fuze body 10mm above joint between fuze and Warhead body

Fuzes Handbook

Part 2 Aircraft Bomb Fuzes

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FOREWORD

The fuzes handbook gives details of common FSU (Former Soviet Union) artillery, mortar , aircraft bomb, rocket and recoilless gun fuzes in addition to some fuzes of US or Chinese (PRC – Peoples Republic of China) design.

In the handbook are included some RSP (Render Safe Procedures) for certain aircraft bomb and rocket fuzes.

This handbook is not a complete inventory of FSU fuzes for (LSA) Land Service Ammunition or aircraft bombs but it is a practical handbook for the field use of EOD operators who are facing the most commonly encountered FSU (Former Soviet Union) and some Chinese PRC or US ammunition.

The handbook does not, in itself, qualify the EOD operator to dispose of the fuzes (or munitions they are used in) covered by this book . Only those EOD Operators holding the appropriate IMAS (International Mine Action Standards) qualifications or military equivalent should attempt RSPs (Render Safe Procedures). Many of the RSPs covered in this handbook have not been tested, but are based on the best technical data available.

INTRODUCTION TO FSU (Former Soviet Union) FUZES

Older style Soviet Bomb mechanical fuzes used a wind driven vane to achieve an arming delay for the fuze. On certain fuzes such as the APUV series, AV-4 , AVDM, AGM 1, AGM 3, AGDT-A, AGDT-B, AGP, ADP, AVSh 2 and TM24B the vanes are welded onto a fuze cap. The fuze cap holds either two or three locking segments in place which in turn locks the striker in a fixed position so it cannot be pushed onto the detonator. Whilst the bomb is attached to the aircraft an arming wire or safety pin locks the vanes in position to ensure that the vane and fuze cap assembly cannot rotate in the airflow.

On dropping the safety pin/arming wire is pulled out of the fuze, and airflow, as the bomb is dropping, causes the vanes and fuze cap assembly to rotate and unscrew from the fuze body. When the fuze cap is fully unscrewed, the locking segments fall away, leaving the striker or plunger to be pushed onto the detonator on impact. The APUV incorporates an inertia weight so that it can be used as a tail fuze. When fitted as a tail fuze, the inertia weight pulls the plunger down on impact.

The AV-1 (and AV1d/u series), ADOZ series and ADA fuzes have the arming vanes attached to an arming stem. The arming stem screws into the fuze body and/or inertia pellet locking the body of the fuze to the inertia pellet. Airflow on the arming vanes causes the arming stem to fully unscrew from the inertia pellet, so that only a creep spring holds the inertia pellet and striker away from the detonator.

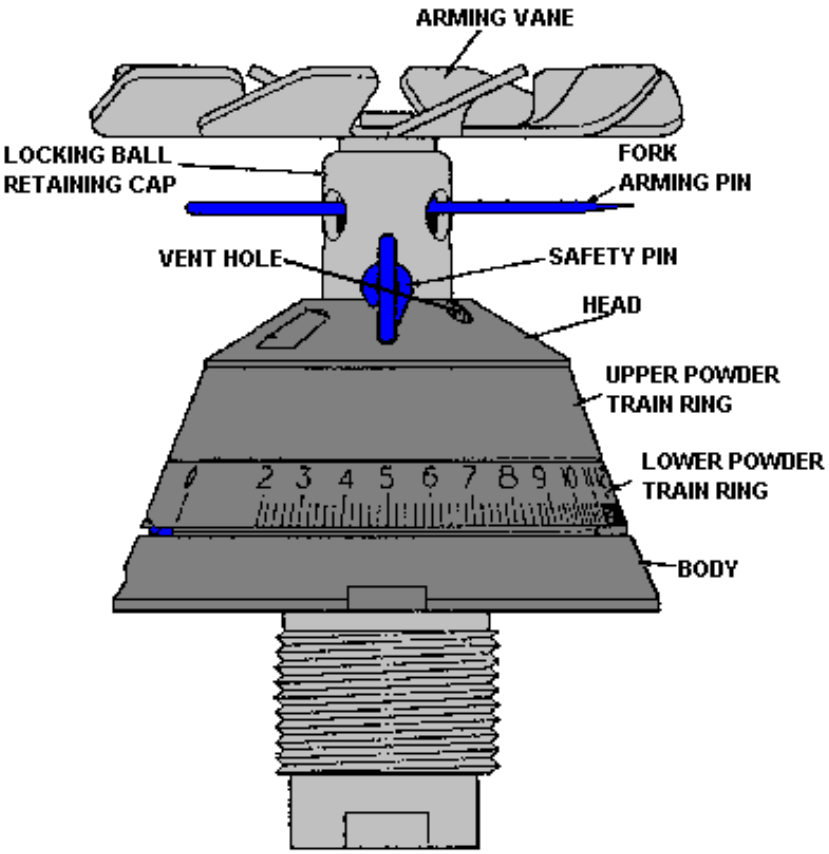
In all the vane armed fuzes, with the exception of the VDV and VDV-1, the arming vane and fuze cap assembly or arming vane and arming stem assembly drops away from the fuze when armed, on the VDV and VDV-1 a pull release lug is pulled out as the bomb drops allowing the wind vanes to turn a certain number of times to release a locking ball holding a cocked striker.

The current bomb fuzes use an electro pyrotechnic method of arming delay. As the bomb is released from the aircraft, an electrical charge fires an electric squib which ignites a short pyrotechnic delay, once the delay has burnt through a small propellant charge pushes across an arming bolt to release an arming rod (or in the case of the AVU-E series the strikers). The electro pyrotechnic arming delay is used on the AVT-E fuze, AVU

series, ATK-Ek and ATK-Eb and AVP-Z. The AV-2d/u uses a pyrotechnic arming delay by this appears to be ignited by a pull friction mechanism as the bomb is dropped and not an electrical squib, likewise the AVP-ZM uses a pull friction mechanism.

5. AIRCRAFT BOMB FUZES

5.1 Time Combustion Fuze AGDT-A and AGDT-B



PHYSICAL DATA

TYPE: Time Combustion
MODEL: AGDT-A, AGDT-B
MATERIAL: Aluminium
WEIGHT: Not Known
MARKINGS: АГДТ-А, АГДТ-Б
LENGTH: 88.1mm

FUNCTIONAL DATA

ARMING METHOD: Airflow causing the Arming vane and fuze cap assembly to unscrew and drop away from the fuze body releasing the cocked striker
SELF DESTRUCT: Time delay setting set on the Fuze
SAFETY DEVICES: Arming wire locking Arming Vane and fuze cap assembly, Arming vane and fuze cap assembly locking cocked striker

HAZARDOUS COMPONENTS

The AGDT-A fuze contains a primer, pyrotechnic in the powder train rings and the body, relay charge, detonator, and booster.

The compositions and weights of these elements are unknown.

The AGDT-B fuze contains the same elements, except that a Gunpowder ignition charge replaces the detonator and booster.

ROCKETS OR BOMBS USED IN

82mm Rocket Model RS-82
132mm Rocket Model RS-132
BOMBS AO-10, AO-20M3, AO-25, AO-100, AOKH-10, AOKH-15, KHAB-25, KHAB-200, KHAB-500, KRAB-25, FOTAB

ROCKETS USED IN

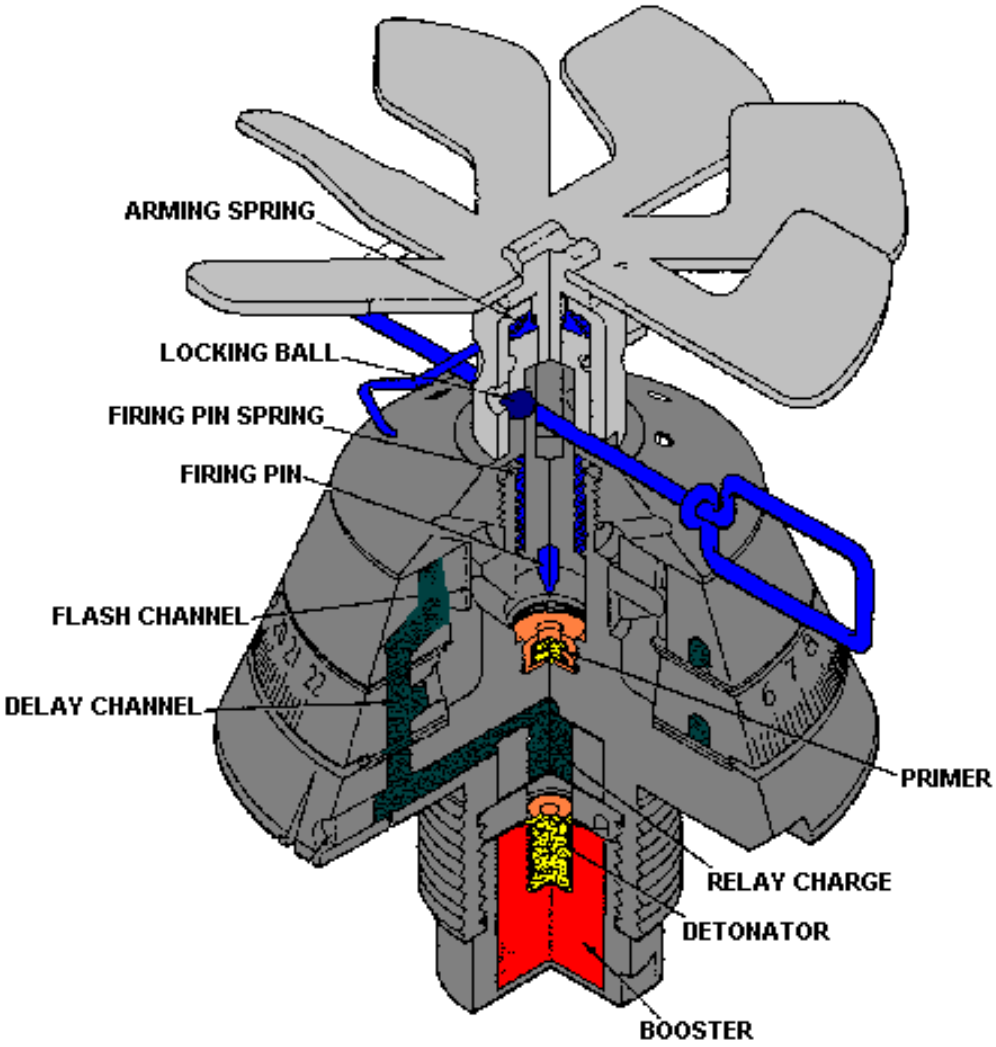
82mm 48-RD ROC: Launcher
82mm M-8 ROC: launcher
82mm Aircraft ROC: launcher M-13
132mm Aircraft ROC: launcher M-132

UNARMED CONDITION (AGDT-A , AGDT-B)

Consider the fuze to be unarmed if: The arming wire device fork-type-arming pin or safety pin is in place, and the locking ball retaining cap (fuze cap) is not crushed

ARMED CONDITION

Consider the fuze to be armed if the arming wire device, fork-type-arming pin, and safety pin are missing, or if the locking ball retaining cap is crushed or missing



WARNINGS

1) Do not jar or move a bomb, The fuze may contain a cocked striker which will be released by any disturbance

2) Do not manually remove a fuze from a photoflash bomb. Sensitive explosive crystals from the bomb's booster' charge, or photoflash powder, may be in the fuze threads.

3) Wait at least 30 minutes before approaching a suspected fuzed bomb which has been dropped from an aircraft. A delay function may be caused by deterioration or dampness which prolongs the burning time of the powder train, or by a hung firing pin overcoming a mechanical obstruction and initiating the powder train in the fuse

4) Do not approach an armed fuze for 30 minutes after removal from a bomb.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR UNARMED FUZES AGDT-A and AGDT-B

a) Secure arming wire device, fork—type arming pin, or safety pin, or use other means to prevent arming vane rotation.

b) Using a wrench or other tool, manually remove the fuze from the bomb by unscrewing it anti clockwise.

c) Proceed to disposal procedure.

RENDER SAFE PROCEDURES FOR ARMED FUZES AGDT-A and AGDT-B

a) Use a Rocket Wrench (roller jaws)

b) If Rocket Wrench is not available, or cannot be fitted use De-Armer (aim 13mm above joint between bomb body and fuze)

c) If Rocket Wrench and De-Armer are not available use Stilson wrench and tape and line method of remote fuze removal or Richmond Engineering remote fuze removal tool (RE17FE82)

d) If remote fuze removal is not possible destroy bomb in situ by High Order Detonation or using Low Order techniques

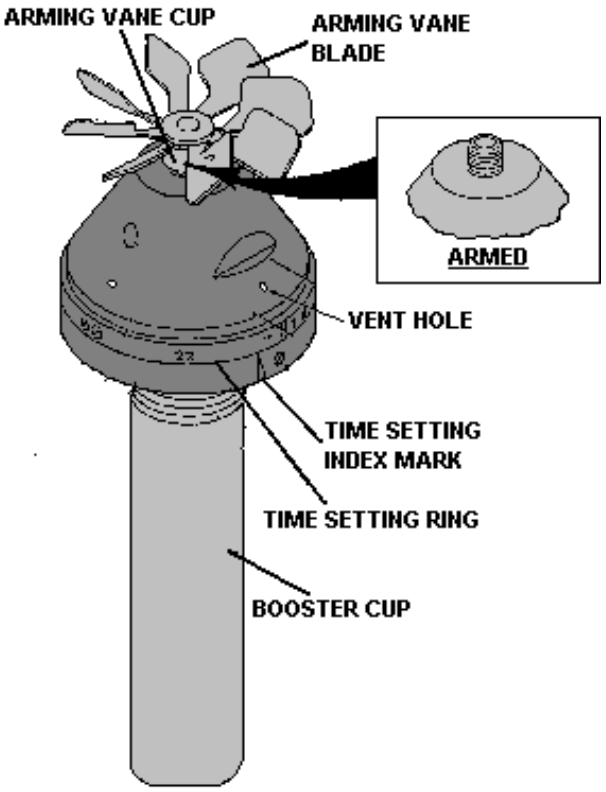
e) Remove fuze from Rocket Wrench jaws

f) Proceed to disposal procedure

DISPOSAL PROCEDURES

Transport fuze in a sand filled box to a disposal site and destroy by detonation.

5.2 Time Combustion Fuze AGP



PHYSICAL DATA

TYPE: Time Combustion
MODEL: AGP
MATERIAL: Steel
WEIGHT: Not known
MARKINGS: АГП
LENGTH: 203.2mm

FUNCTIONAL DATA

ARMING METHOD: Airflow causing the Arming vane and fuze cap assembly to unscrew and drop away from the fuze body releasing the cocked striker
SELF DESTRUCT: Time delay setting set on the Fuze
SAFETY DEVICES: Arming wire locking Arming Vane and fuze cap assembly, Arming vane and fuze cap assembly holding cocked striker

HAZARDOUS COMPONENTS

The fuze contains a primer, pyrotechnic in the powder train rings and the body, relay charge, detonator, and booster.

The compositions and weights of these elements are unknown.

BOMBS USED IN

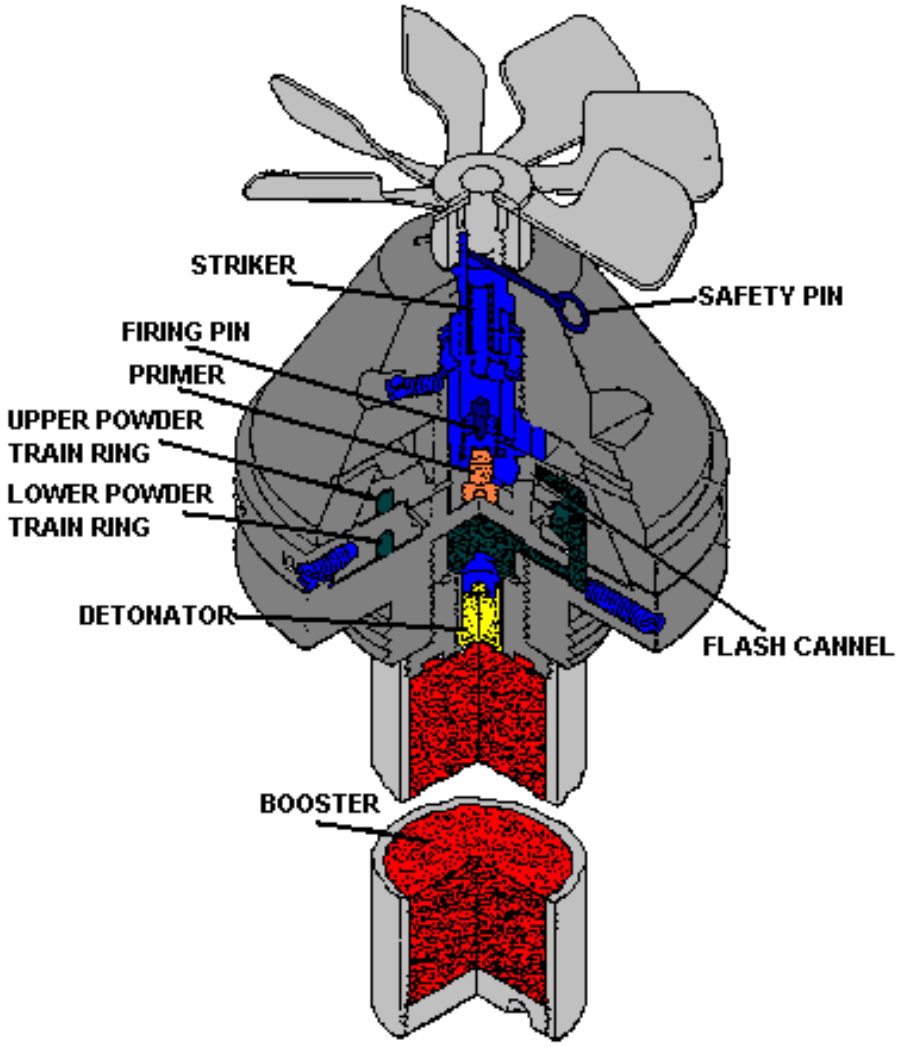
FAB-50, FAB-100, FAB-250, FAB-500, FAB-1000,

UNARMED CONDITION

Consider the fuze to be unarmed if: The arming Vane and fuze cap assembly is in place

ARMED CONDITION

Consider the fuze to be armed if: The arming Vane and fuze cap assembly is missing



WARNINGS

1) Do not jar or move a bomb, The fuze contains a cocked striker which will be released by any disturbance

2) Do not manually remove a fuze from a photoflash bomb. Sensitive explosive crystals from the bomb's booster' charge, or photoflash powder, may be in the fuze threads.

3) Wait at least 30 minutes before approaching a suspected fuzed bomb which has been dropped from an aircraft. A delay function may be caused by deterioration or dampness which prolongs the burning time of the powder train, or by a hung firing pin overcoming a mechanical obstruction and initiating the powder train in the fuse

4) Do not approach an armed fuze for 30 minutes after removal from a bomb.

NOTE

Powder burn stains around the vent holes in the head are an indication that the powder train has partially burned out, resulting in an interrupted explosive train. Perform the procedures for the unarmed condition if the powder train has burned.

Wait 30 minutes to approach a fuze after impact wrench removal. The powder Train may have been initiated during fuse removal, and, deterioration or dampness, which prolongs the burning time of the powder train, may cause a delay function.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR UNARMED FUZES AGP

b) Secure arming wire device, fork—type arming pin, or safety pin, or use other means to prevent arming vane rotation.

d) Using a wrench or other tool, manually remove the fuze from the bomb by unscrewing it anti clockwise.

e) Proceed to disposal procedure.

RENDER SAFE PROCEDURES FOR ARMED FUZES AGP

g) Use a Rocket Wrench (roller jaws)

h) If Rocket Wrench is not available, or cannot be fitted use De-Armer (aim 13mm above joint between bomb body and fuze)

i) If Rocket Wrench and De-Armer are not available use Stilson wrench and tape and line method of remote fuze removal or Richmond Engineering remote fuze removal tool (RE17FE82)

j) If remote fuze removal is not possible destroy bomb in situ by High Order Detonation or using Low Order techniques

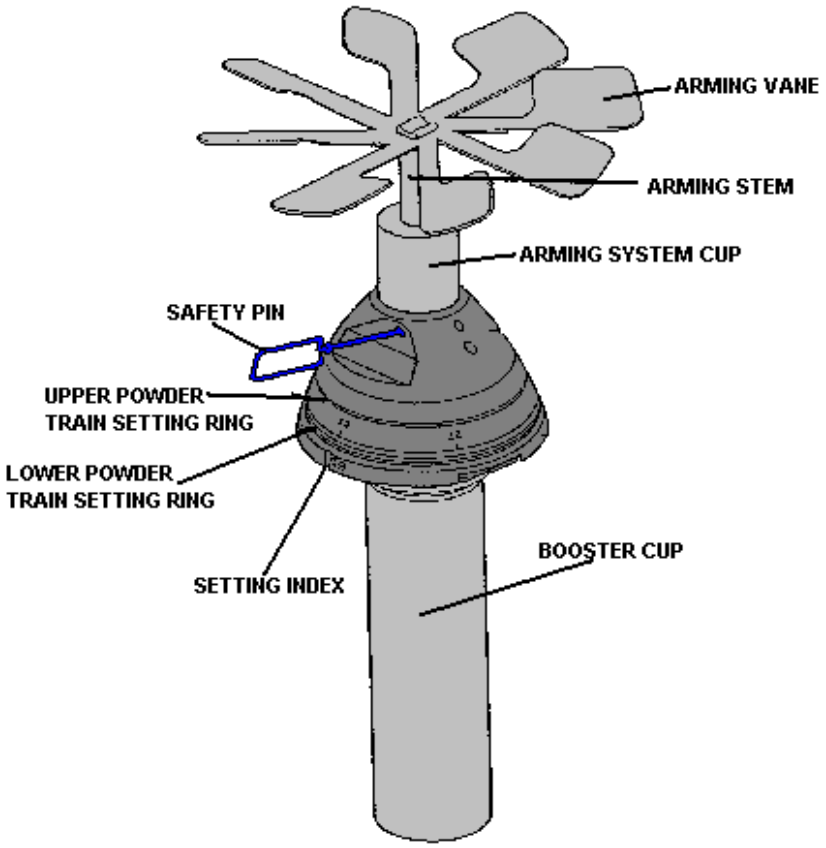
k) Remove fuze from Rocket Wrench jaws

l) Proceed to disposal procedure

DISPOSAL PROCEDURES

Transport fuze in a sand filled box to a disposal site and destroy by detonation.

5.3 Time Combustion Fuze ADP



PHYSICAL DATA

TYPE: Time Combustion
MODEL: ADP
MATERIAL: Aluminium
WEIGHT: Not Known
MARKINGS: АДП
LENGTH: 243.8mm

FUNCTIONAL DATA

ARMING METHOD: Airflow causing the Arming vane and fuze cap assembly to unscrew and drop away from the fuze body releasing the Striker and Inertia Pellet (now only held away from the detonator by a creep spring
SELF DESTRUCT: Time delay setting set on the Fuze
SAFETY DEVICES: Safety Pin locking Arming Vane and fuze cap assembly, Arming vane and fuze cap assembly locking Inertia Pellet

HAZARDOUS COMPONENTS

The explosive components are the primer, upper and lower powder train, relay, secondary primer, detonator, and booster charge.

BOMBS USED IN

FAB-50, FAB-100, FAB-250, FAB-500, FAB-1000, BRAB-200DS, BRAB-500, BRAB-1000, BETAB-150DS.

UNARMED CONDITION ADP

The fuze is unarmed if the arming fork/safety pin is in place and the fuze is undamaged.

ARMED CONDITION ADP

Consider the fuze armed if the fork/safety pin is not in place and/or the fuze is damaged.

WARNINGS

1) Do not jar or move a bomb, This fuze contains a cocked Inertia pellet which is only held from the detonator by a creep spring, fuze function may be caused by any disturbance

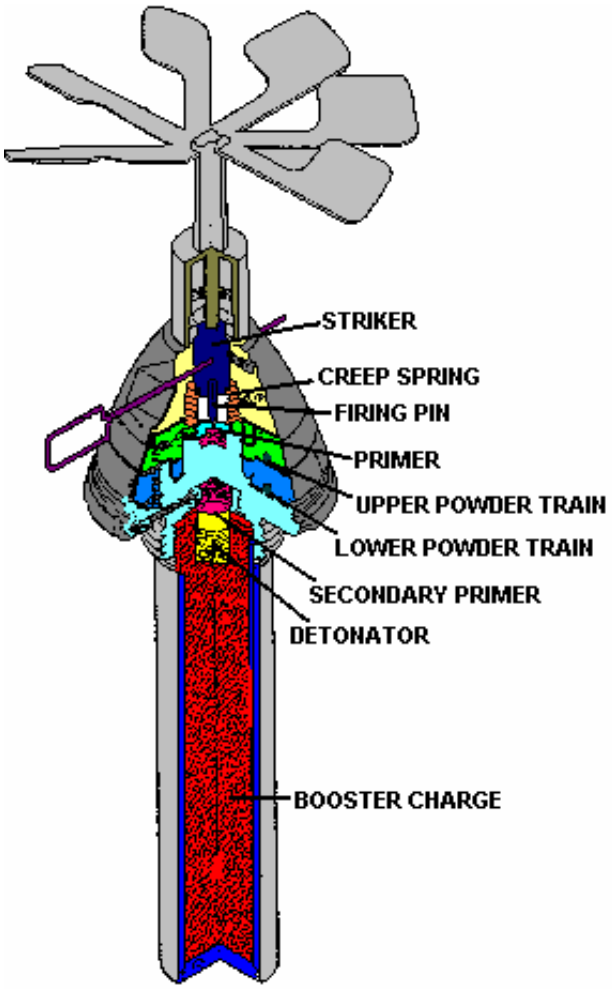
2) Do not manually remove a fuze from a photoflash bomb. Sensitive explosive crystals from the bomb's booster' charge, or photoflash powder, may be in the fuze threads.

3) Wait at least 30 minutes before approaching a suspected fuzed bomb which has been dropped from an aircraft. A delay function may be caused by deterioration or dampness which prolongs the burning time of the powder train, or by a hung firing pin overcoming a mechanical obstruction and initiating the powder train in the fuse

4) Do not approach an armed fuze for 30 minutes after removal from a bomb.

NOTE

Powder burn stains around the vent holes in the head are an indication that the powder train has partially burned out, resulting in an interrupted explosive train. Perform the procedures for a fuze in an unarmed condition if the powder train has partially burned out.



SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR UNARMED FUZES ADP

c) Secure arming wire device, fork—type arming pin, or safety pin, or use other means to prevent arming vane rotation.

f) Using a wrench or other tool, manually remove the fuze from the bomb by unscrewing it anti clockwise.

g) Proceed to disposal procedure.

RENDER SAFE PROCEDURES FOR ARMED FUZES ADP

m) Use a Rocket Wrench (roller jaws)

n) If Rocket Wrench is not available, or cannot be fitted use De-Armer (aim 13mm above joint between bomb body and fuze)

o) If Rocket Wrench and De-Armer are not available use Stilson wrench and tape and line method of remote fuze removal or Richmond Engineering remote fuze removal tool (RE17FE82)

p) If remote fuze removal is not possible use alternative procedure as shown below

q) Remove fuze from Rocket Wrench jaws

r) Proceed to disposal procedure

ALTERNATIVE PROCEDURE

WARNING

Do not depress or move the striker during the insertion of cotter pin into the safety pin hole. The firing pin is held away from the primer by a creep spring or may be embedded in the primer.

a).Insert a cotter pin, or suitable substitute, into the safety pin hole, and secure in place

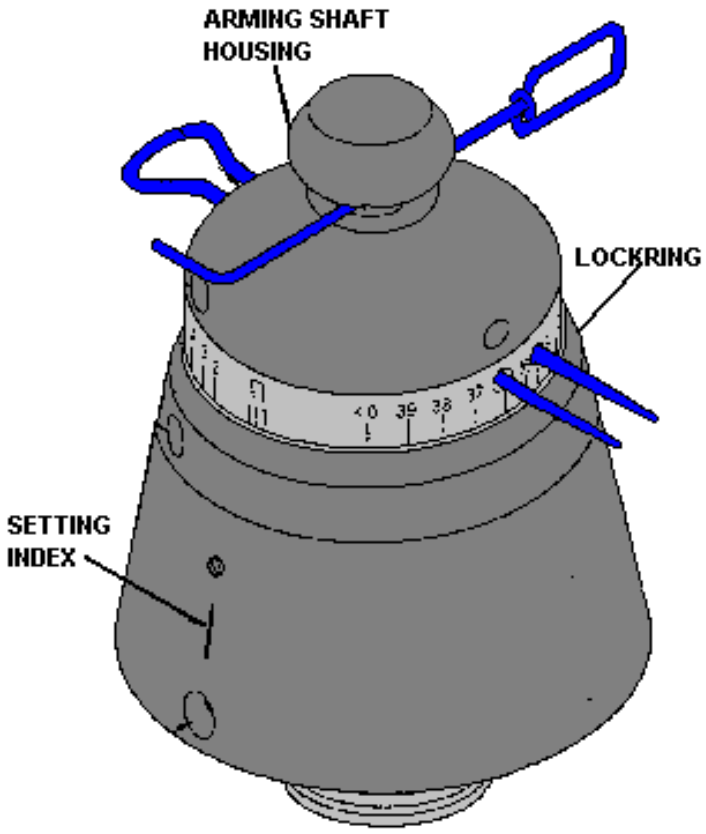
b).Remove the fuze by hand, turning it anti-clockwise.

c).Proceed to disposal procedure.

DISPOSAL PROCEDURES

Transport fuze in a sand filled box to a disposal site and destroy by detonation.

5.4 Time Mechanical Fuze TM-4A and TM-4B



PHYSICAL DATA

TYPE: Time Mechanical
MODEL: TM-4A and TM-4B
MATERIAL: Steel
WEIGHT: Not known
MARKINGS: TM-4A or TM-4Б
LENGTH: 97.5mm

FUNCTIONAL DATA

ARMING METHOD: Removal of the arming wire allows upward movement of the arming shaft which in turn allows upward movement of the detent pin which releases the timing hand
SELF DESTRUCT: Time delay setting set on the Fuze
SAFETY DEVICES: Arming wire locking arming shaft downwards in turn locking detent pin downwards. Detent pin locks timing hand

HAZARDOUS COMPONENTS

The compositions and weights of the TM-4A detonator and the TM-4B primer are unknown but are not believed to be more than 1 gram.

BOMBS USED IN

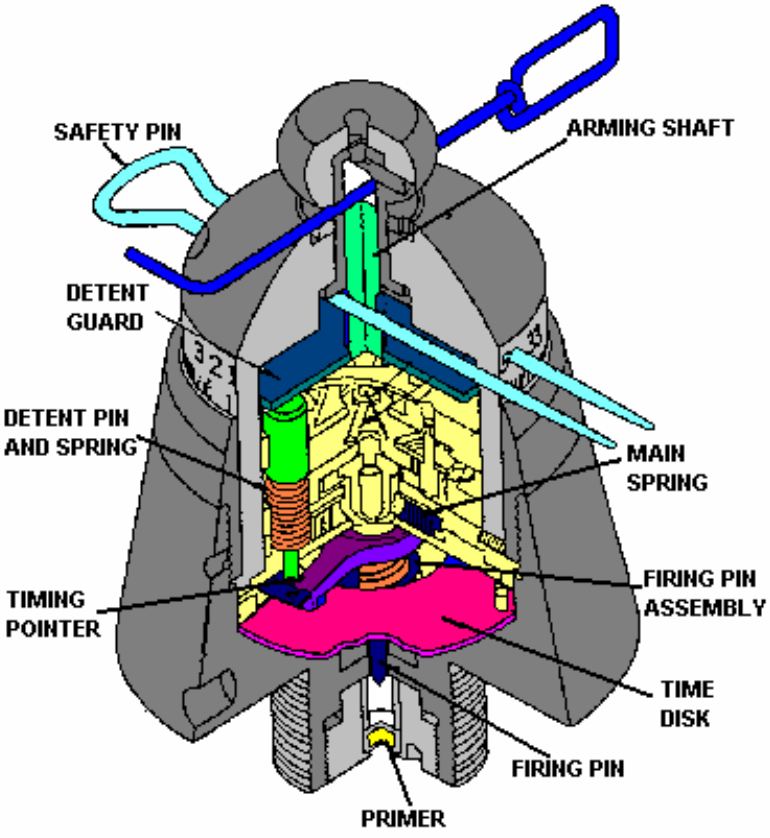
AD-1, AOKH-10, AOKH-15, FOTAB, SAB, SAB-3M, SAB-25, KHAB-200, KHAB-500, KRAB-25, ZAB-50TSHCH, ZAB-100T.

UNARMED CONDITION TM-4A or TM-4B

Consider the fuze to be unarmed if: The arming wire or safety pin is in place

ARMED CONDITION TM-4A or TM-4B

Consider the fuze to be armed if: The arming wire and safety pin are missing



WARNINGS

1) Do not jar or move a bomb, The fuze may contain a cocked striker which will be released by any disturbance or the clockwork time delay mechanism, stopped by impact, may be restarted by disturbance

2) Do not manually remove a fuze from a photoflash bomb. Sensitive explosive crystals from the bomb's booster' charge, or photoflash powder, may be in the fuze threads.

4) Do not approach an armed fuze for 30 minutes after removal from a bomb.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR UNARMED FUZES TM-4A and TM-4B

d) Secure arming wire device, or safety pin, to ensure that they cannot accidentally fall out or be pushed or pulled out

h) Using a wrench or other tool, manually remove the fuze from the bomb by unscrewing it anti clockwise.

i) Proceed to disposal procedure.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR ARMED FUZES TM-4A and TM-4B

WARNING Do not jar drop or move a bomb with an armed fuze, the spring loaded firing pin may be partially released and could cause the fuze to function when jarred, or the clockwork timing mechanism could have stopped on impact, and movement could re-start it

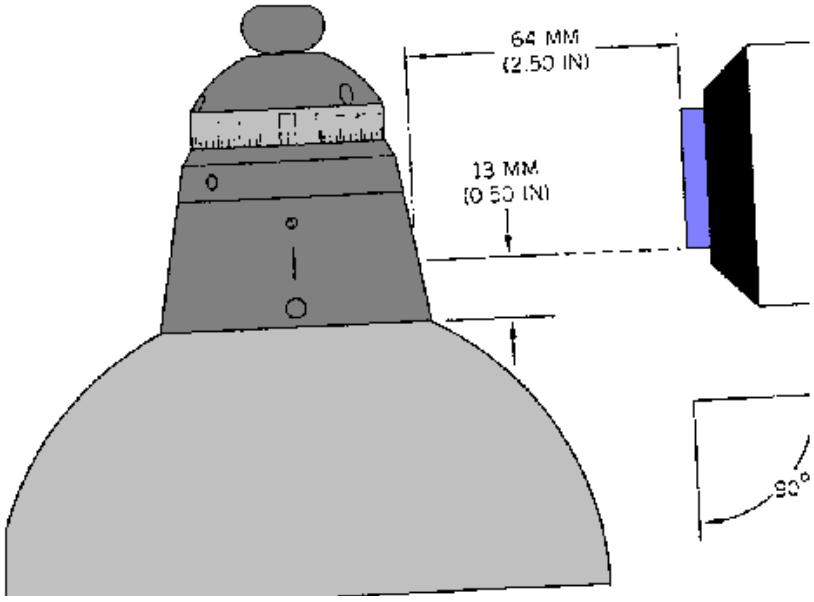
a) DO NOT use Rocket Wrench

b) Assemble a .50 calibre De-Armer/ JROD with a bolster projectile in a position as shown in the figure below

c).Fire the dearmer.

d).Cover remainder of fuze with tape.

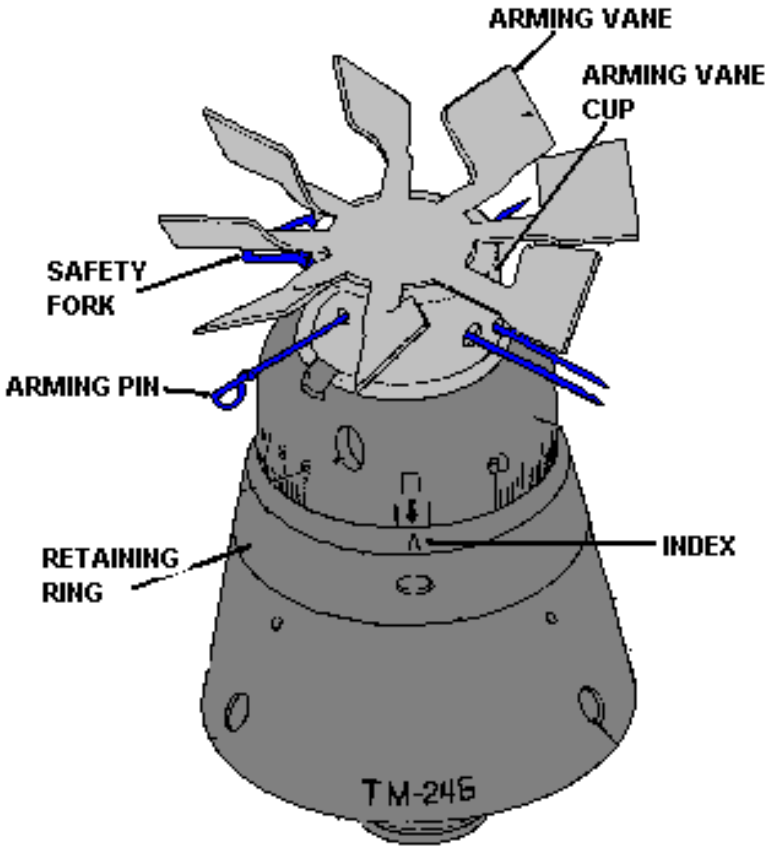
e).Proceed to disposal procedure.



DISPOSAL PROCEDURES

Transport fuze in a sand filled box to a disposal site and destroy by detonation.

5.5 Time Mechanical Fuze TM-24A and TM-24B



PHYSICAL DATA

TYPE: Time Mechanical
MODEL: TM-24A and TM-24B
MATERIAL: Steel
WEIGHT: Not known
MARKINGS: TM-24A or TM-24Б
LENGTH: 93.4mm

FUNCTIONAL DATA

ARMING METHOD: Airflow causes the Arming Vane and Fuze cap assembly to rotate and unscrew from the fuze body this allows the locking ball to fall out allowing upward movement of the detent pin which releases the timing hand
SELF DESTRUCT: Time delay setting set on the Fuze
SAFETY DEVICES: Arming pin and safety fork locking the Arming Vane and Fuze cap assembly in place . Arming Vane and Fuze cap assembly holding Locking ball which in turn holds locking detent pin downwards. Detent pin locks timing hand.

HAZARDOUS COMPONENTS

The compositions and weights of the TM-24A detonator and the TM-24B primer are unknown but are not believed to be more than 1 gram.

BOMBS USED IN

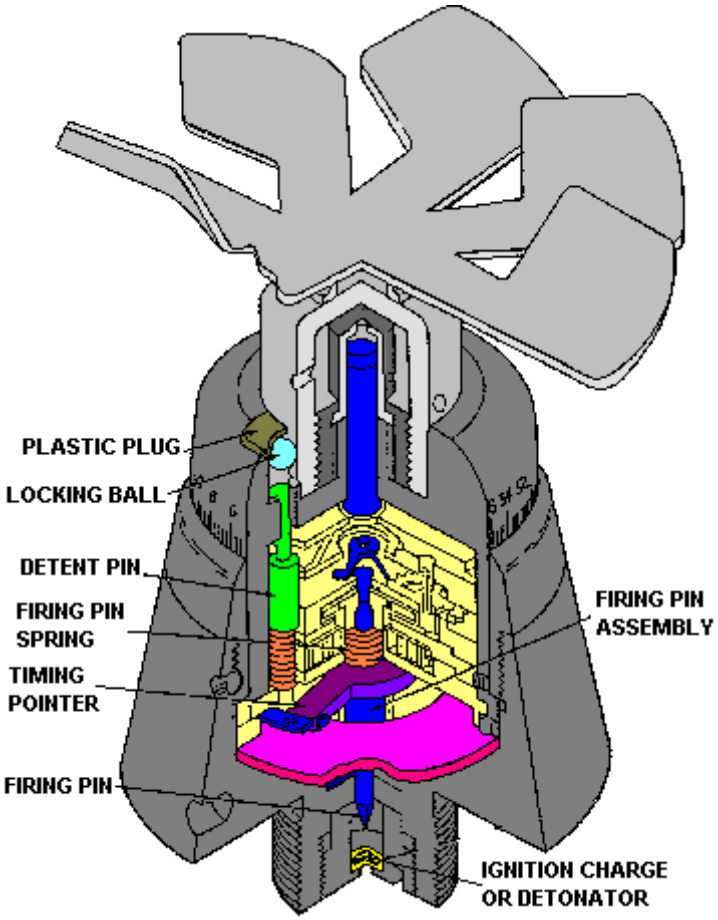
RBK 250, RBK-500 (other bombs uncertain)

UNARMED CONDITION TM-24A or TM-24B

Consider the fuze to be unarmed if: The Arming Vane and fuze cap assembly is in place and not partially unscrewed

ARMED CONDITION TM-24A or TM-24B

Consider the fuze to be armed if: The Arming Vane and fuze cap assembly is missing or partially unscrewed



WARNINGS

1) Do not jar or move a bomb, The fuze contains a cocked striker which will be released by any disturbance or the clockwork time delay mechanism, stopped by impact, may be restarted by disturbance. Do not move the Arming Vane fuze cap assembly if in place this may allow the locking ball to fall out and the fuze to function after the time set

2) Do not manually remove a fuze from a photoflash bomb. Sensitive explosive crystals from the bomb's booster' charge, or photoflash powder, may be in the fuze threads.

4) Do not approach an armed fuze for 30 minutes after removal from a bomb.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR UNARMED FUZES TM-24A and TM-24B

e) Gag arming Vane / Fuze Cap assembly to prevent any movement

j) Using a wrench or other tool, manually remove the fuze from the bomb by unscrewing it anti clockwise.

k) Proceed to disposal procedure.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR ARMED FUZES TM-24A and TM-4B

WARNING Do not jar drop or move a bomb with an armed fuze, the spring loaded firing pin may be partially released and could cause the fuze to function when jarred, or the clockwork timing mechanism could have stopped on impact, and movement could re-start it

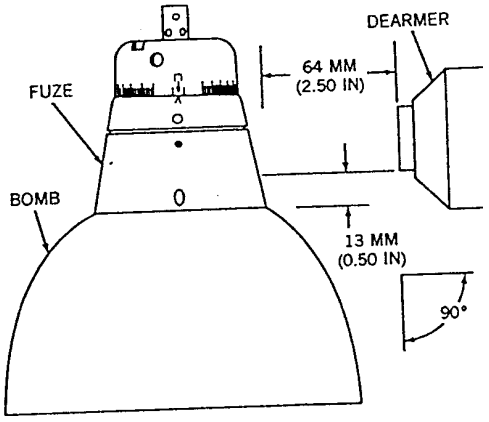
a) DO NOT use Rocket Wrench

b) Assemble a .50 calibre De-Armer/ JROD with a bolster projectile in a position as shown in the figure below

c).Fire the dearmer.

d).Cover remainder of fuze with tape.

e).Proceed to disposal procedure.



DISPOSAL PROCEDURES

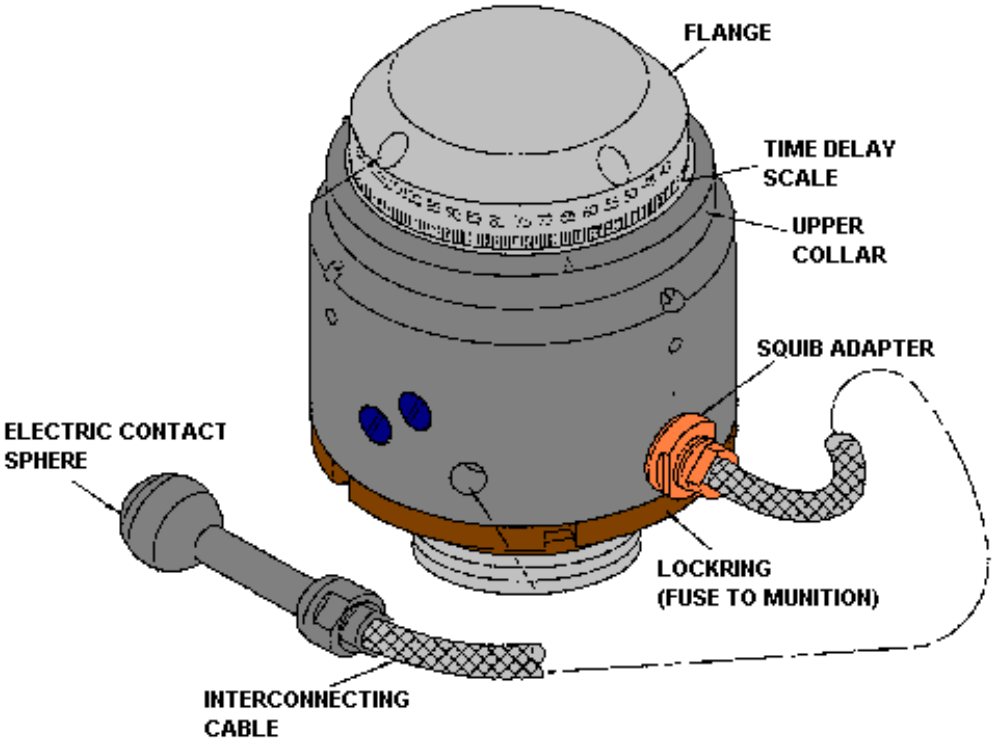
Transport fuze in a sand filled box to a disposal site and destroy by detonation.

TM 24B UNARMED

TM 24 B AS TAIL FUZE IN RBK 250

TM 24B ARMED

5.6 Time Mechanical Fuze ATK-EK and ATK-EB



PHYSICAL DATA

TYPE: Time Mechanical
MODEL: ATK-EK and ATK-EB
MATERIAL: Steel
WEIGHT: Not known
MARKINGS: АТК-ЕК and АТК-ЕБ
LENGTH: Not Known

FUNCTIONAL DATA

ARMING METHOD: Electrical charge from the aircraft as bomb is released fires a small electrical squib which in turn pushes the squib spacer blocking the arming plunger, arming plunger moves downwards releasing the safety lever allowing the arming cam to move and release the timing hand
SELF DESTRUCT: Time delay setting set on the Fuze
SAFETY DEVICES: Squib spacer blocks arming plunger, arming plunger holds safety lever and cam shaft in position, arming cam holds timing hand in position

HAZARDOUS COMPONENTS

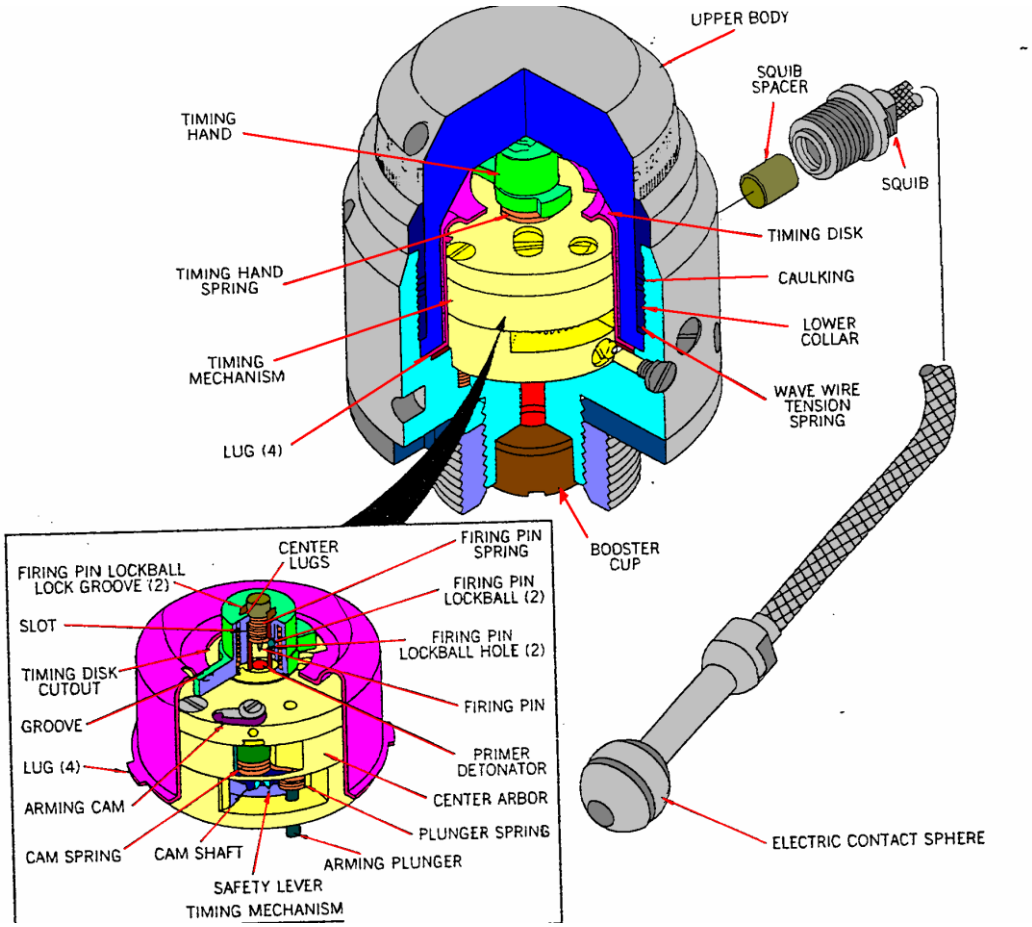
The fuze contains a squib, a primer detonator, and a booster, each of unknown weight and composition.

BOMBS USED IN

RBK 250, RBK 250-275, RBK-500, SAB 100TM, SAB 250-200, SAB 250T, AGITAB 250, AGITAB 500, FOTAB 100-80, FOTAB 100-140, FOTAB 250T, P50Sh, DOSAB 100T, NOSAB 100TM

UNARMED or ARMED CONDITION ATK-EK or ATK-EB

Consider the fuze to be always armed is found on a bomb which has been dropped, as there is no external means of determining if the fuze has received an electrical charge to fire the electrical squib



WARNINGS

1) Do not jar or move a bomb, The fuze contains a cocked striker which could be released by any disturbance or the clockwork time delay mechanism, stopped by impact, may be restarted by disturbance.

2) Do not manually remove a fuze from a photoflash bomb. Sensitive explosive crystals from the bomb's booster' charge, or photoflash powder, may be in the fuze threads.

4) Do not approach an armed fuze for 30 minutes after removal from a bomb.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR ARMED FUZES ATK-EK and ATK-EB

WARNINGS Consider the fuze to be always armed is found on a bomb which has been dropped, as there is no external means of determining if the fuze has received an electrical charge to fire the electrical squib

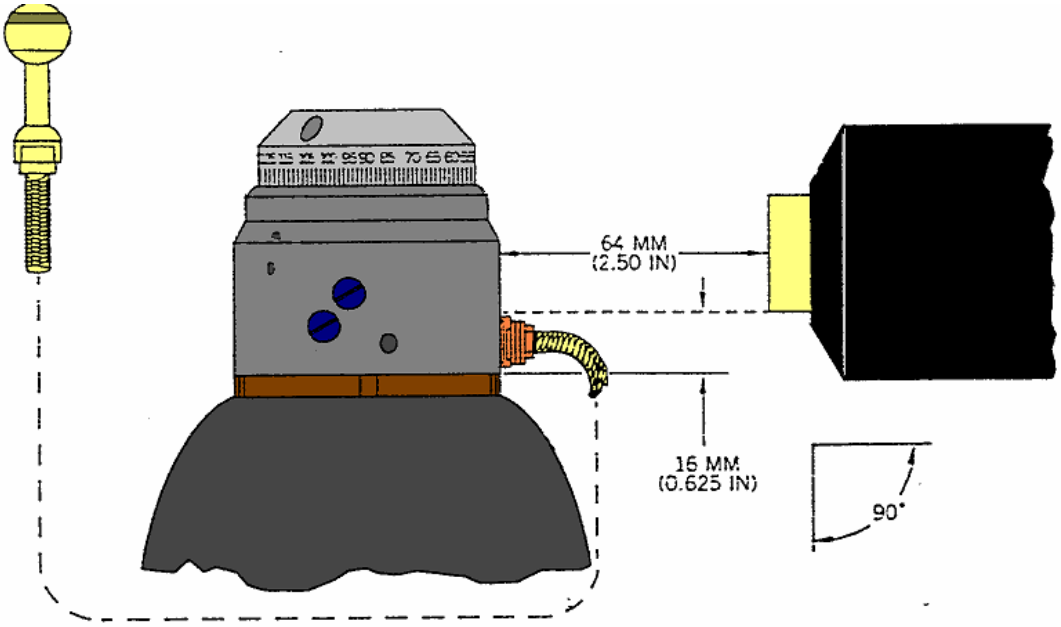
Do not jar drop or move a bomb with an armed fuze, the spring loaded firing pin may be partially released and could cause the fuze to function when jarred, or the clockwork timing mechanism could have stopped on impact, and movement could re-start it

a) DO NOT use Rocket Wrench

b) Assemble a .50 calibre De-Armer/ JROD with a bolster projectile in a position as shown in the figure below

c).Fire the dearmer.

d).Cover remainder of fuze with tape.



DISPOSAL PROCEDURES

Transport fuze in a sand filled box to a disposal site and destroy by detonation.

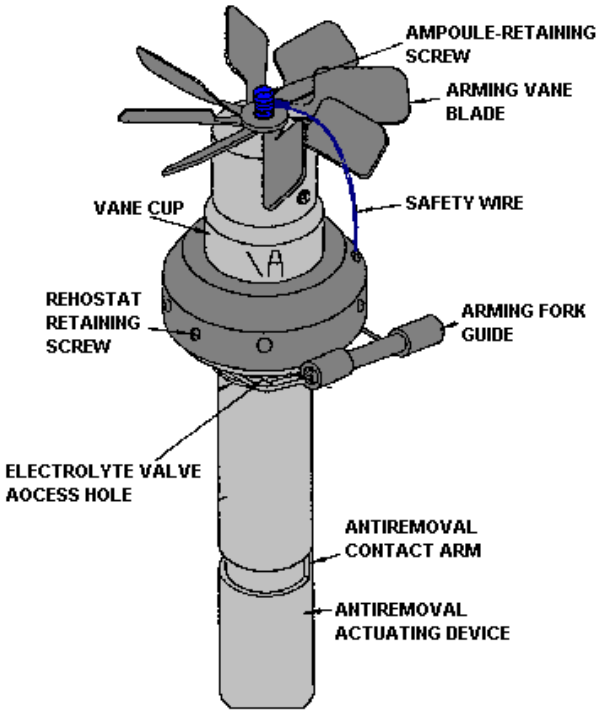
ATK -EK

ATK -EK

ATK -EK AS TAIL FUZE

ATK -EK AS NOSE FUZE

5.7 Long Delay and anti-Removal Tail fuze AVDM



WARNINGS

This fuze is a long delay and anti-removal fuze, it is designed to kill or prevent personnel returning to a location which has been bombed.

The anti removal feature is specifically designed to kill the EOD operator or any other person attempting to de-fuze the bomb.

In effect this fuze is designed to turn the bomb into a booby trap, the long delay feature allows a setting of a few hours to 24 days.

The EOD Operator has no means knowing the delay set, or how much longer the delay has to run before fuze function.

Pay special attention to the warnings given on the next page

WARNINGS

a)Do not depress an extended inertia plunger. Depressing the plunger of a fuze having an energised battery will arm or rearm the fuse, causing it to function.

b)Wait 24 days (576 hours), if possible, before attempting to render safe a bomb containing an armed fuze. This will allow the battery to bleed down below firing voltage.

c)Do not remove an armed and functioning fuze. As the fuze unscrews, the anti removal device will complete the firing circuit and detonate the bomb.

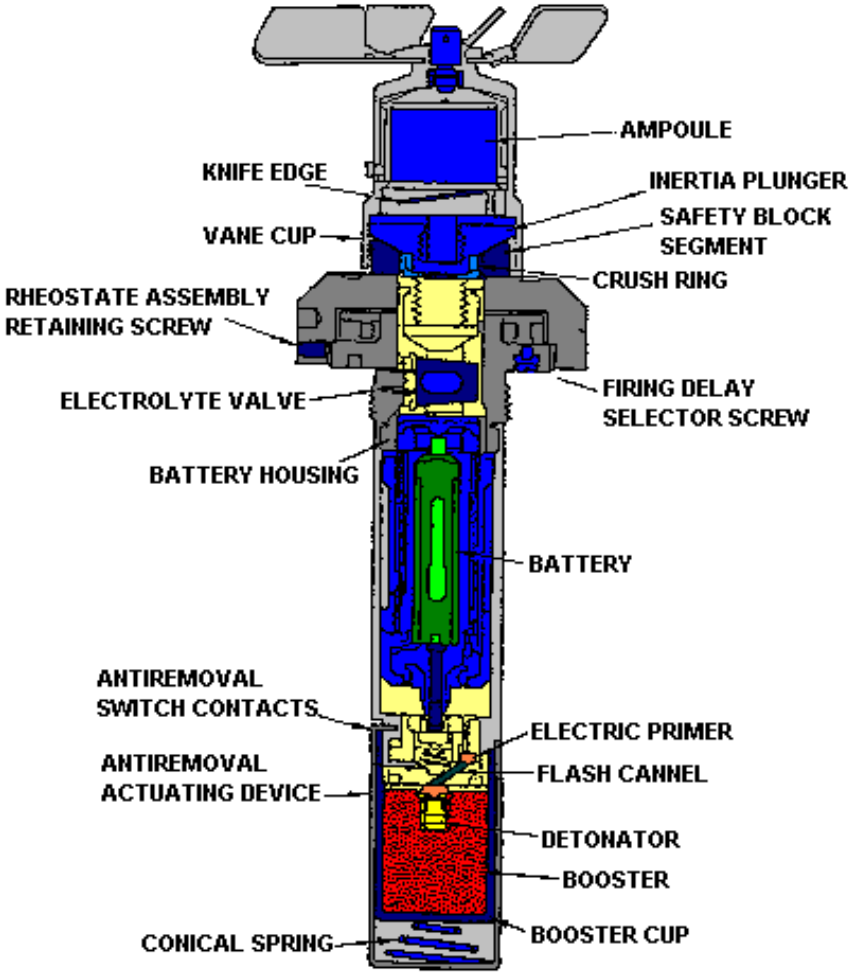
d)Do not remove a fuze from a bomb after the inertia plunger has been withdrawn (fuze rendered safe). Withdrawal of the inertia plunger removes only the delay—firing capability. The anti removal circuit remains active for the life of the battery.

PHYSICAL DATA

TYPE: Long Delay and Anti Removal
MODEL: AVDM
MATERIAL: Steel
WEIGHT: Not Known
MARKINGS: АВДМ
LENGTH: 238mm

FUNCTIONAL DATA

ARMING METHOD: Airflow causing the Arming vane and fuze cap assembly to unscrew and drop away from the fuze body releasing the the safety block segments and cutting the acid ampoule with the knife edge to release the acid. On Impact the Inertia pluger turns the electrolyte valve to release the acid into the battery thus energising the battery.
SELF DESTRUCT: Time delay setting set on the Fuze
SAFETY DEVICES: Arming wire locking Arming Vane and fuze cap assembly, Arming vane and fuze cap holding safety block segments which in turn locks the Inertia plunger. Electrolyte valve preventing release of acid to the battery until the fuze is armed on impact



HAZARDOUS COMPONENTS

The electric primer and the detonator each contain less than 1 gram of initiating explosive.
The fuze booster contains approximately 27 grams of Tetryl.

BOMBS CAN BE USED IN

(as tail fuze) OFAB 100NV, OFAB 100-120, OFAB 250-270, FAB 250 M46, FAB 500 M46, FAB 1,500 M46, FAB 250 M54, FAB 500 M54, FAB 250 TS, FAB 500 TS and any other FAB / OFAB bombs with an external tail fuze well

UNARMED CONDITION AVDM

Consider the fuze to be unarmed if:
a)The vane cup and safety-block segments are in place.

b)The vane cup and safety-block segments are not in place, but the inertia plunger is extended and the crush ring has not been deformed.

ARMED CONDITION AVDM

Consider the fuze to be armed and functioning if: the vane cup and safety block segments are in place, and the inertia plunger is depressed.

WARNINGS AVDM Fuze

a)Do not depress an extended inertia plunger. Depressing the plunger of a fuze having an energised battery will arm or rearm the fuse, causing it to function.

b)Wait 24 days (576 hours), if possible, before attempting to render safe a bomb containing an armed fuze. This will allow the battery to bleed down below firing voltage.

c)Do not remove an armed and functioning fuze. As the fuze unscrews, the anti removal device will complete the firing circuit and detonate the bomb.

d)Do not remove a fuze from a bomb after the inertia plunger has been withdrawn (fuze rendered safe). Withdrawal of the inertia plunger removes only the delay—firing capability. The anti removal circuit remains active for the life of the battery.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR UNARMED FUZES AVDM

NOTE

An extended inertia plunger will protrude 0.25 inch (6 millimetres) from the upper fuse body.

WARNING

Do not depress an extended inertia plunger. Depressing the plunger (figure 2) of a fuze having an energised battery will arm or rearm the fuze, causing it to function.

a).If vane cup is in place, secure it with tape.

b).If vane cup and safety—block segments are not in place, gag plunger in extended position with several turns of soft wire, or tape, placed between plunger and upper fuze body.

c).Attach a wrench, pipe (pipe wrench), a wrench, strap (strap wrench) or a suitable substitute, to upper fuse body; remove fuse by turning it anti-clockwise.

d).Fill fuze well of bomb with rags or paper, cover with tape.

e).Proceed to disposal procedure.

RENDER SAFE PROCEDURES FOR ARMED FUZES AVDM

WARNINGS

Wait 24 days (576 hours), if possible, before attempting to render safe a bomb containing an armed fuse. This will allow the battery to bleed down below firing voltage.

Do not remove an armed and functioning fuse. As the fuse unscrews, the anti removal device will complete the firing circuit and detonate the bomb.

Do not remove a fuse from a bomb after the inertia plunger has been withdrawn (fuse rendered safe). Withdrawal of the inertia plunger removes only the delay-firing capability. The anti removal circuit remains active for the life of the battery.

NOTE The .50 calibre dearmer and the improvised dearmer may be completely assembled (explosive train completed and slug installed) prior to entry into the incident site, thus reducing the EOD operators time at the bomb.

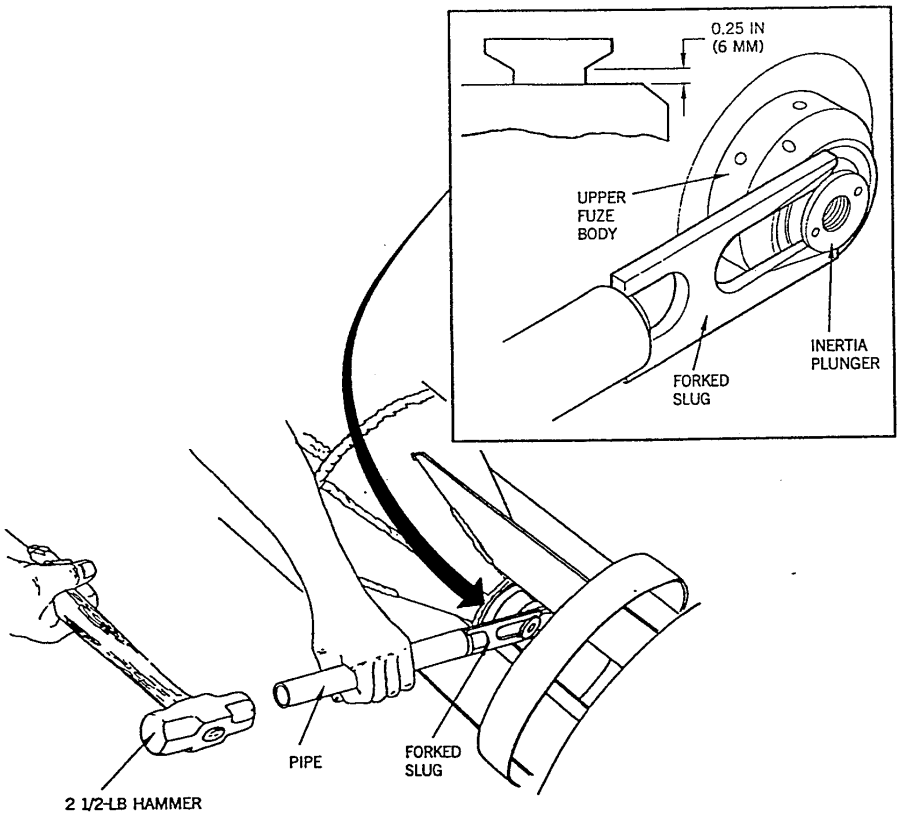
a). If possible observe the 24-day (576 hour) wait time. Using a 1.00 Inch inside diameter by 12.00-inch long pipe a forked slug, and a 2 1/2 Pound hammer, or suitable substitutes, manually extend fuze inertia plunger as shown in figure.

b).Inspect fuze to determine if inertia plunger has been withdrawn 0.25 Inch (6 millimetres). **Do not** remove fuze from bomb.

c), If forked slug stays with fuze, gag inertia plunger with forked slug in place with several turns of tape.

d). If forked slug does not stay with fuze, gag inertia plunger with several turns of soft wire or tape, placed between plunger and upper fuze body.

e) proceed to disposal procedure



DISPOSAL PROCEDURES

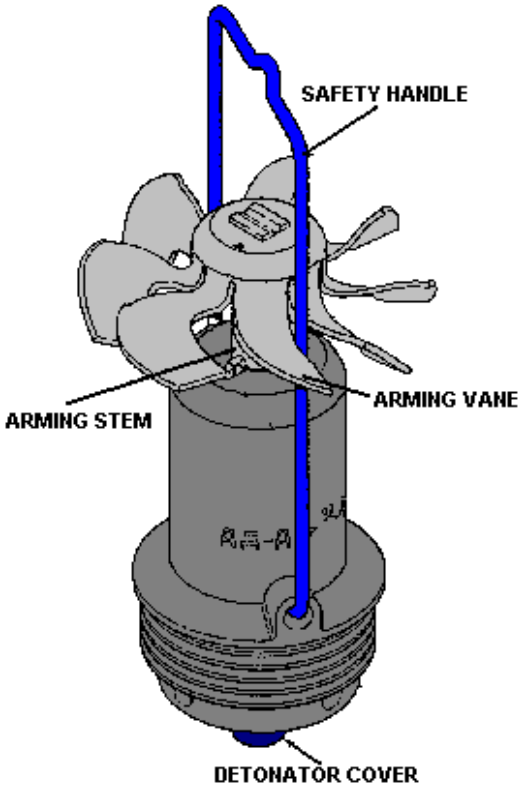
Transport Bomb to a disposal site and destroy by detonation.

AVDM UNARMED

AVDM ARMED

AVDM ARMED

5.8 Tail Inertia Impact Fuze AD-A



PHYSICAL DATA

TYPE: Tail Impact (Inertia)
MODEL: AD-A
MATERIAL: Aluminium alloy
WEIGHT: Not known
MARKINGS: АД-А,
LENGTH: 96.5mm

FUNCTIONAL DATA

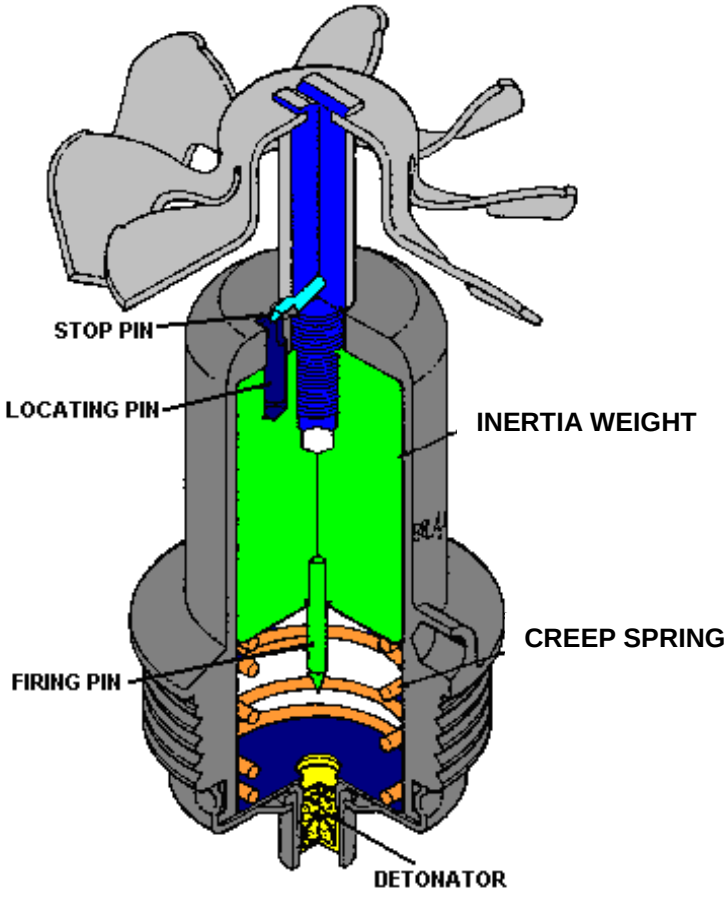
ARMING METHOD: Airflow causing the Arming vane and Arming stem assembly to unscrew and drop away from the fuze body releasing the inertia weight so it is only held away from the detonator by the Creep spring
SELF DESTRUCT: None
SAFETY DEVICES: Arming handle locking Arming Vane and Arming stem assembly, Arming vane and Arming stem assembly locking Inertia weight to body of fuze

HAZARDOUS COMPONENTS

The detonator contains less than 1 gram of explosives

BOMBS USED IN

Any bomb with an external tail fuze well, for example OFAB 100NV, OFAB 100-120, OFAB 250-270, FAB 250 M46, FAB 500 M46, FAB 1,500 M46, FAB 250 M54, FAB 500 M54, FAB 250 TS, FAB 500 TS



UNARMED CONDITION AD-A

Consider the fuze to be unarmed if: the safety wire or arming vane is in place and the fuze is undamaged.

ARMED CONDITION AD-A

Consider the fuze to be armed if: the arming vane and arming stem is missing and / or the fuze is damaged.

SPECIAL WARNINGS

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR UNARMED FUZES ADA

a) Tape the safety wire or arming vane in place.

b) Using a wrench or other tool, manually remove the fuze from the bomb by unscrewing it anti clockwise.

c) Proceed to disposal procedure.

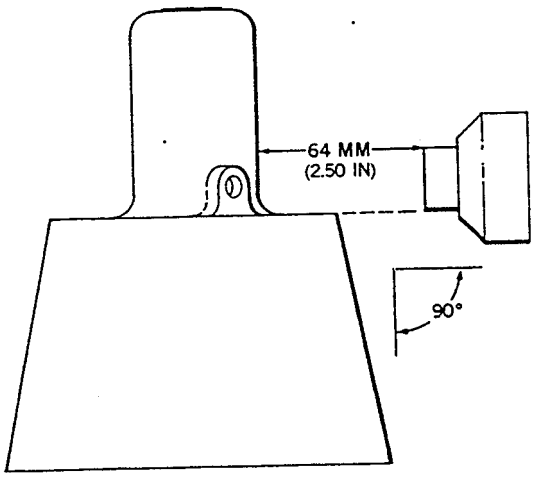
RENDER SAFE PROCEDURES FOR ARMED FUZES AD-A

a) Assemble a .50 calibre De-Armer/ JROD with a bolster projectile in a position as shown in the figure below

b).Fire the dearmer.

c).Cover remainder of fuze with tape.

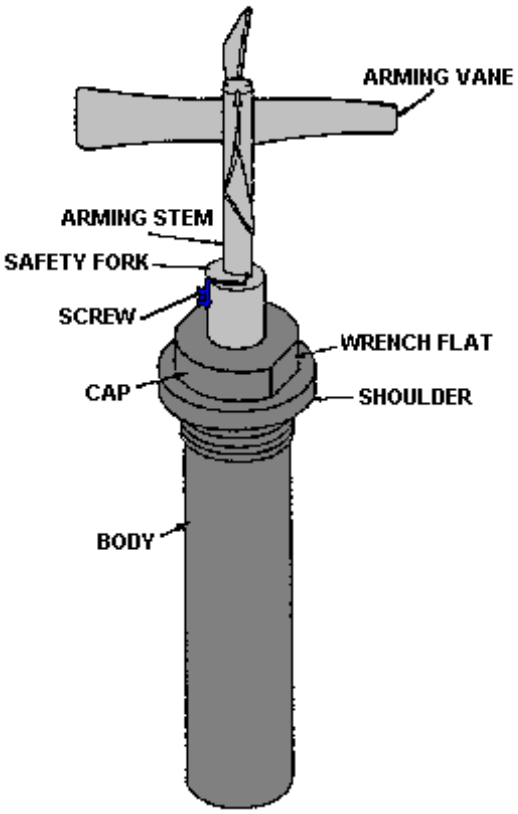
d).Proceed to disposal procedure.



DISPOSAL PROCEDURES

Transport fuze in a sand filled box to a disposal site and destroy by detonation.

5.9 Tail Inertia Impact Fuze ADOZ,



PHYSICAL DATA

TYPE: Tail Impact (Inertia) with delay element
MODEL: ADOZ, ADZ, ADZU
MATERIAL: Steel
WEIGHT: 798.3g
MARKINGS: АДОЗ, АДЗ, АДЗУ
LENGTH: 251.4mm

FUNCTIONAL DATA

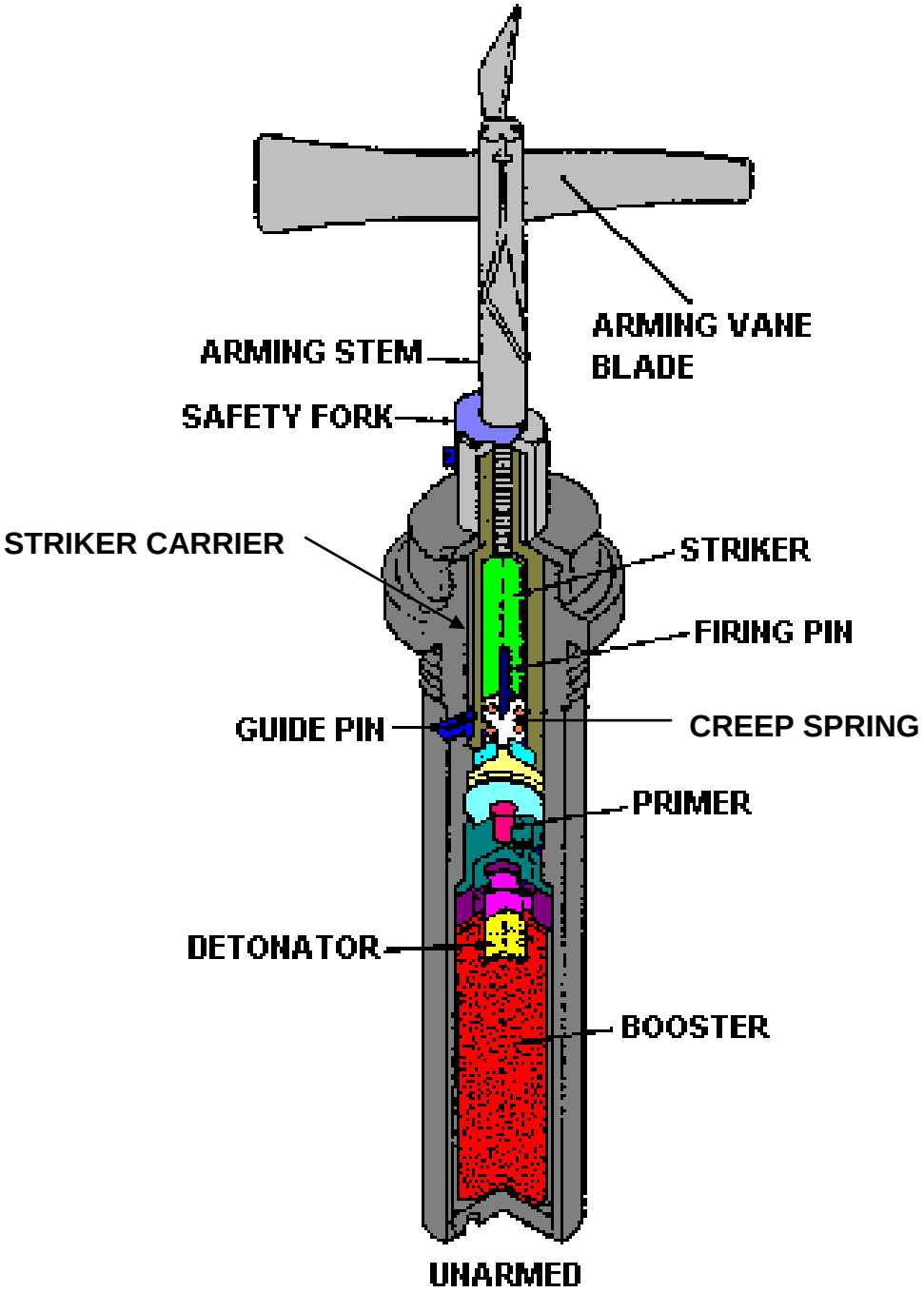
ARMING METHOD: Airflow causing the Arming vane and Arming stem assembly to unscrew and drop away from the fuze body releasing the Striker carrier so that the striker is only held away from the detonator by the Creep spring
SELF DESTRUCT: None
SAFETY DEVICES: Arming fork locking Arming Vane and Arming stem assembly, Arming vane and Arming stem assembly locking striker carrier to body of fuze, so that striker cannot reach detonator

HAZARDOUS COMPONENTS

These fuzes contain a primer, relay, detonator, and booster. The ADZ and ADZU fuzes each have a delay element.

BOMBS USED IN

Any bomb with an external tail fuze well, for example OFAB 100NV, OFAB 100-120, OFAB 250-270, FAB 250 M46, FAB 500 M46, FAB 1,500 M46, FAB 250 M54, FAB 500 M54, FAB 250 TS, FAB 500 TS



UNARMED CONDITION ADOZ, ADZ, ADZU

Consider the fuze to be unarmed if: safety fork, and/or the arming vane and arming stem assembly are in place and no threads are showing on the arming stem

ARMED CONDITION ADOZ, ADZ, ADZU

Consider the fuze to be armed if: the arming vane and arming stem assembly are missing or threads are showing on the arming stem

WARNINGS

1)Wait 30 minutes from time of impact before performing render safe procedures on an armed fuze.
Two fuzes in this series contain delay elements of an unknown duration.

2)wait 30 minutes before approaching a remotely removed armed ADZ or ADZU fuze. This should provide sufficient time to observe any indication of further functioning, since deterioration or dampness may prolong burning of the pyrotechnic delay which could be initiated by removal.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR UNARMED FUZES ADOZ, ADZ, ADZU

a) Tape the safety fork or arming vane in place.

b) Using a wrench or other tool, manually remove the fuze from the bomb by unscrewing it anti clockwise.

c) Proceed to disposal procedure.

RENDER SAFE PROCEDURES FOR ARMED FUZES ADOZ, ADZ, ADZU

WARNING

Wait 30 minutes from time of impact before performing procedures on an armed fuze. Two fuzes in this series contain delay elements of unknown duration.

a).Assemble and attach Rocket Wrench to the fuze.

b) If Rocket wrench is not available available use Stilson wrench and tape and line method of remote fuze removal or Richmond Engineering remote fuze removal tool (RE17FE82)

b).Remotely remove fuze.

c).Proceed to disposal procedure.

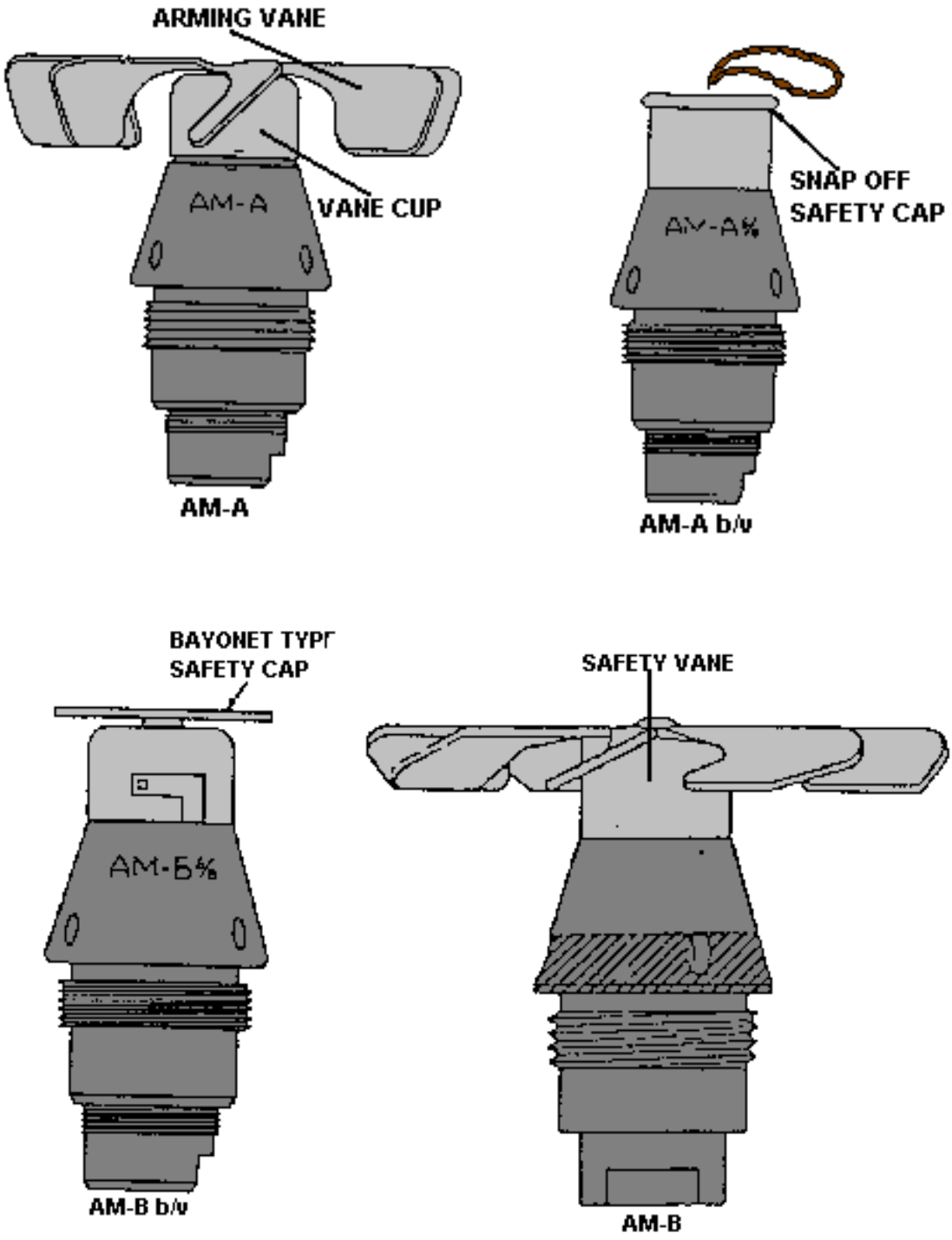
WARNING

Wait 30 minutes before approaching a remotely removed ADZ or ADZU fuze. This should provide ample time to observe any indication of further functioning since deterioration or dampness may prolong the burning of the pyrotechnic delay if initiated during removal.

DISPOSAL PROCEDURES

Transport fuze in a sand filled box to a disposal site and destroy by detonation.

5.10 Nose Impact Fuze AMA, AMA b/v and AMB, AMB b/v



PHYSICAL DATA

TYPE: Nose Impact (Direct Action)
MODEL: AM-A, AM-A b/v, AM-B, AM-B b/v
MATERIAL: Steel
WEIGHT: 140.6g (AM-A, AM-A b/v) 226.7g (AM-B, AM-B b/v)
MARKINGS: AM-A, AM-A б/в, AM-Б, AM-Б б/в
LENGTH: 63.2mm (all models)

FUNCTIONAL DATA

ARMING METHOD: Airflow causing the Arming vane and vane cap assembly to unscrew and drop away from the fuze body so that there is no barrier to the depression of the firing pin except the frangible disc at the top of the fuze. The AMA b/v and AMA b/v uses snap off safety caps instead of a screw on Arming vane and vane cap assembly, the snap off safety caps are secured to the inside of RBK cluster bomb bodies,these caps are pulled off as the bomblets are ejected from the cluster bomb

SELF DESTRUCT: None

SAFETY DEVICES: Arming vane and vane cap assembly or snap off safety cap preventing pressure on the firing pin

HAZARDOUS COMPONENTS

The AM-A and AM-B has a detonator containing 6.2 grams of mercury fulminate and a primer containing less than 1 gram

ROCKETS OR BOMBS USED IN

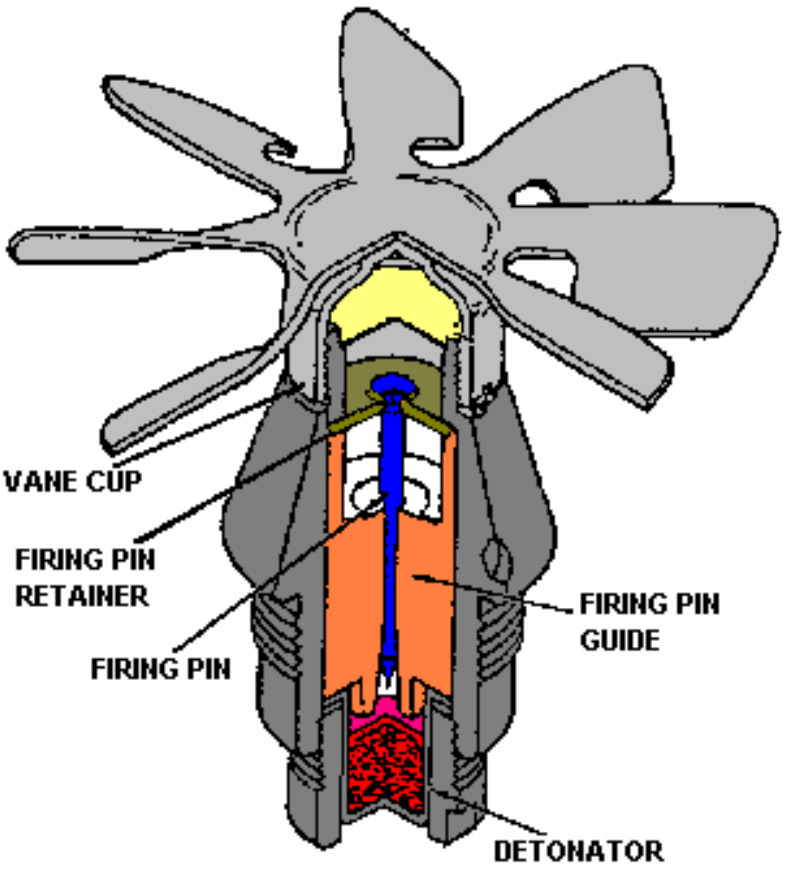
82mm Rocket RS-82,
132mm Rocket RS-132,
132mm Rocket ROFS-132,

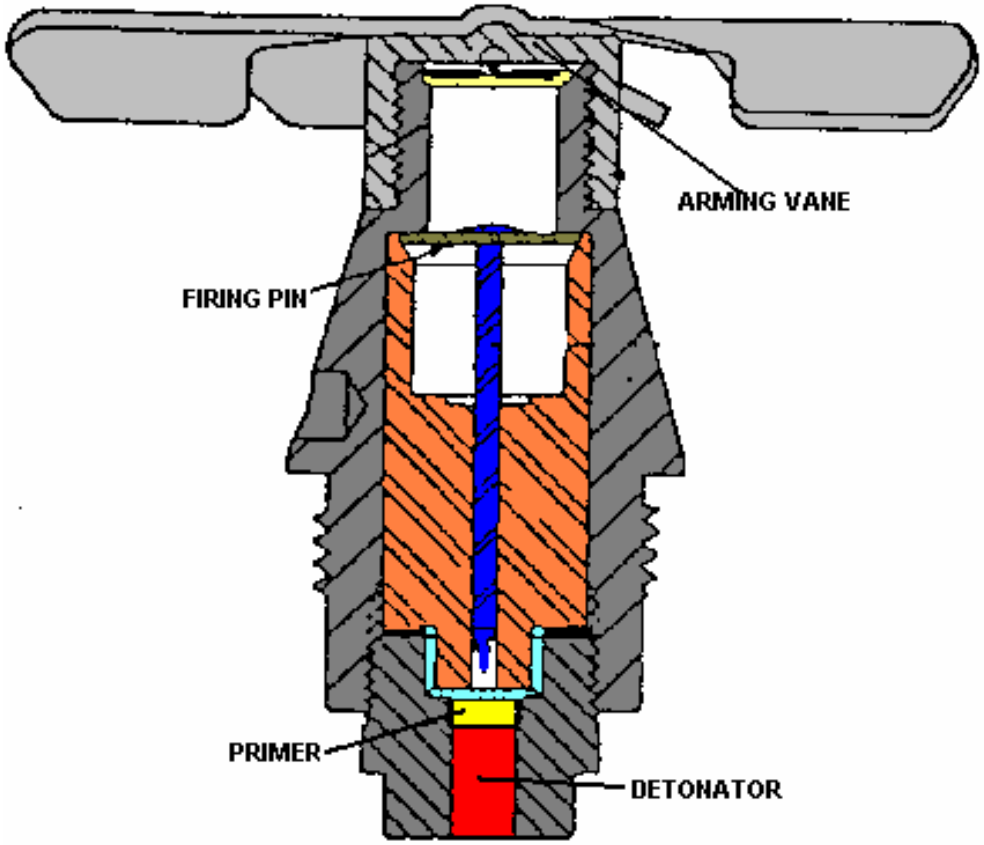
BOMBS

AO-2.5, A0-8M6, AO-10.
AO-15, AO-20M1, AO-20M2, AO-25,
AO-25M1, AO-25M2, AOKH-10,
KHAB-25, KHAB-200, KHAB-500,

ROCKETS USED IN

82mm 48-RD Rocket Launcher
82mm M-8 Rocket Launcher
82mm Aircraft Launcher RO-82
132mm Rocket Launcher M-18
132mm Aircraft Launcher RO-132





UNARMED CONDITION AM-A, AM-A b/v, AM-B, AM-B b/v

Consider the fuze to be unarmed if: The Arming vane and Vane cap assembly or snap off safety cap is in place and the fuze is undamaged

ARMED CONDITION AM-A, AM-A b/v, AM-B, AM-B b/v

Consider the fuze to be armed if: The Arming vane and Vane cap assembly or snap off safety cap is missing or the fuze is damaged

SPECIAL WARNINGS

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR UNARMED FUZES AM-A, AM-A b/v, AM-B, AM-B b/v

a) Secure arming vane and cup, or safety cap in place..

b) Using a wrench or other tool, manually remove the fuze from the bomb by unscrewing it anti clockwise.

c) Proceed to disposal procedure.

RENDER SAFE PROCEDURES FOR ARMED FUZES AM-A, AM-A b/v, AM-B, AM-B b/v

a) Check the frangible disc at the front of the fuze, if it is broken this could indicate that the firing pin could be impinged on the primer or detonator

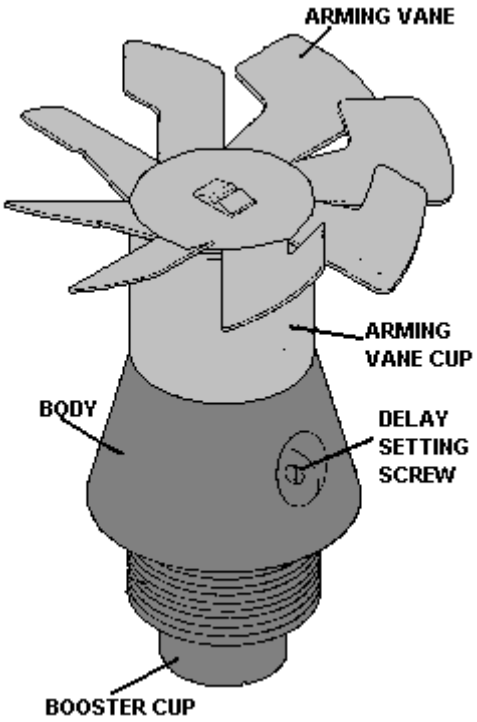
b) Using a wrench or other tool, manually remove the fuze from the bomb by unscrewing it anti clockwise.

c) Proceed to disposal procedure.

DISPOSAL PROCEDURES

Transport fuze in a sand filled box to a disposal site and destroy by detonation.

5.11 Nose Impact Fuze AV-4



PHYSICAL DATA

TYPE: Nose Impact (Direct Action)
MODEL: AV-4
MATERIAL: Steel
WEIGHT: Not Known
MARKINGS: AB-4
LENGTH: 94.4mm

FUNCTIONAL DATA

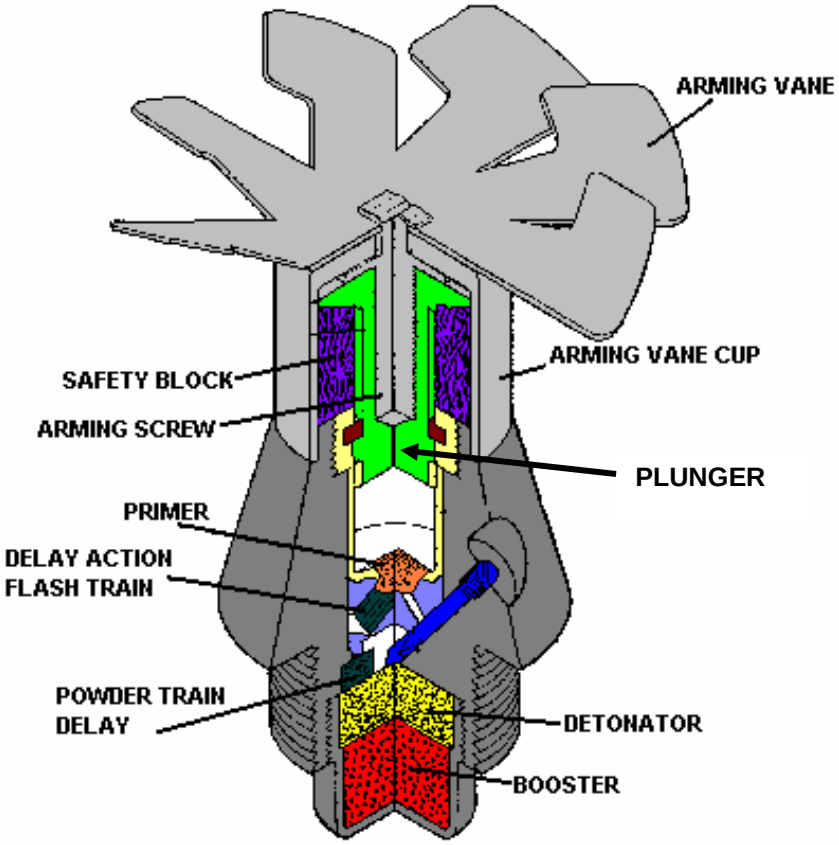
ARMING METHOD: Airflow causing the Arming vane and arming vane cup assembly to unscrew and drop away from the fuze body which allows the safety blocks to fall away from the plunger. The plunger is now unlocked and can be depressed on impact
SELF DESTRUCT: None
SAFETY DEVICES: Arming vane and arming vane cup assembly holding the safety blocks, safety blocks locking the plunger in position

HAZARDOUS COMPONENTS

The explosive train consists of a primer powder train delay, detonator, and booster. The compositions and weights of these components is unknown

BOMBS USED IN

AO-2.5, AO-10, AO-20M3, AO-25M1, AO-100, AOKH-10, AOKH-15, KHAB-25, KHAB-200, KHAB-500, KRAB-25,



UNARMED CONDITION AV-4

Consider the fuze to be unarmed if: The Arming vane and Arming Vane cup assembly is in place and the fuze is undamaged

ARMED CONDITION AV-4

Consider the fuze to be armed if: The Arming vane and Arming Vane cup assembly are missing or the fuze is damaged

WARNINGS

Wait at least 30 minutes from the time the bomb was dropped before approaching an armed fuze. This will provide sufficient time for functioning should deterioration or dampness prolong burning time of the powder train delay.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR UNARMED FUZES AV-4

a) Secure arming vane and and Arming vane cup, in place..

b) Using a wrench or other tool, manually remove the fuze from the bomb by unscrewing it anti clockwise.

c) Proceed to disposal procedure.

RENDER SAFE PROCEDURES FOR ARMED FUZE AV-4

WARNING

Wait 30 minutes from time of impact before performing procedures on an armed fuze.

Ensure the plunger , if still extended, is not depressed accidentally as this could cause the fuze to function

a).Assemble and attach Rocket Wrench to the fuze.

b) If Rocket wrench is not available available use Stilson wrench and tape and line method of remote fuze removal or Richmond Engineering remote fuze removal tool (RE17FE82)

b).Remotely remove fuze.

c).Proceed to disposal procedure.

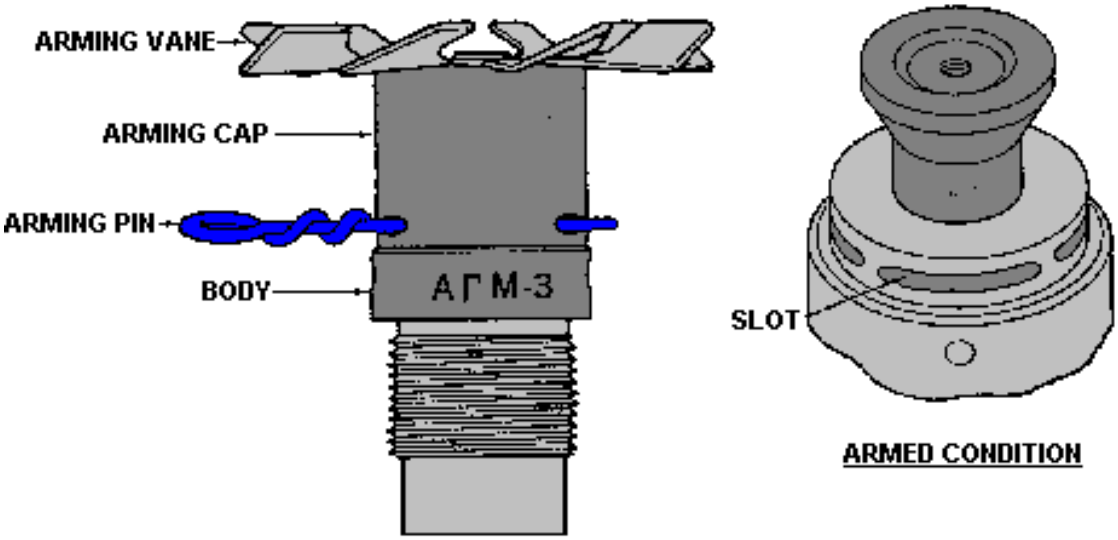
WARNING

Wait 30 minutes before approaching a remotely removed AV-4 fuze. This should provide ample time to observe any indication of further functioning since deterioration or dampness may prolong the burning of the pyrotechnic delay if initiated during removal.

DISPOSAL PROCEDURES

Transport fuze in a sand filled box to a disposal site and destroy by detonation.

5.12 Nose Impact Fuze AGM-1 and AGM-3



PHYSICAL DATA

TYPE: Nose Impact (Direct Action)
MODEL: AGM-1 and AGM-3
MATERIAL: Brass and Aluminium
WEIGHT: 272.3g
MARKINGS: АГМ-1 or АГМ-3
LENGTH: 76.6mm

FUNCTIONAL DATA

ARMING METHOD: Airflow causing the Arming vane and arming vane cap assembly to unscrew and drop away from the fuze body which allows the safety blocks to fall away from the Striker. The striker is now unlocked and Only the shear pin and striker spring (creep spring) keep the striker away from the detonator

SELF DESTRUCT: None

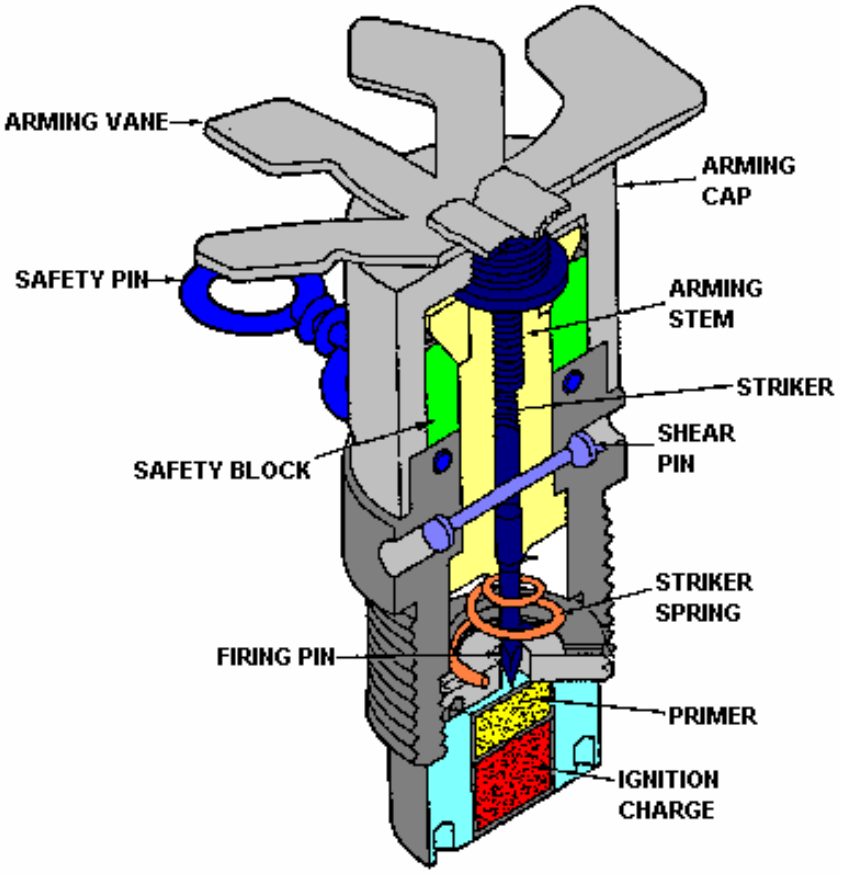
SAFETY DEVICES: Safety pin (pulled out as bomb drops from aircraft)Arming vane and arming vane cap assembly holding the safety blocks, safety blocks locking the striker in position.

HAZARDOUS COMPONENTS

The fuze has a primer and a detonator. The compositions and weights of these components is unknown

BOMBS USED IN

AO-2.5, AO-10, AO-20M3, AO-100, AOKH-8, AOKH-10, AOKH-15, KHAB-25, KHAB-25, KHAB-200, KHAB-500, KRAB-25



UNARMED CONDITION AGM-1 or AGM-3

Consider the fuze to be unarmed if: The Safety pin and/or the Arming vane and Arming Vane cap assembly is in place and the fuze is undamaged

ARMED CONDITION AGM-1 or AGM-3

Consider the fuze to be armed if: The Arming vane and Arming Vane cap assembly is missing or the fuze is damaged

WARNINGS

1) Do not remove a fuze from a bomb which may contain picric acid, black powder, or toxic chemicals. Sensitive explosives or chemicals may be present in the fuze well.

2) Do not move or depress the striker or The impact disk on an armed fuze. The fuze has an in-line firing train.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR UNARMED FUZES AGM-1 or AGM-3

WARNINGS

Do not remove a fuze from a bomb which may contain picric acid, black powder, or toxic chemicals. Sensitive explosives or chemicals may be present in the fuze well.

a) Secure safety pin (if present) or arming vane and Arming vane cap, in place..

b) Using a wrench or other tool, manually remove the fuze from the bomb by unscrewing it anti clockwise.

c) Proceed to disposal procedure.

RENDER SAFE PROCEDURES FOR ARMED FUZE AGM-1 or AGM-3

WARNINGS

Do not move or depress the striker or The impact disk on an armed fuze. The fuze has an in-line firing train.

Do not remove a fuze from a bomb which may contain picric acid, black powder, or toxic chemicals. Sensitive explosives or chemicals may be present in the fuze well.

If the Striker is not depressed:

a) Gag the Striker

b) Using a wrench or other tool, manually remove the fuze from the bomb by unscrewing it anti clockwise.

c) Proceed to disposal procedure.

If the striker is depressed

a).Assemble and attach Rocket Wrench to the fuze.

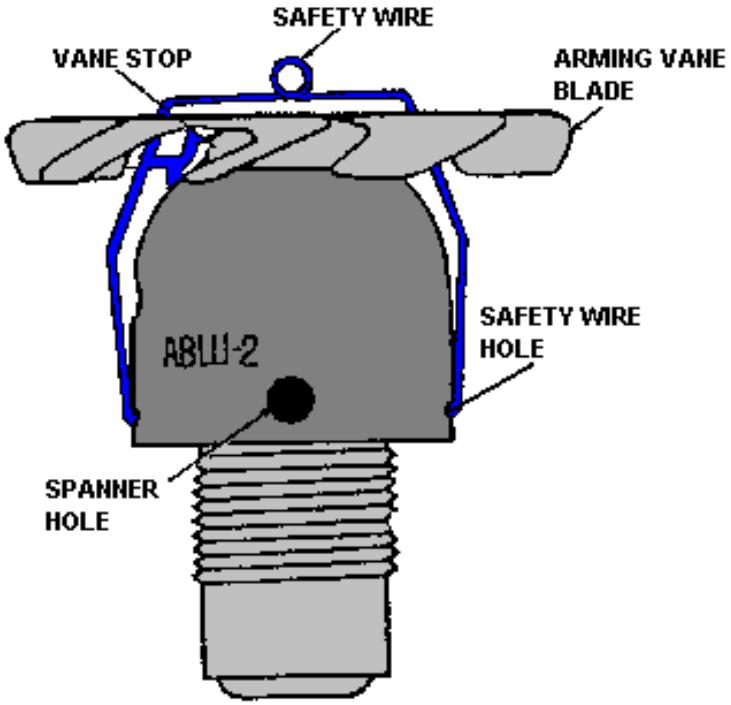
b) If Rocket wrench is not available available use Stilson wrench and tape and line method of remote fuze removal or Richmond Engineering remote fuze removal tool (RE17FE82)

b).Remotely remove fuze.

DISPOSAL PROCEDURES

Transport fuze in a sand filled box to a disposal site and destroy by detonation.

5.13 Nose Impact Fuze AVSh-2



PHYSICAL DATA

TYPE: Nose Impact (Direct Action)
MODEL: AVSh-2
MATERIAL: Steel
WEIGHT: Not Known
MARKINGS: АВШ-2
LENGTH: 71.6mm

FUNCTIONAL DATA

ARMING METHOD: Airflow causing the Arming vane and arming vane cap assembly to unscrew and drop away from the fuze body which unlocks the Primer carrier. Only the creep spring keeps the striker away from the Primer Carrier

SELF DESTRUCT: None

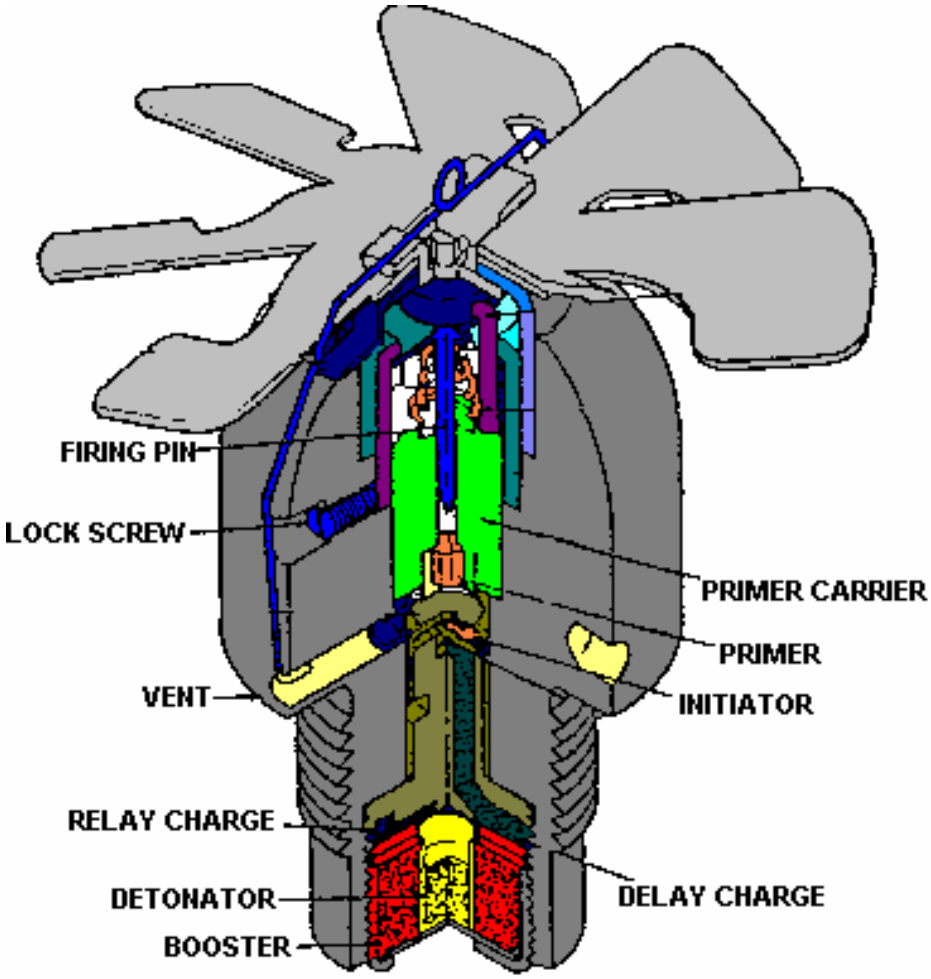
SAFETY DEVICES: Safety pin (pulled out as bomb drops from aircraft)Arming vane and arming vane cap assembly holding the Primer Carrier away from the firing Pin,

HAZARDOUS COMPONENTS

The explosive train consists of a primer, an initiator, pickup, delay and relay charges, and a detonator, each weighing less than 1 gram, and a Tetryl booster of unknown weight

BOMBS USED IN

Not certain but possibly any of the following:
OFAB 100NV, OFAB 100-120, OFAB 250-270, FAB 250 M46, FAB 500 M46, FAB 1,500 M46, FAB 250 M54, FAB 500 M54, OFAB 250 T, FAB 500 T, FAB 100 M62, FAB 250 M62, FAB 500 M62



UNARMED CONDITION AVSh-2

Consider the fuze to be unarmed if: The Safety pin and/or the Arming vane and Arming Vane cap assembly is in place and the fuze is undamaged

ARMED CONDITION AVSh-2

Consider the fuze to be armed if: The Arming vane and Arming Vane cap assembly is missing and the fuze is damaged

WARNINGS

1) Wait 30 minutes before approaching a bomb which has been dropped containing this fuze. A random delay function may be caused by deterioration or dampness which prolongs the burning time of the delay charge.

2) Do not move or jar a bomb containing an armed fuze. The fuze contains an in—line primer separated from the firing pin only by a creep spring.

3) Wait 30 minutes to approach a fuze after rocket wrench removal. The delay may have been initiated during fuze removal. A random delay function may be caused by deterioration or dampness, which prolongs the burning time of the delay charge.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR UNARMED FUZES AVSh-2

WARNINGS

Wait 30 minutes before approaching a bomb which has been dropped containing this fuze. A random delay function may be caused by deterioration or dampness which prolongs the burning time of the delay charge.

a) Secure safety pin (if present) or arming vane and Arming vane cap, in place..

b) Using a wrench or other tool, manually remove the fuze from the bomb by unscrewing it anti clockwise.

c) Proceed to disposal procedure.

RENDER SAFE PROCEDURES FOR ARMED FUZE AVSh-2

WARNINGS

1) Wait 30 minutes before approaching a bomb which has been dropped containing this fuze. A random delay function may be caused by deterioration or dampness which prolongs the burning time of the delay charge.

2) Do not move or jar a bomb containing an armed fuze. The fuze contains an in—line primer separated from the firing pin only by a creep spring.

3) Wait 30 minutes to approach a fuze after rocket wrench removal. The delay may have been initiated during fuze removal. A random delay function may be caused by deterioration or dampness, which prolongs the burning time of the delay charge.

a).Assemble and attach Rocket Wrench to the fuze.

b) If Rocket wrench is not available available use Stilson wrench and tape and line method of remote fuze removal or Richmond Engineering remote fuze removal tool (RE17FE82)

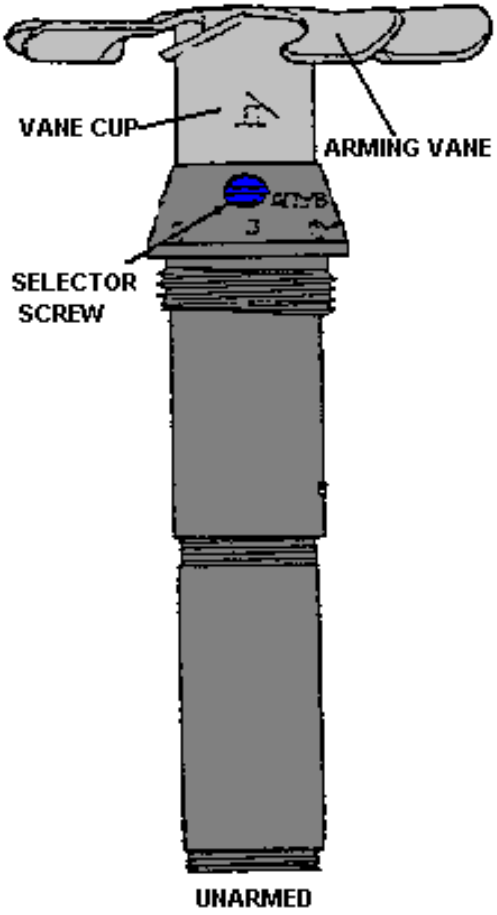
b).Remotely remove fuze.

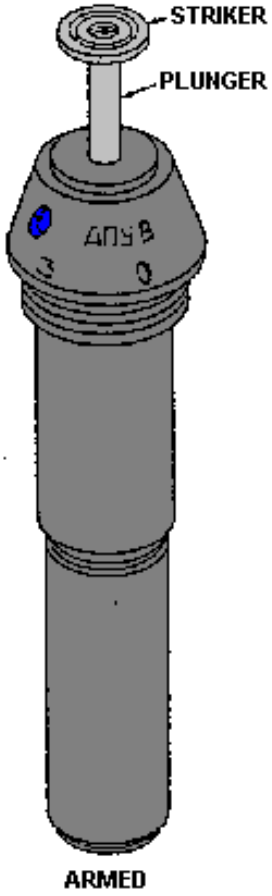
c).Proceed to disposal procedure.

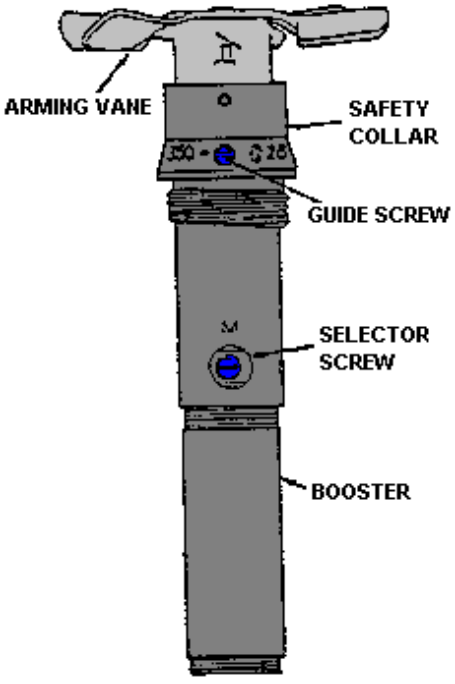
DISPOSAL PROCEDURES

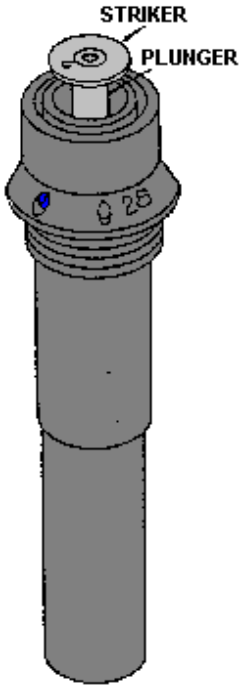
Transport fuze in a sand filled box to a disposal site and destroy by detonation.

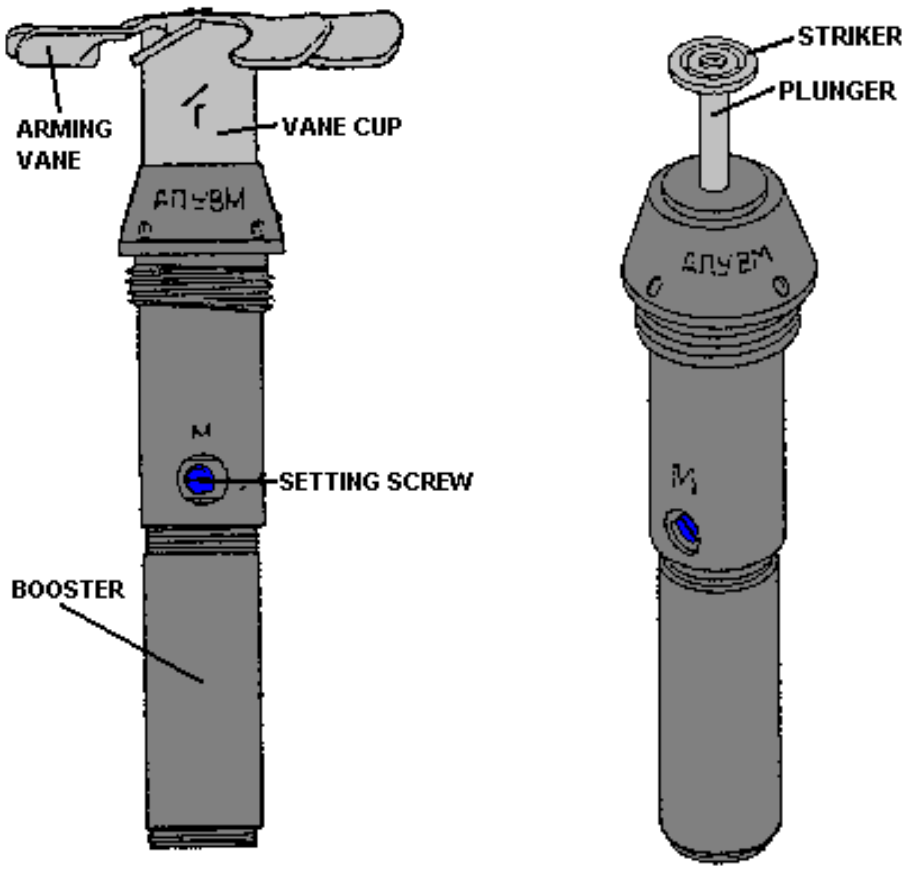
5.14 Nose and Tail Impact / Inertia Fuzes APUV Series (APUV, APUV-1, APUV-M)











PHYSICAL DATA

TYPE: Nose Impact (Direct Action) Tail (Inertia) Impact
MODEL: APUV, APUV-1, APUV-M
MATERIAL: Steel (all models)
WEIGHT: Not known
MARKINGS: АПУВ, АПУВ-1, АПУВ-М
LENGTH: 199.3mm (APUV, APUV-M) 188.7mm (APUV-1)

FUNCTIONAL DATA

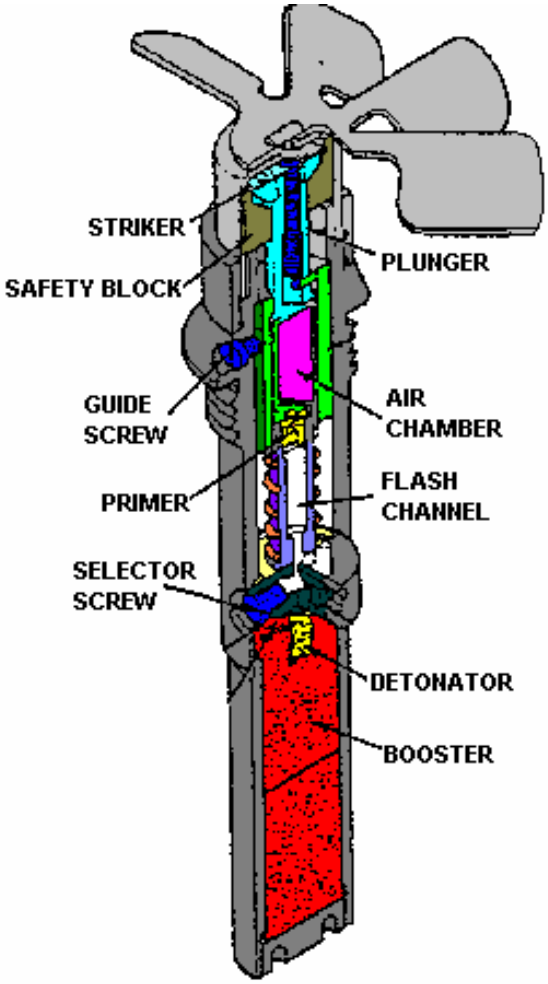
ARMING METHOD: Airflow causing the Arming vane and arming vane cup assembly to unscrew and drop away from the fuze body which allows the safety blocks to fall away from the striker / plunger . The striker / plunger is now unlocked and can be depressed on impact or pulled downwards by the Inertia Sleeve
SELF DESTRUCT: None
SAFETY DEVICES: Arming vane and arming vane cup assembly holding the safety blocks, safety blocks locking the striker/ plunger in position

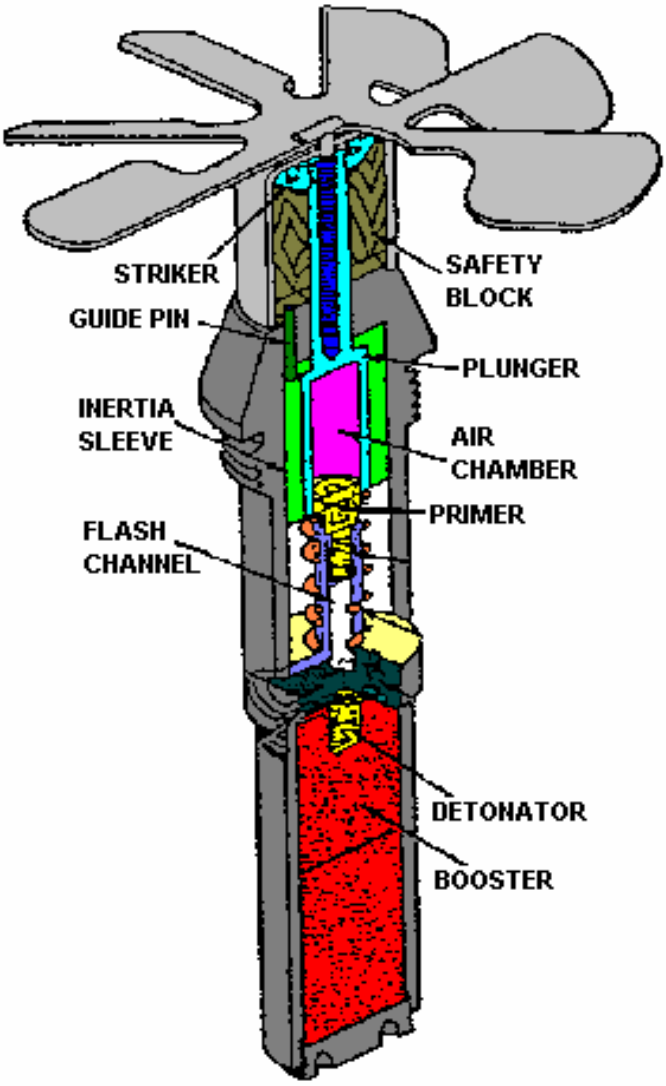
HAZARDOUS COMPONENTS

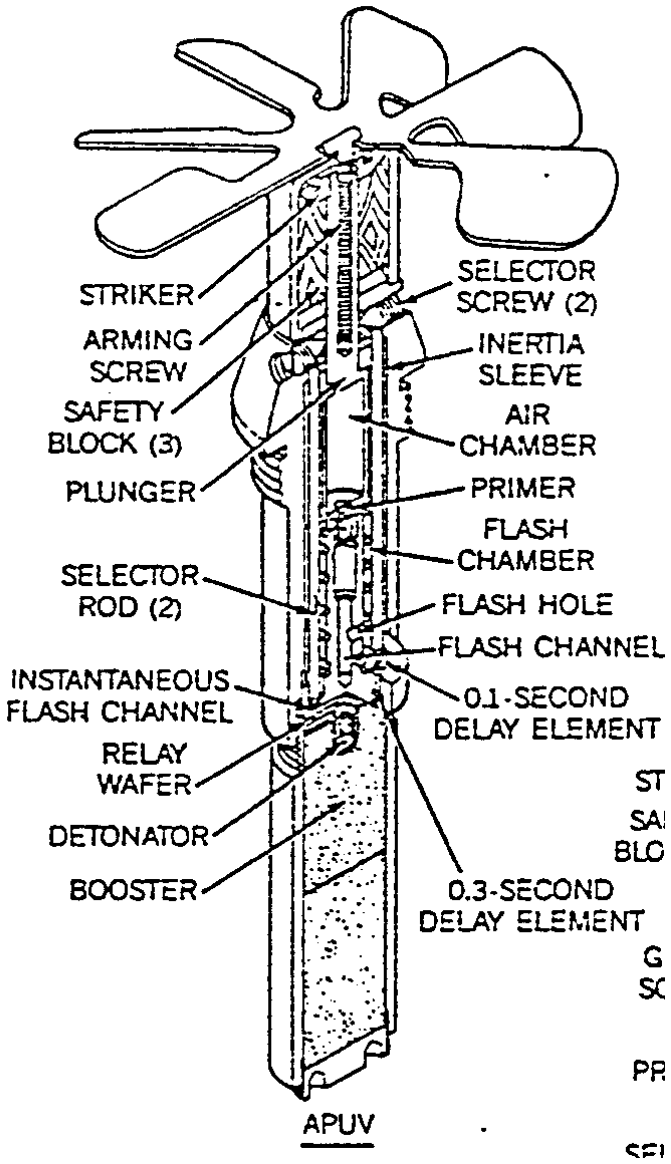
The explosive train of these fuzes consists of a primer (lead styphnate and potassium perchlorate), delay elements (black powder), a relay wafer and a detonator (lead styphnate, lead azide, and tetryl) each of which weight less than 1 gram.
The booster contains 51gram of tetryl.
Some fuzes have a relay pellet beneath the primer.

BOMBS USED IN

Not certain but possibly any of the following:
OFAB 100NV, OFAB 100-120, OFAB 250-270, FAB 250 M46, FAB 500 M46, FAB 1,500 M46, FAB 250 M54, FAB 500 M54, OFAB 250 T,(nose only) FAB 500 T, (nose only)FAB 100 M62,(nose only) FAB 250 M62, (nose only) FAB 500 M62 (nose only) FAB 250 TS, FAB 500 TS







UNARMED CONDITION APUV, APUV-1, APUV-M

Consider the fuze to be unarmed if: The Arming Vane and vane cup assembly is in place and the vane cup is seated against the fuze body and the fuze is undamaged.

ARMED CONDITION APUV, APUV-1, APUV-M

Consider the fuze to be armed if: The Arming Vane and vane cup assembly is missing or the vane cup is not seated against the fuze body or the fuze is damaged.

WARNINGS

1) Wait 30 minutes before approaching a bomb which has been dropped containing this fuze. A random delay function may be caused by deterioration or dampness which prolongs the burning time of the delay charge.

2) Do not depress or permit movement of the striker / plunger ,movement of the striker / plunger could initiate the fuze. NOTE . These fuzes have no detonator out of line safety feature.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR UNARMED FUZES APUV, APUV-1, APUV-M

WARNINGS

Wait 30 minutes before approaching a bomb which has been dropped containing this fuze. A random delay function may be caused by deterioration or dampness which prolongs the burning time of the delay charge.

a). Secure vane cup to fuze body with tape or other suitable material to prevent vane cup rotation.

b). Manually remove fuze from bomb. If required. Loosen fuze with wrench, pipe adjustable 18 inch, or other suitable tool, placed on body.

c).Proceed to disposal procedure.

RENDER SAFE PROCEDURES FOR ARMED FUZES APUV, APUV-1, APUV-M

WARNINGS

Wait 30 minutes before approaching a bomb which has been dropped containing this fuze. A random delay function may be caused by deterioration or dampness which prolongs the burning time of the delay charge.

Do not depress or permit movement of the striker / plunger ,movement of the striker / plunger could initiate the fuze.
NOTE . These fuzes have no detonator out of line safety feature.

a). Gag striker / plunger in position found

b). Manually remove fuze from bomb. If required. Loosen fuze with wrench, pipe adjustable 18 inch, or other suitable tool, placed on body.

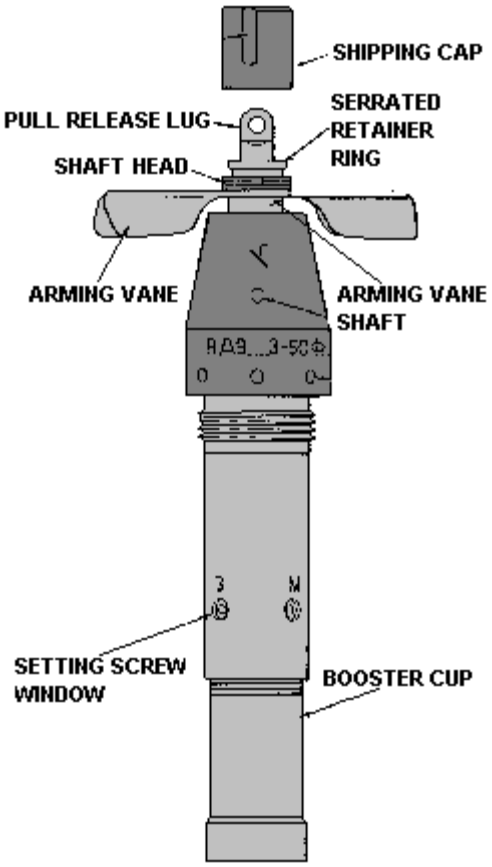
c).Proceed to disposal procedure.

DISPOSAL PROCEDURES

Transport fuze in a sand filled box to a disposal site and destroy by detonation.

APUV-1 ARMED **APUV-1 ARMED**

5.15 Nose and Tail Impact / Inertia Impact Fuzes VDV and VDV-1



PHYSICAL DATA

TYPE: Nose Impact (Direct Action) Tail (Inertia) Impact
MODEL: VDV, VDV-1 and VDV-2
MATERIAL: Steel (all models)
WEIGHT: Not known
MARKINGS: ВДВ, ВДВ-1, and ВДВ-2
LENGTH: 226mm (all models)

FUNCTIONAL DATA

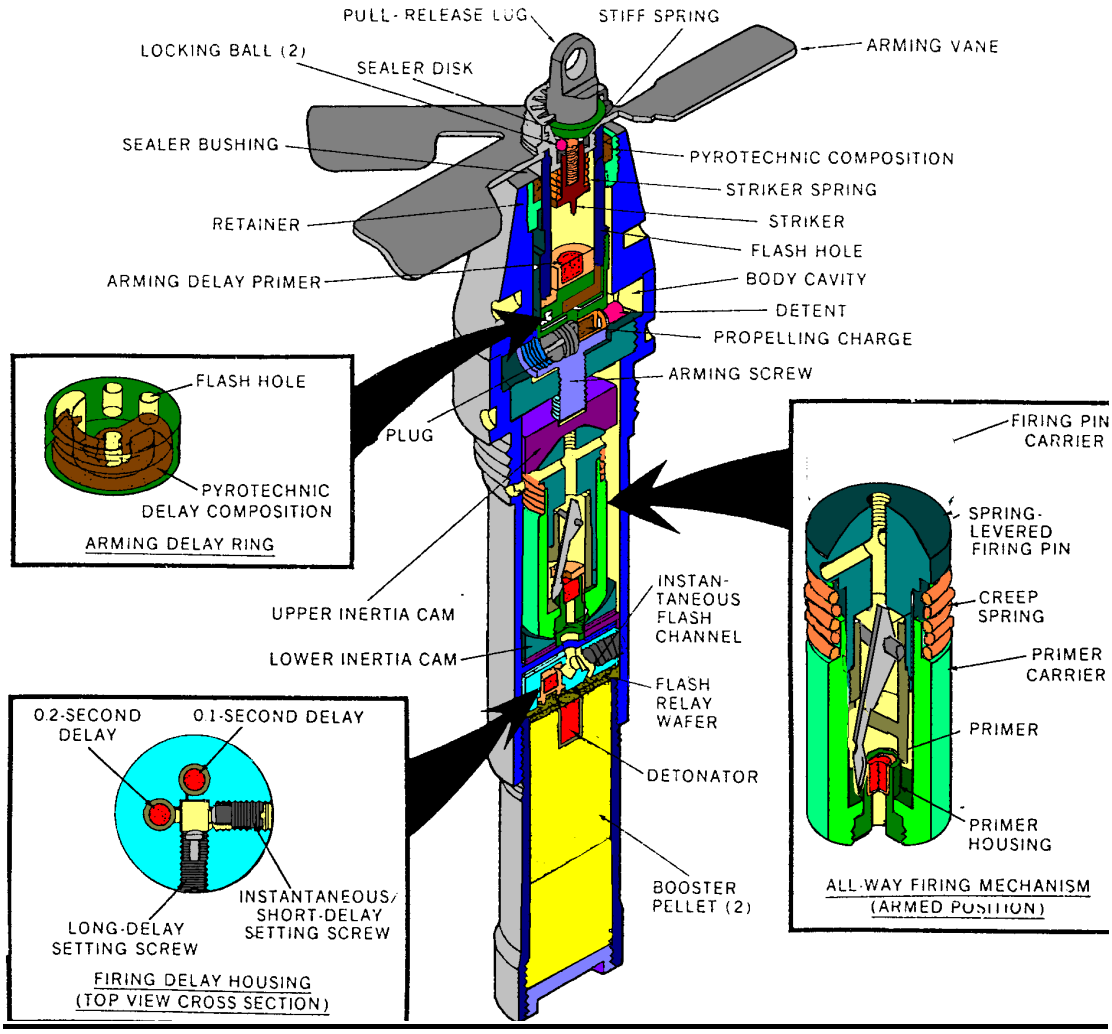
ARMING METHOD: The Pull Release Lug is pulled out as the bomb is released from the aircraft, this allows rotation of the Arming Vanes in the airflow. After a few turns of the Arming Vanes, the 2 Locking Balls holding the (upper) Cocked Striker fall out allowing the Striker Spring to drive the Striker onto the Arming Delay Primer. The Arming Delay Primer fires and ignites the Pyrotechnic Delay Composition which burns through and ignites a small propelling charge which moves the Detent across to allow upward movement of the Arming Screw, which in turn allows upward movement of the Upper Inertia Cam. Upward movement of the Upper Inertia Cam allows the Spring Levered Firing Pin to move into line with the (lower) Primer
SELF DESTRUCT: None
SAFETY DEVICES: Pull Release Lug holding the Arming Vanes and preventing rotation, Arming vanes holding the 2 Locking Balls which hold the (upper) Striker in position

HAZARDOUS COMPONENTS

Each fuze contains the following: less than 1 gram of pyrotechnic composition beneath the sealer bushing; an arming delay primer containing less than 1 gram of explosive; approximately 1 gram of pyrotechnic delay composition in the arming delay ring; a propelling charge, a primer, and a 0.1-second and/or 0.2-second delay, each containing less than 1 gram of explosive; a black powder flash relay wafer and a detonator containing Lead Styphnate, Lead Azide, and Tetryl, each weighing approximately 1 gram; and two Tetryl booster pellets weighing a total of 43 grams (1.5 ounces).

BOMBS USED IN

Not certain but possibly any of the following:
OFAB 100NV, OFAB 100-120, OFAB 250-270, FAB 250 M46, FAB 500 M46, FAB 1,500 M46, FAB 250 M54, FAB 500 M54, OFAB 250 T,(nose only) FAB 500 T, (nose only)FAB 100 M62,(nose only) FAB 250 M62, (nose only) FAB 500 M62 (nose only) FAB 250 TS, FAB 500 TS



UNARMED CONDITION VDV, VDV-1, and VDV-2

Consider the fuze to be unarmed if: the Pull-Release Lug is retained in the Shaft Head by the Serrated Retainer Ring and Sealer Disk.

ARMED CONDITION VDV, VDV-1, and VDV-2

Consider the fuze to be armed if: the Pull-Release Lug is missing from the Shaft Head.

WARNINGS

1)Do not manually move the arming vane of an unarmed fuze.
Movement of the vane may ignite the pyrotechnic composition beneath bushing, resulting in a flash of fire between the arming vane shaft and retainer.

2)Do not move the pull-release lug on an unarmed fuze.
Doing so may release the cocked striker and ignite the arming delay primer.

3)Do not jar an armed fuze except by remote means.
This is an all-ways action fuze, and the firing pin may be embedded in the primer.

4)Do not move the Arming Vane of an armed fuze.
Movement of the Arming Vane transmitted through the Vane shaft , Arming Screw, and Upper Inertia Cam could cause the all-ways-action mechanism to function.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR UNARMED FUZES VDV, VDV-1 and VDV-2

WARNINGS

Wait 30 minutes before approaching a bomb which has been dropped containing this fuze. A random delay function may be caused by deterioration or dampness which prolongs the burning time of the delay charge.

1)Do not manually move the arming vane of an unarmed fuse.
Movement of the vane may ignite the pyrotechnic composition beneath bushing, resulting in a flash of fire between the arming vane shaft and retainer.

2)Do not move the pull-release lug on an unarmed fuse. Doing so may release the cocked striker and ignite the arming delay primer.

a)Manually remove the fuze from the bomb. If a wrench is required to break the fuze loose, apply a wrench, pipe, 18 inch, or other suitable tool, to the lower body of the fuze.

NOTE

If the Pull Release Lug is inadvertently dislodged, rapidly move away from the bomb. This could result in the cocked striker being released, a flash of fire between the arming vane shaft and retainer will follow within seconds.

b). Proceed to disposal procedure.

RENDER SAFE PROCEDURES FOR ARMED FUZES VDV, VDV-1 and VDV-2

WARNINGS

Wait 30 minutes before approaching a bomb which has been dropped containing this fuze. A random delay function may be caused by deterioration or dampness which prolongs the burning time of the delay charge.

Do not jar an armed fuze except by remote means. This is an all ways action fuze,and the firing pin may be embedded in the primer.

Do not move the Arming Vane of an Armed fuze. Movement of the vane could be transmitted through the Vane Shaft and Arming Screw, to the Upper Inertia Cam and cause the all ways firing mechanism to function.

NOTE

If the Arming Vane is present, and the blades are not bent forward or back far enough to allow the Rocket Wrench to be applied, use the manual removal method (secondary procedure) shown below

a)Attach Rocket Wrench to the lower body of the fuze taking extreme care not to disturb the Arming Vanes

b).Remove the fuze from the bomb with Rocket Wrench

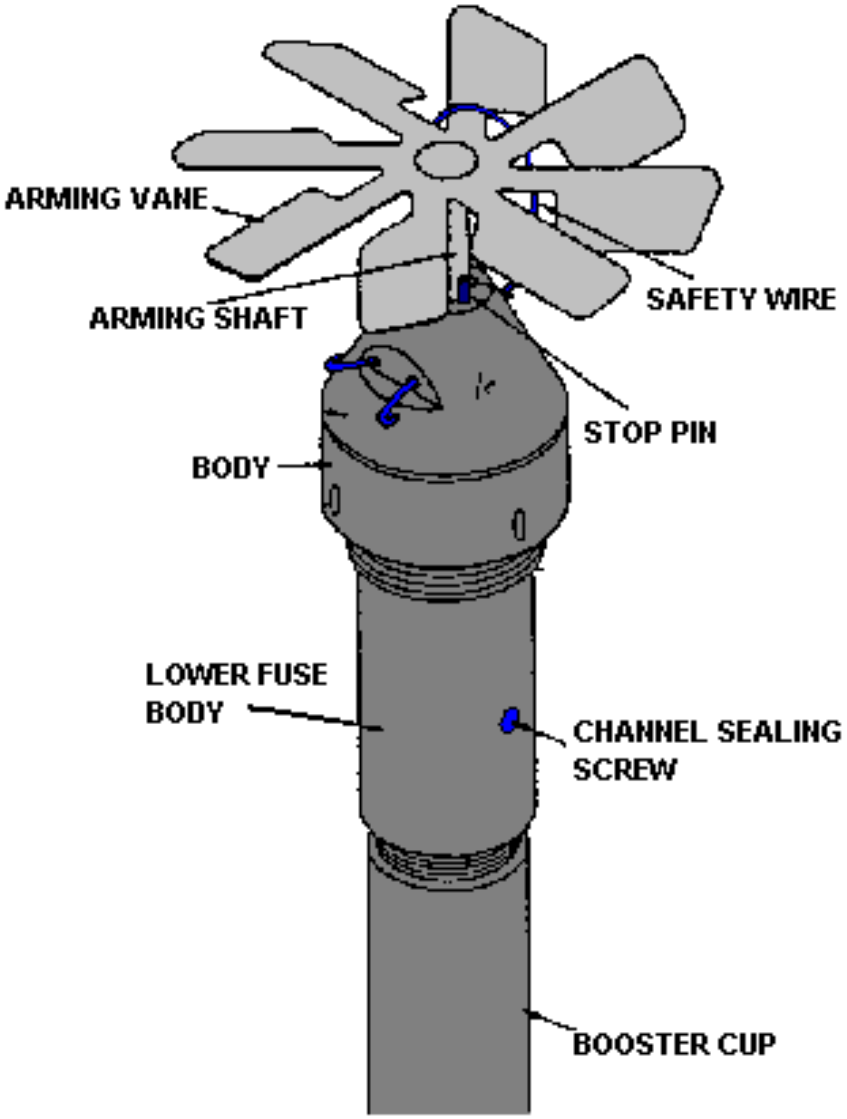
c).Proceed to disposal procedure

Secondary Procedure

a).Manually remove the fuze from the bomb. If a wrench is required to break the fuze loose, apply an 18-inch pipe wrench, or other suitable tool, to the lower body of the fuze.

b). Proceed to disposal procedure.

5.16 Nose and Tail Impact / Inertia Impact Fuzes AV-1, AV-1 d/u



PHYSICAL DATA

TYPE: Nose Impact (Direct Action) Tail (Inertia) Impact
MODEL: AV-1, AV-1 d/u
MATERIAL: Steel (both models)
WEIGHT: Not known
MARKINGS: АВ-1, АВ-1 д/у
LENGTH: 214.2mm (both models)

FUNCTIONAL DATA

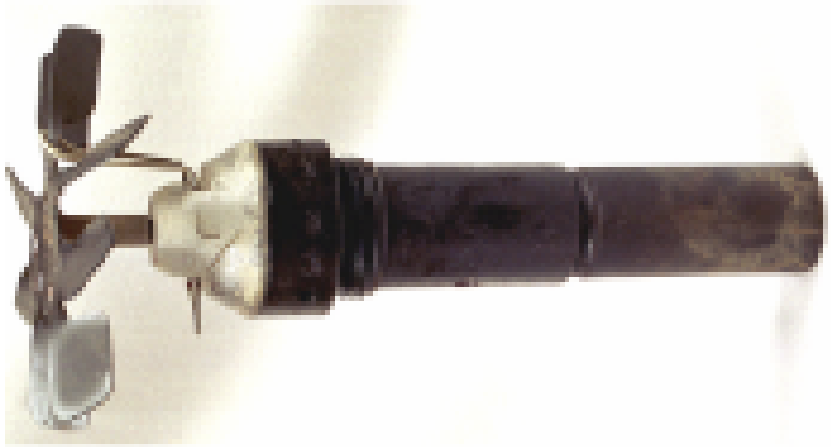
ARMING METHOD: Dropping of the bomb pulls out the Safety Wire, Airflow causes the Arming Vanes and Arming Vane Stem to unscrew from the fuze body and Upper Inertia Cam/ Striker Holder to the Lower Inertia Cam / Primer Carrier. This Unlocks the Upper Inertia Cam / Striker Holder from the fuze body and allows the two locking balls which lock the Upper Inertia Cam /Striker Holder to the Lower Inertia Cam / Primer Holder to drop inwards. The Upper Inertia Cam /Striker Holder is now only held away from the Lower Inertia Cam / Primer Holder by a Creep Spring.
SELF DESTRUCT: None
SAFETY DEVICES: Safety Pin locking Arming Vane Arming stem assembly, Arming stem locking the Upper Inertia Cam /Striker Holder to the fuze body. Locking Balls (x2) locking the Upper Inertia Cam /Striker Holder to the Lower Inertia Cam / Primer Holder .

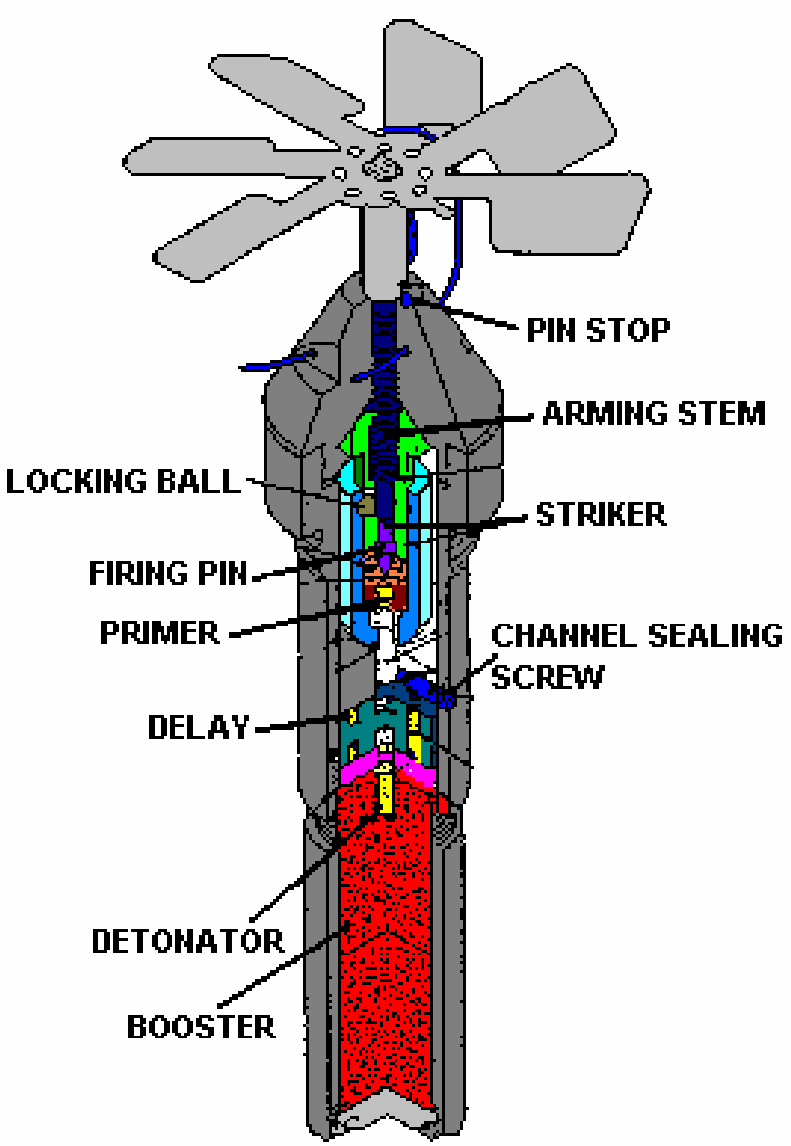
HAZARDOUS COMPONENTS

Each fuze contains a primer, a detonator, and a delay element, each with less than 1 gram of explosive, a relay wafer with 1 gram of Potassium Nitrate, Sulfur and Carbon, and a booster with 51grams of Tetryl. In addition to this, the AV-1d/u fuze contains a relay pellet with less than 1 gram of explosive.

BOMBS USED IN

FAB-50, FAB-100, FAB-250, FAB-500, FAB-1000





UNARMED CONDITION AV-1, AV-1 d/u

Consider the fuze to be unarmed if: The Safety Wire or the Safety Fork is in place and the Arming Vane and Arming Stem assembly is present , and/or the D-pin is in contact with the stop pin and the fuze is undamaged

ARMED CONDITION AV-1, AV-1 d/u

Consider the fuze to be armed if: The Arming Vane and Arming Stem assembly is missing, or the D-pin is not in contact with the stop pin or the fuze is damaged

WARNINGS

1) Do not approach a bomb with armed fuze for 30 minutes after impact or remote fuze removal. Deterioration or dampness may prolong the burning time of the pyrotechnic delay element.

2) Do not subject an armed fuze to unnecessary movement, and maintain the fuze in a nose-up attitude after removal.
These are all-way action fuzes, and in the armed condition the firing pin and primer are held apart only by the creep spring.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURES FOR UNARMED FUZES AV-1, AV-1 d/u

WARNINGS

Wait 30 minutes before approaching a bomb which has been dropped containing this fuze. A random delay function may be caused by deterioration or dampness which prolongs the burning time of the delay charge.

a). If safety pin is missing, Secure arming vane to fuze body prevent movement.

b).Manually remove fuze.

NOTE

If a wrench is required to loosen the fuze, attach the wrench to the fuze body.

c).Proceed to disposal procedure.

RENDER SAFE PROCEDURES FOR ARMED FUZES AV-1, AV-1 d/u

WARNINGS

Wait 30 minutes before approaching a bomb which has

a). Remove fuze using tape and line technique for small diameter fuzes. Ensure that pipe wrench is attached to fuze body or , if using another form of wrench, Ensure the wrench is attached to the fuze body.

b). Maintain the fuze in a nose-up attitude.

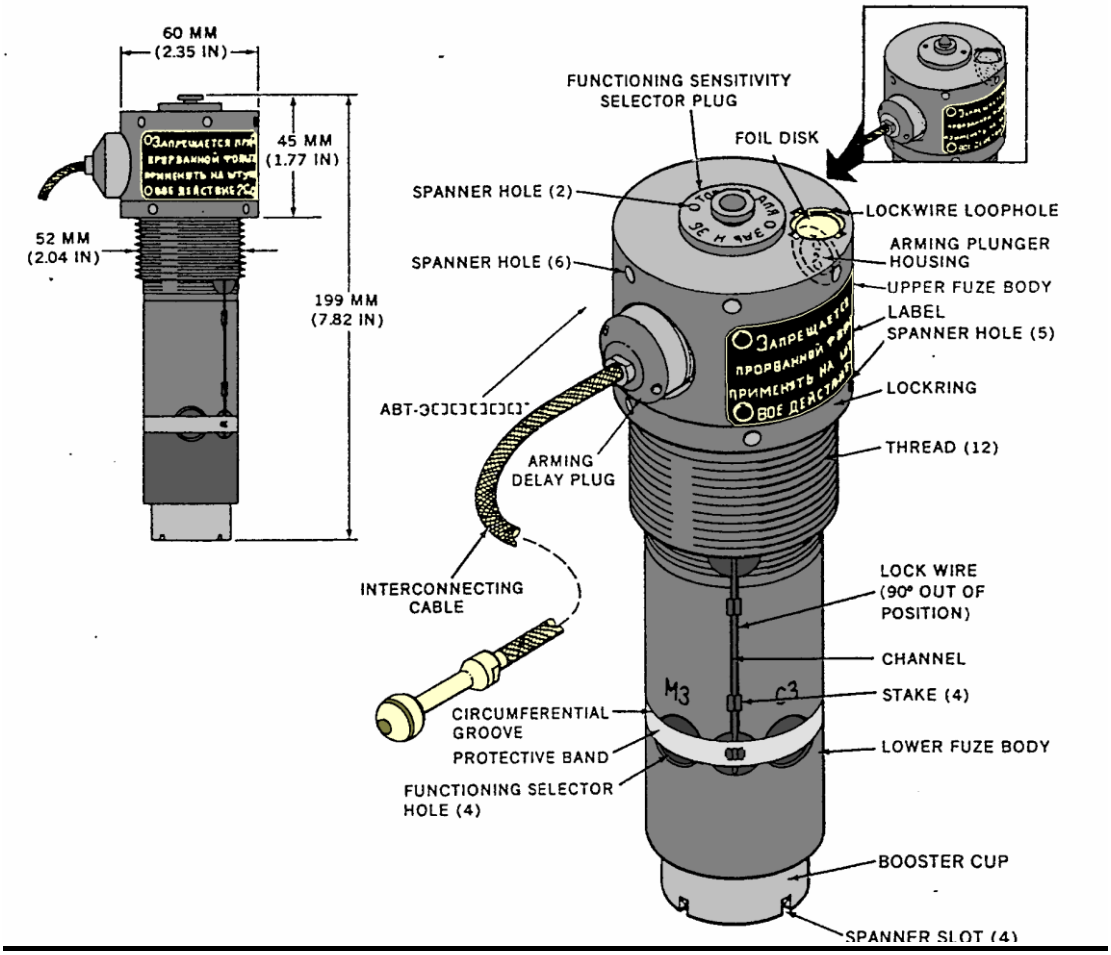
c). Proceed to disposal procedure.

DISPOSAL PROCEDURES

UNARMED FUZE Transport fuze in a sand filled box to a disposal site and destroy by detonation.

ARMED FUZE a). Hand carry hazardous components to a disposal area, keeping fuze in a nose up attitude, and dispose of by detonation.

5.17 Nose and Tail Impact / Inertia Impact Fuzes AVT-E



PHYSICAL DATA

TYPE: Nose Impact (Direct Action) Tail (Inertia) Impact
MODEL: AVT-E
MATERIAL: Steel
WEIGHT: Not known
MARKINGS: ABT-E
LENGTH: 45mm (exposed length total length unknown)

FUNCTIONAL DATA

ARMING METHOD: Immediately prior to release of the bomb, a small electrical charge fires the electrical Arming Squib, which ignites the pyrotechnic arming delay which burns through and ignites a small propulsive charge which pushes the arming plunger across into the arming plunger housing. The lateral movement of he arming plunger permits upward movement of the Upper Cam Extension allowing the Creep Spring to move the Firing Pin Carrier upwards away from the Primer Carrier. This movement allows the Slider spring to move the Slider across thus moving the detonator into line with the Firing Pin.
SELF DESTRUCT: None
SAFETY DEVICES: The Arming Plunger holds the Upper Cam Extension in the downwards position which in turn prevents upwards movement of the Firing Pin Carrier. Until the Firing Pin carrier moves upwards, the Detonator in the Slider is held out of line with the Firing Pin.

HAZARDOUS COMPONENTS

The fuze contains a primer, detonator, delay element and booster of unknown weight (The Booster weight will be in the region of 50 grams and will probably be Tetryl)

BOMBS USED IN

Not certain but possibly any of the following:
OFAB 100NV, OFAB 100-120, OFAB 250-270, FAB 250 M46, FAB 500 M46, FAB 1,500 M46, FAB 250 M54, FAB 500 M54, OFAB 250 T, FAB 500 T, FAB 100 M62, FAB 250 M62, FAB 500 M62, FAB 250 TS, FAB 500 TS, ZAB 100-105, ZAB 250-200, ZAB 500, ZAB 500V.

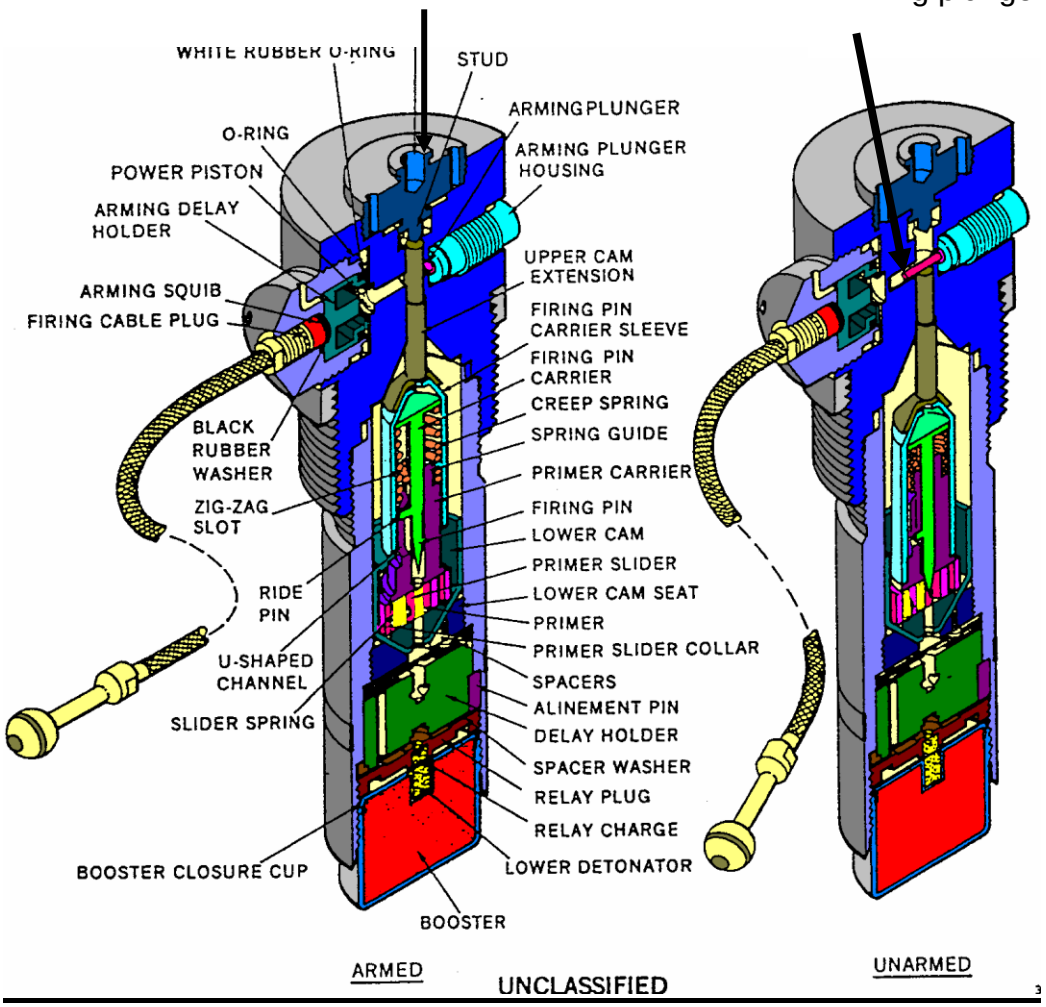
UNARMED CONDITION AVT-E

Consider the fuze to be unarmed if:.
1)It can be positively ascertained that the fuze has not received an electrical pulse to fire the arming squib, and/or

2)The fuze is undamaged, permitting removal of the sensitivity selector plug,(at the front of the fuze) and after removal, visual inspection reveals that the arming plunger has not been withdrawn, preventing movement of the upper cam extension.

Sensitivity selector plug

Arming plunger



ARMED CONDITION AVT-E

Consider the fuze to be armed if:
1) It cannot be positively ascertained that the fuze has not received an electrical pulse to fire the arming squib, or

2)The fuze is damaged, or if undamaged, on removal of the sensitivity selector plug, it is found on visual inspection that the arming plunger has been withdrawn, and the upper cam extension has moved upwards.

WARNINGS

1)Do not remove the Functioning Sensitivity Selector Plug (on the front of the fuze) when installed in the fuze with the cylindrical cavity exposed.
If the fuze is armed and is on a bomb which has been dropped, the firing pin may be embedded in the primer, removal of the selector plug may cause movement the fuze firing mechanism, causing the fuze to function.

2)Handle an armed fuze carefully. The fuze contains an all-ways action firing mechanism.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURE FOR ARMED FUZES AVT-E

WARNING After removal handle the armed fuze carefully. The fuze contains an all ways action firing mechanism.

NOTE

If the interconnecting cable is present and interferes with the attachment of the Rocket Wrench, cut the cable at the entrance to the arming delay plug with pliers, diagonal cutting, 6 inch, or other suitable tool.

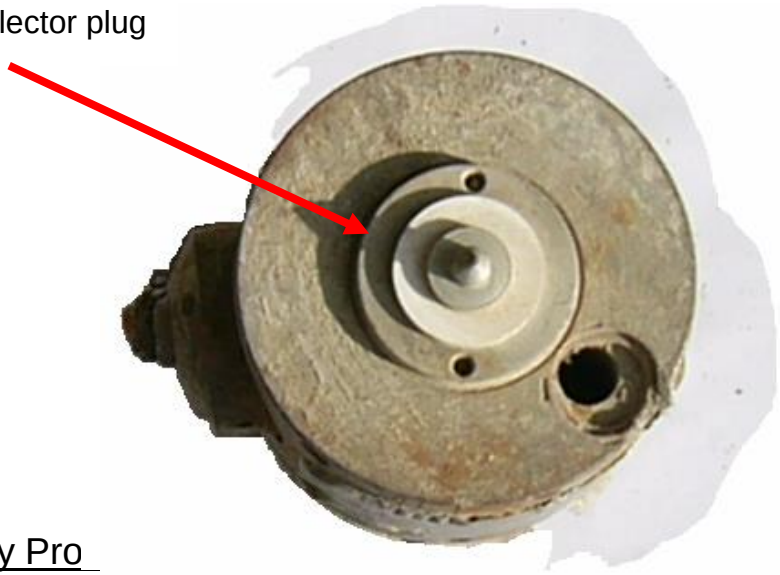
a). Attach a Rocket Wrench to the upper fuze body.

b) initiate the Rocket Wrench

c) If Rocket Wrench is unavailable use Stilson wrench and tape and line method of remote fuze removal or Richmond Engineering remote fuze removal tool (RE17FE82)

b).Carefully place the fuze in metal container partially filled with sand or other cushioning material, and secure the container lid in place.

Sensitivity selector plug



Secondary Pro

a). Using a hook spanner wrench, or other

DISPOSAL PROCEDURES

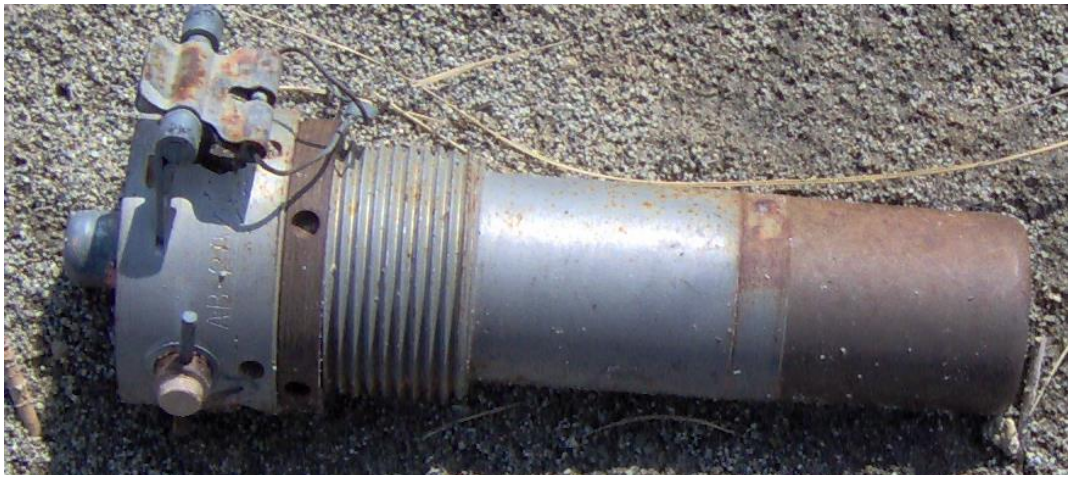
NOTE

Handle an armed fuze carefully. The fuze contain an all ways action firing mechanism

a). Transport hazardous components to disposal area

b). Dispose of by detonation

5.18 Nose and Tail Impact / Inertia Impact Fuzes AV-2 d/u



PHYSICAL DATA

TYPE: Nose Impact (Direct Action) Tail (Inertia) Impact
MODEL: AVT-E
MATERIAL: Steel
WEIGHT: Not known
MARKINGS: ABT-E
LENGTH: 45mm (exposed length total length unknown)
DIAMETER: 62mm

FUNCTIONAL DATA

ARMING METHOD: On release of the bomb from the aircraft, a pull cord pulls a pull igniter, which ignites the Pyrotechnic Delay Pellet which burns through and ignites a small pyrotechnic propulsive charge which pushes the Locking Bolt across. The lateral movement of the Locking Bolt permits upward movement of the Arming Rod and in turn upward movement of the Upper Inertia Pellet which is pushed upwards by the Firing Pin Spring. This movement allows the Shutter spring to move the Sliding Shutter across thus moving the Detonator into line with the Firing Pin.
SELF DESTRUCT: None
SAFETY DEVICES: The Locking bolt holds the Arming Rod and Upper Inertia Pellet in the downwards position which in turn prevents movement of the Sliding Shutter and Detonator into line with the Firing Pin.

HAZARDOUS COMPONENTS

The fuze contains a primer, detonator, delay element and booster (containing 58 grams Tetryl)

BOMBS USED IN

Not certain but possibly any of the following:
OFAB 100NV, OFAB 100-120, OFAB 250-270, FAB 250 M46, FAB 500 M46, FAB 1,500 M46, FAB 250 M54, FAB 500 M54, OFAB 250 T, FAB 500 T, FAB 100 M62, FAB 250 M62, FAB 500 M62, FAB 250 TS, FAB 500 TS, ZAB 100-105, ZAB 250-200, ZAB 500, ZAB 500V.

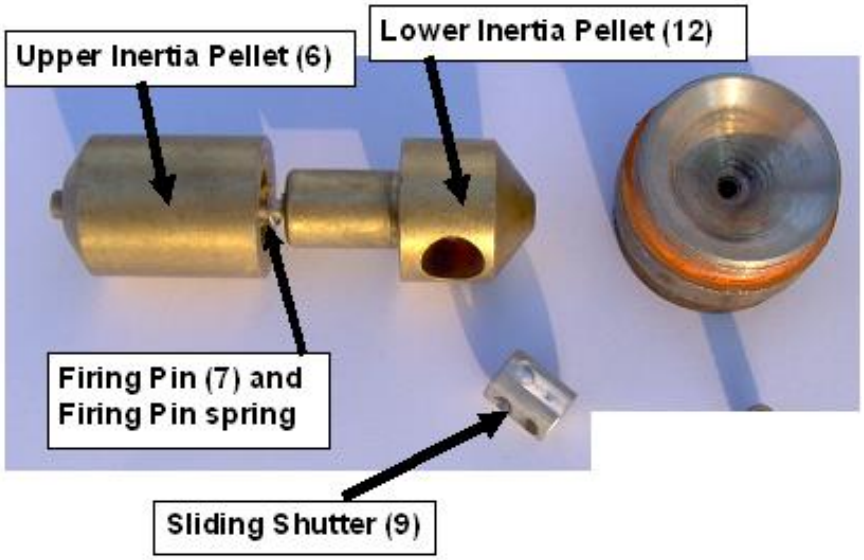
UNARMED CONDITION AV-2 d/u

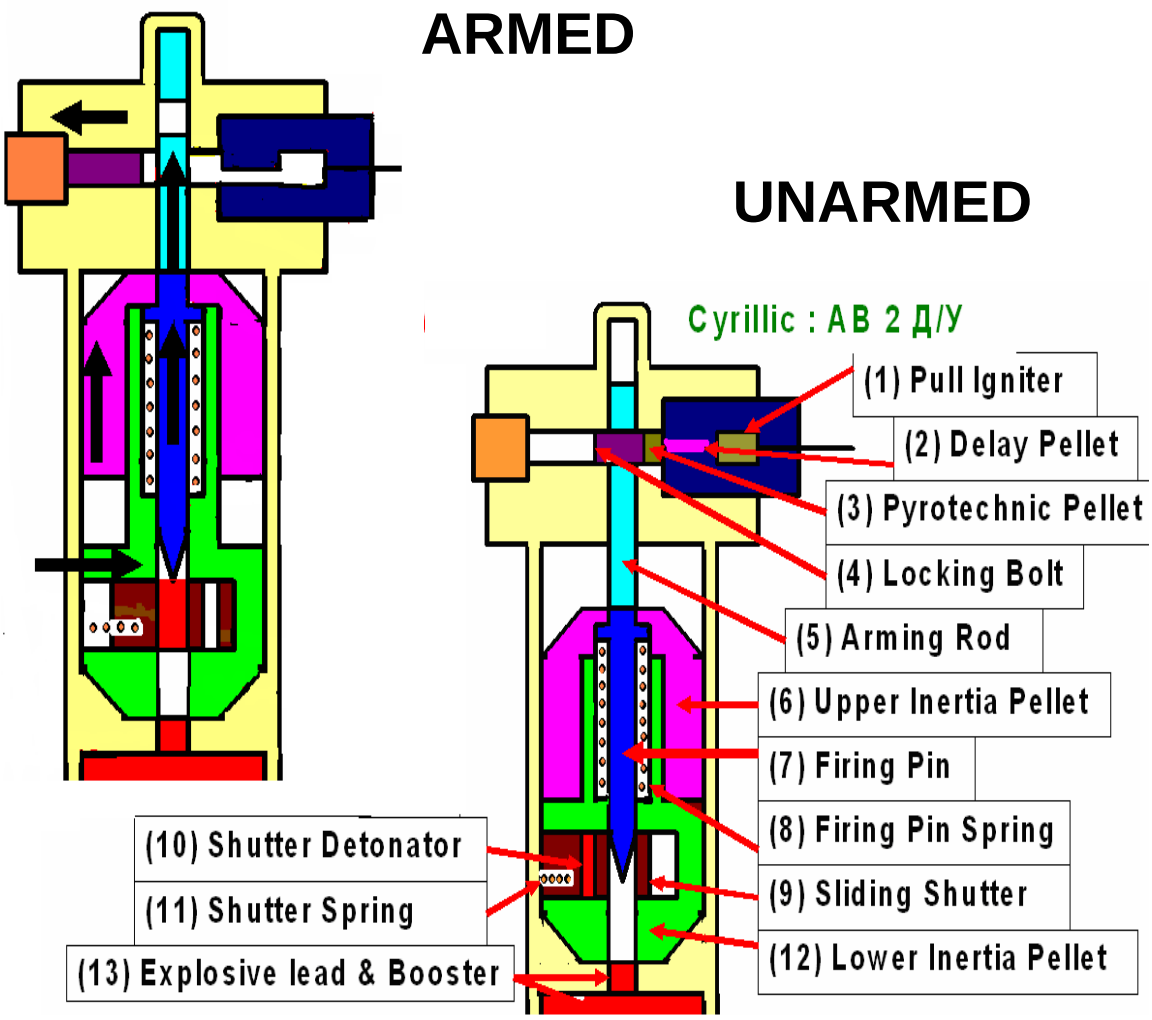
Consider the fuze to be unarmed if any of the following conditions apply:.

1)It can be positively ascertained that the fuze pull ignitor has not been pulled and/or

2) The Safety Pin is in position

3) The fuze is undamaged, permitting removal of the plug,(at the side of the fuze) and after removal, visual inspection reveals that the Locking bolt has not been pushed across, and the arming rod has not been pushed upwards.





ARMED CONDITION AV-2 d/u

Consider the fuze to be armed if any of the following conditions apply:.

1)It cannot be positively ascertained that the fuze pull ignitor has not been pulled and/or

2) The Safety Pin is missing

3) The fuze is damaged

WARNINGS

1)Do not remove the Plug on the side of the fuze if it cannot be removed easily, If the fuze is armed and is on a bomb which has been dropped, the firing pin may be embedded in the primer, removal of the selector plug may cause movement the fuze firing mechanism, causing the fuze to function.

2)Handle an armed fuze carefully. The fuze contains an all-ways action firing mechanism.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURE FOR UNARMED FUZES AV-2 d/u

a). Using a wrench, spanner, hook, or other suitable tool, loosen lock ring by turning anti-clockwise .

b). Manually remove the fuze from the bomb. If required, loosen the fuze using a wrench, pipe adjustable(pipe wrench), 18 inch, or other suitable tool, placed on upper fuze body.

c). Carefully place the fuze in metal container partially filled with sand or other cushioning material, and secure the container lid in place.

d).Proceed to disposal procedure.

RENDER SAFE PROCEDURE FOR ARMED FUZES
AV-2 d/u

WARNING After removal handle the armed fuze carefully. The fuze contains an all ways action firing mechanism.

a). Attach a Rocket Wrench to the upper fuze body.

b) initiate the Rocket Wrench

c) If Rocket Wrench is unavailable use Stilson wrench and tape and line method of remote fuze removal or Richmond Engineering remote fuze removal tool (RE17FE82)

b).Carefully place the fuze in metal container partially filled with sand or other cushioning material, and secure the container lid in place.

Secondary Procedure.

a). Using a hook spanner wrench, or other

DISPOSAL PROCEDURES

NOTE

Handle an armed fuze carefully. The fuze contain an all ways action firing mechanism

a). Transport hazardous components to disposal area

b). Dispose of by detonation

5.19 Nose and Tail Impact / Inertia Impact Fuzes AVU-E , AVU-ET, AVU-ETM

PHYSICAL DATA

TYPE: Nose Impact (Direct Action) Tail (Inertia) Impact
MODEL: AVU-E, AVU-ET, AVU-ETM
MATERIAL: Steel
WEIGHT: Not known
MARKINGS: АВУ-Е, АВУ-ЕТ, АВУ-ЕТМ
LENGTH: 68mm (exposed length total length 209mm
DIAMETER: 60mm)

FUNCTIONAL DATA

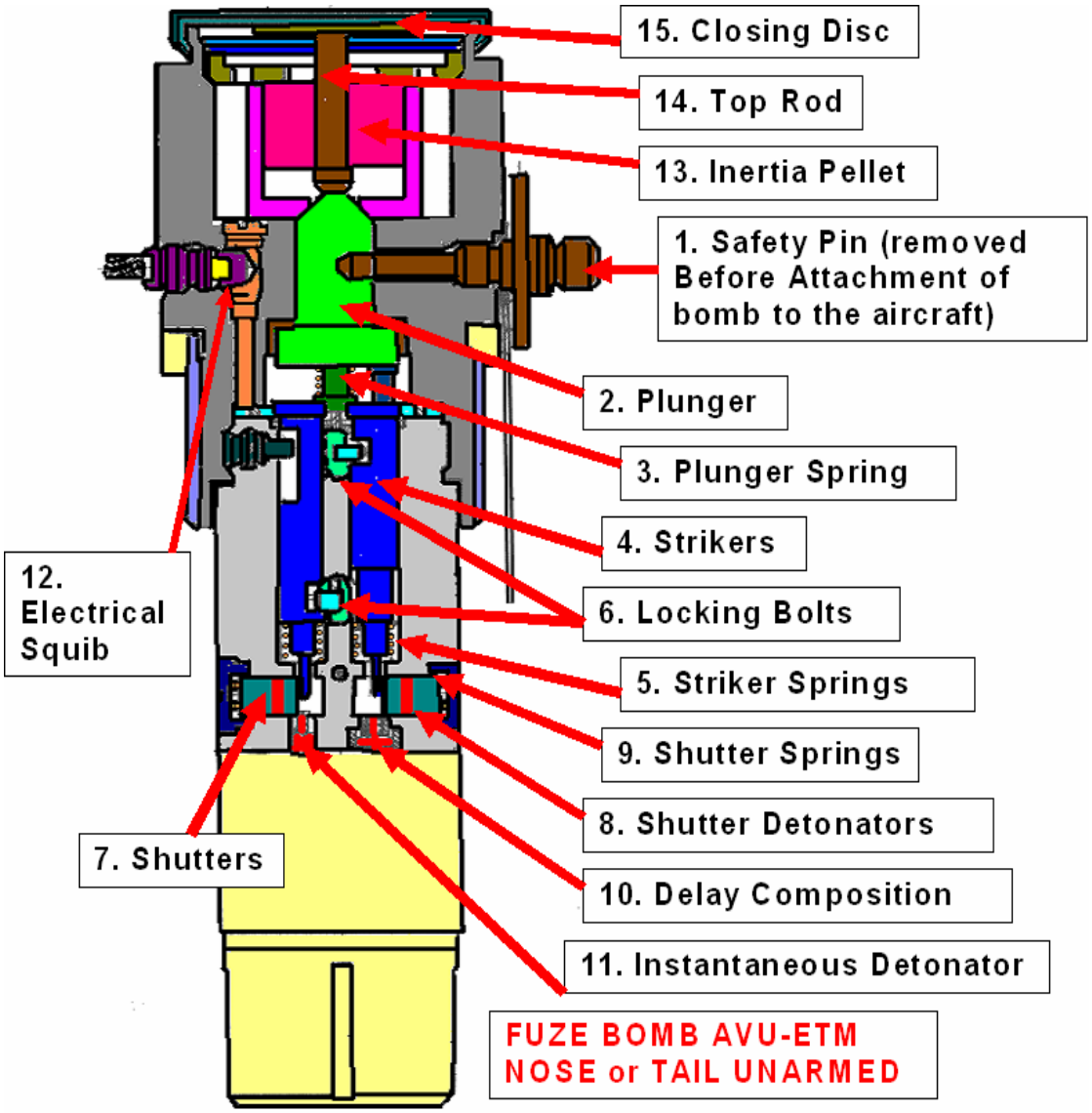
ARMING METHOD: Immediately prior to release of the bomb, a small electrical charge fires the Electrical Arming Squib, which ignites the Pyrotechnic Arming Delay which burns through and ignites a small propulsive charge which pushes the Upper and / or Lower Arming Bolts across. The lateral movement of the Arming Bolts permits upward movement of one (or both) of the Striker(s) (dependant whether the delay setting is set or not). This allows the Striker Spring to move the Strikers upwards. This movement allows the Shutter spring to move the Shutters across thus moving the detonator(s) into line with the striker(s).
SELF DESTRUCT: None
SAFETY DEVICES: The Arming Bolts lock the Strikers in the downwards position which in turn locks the Sliding shutters out of line with the Strikers.

HAZARDOUS COMPONENTS

The fuze contains a pyrotechnic charge, detonator, delay elements of unknown weight and a Booster weight of 60 grams RDX

BOMBS USED IN

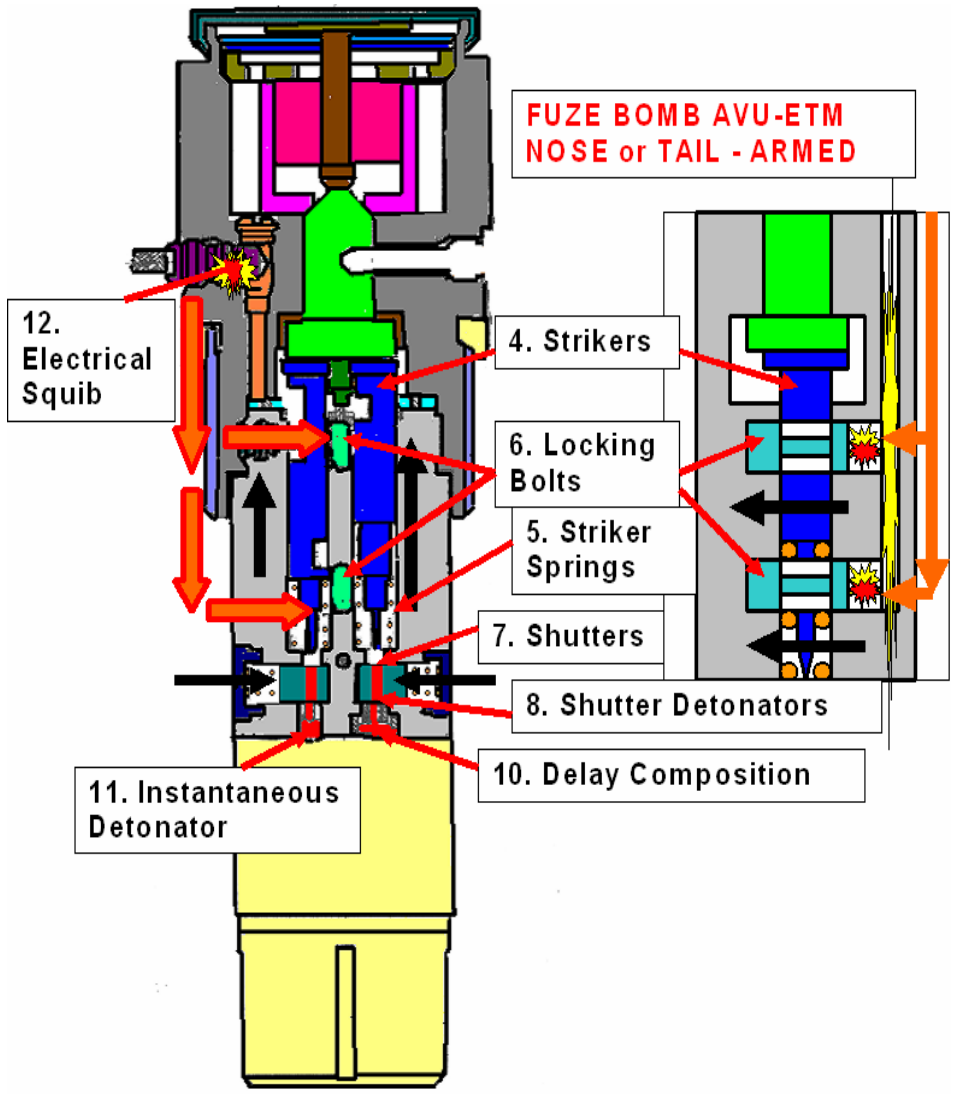
Not certain but possibly any of the following:
OFAB 100NV, OFAB 100-120, OFAB 250-270, FAB 250 M46, FAB 500 M46, FAB 1,500 M46, FAB 250 M54, FAB 500 M54, OFAB 250 T, FAB 500 T, FAB 100 M62, FAB 250 M62, FAB 500 M62, FAB 250 TS, FAB 500 TS, ZAB 100-105, ZAB 250-200, ZAB 500, ZAB 500V.



UNARMED or PARTIALLY ARMED CONDITION AVU-E, AVU-ET, AVU-ETM

Consider the fuze to be unarmed or partially armed if:.
1) The Safety Pin is in place and/or

2)It can be positively ascertained that the fuze has not received an electrical pulse to fire the arming squib, and/or
NOTE: The fuze can partially arm with the safety pin in place (the arming bolts can move across to release the strikers and allow their upwards movement – but the Plunger is locked in position so that the Inertia Pellet and Plunger cannot push the Strikers downwards)

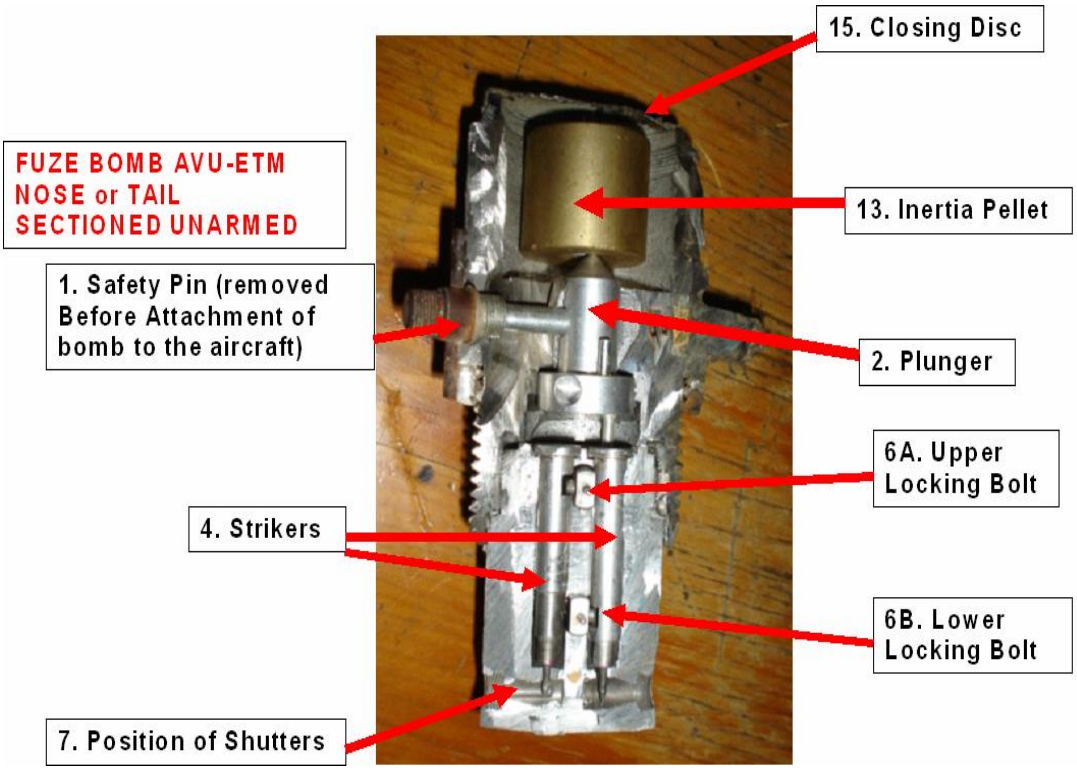


ARMED CONDITION
AVU-E, AVU-ET, AVU-ETM

Consider the fuze to be armed if:.

1) The Safety Pin is missing

2)It cannot be positively ascertained that the fuze has not received an electrical pulse to fire the arming squib,



WARNINGS

1) If the fuze is armed and is on a bomb which has been dropped, the firing pin may be embedded in the primer, movement of the bomb may cause movement the fuze firing mechanism, causing the fuze to function.

2)Handle an armed fuze carefully. The fuze contains an all-ways action firing mechanism.

SPECIAL WARNINGS

Refer to the WARNINGS Section for this fuze

NOTE: The procedures for UNARMED and ARMED condition fuzes are untested and are based on the best technical data available.

RENDER SAFE PROCEDURE FOR UNARMED or PARTIALLY ARMED FUZES AVU-E, AVU-ET, AVU-ETM

a). Using a wrench, spanner, hook, or other suitable tool, loosen lock ring by turning anti-clockwise .

b). Manually remove the fuze from the bomb. If required, loosen the fuze using a wrench, pipe adjustable(pipe wrench), 18 inch, or other suitable tool, placed on upper fuze body.

c). Carefully place the fuze in metal container partially filled with sand or other cushioning material, and secure the container lid in place.

d).Proceed to disposal procedure.

RENDER SAFE PROCEDURE FOR ARMED FUZES AVU-E, AVU-ET, AVU-ETM

WARNING After removal handle the armed fuze carefully. The fuze contains an all ways action firing mechanism.

NOTE

If the interconnecting cable is present and interferes with the attachment of the Rocket Wrench, cut the cable at the entrance to the arming delay plug with pliers, diagonal cutting, 6 inch, or other suitable tool.

a). Attach a Rocket Wrench to the upper fuze body.

b) initiate the Rocket Wrench

c) If Rocket Wrench is unavailable use Stilson wrench and tape and line method of remote fuze removal or Richmond Engineering remote fuze removal tool (RE17FE82)

b).Carefully place the fuze in metal container partially filled with sand or other cushioning material, and secure the container lid in place.

Secondary Procedure.

a). Using a hook spanner wrench, or other suitable tool, loosen the fuze lock ring by turning it anti-clockwise.

b). Manually remove the fuze from the bomb. If required loosen the fuze, using an 18 Inch pipe wrench, or other suitable tool, placed on the upper fuze body.

c).Carefully place the fuze in a metal container partially filled with sand or other cushioning material, and secure the container lid in place.

d). Proceed to disposal procedure

DISPOSAL PROCEDURES

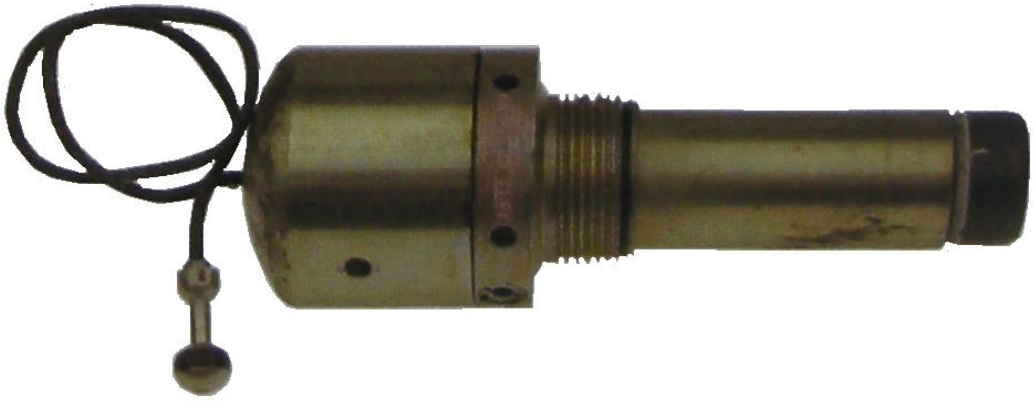
NOTE

Handle an armed fuze carefully. The fuze contain an all ways action firing mechanism

a).Transport hazardous components to disposal area

b).Dispose of by detonation

5.20 Nose or Tail Long Delay and Anti Disturbance Fuzes AVP-Z , AVP-ZM



PHYSICAL DATA

TYPE: Long Delay and Anti Disturbance
MODEL: AVP-Z ,AVP-ZM
MATERIAL: Steel
WEIGHT: AVP-Z, Not known AVP-ZM 3.48 kg
MARKINGS: АВП-3, АВП-3М,
LENGTH: AVP-Z, 82mm (exposed length - total length 223mm)
AVP-ZM 80.3mm (Exposed length – total length 220.43mm)
DIAMETER: 80mm both fuzes

FUNCTIONAL DATA

ARMING METHOD: WARNING The exact method of arming of the fuze is uncertain,

The AVP-Z appears to use a electro-pyrotechnic arming method similar to that used on the AVU-ETM, the AVP-ZM appears to use a mechanically operated pull igniter to fire the pyrotechnic (arming) delay pellet. The Anti disturbance feature is electronically initiated whilst the long delay mechanism is mechanical (clockwork) it is assumed that whilst there is a difference in the method of initiating the pyrotechnic (arming) delay pellet, the internal mechanisms and actual functioning of the fuze are the same

SELF DESTRUCT: Time Delay set on fuze, Anti Disturbance mechanism functioning if bomb is disturbed

SAFETY DEVICES: Uncertain but it is assumed that a form of locking bolt will be used to prevent movement of the long delay clockwork mechanism and a form of mechanical shutter or mechanical electrical shorting device to prevent the electrical Anti Disturbance feature being energised

HAZARDOUS COMPONENTS

The fuze contains a pyrotechnic charge, detonator, delay elements of unknown weight and a Booster weight of 50 grams Tetryl for the AVP-Z and 47 grams Tetryl for the AVP-ZM

BOMBS USED IN

The AVP-Z fuze has been found fitted as a nose fuze in a FAB 250 M62 bomb and a tail fuze in an OFAB 100-120 as a tail fuze, it could possibly be found fitted to the following bombs:
OFAB 100NV, OFAB 100-120, OFAB 250-270, FAB 250 M46, FAB 500 M46, FAB 1,500 M46, FAB 250 M54, FAB 500 M54, OFAB 250 T, FAB 500 T, FAB 100 M62, FAB 250 M62, FAB 500 M62, FAB 250 TS, FAB 500 TS,

UNARMED or ARMED CONDITION AVP-Z , AVP-ZM

The Arming condition of the fuze is very difficult to ascertain, There appears to be a small window on the side of the fuze which may be used to indicate the arming condition (it is assumed, but not certain,that if the fuze is armed Red) will show in the window. It is believed that the fuze may have a safety pin of a similar configuration to that used on the AV2 d/u, AVU-E, AVU-ET, AVU-ETM fuzes but this is unconfirmed. It is known that the Electronic Anti Disturbance mechanism is contained in the large dome shaped external portion of the fuze and the clockwork mechanism is contained in the internal lower portion of the fuze.

WARNINGS

1) If possible, a bomb which has been dropped with this fuze fitted, should not be approached for a period of at least 6 days after the bomb was dropped. (The maximum delay is 6 days but the delay can be set in 30 minute increments so that the fuze could function at any time between 30 minutes to 6 days after being dropped.

2) If, on examination of the bomb, the AVP-Z or AVP-ZM fuze is discovered to be fitted, and the bomb is known to have been dropped less than 6 days previous, order immediate full evacuation of the area and, if possible, wait out the 6 day minimum soak time before initiating any EOD action. If a 6 day soak time is not possible for operational reasons. Consider destruction in situ or low order techniques, making the minimal manual approaches to the bomb as possible and with all approaches being a one man risk. Low order techniques should only be attempted if the results can be viewed remotely.

Use of Rocket Wrench may cause the fuze to function as the Wrench is being fitted, or on firing the wrench. Even if the fuze is successfully removed with Rocket wrench, the action of removal may restart the clockwork mechanism (if it has stopped)

ANY EOD ACTION ATTEMPTED ON THIS FUZE WITHIN THE 6 DAY PERIOD OF THE FUZED BOMB BEING DROPPED CARRIES A SIGNIFICANT RISK TO THE EOD OPERATOR. AFTER THE 6 DAY PERIOD, ANY EOD ACTION OTHER THAN DESTRUCTION IN SITU WITHOUT ANY DISTURBANCE OF THE BOMB ALSO CARRIES A SIGNIFICANT RISK OF DETONATION