MK 432 ELECTRONIC TIME FUZE
A New Fuze for the US Navy
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**MK 432 ELECTRONIC TIME FUZE A New Fuze for the US Navy**

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### Supplementary Notes

### Abstract

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UU

### Number of Pages
13
Navy 5” Cargo Projectile
EX 172 HE-ICM

- Navy 5” Cargo Projectile
- EX 172 HE-ICM
- MK2 Submunition
- 49 Submunitions
- High-Frag Shaped Projectile Body
- Discarding Rotating Band
- Base Plug
- Expelling charge
- ET Fuze

NDIA, 4/18/01, cfinch
# Fuze Alternatives

<table>
<thead>
<tr>
<th>Development Cost</th>
<th>MK 429 MFF</th>
<th>Simplified MK 429</th>
<th>Modified MOFA</th>
<th>Modified M762A1</th>
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<tbody>
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<td>None</td>
<td>$1,000,000+</td>
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<table>
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<th>Projectile Compatibility</th>
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<th>TBD</th>
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<table>
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<th>Overhead Safety</th>
<th>Acceptable</th>
<th>Acceptable</th>
<th>TBD</th>
<th>Excellent</th>
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<table>
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<tr>
<th>Unit Cost</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
<th>Lowest</th>
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</table>

<table>
<thead>
<tr>
<th>Total Cost 14,600 Fuzes</th>
<th>High</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
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</thead>
</table>
Team Approach

• Take Advantage of M762A1 MCP in Process
• Amended Army’s MCP Contract on May 2000
• Three Major Changes to M762A1 Fuze:
  ➢ Compatibility w/ Gun Weapon System
    ▪ Inductive Set Changes
  ➢ Battery Activation
    ▪ From Activate on Set to Activate at Gun Launch
  ➢ Targets
    ▪ Increased Timer Precision
Inductive Set Changes

M762A1

- PIAFS Setter
- 19 Bit Message
- Single Set Mode
- Time Resolution
  - 0.1 Second

MK 432

- MK 34 Setter
- 26 Bit Message
- Continuous Set Mode
- Time Resolution
  - 0.01 Second
Inductive Set Changes

M762A1

MK 432
Battery Activation

- **M762A1**
  - Activation on Set (Manual or Inductive)
- **MK 432**
  - Activation at Gun Launch Required
  - Redundant Activation Methods:
    - Electrical Activation
      - Spin Switch Closure Initiates Battery Primer
    - Mechanical Activation
Battery Activation

- **Mechanical Activation**
  - Modified Actuating Rod
  - Release Stab Pin Via Setback Force
  - Stab Pin Has Less Mass
  - Entire Stab Assembly Lubricated
  - Design Proven in Vertical Recovery Tests
Timer Precision

- **M762**
  - Settable to 199.9s
  - Set Resolution of 0.1 Seconds

- **MK 432**
  - Settable to 327.66s
  - Set Resolution of 0.01 Seconds
  - Greater Precision Needed for SuW Targets
  - System Errors Reduce Benefit at Long Range
Other Changes

• Eliminated Manual Set Capability
• Eliminated Point Detonating Backup Mode
  ➢ MK 432 Will Dud in the Event of a Primary Mode Failure
• New Carbon Filled Ogive
  ➢ Added Protection During Electromagnetic Environmental Effects
Qualification

• 400 Fuzes Completed on 30 March
• First 10 Gun Fired at Yuma on 21 March
  ➢ Only 10 Months from Contract Award
  ➢ 9 Successful Firings, 1 No Test
• 60 Fuzes for EEE Testing
• 102 Fuzes for MIL-STD-331B
• Qualification Completed Summer 2001
Production

- Scheduled to Begin July 2001
- 14,600 Fuzes Delivery October 2001
- Old Fashion Build to Print Contract
  - No Performance Specification
- On Schedule for a Record Setting Delivery
  - 16 Months from PIP Contract to Completion of Production