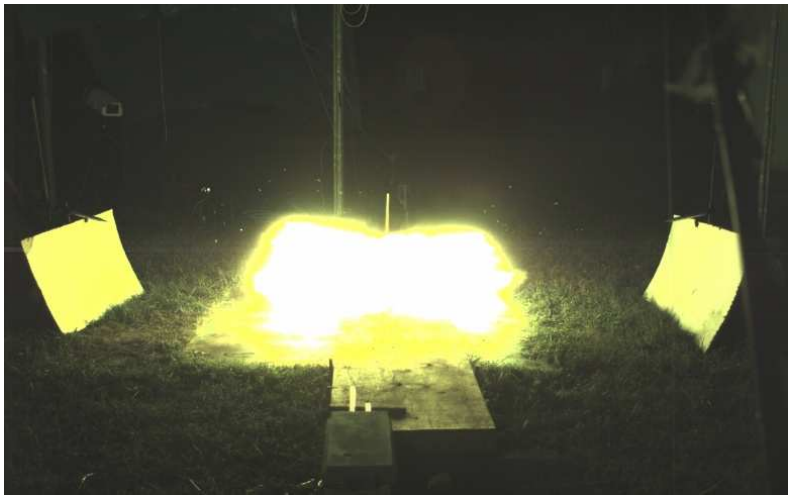
Improved Flash Bang Grenade (IFBG)

Joint Armaments Conference, Exhibition & Firing Demonstration

National Defense Industrial Association
Seattle, WA **15 May 2012**

Technical Lead: Ken Tiedge, PhD
Email: Kenneth.Tiedge@navy.mil
Voice: 540-653-2732 (DSN 249-2732)



Introduction

- IFBG is a Joint Non-Lethal Weapons Program sponsored program for developing an improved non-lethal incapacitating grenade:
  - Increases non-lethal incapacitation
  - Government-owned Technical Data Package (TDP)
  - Joint Service buy-in (SOCOM-lead, USMC, USAF)
  - Perchlorate-free payload and initiator (excepting fuze)
- On track for a 4th qtr FY13 Milestone (MS) C

Performers:
NSWC Crane, NSWC Dahlgren, NSWC Indian Head, AFRL (Human Effects Center Of Excellence (HECOE))

What is a Flash Bang?

Hand deployed counter-personnel tool to move/deny/suppress individuals in non-lethal force operations.

- Intended to Distract / Disorient
- Causes temporary threshold hearing shift (like a loud gunshot)
- Causes temporary visual obscuration (like looking into the sun)

Previous Flash Bang Grenade Increments

Mk-141, Increment I (not in service)

- In service 1987- 2004
- Fragmenting (not hand safe)
- Safety issues
- Contains perchlorates, chromates, lead

BTV-1, Increment II (Currently in service)

- In service 2005 - 2011+
- Hand safe
- Contains perchlorates & chromates

Increment III- IFBG

A safer, more effective, hand employed flash-bang grenade with

- Greater light output and duration of flash-incapacitation (10 seconds)
- Environmental and health concerns reduced by removal of perchlorates
  - perchlorates can have a negative impact on the environment and the Warfighters that train with & use flash-bang grenades
- Decrease in smoke output from previous increments*
- Similar or better sound output to safely startle / confuse target subjects

* Reduced smoke output requirement is on based on User Assessment Feedback.

NAVSEA WARFARE CENTERS DAHLGREN

Requirements

	Requirement Description / Short Title	Threshold	Objective
KPP	Fuze Safety	• Dual Safe & Arm • Out-of-Line Fuze Train	• Prevent Inadvertent Activation of Grenade • Function in 1.5 (+ -) 0.5 seconds
KPP	Hand-Safe (Non-Fragmenting Body)	• Hand Safe • Blast effects directed away from operator's hand	• Threshold = Objective
KPP	Induce Temporary Flash Incapacitation	• Induce temporary flash incapacitation for 5 seconds against low contrast target in dim room	• Induce temporary flash incapacitation for 10 seconds against low contrast target in dim room
KSA	Remove Perchlorates from Payload	•Remove Perchlorates from Payload	•T = O
KSA	Sound/Pressure Output	•140-143 dBA	•T = O
KSA	Reduce Smoke Output	•Reduce beyond Increment II	•T = O
KSA	Dimensions	•≤ 5.5 in length, ≤ 2.0 in diameter	•≤ 4.5 in length, ≤ 2.0 in diameter
KSA	Water Immersion	•Must pass water immersion testing unpackaged for 2 hours at 3 feet	•Must pass water immersion testing unpackaged for 1 hours at 66 feet
KSA	Shelf Life	•Operable after 10 years	•Operable after 15 years
KSA	Insensitive Munitions (IM)	•Will be compliant with the IM requirement as required by DoD 5000.1	•T = O

Design Approach

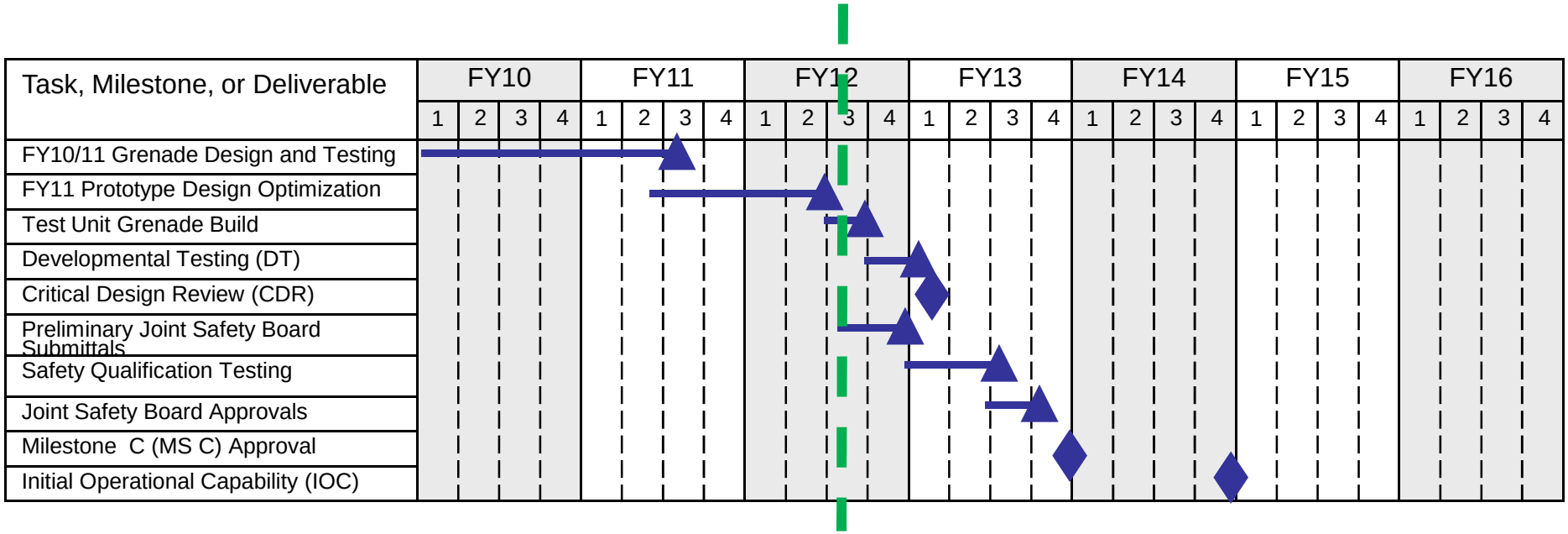
Performance Goals:

- Optimize Light / Sound – Improved non-lethal effects
- Igniter formulation - Reduced smoke
- Internal geometry - Optimized grenade efficiency
- Structural integrity - Hand-safe & non-fragmenting
- Material selection - Reduce cost and weight (lighten warfighter loads)
- Environmental sealing - Ensure performance in all environments

Manufacturable Grenade Design

- Reduce number and complexity of parts
- Ease of assembly
- Material selection
- COTs energetics
- Government qualified fuze
- Safety
- Price

Overall POA&M (FY10 –FY13)



Schedule highlights:

- DT summer/fall 2012
- CDR Dec 2012
- MS C 4th qtr FY13

Future Contract Opportunities

- Government plans to release a build-to-print RFP 4QTR FY13 /1QTR FY14
  - Anticipate 5 year firm fixed price IDIQ RFP to be released by NSWC Crane
  - First article and LAT will be performed in accordance with performance specification
- SOCOM acquisition IOC 20121 FOC 80488
    - USMC and USAF supporting and expected to adopt IFBG as their flash bang

Questions?