



Multiple Kill Vehicle

MISSILE DEFENSE DIVISION

NATIONAL DEFENSE INDUSTRY ASSOCIATION

April 16, 2007

**Richard Matlock
Program Director**



MISSION

Multiple Kill Vehicle

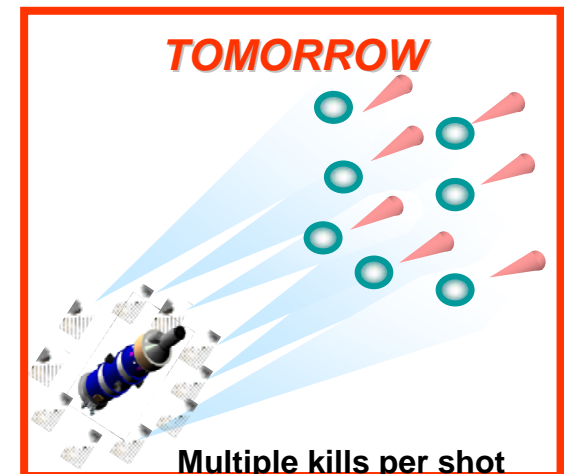
- Dramatically Alter The Statistical Probability Of Kill In Favor Of The Defender By Engaging Midcourse Threat Clusters With Multiple Kill Vehicles



PROGRAM OVERVIEW

- **Volume kill capability for all midcourse interceptors**
 - **Common, modular payload**
 - **Capability for both land and sea-basing**
- **Parallel development paths**
 - **Maintain two viable sources**
 - **Reduce development risk**
 - **Continue development of Lockheed configuration**
 - **Initiated parallel path**
 - **Common architecture and standards**

Multiple Kill Vehicle



Multiple Kill Vehicle enables a new approach to Midcourse Defense:
Discriminate and kill all threat objects



PROGRAM DESCRIPTION

Multiple Kill Vehicle

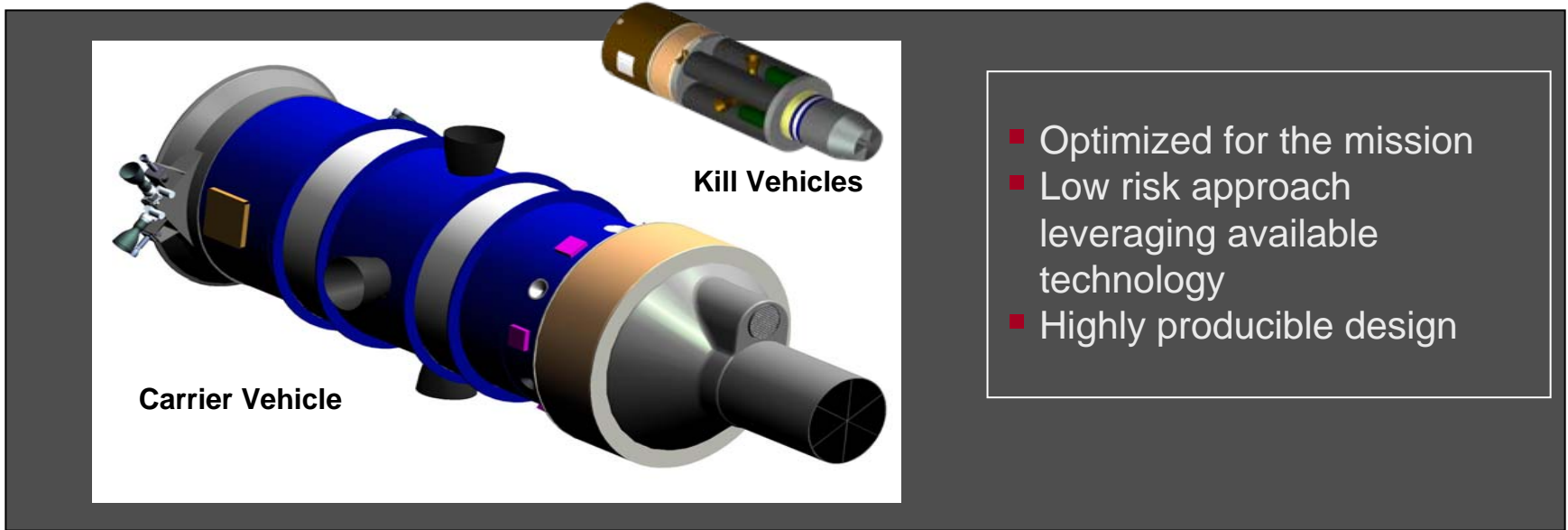
- Transform Technology Development to System Acquisition
- Integrate MKV Payload System Within the Ballistic Missile Defense System
- Focus on Block 12/14 Insertion Goal
- Give New Capability to All Mid-Course Interceptors



MULTIPLE KILL VEHICLE COMPONENTS

Multiple Kill Vehicle

Two major subsystems: Carrier Vehicle and Kill Vehicle



- The Carrier Vehicle assesses the threat set, deploys and assigns the Kill Vehicles and manages the engagement
- The Kill Vehicles perform threat analysis and intercepts



MIDCOURSE INTERCEPTORS

Multiple Kill Vehicle

Payload Volume



**Ground-based
Interceptor**

Payload Volume



**Kinetic Energy
Interceptor**

Payload Volume

21" Third Stage

21" Second Stage

Mk-72

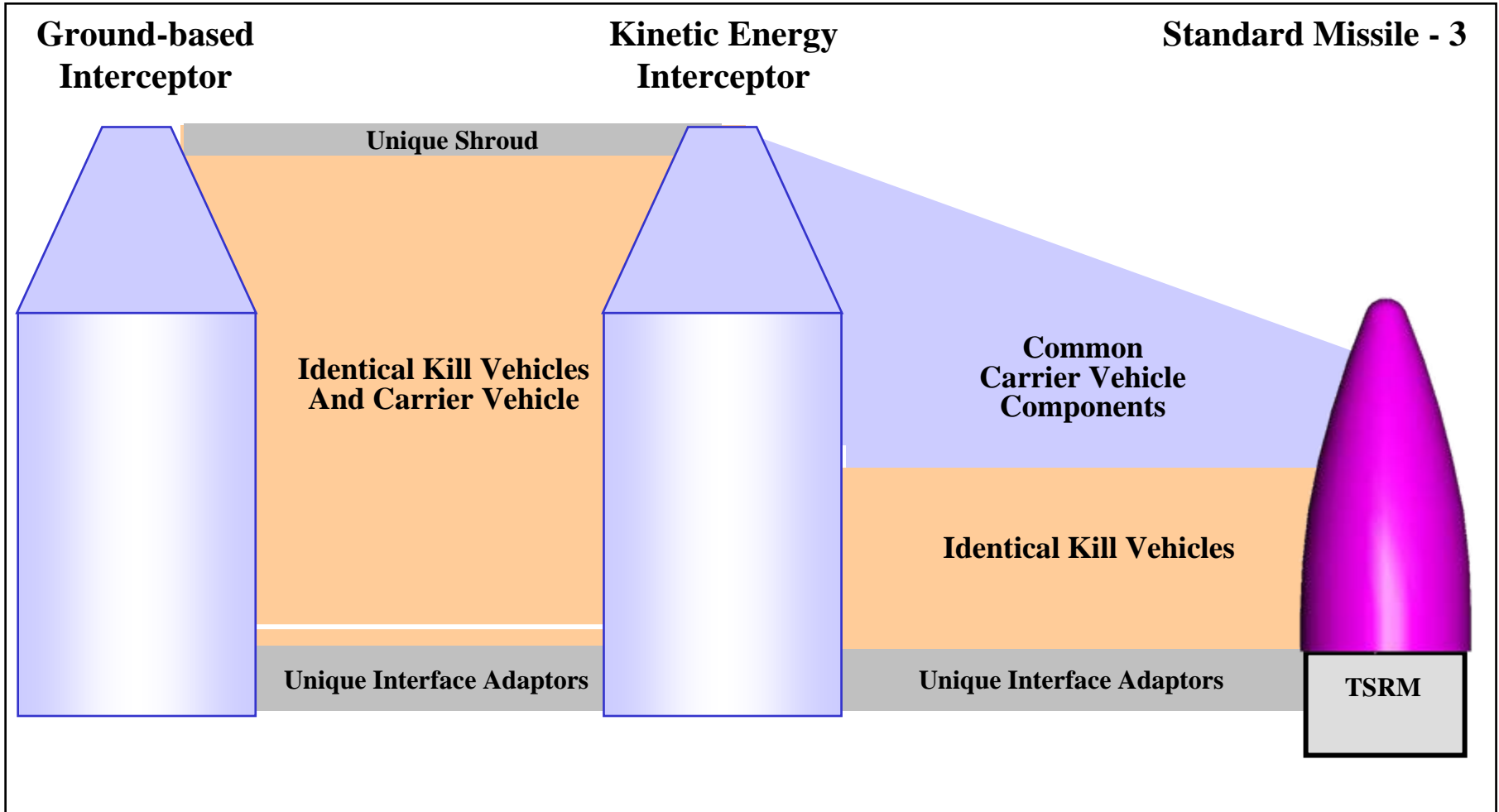


Standard Missile-3



INTEGRATION APPROACH

Multiple Kill Vehicle



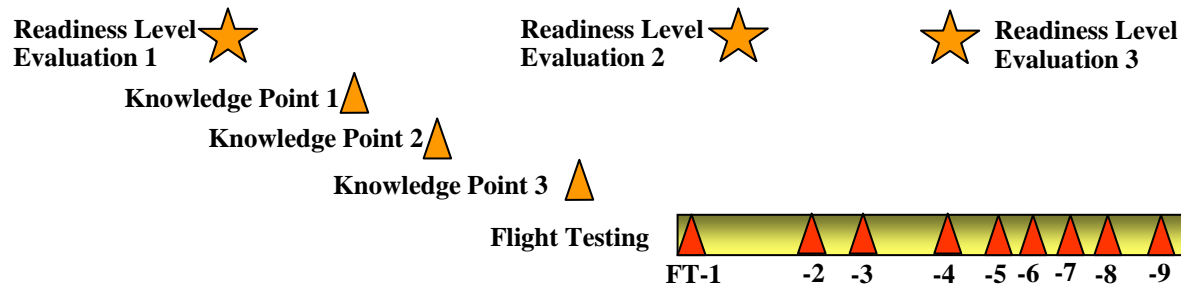


SCHEDULE AND DESCRIPTION

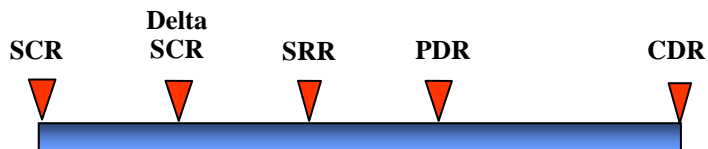
Multiple Kill Vehicle

CY	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
FY	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BLOCK	04	06	08	10	12	14	16						

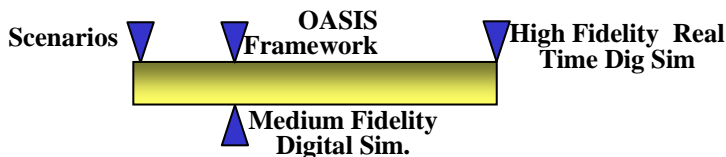
Development & Test Milestones



Design/Development



Models & Sims



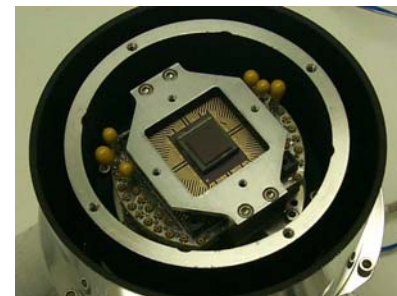
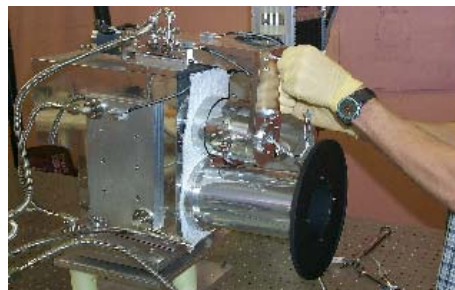


COMPONENT DEVELOPMENT AND TEST

Multiple Kill Vehicle

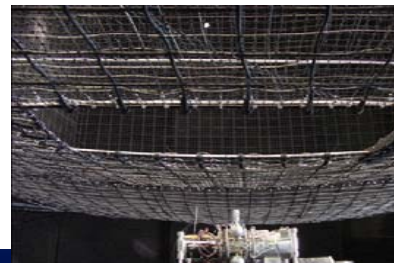
Carrier Vehicle Seeker

- Integration of 2-color focal plane
- Seeker tested against realistic targets



Carrier Vehicle/Kill Vehicle Prototype Hover Tests

- Seeker, DACS, avionics
- Closed loop testing at National Hover Test Facility



Battle Management Algorithm Demonstrations





CARRIER VEHICLE DACS TEST (JULY 07)

Multiple Kill Vehicle



Isolation Valve

Regulator



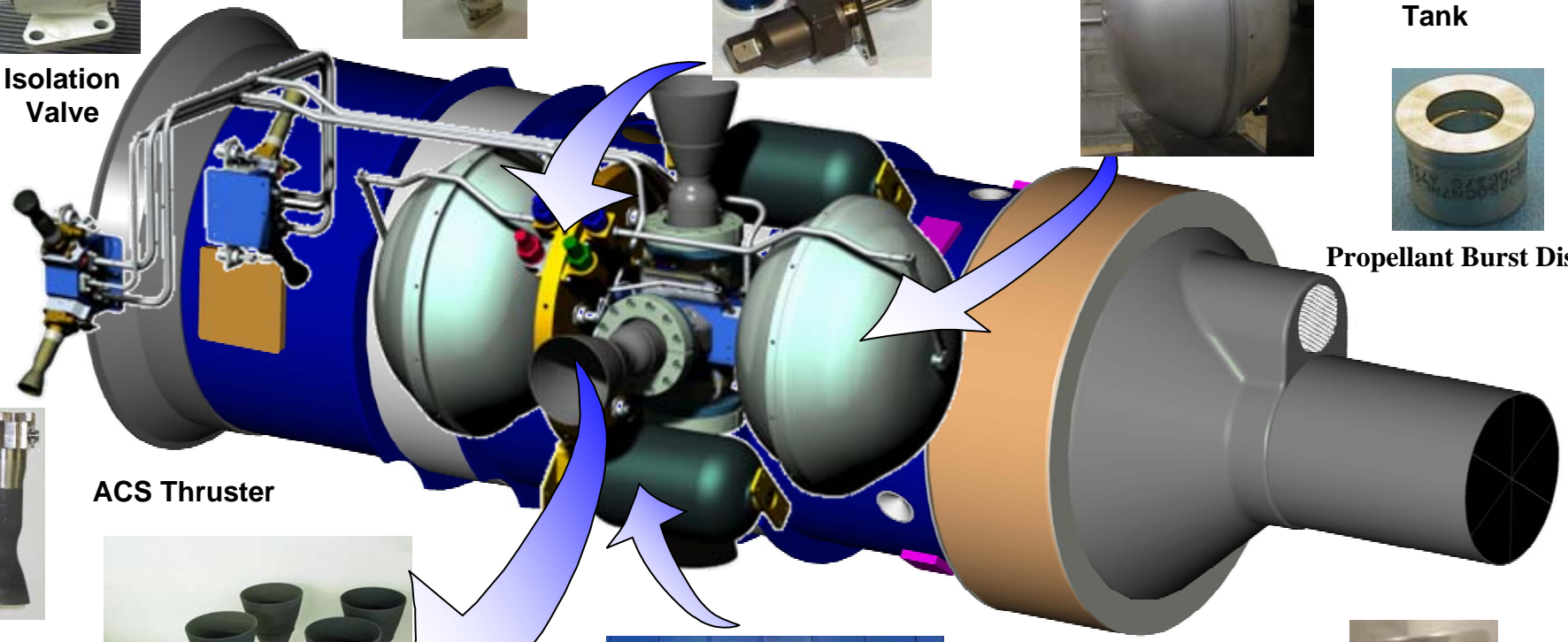
Service Valves



Propellant/
Oxidizer
Tank



Propellant Burst Disc



ACS Thruster

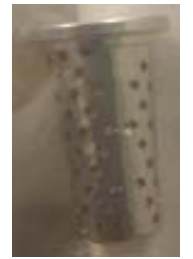


Divert Thrusters



Pressurant Tank

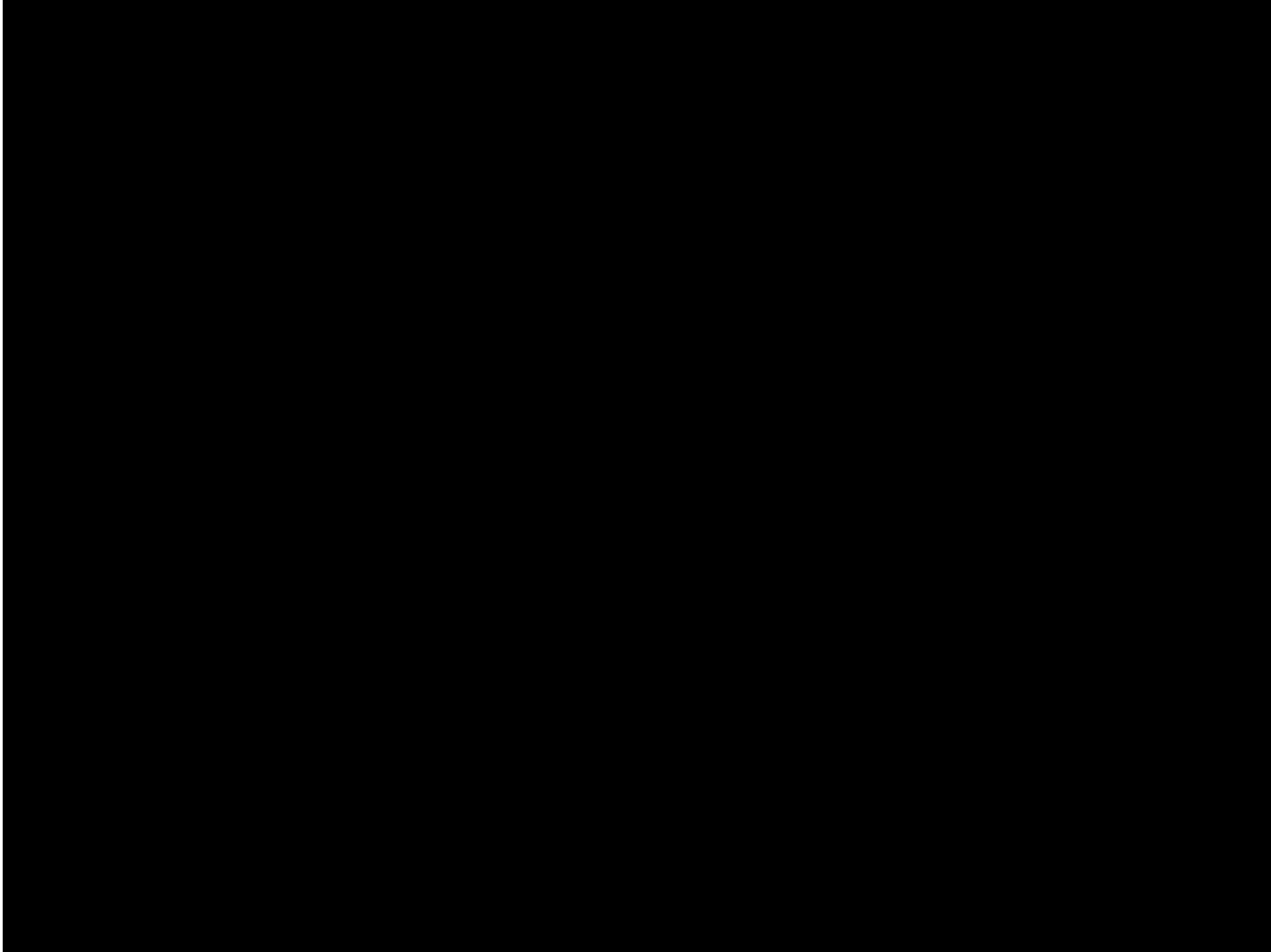
Propellant
Filter





VIDEO

Multiple Kill Vehicle





Multiple Kill Vehicle

