

# Intermediate Force Capabilities

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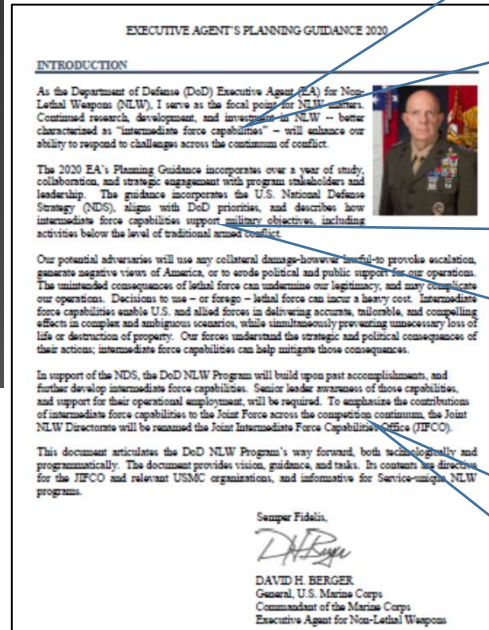
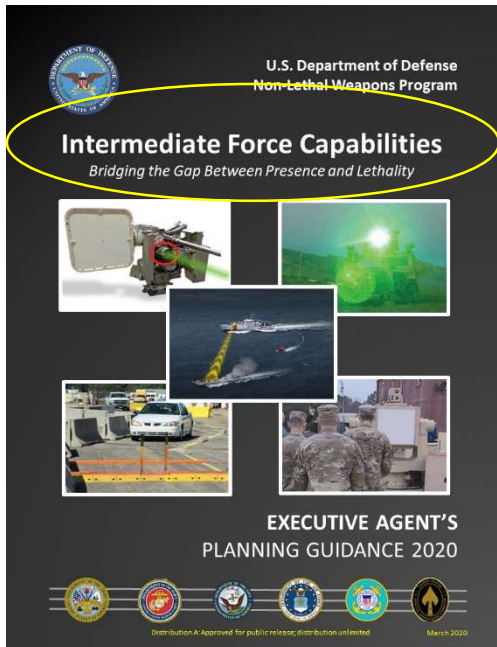
# Background

- DoD Non-Lethal Weapons Program created in 1996 out of impetus from Gen Zinni and his experiences in Somalia during Operation Restore Hope
- National Defense Authorization Act directed DoD to centralize development of NLWs.
- CMC designated as the DoD NLW Program Executive Agent; Joint Non-Lethal Weapons Directorate established at Marine Corps Base Quantico
- Program has achieved many accomplishments with regard to advanced technology development and adoption of some capabilities into the Services
- Over time, the Services have vectored their involvement in the program to policing and security force communities for advocacy and resourcing
- Technology research under the auspices of the DoD NLW Executive Agent is leading to new capabilities with broader applications beyond law enforcement

We have changed the conversation to **Intermediate Force Capabilities (IFCs)** to engender meaningful conversation with broader community bases within the Services.



# DoD Non-Lethal Weapons (NLW) Program Executive Agent Planning Guidance March 2020



“Continued research, development, and investment in NLW – better characterized as **“intermediate force capabilities”** – will enhance our ability to respond to challenges across the continuum of conflict.”

“This guidance incorporates the U.S. National Defense Strategy, aligns with DoD priorities, and describes how intermediate force capabilities support military objectives, including activities below the level of traditional armed conflict.”

“To emphasize the contributions of intermediate force capabilities to the Joint Force ... **the Joint NLW Directorate will be renamed the Joint Intermediate Force Capabilities Office.**”

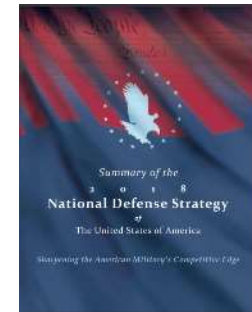


# Strategic Relevance of IFCs



- **National Defense Strategy (NDS)**

- *“Be strategically predictable, but operationally unpredictable – our dynamic force deployment, military posture, and operations must introduce unpredictability to adversary decision-makers” (pg. 5)*
- *“Strengthen Alliances and Attract New Partners - By working together with allies and partners we amass the greatest possible strength for the long-term” (pg. 8)*



- **NDS Irregular Warfare Annex**

- *“The Department will embrace IW as an enduring and fundamental form of warfare” (pg. 6)*
- *“We will seize the initiative and execute proactive, enduring campaigns employing IW capabilities to expand the competitive space, shape the environment, and prepare for escalation to conflict, if required” (pg. 7)*



- **Tri-Service Maritime Strategy – “Advantage at Sea”**

*“Intermediate force capabilities will provide options short of lethal force to contest coercive actions in day-to-day competition” (pg. 23)*

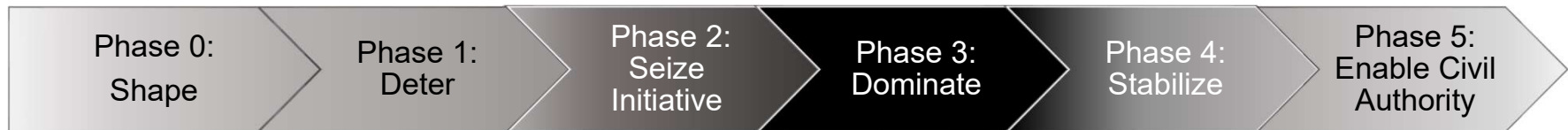




# Utility of Intermediate Force Capabilities Across Warfare Spectrum



“Gray Zone” competition dominates any conceptual Spectrum of Warfare and is ideally suited for Intermediate Force Capabilities



**Phases of Warfare**



**Competition Continuum**

IFCs are a ***strategic risk mitigation investment*** that provide warfighters tools to seize the initiative while competing below the level of armed conflict.



# Investment Disparity of IFC Despite Strategic Utility



Investments in IFC do not come at the expense of lethality to the overall force

## Suitability of Intermediate Force Capabilities



## Suitability of Lethal Capabilities (Other than Deterrence)



If the Services accept the term “enhanced lethality” as the **sole** attribute that informs requirements and acquisition decisions, their ability to equip relevant combat forces today and tomorrow will greatly suffer.





# Intermediate Force Capabilities in Information Space



IFCs are a ***strategic risk mitigation investment*** that provide our warfighters the tools to compete below the level of armed conflict without losing credibility in the ***information space***.



# IFCs Provide Effects Without Destruction

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- Mission accomplishment without undesired casualties and destruction of critical infrastructure
- IFC implementation involves more than materiel, it is a new way of thinking about operational problems and crosses DOTMLPF
- Must change operational mindset so that Services incorporate IFCs into regular training and planning cycles
- With the proper tools and training, our warfighters will be unbeatable across the competition continuum, not just in the “Dominate” phase

**VISION:** Transform the National Security Enterprise by mainstreaming the planning and employment of Intermediate Force Capabilities to arm the Joint Force with the fullest range of capabilities in support of National Security objectives.





# Current vs. Advanced Technology IFC Initiatives/Concepts



## Current Capabilities

Stun Grenades



40mm Munitions



Stingball Grenade



12 Gauge Munitions



Spike Strips



Acoustic Hailers



Tethered TASER (Short Range)

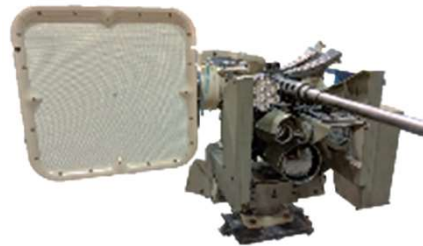


Dazzling Lasers (Short Range)



## Next Generation Capabilities

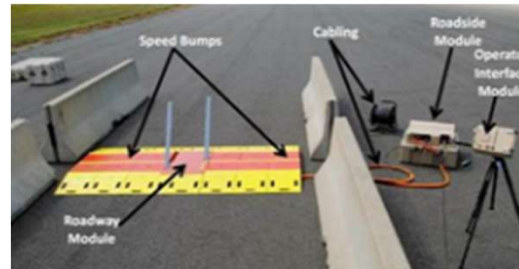
Escalation of Force CROWS Concept for IFC Kit (Projected Demo - FY23)



Remotely Deployed Vehicle Stopping Nets



Pre-Emplaced Electrical Vehicle Stopper (Ongoing Pilot Program)



Tetherless Human Electro-Muscular Incapacitation



Dazzling Lasers (Long Range)



Occlusion Technology





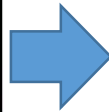
# Additional Emerging IFC Technology



**Millimeter Wave Active Denial System (Tube-Based)**



*Current Form Factor  
(Two systems exist)*



**Millimeter Wave Active Denial System (Solid-State)**



*Future Form Factor*

**IFC Counter- sUAS**



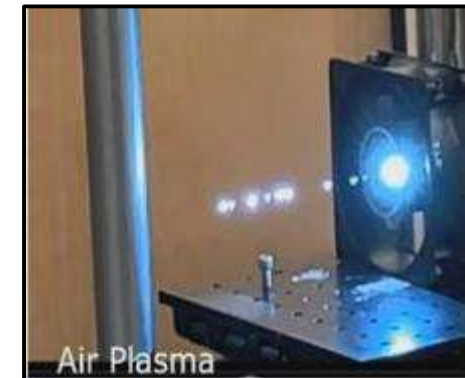
**Directed Energy Vessel Stopper**



**Directed Energy Vehicle Stopper**



**Laser-Induced Plasma**



*Air Plasma*

*Audio / Physical / Thermal  
Effects at Extended Range*



# Vignette: Stand-in Force



## EXPEDITIONARY ADVANCE BASE OPERATIONS (EABO):

- The Marine Littoral Regiment (MLR) is deployed as a Stand-In Force to operate forward from key maritime terrain within peer-adversary long-range Weapons Engagement Zone. Multiple EABs are established near and/or among civilians to defend allied sovereignty and US interests, control/deny access to close and confined seas, and conduct reconnaissance and counter-reconnaissance
- Adversary forces employ SOF, violent extremist organizations (VEOs), coast guard, and civilian fishing vessels (including other nations' fishing fleets) to conduct reconnaissance, disrupt MLR operations and activities, and when possible, provoke violent responses for transmission via social media

## INTERMEDIATE FORCE CAPABILITIES (IFCs):

- **Dazzling Lasers and Acoustic Hailing Devices** from EABs and Light Amphibious Warships (LAWs) determine intent of potential SOF, VEOs, and fishing vessels
- **Active Denial System** counter-personnel capability employed to disrupt potential SOF, VEOs, and fishing vessels from conducting reconnaissance and disruption of EABs and LAWs
- **IFC C-UAS systems** are employed against small unmanned aerial systems to keep them from conducting aerial reconnaissance of EABs

## OPERATIONAL IMPACT:

- Enable the littoral force to avoid, mitigate, or withstand adversary actions
- Preserve the littoral force's capabilities
- Ensure survivability of EABs by disrupting target acquisition and tracking capabilities

**Operational Resilience**  
**"Because you can't sink an island"**  
**Strategic deterrence/ presence**  
**Economy of Force and Force in Being Operations**





# Vignette: IFC Application to Maritime “Gray Zone” Scenarios



## EXPEDITIONARY ADVANCE BASE OPERATIONS (EABO):

- U.S. Marines conduct bilateral training with allied naval and ground forces around contested island chains as proof of concept for EABO and Stand-In Forces (SIF)
- An adversary’s government expresses displeasure at exercise to USG
- Mixed fleet of armed adversary, coast guard, and civilian fishing vessels attempt to disrupt the exercise. Adversary IO campaign inflames local civilians’ concerns about the exercise by encouraging civil unrest via social media



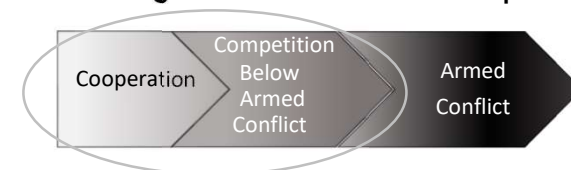
*Long Range Dazzling Laser producing glare on vessel wheelhouse*

## INTERMEDIATE FORCE CAPABILITIES (IFCs):

- **Dazzling Lasers** from afloat and ashore forces employed to warn adversary vessel operators impeding safe operations
- **Active Denial System** counter-personnel capability employed to deter aggressive actions of adversary fishing vessels around the island
- **IFCs** employed against small unmanned aerial systems creating safety of flight issues to U.S. aircraft

## OPERATIONAL IMPACT:

- Boost versatility and adaptability across the Competition Continuum
- Expand decision time and space in ambiguous situations
- Build partner capacity with low-risk tools
- Increase costs to competitors
- Support proactive operations while reducing risk in information space





# Vignette: Strait of Hormuz

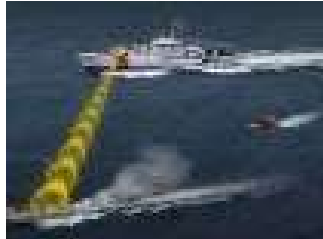


## MARITIME SECURITY OPERATIONS

- Carrier Strike Group in 5th Fleet AOR is conducting maritime security operations in the Strait of Hormuz.
- A small vessel with an outboard motor and open cockpit is on a collision course with USS CVN.
- Vessel is not responding to bridge to bridge communications nor internationally recognized sound and light signals.
- Vessel is considered a contact of interest and is prevented from reaching the carrier through a layered defense of Intermediate Force Capabilities



*Active Denial System*



*Directed energy vessel stopper*



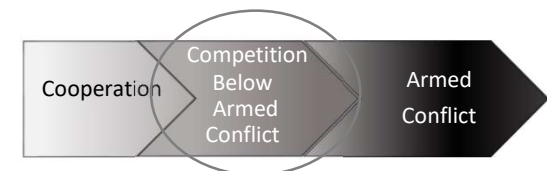
*Occlusion technology*

## INTERMEDIATE FORCE CAPABILITIES:

- **Active Denial System** – Millimeter wave directed energy creates intolerable heating sensation forcing vessel operators to alter course.
- **Occlusion** – Slows or stops a vessel by utilizing a material to reduce propeller efficiency.
- **Directed Energy Vessel Stopper** - High Power Microwaves effect the operational performance of outboard motors.

## OPERATIONAL IMPACT:

- Boost versatility and adaptability across the Competition Continuum
- Expand decision time and space in ambiguous situations
- Increase costs to competitors
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## **“Fear-of-the-New” and “First-Use” of Directed Energy Intermediate Force Capability (IFC) Weapons Study**



- Directed Energy and Non-Lethal Weapons Community of Interest (DE & NLW COI), with support from OSD (R&E), requested a study in FY21/22 via a DE federally funded research and development center
- A “Directed Energy Intermediate Force Capability (DE IFC) ‘Fear-of-the-New’ and ‘First-Use’ of DE IFC Weapons” study will:
  - Make recommendations to the DoD on how best to make progress against the 2007 Defense Science Board Task Force on Directed Energy Weapons’ recommendation to develop a DoD DEW Strategic Information/Communication “Campaign” Plan that:
    - ✓ Counters the DEW “Death-Ray” myth
    - ✓ Thwarts the “Fear-of-the-New” for DEWs
    - ✓ Compels senior DoD leadership and the U.S. public to demand “First-Use” of non-lethal – low collateral damage DEWs



# SUMMARY



- We have changed the conversation to Intermediate Force Capabilities (IFCs)
- IFCs enable the warfighter to compete across the competition continuum without losing in the information space
- Ultimate goal of IFCs is mission accomplishment without unnecessary destruction that initiates or prolongs expensive hostilities

