



## Space Strategies Center (SSC)

# Space Escalation Ladder – How to Control and Limit Outer Space Conflicts

## Space Warfare Theory, Doctrine, Strategies & Tactics

### - How to Fight and Win the Next Space War -

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Outer Space Warfare  
 Space Control  
 Space Defense  
 Space Supremacy  
 Space Conflict Escalation

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 Slide Show Mode to View Subjects of Interest





# Space Warfare Analyses Purpose

- **Develop Foundational Space Doctrine & Automated Battle Management Decision Capabilities That Enable Warfighters to Fight & Win the Next Space War**
  - ① **Based on Author's 42 Years Experience Developing Space Warfare Programs & Analyses, & Study of Military History**
  - ② **Integrates Space Grand Strategies, Operational Strategies, & Tactics While Linking These to Terrestrial Warfare Courses of Action (COA's)**
  - ③ **Research Efforts Lead to More Timely & Comprehensive Space Battle Management**
  - ④ **Normalizes Space Battle Management to Reflect Terrestrial Warfighting Principles**

**Provides a “Unified Field Theory” for Space Situational Awareness (SSA),  
Satellite Attack Warning (SAW) & Space Battle Management**

Strategies

Operational

Tactical





# Space Levels of War Phases

*“Why, you may take the most gallant  
sailor, the most intrepid airman, or the  
most audacious soldier, put them at a  
table together and what do you get? The  
sum of their fears.”*

(Churchill)



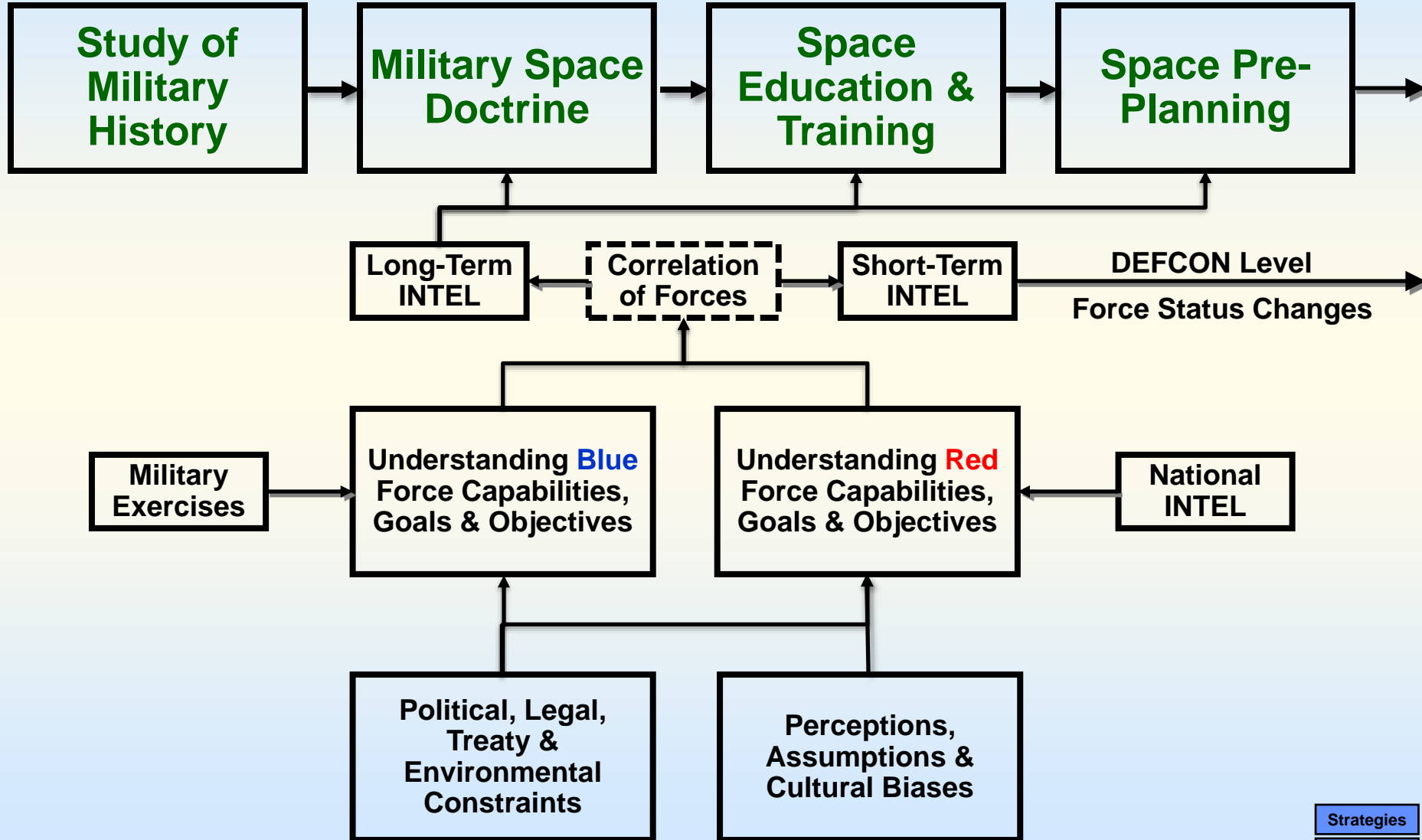
# Fundamental Levels of War



**Concepts From Terrestrial Warfare Can be Applied to Space Warfare**

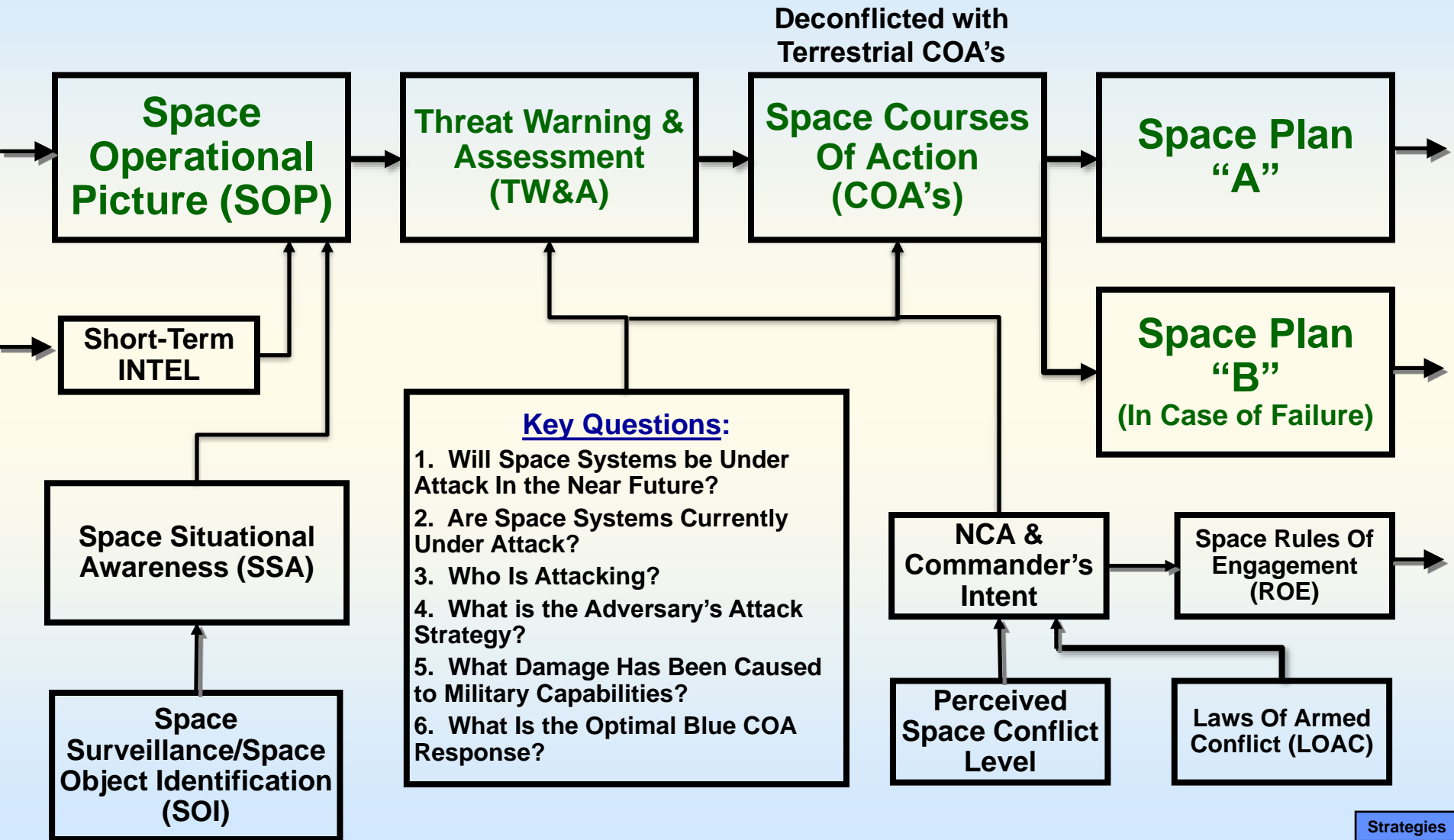


# Space Grand Strategy



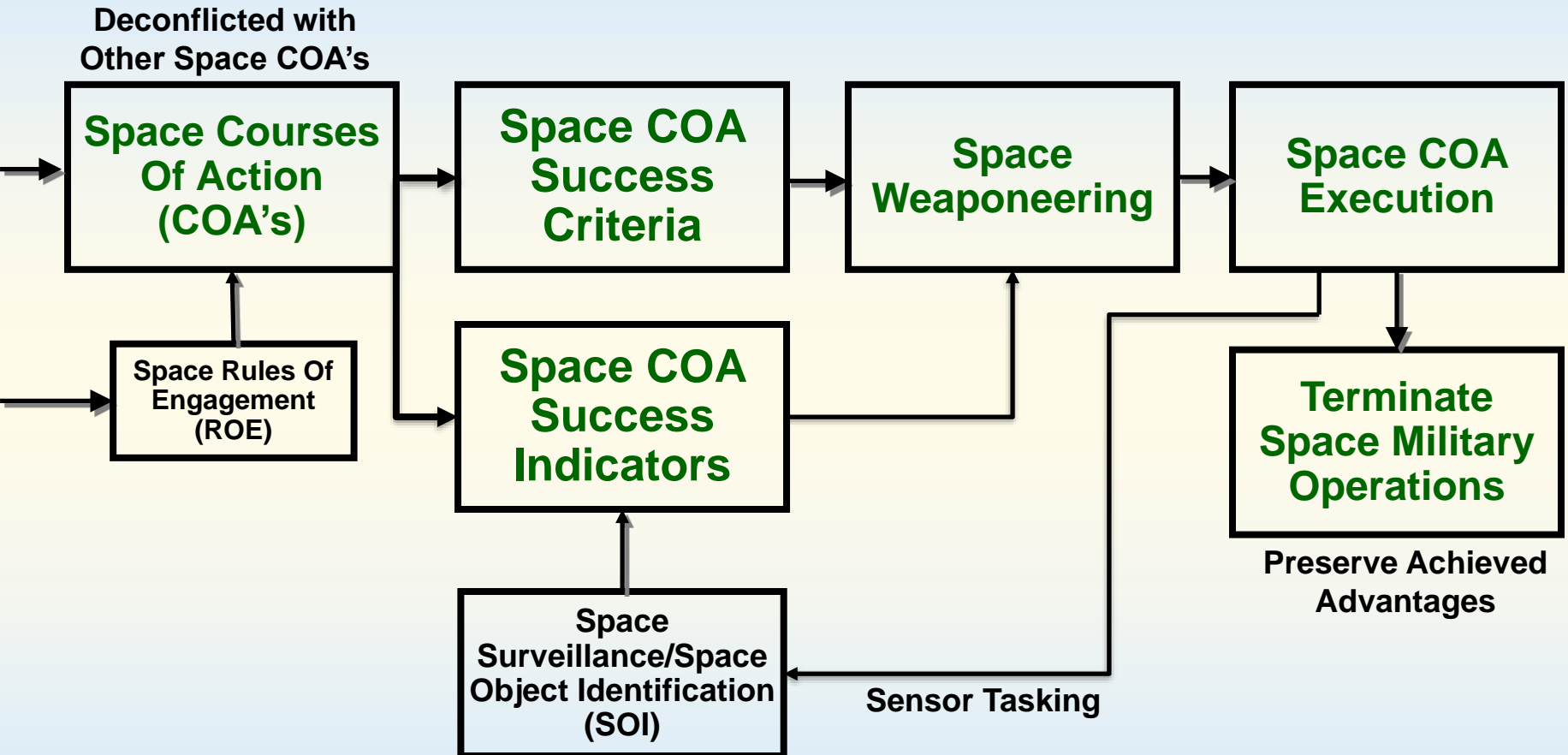


# Space Operational Level





# Space Tactical Level





# Space Conflict Escalation Ladder

*“When it is darkest, men see the stars.”*  
(Ralph Waldo Emerson)



# Space Escalation Ladder

WBS	Conflict Phase	Terrestrial Campaign Phase	Space Campaign Phase	Weapon Type	Space Campaign Phase Full Name	Weapon Category
P.1.A.0	Pre-Conflict	Phase 0: Pre-War Buildup (Shape)	1st Wave Attacks Phase A	Pre-Conflict Deter	1st Wave Attacks Phase A - Pre-Conflict Deter	Overt Weapons Testing & Deployment; Treaties; Saber Rattling; Space Alliances; Normal Space Surveillance, Tracking & Reconnaissance Activities; Satellite Close Inspectors
P.1.B.0	Pre-Conflict	Phase 0: Pre-War Buildup (Shape)	1st Wave Attacks Phase B	Persuade; Spying; Propaganda; Avoidance Maneuvering; Increased Space Surveillance & Close Satellite Inspections	1st Wave Attacks Phase B - Pre-Conflict Persuade	Diplomatic Requests & Démarches; Economic Actions; Embargos; Legal Actions; Administrative Actions; Transmitting Propaganda Broadcasts; Jamming Propaganda Broadcasts; Increased Spying & Surveillance; Unusual Increases in Space Surveillance and Tracking Activities; Threaten Allies of Your Adversaries; Maneuver to Avoid Attacks
P.1.C.0	Pre-Conflict Crisis	Phase 0: Pre-War Buildup (Shape)	1st Wave Attacks Phase C	Hide; Covert; Cyber; Political Disruptions; Mobilize Forces; Increase Military Alert Level; Threatening Satellite Maneuvers; Increase Space Radiation; Initiate Satellite Defensive Measures; Employ Nation's Astronauts on International Space Station for Military Uses	1st Wave Attacks Phase C - Pre-Conflict Hide	Camouflage; Stop Activities; Mobility; Covert Technology Developments; Small Covert SOF Attacks; Cyber Attacks; Covert Actions in Violation of International Treaties; Cutoff Diplomatic Relations; Inspire Social Disruptions and Agitation; Employ Lethal Force Against Your Own Citizens; Mobilize Forces; Increase Military Alert Level (DEFCON); Maneuver Close Enough to Adversary Satellites to Purposely Appear as a Threat; Reveal Covert Programs to Appear Threatening; Enter Into War-Reserve Modes (Hide) for Critical Satellites; Hide Senior Leadership; Increase Radiation Environment in Orbits Used by Adversaries; Initiate Satellite Defensive Measures; Employ Nation's Astronauts on International Space Station for Military Reconnaissance and Surveillance; Spoof and Falsify World-Wide Distribution of Satellite Location Orbital Tracking Data
P.2.A.0	Trans-Conflict	Phase I: Deployment / Deterrence (Deter)	2nd Wave Attacks	Trans-Conflict Deter	2nd Wave Attacks - Trans-Conflict Deter	Provocative but False Attacks; Linked Attacks; Demo Attacks; Alternate Country Attacks; Blockades; Major Covert SOF Attacks; Terrorist Attacks; Summarily Execute Saboteurs; Seize & Sequester Suspected Terrorists; Alert Anti-Satellite Systems; Arm Satellite Self-Defense Mechanisms; Alert Anti-Missile Defenses; Alert Anti-Aircraft Defenses; Arm Allied Astronauts on International Space Station

**Space Actions May Be Conducted Pre-Conflict**



# Space Escalation Ladder (Cont.)

WBS	Conflict Phase	Terrestrial Campaign Phase	Space Campaign Phase	Weapon Type	Space Campaign Phase Full Name	Weapon Category
P.3.A.1	Trans-Conflict	Phase II: Halt Incursion (Seize Initiative)	3rd Wave Attacks Phase A1 – Gnd Based	From Terrestrial Partial Temporary Kill	3rd Wave Attacks Phase A1 – Terrestrial-to-Space Partial Temporary Effects	Delay, Deny, Covertly Assassinate Adversary Diplomatic Ambassador
P.3.A.2	Trans-Conflict	Phase II: Halt Incursion (Seize Initiative)	3rd Wave Attacks Phase A2 – Gnd Based	From Terrestrial Total Temporary Kill	3rd Wave Attacks Phase A2 – Terrestrial-to-Space Total Temporary Effects	Disrupt
P.3.B.1	Trans-Conflict	Phase III: Air Counter-Offensive (Dominate)	3rd Wave Attacks Phase B1 – Space Based	From Space Partial Temporary Kill	3rd Wave Attacks Phase B1 – Space-to-Space Partial Temporary Effects	Delay, Deny
P.3.B.2	Trans-Conflict	Phase III: Air Counter-Offensive (Dominate)	3rd Wave Attacks Phase B2 – Space Based	From Space Total Temporary Kill	3rd Wave Attacks Phase B2 – Space-to-Space Total Temporary Effects	Disrupt
P.4.A.1	Trans-Conflict	Phase IV: Joint Counter-Offensive to Restore Friendly Pre-Conflict Status (Stabilize Borders)	4th Wave Attacks Phase A1 – Gnd Based	From Terrestrial Partial Permanent Kill	4th Wave Attacks Phase A1 – Terrestrial-to-Space Partial Permanent Kill	Degrade
P.4.A.2	Trans-Conflict	Phase IV: Joint Counter-Offensive to Restore Friendly Pre-Conflict Status (Stabilize Borders)	4th Wave Attacks Phase A2 – Gnd Based	From Terrestrial Total Permanent Kill	4th Wave Attacks Phase A2 – Terrestrial-to-Space Total Permanent Kill	Destroy
P.4.B.1	Trans-Conflict	Phase V: Joint Counter-Offensive to Capture Adversary Capitol (Enable New	4th Wave Attacks Phase B1 – Space Based	From Space Partial Permanent Kill	4th Wave Attacks Phase B1 – Space-to-Space Partial Permanent Kill	Degrade
P.4.B.2	Trans-Conflict	Phase V: Joint Counter-Offensive to Capture Adversary Capitol (Enable New	4th Wave Attacks Phase B2 – Space Based	From Space Total Permanent Kill	4th Wave Attacks Phase B2 – Space-to-Space Total Permanent Kill	Destroy
P.5.A.0	Trans-Conflict	Phase VI: Defend Against Adversary Counter-Attacks Against Friendly Homeland (Defend Friendly Citizens)	5th Wave Attacks	Space-Manned Permanent Kill: Kill Adversary Astronauts	5th Wave Attacks - Space-Manned Permanent Kill	Degrade, Destroy: Kill Adversary Astronauts on International Space Station
P.6.A.0	Trans-Conflict	Phase VI: Defend Against Adversary Counter-Attacks Against Friendly Homeland (Defend Friendly Citizens)	6th Wave Attacks	Space-to-Earth Permanent Kill	6th Wave Attacks - Space-to-Earth Permanent Kill	Degrade, Destroy
P.7.A.0	Trans-Conflict	Phase VII: Defend Against Adversary Use of Nuclear Weapons in Space (Defend Friendly Military)	7th Wave Attacks	NBC Use - Space	7th Wave Attacks - NBC Use - Space	Degrade, Destroy
P.8.A.0	Trans-Conflict	Phase VIII: Defend Against Adversary Use of NBC Against Friendly Military Targets (Defend Friendly Military)	8th Wave Attacks; Phase A – Military Targets	NBC Use - Space & Terrestrial	8th Wave Attacks Phase A – NBC Use - Space & Terrestrial - Military Targets	Degrade, Destroy
P.8.B.0	Trans-Conflict	Phase IX: Defend Against Adversary Use of NBC Against All Friendly Targets (Defend Friendly Military & Civilians)	8th Wave Attacks; Phase B – Civilian Targets	NBC Use - Space & Terrestrial	8th Wave Attacks Phase B – NBC Use - Space & Terrestrial - Civilian Targets	Degrade, Destroy
P.9.A.0	Post-Conflict	Phase X: Post-Hostilities (Reconstruction & Stabilization)	9th Wave Attacks	Post-Conflict Deter	9th Wave Attacks - Post-Conflict Deter	Diplomatic Requests; Economic Actions; Legal Actions; Administrative Actions; Jamming Propaganda Broadcasts

**Space Provides Finer Gradations & Thus Better Control During Conflict Escalation**

Strategies  
Operational  
Tactical



# Space COA's Baseline Considerations

*“Control of space means control of the world, far more certainly, far more totally than any control that has been achieved by weapons or troops of occupation. Space is the ultimate position, the position of total control over Earth.”*  
(President Lyndon Baines Johnson)



# Command and Control Relationships

Level of Command	OODA Loop			
	Observe	Orient	Decide	Act
Strategic	National Intelligence Assets	National INTEL Center	JFACC	Theater Forces
Operational	SSN	Space INTEL Center	JSpOC/ JICSPOC	AFSCN
Tactical	On-Board Sensors	On-Board Sensor Fusion	On-Board Decision Algorithms	On-Board Execution Algorithms

Strategies

Operational

Tactical



# Conflict Level of War

Level of War	Rules Of Engagement (ROE)				
	<u>Deception</u>	<u>Disruption</u>	<u>Denial</u>	<u>Degradation</u>	<u>Destruction</u>
Peace	Yes	Maybe	No	No	No
Space Crisis	Yes	Yes	Yes	No	No
Conventional Terrestrial	Yes	Yes	Yes	No	No
Conventional Terrestrial & Space	Yes	Yes	Yes	Yes	Yes

**Space Crisis** - Does not necessarily mean a terrestrial crisis, but certainly means a crisis concerning on-orbit space systems. This would include space objects making controlled close approaches to potential targets in a threatening manner.

**Note:** D6 Actions Also Include “Deterrence”



# Weapons Release Authorization Levels

Assumes Satellite **Does** Support Area Of Responsibility (AOR) of Current Concern or Conflict

Level of War	Weapons Release Authorization Level				
	<u>Space Positive Control</u>	<u>Space Autonomous Operation</u>	<u>Space Weapons Hold</u>	<u>Space Weapons Tight</u>	<u>Space Weapons Free</u>
Peace	Yes	No	No	No	No
Space Crisis	Yes	Maybe	Maybe	No	No
Conventional Terrestrial	Yes	Yes	Yes	Maybe	No
Conventional Terrestrial & Space	Yes	Yes	Yes	Yes	Maybe

Extended lost communications from ground controllers (e.g., 24 hrs.) automatically increases Weapons Release Level by one step



# GEO Areas Of Responsibility (AOR's)

Assumes Satellite Does **Not** Support Area Of Responsibility (AOR) of Current Concern or Conflict

Level of War	Weapons Release Authorization Level				
	<u>Space Positive Control</u>	<u>Space Autonomous Operation</u>	<u>Space Weapons Hold</u>	<u>Space Weapons Tight</u>	<u>Space Weapons Free</u>
Peace	Yes	No	No	No	No
Space Crisis	Yes	Maybe	Maybe	No	No
Conventional Terrestrial	Yes	Maybe	Maybe	No	No
Conventional Terrestrial & Space	Yes	Yes	Yes	Maybe	No

Extended lost communications from ground controllers (e.g., 24 hrs.) automatically increases Weapons Release Level by one step



# Potential Conflict Escalation

Assumes Satellite **Does** Support Area Of Responsibility (AOR) of Current Concern or Conflict

Level of War	Weapons Release Authorization Level				
	<u>Space Positive Control</u>	<u>Space Autonomous Operation</u>	<u>Space Weapons Hold</u>	<u>Space Weapons Tight</u>	<u>Space Weapons Free</u>
Peace	0%	10%	20%	80%	90%
Space Crisis	0%	20%	30%	90%	90%
Conventional Terrestrial	0%	30%	50%	100%	100%
Conventional Terrestrial & Space	0%	20%	30%	40%	50%

Numbers listed are probabilities that satellite actions taken at their authorized Weapons Release Level will cause conflict escalation to next Level of War



# Backup Slides

*“In space, all warriors are cold warriors.”*  
(Chang)



# Space Warfare Definitions

*“Mere tonnage of explosives is a fallacious criterion. In the final analysis, victories are achieved because of the effect produced, not simply because of the effort expended.”*

**(Brigadier General Haywood S. “Possum” Hansell, Jr.,  
Memorandum to Army Air Force Chief of Staff General  
“Hap” Arnold, 26 July 1944)**



# Space Defense Definitions (1)

- **Space Sovereignty** - A nation's inherent right to exercise absolute control and authority over the orbital space near its satellites. Also see **Space Sovereignty Mission**.
- **Space Sovereignty Mission** - The integrated tasks of surveillance and control, the execution of which enforces a nation's authority over the orbital space near its satellites.
- **Space Control Operations** - The employment of space forces, supported by air, ground and naval forces, as appropriate, to achieve military objectives in vital areas of concern to space systems. Such operations include destruction of enemy in-space assets, space-related ground systems and surface-to-space forces (launch), interdiction of enemy space operations, protection of vital space lines of communication (links from ground to space to ground), and the establishment of local military superiority in areas of space operations.

**Definitions Derived from Joint Pub 3-01.1 Modified for Space Control**



# Space Defense Definitions (2)

- **Space Autonomous Operation** - In space defense, the mode of operation assumed by a space system after it has lost all communications with human controllers. The space system assumes full responsibility for control of weapons and engagement of hostile targets, based in accordance with on-board surveillance and weapon system control logic. This automatic state may occur on a regular basis due to orbital movements outside regions of ground coverage and control.
- **Space Positive Control** - A method of space control which relies on positive identification, tracking, and situation assessment of spacecraft within a Space Defense Area, conducted with electronic means by an agency having the authority and responsibility therein.
- **Space Weapons Hold** - In space defense, a weapon control order imposing a status whereby weapons systems may only be fired in self defense or in response to a formal order.
- **Space Weapons Tight** - In space defense, a weapon control order imposing a status whereby weapons systems may be fired only at targets recognized as hostile.
- **Space Weapons Free** - In space defense, a weapon control order imposing a status whereby weapons systems may be fired at any target in orbital space of defined altitude and inclination, not positively recognized as friendly.

Definitions Derived from Joint Pub 3-01.1 Modified for Space Control



# Space Defense Definitions (3)

- **Active Space Defense** - Direct defensive action taken to destroy, nullify, or reduce the effectiveness of hostile space actions. It includes the use of anti-satellite weapon systems, defensive counter space weapons, electronic warfare, and other available weapons not primarily used in a space defense role. See also Space Defense.
- **Passive Space Defense** - All measures, other than Active Space Defense, taken to reduce the probability of and to minimize the effects of damage to space systems caused by hostile action without the intention of taking the initiative. These measures include camouflage, deception, dispersion, and the use of protective construction and design. See also Space Defense.
- **Space Centralized Control** - In space defense, the control mode whereby a higher echelon makes direct target assignments to fire units.
- **Space Decentralized Control** - In space defense, the normal mode whereby a higher echelon monitors unit actions, making direct target assignments to units only when necessary to ensure proper fire distribution or to prevent engagement of friendly spacecraft. See also Centralized Control.
- **Broadcast-Controlled Space Interception** - An interception in which the interceptor is given a continuous broadcast of information concerning the space defense situation and effects interception without further control.
- **Close-Controlled Space Interception** - An interception in which the interceptor is continuously controlled to a position from which the target is within local sensor range.

Definitions Derived from Joint Pub 3-01.1 Modified for Space Control



# Space Defense Definitions (4)

- **Suppression of Adversary Counterspace Capabilities** - Suppression that neutralizes or negates an adversary offensive counterspace system through deception, denial, disruption, degradation, and/or destruction. These operations can target ground, air, missile, or space threats in response to an attack or threat of attack. (AFDD 2-2.1)
- **Space Control Sector** - A sub element of the space control area, established to facilitate the control of the overall orbit. Space control sector boundaries normally coincide with space defense organization subdivision boundaries. Space control sectors are designated in accordance with procedures and guidance contained in the space control plan in consideration of Service component and allied space control capabilities and requirements.
- **Space Deconfliction In The Combat Zone** - A process used to increase combat effectiveness by promoting the safe, efficient, and flexible use of space systems. Space Deconfliction is provided in order to prevent fratricide, enhance space defense operations, and permit greater flexibility of operations. Space Deconfliction does not infringe on the authority vested in commanders to approve, disapprove, or deny combat operations. Also called combat space deconfliction; space deconfliction.
- **Space Point Defense** - The defense or protection of special vital elements, orbital positions (geosynchronous slots, and advantageous orbits, such as sun-synchronous) and installations; e.g., command and control facilities, space launch facilities, Tracking, Telemetry and Control facilities, space surveillance sensors, and high-value satellites.

**Definitions Derived from Joint Pub 3-01.1 Modified for Space Control**



# Space Defense Definitions (5)

- **Space Defense Operations Area** - An area and the orbital space around it within which procedures are established to minimize mutual interference between space defense and other operations; it may include designation of one or more of the following: Space Defense Action Area, Space Defense Area; Space Defense Identification Zone, and, or firepower umbrella.
- **Space Defense Action Area** - An orbit and the space around it within which friendly spacecraft or surface-to-space weapons are normally given precedence in operations except under specified conditions.
- **Space Defense Area** - 1.) A specifically defined orbit for which space defense must be planned and provided. 2.) An orbit and a region surrounding it of defined dimensions designated by the appropriate agency within which the ready control of space borne vehicles is required in the interest of national security during a **Space Defense Emergency**.
- **Space Defense Region** - An orbital subdivision of a Space Defense Area.
- **Space Defense Sector** - An orbital subdivision of a Space Defense Region.
- **Space Defense Division** - A geographic subdivision of a Space Defense Region.
- **Space Defense Identification Zone (SDIZ)** - Orbital space of defined parameters within which the ready identification, location, and control of space borne vehicles is required.
- **Space Defense Battle Zone** - A volume of space surrounding a space defense fire unit or defended area, extending to a specified orbital altitude and inclination, in which the fire unit commander will engage and destroy targets not identified as friendly under criteria established by higher headquarters. In other words, this would be a **free-fire zone around a defended satellite**.

Definitions Derived from Joint Pub 3-01.1 Modified for Space Control



# Space Defense Definitions (6)

- **Space Weapon Engagement Zone (SWEZ)** - In space defense, orbital space of defined altitude and inclination within which the responsibility for engagement of space threats normally rests with a particular weapon system.
- **Direct-Ascent Engagement Zone (DAEZ)** - In space defense, that orbital space of defined altitude and inclination within which the responsibility for engagement of space threats normally rests with a direct-ascent anti-satellite system of terrestrial launch origin.
- **Directed Energy Engagement Zone (DEEZ)** - In space defense, that orbital space of defined altitude and inclination within which the responsibility for engagement of space threats normally rests with a directed energy (laser or microwave) ASAT or electronic warfare system of terrestrial location.
- **Electronic Warfare Engagement Zone (EWEZ)** - In space defense, that orbital space of defined altitude and inclination within which the responsibility for engagement of space threats normally rests with an electronic warfare system of terrestrial location.
- **Close Attack Engagement Zone (CAEZ)** - In space defense, that orbital space of defined altitude and inclination within which the responsibility for engagement of space threats normally rests with a defense system that is stationed within 10 kilometers of its target.
- **Long Range Engagement Zone (LREZ)** - In space defense, that orbital space of defined altitude and inclination within which the responsibility for engagement of space threats normally rests with long range space defense weapons, that are space-based, but are normally stationed at more than 10 kilometers from its target.
- **Joint Engagement Zone (JEZ)** - In space defense, that orbital space of defined altitude and inclination within which multiple space defense systems (from both terrestrial and space-based locations) are simultaneously employed to engage space targets.

**Definitions Derived from Joint Pub 3-01.1 Modified for Space Control**

Strategies

Operational

Tactical



# Space Defense Definitions (7)

- 1) **Deception** consists of those measures designed to mislead the adversary by manipulation, distortion, or falsification of evidence to induce the adversary to react in a manner prejudicial to their interests.
- 2) **Disruption** is the temporary impairment of the utility of space systems, usually without physical damage to the space segments. These operations include delaying critical mission data support to an adversary. Given the perishability of information required to effectively command and control military operations, this disruption impedes the effective application or exploitation of that data. Examples of this type of operation include jamming or refusing or withholding data support or spare parts.
- 3) **Denial** is the temporary elimination of the utility of the space systems, usually without physical damage. This objective is accomplished by such measures as denying electrical power to the space ground nodes or computer centers where data and information are processed and stored.
- 4) **Degradation** is the permanent impairment of the utility of space systems, usually with physical damage. This option may include attacks against the terrestrial or space element of the space system. For example, a ground-based laser could be used to damage the optics of an imaging sensor without impairing other functions of the satellite bus.
- 5) **Destruction** is the permanent elimination of the utility of space systems, usually with physical damage. This last option includes special operations forces (SOF) missions to interdict critical ground nodes, airpower missions to bomb uplink/downlink facilities, and attacks against space elements with either kinetic-kill or directed-energy weapons.

Definitions Derived from AFDD 2-2



# Space Defense Definitions (8)

## Defense Readiness Conditions for Space Systems - Strategic

Readiness condition	Exercise term	Description	Readiness
SPACE DEFCON 1	COCKED PISTOL	Global Space War is imminent	Maximum space readiness
SPACE DEFCON 2	FAST PACE	Preparations for multiple attacks in multiple regions in space have been detected	Terrestrial-based weapons ready to deploy and engage in less than 6 hours
SPACE DEFCON 3	ROUND HOUSE	Preparations for a single attack in space have been detected	Space-based weapons ready to maneuver for engagement in 15 minutes
SPACE DEFCON 4	DOUBLE TAKE	Increased intelligence watch and strengthened security measures for space systems	Above normal space systems readiness
SPACE DEFCON 5	FADE OUT	Lowest state of readiness	Normal space systems readiness

## Defense Readiness Conditions for Space Systems - Tactical

Readiness condition	Exercise term	Description	Readiness
SPACE TACTICAL DEFCON 1	COCKED PISTOL	Multiple space attacks in local SDIZ are imminent.	Maximum space readiness
SPACE TACTICAL DEFCON 2	FAST PACE	Potential ASAT <1 Km or <5 Min. Away. Preparations for space attack against a single satellite have been detected.	Space-based weapons/defenses ready for target engagements immediately
SPACE TACTICAL DEFCON 3	ROUND HOUSE	Potential ASAT <10 Km or <20 Min. Away. Preparations for a single attack in space have been detected.	Space-based weapons/defenses ready to maneuver/prepare for target engagements in 15 minutes
SPACE TACTICAL DEFCON 4	DOUBLE TAKE	Potential ASAT More Than 10 Km or 20 Min. Away. Increased intelligence watch and strengthened security measures for space systems.	Above normal space systems readiness
SPACE TACTICAL DEFCON 5	FADE OUT	Potential ASAT Outside Local LREZ/CAEZ Zone. Lowest state of readiness.	Normal space systems readiness

**SDIZ - Blue** (ASAT Outside Local LREZ/CAEZ Zone)

**LREZ - Green** (ASAT More Than 10 Km or 20 Min. Away)

**CAEZ - Yellow** (ASAT <10 Km or <20 Min. Away)

**CAEZ - Red** (ASAT <1 Km or <5 Min. Away)

**SDIZ** = Space Defense Identification Zone

**LREZ** = Long Range Engagement Zone

**CAEZ** = Close Attack Engagement Zone

**Definitions Derived from Joint Publication 1-02**