STUDY NOTES · BASIC CONCEPT

What is military logistical resilience? What is Pentagon's FORTRESS initiative? What is GPS jamming?

Defence & Security

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What is military logistical resilience?

Military logistical resilience is the ability of armed forces to sustain operations when supply chains are disrupted or external support becomes unavailable.

It includes maintaining adequate stocks of:

1. Fuel and lubricants
2. Food and drinking water
3. Medicines and medical equipment
4. Ammunition and spare parts
5. Backup electricity and communications systems

Why it matters: Modern warfare can target not only combat forces but also the supply networks that keep them operational.

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What is the Pentagon's FORTRESS initiative?

The Pentagon's reported FORTRESS initiative aims to enable major US military bases in the continental United States to sustain essential operations for at least 90 days without external support during a major conflict.

Its reported priorities include independent power, reserves of essential supplies, alternative suppliers, emergency manufacturing capacity and protection of communications systems. The plan is intended to reduce dependence on vulnerable civilian infrastructure and disrupted international supply chains.

What is energy resilience?

Energy resilience is the ability to maintain essential electricity and fuel supplies despite disruptions caused by war, natural disasters, cyberattacks or infrastructure failures.

Military bases need reliable electricity for:

1. Radar and surveillance systems.
2. Command centres and secure communications.
3. Water treatment and medical facilities.
4. Logistics, maintenance and weapons systems.
5. The FORTRESS initiative reportedly considers portable nuclear reactors, large battery-storage systems and microgrids to strengthen energy resilience.

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What is a microgrid?

The Benefits of Military Microgrids | Enercon

A microgrid is a local electricity network connecting power sources, storage systems and consumers. It can operate alongside the main electricity grid or, when appropriately designed, independently of it.

Feature	Conventional grid	Microgrid
Coverage	Large geographical area	Local area or facility
Power sources	Connected centralised and distributed sources	Local generators and other distributed sources
During a major grid failure	Supply may be disrupted	May continue operating independently if adequately equipped
Military application	Supports bases through civilian infrastructure	Provides a potential independent power source

Key concept: A microgrid improves resilience only if it has sufficient generation, fuel, storage, controls and maintenance capacity.

What are strategic stockpiles?

Strategic stockpiles are reserves of essential materials maintained for emergencies, war or prolonged supply disruptions.

Under the reported FORTRESS plan, these may include:

1. Ammunition and military equipment.
2. Fuel and lubricants.
3. Critical minerals and electronics.
4. Spare parts and medical supplies.
5. Other materials needed to sustain military operations.
6. Strategic stockpiles buy time when normal supply routes fail. However, they require careful planning to account for consumption rates, storage conditions, expiry dates and replenishment time.

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What is supply-chain resilience?

Supply-chain resilience is the ability to continue obtaining essential goods even when suppliers, transport routes or manufacturing facilities are disrupted.

A major conflict can affect ports, shipping, factories, energy networks and international trade.

One approach is supplier diversification: maintaining at least two qualified sources or production routes for critical items. This reduces the risk that the failure of a single supplier will halt essential operations.

The FORTRESS initiative reportedly seeks alternative supply pathways and reserves of strategically important materials.

What is the Civil Reserve Manufacturing Network?

The Civil Reserve Manufacturing Network is intended to help prepare civilian factories to switch to defence-related production during an emergency.

This involves identifying suitable factories, planning technical requirements, establishing contractual arrangements and preparing production-conversion procedures in advance.

The underlying concept is industrial mobilisation: using a country's wider industrial capacity to meet extraordinary defence requirements during a crisis.

Its effectiveness depends on the availability of skilled workers, specialised machinery, raw materials, cybersecurity protections and reliable energy supplies.

What is critical infrastructure protection?

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Critical infrastructure comprises systems and facilities whose disruption could seriously affect national security, the economy or public safety.

Examples include:

1. Electricity grids and fuel networks.
2. Telecommunications and data centres.
3. Water supply systems.
4. Ports, airports and transport networks.
5. Satellite navigation and communications.
6. Defence manufacturing facilities.
7. Modern militaries depend on both military-owned systems and civilian infrastructure. Consequently, attacks on civilian power grids, communication networks or transport systems can have significant military implications.

What is GPS jamming?

GPS jamming is the deliberate transmission of interference that prevents or degrades the reception of satellite-navigation signals.

It can disrupt navigation, timing and some systems that rely on precise positioning. GPS spoofing is different: it involves transmitting misleading signals that can cause a receiver to calculate an incorrect position or time.

Military resilience therefore requires alternative navigation methods, protected communications, redundancy and the ability to operate when satellite-based services are unavailable.

What is the relevance for India?

The reported US initiative offers several lessons for India's defence preparedness and national security.

Area	Relevance for India
Defence preparedness	Maintain adequate reserves of essential supplies and spare parts
Energy security	Improve backup power and energy resilience at critical defence installations
Atmanirbhar Bharat	Expand domestic defence manufacturing and reduce critical import dependencies
Industrial mobilisation	Prepare civilian industries to support emergency production
Cybersecurity	Protect power, communication and logistics networks against cyberattacks
Disaster management	Apply resilience planning to floods, cyclones and other emergencies
Strategic autonomy	Reduce vulnerability to external supply restrictions during international crises

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