

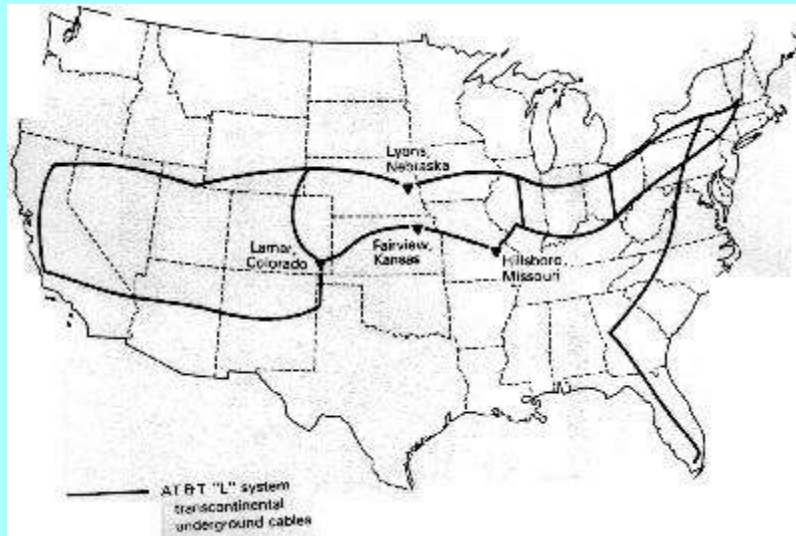
L

Researched and compiled by Joe Cyr (www.joe-cyr.com)

"L" SYSTEM - A Department of Defense (DoD) land-line communications system provided by AT&T for use during the Cold War. The "L" system used transcontinental underground coaxial cables. The L-2 system became obsolete after WWII. The L-4 coaxial cable, installed in 1967, was a major "hardened" defense carrier, and was capable of handling more than 32,000 voice circuits (compare to fiber cables which can handle more than 300,000,000 voice circuits). Most of the L-4 sites were laid at least 40 miles from major cities. This system was called "L CXR", or the Transcontinental Cable.

L-System Summary					
TYPE	YEAR	BANDWIDTH	COAX TUBES	REPEATER SPACING	CAPACITY (Voice Circuits)
L-1	1941	3 MHz	4	8 miles	600
L-2	1942	840 KHz	4	16 miles	360
L-3	1953	8 MHz	8	4 miles	5,580
L-3I	1960	8 MHz	12	2 miles	9,300
L-4	1967	17 MHz	20	2 miles	32,400
L-5	1972	57 MHz	22	1 mile	108,000

The map shown below shows the layout of the transcontinental "L" system underground cables. [10:2716]



LADAR -Laser radar. [10:20] Developed primarily for use in missiles, LADAR is a solid state system that provides near photographic quality images of potential targets. Precise target range is determined by measuring elapsed time from a laser transmission to the reflected return of the pulse. Unlike thermal imaging, a LADAR produces high resolution three dimensional images of near photographic quality, similar to a black and white photo. [10:2508]

LAMBERTIAN SURFACE - A surface that reflects and emits radiation in a perfectly diffuse pattern (uniform reflection of light). [] NOTE: For reflections of visible light, the surface of a piece of matte paper is nearly Lambertian; the surface of a mirror is not.

LAMB SUPPRESSOR - See DICKE FIX.

LAND WARRIOR (LW) SYSTEM - A system to provide the soldier with SITUATIONAL AWARENESS (SA) through a helmet-mounted display that can show the relative locations of all squad mates and known threats. Soldiers can exchange messages and input known threats and obstacles onto digital moving maps via a small portable computer system. The object is to give the soldier a 10-minute window of warning of nearby threats. LW-equipped soldiers will also be equipped with night-vision goggles and GPS receivers, laser range finders and digital compasses that will allow them to spot and locate targets accurately enough to call for fire support. [10:2711] See also COMBAT IDENTIFICATION FOR DISMOUNTED SOLDIER (CIDDS) SYSTEM.

LANTIRN - An acronym for low altitude infrared for night. The Lantirn system combines FORWARD LOOKING INFRARED (FLIR) with radar technology, and uses FEDERATED ARCHITECTURE techniques for both navigation and the target attack function. [10:9] NOTE: For navigation, a wide-field-of-view FLIR "night window" and

a terrain-following radar provide redundant inputs for safe flight paths at extremely low altitudes at night. Target acquisition, weapon handoff and target designation are accomplished using a precision-stabilized two-fields-of-view FLIR, coupled with automatic trackers and a laser designator, to provide maximum range standoff and precision weapon delivery.

LARGE-AREA SMOKE GENERATOR (LASG) A smoke-generating system designed for mobile and stationary applications, covering both the visual and IR region, as well as degrading laser performance. The system produces up to 9,500 m³/min. of visual and thermal image obscurants for periods of up to two hours. [10:2719]

LASE - To illuminate an object with a LASER beam. See also LASER ILLUMINATOR. []

LASER - An acronym for Light Amplification by Stimulated Emission of Radiation. The laser produces a highly monochromatic and coherent beam of radiation. A steady oscillation of nearly a single electromagnetic mode is maintained in a volume of an active material bounded by highly reflecting surfaces called a resonator. The frequency of oscillation varies according to the material used and by the methods of initially exciting or pumping the material. [3] See also TUNABLE LASER. [11.2]

LASER ABSORPTIVE VISOR - A visor containing absorbing material that will block out some LASER wavelengths while permitting clear vision. [10:75]

LASER CHEMICAL DETECTOR - A frequency-agile LASER system able to operate at high repetition rates to detect chemical agents in vapors, aerosols and surface contaminants. [10:2501] NOTE: The sensor detects specific agents because individual chemicals tend to absorb laser energy of specific known wavelengths.

LASER COUNTERMEASURE SYSTEM (LCMS) - A man-portable, multi-role, LASER ILLUMINATOR and optical threat negation system. [10:2745]

LASER DESIGNATOR - device that emits a beam of LASER energy which is used to mark a specific place or object. [1.1] See also LASER ILLUMINATOR.

LASER DOPPLER VIBROMETER - A vibration sensor capable of measuring the soil velocity above and around a buried object (such as a land mine) that has been stimulated by an acoustic source (acoustic sources coupled into the earth produce scattering by buried objects). The soil vibration is measured without contact except by the LASER beam. [12.1] See also LASER VIBROMETER.

LASER DYE ROD - An "Optical Flash Device" carried by a 40mm shell. On impact, the rod creates an exceptionally intense flash, which blinds surrounding electro-optical sensors and personnel. [10:2341]

LASER FLASHLIGHT - A LASER device designed to "spotlight" hostile individuals by placing a bright red light on them at distances up to 300 yards. The device is battery operated and can be mounted on a standard M-16 rifle/grenade launcher. The device is harmless to the targeted individual. [10:2551] See also LASER DESIGNATOR.

LASER GUIDANCE UNIT - A device which incorporates a LASER SEEKER to provide guidance commands to the control system of a missile, projectile, or bomb. [1.1]

LASER GUIDED WEAPON - A weapon which utilizes a seeker to detect LASER energy reflected from a laser- marked/designated target and through signal processing provides guidance commands to a control system which guides the weapon to the point from which the laser energy is being reflected. [1.1]

LASER ILLUMINATOR - An ILLUMINATOR in which the electromagnetic radiation is provided by a LASER. []

LASER INDUCED PLASMA CHANNEL (LIPC) - A device which produces a directed discharge of electrical energy that can be set to shock, stun, or stop a person. [10:3062] NOTE: (ca 2005) LIPC can be modified to neutralize improvised explosive devices (IEDs).

LASER INFRARED FLYOUT EXPERIMENT (LIFE) -- (2001) A LASER-based countermeasure system intended to protect large, less maneuverable aircraft. The system is designed to defeat INFRARED guided missiles during the aircraft's takeoff and landing. [10:2902] NOTE: The laser for this system is designed to confuse the missile seeker with modulation to break lock, rather than destroying its circuitry.

LASER INTELLIGENCE (LASINT) - Technical and intelligence information derived from LASER systems; a subcategory of electro-optical intelligence. [1.1]

LASER LINESCAN SONAR - An underwater detection device which employs a LASER flash to illuminate the target momentarily to create an image. The narrow beam of the laser results in useful imaging ranges several times that of other imaging systems. [] See also MOBILE UNDERWATER DEBRIS SURVEY SYSTEM (MUDSS).

LASER LINESCAN SYSTEM - An active airborne IMAGERY recording system which uses a LASER as the primary source of illumination to scan the ground beneath the flight path, adding successive across-track lines to the record as the vehicle advances. [1.1] See also INFRARED LINESCAN SYSTEM.

LASER ORDNANCE INITIATION SYSTEM (LOIS) - A system which uses LASER energy transmitted through fiber optic lines to initiate ordnance devices. One application is in aircraft egress systems which use a low-power light source, such as a LIGHT-EMITTING DIODE (LED), as the laser signal source. The source is triggered from the cockpit to begin the egress process. Fiber optic lines carry the signal from the laser source to the egress system ordnance activation points which fire, ejecting the canopy and the crewmember seat or crew module. [10:2650]

LASER PULSE DURATION - The time during which the LASER output pulse power remains continuously above half its maximum value. [1.1]

LASER RANGEFINDER - A device which uses LASER energy for determining the distance from the device to a place or object. [1.1]

LASER RANGEFINDER COUNTERMEASURE (LARC) - An airborne system employing four sensors to cover the aircraft's lower hemispheres. The sensors detect incoming LASER energy and provide direction-of-arrival data. The system subsequently predicts the laser emission's time of arrival, points a beam director toward the source of emission and transmits a countermeasure optical beam toward the rangefinder, thus jamming it. [10:2535] See also LASER RANGEFINDER.

LASER-RETARGETING SATELLITE - A prototype twin-mirror Bifocal Relay Spacecraft designed to receive "up" beams and refocus them via a "steering" mirror and second main mirror onto targets of choice on the ground. Also called TWIN-MIRROR LASER RETARGETING SATELLITE. [10:2958] NOTES: [1.1] (2002) If fielded, a combination of 27 twin-mirror satellites will orbit the earth at 715 km sometime in the next decade. [2] Potential applications include reconnaissance, space optics, space communications, remote imaging, enhancing night vision capabilities, camouflage detection and penetration, chemical warfare agent detection and identification, theater wind profiling, tunnel and underground structure detection, and cloud ceiling detection. One of the most intriguing potential uses of the space mirrors would be as giant flashlights to illuminate future battlefields.

LASER RETROFIRE - The triggering of a LASER beam in the direction of a received threat signal [] . See also LASER ZAPPER.

LASER SEEKER - A device based on a direction sensitive receiver which detects the energy reflected from a laser designated target and defines the direction of the target relative to the receiver. [1.1] See also LASER GUIDED WEAPON.

LASER SHIELD - A housing, screen, or other object that substantially reduces the effect of LASER energy on one side thereof, upon devices, living organisms, or circuits on the other side. [Adapted from the definition of electromagnetic shield in ref. 3]

LASER SIGNATURE CONTROL - The employment of materials, electronics, and platform design features intended to reduce the susceptibility of the platform to detection, tracking, and engagement by an adversary using LASER sensors, such as LADAR. LASER SIGNATURE CONTROL includes the use of paints, coatings and other surface treatments, and the use of special lens material. [12] See also ACOUSTICS SIGNATURE CONTROL, INFRARED SIGNATURE CONTROL, MAGNETIC SIGNATURE CONTROL, MULTISPECTRAL SIGNATURE CONTROL, OPTICAL SIGNATURE CONTROL, RADIO FREQUENCY (RF) SIGNATURE CONTROL, and SIGNATURE CONTROL.

LASER SPECKLE - A pattern produced by interference among various contributions of backscattered light coming to a receiver from the surface of a target illuminated by a LADAR . [10:2504] NOTE: Formerly considered a nuisance because it degraded target images, speckle has potential in LADARs for high resolution in range and angle.

LASER TRACKER - A device which locks on to the reflected energy from a LASER-marked/designated target and defines the direction of the target relative to itself. [1.1]

LASER TWEEZERS - A LASER device designed to trap small particles and objects in a strongly focused CONTINUOUS WAVE (CW)] laser beam. Objects trapped in the focus of the laser beam experience a restoring force if they try to leave the high-intensity volume. An optical tweezer system is constructed by focusing light from a laser through a microscope with a high numerical aperture (*e.g.*, $100 \times \text{N.A.} = 1.3$). The tweezers can be used to move NANOMETER-size particles in order to construct a patterned array. []

LASER VIBROMETER - A vibration sensor capable of measuring vibration without contact except by a LASER beam. [] NOTE: The laser vibrometer detects air-transmitted vibrations from objects to be tested, such as rotating machinery and engines. Degraded components vibrate in a less organized and less energetic manner than structurally solid components.

LASER ZAPPER - A medium-powered LASER used to counter laser designators and laser pointers. It is coupled to a laser warning system, and automatically sends LASER RETROFIRE to the enemy sensor to disable it. [4:11]

LATCH-UP - A condition of a Complementary Metal-Oxide Semiconductor (CMOS) integrated circuit (IC) in which parasitic bipolar transistors are switched on, drawing large currents that may destroy the device. [10:2620] See also **BURN-OUT**.

LATERAL TELLING - See **CROSS TELLING**.

LAUNCH-AND-LEAVE - See **FIRE-AND-FORGET**.

LAYER - (1) A stratum of the ionosphere which affects radio wave propagation. [] (2) A stratum of water which affects sound transmission. [] (3) A subdivision of the **OPEN SYSTEMS INTERCONNECTION (OSI) ARCHITECTURE**, constituted by subsystems of the same rank. [3] Also called **LEVEL**. NOTE: Communications networks may be organized as a set of more or less independent **PROTOCOLS**, each in a different **LAYER**, or level. The lowest layer governs direct host-to-host communications between the hardware at different hosts; the highest consists of user applications. Each layer builds on the layer beneath it. For each layer, programs at different hosts use protocols appropriate to that layer to communicate with each other. TCP/IP has five layers of protocols; OSI has seven. The advantages of different layers of protocols is that the methods of passing information from one layer to another are specified clearly as part of the protocol suite, and changes within a protocol layer are prevented from affecting the other layers. This greatly simplifies the task of designing and maintaining communication programs.

LEAVE-IT-BEHIND JAMMER - A small, expendable jammer used to attack **SIDE LOBES** and the main beam of the victim radar. [] See also **HAND-EMPLACED JAMMER**.

LEFT-HANDED MEDIA (LHM) - Materials that have negative refractive index. [10:2959] NOTE: A lense of left-handed material could potentially focus light onto a spot less than a half-wavelength across - less that the current "diffraction limit."

LEGACY - A system which is still in use, but was developed at an earlier time using the best technology then available, but whose input/output devices and user interfaces are now generally obsolete. [] NOTE: An example of legacy is the mainframe computer developed in the 1970s.

LEGACY MIGRATION - The process of making mainframe data available to users employing internet protocol (IP) and/or Windows-based systems. [] NOTE: "Legacy" refers to technologies of the past (i.e., mainframe applications) and "migration" is the conversion to IP and Windows-based systems. **LEGACY MIGRATION**, then, requires knowledge of both the legacy and target systems in order to successfully migrate data to the latter applications.

LEMMINGS - A small unmanned maritime vehicle (UMV), under control of a tactical control system (TCS), designed for beach and surf reconnaissance (*e.g.*, to crawl on beaches to search for mines and obstacles). [www.ncsc.navy.mil] NOTE:

LEMMINGS contains a video camera, a global positioning system (GPS) receiver, RF links and a PERSONALITY MODULE for integrating the device to the TCS.

LENS ANTENNA - An antenna consisting of an electromagnetic lens and a feed (antenna) which illuminates it. [3] NOTE: An intuitive analogy is a three-dimensional structure to "focus" the electronic radiation.

LESS-THAN-LETHAL (LTL) MUNITIONS - Weapons designed to thwart adversaries while minimizing fatalities and undesired damage to property and the environment. [10:2720] See also NONLETHAL WEAPON.

<i>LESS-THAN-LETHAL MUNITIONS</i>	
Personnel Immobilization	
Crowd control	Examples: 40mm Sponge Grenade; foam baton; rubber balls & pellets
Standoff/barricade	
Snagging fleeing individuals	Example: Entanglement net munitions
Material immobilization	
Stopping/hindering vehicle passage with minimal endangerment to personnel inside	
Lines of Communications Interference	
Insertion of computer viruses	
Community Infrastructure Interference	
Disabling power grids	

LETHAL ELECTRONIC COUNTERMEASURES - The use of ECM-related hard-kill systems, such as anti-radiation missiles (ARMs) and directed energy weapons. []

LIDAR - See LIGHT DETECTION AND RAGING.

LIFE ASSESSMENT DETECTOR SYSTEM (LADS) - A microwave Doppler movement-measuring device capable of detecting a heartbeat from a distance of approximately 100 feet. [10:2918]

LIFESTYLE POLYGRAPH - A lie-detector (polygraph) test that is administered as a requirement for employment in certain fields. [] NOTE: LIFESTYLE POLYGRAPHS are common as part of the screening process for any job requiring a security clearance. This includes many government jobs, as well as an increasing number of technical jobs in which employees handle, process, or can obtain access to classified data.

LIGHT AMPLIFICATION - A technique whereby ambient light (such as starlight) is amplified to permit night observation. []

LIGHT DETECTION AND RANGING (LIDAR) - A LASER device which emits pulses, reflections of which are gathered by a telescope aligned with the laser. The return signal is used to determine distance and position of the reflecting material. One application is that of detecting missile plumes. The laser pulses are reflected off AEROSOLS and particles in the air caused by a missile exhaust. Other applications include employment to deter narcotics trafficking and to monitor the environment. [10:2526] NOTE: LIDAR is also used to detect clear air turbulence, an invisible aircraft safety hazard. [10:2627].

LIGHT-EMITTING DIODE (LED) - A semiconductor device that can emit incoherent optical radiation. It is used in displays to provide a visual representation of data. []

LIGHTSAT - A light, small, low-cost satellite payload for a simple application. [10:72] See also FATSAT.

LIGHT SIGNATURE - The unique fiber pattern possessed by a sheet of paper, e.g., a certificate. [] NOTE: A light signature is determined by passing a high-intensity light beam through a small section of the document. The light-signature device then reads the patterns created by the paper's individual fiber matrix and then digitizes and encodes the data on a magnetic stripe on the document. These data then become part of the escort memory of the document. The authenticity of the document may then be verified by passing a light beam through the scan area of the document and comparing the resultant light signature with the light-signature data residing on the magnetic stripe.

LIGHTWEIGHT MAN-PORTABLE RADIO DIRECTION-FINDING SYSTEM (LMRDFS) - A man transportable ground-based communications intercept, processing, and direction finding system. [] NOTE: The system is ideal for intercept/DF operations in light, airborne, air assault and SPECIAL OPERATIONS FORCE (SOF) operations. The 60 pound system can be carried by two soldiers. The receiver/processor subsystem fits in one soldier's All-purpose Lightweight Individual Carrying Equipment (ALICE) pack and the antenna subsystem goes in another ALICE pack. A complete station can be rapidly relocated, optimizing its use in the forward areas of operations. External communications are provided by secure COMBAT NET RADIO (CNR).

LIGHTWEIGHT THERMAL WEAPON SIGHT (LTWS) - A rifle gun sight that allows the user to shoot at targets at night or in daylight, through smoke, bad weather or in total darkness. Powered by two AA batteries, the sight imager features a two-to-one electronic zoom, electronically programmable reticules, and a liquid crystal display (LCD) . The LTWS employs an eyecup-activated standby mode to conserve power. [10:2932]

LINE CHARGE (LC) - An explosive clearing system used to clear mines in 3-10 ft water depths. [10:21691] See also **SURF-ZONE ARRAY (SZA)**, **BEACH-ZONE ARRAY (BZA)**.

LIQUID CONDUCTIVE THREAD PROJECTOR - A NONLETHAL WEAPON consisting of a hand-held device which uses pulsed electronic currents to incapacitate one or several target individuals. [10:2745]

LIQUID CRYSTAL DISPLAY (LCD) - A display made of material whose reflectance or transmittance changes when an electric field is applied. [3] See also **REFLECTIVE DISPLAY** and **TRANSFLECTIVE DISPLAY**.

LITTORAL AIRBORNE SENSOR-HYPERSPECTRAL (LASH) - The LASH system - installed in P-3C Orion maritime patrol aircraft - uses **HYPERSPECTRAL IMAGERY** to increase the air crew's ability to detect small color variance of the water surface, thus aiding in the detection and tracking of submerged submarines. [10:2656]

LITTORAL REMOTE SENSING (LRS) - A system used for covert mine detection. The LRS uses surveillance satellites and other collection techniques, imagery processing and algorithms to covertly gather data on coastal and littoral defenses, environments and oceanographic phenomena such as surf conditions and weather conditions. [10:2691] See also **NEAR-TERM MINE RECONNAISSANCE SYSTEM (NMRS)** and **LONG-TERM MINE RECONNAISSANCE SYSTEM (LMRS)**.
NOTES: (1) LRS cannot locate individual mines, merely indicates areas of interest to support mine countermeasures. (2) LRS uses existing (*circa* 2001) US government surveillance satellites plus new collection techniques, imagery processing and algorithms to covertly gather data on coastal and littoral defenses, environments and oceanographic phenomena. The data are distributed to operational units, such as the Joint Intelligence Centers. LRS doesn't find individual mines, but indicates "areas of interest." LRS can also deliver useful data just prior to a mission, such as surf conditions and weather forecasts.

LITTORAL SEA MINE (LSM) - A multiple-influence bottom mine armed with a mobile homing warhead and a remote control (RECO) subsystem that permits the mine to be put in place, queried by fleet assets, and armed only when the situation requires. [10:2832]

LMU ANTENNA - A commercially-available multi-directional base station high-performance antenna in the 1,800 MHz region. The antenna unit comprises three separate antennas, each providing an angular coverage of 120 degrees. This reduces the effects of multi-path and co-channel interference and provides high accuracy which can be exploited by position sensing technologies such as enhanced observed time difference, and ANGLE OF ARRIVAL (AOA). [10:2931] NOTE: "LMU" is an acronym for "Location Monitoring Unit."

LOADSHARING - A software program used in MULTIPROCESSING. It prioritizes incoming jobs and monitors the availability, power, and existing load of the processors in the system, as well as available licenses, memory, disk space, and swap partitions, assigning tasks to the most appropriate processor in the system. [] See also PROCESSOR FARM.

LOBE - A portion of the directional pattern (of an antenna) bounded by one or two cones of nulls (surfaces of minimum radiation). [3] NOTE: A LOBE that exists in the desired direction is called the MAJOR LOBE. Other lobes are called SIDE LOBES or the BACK LOBE, as appropriate.

LOBE SWITCHING - A means of direction finding in which a directive radiation pattern is periodically shifted in position so as to produce a variation of the signal at the target. The signal variation provides information on the amount and direction of displacement of the target from the pattern mean position. [3] Also called SEQUENTIAL LOBING.

LOCAL AREA NETWORK (LAN) - A data or computer NETWORK covering a small geographical area (e.g., 1 km² or less) [] Contrast with WIDE AREA NETWORK (WAN).

LOCATION FINGERPRINTING - The combining of radio frequency (RF) multipath patterns with other signal characteristics to create a signature unique to a given location. [10:2822]

LOCK-ON METHOD OF CHAFF DEPLOYMENT - A DISTRACTION CHAFF deployment method that is based on the principle of generating a number of chaff clouds that act as false targets. These targets must be positioned relative to the protected surface unit in a pattern that will insure the missile will find a false target first, irrespective of its search method. [4:21] Synonymous with DILUTION CHAFF.

LOG-PERIODIC ANTENNA (LPA) - An antenna having a structural geometry such that its impedance and radiation characteristics repeat periodically as the logarithm of frequency. [3]

LOGIC BOMB - Computer code which is surreptitiously inserted into an application or operating system (OS) that performs some destructive or security-compromising activity whenever specified conditions are met. In other words, a logic bomb is designed to execute (or "explode") under specified circumstances, for example the lapse of a certain amount of time or the failure of a user to respond to a given program command. A logic bomb, when "exploded," may display or print a spurious message, delete or corrupt data, or have other undesirable effects. Also called **SLAG CODE**. See also **VIRUS**. NOTE: A logic bomb is in effect a delayed-action **VIRUS** or **TROJAN HORSE**.

LOGISTICAL FOOTPRINT - The amount of personnel, spares, resources, and capabilities physically present and occupying space at a deployed location. [*I cannot find a documented definition for this often-used term; send help to Echoplex@ieee.org*]

LOITERING ATTACK MISSILE (LAM) - See **LOITERING AUTONOMOUS MUNITION**.

LOITERING AUTONOMOUS MUNITION (LAM) - A small winged munition dropped from an Unmanned Combat Air Vehicle (UCAV). (*ca* 2002) The LAM is able to hover in the air for up to 30 minutes seeking its target across an 80 square-km area. [] Also called the Long Loiter Cooperative Attack Munition and Loitering Attack Missile. See also **UNMANNED AERIAL VEHICLE (UAV)**.

LOITERING ELECTRONIC WARFARE KILLER (LEWK) - A recoverable **UNMANNED AIR VEHICLE (UAV)** providing **ELECTRONIC WARFARE (EW)** **JAMMING** at a low cost. It is capable of being launched from air, sea or ground platforms. [10:2915]

LONG RANGE ADVANCED SCOUT SURVEILLANCE SYSTEM (LRAS³) - A relatively light weight (approx. 120 lbs.) system incorporating a **FORWARD LOOKING INFRARED (FLIR)** sensor with long-range optics, a laser rangefinder and a television camera that provides day/night far-target recognition and location. [10:2686]

LONG-TERM MINE RECONNAISSANCE SYSTEM (LMRS) - An **UNMANNED UNDERWATER VEHICLE (UUV)** about the size of a Mk 48 torpedo. The UUV is launched from a torpedo tube, but remains tethered to the launch platform via a fiber-optic link, which can extend out to several miles. Equipped with an onboard inertial navigation system, the UUV uses a multi-beam, forward-looking active sonar to detect moored and bottomed objects, and a side-scanning HF sonar to classify them. Data are relayed to an operator console in the launching platform. [10:2691]

[10:2972] See also NEAR-TERM MINE RECONNAISSANCE SYSTEM (NMRS) and LITTORAL REMOTE SENSING (LRS).

LONG WAVE INFRARED - See FAR INFRARED.

LOOK AROUND - An EW technique to achieve compatibility between RADAR WARNING RECEIVERS (RWRs) and ECM systems. The receiver uses frequencies other than those currently in use (i.e., jamming and harmonic frequencies) by the ECM. [10:2400] See also LOOK OVER, LOOKTHROUGH, and HIGH-SPEED CHOP.

LOOK OVER - An EW technique to achieve compatibility between RADAR WARNING RECEIVERS (RWRs) and ECM systems. The receiver is able to receive in the presence of jamming by analyzing the expected emitter signal level and the expected level of the jamming signal at the receive antenna ports. The receiver blanks ECM transmission according to a schedule based on preset tolerable percentages, based on the particular threat. [10:2400] See also LOOK AROUND, LOOKTHROUGH, and HIGH-SPEED CHOP.

LOOKTHROUGH - An EW technique to determine jammer effectiveness by measuring victim RADAR PARAMETERS. The jammer is turned off momentarily so that the receiver can detect the victim radar's signals. [3*] See also LOOK AROUND, LOOK OVER, and HIGH-SPEED CHOP.

LOW ALTITUDE/AIRSPEED UNMANNED AIRCRAFT (LAURA) - An autonomous aircraft designed to carry Electronic Warfare (EW) payloads for long-flight endurance at ship-like speeds. [10:105] NOTE: LAURA is intended to be launched out of small container and match a ship's course and speed, cruising for example for 20 hours at about 20 knots. It can carry reconnaissance, radio link, or other electronic payloads that need to be carried off-board a ship and move with the Fleet.

LOW COLLATERAL DAMAGE BOMB (LCDB) - A bomb designed to strike urban targets with lower risk of unwanted collateral damage. It contains less explosive mass producing a reduced fragmentation pattern and blast radius. [10:3104]

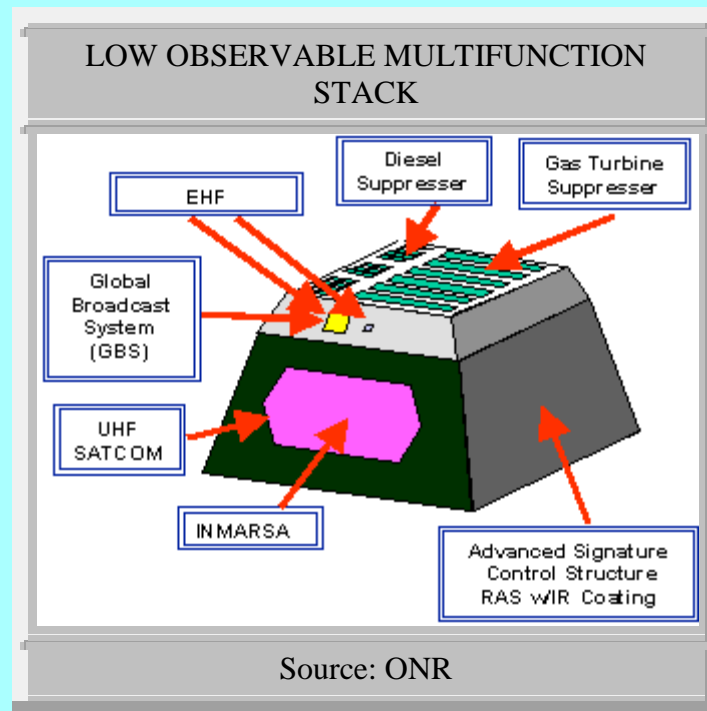
LOW-COST ANTI-ARMOR SUBMUNITION (LOCAAS) - An autonomous submunition that can be delivered by missiles or aircraft. The system uses a solid-state LADAR seeker for autonomous search, acquisition and tracking of potential targets. The smart, air-launched submunition that can loiter over enemy territory and autonomously search for, recognize and destroy moving SAMs and other targets. Depending on the stand-off launch range, the LOCAAS can have up to 15 minutes of search time over enemy territory. Using an INERTIAL NAVIGATION SYSTEM

(INS) and GLOBAL POSITIONING SYSTEM (GPS) for navigation, along with target coordinate data from the launching aircraft, LOCAAS builds its own logical search pattern. The high-resolution sensor is equipped with automatic target recognition algorithms and a built-in target library, has the capability to distinguish between military targets and civilian vehicles, and can classify vehicles such as tanks, trucks and armored personnel carriers. Over target, the LOCAAS laser sensor functions as a smart fuse for the submunition to fire in one two warhead modes. An explosively formed, long, rod-shaped penetrator slug is fired at the top of heavily armored targets. Multiple small slugs are fired against light armor to enhance lethality. [10:2511] [10:2685] Also called LOW-COST AUTONOMOUS ATTACK SYSTEM, LCAAS. NOTES: (1) The LOCAAS is programmed to self-destruct if the submunitions don't find a target. (2) LOCAAS, along with the Small Bomb System (SBS), has been incorporated (*circa* 2000) into the MINIATURE MUNITION CAPABILITIES program

LOW ENERGY LASER WEAPON - A laser weapon having output energy of the order of milliwatts, which is still capable, however, of producing severe damage to the retina of the eye and permanent blinding, and can cause temporary malfunction of sensitive electro-optical weapon sights. [10:76] NOTE: Lasers cause damage to the target primarily by the transfer of thermal energy at a rate faster than the target can safely absorb it. Laser light is seen by the eye as if it were coming from a point source. The eye can only focus it onto a very small point on the retina. The effect is to magnify the brightness of the light by a factor of approximately 100,000.

LOW INTENSITY CONFLICT (LIC) - Political-military confrontation between contending states of groups below conventional war and above the routine, peaceful competition among states. It frequently involves protracted struggles of competing principles and ideologies. Low intensity conflict ranges from subversion to the use of armed force. It is waged by a combination of means employing political, economic, informational, and military instruments. Low intensity conflicts are often localized, generally in the Third World, but contain regional and global security implications. [1.1] See also CONTINGENCY AND LIMITED OBJECTIVE WARFARE (CALOW), UNCONVENTIONAL WARFARE.

LOW OBSERVABLE MULTIFUNCTION STACK - A surface ship composite exhaust stack having embedded multi-function satellite communication array antennas and **INFRARED SIGNATURE CONTROL** features. Composite exhaust stacks also reduce a ship's topside signature, volume, weight, and mast antenna population.



LOW OBSERVABLES (LO) - See **SIGNATURE CONTROL**

LOW OBSERVABLES TECHNIQUES - See **STEALTH TECHNIQUES**.

LOW-POWER SOURCE NOISE JAMMING - A type of **BARRAGE JAMMING** in which a low-level noise source is amplified to produce the jamming signal. [10:36]
Contrast with **HIGH-POWER SOURCE NOISE JAMMING**.

LOW PROBABILITY OF IDENTIFICATION (LPID) RADAR - A **LOW PROBABILITY-OF-INTERCEPT (LPI) RADAR** with parameters that make it difficult for an **ESM** receiver to correctly identify the radar type. [10:2859]

LOW PROBABILITY OF INTERCEPT - That property of a radiating device which, because of its low power, high directivity, frequency variability or other design attributes, make it difficult to be detected or identified by means of passive devices. []

LOW PROBABILITY OF INTERCEPT (LPI) RADAR (LPIR)- A radar that, because of its low peak power output, the way in which it is operated, and other design features, is difficult to detect by means of an **ELECTRONIC SUPPORT MEASURES (ESM)** or **ELECTRONICS INTELLIGENCE (ELINT)** receiver, and difficult to identify if detected. [4:12] See also **BINARY-PHASE-CODED CONTINUOUS-WAVE RADAR**, **COHERENT RADAR**, **FREQUENCY AGILE RADAR**, **QUIET RADAR**, **SILENT RADAR**, **RANDOM SIGNAL RADAR**.

LOW RATE INITIAL PRODUCTION (LRIP) - Optional materiel acquisition phase used when substantial doubt or risk exists about an item's producibility. []

LPID RADAR - See **LOW PROBABILITY OF IDENTIFICATION (LPID) RADAR**.

LUMINOUS LIGHT - See **PHOTOMETRIC LIGHT**.