

CHAPTER-III

Civil Defence Measures for Protection

The Civil Defence arrangements will be made with an objective to reduce risk to the population from effects of war emergencies and disasters that will include:-

- (a) To build capacities and resilience of population through education, training and organizational activities to prevent panic.
- (b) Training of Civil Defence personnel in life saving skills.
- (c) Arrangements of Protective Shelters for population
- (d) Protection of Government buildings against war and disaster effects.
- (e) Establish effective Communication Network for information management, control of operations and rapid deployment of response services with additional provision for alternative means of communication.
- (f) Organize extensive Auxiliary Fire Services for rapid control of fire incidence with provision for adequate water supply.
- (g) Organize Search & Rescue of trapped casualties.
- (h) Establish Incident Command and practice Incident Control & Management for better co-ordination between responding units.
- (i) Provision for early treatment and Basic Life support to casualties.
- (j) Provision of Welfare facilities such as :-
 - (i) Organize housing and sheltering organisation for homeless with Rest Centers for temporary relocation.
 - (ii) Public information and guidance on critical issues related to public safety.
 - (iii) Evacuation of population to safer areas.
 - (iv) Regular supply, storage and distribution of essential food materials and emergency clothing.
- (k) Proper Identification & Disposal of dead.
- (l) Mobilization of transport through requisition / hire / voluntary offers for Civil Defence Services and Monitor & Control, issue of petrol, oil, lubricants, spare parts, repair facilities, etc. for C.D. vehicles.
- (m) Earmarking and requisitioning of premises required for Civil Defence purposes.
- (n) A centrally controlled Disaster Warming System with provision to disseminate emergency messages to authorized recipients and the public simultaneously.

- (o) Enforcement of Lighting restrictions and other Civil Defence Rules & Regulations.
- (p) Protection of National monuments and articles of historical value.
- (q) Provision for removal of debris, repairs to slight damaged houses and demolition of dangerous structures.
- (r) Special measures for the protection of all important Industries and Essential Services with arrangements for quick repair and restoration.
- (s) Earmarking of hospitals, medical and nursing staff with Provision for Emergency beds.
- (t) Measures for emergency sanitation with provision for alternative supply of water for drinking, cooking, washing and sanitation.
- (u) Dispersal of industry and/or warehouses for essential commodities.
- (v) Reconnaissance, confirmation and disposal of unexploded explosive devices..
- (w) Static Camouflage of vital installations.
- (x) Provision for Salvage of property and it's safe custody.
- (y) Procurement, distribution, care, maintenance, accounting and inspection of C.D. equipment.
- (z) Care of animals.
- (aa) Co-ordination between various local authorities for mutual assistance arrangements.
- (ab) Publicity and Public co-operation.

Nature of Security Threat and Protection:

The threat from conventional weapons has remained the same albeit they have greater accuracy now. Though a limited number of advanced weapons like Precision Guided Missiles (PGMs) are available with our adversaries, they are likely to be used against vital strategic targets. Any security threat initially may rely more on conventional weapons and target strategic and economic centers of the country. This invariably create an impact on the civilian areas in the vicinity of such vulnerable defence installations.

It is expected that majority of weapons used by potential adversaries would still be in the range of 500 and 1000 kgs general purpose bombs. However, estimated collateral damage would be less because of greater accuracy due to advanced guidance / aiming systems. In view of the damages likely to be caused, there is a definite need to upgrade communication systems, improve capability to respond rapidly and provide faster medical relief through mobile medical teams.

Explosives are categorized as **High-order Explosives (HE)** or **Low-order Explosives (LE)**. HE produces a defining supersonic over-pressurization shock wave.

Examples of HE include TNT, C-4, Semtex, nitroglycerin, dynamite, and ammonium nitrate fuel oil (ANFO). LE creates a subsonic explosion and lack HE's over-pressurization wave. Examples of LE include pipe bombs, gunpowder, and most pure petroleum-based bombs such as Molotov cocktails or aircraft improvised as guided missiles. HE and LE cause different injury patterns.

Explosive and incendiary (fire) bombs are further characterized based on their source. "Manufactured" implies standard military-issued, mass produced, and quality-tested weapons. "Improvised" describes weapons produced in small quantities, or use of a device outside its intended purpose, such as converting a commercial aircraft into a guided missile. Manufactured (military) explosive weapons are exclusively HE-based. Terrorists will use whatever is available – illegally obtained manufactured weapons or Improvised Explosive Devices (also known as "IED's") that may be composed of HE, LE, or both. Manufactured and improvised bombs cause markedly different injuries.

The Standard of Protection

A four and half feet of reinforced concrete overhead cover can be considered to give necessary protection against a direct hit by explosive devices / bombs. Constructing such protection for a huge population is not economically possible. Much damage can be averted and many lives saved by providing protective shielding against lateral effects (blast and splinters) of any explosive device..

The level of protection planned for Civil Defence purposes will aim to shield against the combined effects of a 250 to 500 Kg. General Purpose Bomb exploding not nearer than 50 ft." The table below gives the thickness of various materials needed to give this standard of protection:-

	<u>Material</u>	<u>Thickness</u>
(i)	Mild steel plate	1½ inches
(ii)	Reinforced concrete	12 inches
(iii)	Brickwork or masonry (in cement and mortar)	13½ inches
(iv)	Unreinforced concrete	15 inches
(v)	Ballast or broken stone	24 inches
(vi)	Earth or sand	30 inches
(vii)	Solidly stacked timber	36 inches

All buildings up to a considerable distance around the point of explosion will suffer damage of some kind; but it may be said that the majority of well-constructed pucca building especially those of "framed" construction, will not (provided openings and weak panels or adequately protected or strengthened). be seriously affected by the effects of a 250 to 500 Kg. bomb falling in the close vicinity. The Incendiary devices may also be used by adversaries to destroy by igniting flammable substances.

Unexploded Bombs and Explosive Devices

The civilian population may be at threat from '**unexploded military bombs**' also referred to as (UXBs) which includes Mines, High Explosive bombs, Anti-personnel bombs, Artillery Shells, Incendiary bombs, Missiles, etc. People may also be at risk from **improvised explosive devices (IED)**; also known as a **roadside bomb** due to contemporary use) which is a homemade bomb constructed and deployed in ways other than in conventional military action. One may be constructed of conventional military explosives, such as an artillery round, attached to a detonating mechanism.

Detection and disposal of such Unexploded Bombs /Explosive devices will be carried out in three stages-

- (a) Preliminary reconnaissance for confirmation of location and detailed information.
- (b) Allotment of priority for disposal; and
- (c) Disposal.

All operations connected with the detection and disposal of UXB / IED on Army, Naval and Air Force establishment/property are the responsibility of the respective services.

In the case of Military UXBs reported to exist on civil areas, railways and ports, the Civil Defence Organisation concerned, will be responsible for the preliminary reconnaissance and confirmation of location and gathering detailed information. As regards IED's the disposal will be carried out by Police, Bomb Disposal Squad and Civil Defence Organisation will provide support for protection of population.

The following exceptions will be dealt as under:-

- (a) In the case of crashed aircraft of bombs on Air Force property the responsibility of disposal will be that of the I.A.F.
- (b) The disposal of unexploded bombs, shells or mines below the High Water mark on the coasts and in all docks, harbor basins, waters adjacent to wharves, jetties and such water covered areas as affects the working or safety of vessels in navigable waters will be the responsibility of the Mine Disposal Clearance Diving Units of the Navy.

The State Government will be responsible for recommending the priority for the disposal of UXB's which have fallen within their territory and will communicate the existence of UXBs and priority accorded for their disposal to the local Divisional/Area Commander of the Armed Forces during the War Emergency. In case of simultaneous demands from two or more State Governments according similar priorities for the disposal of UXBs in their respective areas, the local Military Division/Area Commander dispatching the Bombs disposal squad units under his control for the disposal of the bombs, will be final authority to decide the order of priority for disposal.

Psychological Impact and Preparedness

During War emergencies, the adversary may indulge in propaganda warfare to induce a Psychological impact on the populace so as to create loss of confidence in the government. This may also happen during any crisis whether Natural or Manmade. Civil Defence preparedness training will aim to implement awareness campaigns prior to an actual crisis event that will be designed to set the appropriate expectation for the crisis/disaster while enhancing the behavioral response to crisis. This type of training is usually instituted as part of disaster event training. The goals of the preparedness training include:

- Setting the appropriate expectations for the actual experiences
- Increasing cognitive resources relevant to a crisis
- Teaching behavioral stress management and personal coping techniques

The main objects of Civil Defence will be to maintain high morale to be able to cope with psychological attrition in the following manner.

1. **High standards in Civil Defence performance** – This will restore people's confidence in Civil Defence Services, reduce losses and deprive the adversary of any advantage over local administration;
2. **Close Interaction & Support** – The CD services, specially the Warden Services should be able to exercise personal influence over people's behaviour;
3. **Provision of adequate welfare services** - It will help to a great extent in softening the outraged feelings of people and hence make less amenable to enemy propaganda;
4. **Unified efforts by community leaders & other agencies** – When people find that everyone around them is hopeful, their hopes will also revive; and
5. **Training for building Resilience** – The instinct of self preservation is the highest instinct, which should be exploited fully. A self-relying man will take the losses coolly and stoically and is less liable to blame the authorities for everything.

LIGHTING RESTRICTONS FOR WAR EMERGENCIES

Lighting restrictions are an important feature of the precautionary measures to be taken as a form of security against air attacks. With significant change in the threat perception and latest technological advancement, the current procedure of black-out poses considerable problems of high-speed aircraft and the anxiety level of the enemy pilot in the cockpit would be more, if the area is dark. Therefore black out will be carried out as per need basis and there is an obligation on those controlling lights, i.e. the police and air raid wardens, to observe and enforce the restrictions. The standard to be

achieved is that no light shall be visible at a height of 5,000 ft, above ground level under normal visibility conditions.

Draft Order- A draft lighting restriction order is at Appendix -A. If this order is generally applied, the necessary standard will be achieved.

Traffic Movement- In order to facilitate the movement of traffic and pedestrians throughout the darkled areas, certain precautions should be taken. An indication of the nature of these precautions is included in Appendix - B.

It is not practicable to achieve an advanced stage of lightning restrictions all at one time. The best way of achieving a high degree of restriction is to approach it in gradual stages. The number of street light should be reduced to the absolute minimum and the power of the remaining lights reduced as far as possible and then so screened that no light is thrown above the horizontal and no appreciable light is reflected on the ground. By this means the public becomes used to these restrictions and to carrying on their normal activities with less and less light.

Illuminated Advertisements - All external illuminated advertisements and unnecessary external lights are prohibited in the vulnerable areas and all external light must be shaded or extinguished according to local rules.

Factories - All factories will comply with the local regulations on lighting restrictions, but such factories that are engaged on work of national importance should also arrange for a crash black-out which means the extinguishing of all lights simultaneously. The crash black-out will come into effect on receipt of the preliminary caution or action warning whichever is earlier and lights may be turned on again at the Cancel Caution. A note for the guidance of factories and industries is given at Appendix - C.

Removal of Roof Signs - It is important to take all possible steps to make less easy the identification of military objectives by day as well as by night. Accordingly arrangements should be made to remove or screen signs on the roofs of buildings which might give any indication to hostile aircraft.

These rules will apply during every Air Raid practices and continuously after an emergency has arisen and will not apply to lighting in Railways and Docks and in certain factories. The restrictions on lighting on these are separately provided for.

Appendix A to Lighting Restrictions

DRAFT ORDER ON LIGHTING RESTRICTION FOR USE UNIFORMLY THROUGHOUT INDIA

Whereas the Government ofhas by Notification No.....the.....order that the powers conferred on it by Civil

Defence Act, 1968 ,shall be exercised on its behalf by the District Magistrate in a District within his jurisdiction.

Now therefore , in exercise of the powers conferred upon me by the said Notification. I..... District Magistrates do hereby make the following orders which shall be enforced from the(specify the date) in the whole of the District.

Preamble - This order is intended to enable the people to protect themselves and their towns from enemy aircraft at night, without incurring the discomfort of total darkness.

A small glow of light outside houses, etc. is permitted in the order. The reduced lighting permitted in this order to the general public may continue even during on Air Raid.

I. Street lights and public lighting - All public lighting shall be reduced to a minimum compatible with public safety, to the satisfaction of an officer appointed by the District Magistrate in this behalf.

No direct ray from a street lamp shall be emitted except at a downward slope.

Light thrown on the gourd shall not be greater than that from a 25 watt bulb at a distance of 20 ft. or an ordinary hurricane lantern at a distance of 6 ft.

II. Lights in and on Buildings or Open Ground -

1. No light shall be used in any building or premises appurtenant thereto, unless it is so placed or so screened by opaque material, that –
 - a. No ray direct from the source of light, or reflected from a bright surface, is visible outside the roofed portion of the building;
 - b. No glare is thrown upwards outside the building or any part of it;
 - c. The total light reaching the outside of the building in any place is not greater than that thrown on the ground by a 25 watt bulb at a distance of 20 ft. or a ordinary hurricane lantern held at a distance of 6 ft.
2. No light whether for decoration advertisement or any other purpose, shall be exhibited on the outside of any building or constriction or on any plot of land.

III. Light on Vehicles –

- (a) **Motor Vehicles** -- All lights capable of throwing a beam, carried on a motor vehicle, shall be screened by one of the following methods :-
 - i. By passing dry brown paper over the glass, one thickness on the lower half, and two thickness on the upper half.

- ii. By inserting behind the glass a cardboard disc covering the whole area with a horizontal slit 1/8 wide, half an inch below the centre of the bulb and the reflector should be screened by a white cone of paper placed so that no light is reflected by the reflector itself.
- iii. By using a standard headlamp mark* complying with the specifications obtainable free from the District Magistrate.

(b) **Other Vehicles** –

- i. Candle lamps and all lamps as usually on carts as and of less power than an ordinary hurricane lamp may be unshaded.
- ii. Hurricane lamps will be painted black or blue down to the level of the flame
- iii. No white light will be visible at the rear of the vehicle.
- iv. No light of greater power than that mentioned above shall be used.

(c) **Bicycles** –

- i. All lamps will be screened by one thickness of dry brown paper pasted over the glass.

IV. Lights carried by hand - No light brighter than that of an ordinary hurricane lamp with the glass painted black or blue down to the level of the flame or candle lamp shall be carried or kept in any street or open place or outside the walls of a roofed building.

Torches must conform to the above standard and must also be screened by paper pasted all over the glass. No torch shall be carried or used outside a walled building during an air raid or practice exercise except by Magistrates, Police, Civic Guards and Civil Defence Services.

V. The rules will apply --

- (a) during every Air Raid Practice.
- (b) continuously after an emergency has arisen.

The dates and times of application will be prescribed by the District Magistrate.

- VI. Any person contravening any provision of this order shall on conviction by a Magistrate be liable to rigorous imprisonment which may extend to six months and also to fine which may extend to Rs.500.
- VII. This order does not apply to lighting on Railways and Docks and in certain factories the lighting of these is separately provided for.

Excepting such factories as are given special exemption orders, all other factories must comply with the general restrictions contained herein.

VIII. This order does not apply to military vehicles for which separate rules exist.

IX. The District Magistrate may exempt from this order, on such terms as he may prescribe, special lighting required -

- (1) for or incidental to the production or movement of war material
- (2) for Police, Fire Fighting or Civil Defence vehicles.

Any such exemption shall be reported forthwith to the Government of the State.

X. **Definition** - An ordinary hurricane lamp is one given no more light than a hurricane lamp burning a wick of $\frac{3}{4}$ inch width in kerosene oil.