
SURVIVAL MANUAL

A Comprehensive Practical Guide for Emergencies:
War, Drones, Cataclysms, Disasters, Blackouts, Digital Threats

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Print edition · Works without electricity or internet · Keep with your emergency go-bag · First 60 seconds on the back cover

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Important Notice: This manual contains general emergency preparedness guidelines compiled from open civil defense and first aid sources (State Emergency Service of Ukraine [SESU/DSNS], Ministry of Health, Red Cross, international tactical emergency casualty care [TECC] and first aid protocols). It does not replace professional medical care, official instructions from civil defense authorities, rescue personnel, or licensed physicians. In a real emergency, always follow the directives of official emergency services when available. Practical first aid skills should be trained in hands-on courses in advance — reading is not a substitute for muscle memory and physical drills. Drug dosages are provided for reference according to official clinical protocols; consult official medication packaging inserts whenever possible.

Review Status: In versions 2.2–2.3, facts, dosages, and emergency numbers have been cross-checked against public official sources (Appendix D), but this guide has not been peer-reviewed by a physician, EOD technician, or civil defense specialist. Prior to mass distribution or field deployment, professional review is recommended: a certified first aid instructor (Chapters 7, 21, 22.5), a physician (drug dosages), and an emergency services/EOD specialist (Chapters 3–6). Threat environments evolve — re-verify all critical guidance every 6–12 months.

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CHAPTER 1

Foundations of Survival: Rules and Psychology

Survival is first and foremost about making the right decisions in the right order. This chapter outlines a priority framework that works in any disaster: from armed conflict to severe flooding.

1.1. The Rule of Threes

A classic survival rule that defines vital priorities. On average, a human can survive:

Time	Without What	Action Takeaway
3 minutes	without oxygen (or with massive arterial bleeding)	Top priority — protect the airway and stop massive bleeding immediately
3 hours	without shelter from extreme cold or heat	Shelter and thermoregulation take precedence over food and water
3 days	without water	Water before food. Procure and disinfect drinking water daily
3 weeks	without food	Hunger is painful, but does not kill rapidly. Never risk your life to forage for food

The primary beginner's mistake: under acute stress, people instinctively scramble for food, even though the immediate lethal threats are hypothermia overnight or contaminated water. Always calculate your priorities using the Rule of Threes.

1.2. The STOP Method — Regaining a Clear Mind

The STOP method is not meant for the split seconds when an active threat is immediately endangering your life. If you are under incoming fire, direct flame, smoke, or rising floodwaters, act immediately: drop to the ground, seek cover, or evacuate the impact zone (Sec. 1.4). Once you reach relative safety (inside a shelter, out of the danger zone) or realize you are lost, pause and apply STOP:

1. **S — Stop.** Do not flail about or run blindly. Panic is the primary killer. Sit down, take 10 deep, controlled breaths (inhale for a count of 4, exhale for a count of 6). This physiologically dampens adrenaline spikes.
2. **T — Think.** What exactly happened? What is the immediate threat to life right now? Who is with you, and is anyone injured?
3. **O — Observe.** What assets do you have: gear, water, companions, cover, current weather, daylight remaining? Conduct a thorough inventory of your pockets and bags.

4. **P — Plan.** Formulate a clear, straightforward plan for the coming hours based on survival priorities: immediate safety → medical care → shelter → water → signaling → food. Execute one step at a time.

1.3. Survival Psychology

What Happens to the Brain in a Disaster

According to observations by British psychologist Dr. John Leach (the "10–80–10" rule), in acute high-stress emergencies, 70–80% of individuals freeze into shock or act haphazardly, roughly 10–15% panic uncontrollably, and only 10–15% retain cognitive clarity and act rationally. The primary objective of emergency training is to place yourself in that final 10–15%. This is achieved not through bravado, but through **pre-planned procedures and practiced drills**: under extreme stress, the human brain executes only what it has already rehearsed.

Practical Self-Regulation Techniques

- **Tactical Box Breathing:** Inhale 4 sec — hold 4 sec — exhale 4 sec — hold 4 sec. Doing 4–6 cycles lowers your heart rate and restores executive brain function.
- **Micro-Tasks:** In overwhelming despair, do not dwell on "how to survive the entire winter." Focus on "right now, I am collecting water." Completing one small, concrete task restores a sense of agency and control.
- **Vocalizing Actions (Say It Out Loud):** Announce out loud to yourself and others what you are doing ("I am checking everyone for bleeding. Now we are gathering the documents"). This structures group actions and quells contagious panic.
- **Daily Routine:** In an extended crisis, a rigid schedule (waking up, assigned work, eating, sleeping at fixed times) is the strongest psychological anchor, especially for children.
- **Caring for Others:** Taking responsibility for a child, an elderly relative, or even a pet significantly enhances the innate will to survive.

Warning signs of psychological crisis in yourself or others: freezing or catatonia lasting more than several minutes, pointless repetitive actions, refusing food and water for over 24 hours, saying "it's all hopeless." Actions: provide physical warmth, a warm sweet drink, assign a simple concrete task, maintain continuous verbal and gentle physical contact. Never leave the person alone.

1.4. Universal Action Protocol in Any Disaster

1. **Immediate Safety.** Evacuate the active danger zone: away from fire, rising floodwaters, artillery strikes, or toxic smoke clouds. Direction: from fire, smoke, and hazardous gas — move crosswind (perpendicular to the wind); from floodwaters — move uphill to higher ground (Chapter 19).
2. **Casualty Assessment.** Check those around you: massive hemorrhage, responsiveness, breathing (Chapter 7).
3. **Secondary Threat Assessment.** Watch for earthquake aftershocks, secondary "double-tap" strikes, structural collapses, gas leaks, and downed power lines.
4. **Communications.** Send a concise text message to family: "Alive, at [location], moving to [destination]." Then conserve battery immediately: enable power-saving mode, keep screen brightness at minimum, avoid voice calls and video. Airplane mode should only be used when battery is critically low or there is zero network coverage; in that case, toggle network on according to a pre-agreed schedule (Sec. 14.4) to receive incoming replies and emergency alerts.
5. **Resource Procurement.** Grab water, vital medications, warm clothing, and documents — only if they can be retrieved without risking life.
6. **Assembly Point.** Move to your pre-agreed family rally point.

1.5. Family Emergency Plan

Draft and print a plan together with all family members. Everyone must know it by heart.

- ☐ **Rally Point #1** — Right outside the home (e.g., a specific tree in the courtyard) in case you need to evacuate the building immediately.
- ☐ **Rally Point #2** — Within the neighborhood (a specific school, church, or store) if your immediate street or block is inaccessible.
- ☐ **Rally Point #3** — Outside the city (relatives' home in a rural area, specific address) if the entire city must be evacuated.
- ☐ **Out-of-Area Contact:** A designated relative living in another city or abroad whom all family members contact to report their status if local communications fail or direct calls do not go through.
- ☐ **Assigned Roles:** Who grabs the go-bag, who escorts the children, who secures pets, and who turns off gas and water valves.

- ☐ **Physical Paper Copies:** Emergency phone numbers for all relatives and addresses of assembly points carried in each person's pocket and go-bag (batteries fail).
- ☐ **Rehearsals:** Walk the routes to your shelter and assembly points on foot every six months, both during the day and after dark.

1.6. Priorities for Sustained Survival in a Prolonged Crisis

If a crisis drags on for weeks or months (military occupation, long-term blackout, collapse of municipal infrastructure), allocate your efforts according to this hierarchy:

Priority	Objective	Minimum Standard
1	Shelter Security	Protection from shelling and weather, low profile, secondary emergency exit
2	Water	4 L/person/day, including 2 L of disinfected drinking water
3	Warmth	One insulated room or sleeping area, dry clothing
4	Medical Care	First aid kit, 30+ day stockpile of essential maintenance medications
5	Food	1,800–2,200 kcal/person/day, systematic stock rotation
6	Sanitation	Improvised latrine, hand hygiene, waste disposal (Chapter 16)
7	Information	Battery-powered radio, scheduled news monitoring
8	Community	Coordination with neighbors, shared watch shifts, skill pooling

Remember: Lone-wolf survival is a myth. Every documented historical case of long-term crisis survival is a story of mutual aid and cooperation. A cohesive group with assigned roles (medic, cook, guard, mechanic) is exponentially more resilient than any lone individual.

CHAPTER 2

Emergency Go-Bag and Home Preparedness

An emergency go-bag (bug-out bag) is a backpack that allows you to evacuate your home in under 2 minutes and survive autonomously for at least 72 hours. It must remain packed and stationed by your exit door at all times.

2.1. Packing Principles

- **Backpack, Not a Duffle Bag:** Your hands must remain free. Aim for a volume of 35–50 L per adult, weighing no more than 20% of your body weight (10–15 kg / 22–33 lbs).
- **One Bag per Person:** Every adult must carry their own backpack with a complete core essentials kit, because family members can become separated.
- **Waterproofing:** Seal everything susceptible to water damage (documents, matches, electronics, medications) inside heavy-duty zip-lock bags.
- **Rotation:** Twice a year (e.g., when daylight saving time changes), inspect expiration dates on rations and medications, and check power bank charge levels.
- **Accessibility:** Place high-priority items (headlamp, vital documents, trauma kit) in top and outer compartments.

2.2. Complete Go-Bag Checklist

Documents and Cash (Top pocket, sealed in a waterproof bag)

- ☐ National passport, ID card, international passport
- ☐ For men aged 18–60 (and women subject to military registration in Ukraine) — military registration document: paper booklet or printed electronic document from "Reserve+" with QR code (valid for 1 year — renew during routine bag rotation). Under mobilization laws, this must be carried alongside your passport and presented upon request to military draft officials (TCK), police, or border guards; phone batteries die, so a physical printed copy belongs in the bag
- ☐ Birth certificates of children, marriage certificate
- ☐ Property titles, vehicle registration, employment record book (or certified copies)
- ☐ Medical records: vaccination cards, prescriptions, documentation of chronic conditions
- ☐ Photocopies of all personal documents in a separate sealed pouch + digital scans on an encrypted USB drive

- ☐ Cash in small denominations (sufficient for 1–2 weeks of living expenses) + reserve in hard currency (USD/EUR)
- ☐ Bank cards, written list of family phone numbers on paper
- ☐ Recent physical photos of all family members (for missing person searches)

Water and Food (For 72 hours)

- ☐ Water: 1.5–2 L in durable bottles — this covers less than one full day (minimum intake is 2 L/day, Sec. 8.1); carrying more is too heavy, so plan to procure and purify water en route
- ☐ Water purification tools: disinfection tablets or a hollow-fiber filter straw (e.g., LifeStraw/Sawyer)
- ☐ Ready-to-eat rations requiring no cooking: nuts, dried fruit, energy bars, hardtack/crackers, pull-tab canned meats/fish, dark chocolate
- ☐ Caloric target: ~2,000 kcal/day per adult
- ☐ Stainless steel mug or compact 0.7–1 L mess kit (suitable for boiling over an open flame)
- ☐ Spoon/spork, folding knife, manual can opener

First Aid Kit (Detailed breakdown in Section 7.16)

- ☐ Tourniquet (windlass style), compression bandages, hemostatic gauze
- ☐ Personal prescription medications for 14–30 days (the single most critical medical item!)
- ☐ Pain relievers, fever reducers, antiseptic solution, assorted adhesive bandages
- ☐ Anti-diarrheal medications and oral rehydration salts (ORS)

Clothing and Warmth

- ☐ Spare underwear and socks (2–3 pairs, wool or synthetic blend)
- ☐ Thermal base layer (in winter), fleece jacket/pullover
- ☐ Rain poncho or waterproof jacket (also serves as a windbreaker)
- ☐ Warm beanie, work gloves, buff/neck gaiter (even in summer — nights get cold)
- ☐ Mylar emergency rescue blankets (2 units, silver, ~60 g each)
- ☐ Sturdy footwear already broken in, either worn or strapped to the pack

Lighting, Communications, and Tools

- ☐ LED headlamp + spare batteries (standard AA/AAA are best for universal availability)
- ☐ Power bank (10,000–20,000 mAh), fully charged, with appropriate charging cables
- ☐ Battery-operated portable radio receiver (FM/AM) — primary source of official information during communications blackouts
- ☐ Emergency whistle (essential for signaling under rubble — saves your voice)
- ☐ Waterproof matches + 2 disposable lighters + ferrocerium fire striker
- ☐ Multi-tool or sturdy folding knife
- ☐ Duct tape / reinforced gaffer tape (5–10 m wrapped around a water bottle)
- ☐ 550 paracord or utility cord (10–15 m)
- ☐ Sewing kit (needles, heavy-duty thread, safety pins)
- ☐ Waterproof notepad and pencil (writes in freezing temperatures and wet conditions)
- ☐ Particulate respirator mask FFP2/FFP3 (protection against building collapse dust and heavy smoke; does not protect against carbon monoxide)
- ☐ Protective safety goggles or standard sunglasses

Hygiene

- ☐ Wet wipes (2–3 packs — serve as a waterless bath)
- ☐ Hand sanitizer, bar of soap in a travel case
- ☐ Toothbrush, travel toothpaste, toilet paper (core removed and flattened)
- ☐ Feminine hygiene supplies, diapers for infants
- ☐ Heavy-duty 50–100 L trash bags (20 count — also useful as emergency ponchos, insulation, and rainwater collection)

Sleep Gear

- ☐ Compact sleeping bag (rated to comfort 0°C / 32°F) or 2 emergency foil blankets + fleece blanket
- ☐ Closed-cell foam sit pad or sleeping mat (ground insulation is critical)

2.3. Specialized Additions

For Whom	What to Add
Children	Small comfort toy, sweets, an ID card with the child's full name and parents' emergency contact numbers placed in their clothing pocket, family photo. Children older than 5 should carry a small personal daypack
Elderly	Spare reading glasses, hearing aid + spare batteries, 30-day supply of vital medications, walking cane, printed list of chronic medical conditions and prescribed dosages
Infants	Baby formula, bottles, diapers for 3+ days, baby wipes, baby sling or carrier (leaves both hands free)
Pets	Pet carrier, sturdy leash, 3-day supply of pet food, veterinary passport, collapsible water bowl, bottled water
Chronic Illness	Insulin + cooling travel pouch, blood pressure monitor, glucometer, inhaler — tailored to medical diagnosis. 30+ day supply of medications

2.4. EDC — Everyday Carry Essentials

Everyday Carry (EDC) is the absolute baseline gear you carry on your person every single day in pockets or a small bag, because disasters do not wait for you to reach your go-bag:

- Smartphone + compact power bank
- Identity document (or laminated copy), cash
- Keychain flashlight, emergency whistle
- Folding pocket knife or multi-tool (where legally permissible)
- **Tourniquet (CAT or SOF-T, certified), hemostatic dressing, and a pair of nitrile gloves** — in wartime conditions, this is the cornerstone of EDC: massive hemorrhage causes death within minutes, long before emergency medical services can arrive (Sec. 7.2). Carry it so it can be deployed with one hand; without muscle memory, a tourniquet is useless — drill applying it to yourself and others
- Adhesive bandages, 1–2 days' supply of personal critical prescription medications
- Lighter

2.5. Home Supplies for 2–4 Weeks

A go-bag is for rapid evacuation. However, in most large-scale crises, sheltering in place at home is statistically safer. This requires home contingency stocks:

Water

- **Baseline standard: 4 L per person per day** (2 L for drinking + 2 L for cooking and basic hygiene). A family of 3 for 2 weeks requires ~170 L (approx. 45 gallons).
- Storage: commercial 5–6 L sealed bottles (shelf life 6–12 months) or food-grade jerrycans treated with regular chlorine bleach (rotate every 6 months).
- At the first warning of impending municipal water shutdown, immediately fill the bathtub, all stockpots, basins, and spare bottles.

Food (Sample 2-Week Stock for 1 Person)

Food Item	Quantity	Notes
Grains (buckwheat, rice, rolled oats)	4–5 kg	Store in airtight glass or metal containers
Pasta	2 kg	Cooks fast — conserves fuel
Canned meat and fish	10–14 cans	Pull-tab cans, essential protein
Canned vegetables and legumes	7–10 cans	Ready to eat cold without cooking
Cooking oil	1 L	Dense calories + cooking fat
Sugar, honey	1 kg	Fast-acting carbohydrates and energy
Salt	0.5 kg	Electrolytes + food preservation
Dried fruit, nuts	1 kg	High-calorie, ready to eat
Hardtack, dry crackers	1 kg	Long-lasting bread substitute
Tea, coffee, cocoa	personal preference	Psychological comfort and morale
Multivitamins	1 pack	Prevents nutritional deficiencies on a restricted diet

The FIFO rotation principle: Buy what you eat normally, stocking +20–30% above immediate need. Place newly purchased goods at the back of the pantry shelf, moving older items forward for daily consumption. This guarantees food supplies never expire and requires no dedicated survival budget.

Other Household Essentials

- ☐ Portable camping gas stove + 4–6 butane/propane canisters (cook without electricity or municipal gas; use **ONLY** with an open window due to carbon monoxide risk)
- ☐ Candles (10+ units), kerosene lamp or battery/rechargeable LED camping lantern
- ☐ AA/AAA batteries (20 each), high-capacity power banks kept fully charged
- ☐ Matches (10 boxes stored in an airtight screw-top jar)
- ☐ Heavy-duty polyethylene sheeting + reinforced duct tape (to seal blown-out windows, weatherproof, or seal rooms)
- ☐ Laundry bar soap, washing powder, unscented liquid chlorine bleach (plain household bleach without fragrance or thickeners — used for both surface sanitation and emergency water disinfection, Chapter 8)
- ☐ 5-gallon buckets with lids x2 (one for water transport, one for improvised dry toilet)
- ☐ Fire extinguisher (ABC dry chemical), sand bucket if using stove heating
- ☐ Tools: pry bar / crowbar (to clear rubble or force jammed doors), shovel, camp axe, hand wood saw

2.6. Preparing Your Home

Installing a smoke detector, keeping a fire extinguisher ready, and knowing two separate exit routes also protect against one of the most common residential killers: household fires (Sec. 10.5).

- **Windows:** Tape will not prevent glass from shattering under blast overpressure, but it holds sharp fragments together — and flying glass shards cause the majority of lacerations. A simple single "X" tape pattern is virtually useless: cover the maximum surface area possible (dense crisscross grid of tape, clear anti-shatter window film, or strips of fabric glued with paste) including the window frame perimeter. Heavy anti-shatter film is the most effective. Add thick blackout curtains and follow the cardinal rule: never stand near a window during an air raid alert. Sleep at least 2 meters (6 feet) away from windows; during mass missile/drone barrages, sleep in the two-wall zone (Sec. 3.3).

- **Shutting Off Utilities:** Every capable adult in the household must know the exact location and operation of shut-off valves for natural gas, incoming water mains, and the main electrical breaker panel. Clearly label all valves and switches with a permanent marker.
- **Safe Room:** Designate an interior room with no external windows (hallway, corridor, bathroom, walk-in pantry) that satisfies the two-wall rule (Chapter 3).
- **Fire Safety:** Keep a certified fire extinguisher in the kitchen, install working smoke and CO alarms, and plan an unobstructed escape route out of every room.
- **Spare Keys:** Leave a set of apartment keys with a trusted neighbor; establish mutual wellness check protocols.

CHAPTER 3

Shelling, Air Raids, and Shelters

The primary killers during bombardments are not direct impacts, but flying shrapnel, blast shockwaves, and shattered glass. Two factors save lives against them: selecting the proper shelter and reaction speed.

3.1. Types of Threats and Reaction Times

Threat	Warning Signs	Reaction Time	Immediate Actions
Artillery / mortars	Whistle, rustling sound immediately before detonation; incoming salvoes	Seconds	Drop to the ground instantly, then crawl to cover
Cruise missiles	Air raid sirens 20–60 min prior; loud, rising jet/whistling roar	Minutes after the siren	Move to a shelter adhering to the two-wall rule or into a basement
Ballistic missiles (Iskander, Kinzhal, KN-23)	"Ballistic threat" alert — followed almost immediately by explosions	1–3 minutes or zero	Do not run across the city: take shelter immediately in the nearest two-wall zone. At night — already sleep inside it (Sec. 3.3)
Long-range strike drones (Shahed / Geran, jet-powered Geran-3, Banderol, Dan-M / Dan-T)	Piston-engine — low buzzing "moped / lawnmower" roar, flying in straight lines in night waves; jet-powered — turbine whistle, 300–700 km/h (185–435 mph), warning times significantly shorter	Minutes to tens of minutes; jet-powered — minutes	Do not look out windows, do not use flashlights/lights, take cover immediately (jet drones are much harder to intercept — head to shelter, do not stay to "watch"). Intercept debris falls over miles
FPV drones and munition drops (Frontline zone 30–40 km / 20–25 mi)	High-pitched whining/buzzing, drone hovering or actively tracking; no sirens	Seconds	Seek solid overhead cover (building entrance, concrete bus stop, basement), do not run in a straight line — Chapter 4
Guided aerial bombs (KAB / glide bombs) 250–3,000 kg	Air alert, roar of combat aircraft; detonation without preceding whistle	Minutes	The two-wall rule does not work: only deeply recessed underground shelters (basement, underground parking, subway). Destroys entire building sections
Thermobaric munitions (TOS, "vacuum" warheads)	Intense blinding flash, prolonged pressure wave, widespread fireball	Seconds	Recessed underground shelter with sealed entryways: the shockwave and oxygen-depleting fireball penetrate open vents and windows
Cluster munitions	Series of rapid, widespread popping detonations across an area	Seconds	Drop prone; afterward, do not touch submunitions ("bells" / "shuttlecocks")

			sized like a battery): up to 30% fail to detonate on impact (Chapter 5)
Small arms fire	Crack and snap of gunfire	Instant	Drop prone behind solid cover: concrete, curb, earthen berm. A vehicle body is not cover — bullets penetrate car doors and glass; only the engine block stops bullets, so drop behind the wheel on the engine side. Do not remain near the vehicle: it attracts incoming fire — crawl away immediately

Rule: If you hear a whistle or a rapidly intensifying roar — do NOT look up at the sky and do NOT run. Drop flat to the ground **WHEREVER YOU ARE**, face down, feet pointed toward the explosion, mouth slightly open (protects eardrums and lungs from blast overpressure), hands covering the back of your head and neck.

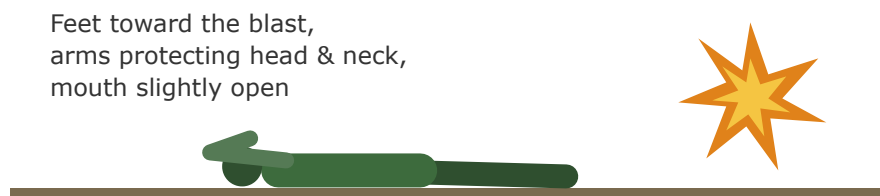


Fig. 3.1. Defensive posture during sudden shelling in the open

3.2. The Two-Wall Rule

If a certified bomb shelter is unavailable, the safest location in an apartment is determined by the two-wall rule: there must be **at least two solid load-bearing walls** between you and the street outside. The first wall absorbs the initial blast wave and shrapnel, while the second wall stops secondary debris and structural fragments blown off the first wall.

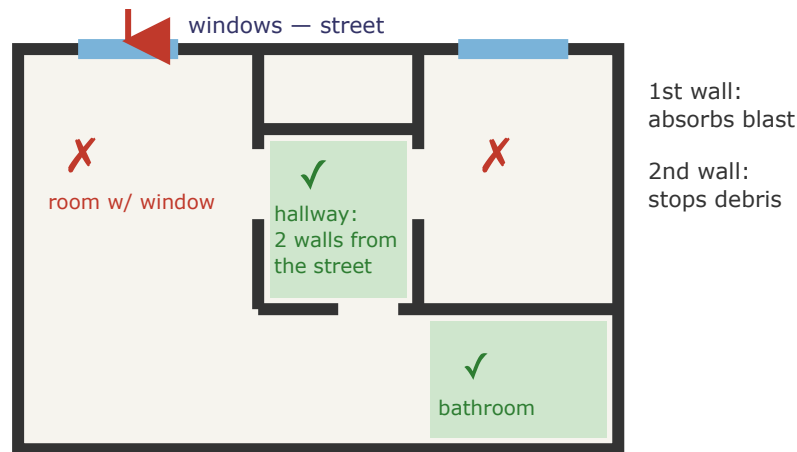


Fig. 3.2. Two-wall rule: safe zones within an apartment (green) — interior hallway and windowless bathroom

- **Best locations:** interior hallway/corridor, windowless bathroom, pantry/closet, space **underneath** reinforced concrete stairs.
- **Avoid:** rooms with windows, balconies, elevators, stairwells and flights of stairs with glazing — it is dangerous to stand **on** stair landings, not **under** them: stair flights are among the first elements to collapse and stairwells are full of glass, whereas the space under a solid concrete flight is one of the sturdiest structures in a building; top floors (drones and missiles strike from above into roofs and top apartments); lower floors adhering to the two-wall rule are substantially safer (Sec. 3.4).
- **Prepare windows in advance:** reinforce with plywood or corrugated metal sheets; if unavailable, use thick cardboard and carpets. This significantly reduces flying glass shards and fragment dispersion.
- **Keep ready in your safe zone at all times:** water, blankets, flashlight, power bank, first aid kit, foam mat or folding chairs.
- **Cast iron bathtubs:** provide extra shrapnel protection — in an extreme crisis, you can lie inside the tub, covered with a thick mattress or heavy blanket.

3.3. Action Protocol During an Air Raid Alert

1. Dress appropriately for current outdoor weather (even at night — put on sturdy shoes and a jacket), grab your emergency go-bag.
2. If time permits (alert is not "ballistic"): shut off natural gas, electrical appliances, water mains, and close all windows and curtains.

3. Move to your designated shelter. If the shelter is more than a 5-minute walk away and explosions are already audible, or if a ballistic threat is declared — remain in your two-wall zone: running across the city is far more dangerous.
4. Inside the shelter: do not sit directly opposite entrance doors; stay close to load-bearing columns and reinforced walls.
5. Exit only after the all-clear signal is officially given. Following a missile or drone strike, a secondary "double-tap" strike frequently targets the same coordinates within 10–40 minutes, and sometimes 1–2 hours later (targeting arriving emergency responders) — never rush to the impact site to "take a look."
6. Artillery or mortar fire without sirens: remain in shelter for at least 40 minutes after the last recorded detonation — bombardments frequently resume after brief lulls.

"Ballistic Nights": How to Live for Months Under Nightly Attacks

- During mass barrages, ballistic missiles afford only 1–3 minutes of warning, and blast shockwaves and shattered glass are the primary killers inside residential flats. The practical solution is to **sleep directly in the two-wall zone** rather than sprinting out every night: place a mattress in the hallway, children's bedding in the bathroom, or a foam mat bed for elderly family members.
- Keep permanently stationed by your sleeping spot: shoes, jacket, flashlight, phone on charger, water, and go-bag. This eliminates 90% of nighttime panic.
- Never approach windows to "watch" explosions or air defense interceptions: secondary missiles or falling debris arrive in split seconds.
- In air alert mobile apps, distinguish between threat categories: "ballistics" = take cover in the two-wall zone immediately; "drones" = typically affords time to reach a nearby shelter, but jet-powered drones arrive within minutes (Sec. 4.7); "MiG-31K takeoff" = threat of Kinzhal aeroballistic missiles across the entire country, air sirens sound nationwide including rear regions: do not wait for launch confirmation — head to shelter immediately while you have several minutes; after launch is confirmed, the missile reaches its target in 2–7 minutes — do not run through the streets, take cover in the two-wall zone at once; "tactical aviation / glide bomb (KAB) threat" — in frontline and border regions — only deep underground shelters (basements, underground garages); the two-wall rule does not protect against glide bombs.
- Sleep management: assign one designated "night sentry" to monitor alarms for the family while others sleep soundly (Sec. 21.5). Chronic sleep deprivation over

weeks degrades health and cognitive judgment far worse than a single sleepless night.

3.4. Choosing a Shelter (Ranked Best to Worst)

#	Shelter Type	Protects Against	Notes
1	Certified bomb shelter, subway system	Direct hits, shockwave, shrapnel	The best option if located nearby
2	Basement of a solid building with 2 exits	Shrapnel, shockwave, partial building collapse	Verify in advance: ventilation, 2 separate exits, no overhead gas pipes. Basements of prefabricated panel buildings ("panelki") and Soviet "khrushchovka" flats do not qualify: concrete slabs pancake, and basements are cramped and unsealed
3	Underground parking, pedestrian underpasses	Shrapnel, shockwave	Stay well away from vehicle ramps and entrances
4	Ground floor, two-wall zone	Shrapnel, shattered glass	When there is no time or no accessible basement
5	Open terrain: ditch, roadside culvert, bomb crater, depression	Shrapnel (travels upward from ground level)	Lie below ground level; fresh craters serve as useful depressions, but the belief that "lightning never strikes the same place twice" is a myth

Never seek cover: under trucks or passenger cars (fuel tanks, thin sheet metal), near shop display windows and glass facades, under trees (shrapnel shears heavy branches; against drones, however, foliage helps, Sec. 4.3), near gas stations, electrical substations/transformers, or exposed gas mains.

3.5. Direct Hit on a Building / Trapped Under Rubble

You Are Inside a Building Near a Detonation

1. Ensure there is no natural gas leak (smell of gas, hissing sound). If leaking — do not flip light switches or ignite flames, open windows if possible, and evacuate immediately.
2. Inspect yourself and family members for wounds — under acute stress and adrenaline, severe injuries may not feel painful (Chapter 7).

3. Evacuate via stairs, never the elevator. Put on sturdy footwear without exception (broken glass everywhere).
4. Grab your go-bag and documents only if it takes seconds, not minutes.

You Are Trapped Under Rubble

1. Do not panic; conserve energy and avoid frantic flailing. Breathe steadily and shallowly through clothing fabric if the air is dusty.
2. Do not ignite lighters or matches (risk of leaking gas). Do not shift loose heavy debris directly above you.
3. Reinforce your survival pocket: if possible, prop up fallen slabs above you using broken furniture fragments.
4. Tap metal against metal or concrete in distinct rhythmic series of 3 strikes — pause — repeat. Rescue crews periodically enforce strict "minutes of silence" to listen for trapped survivors.
5. Shout only when you hear rescue personnel directly above or nearby — shouting exhausts your voice within an hour and forces concrete dust into your lungs. An emergency whistle carries much farther and preserves your vocal cords.
6. Sip water if available, taking tiny swallows. People have survived under rubble for 5–10 days — maintaining an airway and mental calm are paramount.

Someone Else Is Trapped Under Rubble Nearby

- Mark the exact spot where sounds originate. Call for bystanders to assist, alert emergency rescue services (112 in EU / 911 in US / 101 State Emergency Service of Ukraine).
- Official civil defense guidance instructs: **do not attempt to dismantle heavy structural rubble on your own**: shifting slabs can trigger secondary collapses, crushing both you and the trapped victim. Await professional rescue teams, maintain verbal contact with the victim, and pass water if safe to do so.
- Only if emergency help is confirmed completely inaccessible: remove small debris by hand from the top down; never pull out large structural elements, which can destabilize the entire pile.
- **Crush Syndrome**: If a victim's limb has been pinned for more than 10 minutes (if the victim is unconscious or the entrapment duration is unknown, assume it exceeds 10 minutes) — do NOT release the pinned limb on your own if medical

personnel can arrive: call emergency services immediately (112 / 911 / 103 Ambulance) and follow the dispatcher's instructions. Sudden release can trigger fatal crush syndrome (toxic myoglobin and potassium flooding the bloodstream from compressed muscle tissue). If pinned for less than 10 minutes, release immediately. If medical assistance is unreachable or urgent evacuation is necessary, hydrate the victim (oral rehydration solution, Sec. 7.10), keep them warm, release them, and transport them to medical care as rapidly as possible. Apply a tourniquet immediately if massive arterial bleeding occurs (Sec. 7.2). Regarding crush syndrome protocols, guidance varies: Ukrainian Ministry of Health protocol (Order No. 441) specifies that if you must extricate a victim yourself after entrapment exceeding 10 minutes, apply a tourniquet just above the compression site prior to releasing the limb; military TCCC guidelines advise this for entrapments exceeding 2 hours when IV hydration is unavailable; some international civilian guidelines (e.g. ANZCOR) do not routinely mandate a tourniquet. Therefore: if communications work, ask the emergency dispatcher and follow their directions. If communications are down, entrapment is prolonged, and a tourniquet is available: apply it immediately prior to release, record the exact application time, and do not remove or loosen it yourself — let medical professionals manage it. If no tourniquet is available, do not delay extrication when emergency rescue is unreachable.

3.6. Shelling Outdoors, in Transit, or in an Open Field

- **On City Streets:** Drop prone immediately, then move in short 3–5 second rushes (count silently "one-thousand-one, one-thousand-two, hit the deck" — never run longer) from cover to cover: concrete stairs, building basements, pedestrian subways.
- **In a Passenger Vehicle:** Stop the vehicle, exit immediately, sprint 30–50 meters (30–55 yards) away from the road, and drop into a roadside ditch or culvert. A vehicle is a magnet for shrapnel and offers zero ballistic protection.
- **On Public Transit:** The driver halts the vehicle; disembark swiftly and lie flat in a ditch or low ground well away from the transit vehicle.
- **In an Open Field or Forest:** Lie flat in any natural depression, furrow, or ditch. Avoid sheltering in isolated buildings or distinct tree lines that serve as obvious aiming reference points.

- **Active Shooter or Explosion Indoors (Train Station, Mall, Shelter):** Follow the "Run — Hide — Fight" protocol. Run — if an escape route is clear, leave belongings behind, keep hands visible, guide others. Hide — lock and barricade doors, silence mobile phones, take cover behind solid objects, maintain total silence. Fight — only as a last resort when life is in imminent peril, act collectively, improvise weapons. When encountering arriving police/security forces: raise empty hands high with fingers spread, make no sudden movements, obey all commands.

3.7. Long-Term Shelter Life

- Space per person: minimum 1 sleeping or sitting spot + clear access aisle. Use sleeping pads and wool blankets — cold concrete rapidly saps body heat.
- Ventilation: ventilate the space during quiet lulls; a flickering or dying candle flame indicates hazardous oxygen depletion.
- Assign duties: assign specific individuals to monitor radio broadcasts, watch over children, and manage water distribution.
- Latrine sanitation: heavy-duty bucket with lid + plastic bags + bleach or cat litter; hang a blanket screen for privacy.
- Children's morale: provide small toys, structured games, and responsibilities ("you are our keeper of the flashlight"). A calm, reassuring adult voice is the most potent medicine.

CHAPTER 4

Drones: The New Primary Threat to Civilians

In the zone within 30–40 km of the front line, drones kill more civilians than artillery: they can spot an individual person, chase vehicles, drop grenades on lines waiting for water, and return to finish off first responders. There are no air raid alerts for them. The survival rules here are different from shelling, and everyone must know them, because the range of drones increases every year, expanding this hazard zone along with it.

4.1. Types of Drones and How to Recognize Them

Type	Appearance / Sound	Function / Threat	Range
FPV Kamikaze	Small quadcopter, buzzing sound like a giant hornet; flies fast (up to 100+ km/h), maneuvers sharply, can hover and look around	Flies directly into the target and detonates: vehicles, people, windows, basement doors. The operator sees through the "eyes" of the drone	10–20 km, newer models up to 40 km
Fiber-Optic FPV	Same, but trails a thin fiberglass tether behind it (remains on the ground, trees, wires)	Cannot be jammed by any EW (electronic warfare) — signal travels via fiber-optic line. This is the most dangerous type	10–25 km
Drop Drone ("Bomber" / Mavic-type)	Hovers high, sound is faint or inaudible; during the day, looks like a dark dot in the sky	Drops grenades/mines onto people, cars, basement entrances. Often drops twice on the same spot	5–15 km
Reconnaissance Drone	Circles at high altitude for extended periods without attacking	Searches for concentrations of people and equipment — followed by artillery strikes or FPV drones	Dozens of km
Long-Range ("Shahed" / "Geran")	Moped-like lawnmower sound, flies straight at 1–3 km altitude, usually in nocturnal waves	Strikes infrastructure and cities hundreds of kilometers away; air raid alarms are issued in advance	1,000+ km
Jet-Powered Long-Range ("Geran-3/4/5", "Banderol", "Dan-M" / "Dan-T")	Turbine whistle instead of "moped", speed 300–700 km/h (2–4 times faster than standard "Shahed"), warhead 50–130 kg	Major threat of winter 2026–2027: intelligence reports indicate up to 500 launches per day; much harder to shoot down, time from alert to impact is minutes, so a "drone alert" no longer means "you have time"	1,000+ km
Autonomous / Swarms (emerging near-term threat)	Multiple drones acting in coordination; operator-free visual/AI target recognition	Immune to electronic warfare and cannot be distracted; attacks anything matching target profile (vehicles, groups of people)	Increasing

Golden rule: if you hear or see a drone, assume it sees you. Your goal is to get under an overhead roof or behind a thick wall within 5–10 seconds and freeze. Do not gawk, do not film on your phone, do not wave your arms.

4.2. Four Things That Make You a Target

1. **Movement and crowding.** A group of people, a queue, a vehicle column, working machinery, emergency responders gathering at a strike site — all of this stands out brightly to the drone operator. Walk in groups of one or two, spaced 20–30 m apart; do not gather in the open.
2. **Motor vehicles.** In frontline zones, vehicles are target #1 for FPV drones. Especially dangerous: driving at dusk and night with headlights on (cameras spot them miles away), stopping in the open, or multiple vehicles grouped together.
3. **Heat and light at night.** Thermal-imaging drones detect body heat, campfires, generators, warmed-up vehicle engines, and smoke. A Dakota fire hole (Sec. 10.3), cooking by day, thermal blankets as shields, and placing generators under canopies are now mandatory campsite camouflage rules.
4. **Secondary strike ("double-tap").** Drones wait until people rush to aid the wounded or inspect a struck vehicle, then strike again. For at least 40 minutes after an impact (sometimes 1–2 hours), approach the site only in short dashes between cover, or wait entirely.

4.3. If You Are Outdoors and Hear/See a Drone

1. **Roof overhead** — building entrance, basement, shop, concrete-roof bus stop, archway, garage. This rule applies specifically to FPV drones and drops (small warheads): during Shahed strikes, missiles, or artillery shelling, building entrances, arches, and stairwells are NOT shelters (risk of collapse); a basement or the two-wall rule is required (Chapter 3). An FPV drone can fly into an open door, window, or breach (especially a fiber-optic drone, which maintains signal inside buildings), so never linger in doorways: step inside, close the door behind you, move away from windows and glass deeper inside, turn a corner into a hallway, under structural stairs, or down into a basement, ensuring at least two walls stand between you and the street. An isolated tree or a fence offers no protection: the drone maneuvers around them. However, if no roof is nearby, dense bushes, thick undergrowth, or a tree line are far better than open ground: a

drone cannot fly through thick brush, and if it detonates in the branches, you may be injured, but your survival chances are far higher. Crawl as deep inside as possible, lie down, and freeze; as soon as the drone leaves or detonates, move under a solid roof.

2. If there is no roof: **do not run in a straight line** and do not attempt to dash across an open area — a drone is faster than anyone. Seek cover behind **THICK** obstacles (concrete, brick wall, tree trunk over 40 cm in diameter) and **shift around the cover** as the drone circles to keep the barrier between you and the drone.
3. FPV drone attacking (diving): at the last split-second — sharply dive sideways to the ground behind cover, face down, hands over head (same as during shelling, Sec. 3.1). An FPV blast is relatively small — 30–50 cm of solid cover will save your life.
4. Drop drone hovering directly above: do not freeze and stare up — move quickly under a roof or at least under a tree with a dense canopy (foliage provides some protection against drops, unlike FPVs), then continue onward beneath concrete.
5. No roof nearby, and a drop drone is already hovering above you: move quickly in a zigzag pattern, changing direction every 7–10 m — making it significantly harder for the operator to aim the drop. This does NOT work against FPVs: only hard cover can save you from an FPV.
6. Afterward — do not emerge immediately. Count to 60, listen carefully: a second drone frequently follows. Do not approach the impact point for at least 40 minutes (Sec. 4.2).

4.4. If You Are in a Vehicle

- If you know an area is drone-infested — travel only during daylight, without headlights, at speed, without stopping in the open, with windows cracked (to hear buzzing), maintaining a 100+ m distance from other vehicles. Keep doors unlocked.
- If you hear or spot a drone: brake hard — everyone out of the vehicle immediately — scatter 30–50 m away from the car behind cover (the primary target is the car; as long as you are next to it, you are a target). Do not attempt to outrun it in a straight line on an open road — an FPV drone will easily catch up.

- If hard overhead cover is nearby (bridge, concrete canopy, archway, garage; NOT a gas station — fuel hazard and prime target) — driving under it is better than staying in the open.
- Anti-drone netting on vehicle bodies and "cope cages" — help only against small FPVs and light drops, not against heavy munitions; never rely on them in place of smart survival behavior.
- Plan evacuation routes out of drone zones along tree-lined roads and built-up areas rather than open highways (Chapter 26).

4.5. At Home and in the Yard

- Keep windows closed, heavy curtains drawn; venture out onto balconies or into yards only briefly, never linger for hours.
- Entrances to basements and doorways — shield with protective canopies or wire netting: in frontline cities, netting over courtyards and bus stops has proven effective against FPVs and drops. Organizing neighborhood efforts — Chapter 17.
- Queuing for water/aid — strictly under overhead shelter or dispersed; assign a designated "sky watcher" who listens and scans overhead while others fill containers.
- Cooking and running generators — during the day under cover; at night, ensure zero light leakage to the exterior.
- Children: teach the rule "if it buzzes, run under cover" as a game; outdoors — only accompanied by an adult, no more than 20 m from shelter.

4.6. Downed or Crashed Drones

- **Do not approach.** Unexploded ordnance may remain on board (self-destruct timer after minutes or anti-handling fuse triggered by touch); drop drones may carry unreleased grenades. Keep a minimum distance of 100 m (SES standard: 100–300 m), preferably behind hard cover. Call only from a safe distance, not next to the device: 101, 102, or 112 (or 911), or inform military personnel. Do not take close-up photos or post geotagged images.
- **Fiber-optic filament** on ground, trees, or wires — do not touch with bare hands (cuts skin like glass fiber) and do not spool it; if the drone is still connected, it may react or return. Walk around it.

- Debris from "Shaheds" shot down by air defense falls kilometers from the intercept point and often burns; never collect wreckage as souvenirs — it contains toxic fuel residues and unexploded charges.
- Do not attempt to shoot down a drone yourself with hunting weapons — this signals to the operator that a civilian is armed, inviting an immediate follow-up strike; furthermore, engagement is legally restricted to military and authorized defense units.

4.7. Long-Range Drones Targeting Rear Cities

- Air raid alerts for "Shahed" strikes can last for hours and arrive in multiple waves; targets typically include energy infrastructure, warehouses, and nearby residential districts. Jet-powered drones arrive within minutes of alert sounding and are much harder to intercept — treat them like ballistic missiles: immediately head to a two-wall safe zone or shelter. The primary danger comes from air defense fragments and blast waves: **stay far away from windows**, inside the two-wall zone (Sec. 3.2). Do not film or publish air defense activity (Chapter 18).
- A drone flying low and loud is not "hunting" you personally, but a falling intercepted craft with an intact warhead is equivalent to a bomb: take shelter immediately, do not step out onto balconies.
- Wreckage in yards — call 101 (or 112), do not touch.

4.8. Drone Reporting and Rumors

- Every spotted drone should be reported (101, 102, regional military administration/AFU official chatbots; write them down on paper in advance). This saves lives.
- Rely on verified official monitoring channels in your region rather than rumors: fake "drone tracking maps" and hearsay are also used as disinformation (Chapter 18).
- In frontline areas, agree with neighbors on an audible alarm for "drone over the yard" (a whistle, striking a pipe) — faster than any messaging app.

CHAPTER 5

Mine Safety and Explosive Ordnance

Landmines and unexploded ordnance continue to kill for years after fighting ends. The only reliable rule for civilians: DO NOT touch, DO NOT approach, mark the spot, and report.

5.1. Where Danger Lurks

- Former combat sites, trenches, dugouts, abandoned positions, and wrecked vehicles.
- Road shoulders, dirt turnoffs from paved roads, bypass trails around checkpoints.
- Tree lines, fields (especially unplowed), riverbanks, fords.
- Abandoned buildings, basements, gates, fences/wickets — possible tripwires.
- Attractive items: toys, smartphones, wallets, boxes — may be booby traps.
- After shelling — any cluster submunitions resembling a battery or small ball: 10–30% of submunitions fail to detonate immediately.

Golden rule: an item that was not here yesterday, or any military-looking object = explosive hazard. There is no such thing as a "safe" mine. Demining is exclusively for combat engineers (sappers).

5.2. Mine Hazard Signs



Fig. 5.1. Official and improvised minefield markings

Improvised markers are left by both soldiers and locals: ribbons on tree branches, tin cans on stakes, stick crosses, lines of stones across trails. **Any unfamiliar or unusual marker = bypass the area completely.**

5.3. If You Discover a Suspicious Object

1. **Stop immediately.** Do not approach, do not bend down, do not touch, and do not take close-up photos.
2. **Memorize visual landmarks** of the location (a building, tree, utility pole).

3. **Retreat along the exact path you came** — step by step in your own footprints.
4. **Mark the danger** only from a safe distance — where you retreated to (bright cloth, ribbon, branch). Never approach the object to cordon it off.
5. **Report it:** Call 101 (State Emergency Service) or 102 (Police) in Ukraine, or 112 / 911. Describe the location and appearance of the object. Warn bystanders.
6. Safe distance: at least 100 m from small objects, 300+ m from artillery shells and aerial bombs. Do not use radios or mobile phones in close proximity to the item — make your call only after retreating 100+ m.

5.4. If You Realize You Have Entered a Minefield

1. FREEZE. Do not take a single step. Call out loudly for help.
2. If help is possible — stand or sit still and wait for sappers (demining technicians). This is the safest option, even if waiting takes hours.
3. If no help can come: turn around on the spot without taking steps, and retrace your steps EXACTLY in your own footprints, stepping footprint into footprint.
4. If footprints are invisible and no help will arrive at all (no signal, no one knows your location, out of earshot) — only then, as a desperate last resort with extreme risk: **(a)** first probe for tripwires: hold a long flexible blade of grass or slender twig horizontally with two fingers and slowly raise it from the ground up to ~1.5 m — left, center, right; if you feel the slightest resistance, stop immediately, do not touch, step over, or cut the wire, find another direction; **(b)** only after that, using a sharp rigid probe (screwdriver, knife, sturdy pen; at least 10 cm long), gently probe the soil at an angle of ~30° to the ground with minimal pressure every 2–3 cm across the width of the path (approx. 0.5 m), advancing the next row 3–5 cm forward; work on your knees, lying down only on thoroughly cleared ground; **(c)** if the probe strikes something hard — do not apply pressure and do not excavate, mark the spot and bypass it. Advance exclusively along the cleared path; extrication may take hours. The UN recommends this technique strictly for trained specialists: it is far better to wait in place for two days than to trigger a mine.
5. Nearby explosion: do not run straight toward the casualty — the route to them may also be mined. Call sappers; if conscious, the casualty should self-apply a tourniquet guided by your vocal commands (Chapter 7). Following a blast injury, the casualty must reach a hospital within the "golden hour" (one hour).

5.5. Rules for Children

- Teach children the simple rule: **"If it's not mine, don't touch it. If it looks strange, step back and tell an adult."**
- Strictly forbid playing: in abandoned buildings, trenches, around military vehicles, or with any found "toys", shiny objects, or unfamiliar items.
- Establish trust: always praise them for reporting a suspicious find; never scold them (or they will hide it next time).

5.6. Threats of the Next Decade: "Petal" Mines, Drone Drops, Returning Home

- **PFM-1 "petal" mines (butterfly mines)** — green or brown plastic "butterflies" (12 cm) with a wing, scattered via cluster munitions across cities and fields; they persist for decades and detonate under a pressure of just ~5 kg — the step of a child (severing the foot). Never pick them up, even as a souvenir — they are pressure-sensitive. Especially dangerous for children and after seasonal floods, which wash them to new locations.
- **Mines dropped by drones** onto roads and paths: TM-62 anti-tank mines and "petal" anti-personnel mines can appear overnight where it was clear yesterday. The rule of "an object that was not here yesterday" now applies to roads: never drive around onto the shoulder — reverse back along your own tire tracks, report the hazard, and never attempt to "kick or push it off the road."
- **Fires and floods displace landmines:** after a wildfire or flood, treat previously "cleared" or "safe" areas as mined until verified by sappers.
- **Demining will take over a decade.** Fields, road shoulders, and woodlands in former combat zones are hazardous by default: travel exclusively along cleared routes and consult State Emergency Service (SES) demining maps.

Returning to a Liberated or Abandoned Home

1. Never enter first: call sappers (101 / 112). In abandoned homes, booby traps are commonly rigged to entry doors, gates, cabinets, refrigerators, toilets, books, toys, bodies of the deceased, and home appliances.
2. If sappers cannot arrive: conduct an external inspection from a distance — look for tripwires, fishing line, new "items" near the threshold, or suspiciously ajar doors. Open doors remotely using a long rope from behind solid cover.

3. Inside: move slowly, watch your step and scan at knee level; pick up nothing, do not flip light switches (traps rigged to electrical switches), and do not touch objects that appear out of place.
4. If anything suspicious is found — exit back along the exact same path and call 101 / 112.

Found weapons or ammunition: do not touch them, even "to turn them in." Mark the location and report to 102/101 (or 112 / 911). Weapon circulation will remain high post-war — train children to treat any firearm or ordnance as a live landmine.

CHAPTER 6

Radiation and Chemical Hazards

Radiation and most chemical warfare agents are invisible and silent. Survival relies on three core principles: time (minimize exposure), distance (maximize distance from the source), and shielding (walls, sealing, respiratory protection).

6.1. Radiation Emergency: Immediate Actions

1. **Get indoors** — immediately. Best locations: a basement or the core of a multistory building (brick and concrete reduce radiation levels by 10 to 100+ times).
2. **Seal the premises:** close all windows, doors, ventilation grilles, and fireplace dampers. Seal gaps with damp towels, duct tape, or plastic sheeting.
3. **If you were outdoors:** remove outer clothing BEFORE entering living quarters, seal it in a plastic bag, and place it far away. Take a shower with soap (do not scrub skin roughly), wash hair thoroughly without conditioner (conditioner binds radioactive particles).
4. **Tune into official announcements** (battery-powered radio). Do not leave until instructed by authorities.
5. **Food and water:** consume only from sealed containers, canned goods, and bottled water. Do not consume milk from local livestock, fresh produce, greens, or wild mushrooms.
6. If you must go outside: wear fully enclosing clothing, do not undress, do not sit on the ground, do not swim in open bodies of water, do not gather mushrooms or berries, and do not smoke.
7. **Evacuation** — only when ordered by emergency authorities, traveling perpendicular to the wind direction relative to the radiation source.

6.2. Potassium Iodide (KI) Prophylaxis — Correct Usage Only

Potassium iodide protects **ONLY** the thyroid gland from radioactive iodine and **ONLY** if a nuclear reactor release has occurred. It does **NOT** protect against external radiation or other radioactive isotopes. Take it **ONLY** after an official directive, 6 hours prior to or within the first few hours of the plume passage. **DO NOT** drink topical iodine solutions (tincture of iodine, Lugol's) — this causes severe chemical poisoning.

Age Group

Single Dose of Potassium Iodide

Adults and adolescents aged 13+ (up to 40 years)	125 mg
Children aged 3–12 years	62.5 mg
Children aged 1 month – 3 years	32 mg
Infants under 1 month	16 mg
Individuals aged 40+ years	Not prescribed (the thyroid gland virtually ceases absorbing radioiodine; side effect risks outweigh benefits). Exception: pregnant and breastfeeding women take 125 mg regardless of age

Take as a single dose after eating, washed down with water, milk, or juice. A repeat dose is administered only on official instructions during prolonged radioactive releases. Potassium iodide protects solely against radioactive iodine isotopes (nuclear power plant accidents, nuclear detonations); it is NOT used in the event of a "dirty bomb" (radiological dispersal device). Dosages follow the Ministry of Health of Ukraine Iodine Prophylaxis Regulations (Order No. 408 of March 9, 2021; consistent with WHO guidelines); if official emergency broadcasts specify different dosages, follow their exact instructions.

6.3. Improvised Respiratory and Body Protection

- FFP2/FFP3 respirator (N95/P100 equivalent) — baseline protection against radioactive dust. If unavailable — 4–8 layers of damp gauze or folded cloth over the nose and mouth.
- Body: tightly woven long-sleeved clothing, waterproof rain poncho or plastic film over it, hood, gloves, rubber boots. Seal cuffs, ankles, and zipper seams with duct tape.
- Eyes: any tight-fitting goggles (swimming goggles are ideal).
- Upon returning: seal all outer garments in a bag outside the door, take a thorough shower.

6.4. Chemical Hazards (Industrial Accident or Attack)

Signs of Chemical Contamination

- Unexplained fog, smoke, or low-creeping cloud; oily droplets or stains on surfaces.

- Sharp, pungent odors (ammonia, chlorine — "swimming pool" bleach smell, "bitter almond", "freshly cut grass", garlic) where they should not be.
- Dead birds, insects, or small animals in a concentrated area; multiple people exhibiting identical symptoms: tearing, coughing, choking/asphyxiation, convulsions, pinpoint pupils (miosis).

Riot control agents and tear gases (CS, chloropicrin) are increasingly deployed beyond the front lines. Stinging eyes, burning skin, and coughing without loss of consciousness are characteristic symptoms: move upwind into fresh air, do not rub eyes, flush eyes with copious water or saline for 10–15 minutes, remove and bag clothing, wash skin with cool soapy water (hot water opens pores and intensifies burning), and discard contact lenses. Asthmatics should use their prescribed inhaler. Seek immediate medical attention (call 103 or 112 / 911) if shortness of breath, chest tightness, or severe coughing does not subside within 30 minutes in fresh air, or if symptoms worsen or return within 24 hours: chloropicrin damages lung tissue, and toxic pulmonary edema can develop with a delay of several hours even after initial relief. For the first 24 hours: rest, avoid physical exertion, and do not remain alone.

Actions

1. Hold your breath, cover your nose and mouth with cloth (preferably damp — for chlorine, moisten with a baking soda solution; for ammonia, with a weak vinegar/citric acid solution — or at least plain water).
2. **Move perpendicular to the wind direction** and TO HIGHER GROUND if the gas is heavier than air (chlorine sinks and hugs the ground) — do NOT seek shelter in basements! Ammonia is lighter than air — seek lower floors. If the substance is unknown: move perpendicular to the wind as quickly and as far as possible.
3. Indoors: close windows, turn off ventilation/AC, seal gaps with damp cloth; move to upper floors (in the event of chlorine) — and listen for emergency broadcasts.
4. Do not eat or drink anything that may have been exposed to the chemical agent until declared safe by authorities.
5. Once out of the hazard zone: remove outer clothing (avoid pulling over head — cut off if possible), flush exposed skin and eyes with copious clean water for 10–15 minutes.
6. For casualties: ensure rest, fresh air, and a semi-sitting position if struggling to breathe. Do not induce vomiting if the chemical agent is unknown. Seek urgent medical care.

6.5. Sealing a Room / Shelter-in-Place (Radiation or Chemical)

1. Select an interior room with minimal windows (for chlorine — on an upper floor).
2. Close windows and doors, turn off exhaust fans and air conditioning, close fireplace and stove dampers.
3. Seal window frames, vent grilles, electrical outlets on exterior walls, and keyholes with duct tape and plastic sheeting.
4. Roll a damp towel along the base of the door. Keep emergency water stores and a radio inside. Drink only water from sealed containers stored in advance: boiling does NOT remove radioactive contaminants.
5. Remember: a completely sealed room holds breathable air for only a few hours per person. Monitor how you feel; do not burn candles or open flames (consumes oxygen).

6.6. Nuclear Detonation: The Protocol That Saves Most Lives

The probability is low, but the cost of an error is catastrophic. The essential fact to remember: most fatalities beyond 3–5 km from ground zero are caused not by the immediate blast or heat, but by **radioactive fallout within the first few hours** — and fallout can be effectively shielded against.

1. **The flash** (brighter than the sun, even at midday): DO NOT look at it (causes retinal burns and permanent blindness). Drop immediately face down behind any available cover, feet pointed toward the flash, protecting head and exposed skin (thermal radiation burns severely in seconds). The blast shockwave arrives seconds later — up to 30–60 seconds at a distance of 10–20 km. Remain down until the shockwave passes and falling debris subsides completely.
2. **10–15 minutes** after detonation — this is your window of opportunity to reach the best available shelter within a 5–10 minute walk: **a basement or the interior core of a massive concrete/brick building**, as far as possible from exterior walls and roofs. The more mass of concrete and earth between you and the sky, the better. Vehicles, wooden structures, and upper floors provide negligible protection. Do not run across the city "to get the children": survive the initial hours sheltered first and reunite later — establish this family emergency plan in advance.
3. **Shelter in place for at least 24 hours, ideally 48–72 hours.** Fallout radiation decays exponentially: after 7 hours it drops by a factor of 10, after 48 hours by a

factor of 100 (the "7-10 rule"). Bag outer garments outside your living area, wipe exposed skin with wet wipes or a damp cloth, rinse hair, nose, and ears. Food and water — strictly from sealed containers. A battery-powered radio is your primary lifeline for emergency instructions.

4. **Potassium iodide** (Table 6.2) — take ONLY if civil authorities announce thyroid blocking prophylaxis; it protects exclusively the thyroid gland from radioiodine, not against external penetrating fallout radiation. Use an FFP2/FFP3 respirator or multi-layer cloth to prevent inhalation of radioactive dust particles.
5. **Exiting shelter** — follow official directives, or after 48–72 hours if communications are completely dead: make rapid transit perpendicular to wind direction, fully covered in clothing, heading toward organized relief staging points. Nausea and vomiting within the first few hours following exposure are clinical signs of acute radiation sickness (ARS) — seek urgent medical treatment.

A personal dosimeter / Geiger counter (from ~\$100) in your go-bag is the only way to verify whether water, food, and ambient outdoors are safe: without one, you are blind to radiation. Normal background radiation in Ukraine is up to 0.3 $\mu\text{Sv/h}$; above 1–2 $\mu\text{Sv/h}$ — strictly limit exposure time; above 10 $\mu\text{Sv/h}$ — seek hardened shelter immediately or evacuate the zone.

CHAPTER 7

First Aid

In an emergency, an ambulance may not arrive. These protocols are a civilian adaptation of modern first aid and trauma standards (such as TCCC/TECC). Reading is not enough: find an opportunity to take a practical, hands-on training course.

Before helping — SCENE SAFETY: look around. Is shelling ongoing? Live electrical wires? Gas leak? Fire? A dead hero saves no one. First neutralize the threat or move the casualty (and yourself) to cover/shelter.

7.1. Assessment Order: The MARCH Algorithm

The international trauma care sequence follows the acronym MARCH, prioritizing from the fastest killers to slower causes of death:

Letter	What to Check	Action Required
M — Massive bleeding	Massive bleeding (pool of blood, clothing soaked through, pulsating arterial jet)	Tourniquet / wound packing / direct pressure — IMMEDIATELY (Section 7.2)
A — Airway	Airway patency (is air passing through)	Head-tilt/chin-lift, jaw-thrust; if vomiting — recovery position (Section 7.4)
R — Respiration	Breathing (respiratory rate, chest wounds)	Penetrating chest wound — occlusive chest seal (Section 7.5)
C — Circulation	Circulation, shock (paleness, cold sweat, rapid weak pulse)	Stop all bleeding, lay flat, keep warm (Section 7.6)
H — Hypothermia / Head	Hypothermia, head trauma	Insulate from ground, cover with blanket; monitor level of consciousness

7.2. Massive Hemorrhage — The Primary Killer

Losing 1.5–2 liters of blood is fatal; from a severed femoral artery, death can occur in 2–4 minutes. Actions in order of priority:

Step 1: Direct Pressure

Press on the wound with your full body weight through cloth/gauze (if nothing is available — with bare hands). Do not let go. In 80% of cases, firm, continuous pressure for 10+ minutes stops bleeding. However, if blood is spurting from an arm or leg — do not wait; apply a tourniquet immediately (Step 2).

Step 2: Tourniquet — for Limbs when Blood is Spurting or Pressure Fails

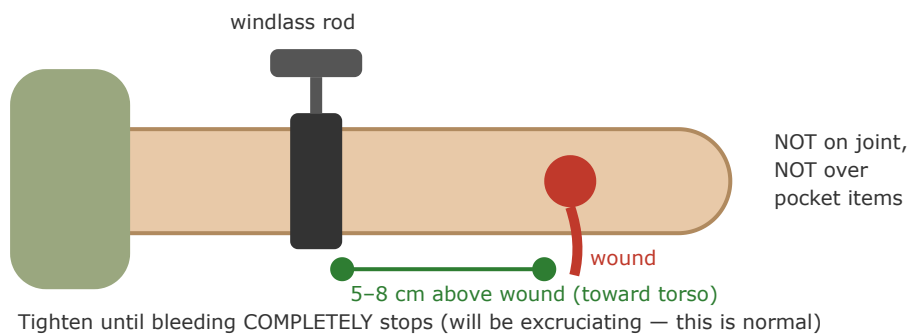


Fig. 7.1. Applying a tourniquet to an extremity

1. Apply the tourniquet 5–8 cm (2–3 inches) above the wound (between the wound and the heart), never directly over a joint. If the exact wound location is unclear under clothing and bleeding is profuse — apply as high as possible on the limb ("high and tight").
2. Pull the strap as tight as possible before turning the windlass rod. Twist the rod until bleeding COMPLETELY stops and the distal pulse disappears.
3. Lock the windlass rod in the clip. **Record the time** of application with a permanent marker on the tourniquet label / forehead / forearm of the casualty (e.g., "T 14:25").
4. Do NOT loosen the tourniquet periodically "to let blood circulate" — this is a lethal myth. Only medical personnel may loosen or convert a tourniquet. The time is noted for the receiving medics — once applied, you do not touch or loosen it, regardless of how much time elapses.
5. If no factory tourniquet is available: maintain continuous **direct pressure on the wound** with both hands using your full body weight or pack the wound (Step 3) — and hold until medics arrive. An improvised tourniquet (a strip of cloth 5+ cm wide and a sturdy stick/windlass) is an absolute last resort when pressure and packing fail: without proper training, improvised tourniquets usually fail to stop arterial blood and waste critical time. Wire, shoelaces, or narrow belts must never be used. The only truly reliable solution is to carry a certified commercial tourniquet (Section 2.4).

Step 3: Wound Packing — for Wounds to the Neck, Groin, Buttocks, Axilla/Shoulders (Where Tourniquets Cannot Be Applied) and Deep Limb Wounds Without a Tourniquet

1. Identify the source of spurting bleeding deep inside the wound and press on it with a finger directly against the bone or tissue.
2. Tightly pack the wound cavity layer by layer with gauze (hemostatic gauze is preferred), maintaining constant pressure with your other hand. Pack the entire cavity until full.
3. Apply direct two-handed pressure over the packed wound for 3 minutes (with hemostatic gauze) or 10 minutes (with plain gauze).
4. Apply a tight pressure dressing over the top. Do not remove the packing — it must only be removed in an operating room at the hospital.

Pressure Dressing (for Moderate Bleeding)

Place a rolled gauze pad directly over the wound and bandage tightly, crossing the wraps over the roll to exert focused pressure. If blood soaks through — do not remove the dressing, add another layer on top.

7.3. Assessing Consciousness and Calling for Help

1. Speak loudly, gently shake the shoulders: "Can you hear me?"
2. No response — check breathing: tilt the head (palm on forehead, fingers lifting the chin), look at the chest, listen for breath sounds, and feel for breath on your cheek for 10 seconds.
3. Call emergency services (112 / 911 / 999; in Ukraine — 103) or assign a specific bystander: "You, in the blue jacket — call 112 (or 103), report back to me once done!"
4. Breathing normally — place in the recovery position (Section 7.4). Not breathing or only agonal gasping — begin CPR immediately (Section 7.7).

7.4. Recovery Position

Head tilted back, mouth facing downward —
tongue and vomit will not obstruct airway

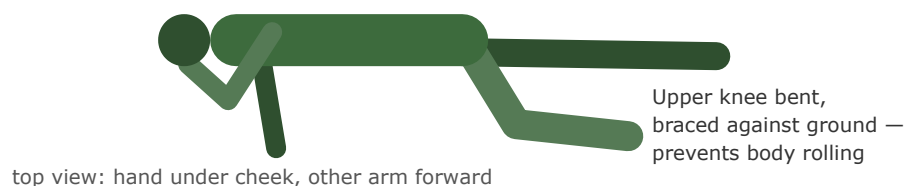


Fig. 7.2. Recovery position for an unconscious breathing casualty

1. Extend the arm closest to you out at a right angle to the body (palm upward).
2. Take the casualty's far arm, place the back of their hand against their near cheek, and hold it there.
3. Bend their far leg at the knee, pull the knee toward you to roll the casualty onto their side facing you.
4. Tilt the head back to keep the airway open; ensure the mouth is tilted downward toward the ground. The upper bent leg props the body in a stable position.
5. Recheck breathing every minute. If waiting for extended periods, turn the casualty onto the other side every 30 minutes.

Do not use if spinal injury is suspected (falls from height, motor vehicle crashes, blunt trauma to the back) — leave the casualty supine, manually stabilize the head and perform a jaw-thrust maneuver to prevent the tongue from occluding the airway; if this fails or if the casualty vomits, perform a log-roll maneuver (with 3 rescuers maintaining the head-neck-torso axis inline).

7.5. Chest and Abdominal Wounds

- **Penetrating chest wound** (sucking/hissing air sound, frothy blood): immediately seal with a gloved palm, then apply an airtight occlusive dressing (chest seal) or plastic sheet taped securely. If the casualty's condition deteriorates rapidly after sealing (increasing breathlessness, signs of tension pneumothorax) — peel back one edge to vent trapped air ("burp" the seal), then reseal. Position: semi-seated or lying on the injured side.
- **Abdominal wound with evisceration:** do NOT attempt to push organs back inside. Cover with a clean, moist dressing, top with plastic wrap/foil, and apply a

loose bandage. Keep the casualty's knees bent to reduce tension. Do not give anything to eat or drink (moistening lips with water is permitted).

- **Impaled object** (knife, shrapnel): do NOT remove. Stabilize the object with bulky dressings/rolled bandages on both sides, secure in place, and transport as is.

7.6. Hemorrhagic Shock

Signs: pale skin, cold clammy sweat, severe thirst, rapid weak pulse (over 100 bpm), confusion/agitation, frequent yawning. Actions:

1. Control all bleeding immediately (stopping blood loss is the primary treatment for hemorrhagic shock).
2. Keep the casualty lying flat; if there are no head, chest, or abdominal injuries, slightly elevate the legs (e.g., on a backpack).
3. Insulate thoroughly from below and above (mylar emergency space blanket, warm clothing) — shock casualties lose body heat rapidly even in warm summer weather.
4. If an ambulance is en route — do not give anything to drink (surgery under general anesthesia may be needed). Only if evacuation will take many hours and the casualty is conscious without abdominal trauma, offer small sips of warm, sweet fluids.
5. Reassure and talk to the casualty; monitor their condition every 5 minutes.

7.7. Cardiopulmonary Resuscitation (CPR)

Perform CPR if the person is unresponsive and NOT breathing normally (or only exhibiting rare, agonal gasps).



Fig. 7.3. Chest compressions

1. Place casualty on a firm, flat surface. Place the heel of one hand on the center of the chest, interlock fingers with your other hand on top.
2. Deliver 30 compressions: depth of 5–6 cm (2–2.4 inches), rate of 100–120 compressions per minute (to the rhythm of "Stayin' Alive"), allowing full chest recoil between compressions.
3. Give 2 rescue breaths: tilt head, pinch nose, form airtight seal over mouth, deliver gentle breath over 1 second until chest rises. If unwilling or unable to perform rescue breaths — perform continuous hands-only CPR compressions; this still saves lives.
4. Do not stop until: casualty regains signs of life/breathing, emergency medical services arrive and take over, or you are completely physically exhausted. Switch rescuers every 2 minutes to prevent fatigue.
5. Children (age 1 to puberty): use one or two hands (depending on child's size), depth ~5 cm (1/3 chest depth); infants (under 1 year): use two thumbs with hands encircling chest (or the heels of two fingers), depth ~4 cm (1/3 chest depth). For both children and infants, begin resuscitation with 5 rescue breaths before compressions.

7.8. Burns

1. Stop the burning process: extinguish flames (stop, drop, and roll; smother with heavy cloth/blanket), remove smoldering clothing. Do NOT tear away clothing melted or adhered to the skin — cut carefully around it.
2. Cool the burn with clean, cool running water (15–20°C / 59–68°F) for at least 20 minutes. Never use ice or ice water.
3. Remove rings, watches, and tight clothing from the affected limb before swelling sets in.
4. Cover with a clean, lint-free cloth or sterile burn dressing / food-grade plastic cling wrap (applied loosely). Do NOT apply butter, oil, sour cream, ointments, or toothpaste; do NOT puncture or pop blisters.
5. Provide pain relief (paracetamol/acetaminophen or ibuprofen) and encourage oral hydration if conscious.
6. Seek medical care immediately if: burn is larger than the casualty's palm, involves face, hands, feet, groin, or major joints, occurs in children, is caused by chemicals

or electricity, or is a deep partial-thickness / full-thickness burn (white, leathery, charred skin with loss of sensation).

7. Chemical burns: flush with abundant running water for 20+ minutes; brush away dry chemical powders before flushing.

7.9. Fractures, Dislocations, and Splinting

- Signs: visible deformity, unnatural mobility, bone crepitus (grating sound), sharp pain with axial loading, swelling, and bruising.
- Splinting principle: immobilize the **joints above and below the fracture site** (for a lower leg fracture — immobilize both the knee and the ankle). Improvise splints using boards, sturdy branches, rolled foam sleeping mats, or rigid cardboard; pad splints with soft cloth and secure without overtightening.
- If emergency medics are en route — do not apply a splint: simply support and keep the limb immobile in a comfortable position. Splint only when you must evacuate or carry the casualty yourself.
- Immobilize the limb "as found" — never attempt to forcefully straighten or realign bones. Leave fingers and toes visible to monitor neurovascular status (if they turn pale, blue, or cold — loosen the ties immediately).
- Arm injury: support with a triangular bandage sling around the neck and secure to the torso with a swathe.
- Open fracture: control bleeding and dress the wound first before splinting. Never push protruding bone ends back inside.
- Suspected spinal or pelvic injury: do not move the casualty unless in immediate danger; stabilize a suspected pelvic fracture by tying knees and ankles together with padding under the knees (or using a pelvic binder).
- Dislocation: never attempt to reduce (pop back) a dislocated joint. Immobilize in the position found, apply a cold pack, and provide pain relief.

7.10. Environmental Emergencies

Hypothermia

1. Signs by stage: shivering vigorously → shivering ceases, lethargy, slurred speech, confusion, "paradoxical undressing" → loss of consciousness.

2. Move to shelter, strip off wet clothing, wrap in dry layers + mylar space blanket (silver side facing inward toward body), insulate from the cold ground.
3. Offer warm, sweet drinks if fully conscious. Do NOT give alcohol, do NOT rub with snow, do NOT place in a hot bath (rapid peripheral rewarming causes cardiovascular collapse and "afterdrop" cardiac arrest) — rewarm gradually using body-to-body contact or warm (not scalding) bottles wrapped in cloth placed against the torso (armpits, groin, neck), avoiding the extremities.
4. Handle severe hypothermia casualties with extreme gentleness (rough movement can trigger fatal ventricular fibrillation); perform CPR if no pulse or breathing.

Frostbite

Rewarm by immersing in warm water at 37–39°C (98–102°F) for 20–30 minutes or using warm body heat. Do not rub the tissue or warm near open fire/radiators (numb skin will burn). Place dry sterile gauze between toes/fingers; do not puncture blisters. If there is any risk of refreezing during transport — do not thaw until you have reached a warm, secure shelter.

Heatstroke

Signs: hot, dry skin or profuse sweating, dangerously high body temperature, confusion, dizziness, nausea, collapse. Move to shade, remove excess clothing, cool actively: place wet towels on the neck, armpits, and groin, fan continuously, provide cool fluids in small sips. For an unconscious person — recovery position, rapid cooling, and urgent medical evacuation.

Dehydration and Diarrhea

During crises, diarrheal illness kills more people than bullets. Oral Rehydration Solution (ORS): mix 6 level teaspoons of sugar + 1/2 level teaspoon of salt into 1 liter of safe, disinfected water. Sip frequently; for small children, administer 1 teaspoon every 2–3 minutes. Red flag signs: no urine output for 8+ hours, sunken eyes, extreme lethargy — requires immediate medical intervention.

7.11. Other Common Emergencies

- **Choking / Foreign Body Airway Obstruction:** encourage coughing → 5 back blows between shoulder blades with the heel of the hand → 5 abdominal thrusts (Heimlich maneuver: stand behind, place fist above navel, pull inward and upward sharply) — alternate 5 back blows and 5 thrusts. For pregnant or obese casualties

— chest thrusts. Infants under 1 year: 5 back blows supported face-down on your forearm → 5 chest thrusts with two fingers/thumbs on sternum.

- **Seizure / Convulsions:** do not restrain movements, do not pry open teeth, and never place anything in the mouth. Move hard/sharp objects away, cushion under head. Once convulsions cease — place in recovery position. If seizure lasts over 5 minutes or recurs — summon emergency medical care urgently.
- **Fainting (Syncope):** lay flat, elevate legs 20–30 cm, provide fresh air. If consciousness is not regained within 1–2 minutes — treat as an unconscious casualty (Section 7.3).
- **Carbon Monoxide (CO) Poisoning** (stoves, indoor generators!): headache, nausea, dizziness, confused/"drunk" behavior, cherry-red skin (late sign). Move immediately into fresh air, keep calm, perform CPR if breathing ceases.
Generators: operate strictly outdoors, at least 6 meters (20 feet) away from windows, doors, and vents (State Emergency Service guideline), with exhaust pointing away from buildings; never operate on balconies, in garages, basements, or stairwells. Install a battery-powered carbon monoxide detector at home.
- **Blast Injury / Concussion:** tinnitus (ringing in ears), acoustic trauma, bleeding from ears/nose, disorientation. Provide quiet rest, monitor neurological status; inspect carefully for hidden shrapnel wounds and internal blast trauma.
Deterioration of consciousness requires emergency hospitalization (risk of intracranial hemorrhage or brain edema).
- **Heart Attack (Myocardial Infarction):** crushing/squeezing retrosternal chest pain lasting over 15 minutes, radiating to left arm, jaw, neck, or back; shortness of breath, cold sweat, sense of doom. Stress and acute physical exertion trigger heart attacks frequently during crises. Actions: sit in a semi-reclined position, rest quietly, loosen tight collar/clothing, call 112 / 911 / 999 (or 103); **chew aspirin 150–300 mg (½ tablet of 500 mg or 2–3 low-dose 75–100 mg tablets)** if not allergic and no active bleeding; nitroglycerin only if previously prescribed to the casualty. If casualty collapses and stops breathing — begin CPR (Section 7.7).
- **Stroke — FAST Protocol:** **F**ace drooping (ask to smile — one side sags), **A**rm weakness (ask to raise both arms — one drifts down), **S**peech difficulty (slurred speech or unable to understand), **T**ime to call emergency services immediately (112 / 911 / 999 or 103) and note time symptoms began. Do not give food, water, or medication; place casualty with head and shoulders slightly elevated; do not leave unattended. Thrombolysis/treatment window is 3–4.5 hours: "sleeping it off" destroys brain tissue.

- **Severe Hypoglycemia (Diabetic or Starving Casualty):** shakiness, cold sweat, irritability, confusion, glazed look, "drunken" stagger. If conscious: give fast-acting sugars (sugar cubes, fruit juice, honey) immediately, followed by complex carbohydrates (bread/crackers); if unimproved after 15 minutes — repeat sugar. If unconscious: do NOT place anything in the mouth — recovery position, do not smear sugar/honey under cheek, call 112 / 911 / 999 (or 103). If uncertain whether blood sugar is high or low: give sugar — hyperglycemia will not kill in minutes, but hypoglycemia can cause irreversible brain damage or death within minutes.
- **Electrical Shock:** do NOT touch the victim until power is disconnected (circuit breaker, plug) or wire pushed aside with dry non-conductive object (dry wooden broomstick, plastic); near downed high-voltage power lines — stay at least 8–10 meters (30 feet) away, only utility crews can isolate. Next — assess breathing / perform CPR, search for electrical entry and exit burn wounds (treat both as burns). Even if casualty appears unharmed, medical evaluation is mandatory: cardiac arrhythmias can manifest hours later.
- **Drowning:** do not swim out to a drowning victim without a flotation aid — a panicking casualty will drag the rescuer under. Lifesaving sequence: **Reach** (pole, paddle, tree branch, clothing) → **Throw** (rope, empty jug, flotation ring) → **Row/Go** (boat or swim with a float aid), approaching from behind. Once rescued: if not breathing — deliver 5 initial rescue breaths, then 30:2 CPR; do not waste time attempting to "drain water from lungs". If breathing — recovery position, rewarm, mandatory medical examination even if seemingly recovered (risk of delayed pulmonary edema / secondary drowning hours later). Cold water rescue — treat hypothermia (Section 7.10).
- **Falling Through Ice:** do not panic, place forearms on ice edge, kick legs horizontally behind you in a flutter/frog kick to propel torso onto ice crawl-style in the direction you came from; roll away from the ice hole. If someone else falls through: do not walk toward the hole — lie flat to distribute weight, extend a long branch, rope, or scarf from 3–4 meters away, pull out. Strip off wet clothing immediately, rewarm (Section 7.10).

7.12. Eyes, Ears, and Nose

- **Foreign body / dust in eye:** do not rub! Blink rapidly, flush with clean water from the inner corner (near nose) toward the outer temple while retracting eyelid. If unsuccessful — cover BOTH eyes (eyes move together) with loose sterile dressings and seek medical care.

- **Chemical eye splash:** irrigate with continuous copious clean water for 15–20 minutes, holding eyelids open with fingers. Immediate copious irrigation is more critical than any medication.
- **Impaled object in eye / open globe injury:** do NOT remove object, do NOT apply pressure. Stabilize object with rolled gauze pads, protect with a rigid eye shield (or plastic cup), secure with bandage, shield the uninjured eye as well, and transport to an eye surgeon immediately.
- **Arc eye (welder's flash) / snow blindness (photokeratitis):** gritty sensation, severe pain, photophobia, tearing appearing hours after UV exposure (snow in sunlight without goggles!). Rest in darkness, cold compresses, lubricating eye drops — resolves within 24–48 hours. Prevention: UV-rated sunglasses or improvised slit goggles carved from cardboard/bark.
- **Nosebleed (epistaxis):** sit upright, tilt head slightly FORWARD (never back!), pinch the soft lower nostrils together continuously for 10–15 minutes, apply cold pack to bridge of nose. If bleeding persists beyond 30 minutes — pack nostril with clean rolled gauze, seek medical attention.
- **Insect in ear canal:** in darkness, shine a flashlight beam into the ear (insects often walk toward light) or instill a few drops of warm mineral/cooking oil or water — the insect will float out. Never probe hard objects into ear canal — doctor only.

7.13. Poisoning and Toxic Ingestions

1. Identify WHAT, HOW MUCH, and WHEN was ingested/inhaled — this dictates all actions.
2. **Food / poisonous mushrooms / medications (swallowed, conscious):** call emergency services (112 / 911 / 999; in Ukraine — 103) and follow dispatcher instructions. Do NOT induce vomiting or attempt home stomach pumping: modern health guidelines (Ukrainian Ministry of Health Order No. 441 of 09.03.2022; International Federation of Red Cross / IFRC) strictly forbid induced vomiting — minimal poison is expelled, while the risk of pulmonary aspiration of vomit is severe, especially if consciousness wanes. Rinse mouth and spit out, place casualty on left side, do not leave alone. Force copious water only if instructed by medical staff. Sorbent (activated charcoal) — give only if the casualty is fully conscious, able to swallow independently, and not vomiting, ideally within the first hour of ingestion, and under dispatcher / poison control guidance. Do NOT give for strong acids, alkalis, petroleum distillates (fuels), alcohol/methanol, or iron

supplements — it will not bind and causes harm. The therapeutic dose for acute poisoning is NOT "1 tablet per 10 kg" (that is a trivial dose for flatulence, dozens of times too low): for adults, 20–30 g in a single dose (up to 50 g in toxicology protocols); for children over 3 years — approx. 1 g/kg (under 3 years — only by medical order). That equals 80–120 standard 0.25 g tablets, which is why first aid kits should contain charcoal powder or granules; stir into 1–2 glasses of water and drink. If no communication with medical services is possible, casualty is conscious, and poison is not in the excluded categories — give this single dose and transport immediately. Preserve packaging and leftover food/mushrooms/pills for toxicologists.

3. **Corrosives (acids, alkalis, bleach, petroleum fuels):** do NOT induce vomiting, do NOT attempt chemical neutralization (e.g. baking soda for acids generates gas and causes gastric rupture). Rinse mouth with water, sip plain water in small sips, evacuate immediately.
4. **Mushroom poisoning:** symptoms appearing 6+ hours after ingestion are the most lethal (Death Cap / *Amanita phalloides*). Follow food poisoning protocol above (call 112 / 911 / 103, do not induce vomiting, sorbent 20–30 g), reach hospital at all costs; save mushroom scraps for analysis. "Feeling better on day two" with Death Cap is a deceptive latency phase; hepatic necrosis is progressing.
5. **Carbon monoxide** — Section 7.11. **Toxic alcohol substitute** (methanol: blindness, "drunk" state with or without alcohol odor): do not self-treat, transport to hospital immediately — delay causes irreversible blindness and death.
6. Unconscious poisoned casualty: recovery position (Section 7.4), nothing by mouth, continuous airway/breathing monitoring.

7.14. Foot Care on the Move: Blisters and Chafing

- Prevention is everything: broken-in footwear, dry wrinkle-free socks, lubricating friction points (petroleum jelly / anti-chafing balm) BEFORE hiking, preemptively taping hotspot areas with adhesive plaster.
- Feel a hot spot or burning sensation — stop IMMEDIATELY (in 30 minutes it will be a full blister): apply tape/moleskin over redness, smooth out socks, shake out sand.

- Intact blister — do not puncture; protect by cutting a "donut" ring of moleskin/plaster around it. Very large, tense blister preventing walking: lance at the margin with a sterilized needle (flamed or alcohol-swabbed), gently press out fluid, do NOT peel away roof of skin, apply antiseptic and sterile dressing.
- Torn blister = open wound: wash, apply antiseptic, sterile dressing, change daily (Section 21.1).
- During rest breaks: remove boots, dry socks, elevate feet for 10 minutes to reduce edema.

7.15. Patient Movement and Evacuation

- Core rule: do not move unless necessary, especially if spinal trauma is suspected (Section 7.9). Move only if: scene is hazardous, or medical evacuation is impossible and you must transport them to care.
- **Drag carry** (one rescuer, rapid extraction from danger): pull by clothing at the shoulders or on an improvised blanket drag, moving headfirst, rescuer staying low.
- **Two-handed / four-handed seat carry** (two rescuers, conscious casualty): rescuers grasp each other's wrists/forearms to form a seat; casualty wraps arms around rescuers' necks.
- **Improvised stretcher**: two 2.5-meter poles + two sturdy jackets (poles threaded through buttoned jacket sleeves) or rope zigzag lashing (Section 15.3), or heavy-duty blanket/tarp (carried by rolled edges by 4–6 rescuers).
- Carry unconscious casualties on their side or with head turned laterally (to prevent aspiration of vomit). Carry feet-first on level ground, head-first when moving uphill or up stairs.
- Every 100–150 meters — pause and reassess: airway, breathing, bleeding control, consciousness.

7.16. First Aid Kit Inventory

Trauma Kit / IFAK (carry easily accessible, not buried at the bottom)

- ☐ Tourniquet (CAT / SOF-T type) — minimum 2 units; Ministry of Health recommends 2 per family member (certified genuine; no cheap bazaar or counterfeit copies)
- ☐ Emergency compression bandage (Israeli type) — 2 units

- ☐ Hemostatic gauze (kaolin or chitosan based) — 1–2 units
- ☐ Chest seals (occlusive vented/unvented) — 2 units (or heavy-duty foil/plastic + medical tape)
- ☐ Sterile gauze roller bandages 7 m × 14 cm — 5 units, non-sterile — 3 units
- ☐ Trauma shears (heavy-duty clothes-cutting shears)
- ☐ Nitrile medical gloves — 4+ pairs
- ☐ Emergency space blanket (mylar) — 2 units
- ☐ Permanent marker, adhesive tape roll, safety pins

General Medical Kit

- ☐ Paracetamol 500 mg, ibuprofen 200–400 mg (analgesic, antipyretic)
- ☐ Oral rehydration salts (ORS) — 5+ packets; loperamide (acute diarrhea in adults)
- ☐ Sorbent: for home kits, the Ministry of Health recommends silicon dioxide-based agents. Activated charcoal (powder or granules, 50 g; impossible to reach effective doses with tablets) — for toxic ingestions as directed by emergency dispatcher or physician; without communications, dosages and exceptions in Section 7.13
- ☐ Wound antiseptic: chlorhexidine or povidone-iodine; 70% alcohol and alcohol prep pads — strictly for intact skin around wounds and tools, not inside open wounds. Brilliant green ("zelenka"), iodine tincture, and hydrogen peroxide should not be used on open wounds
- ☐ CPR face shield with one-way valve — 1 unit
- ☐ Assorted adhesive bandages (band-aids), sterile adhesive wound closure strips (Steri-Strips)
- ☐ Antihistamine (allergy relief)
- ☐ Burn gel / topical dexpanthenol dressing
- ☐ Lubricating eye drops (dust, smoke irritation)
- ☐ Digital thermometer, medical tweezers
- ☐ **Personal prescription medications for 30+ days + list of diagnoses, allergies, and dosages**

Tip: taking antibiotics without a physician's guidance is hazardous, but for prolonged grid-down crises, maintain an emergency prescription reserve obtained in advance from your family doctor, complete with written indications and dosing. Discuss this with your doctor now while healthcare systems are fully operational.

CHAPTER 8

Water: Sourcing, Filtration, and Disinfection

3 days without water. Contaminated water brings dysentery, which in a crisis is deadlier than thirst. Golden rule: treat any sourced water as contaminated until disinfected.

8.1. How Much Water You Need

Need	Minimum per person/day	Comfort level
Drinking	2 L (heat/hard labor: 3–4 L)	3 L
Cooking	1 L	1.5 L
Hygiene (hands, dishes)	1 L	3–4 L

This is the survival minimum. For home emergency supplies, dovidka.info recommends more: 3 L of drinking water + 10–12 L for hygiene and cooking per person per day, for at least 72 hours.

The sign of adequate hydration is pale, clear urine. Dark urine, headache, lethargy = already dehydrated. Drink before you feel thirsty, not after.

8.2. Where to Find Water

In the City Without Running Water

- **Water heater / boiler:** 30–100 L of potable water. First, disconnect power (unplug from socket or turn off breaker; shut off gas for gas heaters), turn off the cold water inlet valve to the heater, and open the hot water tap on a faucet — this allows air in, otherwise water won't flow out. Drain via the drain valve at the bottom; if there isn't one, lift the pressure relief valve lever on the cold water inlet (flows slowly, place a bucket beneath). Caution: water may be scalding hot. Never power on an empty water heater — fill it first until water flows from the hot tap, otherwise the heating element will burn out.
- **Toilet cistern / tank** (the upper tank, never the toilet bowl!): if free of chemical disinfectant tablets, this is utility water, or potable after disinfection.
- **Building pipes:** open the highest tap in the building to let air in, and drain residual water from the lowest tap.
- Ice/snow from the freezer, liquid from canned vegetables.
- Water distribution points, wells, neighbors' boreholes; rainwater from roofs (divert the first 10 minutes of rain to flush away dirt and soot).

In Nature — Where to Look

- Lowlands, bases of slopes, ravines — water flows downward. Strips of lush green vegetation, willows, reeds = water is near.
- A stream is better than a river, a river is better than a lake, a lake is better than a puddle (flow!). Collect upstream from settlements, roads, pastures.
- A natural spring at the foot of a hill is the best find.
- Rain: stretch plastic sheeting or a poncho angled down into a container. Dew: drag clean cloth across grass before dawn and wring it out.
- Birch sap in early spring. Snow and ice — melt before consuming (eating snow lowers core body temperature and yields minimal hydration).
- Seep well / coyote hole: in a damp depression or near a riverbank, dig a hole 30–50 cm deep, allow water to seep in and settle.

Never drink without disinfection, even crystal-clear stream water (Giardia, parasites, and bacteria are invisible). **Never collect at all:** stagnant puddle water with an oily film, water near animal carcasses, water with a chemical odor, or in war zones downstream from military vehicles and destroyed equipment — fuel, chemicals, and heavy metals are NOT removed by boiling, chlorine, or SODIS; only distillation (partially) or avoiding the source entirely will keep you safe.

8.3. Three Steps: Settling → Filtration → Disinfection

Filtration removes turbidity and suspended particles, but not microbes.

Disinfection kills pathogens, but works poorly in cloudy water. Therefore, always perform all three steps: settle (decant clear water from sediment), filter, and disinfect.

DIY Improvised Filter

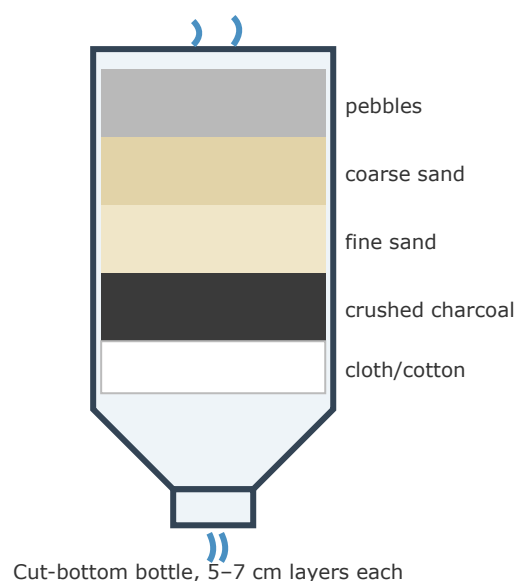


Fig. 8.1. DIY plastic bottle filter. Charcoal must be from fully burned wood ash/charcoal (not hot embers!)

Discard the first 2–3 liters (flushing the filter). If you lack a bottle, filter through 4–8 layers of tightly woven fabric. Water still requires disinfection after filtering!

8.4. Disinfection Methods

Method	Instructions	Pros / Cons
Boiling (most reliable)	Rolling boil for 1 min (at altitudes >2,000 m: 3 min) — CDC/WHO minimum; Ukrainian Ministry of Health recommends 10 min if fuel permits	Kills all living pathogens. Cons: consumes fuel and time; does not remove chemical contaminants
Disinfection tablets (Aquatabs, chlorine dioxide, etc.)	Follow package instructions, typically wait 30 min	Lightweight, precise dosing. Cons: limited supply
Household bleach (unscented sodium hypochlorite, NO fragrances, detergents, or surfactants; check concentration on label)	Check the label first — bleach concentration varies widely. 5–9% sodium hypochlorite (50–90 g/dm ³ available chlorine): 2 drops per 1 L of clear water (4 drops for cloudy or very cold water). ~1% (10–15 g/dm ³) or unknown concentration: 10 drops per 1 L (20 drops for cloudy or very cold water). Stir, wait 30–60 min. Water should retain a faint chlorine scent; if none, repeat dosage and wait another 15 min. If smell or taste is too sharp, let water stand open for a few hours or aerate by pouring back and forth between clean containers. Bleach older than 1 year loses potency.	Available everywhere. Cons: requires careful dosing, only pure hypochlorite

SODIS (Solar Water Disinfection)	Clear PET bottles up to 2 L filled with filtered water — place in full sun for 6+ hours (cloudy: 2 days), ideally on a reflective surface	Free, zero fuel needed. Cons: slow, requires clear water, PET bottles only (glass blocks UV)
Distillation	Boil under an inverted lid, collect condensate in a cup (suspend cup under inverted lid handle; or use tube/gutter)	Only method against salt and partially against volatile chemicals. Cons: heavy fuel consumption

Tincture of Iodine: 5% alcoholic iodine solution — 2 drops per 1 L of clear water (4 drops for cloudy water), wait 30 min (60 min in cold water). Not recommended for pregnant women, infants, or people with thyroid conditions; do not use continuously for more than a few weeks.

8.5. Water Storage

- Store only in food-grade plastic, glass, or stainless steel with airtight lids; keep in a cool, dark place.
- Water treated with chlorine in clean sealed containers stores up to 6 months. Label with storage date.
- Never touch stored drinking water with bare hands or dirty utensils — ladle out with a clean scoop.
- Keep drinking water and utility water strictly separate and clearly labeled.

CHAPTER 9

Food: Supplies and Foraging

Remember the rule of threes: weeks without food. Never risk your life for calories. Yet a protracted crisis requires knowing how to preserve food, cook without gas or electricity, and supplement supplies from nature.

9.1. How Much Food You Need

- Survival baseline (sedentary): 1200–1500 kcal/day. Normal intake: 1800–2200. Heavy physical labor / sub-zero cold: 3000+.
- Priority during caloric deficits: fats (9 kcal/g — cooking oil, lard/saló, nuts) and carbohydrates. Protein is critical for tissue repair and wound healing.
- Children, pregnant women, and the sick eat first and receive full nutritional portions.
- Fasting for 1–2 days is safe for a healthy adult — but staying hydrated is mandatory and water intake must increase.

9.2. Cooking Without Gas and Electricity

- **Backpacking gas stove:** primary tool. A standard 220 g butane/propane canister = ~1 hour continuous burn time = 8–12 cooked meals.
- **Campfire / wood stove (burzhuyka):** Chapter 10. Cooking in a covered pot with a tight lid saves 30% fuel.
- **"Thermal retention" cooking (haybox / thermos method):** bring grains/porridge to a rolling boil for 2–3 minutes, then wrap the covered pot tightly in blankets or a sleeping bag for 1–2 hours — it finishes cooking thoroughly on retained heat. Saves 50–80% fuel.
- **Brick rocket stove:** 16–20 bricks arranged in a chimney column with a bottom side feed for kindling — multiple times more fuel-efficient than an open campfire, runs on dry twigs.
- Soaking beans, lentils, and whole grains for 4–8 hours cuts boiling time in half.
- **Never** light an open fire, barbecue grill, or run a fuel generator indoors — carbon monoxide kills silently (Section 7.11).

9.3. Food Storage Without Refrigeration

Product	Method	Shelf Life
Meat, fish	Immediately after catching, fish MUST be eviscerated (remove all entrails and gills) and washed inside and out:	Weeks to months

	uneviscerated dried river fish is one of the leading causes of fatal botulism in Ukraine, and the toxin alters neither appearance, odor, nor taste. Dry-cure with salt (coarse salt rubbed thoroughly into the skin and abdominal cavity, 20% salt by weight of fish — 200 g per 1 kg) in a cool spot, then air-dry in a breezy shaded area covered with cheesecloth to keep flies off	
Meat, fish	Hot smoking over alder or fruitwood is a cooking method, not long-term preservation (low salt, high residual moisture)	Eat the same day; in warm weather — within a few hours. In temperatures below +5 °C (outdoor winter "window fridge", ice) — up to 2–3 days. For stockpiling, use heavy salting and air-drying (row above)
Vegetables, mushrooms, apples, herbs	Sun-drying in thin slices or drying near a stove/heater	Months
Opened canned goods	Transfer immediately to a glass or ceramic container, consume within 1 day (winter: 2–3 days)	1 day
Cabbage, cucumbers	Lacto-fermentation under a weight. Cabbage: 2–2.5% salt by weight (20–25 g ≈ 1 level tbsp per 1 kg), pound until juicy, no added water. Cucumbers: 4–6% brine (40–60 g per 1 L water, ideally 50 g ≈ 2.5 level tbsp); below 3% (30 g/L) — they soften, turn slimy, and rot. Use non-iodized salt; keep all vegetables fully submerged under brine; after 3–5 days active fermentation — move to cold storage (root cellar)	Months, + rich in vitamin C
Perishables in winter	"Outdoor window fridge": insulated box mounted outside the window or on a balcony, protected from birds and scavengers	Functions like a refrigerator

Danger of botulism: bulging lids, cloudy brine, bubbling/foam, or off-odors — discard the jar immediately without opening or tasting. The botulinum toxin alters neither flavor, odor, nor appearance, so always boil home-canned meat, fish, or mushrooms (contents in an open pot) for 10–15 minutes before consumption — heat destroys the toxin.

9.4. Edible Wild Plants (Common in Ukraine)

Ironclad rule: eat only what you recognize 100%. If in doubt, do not eat. Avoid wild mushrooms entirely during a crisis: a single mistake means severe poisoning when emergency medical care is unavailable.

Plant	Identification	What to Eat
Stinging nettle	Stings on contact; serrated leaves in opposite pairs, square stem	Young tender leaves — blanch in boiling water 2 min: soups, "spinach". Rich in protein, iron, and vitamins
Dandelion	Bright yellow flower, basal rosette of deeply toothed leaves, milky white sap	Leaves (soak in cold water to leach out bitterness), roasted roots as vegetable or coffee substitute
Plantain (broadleaf / ribwort)	Rosette of oval leaves with prominent parallel/arcuate veins	Young leaves boiled in soup; crushed fresh leaf applied topically to minor wounds
Lamb's quarters (goosefoot)	Diamond-shaped "goosefoot" leaves with a white powdery/mealy underside	Boiled leaves — cooked like spinach
Sorrel	Arrow-shaped tart, pleasantly sour leaves	Fresh in salads and boiled in soups / green borscht (rich in vitamin C)
Broadleaf cattail	Brown cigar-like flower spikes ("corn dogs") in wetland marshes	White young shoots and peeled rhizomes (roasted/baked) — excellent source of starch
Linden (basswood)	Heart-shaped leaves, fragrant yellowish blossoms	Young tender leaves — fresh salad; dried blossoms — soothing tea
Acorns	Oak tree nuts	Must be leached for 2–3 days with daily water changes to remove astringent tannins, then roasted or ground into flour
Familiar wild berries	Raspberry, blackberry, wild strawberry, bilberry, guelder rose (kalyna), rose hip, rowan (sweeter after frost)	Fresh; rose hips — brewed as vitamin C tea

Deadly Lookalikes — Learn to Avoid

- **Poison hemlock and water hemlock / cowbane** (resemble wild parsley, wild carrot / Queen Anne's lace; mousy odor, purple-spotted hollow stems) — never forage any "wild dill" or "wild carrot".
- **Herb Paris** (single black berry atop 4 leaves), **lily of the valley** (red berries), **mezezon / spurge laurel, belladonna (deadly nightshade)** — avoid all unfamiliar wild berries, especially solitary red or black ones.
- Apricot and cherry pits in large quantities, green sprouting potatoes, raw elderberries — also toxic.

Universal Edibility Test for Unknown Plants — An Extreme Last Resort, Not a Method

The honest truth about this test: it does not detect cumulative toxins and offers no protection against severe allergic reactions; survival experts consider it unreliable. The correct strategy is to memorize 5–7 foolproof plants from the table above RIGHT NOW so you never need this test. Employ it only during multi-day starvation when no alternatives exist.

Protocol: Rub plant juice on wrist — wait 15 min → touch to outer lip — wait 15 min → place on tip of tongue — wait 15 min → chew a small piece and spit out — wait 1 hour → swallow 1/2 teaspoon — wait 8 hours without eating any other food → eat a small handful — wait 8 hours. Any burning, tingling, nausea, numbness, or rash — stop immediately, induce vomiting, drink plenty of water. Avoid plants with milky sap (except dandelion), almond scents, shiny/waxy leaves, or umbrella-shaped flower clusters (umbels).

9.5. Basic Fishing with Minimal Tackle

- Go-bag fishing kit: 20–30 m of 0.25–0.3 mm monofilament line, hooks #5–10 (10 pcs), split-shot sinkers — weighs only 50 g, provides food indefinitely.
- Bait: earthworms (under rotting logs, in damp leaf litter), grubs, grasshoppers, bread dough balls, scraps of any meat.
- **Bottom line / bank line (donka):** monofilament line with a sinker and 2–3 hooks, cast out into the current, tied off to a bank stick with a bell or tin can rattle. Set 3–5 lines overnight — passive harvesting while you handle other priorities.
- **Plastic bottle minnow trap:** cut off the top third of a large plastic bottle, invert the spout inward like a funnel, secure with wire/cord, place bait inside — small fish swim in through the funnel and cannot navigate out. Ideal for minnows and small baitfish.
- Fish are most active at dawn and dusk, in shaded bank overhangs, around submerged snags, and along seams between current and slack water.
- Always cook fresh fish thoroughly (parasites); for long-term reserves, salt-cure and air-dry per Section 9.3.

9.6. Small Game

Traps hunt while you sleep — set a dozen simple traps rather than a single complex one. Check them twice daily. Position traps along active animal runways (worn paths,

droppings, gnawed bark), and mask human hand scent with wood smoke.

- **Wire snare:** wire loop the diameter of a fist set along a rabbit/hare run, positioned one hand-width above the ground, anchored to a solid stake or bent sapling spring pole.
- **Figure-4 deadfall trap:** heavy flat rock or log propped upon three notched sticks arranged in the shape of a "4", with bait affixed to the horizontal trigger stick.
- **Birds:** urban pigeons are an accessible source of protein; trap using an inverted crate or box propped on a stick with a pull cord, baited with grain.
- **Cook all game meat thoroughly. Never eat:** animals found dead, animals exhibiting erratic or fearless behavior (rabies risk!), or the liver of apex carnivores (toxic vitamin A levels).

Trapping game (snares, deadfalls) outside of an existential crisis is prohibited by law (Art. 20 of the Law of Ukraine "On Hunting and Game Management"); fish traps and using more than 7 hooks per angler are likewise banned (Amateur Fishing Regulations, 2022). These skills are strictly for life-or-death survival situations.

9.7. Often Overlooked Urban Food Sources

- **Unconventional home pantry stores:** flour, gelatin, bouillon cubes, infant formula, dry pet kibble. Abandoned supplies from neighbors — strictly by mutual agreement or under life-threatening necessity, leaving an explanatory note and commitment to compensate.
- **Urban fruit and nut trees:** apple, apricot, walnut, mulberry; tart or unripe fruit is still edible after cooking.
- **Vegetable gardens, greenhouses, and grain silos beyond city limits;** barter with rural villagers (high-value trade items: fuel, batteries, medications, salt, sugar, matches, alcohol for antiseptic use and universal currency).

CHAPTER 10

Fire

Fire provides warmth, disinfected water, cooking, signaling, and psychological security. The ability to light it with a single match in the pouring rain is a fundamental survival skill.

10.1. The Fire Triangle and Three Fuel Sizes

Fire requires three elements: **heat + fuel + oxygen**. Most failures stem from rushing: placing a heavy log onto a fragile flicker of flame smothers it. Always prepare **THREE** distinct piles in advance:

1. **Tinder** (ignites from a spark): birch bark, dry reeds, cattail fluff, cotton balls (ideally impregnated with petroleum jelly), a bird's nest of buffed dry grass, finely feathered sticks carved with a knife; ignitable from open flame (not sparks): bicycle inner tube rubber, paper.
2. **Kindling** (matchstick to pencil thickness): dry lower dead spruce/pine twigs, split cedar or pine splinters. Prepare an armful the girth of your grip.
3. **Fuel wood** (finger to wrist thickness, progressing to split logs). Dry wood snaps cleanly with a sharp crack. For wet logs: split them open — the heartwood inside remains dry.

In the rain: look for dry wood underneath fallen tree trunks, lower dead evergreen branches sheltered under the canopy, and the split heartwood of wet logs; birch bark ignites even when soaking wet. Build your fire beneath a leaning trunk or tarp, on a platform of split green logs (never directly on saturated ground or snow).

10.2. Ignition Tools

Tool	Method	Notes
Matches / Lighter	Self-explanatory	Store in 3 separate waterproof locations. If a lighter freezes, warm it in your closed fist or armpit before striking
Ferrocerium rod (ferro rod / firesteel)	Shower sparks into tinder using the striker, holding it point-blank	Works when soaking wet, thousands of strikes — the gold standard for your go-bag
Lens	Magnifying glass, reading glasses for farsightedness, flashlight lens, clear water bottle: focus direct sunlight into a pinpoint dot on dark tinder	Requires intense direct sunlight. Smoke appears in 5–30 sec
Battery + foil	Cut a strip of foil (gum wrapper), taper the middle to 2–3 mm, and bridge the + and –	Have tinder ready immediately; foil burns for only 1–2 sec

	terminals of an AA battery: the narrow bridge instantly flares	
Car battery	Connect jumper cables to the + and – terminals first. Holding only the insulated clamp handles, tap the free clamps together 1–2 m away from the battery across a wad of fine steel wool or fine wire resting on tinder. Never short clamps together directly or bridge the terminals directly.	Extreme last resort. A spark near a charging/discharging car battery can ignite venting hydrogen gas, spraying sulfuric acid into your eyes; incandescent wire causes severe burns. Never lean over the battery; shield eyes.

10.3. Basic Fire Lays



Fig. 10.1. Basic fire lays

Dakota Fire Hole — Concealed and Ultra-Efficient

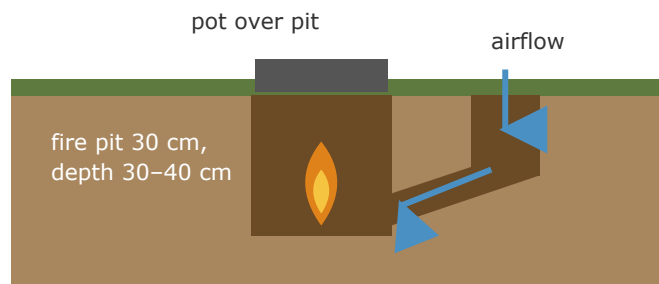


Fig. 10.2. Dakota fire hole: two holes connected by an underground tunnel. Virtually smokeless and concealed, uses minimal wood, creates strong draft

Ideal when you need to avoid giving away your position (Chapter 17) or in high winds. Dig a primary fire pit, and 30 cm away on the upwind side, dig an angled air tunnel connecting to the bottom of the fire chamber.

10.4. Fire Lay and Ignition: Step-by-Step Technique

1. Site preparation: clear organic duff down to bare mineral soil for 1.5 m in all directions; encircle with rocks (NEVER porous wet river rocks — trapped water

turns to steam, causing them to shatter like shrapnel). In winter, build a raft of damp logs over the snow.

2. Place a tinder "nest" the size of two fists directly in the center.
3. Apply spark or flame to the base of the tinder (heat rises!). Blow gently with long, steady exhalations.
4. Gradually feed kindling in a teepee structure over the tinder — starting with the finest twigs. Do not dump an armful at once.
5. Once flames are established — only now add finger-thick fuel wood, graduating to split logs.

Maintaining and Preserving Fire

- Overnight bank: cover thick glowing coals with a layer of ash — in the morning, blow back into active flame in a minute.
- Transporting fire: place an ember inside a tin can lined with dry punk wood or tinder fungus; smolders safely for hours.
- Complete extinguishing: douse with water, stir thoroughly with a stick, douse again, and check with the back of your bare hand — it must feel stone-cold. A wildfire during a crisis is a disaster on top of disaster.

10.5. Domestic Fire Safety: Surviving a Fire in Your Home

Domestic fires are the most common lethal emergency in both peacetime and wartime: in Ukraine, over 1,000 people die in residential fires every year, and in winter one in five fires is triggered by stoves, space heaters, and candles. During blackouts, this risk multiplies dramatically. Smoke kills far faster than flames: 2–3 breaths of superheated toxic smoke can render an adult unconscious.

Prevention (Mandatory During Blackouts)

- Candles: place only inside glass jars set on non-combustible surfaces, well away from curtains, and kept at arm's length from sleeping areas; **never sleep with a burning candle**. Use LED lanterns instead (Section 20.2).
- Heaters and wood stoves (burzhuykas): maintain 1 m of clearance around them, never dry clothing on them, inspect chimney flues, and ensure the floor beneath is shielded with metal or non-combustible material; shut down before sleeping or leaving the house.

- Electrical wiring: avoid daisy-chaining multiple splitters or power strips for high-draw space heaters; discard frayed extension cords; when power is restored after a blackout, check what was left plugged in.
- Portable gas canisters and camping burners: keep away from open flames and direct heat; smoking in bed remains the leading cause of fatal fires in State Emergency Service (SES) statistics.
- **Smoke detector** (from ~300 UAH, 1-year battery life) in hallways and bedrooms is the cheapest lifesaver available; keep a 2–4 kg dry powder fire extinguisher in the kitchen + a fire blanket or dense woolen blanket. Know two distinct escape routes from the home (balcony adjoining emergency exit, ground-floor window, fire escape ladder).

Fight or Flee

- Fight the fire yourself **ONLY** while flames are smaller than a bucket and smoke does not impede breathing: aim extinguisher spray directly at the base of the flames; for oil/grease fires in cooking pans — smother immediately with a lid (preferably metal), a fire blanket, or a dense damp wrung-out cloth, **NEVER use water** (a steam explosion will violently scatter flaming grease); for electrical appliances — unplug from socket first, then extinguish.
- If not extinguished within 30 seconds or if toxic smoke gathers near the ceiling — **evacuate immediately**. Belongings, documents, pets — take only what is already in your hands.

Evacuation Through Smoke

1. Shout "Fire!", awaken everyone in the home, call 101 (or 112 / 911) from outside or while escaping.
2. **Close the door** to the room on fire — this buys 10–15 minutes; before opening any interior doors, touch them with the back of your hand: if hot, do not open.
3. Stay low: crawl or crouch (the air nearest the floor is cooler and contains more oxygen), hold a damp cloth over nose and mouth, navigate along the perimeter wall toward the exit.
4. **Never use elevators**. Take the stairs down; if the stairwell is choked with dense smoke, retreat into your apartment and seal the door.
5. If clothing catches fire: **Stop, Drop, and Roll**; smother flames with a heavy coat or blanket; never run (running fans the flames). Treat burns with cool running

water for at least 20 min, never apply ice (Section 7.8).

If Trapped and Escape Routes Are Cut Off

- Close the door, seal all perimeter gaps and vents with wet towels or damp clothing, open the window, stay beside it, and signal for help (bright cloth, flashlight, shouting); call 101/112 providing your exact address, floor, and apartment number.
- Do not jump from above the second floor — hold out for emergency rescue teams: a closed room with an exterior window provides 10–20 vital minutes.
- Balcony: step onto the balcony and pull the door shut behind you — this keeps smoke from billowing outside.

Fires following airstrikes or shelling (shrapnel, ruptured gas lines, missile fuel): first check whether a secondary strike / double tap is imminent (Section 3.3), shut off main gas valves, and trip circuit breakers. Never re-enter a smoke-filled building to rescue possessions or pets: unconsciousness occurs within seconds in toxic smoke. Alert rescue crews immediately about anyone trapped inside — firefighters are equipped with SCBA breathing gear.

CHAPTER 11

Shelter and Bivouac

Under the rule of threes, in freezing cold or a storm without protection, hypothermia kills within hours. A shelter is not a "cabin" — it is anything that halts wind, water, and conductive heat loss into the ground.

11.1. Site Selection (The 5 W's Rule)

- **Water:** nearby (100–200 m), but not right at the water's edge (dampness/fog, insects, flash flooding, predator trails).
- **Wind:** choose a sheltered location — behind a ridge, knoll, or dense tree line; position the shelter entrance facing leeward (away from the wind).
- **Elevation (Valley vs. Peak):** avoid depressions or dry ravines/gullies (cold air pools and water flows there), avoid exposed ridge crests (severe winds). The ideal spot is mid-slope.
- **Widow-makers / Overhead hazards:** check for dead hanging branches or rotten standing trees overhead ("widow-makers"); avoid the base of loose scree or cliffs prone to rockfalls.
- **Visibility / Concealment:** chosen deliberately depending on whether your goal is rescue signaling or evasion (Chapters 14 and 17).

11.2. Rapid Improvised Shelters

Lean-to Tarp Shelter (30 Minutes)

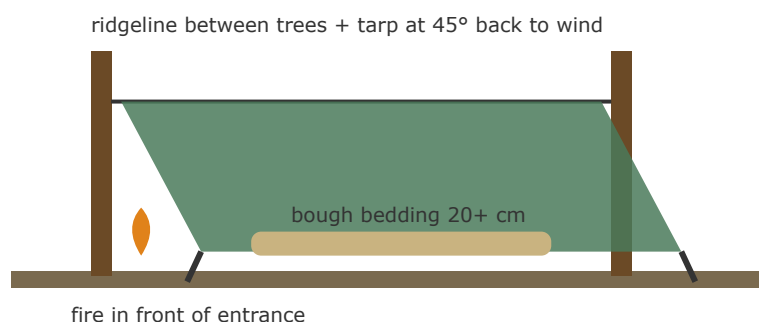


Fig. 11.1. Lean-to shelter: fastest field shelter, works effectively with a reflector campfire

1. Rig a taut ridgeline cord between two trees at chest height. Drape the tarp or plastic sheeting over it, stake the trailing edge to the ground at a 45° angle facing into the wind, and weight it down with logs or pegs.
2. Insulation bedding: lay down 20+ cm of pine/conifer boughs, dry leaves, or dried grass — WITHOUT this layer, the ground will siphon away all your body heat

(conduction into frozen soil robs heat faster than cold air!).

3. Build a long fire along the open front 1–1.5 m away; behind the fire, construct a reflector wall of stacked green logs or dry stones to radiate heat back into the shelter.

Debris Hut (Without a Tarp, 2–3 Hours)

Rest one end of a sturdy ridgepole onto a tree crotch or stump at waist height, with the other end anchored to the ground. Prop ribbing sticks along both sides at a 45° angle. Cover with a thick layer of pine boughs or leafy branches shingled from bottom to top, forearm-thick (30–60 cm deep — this thickness sheds heavy rain). Pile deep insulating debris inside. Keep the entrance opening small and plug it with your backpack.

Snow Shelters

- **Snow trench:** dig down to the ground, span the top with sturdy poles/branches + tarp + snow mound. Fast to construct and remarkably warm (snow is an outstanding thermal insulator: ~0 °C inside even at –20 °C ambient temperature).
- **Spruce tree well shelter:** beneath mature evergreen branches near the trunk, snow naturally creates a hollow void — excavate and deepen it, lining the floor with boughs.
- Critical rules for any snow shelter: poke a ventilation hole through the ceiling with a stick (prevents suffocation), keep the entrance lower than the sleeping shelf (dense cold air drains downward), and mark the shelter on the snow surface outside.

In a Destroyed Urban Environment

- Choose structurally sound low-rise buildings or basements featuring at least two separate exits; inspect ceilings and load-bearing walls for structural cracks and check for gas odors.
- A single compact room retains heat far better than an entire flat: concentrate living space into one small room, sealing doors and windows with heavy blankets.
- Never shelter overnight in structures that act as military targets: near defense installations, radio/cell towers, or supply depots.

CHAPTER 12

Warmth, Clothing, and Cold-Weather Survival

Cold kills silently: first it strips finger dexterity, then mental clarity. Manage heat deliberately — through clothing layers, dryness, and calories.

12.1. The Three-Layer Principle

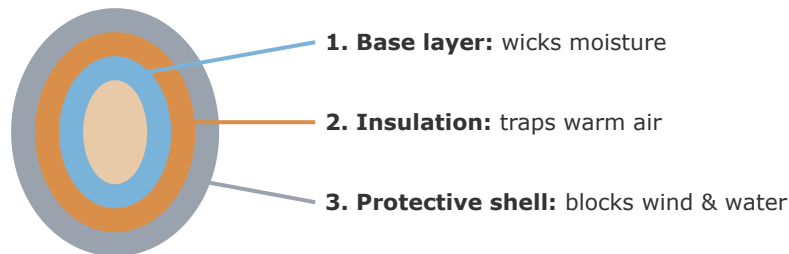


Fig. 12.1. Three clothing layers: base layer (thermal underwear, synthetic/wool — NOT cotton), insulation (fleece, sweater, down), protective shell (breathable membrane, rain shell). It is not the fabric that keeps you warm, but the dead air trapped between layers

- **Cotton kills:** a wet cotton shirt conducts heat away 25 times faster than air and does not dry out. Your next-to-skin layer must be synthetic or wool.
- **Do not sweat:** remove a layer before strenuous work or walking. Sweating = freezing later. It is far better to hike slightly cool than soaked in sweat.
- On a dressed person, an uncovered head and neck are the largest "heat leak" (not because the head has special physiology, but because the rest of the body is already insulated): a warm beanie + scarf/buff retains more heat than adding a second sweater.
- Two pairs of socks (thin liner + thick wool); footwear must not pinch (tight boots = cold feet from restricted circulation). Add an insole cut from a closed-cell foam pad or thick felt.
- Field improvisation: crumpled newspaper, dry leaves, or straw stuffed between jacket layers; plastic produce bags over socks (vapor barrier inside wet boots); space blanket (mylar foil) under outerwear across the chest and back.

12.2. Warmth in an Unheated Home

- **Shrink living space:** gather everyone into a single small room with the fewest exterior walls. Keep doors tightly closed and block drafty cracks with rolled blankets.
- **Windows** are the primary thermal leak: tape plastic sheeting, blankets, or mattresses over them at night; open curtains during sunny daylight hours on

south-facing windows.

- **Pitch a tent indoors** or construct a blanket fort over the bed — the interior stays 5–10°C (9–18°F) warmer simply from trapped body heat and respiration.
- Sleep together; pets provide radiant heat as well. Place bottles of hot water inside sleeping bags 30 minutes before sleep.
- Internal heating: hot tea or broth and high-calorie, fatty food before bed; a well-fed body generates continuous internal warmth.
- A candle placed under an inverted ceramic flowerpot slightly warms cold hands and morale, but will NOT heat a room; monitor ventilation and fire hazards vigilantly.
- Wood-burning stove (burzhuika): route chimney pipe through a window using a sheet-metal pass-through, keep 50+ cm away from walls, keep a sand bucket nearby, and NEVER leave unattended. Burn only in dedicated stoves with functional draft; NEVER use a barbecue grill, brazier, or "bucket of charcoal" indoors. NEVER operate a generator inside a home, basement, garage, hallway, or on a balcony, even with open windows or piped exhaust: strictly outdoors, 6+ meters (20+ ft) away from windows and doors, exhaust pointed away from the house — carbon monoxide kills silently (sec. 7.11, safety rules sec. 20.4).
- Never heat a room using a gas stove or oven: carbon monoxide is colorless and odorless, causing unconsciousness without warning. Use a gas stove strictly for brief cooking cycles with active ventilation.

12.3. Rules for Sleeping in the Cold

1. Double ground insulation: there must be more insulation beneath you than above you (body weight compresses sleeping bag loft).
2. Warm up before bed: light physical movement (squats until warm, not sweating) and eat a snack.
3. Sleep completely dry: switch into dry sleeping socks and base layer; never sleep in damp daytime clothes — place them under your sleeping mat or next to your sleeping bag (they will finish drying).
4. Do not bury your face inside the sleeping bag — moisture in exhaled breath condenses and drenches the insulation. Cover your nose with a fleece buff.
5. A full bladder drains thermal energy — urinate before sleeping, no matter how reluctant you are to leave your sleeping bag.

CHAPTER 13

Orienteering and Navigation

GPS fails first: batteries die, signals are jammed — or spoofed, sending your navigator confidently to a location hundreds of kilometers away. A regional paper map + compass + these techniques are your fail-safe navigation that never shuts down.

13.1. Map and Compass

- Hold the compass level, well away from ferrous metal, magnets, smartphones (0.5+ m / 20+ in), vehicles (15–20 m / 50–65 ft), and high-voltage power lines (50+ m / 160+ ft).
- The red needle points North. Orient the map so that its top edge aligns with magnetic North — now the map directly matches the surrounding terrain.
- Azimuth (Bearing): direction in degrees measured clockwise from North. When navigating by azimuth, sight prominent intermediate landmarks (distinctive tree, boulder, building) every 100–200 m and walk directly toward them.
- Bypassing an obstacle (dog-leg): turn 90° sideways, counting paces → turn 90° back onto your original azimuth, passing the obstacle (add these forward paces to your primary count) → turn 90° in the opposite direction and walk the exact same lateral pace count → turn back onto your original azimuth.
- Pace counting: count every double step (each time your left foot strikes); ~65 pace pairs = 100 m on level terrain (~110 yards). This tracks distance traveled without electronics.
- **GPS spoofing:** if your navigation app shows you offshore in open water, in another city, or your location dot jumps erratically — the GPS signal is being spoofed (prevalent in combat zones and near strategic military infrastructure). Trust your compass, paper topographic map, and road signs; offline mapping apps (Organic Maps, OsmAnd, maps.me) function without cell service, but satellite coordinates can still be forged.

13.2. Cardinal Directions Without a Compass

Using the Sun and an Analog Watch (or Drawn Dial)

Hold the watch face level and point the **hour hand directly at the sun**. Bisect the angle between the hour hand and the "12" numeral (standard winter time) or "1" numeral (daylight saving time) — this bisecting line points toward **South**; the opposite direction is North. This method is approximate and applies only in the Northern Hemisphere; verify with secondary signs.

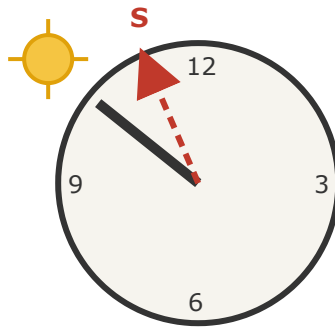


Fig. 13.1. Watch-and-sun method (Northern Hemisphere): point hour hand at the sun; the angle bisector to "12" (in summer DST, to "1") = South

Using a Shadow Stick (Two-Mark Method)

Plant a straight stick vertically in level ground and mark the shadow's tip with a pebble. Wait 15–20 minutes and place a second pebble at the new shadow tip. A line drawn from the first mark to the second points **East**; place your left foot on the first mark and your right foot on the second — you are now facing North. At solar noon (around 13:00 DST, or 12:00 standard time), the shortest shadow of the day points true North.

Using the North Star (Polaris at Night)

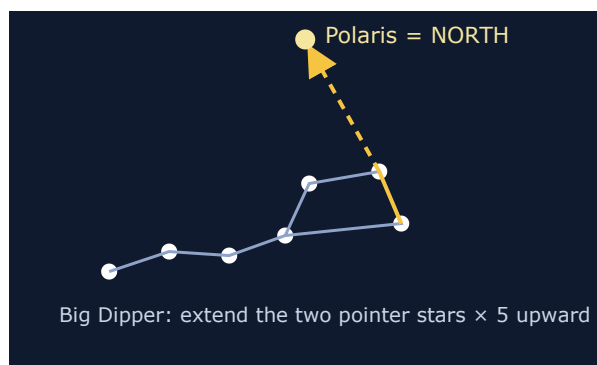


Fig. 13.2. Locating the North Star (Polaris) using the Big Dipper

Natural Signs (Secondary aids only — always verify with multiple indicators)

- Moss and lichen grow thicker on the north (damp, shaded) side of large boulders and trees; bark is darker and rougher on the northern side.
- Anthills are usually built on the south side of trees and stumps; the southern face of an anthill has a gentler slope.
- Snow melts faster on south-facing slopes; wild berries ripen first on their southern exposure.

- Eastern Orthodox church altars face East; satellite TV dishes in Ukraine and Europe point approximately South toward geostationary orbital positions.

13.3. If You Get Lost

1. STOP protocol (Chapter 1: Stop, Think, Observe, Plan). Do not walk in circles — without visual reference points, humans naturally veer off course.
2. Linear handrail method (if no search party is looking for you): navigate toward a prominent linear terrain feature — river, power line corridor, road, or surveyed forestry cutline — and follow it. Water flows toward civilization: stream → river → village.
3. Settlement sounds carry 2–3 km (barking dogs, heavy machinery, traffic); the smell of woodsmoke carries for miles. Listen from elevated ground at dawn and dusk.
4. Stop traveling 2 hours before dark and establish a shelter — traveling through unknown wilderness at night is far more hazardous than bivouacking.
5. If search-and-rescue is looking for you — stay in place in an open clearing and signal (Chapter 14). Locating a moving person in the wilderness is ten times harder.

CHAPTER 14

Rescue Signals and Emergency Communications

The rule of distress signaling: anything repeated THREE times is an international signal of distress. Three signal fires, three whistle blasts, three light flashes.

14.1. Sound and Light Signals

- **Whistle:** 3 long blasts — 1-minute pause — repeat. Audible at 1.5–3 km (1–2 miles; human voice carries only 200–500 m and causes vocal fatigue).
- **Flashlight at night:** series of 3 bright flashes directed toward houses, roads, or aircraft. SOS: 3 short — 3 long — 3 short (… — …).
- **Signal fires:** 3 fires in a triangle or in a straight line, spaced 20–30 m apart. Daytime — smoke (throw green leaves or damp branches onto the fire for white smoke; rubber or plastics for black smoke; choose a color contrasting with your surroundings: black against snow, white against dense forest), nighttime — bright flames. Keep a stockpile of dense smoke-generating fuel ready beside each watch fire.

14.2. Signal Mirror

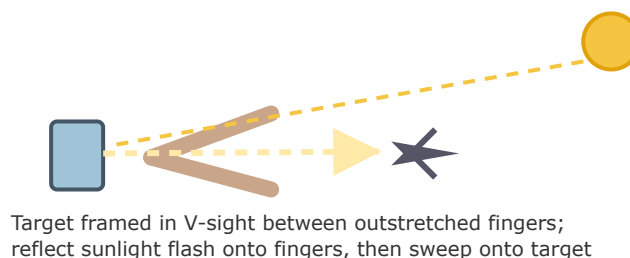


Fig. 14.1. Aiming a signal mirror flash using the outstretched two-finger sight

Any reflective surface works: pocket mirror, foil over cardboard, phone screen, can lid. A mirror flash is visible from an aircraft at 10–20+ km (6–12+ miles). Sweep flashes across the horizon in series even if you see no one — searchers may spot you first.

14.3. Ground-to-Air Emergency Signals

Lay out signals in an open area using high-contrast materials (bright fabric, logs, packed snow trenches, dark stones); symbols should measure at least 3 m (10 ft), ideally 5–10 m (16–33 ft):

Symbol	Meaning
--------	---------

V	Require assistance
X	Require medical assistance
→ (arrow)	Proceeding in this direction
N	No / Negative
Y	Yes / Affirmative
SOS	Universal distress signal

If you spot an aircraft or helicopter: first attract attention with movement — wave bright clothing, alternate standing and dropping down, flash a mirror (motion catches the human eye far better than color). Once spotted, stand in an open area facing the aircraft, raise BOTH arms overhead (forming the silhouette of the letter **Y**), and hold steady: this is the international aviation signal for "Yes, need help / pick us up." One arm up, one arm down (letter **N**) = "No, assistance not required." Waving a single arm overhead is interpreted by pilots as "All is well, do not wait" or an ordinary greeting — do NOT wave with one arm if you need rescue. DO NOT cross both arms over your head in an X — to pilots, that means "Do not land here / landing zone unsafe."

14.4. Communications in a Crisis

- **Conserving phone battery:** enable extreme power-saving mode, minimum brightness, disable background apps and location; airplane mode only when there is zero cell signal or battery is critically low (airplane mode blocks incoming civil defense air raid alerts). In zero signal, power on according to an agreed schedule (e.g., 10 minutes every 3 hours — agree on this schedule with loved ones in advance!).
- **SMS gets through when voice calls fail** — an overloaded network still pushes small text packets. Send concise SMS: who, where, status, plan.
- **National roaming:** if your primary mobile operator drops offline, a phone in Ukraine can connect to another operational network — toggle airplane mode on and off or select an available network manually in cellular settings. Emergency calls to 112 (and 911 / 999 abroad; in Ukraine, 101 State Emergency Service, 102 Police, 103 Ambulance, 104 Gas) are supported through any carrier, usually even without a SIM card — but do not rely on this: keep an active SIM in your phone. In advance, install and authenticate the official Ministry of Internal Affairs app "112

Ukraine" — it dials 112 over any internet connection (Wi-Fi in bomb shelters or Resilience Points / "Punkty Nezlamnosti") when cellular service is down.

- **Satellite SOS:** modern smartphones can send emergency messages to rescuers via satellite without cellular coverage — but only in countries where the service is enabled. **iPhone 14+:** among EU countries, only Austria, Belgium, Ireland, Spain, Italy, Luxembourg, Netherlands, Germany, Portugal, France (as well as the UK, Switzerland, Iceland, Andorra); it does NOT work on iPhone in Poland, Czechia, Slovakia, Romania, the Baltic states, or Scandinavia. **Google Pixel 9/10:** available across most of the EU, including Poland, Czechia, Slovakia, Romania, the Baltic states, and Scandinavia. Neither Apple nor Google Emergency SOS operates in Ukraine (as of September 2026); verify the supported country list on the manufacturer's website prior to travel. Requires an unobstructed view of the open sky.
- **Satellite SMS in Ukraine:** Starlink Direct to Cell via Kyivstar (launched November 2025). Any 4G LTE smartphone (Android or iPhone 13+ running iOS 26.2+) with a Kyivstar 4G SIM in areas without terrestrial cell towers automatically connects to the "Kyivstar I SpaceX" network (displays SAT in the iPhone status bar) to send and receive standard SMS; delivery takes 3–10 minutes. Requires automatic network selection and an open sky. Does NOT operate in temporarily occupied territories, active front-line combat zones, or border buffer zones. Treat this as a backup, not a total replacement: coordinate SMS check-ins with family in advance.
- **Official broadcast channels:** write down on paper the local FM frequencies for Ukrainian Radio (Suspilne) in your region, as well as the names of official Regional Military Administration (OVA) and State Emergency Service (DSNS) Telegram channels. Apply the two-source rule before following any "evacuation orders" — Chapter 18.
- **Broadcast radio receiver** — your primary source of official information during a prolonged blackout. Tune in at designated hours (official bulletins typically air at the top of the hour).
- **PMR446 walkie-talkies (license-free):** reliable family communications covering 0.5–1 km in dense concrete urban areas (up to 3–5 km in open terrain). Agree on a preset channel and schedule check-in windows. Remember: the radio spectrum is public and open to everyone — never transmit real names, addresses, or sensitive locations.

- Analog offline fallback: a paper list of contact phone numbers, prearranged family rally points (Section 1.5), physical notes left in a predetermined hidden spot ("Alive and well, headed to Aunt's, May 14, 10:00").

CHAPTER 15

Knots and Cordage

Six knots cover 95% of survival needs: securing, joining, tensioning, and lifting. In the diagrams: solid line = rope passes in front; dashed line = passes behind; green arrow = direction of the working end. Practice until automatic: your hands must be able to tie them in total darkness and freezing cold.

15.1. Cordage in Your Pack

- **550 Paracord (4 mm, 10–15 m / 33–50 ft)** — the gold standard: rated to hold ~250 kg (~550 lbs) tensile breaking strength (brand new, unknotted; paracord is strictly NOT designed for human rappelling, climbing, or life safety!), and the core contains 7 individual nylon strands that can be removed for fishing line, sewing thread, or snares.
- Protect cordage from: sharp edges (pad with folded cloth), abrasion against rough stone, and flame. Wet or knotted rope loses up to 30–50% of its rated tensile strength.
- Melt the cut ends of synthetic cordage with a lighter immediately to prevent unraveling.
- Terminology: **standing part** — the long, load-bearing portion of the rope; **working end** (running end) — the active end used to tie the knot.

15.2. The Six Essential Knots

1. Figure-Eight Knot — Stopper Knot and Reliable Loop

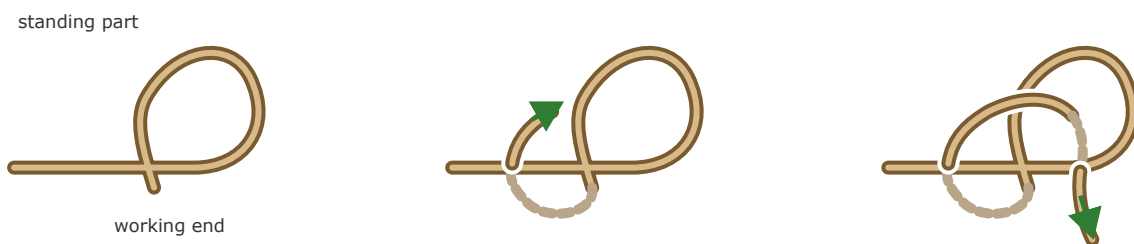


Fig. 15.1, Step 1. Form a loop: end crosses over standing part

Step 2. End passes BEHIND standing part and up

Step 3. Down through loop — figure-eight complete

Purpose: prevents rope end from slipping through an eyelet, pulley, or carabiner; tied on a bight (doubled rope), it forms a bombproof loop for carabiners, hooks, or hanging gear. Unties easily even after bearing heavy loads. Fig. 15.1.

2. Bowline — The "King of Knots": Non-Slipping Fixed Loop

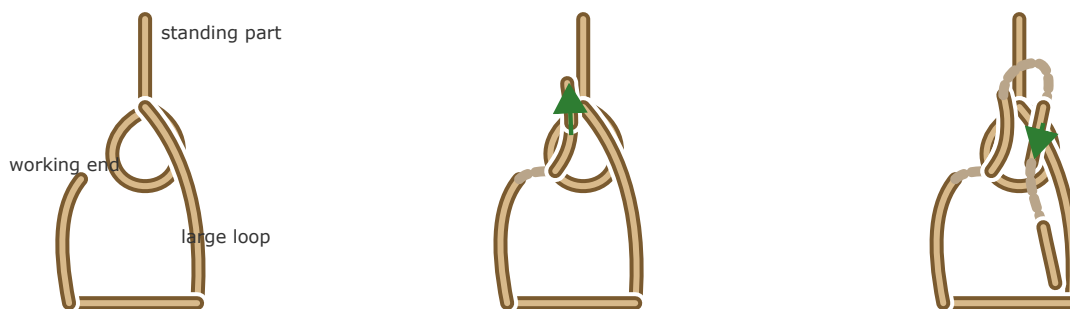


Fig. 15.2, Step 1. Small loop in standing part; end from below

Step 2. End passes from below UP through small loop

Step 3. Behind standing part and back down into loop

Mnemonic: "The rabbit comes out of the hole (small loop), goes around the tree (standing part), and goes back down the hole." **Purpose:** a fixed loop that will NOT cinch down under tension and unbinds easily afterward: rescue harness around a person for hauling (in this case MANDATORY: first cinch the bowline completely tight, then use the working end to tie a stopper knot — an overhand, or preferably a double overhand — around the adjacent leg of the loop flush against the bowline; leave a tail of at least 10 cm / 4 in. Without a stopper safety knot, cyclic loading and jerking can cause the bowline to shake loose), anchor tie-offs, guy line loops, terminal loop on a rope. Test: pull the standing line firmly — the loop must not shrink. Fig. 15.2.

3. Square Knot (Reef Knot) — Joining Two Ropes of Equal Diameter

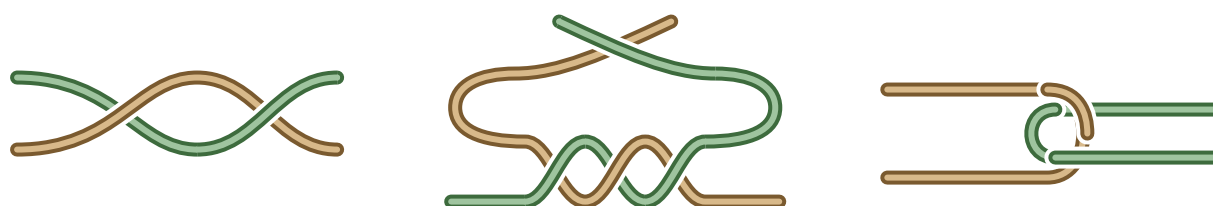


Fig. 15.3, Step 1. Left over right — first half-knot

Step 2. Right over left — second half-knot on top

Step 3. Complete: two interlocking bights

Rule: "Left over right, then right over left." A correctly dressed knot lies flat, with both ends of each rope exiting on the same side. If the ends exit crosswise, you have tied a "granny knot," which will capsize and slip. **Purpose:** securing bandages, parcel bundling, joining two ropes of EQUAL diameter. Never use for life-safety loads or for joining lines of unequal thickness. Fig. 15.3.

4. Clove Hitch — Securing to a Post or Spar

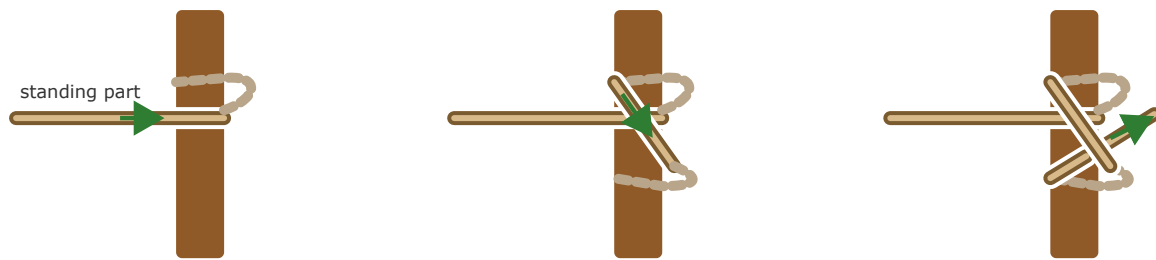


Fig. 15.4, Step 1. Turn: front to right, back to left Step 2. Second turn diagonally across the first Step 3. Working end tucks under own last turn; pull tight

Purpose: the starting point of lashings — ridge lines, tarp corners, shelter frames, hanging a cooking pot, securing to a post or pole. Tying and untying takes seconds, but it holds reliably only under constant, steady tension: with fluctuating loads it can slip — always lock it with an added half-hitch (see "Two Half-Hitches" below). Fig. 15.4.

5. Round Turn and Two Half-Hitches — High-Tension Hitch, Easy to Untie

1. Wrap the rope around the support (tree, post, ring) with a full turn (round turn) — this friction turn bears the primary load.
2. Take the working end and make a **half-hitch**: pass it around the standing part and tuck it through its own loop.
3. Make a second identical half-hitch in the exact same direction. Pull tight, cinching it snug toward the support.

Purpose: securing tarp guy lines to trees, mooring a boat to a piling, heavy towing lines. Holds tenaciously under immense tension and unties effortlessly even after being heavily loaded.

6. Taut-Line Hitch — Adjustable Friction Hitch

1. Wrap the rope around a tent stake or anchor and bring the working end back along the standing part.
2. Inside the formed loop, make two wraps with the working end around the standing part (wrapping toward the stake).
3. Then make a final wrap OUTSIDE the loop (away from the stake, toward your hands) and tuck the working end under it. Pull tight to dress the knot.

Purpose: slides easily along the standing line by hand to adjust tension, then jams securely under load — ideal for adjusting tarp and tent guy lines without retying.

How to master: tie each knot 20 times following the diagrams, then 10 times with your eyes closed, then wearing winter gloves. That is 2–3 hours total for all six knots — and a skill ingrained for life.

15.3. Practical Field Applications

- **Mechanical advantage without hardware:** improvised trucker's hitch / 2:1 pulley — tie a directional figure-eight loop mid-line, run the working end around the anchor and back through the loop: pull with 2:1 mechanical advantage and lock immediately with two half-hitches around the tensioned line (tarp ridge lines, securing heavy cargo).
- **Lashing timber frames:** square lashing — start with a clove hitch on one spar, make 3–4 wraps around both crossed spars in alternating diagonals, cinch tight with frapping turns between the spars, and finish with a clove hitch.
- **Casualty transport:** improvised rope stretcher — lace cordage in a zig-zag weave between two sturdy poles + cover with a jacket or blanket (sec. 7.15).
- **Cordage storage:** coil heavy rope in a butterfly or mountaineer's coil with a binding wrap; store paracord in a "chain sinnet" (crochet daisy chain that deploys instantly without knots or tangles).

CHAPTER 16

Hygiene and Sanitation

In most wars prior to the 20th century, more people died from infections than from weapons. Clean hands, safe sanitation, and waste control are survival weapons, not "comfort luxuries."

16.1. Hands — The Primary Route of Infection

- Mandatory handwashing: before eating and food preparation, after using the toilet, after contact with a casualty, raw meat, garbage, or animals.
- Economical washing: 0.5 L of water from a plastic bottle with a pierced cap + soap = a thorough wash. Sequence: wet hands → lather for 20 seconds (between fingers, under fingernails) → rinse with a thin stream of water.
- No water available: use hand sanitizer (70%+ alcohol) or wet wipes; wood ash mixed with animal fat makes improvised soap (it produces lye: caustic, so do not leave it on the skin for long); plain wood ash by itself also acts as a cleansing agent.
- Keep fingernails trimmed short — that is where the worst pathogens live.

16.2. Sanitation Without Plumbing

In an apartment (blackout, unable to go outside)

1. **Bucket with a lid + heavy-duty trash bags:** line the toilet bowl with a double heavy-duty bag (scoop out water from the bowl first) or use a bucket.
2. Cover after each use: cat litter, sawdust, ash, soil, or spray with a diluted bleach solution — this blocks odors and flies.
3. When 1/2 to 2/3 full, tie off the bag and take it to a designated disposal site away from living quarters and water sources (not into communal garbage dumpsters if waste collection has stopped!). Bury if possible.
4. Separate waste: collect urine separately (wide-mouth bottles) — urine is nearly sterile and easy to pour out farther away; keep solid waste separate — this keeps bags lighter, cleaner, and safer to manage.

Outdoors / Camp

- **Trench latrine:** 50–70 cm deep (deeper latrines decompose poorly, shallower ones get dug up by animals), **at least 60 m (200 ft) from water sources and 30+ m (100 ft) from camp**, downwind. Cover with a layer of dirt or ash after each use. When filled to within 15 cm of the surface, backfill completely and dig a new one.
- Quick option — "cat hole": a 15–20 cm hole for single use, buried immediately.

- Ran out of toilet paper: burdock or plantain leaves (ensure they are non-stinging and non-waxy/glossy!), moss, snow, smooth stones, or fabric scraps (boil after use to sanitize).
- Handwashing: establish a mandatory washing station next to the latrine (water bottle + bar of soap suspended from a branch).

16.3. Body, Clothing, Dishware

- **"Sponge bath" with 2–3 liters:** wipe down section by section with hot water, a washcloth, and soap; critical daily zones: armpits, groin, feet, and face. A full wash once a week is sufficient.
- **Feet — daily inspection:** dry socks, talcum powder or cornstarch for sweating. Wet, cold feet = risk of "trench foot" (freezing temperatures are not required — temperatures below +15 °C / 59 °F are enough): near freezing, it can develop in just 12–14 hours, typically in 1–3 days; progressing to blisters, ulcers, and severe infection leading to tissue loss. Change wet socks immediately, never sleep in footwear, and thoroughly dry feet before sleep.
- Teeth: brush without fail (a severe toothache during a crisis is a disaster). No toothpaste — use baking soda, wood ash, or chew the end of an oak/linden twig into a "brush."
- Laundry without detergent: boil for 15–20 min with laundry soap or baking soda; dry in direct sunlight (UV light disinfects). Against lice: wash at 60 °C+ (140 °F+), iron seams, cut hair short.
- Dishware: wash immediately (dried food becomes a breeding ground), rinse with boiling water; in the field — use sand and wood ash as abrasive and alkali. Keep a separate cutting board for raw meat at all times.

16.4. Garbage and Animal Carcasses

- Organic waste — put in a compost pit or bury; burn burnable trash; tin cans — burn in fire (destroys food residue), crush flat, and bury separately.
- Accumulated garbage near shelters = rats and flies = disease outbreaks. Set up the garbage collection point at least 30+ m from living quarters and 60+ m from water sources.
- Dead animals: never touch with bare hands. Bury at a depth of 1+ meter, well away from water sources, and wash hands thoroughly. Never consume livestock

that died of unknown causes. Do not touch dead wild birds at all (especially multiple carcasses together) — risk of avian influenza; report to veterinary authorities.

16.5. Controlling Illness in a Group

- Anyone with diarrhea or fever — designate separate dishware, a separate sleeping area if possible, and assign a single caregiver (rather than having everyone take turns).
- Drinking water — only disinfected water, for everyone, with zero exceptions ("I only took one sip from the river").
- Oral rehydration — the primary treatment for diarrhea (oral rehydration solution recipe — Section 7.10).
- Even minor wounds — wash, apply antiseptic, and dress: in field conditions, a scratch can become infected within 24 hours.
- Group outbreak (multiple people with identical symptoms within 1–2 days) — initiate isolation protocol: Section 21.6.

16.6. If Someone Dies

In a prolonged crisis, this happens, and one must be prepared — both practically and psychologically. A deceased person's body itself is not an inherent source of epidemics (unless death was caused by cholera, typhus, or similar infections), but it requires dignified and safe handling.

1. **Scene safety:** in an active shelling zone or mined terrain, a body may be "bait" for a secondary strike or may be booby-trapped (Section 5.6). Do not rush.
2. **Documentation:** photograph the body (face, distinguishing marks, clothing, location), record date, time, circumstances, any documents found, and witnesses. This is critical for relatives, insurance and legal matters, and tracing efforts.
3. **Documents and personal effects** — place separately into a labeled bag; do not leave them on the body, but never appropriate them.
4. **Temporary preservation:** keep in a cool place (basement, shade), cover the body with cloth or plastic sheeting, and isolate from animals. Wear gloves during any contact, and wash hands thoroughly afterward.

5. **Burial only if evacuation of the body is impossible for weeks:** bury at a depth of 1.5+ m (the bottom of the grave must be at least 1.2–1.5 m above the groundwater table; do not bury in lowlands or where water seeps into the pit), at least 200 m from wells, boreholes, springs, rivers, and lakes; if impossible, as far from water as possible, downslope from wells, and far from housing. Mark the site (a marker with name/description and date), record coordinates and landmarks, and notify the police (102 in Ukraine, or 112 / 911) or State Emergency Service (SES / 101) at the first opportunity — bodies will later be exhumed for proper burial.
6. **Family and children:** tell children the truth briefly and honestly ("he passed away; it's not because of you; we are together"); do not leave someone who lost a loved one alone during the first days (Section 21.5).

CHAPTER 17

Security, Documents, Money, Community

In an extended crisis, threats stem not only from hardship, but from desperate people. Your strategy: blend in, stay vigilant, and — above all — do not remain isolated.

17.1. The "Gray Man" Principle

- Do not flaunt resources: food, tactical equipment, generators (noise!), lights in windows (use blackout curtains), cooking aromas — all of these serve as advertisements.
- Dress inconspicuously, without military styling (in combat zones, a civilian appearance means safety) and without displaying valuables.
- Disclose your stockpiles only to those you are prepared to share with. Explain this to children without fear-mongering: "our family affairs are not for outsiders."
- Divide money and documents: keep a portion on your person, hide some at home, and pack some in your go-bag. Carry a "throwaway" decoy wallet with small cash in case of robbery.
- Be a "gray man" online as well: post no photos of provisions, shelters, or missile strike damage with geotags (Chapter 18).

17.2. Assessing People and Conflicts

- The cardinal rule: **avoiding a conflict is always cheaper than winning one.** Surrendering belongings is not defeat if everyone escapes unharmed.
- Distance: keep strangers at least 2–3 meters away, especially when outnumbered. If someone asks you to "come over and help" in a deserted area — offer help without closing distance, or call other people over.
- Danger signs: individuals splitting up to surround you; glances darting toward your hands and bag; "accidental" physical contact; persistent closing of distance after being told to stop.
- De-escalation: calm, low voice tone, open and visible hands, no insults, suggesting that "everyone go their own way." Firmness without aggression.
- At checkpoints and during inspections: hands in plain sight, zero sudden movements, retrieve documents slowly while announcing your actions beforehand. Never argue, do not take photos. Your phone may be inspected — see Chapter 18 for what should and should not be on it.
- **Martial law and curfew:** curfew hours vary by region (in rear regions typically 00:00–05:00 or 01:00–05:00, in frontline areas — longer; schedules change via

regional military administration orders, verify current hours) — know them and do not venture outside without extreme necessity: on the street at night you are seen either as a violator or a target. Men aged 18–60 must carry military registration documents (paper or electronic in the Reserve+ app) at all times: these are checked at checkpoints and on public transport. Movement during curfew is permitted only with an official pass; in an emergency, call 103 (Ambulance) / 101 (State Emergency Service) or 112 / 911 rather than driving yourself.

17.3. Home and Group

- Home fortification: secondary deadbolts, door jammer or brace under the handle, "noise" early-warning obstacles (tin cans on a tripwire) along approaches, pre-arranged signals with neighbors (knocks on the wall).
- Never open the door to "utility workers" or "officials" without verification — in a crisis, looters often pose as service personnel. Converse through the locked door, verify credentials via neighbors.
- Night watch in a group: assign one person to stay awake at night (in 2–3 hour shifts), especially during the initial weeks of chaos.
- Contingency plan: primary and secondary evacuation routes from home (2 options), an emergency cache stashed outside the home (with relatives, in a garage, or buried).
- **Armed home invasion** (weapons proliferation increases during and after war): do not open the door, gather everyone into an interior room with a solid door and no windows facing the attackers, stay below window level (bullets penetrate doors and walls), call the police (102 in Ukraine, or 112 / 911), make maximum noise to alert the entire building — neighbors and witnesses deter criminals far better than reckless "heroism." Do not step outside to "settle things" and do not engage in prolonged dialogue through the door.

17.4. Documents and Money in a Crisis

- Complete sets of document copies — in 3 separate locations: go-bag, home cache, and with trusted relatives / encrypted cloud storage. Photos of documents on every adult's smartphone.
- Small-denomination cash is far more critical than cards: ATMs and payment terminals fail first (and cyberattacks can knock out banking systems for days —

Chapter 18). Distribute cash across several hiding spots; keep a portion in euros or US dollars for currency exchange.

- Real "currencies" of an extended crisis: fuel, batteries, medications (painkillers, antibiotics), matches and lighters, salt, sugar, coffee, cigarettes, alcohol, candles, personal hygiene items. A small barter reserve is more practical and valuable than gold.
- Record debts and agreements in writing even with neighbors — memory falters under chronic stress, and disputes are costly.
- **Damaged property:** before clearing debris — take detailed photos and videos of everything (every room, damaged windows, roof, appliances, timestamps on photos), request the State Emergency Service (SES) / police to file an official damage assessment report, keep all repair receipts. Without these, compensation (programs such as "eRecovery" / "єВідновлення") and insurance claims are impossible. Keep property deeds with your set of document copies.

17.5. Community — The Primary Resource

- Get to know your neighbors NOW. Make a roster for your stairwell or street: identify who is a medic, who has a vehicle, a generator, a borehole/well, and who lives alone and needs assistance.
- Role division in the building or neighborhood: water supply, first aid post, information hub (battery radio), childcare, perimeter security shifts.
- Shared resources are far more efficient: a single field kitchen for 5 families consumes 2–3 times less firewood than 5 separate campfires; shared night shifts allow everyone to get adequate sleep.
- Help vulnerable individuals (the elderly, single parents) — this is not merely ethics: a resilient community = your personal security, and a reputation as a dependable person during a crisis is invaluable capital.
- Information hygiene: panic spreads faster than wildfire. Verify rumors via official emergency radio broadcasts, never pass on unverified claims, and record the time and source of critical announcements.

17.6. Evacuation: When to Go and When to Stay

Stay at home if

Evacuate if

Home is intact, area is relatively safe	Official evacuation order issued (verified via two sources!)
You have weeks of water, food, and medication reserves	Fighting is approaching, home is damaged, drones are actively hunting in the area
The road is more dangerous than staying put (shelling on transit routes, FPV drones hunting along highways)	No water or heat in winter, with no prospect of restoration
There are bedridden/ill persons who cannot be safely transported	Someone urgently requires medical care that is unavailable locally

- Depart at first light during daylight, via verified routes, with a full fuel tank (always keep your tank at least half full!), with food, water, and warm clothing inside the passenger cabin, not locked away in the trunk. Details — Chapter 26.
- A convoy of several trusted vehicles is significantly safer than traveling in a solo car.
- On foot: 15–25 km/day with a backpack is a realistic adult pace; with children — cut that in half. Plan overnight rest stops in advance.
- Leaving home: shut off gas and water mains, turn off the main electric breaker, take documents and valuables, and leave a note for designated relatives in an agreed-upon hiding spot.

17.7. Tracing the Missing and Reuniting

- Step one is always your out-of-area contact person (Section 1.5): all family members report their status and location to them. Most "missing persons" are accounted for this way within 24 hours.
- If still unaccounted for: file a police report immediately (102 in Ukraine, or 112 / 911) — disappearances in wartime are registered without any waiting period (no "three-day wait"); contact the Tracing Service of the Ukrainian Red Cross, the National Information Bureau (NIB), and the Coordination Headquarters for the Treatment of Prisoners of War (for captivity/occupied territories; create an online account and update your inquiry details); check regional hospitals and morgues; visit displaced persons reception centers.
- Prepare in advance for each family member: a recent clear photograph, physical distinguishing marks, blood type, copy of ID — stored in a "tracing" folder in your go-bag. For children — place an emergency contact card in their pocket (Section 22.1).

- Document every official interaction: date, official's name, case reference number. This speeds up tracing considerably.

17.8. Human Trafficking, Personal Safety on the Road, Detention

Crises and mass displacement are prime times for predators: posing as "volunteers," "employers," or offering "free accommodation." Victims include women and children abroad as well as men seeking employment within Ukraine. Guidelines from the National Anti-Trafficking Hotline (**527** from mobile, **0 800 107 527** toll-free from landline or mobile in Ukraine, daily 7:00–22:00; abroad — IOM offices and Ukrainian embassies/consulates):

- **Your passport stays in your hands only.** Show it exclusively to uniformed officials (border guards, police); never surrender it as "collateral," "for registration," or "for document processing." If confiscated by force — report immediately to the nearest Ukrainian consulate and local police.
- Never accept rides from strangers or travel with unregistered carriers; photograph license plates and send them to family along with your route and expected timeline. Register at official aid reception centers rather than responding to ad-hoc private listings.
- Offers that seem too good to be true (unregistered cash jobs, "free" housing with strings attached, "we'll look after your child for a few days while you settle in") are traps. Never make major decisions when exhausted or under pressure: take a night to deliberate and consult an anti-trafficking hotline.
- Never accept parcels to "transport" for strangers, and never hand over your mobile phone. Establish regular check-in schedules with relatives: "daily at 20:00 — message with my current location."
- For children: keep a contact card in their pocket and enforce the rule "never go anywhere with anyone without Mom/Dad"; at train stations and transit hubs, keep children within sight at all times.
- **Domestic violence or abuse by hosts/landlords** escalates during crises: Ukraine hotline 1547 (24/7), La Strada 116 123; abroad — 112 (EU/UK) / 911 (US) and local domestic violence shelters. This is not a "private family matter" — it is a threat to life.

If You Are Detained (Checkpoint, "Filtration", Captivity)

- Calm and compliance: do not argue, do not attempt to run, do not resist, do not make jokes; keep hands visible at all times. Bravado or aggression will not save you here.
- The first 45 minutes of detention are the most volatile: everyone is on edge and prone to impulsive violence. Obey orders, move deliberately and slowly, avoid direct eye contact — a steady gaze is often interpreted as defiance.
- Provide brief, truthful answers to obvious questions (name, origin, destination); remain silent regarding relatives in the Armed Forces of Ukraine (AFU), volunteer activities, or political views; never sign documents without reading them, and do not make false "confessions."
- Commit details to memory: dates, locations, names, physical descriptions, vehicle license plates, transport routes — this information may save your life and aid others later. Request notification of relatives and the International Red Cross; family should immediately file reports with the police (102 in Ukraine, or 112 / 911), the National Information Bureau, and the Parliamentary Commissioner for Human Rights.
- Maintain personal dignity and a structured routine (sleep schedule, calisthenics, water intake, daily rituals) — routine is your core psychological anchor during prolonged isolation.

CHAPTER 18

Digital Threats and Information Hygiene

In the coming decade, crises will also arrive through screens: a bank knocked offline by a cyberattack, a GPS navigator feeding false coordinates, your son's cloned voice on the phone begging for money, a fake "evacuation order" from an impostor channel. Protection is simple and practically free — if prepared in advance.

18.1. When the "Digital World" Goes Dark: Banks, Documents, Communications

- **Scenario:** a cyberattack or missile strike on a data center — and for 1–5 days, banking apps, payment terminals, ATMs, the "Diia" state portal, electronic queuing systems, and digital tickets stop working. This has happened before and will happen again.
- **Cash:** small-denomination notes to cover 2–4 weeks of living expenses, distributed across several places (Section 17.4). Keep a portion in euros or US dollars in case currency exchange is needed.
- **Paper documents and copies:** "Diia" cannot replace a passport when network connectivity is down. Printed copies of all vital documents — laminated or in waterproof sleeves, kept in your go-bag; digital scans saved on an encrypted USB flash drive and in secure cloud storage.
- **Paper emergency contact and account sheet:** phone numbers, physical addresses, doctors, insurance policy and account numbers, and passwords to critical services (in a sealed envelope stored in a secure home cache).
- **Offline copies:** regional maps downloaded in offline mapping apps (Organic Maps, maps.me) and a printed paper road map; this book in printed format; audiobooks/games for children downloaded locally, not relying on streaming.
- **Information without the internet:** a battery-powered radio receiver remains the sole functioning channel when cellular networks and the internet collapse. Write down local radio frequencies on paper (Section 14.4).

18.2. GPS That Lies

- GPS jamming (complete loss of signal) and **spoofing** (signal manipulation: your phone confidently displays your location in the Black Sea or 300 km away) are widespread near military installations, in combat zones, and intermittently in major metropolitan areas. Consequences: navigators lead drivers astray, taxi and delivery apps malfunction, and vehicle digital clocks and GPS units lose synchronization.

- Tell-tale signs: location marker jumping erratically, walking speed shown as 500 km/h, routes plotted straight across bodies of water. Solution: magnetic compass + paper map + physical road signs (Chapter 13); never trust a GPS that contradicts your eyes.
- During an evacuation (Chapter 26), write down the route description in words beforehand: "to the fork after the bridge, left onto H-08 highway, 12 km to village..."

18.3. Deepfakes, Voice Clones, and Crisis Scams

- **Voice clones:** just a few seconds of audio scraped from social media videos is enough to make "your child" call from an unfamiliar number: "Mom, I'm in trouble, wire money right now, don't tell anyone." Other variants: "police/hospital/volunteers" citing plausible personal details harvested from your own social profiles.
- **Defense #1 — Family safe word:** agree now on a family challenge question or code phrase known only to immediate family (a nonsensical phrase like "blue tangerine" — not a biographical fact that could be found online or guessed). Any emergency call asking for money is challenged with this phrase; if they cannot answer, hang up and call back on their known number. Teach this rule to children and elderly relatives alike.
- **The pause rule:** any urgent demand to transfer funds "immediately and without telling anyone" is invariably a hallmark of fraud. False urgency is a primary tool of manipulation.
- **Fake volunteer programs and "compensation payouts":** phishing links promising "receive your UN/government crisis payout, enter your card details" — designed to drain your bank account. Social payments and compensation are processed strictly through official government portals and apps that you open directly, never via links sent in SMS or messenger blasts.
- **Deepfake videos of the President or Mayor** announcing surrender or sudden mass evacuation orders — a classic psychological warfare tactic in early offensive stages. Verification protocol below.

18.4. The Two-Source Rule: How to Verify Orders and News

1. Any critical announcement (evacuation orders, humanitarian corridors, radiation threats, regulatory changes) must be confirmed via **two independent official**

channels: for example, Ukrainian Radio (public broadcaster) + official channel of the Regional Military Administration (OVA) / State Emergency Service (SES) / National Police. A single channel can be hacked or compromised.

2. Compile a roster of official regional sources NOW and write it down on paper (Appendix C): radio frequencies, verified Telegram channel handles, official websites, hotline numbers. During a crisis, it will be too late to search.
3. Hallmarks of disinformation: urgent calls to "repost to everyone immediately"; absence of specific date, time, and official attribution; emotional hysteria rather than objective facts; "exclusive insider leaks from a friend in the military"; links to unknown domains; video footage featuring unnatural facial movements, blinking, or robotic audio cadence.
4. Never spread unverified rumors even "just in case" — panic in transit queues and on highways costs lives. Log the exact timestamp and source of vital news.
5. Total blackout (radio, cellular, power down): operate strictly according to your family emergency plan (Section 1.5) and this manual, not rumors.

18.5. What Never to Post

Do Not Post	Why
Photos or videos of missile/drone strike impacts showing location, damage, or timestamps ("where it hit")	The enemy assesses strike accuracy and adjusts subsequent targeting. If air defense systems, troops, military equipment, or defense installations are visible — this carries criminal liability (Article 114-2 of the Criminal Code of Ukraine, 5–8 years, up to 12 years if causing severe consequences); the SBU treats such publications as artillery fire adjustment. Wait for official statements
Air defense operations, troop movements, military convoys, checkpoints, barracks/bases	Same reason
Addresses of bomb shelters, humanitarian aid distribution points, drinking water distribution points, civilian queues	Civilian crowd concentrations become targets for drone drops and strikes (Chapter 4)
Photos of personal stockpiles, generators, firearms, "we evacuated, the house is empty"	Looters and criminals monitor social media (Section 17.1)

Children with names, school locations, daily schedules	Intel for extortionists, scammers, and traffickers
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Photo geotags (EXIF metadata) — disable GPS location tags permanently in your phone's camera settings.

18.6. Your Phone at Checkpoints and in Occupied Areas

- At enemy checkpoints and in filtration facilities, smartphones are subjected to forensic inspection: chat logs, photos, media galleries, channel subscriptions, contact lists, and deleted files (which examiners recover). The presence of "suspicious" subscriptions or photos can cost your freedom or your life.
- **A "clean" phone for transit:** back up sensitive data to secure cloud storage or trusted relatives well in advance; keep only routine everyday chats, family photos, and a few benign apps on the device. When deleting content, overwrite storage space (by recording a long junk video) or perform a factory reset — but do this at least 1–2 weeks (preferably a month) prior to departure, followed by "living in" the phone: restoring old benign photos, casual messages, common apps, and standard channels. Both a recent factory reset and a completely blank phone immediately arouse suspicion. A safer approach is gradual cleaning, a little each evening, while actively adding normal daily activity.
- Unsubscribe from patriotic or sensitive channels and groups, delete contacts of military personnel and volunteers (especially entries labeled "AFU", "TrO"), and turn off auto-sync features that might restore deleted data.
- Never lie about carrying a secondary phone — search dogs and scanners find them. It is far safer to present a single credible, well-sanitized phone than to get caught concealing a second device.
- Passcodes and biometrics: at border crossings and filtration points, passcodes are forcibly demanded; expect your phone to be unlocked. Secrets must not be stored on the device, but held in your memory or in a secure remote location.
- Ukrainian checkpoints: devices may also be checked (countering sabotage and reconnaissance groups) — extreme sanitization is not required here, but photos of military positions, equipment, or fortifications must never be on your phone.

18.7. Backup Communications Without Internet

- PMR446 two-way radios (Section 14.4) — for family and neighbors, pre-agreed channels and check-in schedules; never broadcast names or exact addresses over the air.
- Mesh messengers (Bridgefy, Briar) operate via peer-to-peer Bluetooth mesh between phones at ranges of 10–30 m indoors (up to 100 m in open terrain) — useful for apartment building courtyards and queues, not city-wide networks.
- National cellular roaming and satellite SOS — Section 14.4. A secondary SIM card from an alternate cellular provider (or eSIM) is cheap insurance.
- The most reliable communication system is pre-arranged agreements: designated physical rally points, notes left in agreed locations, scheduled radio check-in windows (Section 1.5, Section 14.4).

18.8. Solar Storm or Electromagnetic Pulse (EMP)

A rare but realistic scenario in the coming decade: a severe coronal mass ejection (extreme geomagnetic solar storm) or a high-altitude nuclear EMP blast knocks out power grids and delicate electronics for weeks. Preparation costs virtually nothing: store a spare radio receiver, an old push-button mobile phone, a flashlight, and a USB flash drive with personal documents inside a metal container (a metal tin with a tight-fitting lid, metal cookie tin), lined inside with cardboard so devices do not touch the metal walls; the lid must make continuous metal-to-metal contact around the entire perimeter — otherwise, such an improvised "Faraday cage" will fail to shield against EMP. Paper copies of all vital documents are already a core principle of this guide. All subsequent response actions mirror the long-term blackout protocol (Chapter 20).

CHAPTER 19

Natural and Industrial Disasters

Floods, storms, earthquakes, wildfires, extreme heat waves or blizzards, dam failures — each bears its own distinct signature and fatal pitfalls. The changing climate of the next decade makes them more frequent and severe: heat exceeding 40 °C (104 °F), droughts in the South, torrential downpours in the Carpathians, wildfires raging across heavily mined forests.

19.1. Floods

Imminent Threat Approaching

- ☐ Valuables, documents, medications — move to upper floors or attic
- ☐ Charge all devices, stockpile potable water (floods contaminate municipal and well sources for weeks!)
- ☐ Shut off electricity at the main breaker, close main gas valves, move gas canisters to elevated locations
- ☐ Prepare improvised flotation devices: empty plastic jerrycans, sealed empty plastic bottles packed inside a pillowcase
- ☐ Untie and release livestock, herding them to high ground

When Floodwaters Arrive

- **The cardinal rule: never enter moving water.** Just 15 cm (6 in) of fast-moving water can knock an adult off their feet; 30 cm (12 in) of rushing water will float and sweep away a passenger car; 60 cm (24 in) will sweep away an SUV or pickup truck.
- Rescuing someone being swept away: never enter the water yourself — the current will take you as well. Throw a rope, extend a pole or branch, or approach by boat.
- Do not drive across submerged road sections: flooded roads conceal washed-out pavement, sinkholes, and missing manhole covers. "Turn around, don't drown" is the universal search and rescue rule.
- If your car stalls in rising water: abandon the vehicle immediately and move to the roof or higher ground. Life is worth more than property.
- **Car plunging into water / swept into deep water:** during the first 30–60 seconds while the vehicle is still afloat: **seatbelt — window — children — exit** (unbuckle, roll down the side window before electrical systems short out, push children out first, climb out through the window onto the roof). Car doors cannot be opened against external water pressure until the cabin is completely flooded. If

the window will not roll down — break a side window (never the laminated windshield!) with the corner of a metal object, headrest prongs, or key — striking the corner of the glass. An inexpensive seatbelt cutter / emergency glass breaker kept in the driver's door pocket costs pennies and saves lives.

- If swept into the water: float on your back, feet pointing downstream (feet absorb impacts against rocks and submerged debris), swim diagonally across the current toward the bank, grab onto stable trees. Do not approach utility poles — submerged power lines may remain energized.
- Stranded on a roof or in a tree: signal with brightly colored fabric or a flashlight; tie yourself off if forced to wait for extended rescue operations.

After the Flood

- Re-entering a home: only after a structural inspection: check for foundation cracks, smell of gas, and ensure electricity is shut off (water + energized wiring = electrocution).
- ALL well and municipal tap water is contaminated: boil or disinfect all water for weeks until official safety clearance. After floods in combat zones — beware of landmines and UXO displaced by flood currents (Section 5.6).
- Food contacted by floodwater (even unopened jars with rust or compromised seals) — discard immediately. Commercially canned goods in undamaged tin cans — wash thoroughly and disinfect with a diluted bleach solution.
- Drying out: toxic mold begins growing within 24–48 hours — open all doors and windows, remove waterlogged carpets and furniture, scrub walls with bleach solution.

19.2. Earthquakes

During Tremors (Indoors)

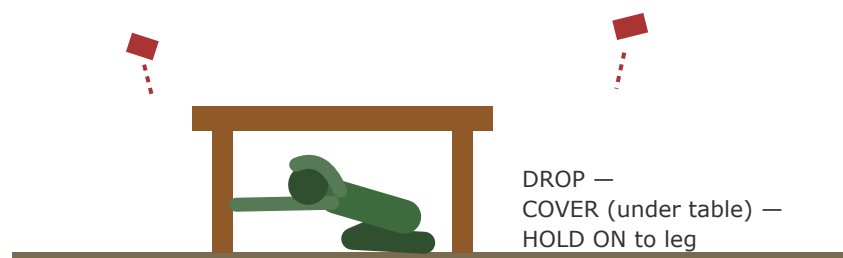


Fig. 19.1. "Drop — Cover — Hold On": the international standard protocol during earthquake tremors

- Do NOT run down stairs during tremors (stairwells collapse first) and never jump from windows. Most injuries result from falling objects, collapsing ceilings, and shattered glass, not total building collapse.
- No sturdy table available — drop next to an interior load-bearing wall or corner, crouch low, cover your head and neck with your arms, staying far away from windows, heavy wardrobes, and chandeliers.
- If in bed — stay there, protect your head with a pillow (provided there are no heavy shelves or pictures mounted overhead).
- If outdoors — move to an open area, clear of buildings, utility poles, and overhead power lines. If in a vehicle — pull over in an open area and remain inside; avoid parking beneath bridges, overpasses, power lines, and away from balconies, cornices, and large trees.

After the Shaking Stops

- Expect aftershocks — they often bring down already compromised buildings. Evacuate a damaged structure immediately; do not re-enter to retrieve belongings.
- Check for gas leaks (if you smell gas — do not switch on lights or strike matches, open windows, exit immediately), assess injuries, check on neighbors (Section 3.5 — structural collapses and rubble rescue).
- Put on sturdy footwear immediately! Glass shards are everywhere. Do not use elevators for several days.

19.3. Storms, Severe Gales, Tornadoes

- **Hail** (with climate warming, increasingly golf-ball or egg-sized): take shelter under a solid roof; pull vehicles under a sturdy awning or bridge, not under trees or in the open; if caught outside — shield your head with a backpack or thick jacket. If roof is damaged — tarp with heavy plastic sheeting immediately (Section 24.2).
- In advance: clear or secure loose patio furniture, planters, and debris from yards and balconies (wind turns loose objects into lethal projectiles); park vehicles clear of trees. Windows: apply protective safety film or install plywood/OSB storm shutters; adhesive tape — even applied in a dense grid — will not prevent glass from shattering under hurricane-force winds or hail, and can produce larger hazardous shards (for blast wave protection — see Section 2.6).

- During the storm: retreat to an interior room on the lowest floor or basement, well away from windows. NEVER venture outside during the "eye of the storm" — a deceptive 10–30 minute calm is followed by ferocious winds from the opposite direction.
- In open country during a tornado: do not attempt to outrun it in a straight line; move perpendicular to its path; lie flat in a low ditch or culvert, protecting your head with your arms. Do not seek shelter under highway overpasses (they act as wind tunnels) or inside cars and mobile trailers.
- Severe thunderstorms: when thunder roars, go indoors immediately (a substantial building or fully enclosed, metal-topped vehicle with windows rolled up — acting as a Faraday cage); tents, picnic shelters, and bus stops offer zero lightning protection. Stay away from isolated tall trees, open bodies of water, and metal fences; descend immediately from hilltops and open fields into low depressions; if in a group — disperse at least 15 m apart. Do not lie completely flat on the ground. If caught in the open with no shelter and your hair stands on end (lightning strike imminent) — as a last resort: drop into a low crouch with feet pressed tightly together, head tucked down, minimizing ground contact; this posture offers minimal protection, so move to real shelter the instant possible. Wait at least 30 minutes after the last clap of thunder before leaving shelter.
- Downed power lines: maintain a distance of at least 8–10 m (30 ft); if evacuating the zone near a downed line — shuffle with feet touching, never lifting your feet off the ground (to prevent step potential electrocution).

19.4. Wildfires and Grass Fires

- Assessment: smoke and wind blowing TOWARD you = imminent mortal danger. A wildfire crown run can advance at speeds up to 20–30 km/h (12–18 mph), outpacing a running person.
- Escape: move **perpendicular to the wind direction**, downhill (fire races uphill significantly faster due to preheating), toward natural firebreaks: rivers, lakes, wide highways, plowed agricultural fields, or already burned-out blackened terrain.
- If escape is cut off: lie face down on already burned ground or bare plowed soil, cover yourself with non-synthetic, fire-resistant clothing (wool or heavy cotton) or an emergency blanket — do not soak the outer cover: wet fabric conducts heat to the skin much faster. Breathe air right at ground level (where it is coolest and has

the least smoke) through a separate damp bandana or cloth held over your mouth and nose.

- Bodies of water: enter the water, cover your head with wet cloth; watch for smoke asphyxiation hovering above the water surface.
- The primary killer is smoke inhalation, not direct flame: crouch low while moving, breathe through a damp cloth.
- **Fires in mined forests** (Eastern, Southern, and Northern Ukraine for decades to come): landmines and unexploded ordnance detonate from heat and scatter shrapnel; never attempt to enter such forests to fight fires manually; after a wildfire, consider the terrain newly re-mined (Section 5.6).
- Protecting your home in advance: maintain a 10–15 m defensible space cleared of dry brush and dead vegetation, store water in large barrels, keep a ladder accessible to the roof (windblown embers landing on roofs are the leading cause of structural loss).

19.5. Extreme Heat and Drought

- Heatwaves of 38–42 °C (100–108 °F) persisting for weeks are becoming routine for Southern and Central Ukraine. Peak danger window: 11:00–17:00: schedule strenuous physical labor only for early morning or late evening. Fluid intake: 3–4 liters daily, drinking BEFORE feeling thirst; urine must remain pale clear.
- Electrolytes: sweat depletes critical salts — consuming liters of plain water without electrolytes risks hyponatremia. Salt food adequately, drink oral rehydration solution (Section 7.10), or mineral water.
- Living quarters: keep windows shut and shaded during the day (reflective foil or light-colored drapes facing outward), ventilate thoroughly with cross-breezes at night. Wet sheets hung across windows act as evaporative cooling. Without electricity, upper floors of concrete panel buildings heat up dangerously — sleep on lower floors or in the basement.
- Clothing: light-colored, loose-fitting, long-sleeved (covering skin in extreme dry heat keeps the body cooler than direct exposure), wide-brimmed hat, wet bandana around the neck.
- Heat exhaustion and heat stroke — Section 7.10. High-risk individuals: monitor young children, the elderly, and cardiac patients every 2 hours.
- NEVER leave children or pets inside a parked vehicle, even "for 5 minutes" — car interiors heat to lethal temperatures in 10–15 minutes.

- **Drought and water rationing:** wells dry up, municipal water is rationed on schedules. Maintain a 2+ week reserve of drinking water at home (Section 2.5), harvest rainwater from roofs into barrels (diverting the first 10 minutes of runoff), mulch garden beds (Section 25.2), reuse greywater (from washing) for toilet flushing and garden irrigation. Always disinfect tap water once service resumes (Chapter 8).

19.6. Extreme Cold and Blizzards

- Blizzards and whiteouts: do not venture outside. Most blizzard fatalities are people who decided to "walk just a short distance." Visibility drops to near zero, causing complete disorientation within seconds.
- Stranded in a car in snow: STAY inside the vehicle (rescuers will find the car, but not a person lost in a snowy field). Run the engine for 10 minutes every hour for cabin heat, regularly clear snow from the exhaust pipe (carbon monoxide danger!), and crack a downwind window slightly for ventilation. Tie a brightly colored cloth to the antenna; continuously flex and exercise arms and legs.
- On foot in severe cold: cheeks, nose, fingers turning waxy white and numb = onset of frostbite — rewarm immediately (Section 7.10), check each other's faces every 10–15 minutes.
- Black ice and glazed frost: adopt the "penguin walk" — short shuffling steps on slightly bent knees, center of gravity over the leading foot, hands out of pockets. When falling — tuck and roll onto your side, never land on stiff, outstretched arms.
- Temperatures at -15°C (5°F) or below without central heating in an apartment building is no longer mere "discomfort" — it triggers an immediate evacuation scenario: draining plumbing/radiator systems and criteria for departure — Section 20.5.

19.7. Dam Breach and Flood Wave

The demolition of the Kakhovka Dam in 2023 demonstrated: the flood wave arrives within hours, waters remain for weeks, sweeping along fuel, industrial chemicals, landmines, livestock, and human remains, followed by epidemic outbreaks. Millions of people reside downstream of cascades along the Dnipro, Dniester, and other major dams.

- **Determine right now:** whether your home is located within a designated inundation zone (flood zone maps are held by Regional Military Administrations /

SES), the estimated wave arrival time at your location (ranging from 20 minutes to 24 hours), and specific evacuation routes to high ground — a concrete topographical destination, not an aimless heading.

- **Dam breach alert** = immediate evacuation uphill on foot or by vehicle, taking only pre-packed emergency go-bags: initially the wave moves at roadway traffic speeds, after which traffic gridlock paralyzes evacuation arteries.
- Do not attempt to salvage property; release livestock from barns along the way.
- Subsequent actions mirror flood protocols (Section 19.1), with key differences: floodwaters are chemically toxic (avoid skin contact, wash thoroughly if exposed), all regional water sources remain contaminated for months, extreme landmine contamination in silt and sediment deposits (Section 5.6), massive die-off of fish and wildlife → severe epidemic risks (Chapter 16).

19.8. Industrial Accidents: Chemical Plants, Fuel Depots, Storage Facilities

- Missile and drone strikes against fuel depots, fertilizer warehouses, chemical plants, and gas infrastructure are an ongoing wartime reality. Identify hazardous industrial facilities located within a 5–10 km radius of your home and what toxic substances they store (ammonia — meat processing plants and cold-storage facilities; chlorine — municipal water treatment plants; ammonium nitrate — fertilizer depots, river/sea ports).
- Fuel depot fires: dense black plumes consist of toxic carbon soot and carcinogenic benzene; if downwind — seal all windows, shut off ventilation systems, stay indoors, move children and asthmatics to the opposite side of the building; toxic smoke plumes can linger for days.
- Chlorine and ammonia leaks — detailed protocol in Section 6.4 (chlorine is heavier than air — seek high ground / upper floors; ammonia is lighter than air — seek low ground / ground floors; always evacuate perpendicular to wind direction).
- Ammonium nitrate or munitions depot fires: massive secondary explosions can detonate hours after initial fire outbreak — do not watch from balconies or approach windows; evacuate family immediately: ammonium nitrate depots — at least 3–5 km (2–3 miles) away; military ammunition depots — at least 10 km (6 miles) away, as artillery shells and rockets detonate and scatter for miles (in 2017, Balakliya and Kalynivka required a 10 km evacuation zone; in 2018, Ichnya required a 16 km zone). If official alerts mandate a larger perimeter — evacuate

further and do not return without official clearance: unexploded ordnance (UXO) litters the entire surrounding area (Section 5.6).

CHAPTER 20

Blackout: Lighting, Power, and Off-Grid Living

A prolonged power outage takes everything down with it: running water (pumps), heating (boilers), communications, banking, and refrigerators. Grid strikes during winter are a multi-year reality: weeks without electricity and heat at −15 °C (5 °F) in urban areas. Those who systematically prioritize their energy needs can live almost normally.

20.1. The First Hours of a Blackout

1. Fill all available containers and the bathtub with water immediately (mains pumps will shut down within hours).
2. Unplug sensitive appliances and electronics (power surges when the grid is restored destroy equipment); leave a single lamp switched on as an indicator that power has returned.
3. Do NOT open refrigerator or freezer doors unnecessarily: a closed freezer preserves sub-zero temperatures for 24–48 hours. In winter, utilize an "outdoor balcony fridge" (Section 9.3).
4. Cook and consume perishables first: meat/dairy → vegetables → canned goods and grains last.
5. Switch gadgets to power-saving mode (Section 14.4); tune a battery-powered radio to the official regional emergency broadcast frequency.
6. **Elevators:** during air raid alerts and scheduled power outage windows, use the stairs only. If stuck inside: press the emergency call button / contact the dispatcher or call emergency services (101 State Emergency Service in Ukraine, or 112 / 911); never attempt to pry doors open or climb out on your own (the elevator shaft is deadly); sit down, conserve phone battery; the cabin is actively ventilated — suffocation is physically impossible.

20.2. Lighting: Comparison

Source	Runtime	Pros / Cons
LED camping lantern	20–100+ hours per battery set	Safe, bright / requires spare batteries
Headlamp	10–40 hours	Hands-free — essential primary work tool
Candle	6–10 hours	Inexpensive, warms hands / #1 fire hazard during blackouts: place strictly inside a glass jar, on a ceramic plate, well away from curtains; NEVER sleep with a lit candle (Section 10.5)

Kerosene lantern	10+ hours per fill	Bright / odor, mandatory room ventilation required
Improvised oil lamp	Hours	Jar + any vegetable oil + wick made from shoelace or rolled bandage on a wire holder — light from household scraps

Pro tip: A headlamp strapped facing inward around a 5-liter translucent water jug turns it into a soft, diffused "room chandelier."

20.3. Off-Grid Electricity: What to Choose

Solution	What It Powers	Pros / Cons
Power banks 20,000 mAh	3–4 smartphone recharges	Inexpensive, silent; always keep charged to 100%
LiFePO4 power station 500–2,000 Wh + solar panel 100–200 W	Wi-Fi router, LED lighting, laptop, refrigerator for several hours, heating boiler circulation pump, personal device charging	The 2026 urban standard: silent, zero carbon monoxide and no fuel hazards, completely safe inside an apartment, lasts 10+ years (3,000+ cycles), discharges reliably even in sub-zero cold. However, never charge below 0 °C (32 °F) — bring into a warm room to recharge. Drawback: purchase cost; winter sun yields only 20–30% of summer output
Car + 300–1,000 W inverter	Chargers, lighting, gas boiler pump if needed	Already owned by many; operate ONLY outdoors, exhaust oriented away from windows and doors — never in a garage, even with open doors (deadly carbon monoxide); requires vehicle fuel
Gasoline/diesel generator	All household loads, including electric water heaters	High output / noisy (reveals location, Section 17.1), deadly carbon monoxide hazard, requires fuel storage and maintenance — adhere strictly to rules in Section 20.4
AA/AAA batteries	Flashlights, radios, two-way walkie-talkies	Standardize all equipment around a single battery type; lithium batteries perform reliably in freezing temperatures, whereas alkaline batteries drain rapidly in the cold (warming them in an inner pocket restores capacity)

- **Vehicle charging:** 12V cigarette lighter charger at engine idle (10 min of engine runtime ≈ 10–15% phone battery) — strictly outdoors only.
- **20–30 W folding solar panel:** even without an expensive power station, recharges a power bank over one sunny day. Affordable and virtually indestructible — one of the highest-yield investments for an extended crisis.

- Power consumption priorities during a blackout: 1) communications and emergency lighting, 2) critical medical equipment (oxygen concentrators, insulin refrigeration), 3) heating boiler circulation pump, 4) refrigerator/freezer, 5) all non-essential loads.

20.4. Generators: Life-Saving Rules

- **STRICTLY outdoors**, at least 6 m (20 ft) away from windows, doors, and ventilation intakes, with the exhaust pipe pointed away from the building. Running a generator inside a garage, on a balcony, or in an apartment entryway = lethal carbon monoxide buildup = death of the entire family in their sleep. This is the single most frequent cause of fatalities during blackout periods.
- Refueling — exclusively with the engine shut down and completely cooled down.
- Never plug a generator directly into a household wall outlet ("backfeeding") without a certified transfer switch — doing so can electrocute line workers repairing external grid lines and destroy your generator.
- Fuel economy: run the generator in 2–3 hour scheduled blocks per day — to freeze food, recharge battery stations, and pump water — rather than continuously around the clock.
- Fuel storage: gasoline remains usable for 3–6 months, or up to 12+ months with a fuel stabilizer (store in certified metal jerry cans, in non-residential ventilated structures away from any open flame); diesel stores 12+ months. Rotate fuel reserves regularly just like food stockpiles.

20.5. Winter Without Heat: Plumbing, Shelter, When to Evacuate

- **Decide "where we will spend the winter" in September–October**, not at -15°C (5°F) in the dark: intelligence and energy officials warn that strikes against thermal power generation will intensify through the 2026–2027 winter (jet-propelled strike drones, ballistic missiles), leaving metropolitan areas without central heating for weeks. Families with young children, elderly, or sick members should pre-arrange a destination in a rural village, small town, or abroad, along with an actionable evacuation plan (Section 17.6, Chapter 26).
- **Pipes freeze** at -5°C to -10°C (14 – 23°F) in an unheated building within 1–3 days. If heat will not be restored: drain all water from plumbing pipes (open all faucets, drain the heating boiler, water heater, toilet tank, and pour antifreeze or concentrated table salt into sink and toilet traps/siphons); otherwise, expanding

ice will burst the pipes and flood the building as soon as municipal pressure or heat returns.

- Isolate one warm room, conserve body heat, pitch an indoor camping tent inside the room — Section 12.2. Wood-burning stoves ("burzhuika") and fuel-burning heaters — strictly with an airtight chimney/ventilation duct to the outside (carbon monoxide hazard, Section 7.11).
- Install a battery-powered carbon monoxide (CO) detector in the sleeping room if there is a wood stove, gas water heater, or an operating generator anywhere nearby.
- **Invincibility Points / warming centers (Пункти незламності):** locate the nearest centers in advance (schools, SES stations, municipal buildings): they provide warmth, electricity, water, internet connectivity, and hot tea. Record their addresses in Appendix C.
- **Criteria for evacuating a freezing city** (for families with children, elderly, or chronically ill members): indoor temperature drops below +5 °C (41 °F) for more than 2 consecutive days with no restoration in sight, complete loss of running water with no feasible way to haul it, or anyone's health deteriorates. This is not panic; it is a calculated decision (Section 17.6): it is far better to stay with relatives or in a heated rural home for 2–3 weeks than to treat pneumonia without a functioning hospital.
- When mains water pumps fail: draw residual water from the lowest-floor service taps of the building, drain the electric water heater tank (30–100 L), then rely on public distribution points and Chapter 8. Flushing toilets — use a bucket of technical/grey water; sanitation without running water — Section 16.2.
- Hand washing laundry: soak overnight in soapy water → scrub only collars and cuffs → rinse twice. Saves two-thirds of physical effort and water.
- Cash reserves: ATMs will be completely offline — maintain adequate physical cash on hand (Section 17.4); small neighborhood stores may sell goods "on credit / on tab" to familiar local residents — another compelling reason to maintain solid relationships with neighbors.

CHAPTER 21

Health in an Extended Crisis

Chapter 7 covers the first critical minutes following trauma. This chapter covers the days and weeks when no doctor is available: wound care, fever management, dental emergencies, chronic diseases, epidemics, and long-term psychological resilience.

21.1. Wound Care Without a Doctor

1. **Copious irrigation** is your primary "medication": clean (boiled and cooled) water delivered under pressure — using a syringe without a needle or a clean plastic bottle with a hole punched in the cap, 0.5–1 L, to flush out ALL dirt and foreign debris. It is painful, but it prevents severe infection better than any ointments.
2. Skin AROUND the wound — disinfect with antiseptic; do NOT pour alcohol or pure iodine directly into an open wound (destroys viable tissue, severely impedes healing).
3. Clean, straight laceration edges should be approximated using adhesive skin-closure strips (Steri-Strips / butterfly closures) placed perpendicularly across the wound (do not attempt surgical suturing without formal medical training!). Puncture, bite, contaminated, or jagged wounds must NEVER be closed tightly — apply only a loose, sterile dressing.
4. Dressing changes: 1–2 times daily; if gauze sticks to raw tissue, soak it off gently with cooled boiled water — never rip it off.
5. **Signs of wound infection:** increasing pain after 48 hours, spreading edema and erythema (swelling and redness), purulent drainage (pus), red streaks traveling up the limb toward the heart (lymphangitis), and fever. Interventions: frequent copious irrigation, warm hypertonic saline compresses (2 tsp salt per glass of boiled water), limb rest, and elevation. Red streaks + systemic fever = life-threatening systemic infection/sepsis; seek professional medical care at all costs. Multidrug-resistant wound infections are a pervasive reality in wartime field hospitals: this is why mechanical irrigation and strict asepsis are far more vital than simply swallowing antibiotics.
6. Animal bites: scrub vigorously with soap and running water for 15 minutes, then, if available, treat the wound cavity with povidone-iodine (Betadine — the sole exception to the prohibition against applying iodine into wounds: povidone-iodine inactivates the rabies virus). Do not suture or tightly seal the wound. Seek post-exposure rabies vaccination immediately by any available means — rabies is 100% fatal once clinical symptoms develop, and even an outwardly healthy-appearing animal can transmit the virus.

21.2. Fever and Common Illnesses

- Fever is an active physiological defense: up to 38.5 °C (101.3 °F) in an adult without severe chronic decompensation — do not suppress with antipyretics; prioritize intensive hydration (+0.5–1 L of fluids for each 1 °C above 37 °C / 98.6 °F) and bed rest.
- Medications to reduce fever: paracetamol (acetaminophen) 500–1,000 mg up to 4 times daily (maximum 4 g / 24 hours; caution regarding liver toxicity) or ibuprofen 200–400 mg up to 3 times daily (after meals). For children — use only weight-based pediatric dosing; NEVER give aspirin (risk of fatal Reye's syndrome).
- Physical cooling methods for high fever: sponge down skin with room-temperature water, place cool damp cloths on forehead and armpits, wear lightweight breathable clothing. Never wrap a patient in heavy blankets to "sweat it out" when temperature reaches 39 °C+ (102.2 °F+).
- Cough and respiratory infections: abundant warm fluids, humidified air, honey; deterioration on days 5–7, shortness of breath, or sharp localized chest pain indicates possible pneumonia — requires clinical evaluation / targeted antibiotic therapy (Section 7.16).
- Diarrhea: oral rehydration (Section 7.10) is paramount; fasting is counterproductive (feed plain boiled rice, dry crackers, bananas); bloody stools, high fever, or severe peritoneal pain warrant urgent medical care.
- "Exhaustion crisis": after 2–4 weeks of continuous survival stress, immune resistance crashes sharply — prioritize sleep, supplemental vitamins, any fresh edible greens, and fermented/pickled vegetables (vitamin C prevents scurvy during prolonged consumption of canned rations).

21.3. Dental Emergencies

- Oral hygiene during a crisis is more vital than ever: brush twice daily (toothpaste substitutes — Section 16.3), avoid biting on hard shells or bones.
- Severe toothache: rinse mouth every 2 hours with warm baking soda and salt solution (1/2 tsp of each per glass of water), take systemic oral analgesics (NEVER place an aspirin or pain pill directly onto the gum — causes severe chemical mucosal ulceration), apply whole clove or clove oil on a tiny cotton pellet directly into the cavity.

- Lost filling or chipped tooth: seal the open defect with softened candle wax or temporary dental zinc-oxide cement from an emergency first aid kit; chew food exclusively on the opposite side.
- Dental abscess / gum infection (swelling of gum or cheek): frequent antiseptic warm saline rinses, apply cold packs externally to the cheek for 15 minutes at intervals; NEVER apply external heat! Swelling spreading down into the neck fascial planes or upward toward the eye is an airway/life emergency — locate a medical professional immediately.
- Avulsed permanent tooth (knocked out completely): handle strictly by the chewing crown (never touch, scrub, or scrape the root surface). The best course — re-implant the tooth into the socket yourself immediately (within the first 15 minutes): if soiled, rinse gently with milk, saline, or running water for no more than 10 seconds; insert firmly back into the alveolar socket and instruct the patient to gently bite down on clean gauze or a handkerchief. If reimplantation is unfeasible or the casualty is unconscious — prevent the tooth root from desiccating: place it in fresh milk (if unavailable, wrap in plastic cling film, immerse in the casualty's own saliva in a clean cup, or use sterile saline; an alert adult may carry it tucked inside the cheek pouch, but never a child due to aspiration risk). Transport to a dentist as swiftly as possible, ideally within 60 minutes. Success rates drop sharply after 60 minutes, but never discard the tooth — a dentist may still perform surgical reimplantation. Primary (baby) teeth must never be re-implanted.

21.4. Managing Chronic Conditions Without Pharmacies

- **Core rule: maintain a 30–90 day personal reserve of essential maintenance medications — this is priority #1 of all crisis preparedness.** Consult your physician in advance regarding: bioequivalent drug substitutions, protocols for tapering doses in extreme supply shortages, and medications that must NEVER be stopped abruptly (beta-blockers, systemic corticosteroids, anticonvulsants, insulin, antidepressants).
- Insulin-dependent diabetes: insulin vials/pens remain chemically stable without refrigeration for ~28 days at room temperature (protect from direct sunlight and never allow to freeze!); cooling methods — wrap the storage case in a damp towel placed in a breeze, store in a sealed jar buried in damp ground, or utilize an "outdoor winter fridge." Eat predictable small meals and always keep fast-acting glucose or candy in your pocket.

- Hypertension / cardiovascular disorders: without a sphygmomanometer (blood pressure cuff), warning signs of dangerous blood pressure spikes include throbbing occipital headaches, exertional dyspnea, and peripheral ankle edema. Restrict dietary sodium; keep sublingual nitroglycerin tablets in your immediate pocket at all times, not buried in packed luggage.
- Asthma: keep a rescue bronchodilator inhaler on your person constantly + a spare in your go-bag; during an acute bronchospasm without an inhaler — assume an upright sitting posture leaning forward supported by your arms ("tripod position"), exhale slowly through pursed lips, sip warm fluids, maintain calm (panic intensifies bronchoconstriction).
- Oxygen-dependent individuals (concentrators): an autonomous backup power source (LiFePO₄ power station, Section 20.3) is an absolute survival requirement; pre-arrange priority evacuation protocols with local hospitals or emergency services (SES / 101).

21.5. Long-Term Psychological Health and Mental Resilience

- A normal reaction to abnormal circumstances: acute insomnia, irritability, intrusive flashbacks, uncontrollable crying — these are expected reactions during the initial weeks. Counter with structured action: maintain a rigid daily routine (Section 1.3), perform physical work, talk openly.
- **Sleep under air raid sirens** is the paramount resource systematically eroded by years of war. Operating rules: sleep directly within the designated "two-wall" safety zone (Section 3.3) so you do not face exhausting nighttime deliberations of whether to dash to a shelter half-asleep; appoint one designated night watchperson per family or apartment stairwell; take 20–30 minute daytime restorative naps; eliminate screen time one hour before sleep; cut off caffeine consumption by midday. Three consecutive nights of under 5 hours of sleep induces a state of cognitive impairment where people commit catastrophic errors while driving or operating gas appliances.
- **Psychological First Aid (PFA)** for others: ensure physical safety → provide warmth, clean water, and food → listen empathetically without pressure ("you do not have to talk about it if you do not want to, I am right here with you") → reconnect them with surviving loved ones → assign a concrete, meaningful task.
- For children: share the truth in calm, age-appropriate doses without horrifying graphic details; provide frequent physical affection; recognize play as their

psychological coping mechanism (children acting out "war" or "evacuation" games is healthy emotional processing).

- **PTSD** (in military veterans, occupation survivors, or those suffering severe loss): symptoms frequently emerge months after the trauma — night terrors, explosive rage, active avoidance of triggers, emotional blunting, self-medicating with alcohol. This is a treatable clinical condition that does not simply resolve on its own: connect with a mental health professional whenever communications exist; within the family unit, ban dismissive remarks like "pull yourself together" — instead provide stability, purposeful routines, and patient presence.
- **Caregiver burnout:** individuals caring for chronically ill or elderly family members over months deteriorate silently. The mandatory rotation rule: at least 1 full day off per week and 1 uninterrupted hour per day strictly disconnected from caregiving duties — otherwise, one patient inevitably turns into two.
- Critical red flags demanding emergency intervention: verbalizing a desire to end one's life, complete refusal of food or communication lasting several days, violent outbursts, daily dependence on alcohol as a coping drug. Never leave the individual unattended, remove lethal means from their environment, and seek medical assistance or crisis hotlines as soon as phone service is available.

21.6. Group Epidemics and Quarantine Protocols

Cholera following infrastructural flooding, measles outbreaks sparked by missed pediatric immunizations, influenza and COVID-19 sweeping overcrowded bomb shelters, avian influenza from infected wild birds — in an extended crisis, infectious disease clusters within groups are nearly inevitable. The core containment protocol is straightforward and has proven effective since the historical days of the plague.

1. **Immediate isolation at first symptoms:** isolate the sick individual into a separate room or a corner partitioned by hanging sheets; designate exclusive dishware, towels, and a latrine bucket; assign a single primary caregiver equipped with an FFP2 respirator (packed in go-bag, Section 2.2), who must not prepare meals for the rest of the group.
2. **Hand hygiene and surface decontamination:** wash hands thoroughly after every contact; disinfect doorknobs, water taps, and communal surfaces with household bleach solution (1 part bleach to 50 parts water; 1:10 dilution for disinfecting infectious bodily waste) twice daily.

3. **Water and sanitation:** for gastrointestinal pathogens, decontaminate patient feces and vomit with bleach prior to disposal; all drinking and cooking water must be boiled for everyone without exception (Chapter 8).
4. **Hydration and feeding:** oral rehydration solution (Section 7.10) is the primary life-saving medicine during cholera and rotavirus outbreaks; the vast majority of fatalities result directly from rapid hypovolemic dehydration, rather than the pathogen itself.
5. **Air quality:** for airborne and droplet respiratory infections, ensure continuous room ventilation, universal mask/respirator compliance in shared shelters, physical distancing, and sleeping in alternating head-to-toe arrangements relative to adjacent neighbors.
6. **Notify medical authorities:** report clusters to physicians, SES responders, or municipal relief hubs at the first opportunity: multiple patients presenting identical symptoms indicate an outbreak, triggering official containment resources (vaccines, specific antibiotic stockpiles).
7. **Advance vaccination** is the most cost-effective defense: measles, diphtheria/tetanus (a tetanus booster is mandatory for any puncture or dirty wound!), hepatitis A and B, seasonal influenza, and cholera vaccination for southern flood-prone regions. Store official immunization cards in your waterproof document pouch in your go-bag.

Avian Influenza (H5N1): never handle dead wild birds with bare hands; avoid purchasing poultry from unauthorized street vendors during mass bird die-offs; keep backyard poultry strictly isolated from wild waterfowl (Section 25.4); onset of sudden fever following poultry contact requires emergency medical evaluation. In coming years, this viral strain represents one of the foremost threats for a severe global pandemic.

CHAPTER 22

Children, the Elderly, and Pets in Crisis

Survival plans are typically drafted for able-bodied, healthy adults — and shatter against a child's inconsolable tears, an elderly grandmother's slow steps, and a panicked cat clawing in its carrier. Design your emergency plan from day one around the most vulnerable member of your household.

22.1. Children: Advance Preparation

- Every child must know by heart (starting from age 4–5): their full legal name, parents' full names, home address, and at least one contact phone number. Practice and recite this like a nursery rhyme or song.
- Always in their jacket pocket: an ID card with the child's and parents' details (+ blood type, documented allergies), an emergency whistle on a breakaway lanyard around their neck, and a compact flashlight.
- Safety drills framed as games: "siren wails — move into the corridor," "buzzing drone heard — take cover under a solid roof" (Chapter 4), "if separated — freeze on the spot, do not follow anyone, call out my name loudly," "unfamiliar or odd objects — never touch" (Section 5.5).
- The "2-Minute Go-Bag Game": see who can pack their emergency bag accurately the fastest — under genuine survival stress, a child will execute the familiar game routine rather than paralyzing panic.
- Reunification point if separated in a crowd or during chaotic evacuation: a prominent, permanent landmark ("main entrance," "central fountain"), adhering to the strict rule — the lost child remains completely stationary, while the adult conducts the active search.
- A secret family password / duress codeword against phone scammers claiming to "call on behalf of mom or dad" (Chapter 18) — teach this from ages 6–7.

22.2. Children: During an Active Crisis

- Your composure directly governs their emotional state: children read subtle facial micro-expressions and vocal tone rather than words. An authoritative, calm tone — "we have an exact plan, now we execute step 1" — reassures a child infinitely better than tearful, trembling hugs with panic on your face.
- Assign them a responsible duty: "you are in charge of our primary flashlight," "you count everyone in our group at each checkpoint." An actively tasked child does not succumb to panic.

- Maintain regular meal and sleep schedules even inside a bomb shelter — this provides an irreplaceable psychological anchor of normalcy. A familiar stuffed toy and a bedtime story routine are far more essential to carry than an extra tin of canned meat.
- Infants: breastfeeding during a catastrophic crisis is an invaluable asset (sterile, always at physiological temperature, soothes both mother and baby) — safeguard the mother's caloric intake and hydration above all else. If formula feeding — prepare exclusively using verified disinfected water, and sterilize feeding bottles by boiling.
- Babywearing: an ergonomic baby carrier or wrap sling keeps your hands completely free while carrying children up to 2–3 years old — an indispensable component of any family evacuation kit.
- Pediatric dehydration is far more rapid and fatal than adult dehydration: dry diaper for 6+ hours, absence of tears when crying, sunken eyes or a depressed fontanelle = administer oral rehydration solution by spoon every 1–2 minutes (following vomiting, pause for 10 minutes and resume at a slower pace), and seek emergency medical evaluation.

22.3. The Elderly and Persons with Reduced Mobility

- A large-print physical summary: all chronic diagnoses, full medication schedule with exact dosages, primary physician name, and family emergency contacts — secured to the refrigerator and kept inside the person's jacket pocket.
- Medications: a 7-day pill organizer container + a 30–90 day reserve stockpile; spare reading/distance glasses and hearing aids + surplus batteries.
- Evacuation mobility: walking cane, walker, or wheelchair — fully inspected, tuned, and staged immediately by the exit door; coordinate in advance with two specific neighbors who will physically assist in carrying them down stairwells (elevators shut off first).
- Transporting an incapacitated person: a two-rescuer "chair carry" with interlocked arms, sliding the patient on a heavy-duty blanket (dragging across floors and stair landings by the corners requires vastly less physical exertion than lifting), or improvised stretchers (Section 15.3, Section 7.15).
- Vulnerability to cold: the elderly develop hypothermia much more rapidly and frequently without conscious awareness: palpate their hands and feet regularly; add an extra layer of thermal clothing by default. In extreme heat, the reverse

applies — they succumb to heat stroke imperceptibly: provide drinking water on a strict hourly schedule (Section 19.5).

- Cognitive decline and dementia: severe crisis triggers disorientation and sudden wandering — slip an ID and address card into every single pocket, attach a chime bell to exit doors, and never leave them unsupervised in unfamiliar transitional environments.
- Phone and in-person scammers ruthlessly target the elderly: enforce the unwavering rule — "hang up the phone immediately and call family members back directly" (Chapter 18).

22.4. Domestic Pets

- Pet emergency bug-out bag: 3–7 days of pet food, water, travel bowls, sturdy leash + harness (a terrified dog or cat will easily slip out of a standard neck collar), hard-sided pet carrier, veterinary passport, familiar blanket, cat litter + portable tray.
- Engraved collar tag displaying your active phone number + up-to-date photograph of the pet on your phone and printed on paper. Microchipping — complete this in advance if possible. For cross-border travel into or through the European Union, a microchip and routine rabies shot alone are insufficient; preparation takes approximately 4 months: microchipping (must occur BEFORE or on the same date as the rabies shot) → rabies vaccination (from 12 weeks of age), recorded in the EU-standard veterinary passport → blood draw for rabies antibody titration test in an authorized laboratory no earlier than 30 days post-vaccination → mandatory 90-day waiting period from the date of blood collection → obtaining a veterinary certificate and international health certificate within 5 days prior to border crossing (State Service of Ukraine on Food Safety and Consumer Protection / Derzhprodspozhyvsluzhba). Complete the vaccination and antibody titer now and revaccinate annually without missing a single day — this permanently eliminates future 90-day waiting periods, requiring only routine pre-travel certificates.
- Inside shelters: keep pets on a secure leash or inside a closed carrier at all times (shelling and explosions cause blinding panic); offer water frequently — stressed animals dehydrate much faster than anticipated.
- If forced to leave a pet behind during sudden evacuation: NEVER lock them inside confined rooms or cages — grant access to the outdoors or leave immense

reserves of drinking water (fill tubs, sinks, basins) and dry food, leave interior doors propped open, and post an unmistakable notice on the outer door: "Cat inside, phone: [number]."

- Livestock and farm animals (goats, cows, horses): drive herds to high ground during flooding, unhitch and release from barns during advancing wildfires — give them an opportunity to survive by natural instinct.
- Remember: a dog serves as an early-warning alarm system, an organic hot-water bottle in freezing shelters, and a psychological anchor for the entire group. Food invested in them pays back manifold.

22.5. Childbirth Without a Doctor

During blackouts, hostile military encirclement, or prolonged evacuations, active labor may commence where professional healthcare workers cannot reach.

Childbirth is a normal physiological process: in 90% of deliveries, the assistant's duty is simply not to interfere, preserve thermal protection and asepsis, and summon emergency services.

1. Call emergency medical services (103 in Ukraine, 112 in EU / 911) and contact the nearest local midwife or nurse upon the onset of regular contractions; there is ample time to reach a hospital facility as long as contractions are farther apart than 5 minutes and amniotic fluid has not broken. When contractions occur every minute, the mother experiences an overwhelming involuntary urge to push (bear down), and the fetal crowning is visible — delivery will happen here.
2. Prepare the delivery environment: clean surface (tarpaulin or plastic sheeting covered with fresh clean sheets), thoroughly washed hands and sterile medical gloves, clean dry towels, warm receiving swaddles, a clean washbasin, scissors and binding ties/string boiled for 10 minutes, and a clean plastic bag. Room temperature warmth is paramount to protect the newborn from rapid hypothermia.
3. Maternal delivery position: whatever the laboring woman finds most comfortable (semi-sitting supported by pillows, lying on her side, or on hands and knees). Provide water to sip, guide steady breathing, and maintain calm; encourage pushing ONLY in synchronization with contractions when the natural urge is present.
4. Crowning and emergence of the head: gently support the delivering head with the flat of your palm without pulling or forcing; instruct the mother to "pant shallowly,

do not push" to avoid perineal tearing. If the umbilical cord is looped around the fetal neck, gently slide it over the head. Following delivery of the head, the shoulders will rotate and deliver spontaneously over the next 1–2 contractions; support and grasp the infant securely (newborns are extremely slippery), maintaining the baby at the exact level of the mother's pelvis.

5. Immediate newborn care: dry the baby quickly with clean towels, place skin-to-skin directly onto the mother's bare chest/abdomen, and drape both under warm, dry blankets; if the newborn does not breathe within 30 seconds — vigorously stimulate by rubbing the back and soles of the feet, gently clear visible mucus from mouth and nose with clean cloth (never insert fingers blindly into the pharynx), maintaining the head in a neutral position (neither hyper-extended nor flexed toward chest); if still apneic after 1 minute — administer 5 gentle rescue breaths (covering both mouth and nose with your mouth), followed by neonatal CPR: 3 thumb chest compressions (hands encircling the ribcage, compressing the lower third of the sternum) to 1 breath; call emergency dispatchers (103 / 112 / 911).
6. Do not rush to clamp or cut the umbilical cord: wait until umbilical pulsations cease entirely (3–5 minutes), securely tie the cord with boiled thread/twine in two places (10 cm and 15 cm from the infant's abdomen), and sever the cord between the ties with sterile scissors. If sterile implements are unavailable — do NOT cut the cord at all; wrap the delivered placenta in a clean plastic bag alongside the baby and await clinical personnel.
7. The placenta will deliver spontaneously within 5–30 minutes (never exert traction on the umbilical cord); preserve the placenta in a bag for medical inspection. Initiate breastfeeding immediately: suckling triggers maternal oxytocin release, contracting the myometrium and controlling postpartum hemorrhage. Gentle circular massage of the maternal lower abdomen beneath the umbilicus also promotes firm uterine contraction.
8. **Critical red flags — seek emergency surgical/obstetric help at all costs:** postpartum hemorrhage soaking more than 2 full pads/cloths per hour, placenta retained after 60 minutes, breech presentation (feet or buttocks presenting first), maternal convulsions/seizures, maternal high fever, or an infant remaining flaccid or cyanotic (blue/pale).

CHAPTER 23

Weather Forecasting Without Meteorologists and Seasonal Survival

When there is no internet or weather forecast, conditions for the next 6–24 hours can be predicted with surprising accuracy by observing the sky, wind, smoke, and natural animal behavior. Traditional indicators are not 100% foolproof, and climate change is making "familiar" seasons less predictable: cross-reference multiple signs together and prepare for extremes.

23.1. Clouds — The Master Forecaster

What You See	What It Means
High, wispy "mares' tails" (cirrus clouds) thickening and streaming from the west	Warm front approaching: steady, prolonged rain within 12–24 hours
Milky overcast veil covering the sky, forming a halo (optical ring) around the sun or moon	High probability of precipitation within 12–20 hours
"Mackerel sky" (altocumulus) rows of small cloud ripples packing together and thickening	Weather deterioration within 6–12 hours
Cumulus "towers" burgeoning vertically in the afternoon with dark, menacing bases	Thunderstorm or heavy downpour within 1–3 hours
Cumulonimbus "anvil" cloud with a flattened, spreading top	Severe thunderstorm is already imminent — take cover immediately
Scattered "cotton-ball" fair-weather cumulus clouds dissipating toward evening	Stable, fair weather continuing
Ragged, low clouds scudding rapidly across the sky with gusty surface winds	Rapid weather change, incoming squalls and turbulence

23.2. Sky, Stars, and Smoke

- **"Red sky at night, sailor's delight":** a deep crimson sunset with clear western skies indicates dry, fair weather tomorrow; a red sunrise in the morning warns of atmospheric moisture and potential rainfall by evening ("red sky at morning, sailors take warning").
- Sun setting behind a dense "wall" of clouds — expect rain overnight or early next morning; setting into a clear horizon — fair weather tomorrow.
- Stars twinkling sharply — increasing high-altitude winds and changing weather fronts; steady, calm starlight — stable conditions.
- Campfire smoke rising straight up in a vertical column — stable high barometric pressure, fair weather; smoke flattening, hugging the ground, and swirling downwards — falling barometric pressure, precipitation ahead.

- Moon surrounded by a hazy halo — air humidity is rising, rain approaching; sharp, clearly defined crescent moon — dry conditions.

23.3. Air, Dew, Sounds, and Wildlife

- Heavy morning dew or ground frost — a dry, sunny day ahead; completely dry grass at dawn — expect rain during the day.
- Distant sounds (train whistles, church bells) carrying with unusual clarity — air humidity is rising, precipitation within 12–24 hours.
- Environmental odors (swamps, flowers, silage) suddenly sharpening and intensifying — atmospheric pressure is dropping, rain coming.
- Swallows and swifts skimming low over the ground — humidity forces insects down, rain expected within hours. Flying high — dry weather.
- Bees retreating into hives in midday, ants sealing anthill entrances, dandelions closing their blooms — rain is near.
- Steady wind blowing from a single direction for days — stable weather pattern; wind shifting erratically throughout the day — a weather front is close.
- Aching joints and throbbing old bone fractures — not a myth: many people genuinely feel dropping barometric pressure 12+ hours before a storm.

23.4. Thunderstorms: Calculating Distance and Danger

- Count seconds from the lightning flash to the thunderclap and divide by 3 to calculate distance in kilometers (speed of sound: ~340 m/s; or divide by 5 for miles). 9 seconds = 3 km (~1.8 miles).
- If you can hear thunder, lightning is already close enough to strike you (lightning bolts can strike 10–15 km / 6–10 miles ahead of a storm cloud): move to a safe structure immediately without waiting for rain. Under 30 seconds between flash and bang (≈ 10 km / 6 miles) means the storm is right on top of you: seek immediate shelter (safety rules — Section 19.3).
- Flash-to-bang interval shrinking with each successive strike — the storm is moving directly toward you; interval growing — it is moving away. It is safe to emerge only 30 minutes after the last heard thunderclap ("30/30 rule").

23.5. Practical Survival Takeaways

- Spotting rain signs 12 hours out — actions today: stockpile dry firewood under cover, reinforce shelter roofs and tarpaulins, stage rainwater collection gear (clean buckets, gutters).
- Thunderstorm signs — avoid planning open-field crossings or water travel in the afternoon.
- Sudden winter thaw after hard freezes — exercise extreme caution regarding thin ice on water bodies and snow-laden roofs.
- Stable winter anticyclone (clear, calm skies, frost deepening every night) — budget firewood and heating fuel carefully: bitter cold will persist for days.

23.6. Winter: Survival Specifics

- Primary threats: hypothermia and frostbite (Section 7.10), carbon monoxide poisoning from improvised heating appliances, black ice (fractures and trauma), impassable road snowdrifts, weeks without district heating amid energy grid strikes (Section 20.5).
- Survival assets: snow = water source (melt it first, never eat raw snow); cold = natural refrigerator; animal and human tracks in snow = navigation and hunting; packed snow = excellent building and insulating material (Section 11.2).
- Stranded in a vehicle during a blizzard: do NOT abandon the vehicle (it is physical shelter and a prominent marker for search-and-rescue teams!); run the engine for 10 minutes per hour with a clear exhaust pipe and slightly cracked downwind window (deadly CO poisoning risk), tie bright fabric to the antenna, and periodically move limbs to maintain circulation.
- Black ice: adopt the "penguin walk" — short, flat-footed shuffling steps, center of gravity shifted slightly forward, hands free outside pockets. For the elderly — a walking cane fitted with an ice spike.
- Ice safety on waterways: safe clear solid ice is at least 10 cm (4 in) thick for a single person on foot, 30 cm (12 in) for a passenger vehicle; cloudy, slushy, cracked ice, or ice near currents, river mouths, reed beds, or drainage outlets is unsafe — never venture onto it. If you or someone falls through — Section 7.11.
- Daylight is short: schedule all strenuous outdoor work strictly between 09:00 and 15:00.

- Climate factor: winters are trending warmer and wetter overall, but punctuated by sudden, severe cold snaps down to -20°C (-4°F) — these rapid swings are the most catastrophic for uninsulated plumbing, roadways, and people caught without proper clothing.

23.7. Spring

- Seasonal floods and standing water (Section 19.1); do NOT walk on lake/river ice once spring thaws begin — spring ice is deceptively fragile, brittle, and honeycombed even when thick.
- Ticks become active with the earliest warm days (now running from February/March through November): wear light-colored clothing, tuck pant legs into socks, conduct full-body tick checks twice daily, apply repellents. To remove an attached tick: grasp smoothly with fine tweezers or thread right at the mouthparts against the skin and pull straight out without twisting or jerking, and NEVER apply oil or petroleum jelly; disinfect the bite wound; monitor the bite area for spreading red ring rash (erythema migrans) and check for fever over the next 30 days (Section 27.1).
- Early edible greens — crucial spring vitamin resource (stinging nettle, dandelion greens — Section 9.4). Birch sap harvesting.
- Root cellars and basements after winter: thoroughly ventilate before entering (hazardous decay gases and oxygen depletion).
- Meltwater can displace and expose unexploded ordnance (UXO) and landmines in former combat zones (Section 5.6).

23.8. Summer

- Extreme heat and dehydration (Section 19.5), violent convective thunderstorms (Section 19.3), and wildfires (Section 19.4).
- Water "blooms" with algae and bacteria — reliable multi-stage filtration and disinfection are vital (Chapter 8); food poisoning risks spike as food spoils rapidly (food storage — Section 9.3; treatment of food poisoning — Section 7.13).
- Mosquitoes and biting midges: smoldering campfire smoke, long-sleeved clothing at dawn and dusk, head nets. Mosquitoes also transmit vector-borne diseases (West Nile virus — Section 27.5). Wasps and bees: if stung, remove the stinger immediately using whatever is handy (fingernail, credit card edge, tweezers — speed matters more than technique), apply cold compresses; anyone with known

bee/wasp allergies must carry an epinephrine auto-injector / antihistamines at all times.

- Snakes (vipers): wear sturdy high-top boots in tall grass and rocky terrain, watch where you step, and never harass snakes. In case of a snakebite: stay calm, immobilize the affected limb, drink plenty of water, and seek medical help; do NOT cut the bite mark, do NOT attempt to suck out venom, and do NOT apply a tourniquet.
- Survival assets: peak natural foraging abundance (wild berries, fishing, edible plants, home gardens), warm weather allows dehydration and sun-drying of food supplies for winter.

23.9. Autumn

- Primary survival task: winter stockpiling — drying, salting, fermenting/pickling (Section 9.3, 25.3), cutting standing deadwood for firewood before autumn rains set in, home weatherization and insulation (Section 12.2), and draining plumbing systems ahead of anticipated grid outages (Section 20.5) — complete ALL preparations BEFORE sustained freezes arrive.
- Dense fogs and shrinking daylight: attach reflective elements to outerwear and keep a flashlight on your person at all times.
- Damp cold between +2 °C and +8 °C (35–46 °F) is far more hazardous for hypothermia than sub-zero dry freezing: wet clothing + wind chill = rapid hypothermia (Section 7.10). A quality rain poncho and dry wool/synthetic socks are the most important gear items of the season.
- Wild mushrooms warning: in a survival crisis, unless guided by a thoroughly experienced local forager, do NOT gather wild mushrooms at all (Section 9.4).

CHAPTER 24

Tools, Repairs, and Improvisation

In a crisis, nothing is bought — everything is repaired, repurposed, and improvised. Here is the minimum toolkit, safe tool handling practices, and the "second life" of ordinary items.

24.1. Minimum Toolkit

Tool	Primary Crisis Applications
Pry bar / wrecking bar (60–90 cm)	Clear rubble, pry concrete slabs, force open jammed doors, home defense
Medium axe	Firewood, stakes, shaping poles, hammering/breaking tasks
Wood handsaw + hacksaw blades	Quieter and safer than an axe; hacksaw for rebar, pipes, padlocks
Spade shovel (+ folding entrenching tool in go-bag)	Latrine, trench/foxhole shelter, Dakota fire hole, gardening
Pliers, adjustable wrench	Shut off utility valves, wire work, all-around repairs
Hammer, assorted nails/screws, screwdriver	Board up windows, reinforce doors, build wooden duckboards/flooring
Utility knife + sharpening stone	A dull knife is more dangerous than a sharp one: it slips
Work gloves x3 pairs, safety glasses	Broken glass and jagged rebar everywhere; an injured hand in a crisis is a disaster

Safety over speed: in a crisis, an injury from your own axe is more likely than almost any other. Chop on a chopping block, never on the bare ground; position your swing line so that a glancing blow deflects AWAY from your leg; always cut with a knife away from yourself; work at heights only with fall protection; lift heavy loads with a straight back using the strength of your legs.

24.2. Repairing the Essentials

- **Broken window in winter:** two layers of plastic sheeting with a 2–5 cm air gap between them (secured with a staple gun, wooden battens, or duct tape) retains heat almost as well as glass. Large breaches: blanket + plastic sheeting over it. Pre-cut "emergency window panels" made of OSB or polycarbonate sized to fit are excellent preparation for frontline cities.
- **Punctured roof:** heavy plastic sheeting, banner vinyl, or linoleum with a 30+ cm overlap onto intact roofing, weighed down with battens or bricks along edges (driving nails through slate tiles creates new leaks).
- **Leaking pipe:** shut off water supply; temporary fix — tightly wrap with rubber (bicycle inner tube) + hose clamps or wire over it; epoxy putty ("cold weld") holds

for months.

- **Footwear:** separated sole — stitch with cobbler's thread around perimeter (awl + heavy nylon thread) or lash with wire through punched holes; duct tape will hold for a single day's trek.
- **Clothing/gear:** repair kit from go-bag (needles, nylon thread, safety pins); tear in tent or poncho — duct tape patch on both inside and outside.
- **Loose door / compromised lock:** hinges inside, door opens inward — brace a wooden timber diagonally from floor under door handle; add a secondary slide bolt in 10 minutes using hinges and a padlock.

24.3. Second Life of Items (Improvisation)

Item	Repurposed As
PET bottle	Water filter (sec. 8.3), funnel fish trap (sec. 9.5), funnel, fishing float, scoop, mini-greenhouse, spoon (cut from neck), cordage (spiral-cut into 3–5 mm strips)
Tin can	Mug, hobo/twig stove, windproof candle holder, perimeter tripwire rattle/bell, grater (punch holes with a nail)
Duct tape	Patches, splint fixation for fractures, blister prevention (tape onto heel BEFORE friction starts), repairing anything; wrap 5 m around each water bottle in your go-bag
Condom / latex glove	Waterproof pouch for matches and documents, water container (up to 1 L supported inside a sock)
Stockings / pantyhose	Water pre-filter, food drying mesh, cordage, hanging onion storage
Automobile (even disabled)	Battery — lighting and fire-starting (sec. 10.2), mirrors — signaling, seats — bed/mattress, wiring — tie-downs, tire — signal fire (thick black smoke)
Laundry soap (bar soap)	Washing, laundry, mild antiseptic for minor scrapes, lubricant for screws and saw blades, temporary putty seal for minor fuel/fluid leaks
Aluminum foil	Heat reflector behind candle/fire, cooking packet, signal reflector, shoe drying (stuff inside with crumpled newspaper)
Newspapers	Insulation for clothing and footwear, tinder/kindling, "vacuum" vegetable wrapping for storage, hygiene
Metal biscuit tin	"Faraday cage" for spare radio and keypad phone (Chapter 18)

24.4. Knife Sharpening Without a Whetstone

1. Find a flat, fine-grained stone (river pebble, concrete curb, unglazed ceramic bottom ring of a mug).
2. Wet the surface. Maintain an angle of $\sim 20^\circ$ (guide: a sheet of paper folded in half twice equals 22.5° ; a coin or two under the blade spine yields only $5\text{--}10^\circ$).
3. Motion: "slice a thin shaving off the stone" — 10 passes on one side, 10 on the other, progressively decreasing pressure.
4. Stropping: strop on a leather belt (motion trailing AWAY from the blade edge) — removes burrs until the knife shaves hair.

24.5. Fuel and Lubricants

- Siphon fuel only from your own vehicle or with the explicit consent of the owner. Someone else's vehicle, even if seemingly "abandoned", has an owner: taking fuel without permission constitutes theft. Under martial law, theft is punishable by 5–8 years of imprisonment (Art. 185, Part 4 of the Criminal Code of Ukraine), while petty amounts (under 2 tax-free minimum incomes) lead to fines or administrative detention under Art. 51 of the Code of Administrative Offenses of Ukraine. In modern tanks, drain only via the bottom drain plug or using a siphon hose with a primer bulb / hand pump inserted into the filler neck. NEVER siphon by mouth — gasoline aspiration into the lungs is life-threatening.
- Gasoline degrades over time ("goes stale") — generators and chainsaws require fresh fuel; do NOT use old fuel to light a stove or campfire: the State Emergency Service (SES) strictly prohibits lighting fires with flammable liquids (vapors ignite explosively, not the liquid itself — adding it "drop by drop" does not protect you; this is a leading cause of structure fires and severe burns). If old fuel is clear, without sediment or water, blend it in small proportions into fresh fuel (approx. 1 part old to 4–5 parts fresh) for tolerant, low-compression engines; if cloudy or containing sediment, do not pour into engines — store in a sealed canister outdoors, far from living quarters and flames, until hazardous waste disposal; do not pour onto the ground or burn off. For fire lighting, use paper, birch bark, wood shavings/kindling, or solid fuel tablets (dry alcohol).
- Used motor oil — wood preservative against rot, rust prevention for tools, highly visible black smoke distress signal.

- Fat candles: rendered animal fat/tallow + cotton cord wick in a jar — provides both light and emergency survival calories (fats) simultaneously.

CHAPTER 25

Long-Term Food Security: Gardening, Sprouting, Preservation

Stockpiles will run out. If a crisis stretches into months, food must be grown. Even a windowsill provides vitamins, and 200–300 m² (2–3 ares / 0.05–0.07 acres) makes a substantial contribution to family survival.

25.1. Sprouting: Fresh Vitamins in 3 Days Without a Garden

1. Suitable seeds: wheat, rye, oats, lentils, peas, mung beans, sunflower seeds, green buckwheat (raw, unroasted!). Do NOT sprout common beans (white, red, kidney, pinto beans) for raw consumption: raw, soaked, and sprouted common beans contain toxic phytohaemagglutinin (lectin) — ingesting as few as 4–5 raw beans causes violent vomiting and diarrhea. Consume common beans only thoroughly cooked: soak, discard soaking water, and boil vigorously in fresh water for at least 10 minutes (preferably 30 minutes); slow simmering at low temperatures does not destroy this toxin. Also do NOT sprout potatoes or tomatoes (nightshades produce toxic sprouts), nor chemically treated seed stock intended for agricultural sowing (identifiable by artificial dye coloring).
2. Rinse thoroughly, soak for 8–12 hours in disinfected/purified water.
3. Drain and spread in a 1–2 cm layer in a glass jar covered with cheesecloth / on a shallow plate covered with a damp cloth. Rinse twice daily using ONLY disinfected (boiled and cooled) water, with clean hands, in clean containers: warm, humid environments promote rapid multiplication of Salmonella and E. coli, which may already contaminate the seeds. Discard any sprouts that feel slimy, smell sour or foul, or show mold. Never give raw sprouts to children under 5, pregnant women, the elderly, or immunocompromised individuals — boil them for 1–2 minutes in boiling water first.
4. Consume when sprouts reach 2–5 mm in length (1–3 days). Sprouting multiplies vitamin content exponentially — serving as your primary defense against scurvy and nutritional exhaustion when surviving on dry grains and canned rations.

25.2. What to Plant in a Crisis: Maximum Calories and Reliability

Crop	Why	Minimum Agricultural Technique
Potatoes	High-calorie, hardy, stores through winter until spring	Plant sprouted tubers or even peelings with "eyes" at 8–10 cm depth in May; hill twice; harvest once foliage withers
Beans, peas	Protein! Keeps dry for years, enriches soil with nitrogen	Sow in warm soil, support pole varieties with stakes; dry pods until seeds rattle inside

Pumpkin, squash, zucchini	Massive yield per plant, pumpkin stores all winter long	Plant 2–3 seeds per hole amended with compost; water directly at root level
Beets, carrots	Store packed in sand until spring, beet greens are also edible	Sow early, thin seedlings, store roots in boxes filled with dry sand in a cool cellar
Cabbage	Vitamin C all winter long through lacto-fermentation	Start from seedlings; water generously
Onions, garlic	Natural antimicrobials, adds flavor to monotonous rations, stores exceptionally well	Plant winter garlic in autumn (October), onion sets in spring
Greens (dill, parsley, lettuce, spinach)	First fresh vitamins ready in 30–40 days, thrives even on windowsills	Sow in succession waves every 2 weeks

- Seed reserves: keep a "strategic seed packet" of these basic crops at home (cool, dry, in a sealed glass jar) — costs very little and remains viable for 3–5 years (exceptions: onion, parsley, parsnip seeds keep only 1–2 years, replenish annually).
- Saving your own seed: collect from the healthiest open-pollinated plants; avoid F1 hybrids (offspring will degenerate); dry completely and label with the harvest year.
- Fertilizer without garden centers: compost (all vegetable scraps + wood ash), wood ash (potassium), fermented stinging nettle tea diluted 1:10 (nitrogen).
- Water conservation in dry seasons: mulching (straw or dry grass clippings in a 5–10 cm layer) cuts watering needs by half; water in the evening directly at the roots; create drip irrigation using perforated PET bottles buried next to plants.
- Gardening in former combat zones — only after professional clearance by explosive ordnance disposal (EOD / sappers, sec. 5.6); soil adjacent to burned-out military vehicles and blast craters is heavily contaminated with heavy metals — do not plant food crops there.

25.3. Crop Storage Without Electricity

- **Root cellar / basement (0...+5°C / 32...41°F):** potatoes and beets — in bulk mounds or slatted crates; carrots — layered in damp sand; cabbage — suspended by stalks; store apples separately from potatoes (ethylene gas emitted by apples accelerates sprouting and decay).
- **Clamp storage / earthen clamp (if no cellar is available):** dig a 50–70 cm pit in a dry, well-drained spot → layer of clean straw → potatoes piled in a mound →

20–30 cm straw layer → 30–40 cm soil (apply in 2 stages, adding more soil as severe frost arrives) → perimeter drainage ditch around clamp; insert a vertical ventilation bundle of straw or pipe along the ridge, otherwise stored potatoes will rot. Retrieve food in batches from one end.

- **Lacto-fermentation** — the primary winter preservation method; use non-iodized salt. Sauerkraut (cabbage): 20–25 g salt per 1 kg shredded cabbage (2–2.5%), massage and pack tightly until completely submerged in its own extracted juices; if liquid is insufficient, top off with a 2% brine (20 g salt/L). Cucumbers and green tomatoes: submerge in a 4–6% brine (40–60 g salt/L, ideally 50 g). Beets: 2–3% brine (20–30 g/L). Keep weighted under a follower/press, ensuring vegetables remain completely submerged below brine level; ready in 1–2 weeks, keeps in cold storage for months, preserving vitamin C. Discard immediately if slimy, mushy, or emitting a putrid odor.
- **Dehydration / drying** — apples, pears, mushrooms (caution! — sec. 9.4), herbs, berries: strung on lines or spread across drying screens in a shaded, well-ventilated breeze or suspended above a wood stove. Store fully dried foods in sealed glass jars.
- Protecting grain and dried beans from pantry pests: store in sealed glass jars or food-grade PET bottles with bay leaves or whole garlic cloves inserted inside; plastic PET bottles make ideal pest-proof containers.

25.4. Backyard Chickens — The Simplest Livestock

- 3–5 laying hens = 2–4 eggs per day = dependable protein for the family. Hens do not require an incubator, forage independently, and thrive on food scraps, weed greens, and grain.
- Minimum requirements: dry, draft-free coop or hutch, roost perches, constant clean water, and predator protection against weasels, martens, and foxes (hardware cloth mesh, secured shut nightly).
- Rabbits: grow rapidly, silent (stealthy!), hutches built easily from wooden pallets; however, they are vulnerable to disease and territorial fighting — house adults in separate individual cages (keep together only kits under 3 months old).
- In urban settings, domestic pigeons and coturnix quail are more practical (caged on balconies, quiet, quail begin laying eggs within 40 days from hatching).

Biosecurity against avian influenza (mandatory protocols): keep feed and water supplies under shelter, strictly inaccessible to wild birds; cover outdoor runs with protective netting; use dedicated boots and gloves exclusively for poultry care; never handle dead wild birds found nearby, report them to veterinary authorities; sudden unexplained die-off of multiple domestic birds — do NOT consume, do NOT sell; immediately notify veterinary authorities (State Service of Ukraine on Food Safety and Consumer Protection / SSUFSCP) and do NOT independently bury or transport carcasses away — official veterinarians must take diagnostic samples and dispose of remains; while waiting for their arrival, wearing gloves, a respirator mask, and protective goggles, seal carcasses into double heavy-duty bags and isolate them from the rest of the flock, children, dogs, and cats; lock remaining poultry securely indoors. Only if veterinary services are unreachable for more than 24 hours (due to communications blackouts or active combat) — incinerate or bury carcasses at least 1+ meter deep far from wells and groundwater, covered generously with quicklime; afterward, wash hands, boots, and tools thoroughly with soap and a chlorine disinfectant solution. Humans can contract avian flu from infected birds — any fever developing after poultry contact requires urgent medical attention (sec. 21.6).

25.5. Food Barter and Mutual Cooperation

- Specialization is far more productive: you focus on potatoes, a neighbor raises chickens, another manages fishing. Bartering surpluses sustains everyone far better than "everyone attempting everything on a tiny scale."
- Establish barter "exchange rates" in advance and in writing (sec. 17.4): 1 bucket of potatoes = 10 eggs = ... This preempts interpersonal conflict.
- Seeds and starter seedlings serve as valuable crisis currency and relationship-building gifts.

CHAPTER 26

Evacuation: On Foot and by Vehicle

The decision to "leave or stay" is covered in section 17.6. This chapter focuses on HOW to travel once that decision has been made: routes, vehicle readiness, convoys, checkpoints, drone threats on highways, and multi-day foot treks.

26.1. Route Planning in Advance

- **Three routes out of the city:** primary (main highway), secondary (regional/back roads), and walking / "quiet" (footpaths, railway embankments, dirt field tracks). Mark them clearly on a paper map stored in your go-bag and write the turn-by-turn directions out in text (GPS navigation can fail or mislead — Chapter 18).
- For each route, scout in advance: gas stations, hospitals, water sources, designated overnight points (churches, schools, trusted contacts), and bypass routes around bridges (bridges are choke points, subject to closure, bottlenecks, and targeted strikes).
- Destination point — a specific, confirmed physical address (relatives, acquaintances, official reception center) arranged in advance, plus a backup destination in an entirely different direction.
- Monitor official announcements: scheduled hours for "green corridors" (humanitarian evacuation corridors), authorized routes — and verify them via two independent official sources (Chapter 18): bogus "corridors" are used as traps and ambushes. Traveling outside an authorized corridor is life-threatening.
- Evacuation hotlines in Ukraine: government hotline **1548** (toll-free, 24/7); **203** — unified helpline of the "Coordination Humanitarian Center" charity; "Vostok SOS" (East SOS) CF 0 800 332 614; "Proliska" 0 800 888 888; Save Ukraine (families with children) 0 800 333 129. Phone numbers can change — verify at dovidka.info. (For emergency services in Ukraine call 101/102/103/112; abroad: 112 / 911 / 999).
- Golden timing rules: depart as early as humanly possible (in the initial hours roads remain relatively clear), or, if that initial window was missed, hunker down to wait out the first massive wave of panic and highway gridlock.

26.2. Vehicle: Preparation

- ☐ Fuel tank kept at least half full at all times (peacetime preparedness habit)
- ☐ 10–20 L jerrycan of extra fuel (secured externally or in a well-ventilated trunk)
- ☐ Full-size spare tire, jack, lug wrench, 12V air compressor / tire plug repair kit, tow strap

- ☐ Jumper cables or a portable lithium jump-starter pack
- ☐ Folding shovel, sturdy knife, hatchet/axe, heavy-duty work gloves
- ☐ 10+ L drinking water, ready-to-eat no-cook food rations for 2–3 days for all passengers
- ☐ Warm blankets / sleeping bags for everyone (spending a winter night in a car without engine heat is a very real scenario)
- ☐ Vehicle first aid kit + your expanded medical kit (sec. 7.16), automotive fire extinguisher
- ☐ 12V cigarette lighter charger, 150–300W power inverter, detailed paper road atlas
- ☐ Duct tape, bailing wire, WD-40, spare fuses, replacement light bulbs
- ☐ Cash in small denominations (highway payment terminals and ATMs will be offline)

Fuel: in a crisis, gas stations run dry within hours. Fuel consumption in gridlock is 2–3 times higher than normal driving. Calculate your effective range as fuel tank capacity ÷ 2. Refill your jerrycan at the first available opportunity, even if you "still have half a tank."

26.3. Driving in a Crisis

1. **Loading cargo:** heaviest gear placed low down and pressed firmly against the rear seatback; keep the rear parcel shelf completely clear (under hard braking, loose items turn into lethal projectiles). Keep each passenger's personal go-bag directly beside their seat door.
2. **Passengers:** everyone seatbelted; children secured in safety seats. Keep windows rolled down slightly in active shelling zones (reduces blast barotrauma, prevents shattered glass from jamming shut, and allows you to hear incoming drones), wear jackets, keep doors unlocked (child-safety door locks disengaged).
3. **Convoy spacing:** maintain increased following distance (sudden stops, unexploded ordnance, blast craters); in drone-threat zones — keep 100+ meters between vehicles. Never overtake the convoy without vital urgency; do not drive into oncoming traffic lanes simply "because everyone else is doing it."
4. Never drive into moving water under any circumstances (just 30 cm / 12 inches of flowing water sweeps a passenger car away — Chapter 19); in standing water, never exceed the depth of the wheel hub center. Do not veer onto unpaved,

unfamiliar dirt shoulders or field tracks (landmines — Chapter 5: stay on paved asphalt; overnight, mines dropped by drones can appear on road surfaces, sec. 5.6).

5. **Night driving:** whenever possible, avoid moving at night in combat or frontline zones; headlights are visible for miles and serve as homing beacons for attack drones.
6. **Drones over highways** (within 30–40 km of the frontline): drive during daylight hours, avoid stopping in open expanses, drive with windows cracked; if you hear an engine drone or high-pitched buzzing — stop immediately, everyone disembark, and sprint away from the vehicle toward solid cover. Full details in Chapter 4.
7. **Incoming artillery/shelling on the road:** follow section 3.6 — stop immediately, everyone exit, and dive into the roadside ditch or depression 30–50 meters away from the vehicle.
8. **Mechanical breakdown:** pull vehicle completely onto the shoulder, activate hazard flashers, place warning triangle; flag down passing motorists — in a crisis, people stop to assist far more readily than in peacetime. Never abandon a vehicle blocking a driving lane — you will trap everyone behind you.

26.4. Checkpoints and Inspections

- Approach preparations: switch to low-beam headlights, turn off radio/music, roll down windows, remove sunglasses, keep both hands resting on the steering wheel. Passengers must keep hands plainly visible and avoid sudden movements.
- Follow all instructions slowly and deliberately; announce your actions before moving ("My documents are in the glove compartment, I am reaching for them").
- Do NOT photograph or film checkpoints, fortifications, or military personnel/vehicles — this is extremely dangerous.
- Keep all identification and vehicle registration documents in a single clear plastic folder that can be passed through the window without searching.
- Smartphones may be inspected. At hostile checkpoints and when crossing out of occupied territories — carry a "clean," sanitized phone prepared in advance (Chapter 18).

- Maintain calm, respectful composure; never argue or raise your voice. If turned away — turn around quietly and proceed via your alternate route.

26.5. Sleeping in a Vehicle

- Selecting a location: never park directly on the shoulder of a major highway (risk of drowsy truck drivers), but rather in designated rest stops, gas station plazas, or alongside other civilian vehicles; in drone zones — park under hard awnings, dense tree cover, or against building walls, never exposed in open fields.
- Winter heating: run the engine intermittently (approx. 10 minutes every hour), but ONLY after verifying that the exhaust tailpipe is clear of snow drifts and keeping a window cracked slightly open on the downwind side — carbon monoxide is odorless and lethal (sec. 7.11). Safer alternative: warm sleeping bags + all occupants sharing body heat inside the cabin.
- Insulation: place closed-cell foam pads on seats and against side windows (glass is the biggest thermal bridge), hang a blanket over the windshield from the inside.
- Park facing the exit route for immediate departure, keep doors locked, and ensure valuables are concealed out of plain sight.

26.6. On Foot: Multi-Day Trek

The realistic marching pace for a loaded adult is 3–4 km/h, covering 15–25 km per day. With small children or elderly companions — 8–15 km per day. Plan your timetable honestly.

Movement Technique

- Rhythm: 50 minutes of walking — 10 minutes of complete rest (take off backpack, elevate feet). Long midday stop — 30 minutes, combined with a meal and thorough foot inspection.
- Pace — determined by the slowest member of the party, who walks second in line (the navigator leads in front).
- Maintain short, steady strides; do not jog downhill (knees and feet are your only transport, protect them above all else).
- Hydration: drink 2–3 sips every 15–20 minutes; do not wait until your mouth is parched.
- Depart at dawn; during peak summer heat — rest from 11:00 to 15:00 in shade, completing the remaining distance in the late afternoon and evening.

- In frontline zones: move in small groups of no more than 3–4 people spaced 20–30 meters apart, traveling along tree lines and building edges rather than walking down the center of open fields or exposed roads (Chapter 4).

Feet Are Your Primary Asset

- Wear thoroughly broken-in footwear and seamless hiking socks that do not rub; hang damp spare socks on the outside of your backpack to dry while walking.
- At the slightest hint of friction or hot spot — STOP immediately: apply blister bandages, adhesive tape, or moleskin BEFORE a blister develops. "I'll tough it out until the next rest stop" = full blister = minus 2 km/h.
- Blister care: never tear away blister skin. If large and painful — puncture at the base with a sterilized needle, gently express the fluid, apply antiseptic, and protect with a cushioned blister pad (sec. 7.14).
- Every evening: wash or wipe feet clean, inspect thoroughly, and dry boots (stuff with crumpled paper or dry grass; never dry footwear directly against open campfire flames — leather stiffens and cracks).

Pack Weight and Children

- Overloading is the #1 mistake: carrying more than 20% of your body weight causes injuries and drastically degrades pace. Shed unnecessary weight before departing, not 10 kilometers into the trek.
- Children under 4–5 years: carry in a sling, baby carrier backpack, or stroller (a stroller also transports supplies). Older children — give them their own small backpack and a designated "mission" (trail lookout, whistle keeper).
- Every child must have an emergency card in their pocket: full name, parents' phone numbers, final destination address. Take a clear smartphone photo of each child every morning (showing their current clothing) — in case of emergency search (sec. 17.7).
- In crowded transit hubs and train stations: agree on a predetermined rendezvous point "if separated" and drill the golden rule: "Freeze right where you are, do not follow anyone, shout Mom's name loudly."

26.7. Arrival and Registration

- Register at official humanitarian aid centers for internally displaced persons (IDPs): this provides access to emergency housing, financial assistance, and

humanitarian relief. For evacuating abroad — see Appendix B.

- Contact your pre-arranged emergency check-in contact (sec. 1.5): "Arrived safely, our current address is..."
- First 48 hours: prioritize deep sleep, hot nutrition, and a medical assessment for all group members (blisters, colds, blood pressure in elderly members) — only then make decisions regarding subsequent steps.

CHAPTER 27

Dangerous Animals, Insects, and Parasites

In a crisis, humans return to environments inhabited by ticks, venomous snakes, feral dogs, and rodents. Most encounters are harmless if you understand three principles: how to avoid them, what to do upon contact, and when a bite is genuinely life-threatening. A warming climate expands the geographic range and active season of ticks and mosquitoes — as well as the diseases they transmit.

27.1. Ticks — The #1 Threat in Our Latitudes

Ticks transmit Lyme disease (borreliosis) and tick-borne encephalitis (TBE). They are active from the first warm days of early spring until late autumn — and in mild winters, virtually year-round. They perch on tall grass and low shrubs up to 1–1.5 m high; they do not drop from trees.

Prevention

- Tuck trousers into socks, shirt into pants, wear light-colored clothing (makes ticks easy to spot), wear a hood/hat in brush, apply repellent to outer clothing.
- Perform full-body skin checks twice daily and after every venture into tall grass or woods: armpits, groin, behind ears, hairline, behind knees, and navel.
- After returning from outdoors, shake clothing out and do not bring it directly into tents or bedding; inspect domestic animals as well.

Removing an Attached Tick

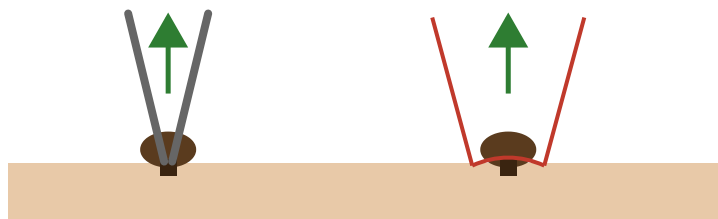


Fig. 27.1. Tick removal: with tweezers (left) or a thread loop (right) — grasp as close to the skin as possible, pull smoothly straight up

1. Using fine tweezers (or a thread loop), grasp the tick **as close to the skin surface as possible**, by the head/mouthparts, never by the swollen abdomen (squeezing the body injects infectious fluids directly into the bite wound).
2. Pull upward slowly, steadily, perpendicular to the skin, without twisting or jerking (a specialized tick-removal hook may be gently rotated — this is the only exception).

3. Do NOT smother the tick with vegetable oil, butter, petroleum jelly, or alcohol, and do NOT burn with a match — under hypoxia and distress, the tick regurgitates pathogen-laden saliva into your bloodstream.
4. Disinfect the bite site with antiseptic and wash your hands thoroughly. If mouthparts break off in the skin, do not dig into flesh with needles — the body expels them naturally like a splinter; apply antiseptic daily.
5. Record the date of the bite. Monitor yourself for 30 days: **an expanding red rash with a central clearing ("bullseye" / erythema migrans) around the bite, unexplained fever, body aches, joint pain, headache** — seek medical care without delay; Lyme disease is fully curable with antibiotics in its early stages. If the tick was attached for more than 36 hours or is already heavily engorged — consult a physician immediately without waiting for symptoms. According to the Ministry of Health (MOH), 20–30% of Lyme cases develop no rash whatsoever: never write off fever and muscle aches following a tick bite as a routine cold.

27.2. Snakes

- In Ukraine, only one group is venomous: vipers (common European adder, steppe viper, Nikolsky's viper) — 50–70 cm long, zigzag dorsal pattern or completely black, vertical slit pupils, distinctly triangular head. Grass snakes and smooth snakes (bright yellow or white patches on the temples, round pupils) are completely harmless. When uncertain, leave all snakes alone.
- Prevention: when walking through tall grass, scree, rocky terrain, or near haystacks — wear high leather boots, watch your step, tap the ground and rocks ahead with a walking stick before sitting down; never reach blindly into brush or crevices; zip tents completely shut at night and shake out boots before putting them on in the morning.
- **Viper bite protocol:** stay calm and minimize all physical exertion (muscle activity rapidly accelerates lymphatic venom spread); remove rings, bracelets, and footwear before edema develops; immobilize the bitten limb using a splint as if treating a fracture, keeping it positioned comfortably at heart level or slightly elevated (never let it dangle downward); drink copious amounts of water; administer an antihistamine and an analgesic (do NOT give aspirin or other blood-thinning NSAIDs); transport to hospital immediately — antivenom (if indicated and available) and anti-shock therapy can only be safely managed in a hospital setting.

- **DO NOT:** cut the puncture wounds, attempt oral suction, cauterize/burn with fire, apply a arterial tourniquet, or administer alcohol. Fatal viper bites are extremely rare; the vast majority of life-threatening complications stem from harmful "first aid" interventions and severe panic. The greatest medical risk is to young children, the elderly, and individuals with acute allergic sensitivities.

27.3. Dogs and Wild Animals

- In times of crisis, abandoned domestic dogs quickly form feral packs and lose their natural inhibition toward humans. Extreme hazard arises from packs scavenging near ruins, illegal dump sites, and casualties: they are territorial, aggressive, and carry a heightened risk of rabies.
- Encountering an aggressive pack: do not run (flight triggers their chase instinct), do not make direct eye contact, and never turn your back; back away slowly at an angle, keeping a stout stick or backpack between yourself and the animals; speak in a loud, deep, commanding voice; bending down to simulate picking up and throwing a stone frequently deters them.
- Under direct attack: protect your throat and face; wrap a forearm in a jacket or backpack as a defensive shield / bite target; if knocked to the ground — curl into a tight ball, interlocking hands behind your neck to protect the carotid arteries, throat, and abdomen.
- Animal bites of any kind: immediately irrigate and flush the wound aggressively with soap and running water for a full 15 minutes, apply antiseptic, do not suture closed tightly — and seek immediate post-exposure rabies vaccination (sec. 21.1). Any bite or scratch from a wild animal or unknown stray carries rabies risk. Rabies has a 100% fatality rate once symptoms emerge, but post-exposure prophylaxis (PEP) vaccination is 100% effective: begin as quickly as possible — and it is never too late even weeks later, provided clinical symptoms have not yet appeared.
- Any wild animal showing abnormal tameness, approaching humans in broad daylight, exhibiting excessive salivation/foaming, or walking with an uncoordinated ("drunken") gait is rabid: retreat immediately, do not approach, and do not attempt to "rescue" it. A wild fox wandering into a village by daylight is a textbook example.
- Wild boars and moose (elk) in spring and when escorting young: give a wide berth; boars cannot climb trees, and moose do not pursue humans over long distances.

27.4. Rats and Mice

- Rodent populations surge during crises within weeks (uncollected refuse, collapsed structures, stockpiled food). They transmit leptospirosis, salmonellosis, and hemorrhagic fever with renal syndrome (HFRS); they spoil and contaminate rations with urine and feces.
- Sanitary prevention is your primary defense: keep all garbage tightly sealed and promptly disposed of (sec. 16.4), clean up food crumbs immediately, never leave open water standing, store dry provisions in metal tins, glass jars, or thick food-grade plastic bins, elevated off floors on shelves fitted with rodent guards.
- Simple traps: bucket trap with water and a rotating plank/can smeared with bait; classic wooden snap traps. Chemical rodenticides — exercise extreme caution around children and domestic pets; poisoned rodents crawl into wall cavities to die (producing putrid odors for weeks).
- Cleaning droppings: wear an N95/FFP2 respirator mask and rubber gloves; spray droppings thoroughly with a chlorine bleach disinfectant solution before handling (aerosolized dust from dried droppings transmits severe viral infections, including hantavirus); never sweep dry droppings with a broom.
- Discard any food showing evidence of rodent contact (gnaw marks, feces). If no replacement food exists — boil or fry thoroughly: causative agents of tularemia and leptospirosis are killed within 5–20 minutes at 60 °C, and instantaneously at 75 °C (167 °F) and above. Never touch dead rodents with bare hands and do not crush them.
- A domestic working cat provides effective biological rodent control and serves as an important psychological morale booster.

27.5. Wasps, Bees, Mosquitoes, and Other Pests

- Wasps/bees: avoid flailing arms, back away slowly; remove honeybee stingers immediately by scraping with whatever is at hand (fingernail, credit card, tweezers) — speed of removal matters far more than technique. Apply cold compresses, take an oral antihistamine. **Critical dangers:** stings inside the mouth or throat (suck on ice, seek emergency medical care immediately), 10+ multiple stings, or systemic allergic reaction: facial swelling, respiratory distress, dizziness, and rapid pulse indicate anaphylaxis: administer epinephrine (auto-injector) without delay if available, give an antihistamine, lie flat with legs elevated (if

breathless — in a semi-seated position), do not stand up abruptly, and summon emergency medical assistance urgently (call 103 in Ukraine, or 112 / 911).

- Mosquitoes and biting midges: wear protective clothing at dawn and dusk, use smoky smudge fires, wear head netting; apply DEET repellent to clothing. Due to climate warming, mosquitoes in Ukraine can transmit **West Nile virus** (fever, severe headache, and neuroinvasive encephalitis in the elderly), while in Southern Europe they carry Dengue and Chikungunya: fever developing 3–14 days after mosquito exposure is not a common cold, but a reason to see a doctor. Treatment is supportive; the best protection is prevention: eliminate all standing water near living quarters (open water barrels, discarded tires, puddles) which serve as breeding grounds — cover or drain them completely.
- Body and head lice (proliferate within weeks in crowded shelters): intense pruritus/itching, nits attached to hair; wash clothing at 60 °C+ (140 °F+), hot-iron seams, crop hair short, use fine-toothed nit combs; freeze infested bedding or immerse in boiling water.
- Intestinal parasites: contracted from unpurified surface water, unwashed greens, and undercooked freshwater fish or wild game — practice strict water disinfection and thorough cooking (Chapters 8–9).
- Most spiders and scorpions in Ukraine are harmless to healthy adults: bite management — wash thoroughly with soap, apply antiseptic, apply a cold pack wrapped in cloth, observe. **The sole dangerous exception is the Karakurt / Mediterranean black widow** (*Latrodectus tredecimguttatus*; found across southern and eastern Ukraine, steppes, vegetable gardens, woodpiles, footwear left outside; glossy black female with a globular abdomen up to 2 cm, often with 13 red spots). The initial bite is almost imperceptible (like a pinprick), but within 15–30 minutes triggers excruciating burning pain radiating throughout the entire body, severe abdominal rigidity and muscle spasms, tremors, profuse sweating, nausea, and shortness of breath. This is life-threatening, particularly for children and the elderly: keep the patient calm, immobilize the bitten limb, encourage plentiful oral hydration, administer an antihistamine — and **immediately seek emergency medical care (call 103 in Ukraine, or 112 / 911)** without waiting for symptoms to worsen; hospitals provide intravenous analgesia, calcium gluconate, and supportive medical management. Any suspected Karakurt bite in a child warrants immediate emergency hospitalization even before symptoms appear. **DO NOT:** cut the wound, attempt suction, cauterize with fire or matches, or apply a tourniquet.

CHAPTER 28

Safety in Crowds and Queues

A train station crush, panic in a shelter, a water queue escalating into a brawl — during a crisis, a crowd can kill just as easily as the disaster itself. The survival rules are simple and do not require physical strength.

28.1. Evaluating Crowd Density: When You Must Leave

- Occasional shoulder-brushing with neighbors is still manageable; continuous contact on multiple sides and the inability to bring your hands to your chest indicates **critical density — leave immediately** while you still have the chance.
- Danger signs: "shock waves" of surging movement rippling through the crowd, chokepoints ahead (doors, narrow corridors, stairs, gates), counter-surges moving against you, loud screaming up front.
- In open-air queues and public gatherings, keep in mind the threat of drones and drone drops (Ch. 4): dispersion and overhead cover take priority over holding your spot in line.

28.2. Trapped in a Crowd Crush

1. **Bring your hands up to your chest** with arms bent (boxer stance): this creates a protective cage shielding your ribcage from compressive asphyxiation — compressive chest crush is what kills, not falling.
2. Stay on your feet at all costs: feet slightly apart for stability, knees flexible; if you drop something, never bend down to pick it up.
3. Move with the crowd, not against it; during pauses between crowd surges, drift diagonally toward the outer periphery of the crowd — into looser pockets, but stay clear of solid walls and fences (compressive pressure is most intense against barriers).
4. Keep breathing, preserve air in your lungs; if panic sets in, consciously count your exhalations.
5. If you fall: immediately curl into a tight fetal position on your side, hands protecting your head; attempt to get up by grasping onto people's lower legs; shout loudly — people often reach down to help. If you see someone fall, stop and yell: "STOP! PERSON DOWN!" — a chain reaction of stopping saves lives.
6. Children in a crowd: lift them onto your shoulders or hold them firmly in front of you facing forward (with their back against your chest), never lead them by hand (their grip will be torn away).

28.3. Panic in Shelters, Metro Stations, and Transit

- A calm, commanding voice issuing simple commands ("Stop. Everyone hold. We exit in order, children first") halts panic more often than you might expect — especially if you are the first to take initiative.
- Do not rush the main exit along with the herd: you will lose in the bottleneck crush at the doorway; look for secondary exits, utility doors, ground-floor windows, or wait 1–2 minutes for the initial rush to subside.
- In darkness or heavy smoke: place one hand along the wall and advance along it — this prevents losing your orientation and keeps you from wandering into the high-pressure center of the crush.
- Separated from family: do not attempt to search through the mob — head straight to your pre-agreed rendezvous point (Sec. 22.1); the lost individual should remain stationary by a prominent landmark.

28.4. Queues for Water, Food, and Humanitarian Aid

- Arrive in a group: one person holds the place while others rest and rotate; women and children should never stand in queues alone.
- Do not display large amounts of cash or overflowing bags (Sec. 17.1); keep identification documents ready and secure.
- Conflict in a queue: do not engage physically, take a step back, use a calm, de-escalating tone; if tension escalates, step out of the queue — your life is worth more than a can of stew.
- The community rule: an organized queue with a written sign-up roster and a volunteer coordinator prevents brawls — take the initiative to organize the line; doing so enhances safety for everyone.

CHAPTER 29

Reference Tables and Signaling Codes

29.1. Morse Code

For whistle, flashlight, or tapping. Dot — short signal, dash — three times longer; pause between letters — length of one dash, between words — approximately two dashes (7 dots). The international distress signal **SOS**: ... — ... is transmitted continuously without pauses and is recognized by search and rescue services worldwide.

Letter	Code	Letter	Code	Letter	Code	Letter	Code
A	·—	J	·— — —	S	... —	1	·— — —
B	—··	K	—·—	T	— ·	2	··— —
C	—···	L	·—··	U	··—	3	··— —
D	—··	M	— —	V	··— —	4	···—
E	·	N	—·	W	·— —	5	····
F	··—·	O	— — —	X	—··—	6	—···
G	—·	P	·—·	Y	—·— —	7	—···
H	····	Q	—·—	Z	—·· —	8	— — ·
I	··	R	·—·	0	— — — —	9	— — — ·

In practice, knowing three things is sufficient: SOS, your name/callsign, and numbers (building address, casualty count). All letters and digits follow standard International Morse Code.

29.2. "Rule of Thumb" Measurements and Distances

Item / Measurement	Reference Guide
1 teaspoon / 1 tablespoon	5 ml / 15 ml (salt: 6–7 g / 20 g; sugar: 5 g / 15 g)
Standard drinking glass / cup	200–250 ml; dry grains ≈ 200 g; flour ≈ 130 g
Width of finger / palm / handspan	≈ 2 cm (~0.8 in) / 8–10 cm (3–4 in) / 20 cm (~8 in); cubit (elbow to fingertips) ≈ 45 cm (18 in); arm span ≈ your height
Single pace / double pace (stride)	≈ 0.75 m (2.5 ft) / 1.5 m (5 ft); 65 double paces ≈ 100 m (Sec. 13.1)

Distance to a person	Facial features distinct — up to 100 m; arm movements discernible — 200–300 m; human silhouette without detail — 500 m; vehicles / marching column distinct — 1–1.5 km
Thunderstorm distance	3 seconds between lightning flash and thunder = 1 km (~5 seconds = 1 mile)
Time until sunset	Outstretched hand: each finger width between the sun and horizon $\approx$ 15 min; full palm (4 fingers) $\approx$ 1 hour
Angle / degrees at arm's length	Single finger $\approx$ 2°, three fingers $\approx$ 5°, clenched fist $\approx$ 10°, outstretched handspan $\approx$ 20°

29.3. Shelf Life (Without Refrigeration, in a Cool Dry Place)

Product	Shelf Life	Notes
Canned meat / fish	2–5 years	Discard if bulging or corroded through (Sec. 9.3)
Canned vegetables	1–3 years	Acidic items (canned tomatoes) store shorter
Grains, pasta, flour	1–2 years (flour 6–12 mos)	Store sealed airtight against pantry moths; white rice and buckwheat last longest
Sugar, salt, honey	Practically indefinite	Keep dry; honey crystallization is completely normal
Cooking oil	12–18 mos	Turns rancid in light and heat — store in a cool, dark place
Dried fruit, nuts	6–12 mos	Nuts turn rancid — store in-shell for maximum shelf life
Powdered milk, infant formula	Per manufacturer label, ~1 year	Once opened: infant formula — up to 4 weeks (per label), powdered milk — ~3 mos; seal tightly, keep dry
Crackers, hardtack, rusks	1–2 years	Keep airtight; dampness leads to mold
Factory-bottled water	6–12 mos (as labeled)	Chlorinated tap water in clean food-grade containers — 6 mos, then rotate
Alkaline batteries	5–10 years	Lithium batteries — up to 15 years, functional in freezing weather
Gasoline / diesel fuel	6–12 mos / 12+ mos	Store in metal jerrycans, dark location, away from living quarters
Medications (most solid tablets)	Per label + typically several years of diminished potency	Liquid suspensions, insulin, reconstituted antibiotics, nitroglycerin, epinephrine auto-injectors, and eye drops — strictly adhere to expiration dates

Potatoes / carrots / beets	4–8 mos	Root cellar / agricultural clamp storage — Sec. 25.3
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29.4. Temperature Guidelines

Indicator	Value
Boiling water for disinfection	1 min of vigorous rolling boil (3 min at high altitude >2,000 m) — WHO/CDC standard; Ukrainian Ministry of Health recommends 10 min
Pasteurization	65°C (149°F) for 30 min — eliminates most pathogens (useful for milk, or water when fuel is insufficient for a rolling boil)
Bacterial danger zone in food	+5...+60°C (41...140°F); more than 2 hours in this zone creates serious food poisoning risk (1 hour in hot summer weather)
Safe internal cooked meat temperature	Juices run clear, internal core temp 70°C+ (158°F+); poultry 75°C+ (165°F+)
Human hypothermia stages	Mild 35–32°C / 95–90°F (vigorous shivering) → Moderate 32–28°C / 90–82°F (shivering ceases, confusion) → Severe <28°C / <82°F (unconsciousness, risk of cardiac arrest)
Heat stroke	Core body temp 40°C+ (104°F+) and altered mental status — immediate life threat, begin rapid cooling immediately (Sec. 7.10)
Frostbite on exposed skin	By wind-chill equivalent temperature: within 30 min at –28°C (–18°F); within 10 min at –40°C (–40°F); within 5 min at –48°C (–54°F). A 30 km/h (19 mph) wind makes –10°C (14°F) feel like –20°C (–4°F), and –20°C feel like –32°C: in sub-zero wind, cover face and hands without exception (Sec. 7.10)
Pipe freezing in unheated buildings	Begins within 1–3 days at outdoor temps of –5...–10°C (23...14°F) (Sec. 20.5)
Background radiation levels	Normal baseline: up to 0.3 μSv/h; above 1–2 μSv/h: restrict time spent outdoors; above 10 μSv/h: take shelter immediately (Sec. 6.6)

29.5. Silent Hand Signals for Group Communication

Agree beforehand on 6–8 hand signals for situations where speaking or shouting is dangerous (overhead drone, hostiles nearby, heavy noise). The first three correspond to international ground-to-air body signals (Sec. 14.3); the remainder are internal tactical team signals.

Signal	Meaning
Both arms raised vertically, motionless	Require assistance / Pick us up

One arm raised vertically	All clear / Do not wait for us
Both arms crossed overhead	No / Do not approach / Danger ahead
Raised clenched fist	HALT. Freeze in place (mines, drone, strangers)
Palm facing down, waving toward ground	Get down / Take cover / Hit the dirt
Palm placed on top of head	Rally on me / Assemble here
Two fingers point to eyes, then point in a direction	I see (something/someone) — over there
Hand across throat	Silence / Total voice and radio silence
Hand tracing circular motions overhead	Everyone to me quickly / Rapid withdrawal

CHAPTER 30

Quick-Reference Checklists

These pages are designed for acute stress, when reading long paragraphs is impossible. Each checklist provides an immediate sequence of actions for a specific emergency, cross-referenced to its detailed chapter. Copy, laminate, and keep them in your go-bag.

30.1. The First 60 Seconds of Any Disaster

1. Stop. Take 3 slow, deep exhalations. (Ch. 1.2)
2. Scene safety: Is there an immediate life threat (fire, flooding, shelling, toxic gas, drone)? — Get out of the hazard zone: move perpendicular to wind direction from fire/smoke, uphill from floodwaters.
3. Casualties: Is everyone intact? Massive bleeding → apply direct pressure to the wound IMMEDIATELY (Ch. 7.2).
4. Secondary threat? (Double-tap strike, secondary collapse, aftershock) — Do not return to the impact site for at least 40 minutes (often 1–2 hours).
5. Communications: Send a single brief SMS to family: "Alive, [location], [heading to]".
6. Go-bag, documents — only if grab-and-go takes seconds. Head to the rendezvous point.

30.2. Air Raid Alert (Ch. 3)

- ☐ Get dressed, put on sturdy shoes, grab your go-bag
- ☐ Shut off gas, water, and electricity; close windows and draw curtains
- ☐ Ballistic missile threat or shelter too distant → retreat to two-wall safe zone (hallway / bathroom)
- ☐ Otherwise → proceed to shelter; inside, never sit directly facing entrance doors
- ☐ Never approach windows to "look outside"
- ☐ Exit only after official all-clear; following nearby detonations, wait at least 40 minutes for follow-up strikes

30.3. Drone Threat (Ch. 4)

- ☐ Hear/see a drone → assume it already sees you
- ☐ 5–10 seconds window: get under overhead cover or behind a thick load-bearing wall, freeze

- ☐ Do not run in a straight line, do not look up, do not film with your phone
- ☐ In a vehicle: stop immediately — everyone exit and move 30–50 m away behind solid cover
- ☐ Drone circling overhead — shift position around your cover, keeping a solid barrier between you and the drone
- ☐ After impact — count to 60, watch for a secondary drone; do not rush to the strike site for at least 40 minutes
- ☐ Downed drone — do not approach, do not touch: retreat at least 100 m (large Shahed drone or missile — 300 m) behind cover, report to 101/102 (or 112); never touch fiber-optic tether wires, steer well clear

30.4. Residential Fire (Ch. 10.5)

1. Shout "Fire!", awaken everyone; attempt extinguishment only while the flame is smaller than a bucket (grease fires — smother with lid/fire blanket, never use water; electrical appliances — unplug from outlet first)
2. If not extinguished within 30 seconds — evacuate; close the door to the room on fire behind you
3. Crawl low under smoke, place a wet cloth over face, follow along the wall; test doors with the back of your hand before opening
4. Elevator — NEVER; if the stairwell is smoke-logged — retreat inside, seal the doorway
5. Trapped: seal cracks with wet towels, open window, signal for help, call emergency dispatch (101 / 112 / 911) stating your floor; do not jump from higher than the 2nd floor
6. Clothes on fire: Stop, Drop, and Roll; burns — cool running water (never ice) for 20 minutes

30.5. Severe Bleeding (Ch. 7.2)

1. Apply direct pressure to the wound with full body weight, do not let up
2. Limb wound with pulsing/spurting blood → apply tourniquet 5–8 cm (2–3 in) above the wound, tighten until bleeding completely stops, write down time

3. Junction (neck, groin, armpit) → pack wound tightly with gauze/hemostatic dressing, hold firm pressure for 3–10 min, apply tight pressure bandage
4. Prevent hypothermia: keep warm, lay flat, elevate legs (unless head/chest/abdominal trauma is suspected)
5. Call emergency medical dispatch (103 / 112 / 911), recheck casualty's condition and tourniquet every 5 minutes

30.6. Unresponsive Person (Ch. 7.3–7.7)

1. Scene safety → call out loudly, tap shoulders firmly
2. Tilt head back, lift chin, check breathing for 10 seconds
3. Breathing normally → recovery position, recheck breathing every minute
4. Not breathing / agonal gasps → CPR 30:2, 100–120 compressions/min, depth 5–6 cm, do not stop
5. Designate a specific bystander to call emergency medical services (103 / 112 / 911)

30.7. Suspicious Object / Landmine (Ch. 5)

- ☐ Do not touch, do not approach, do not photograph at close range
- ☐ Memorize landmarks, retrace your exact footsteps back to safety
- ☐ Mark danger zone from a safe distance, warn others
- ☐ Move 100+ m away (unexploded shells/aerial bombs — 300+ m) and only then call 101 or 102 (or 112 / 911) — never use cell phones or radios near the suspicious item
- ☐ Stepped onto a minefield → FREEZE in place, shout for help, wait for professional sappers
- ☐ Returning home to formerly occupied areas → wait for official demining clearance first (Ch. 5.6)

30.8. Radiation Threat (Ch. 6)

- ☐ Move indoors immediately (basement or center of a concrete building), close windows/ventilation, seal gaps with tape

- ☐ Outer clothing — seal in plastic bag and leave outside living area, shower, wash hair thoroughly
- ☐ Battery-powered radio — listen for official government instructions
- ☐ Potassium iodide — ONLY upon explicit official notification (dosages — Table 6.2)
- ☐ Food/water — consume only from sealed containers and protected indoor storage
- ☐ Nuclear flash: do not look, drop to the ground, take shelter within 10–15 minutes before fallout arrives, stay sheltered 24–72 hours (Ch. 6.6)

30.9. Water Purification (Ch. 8)

1. Settle particulates → filter through cloth or layered bottle filter
2. Boil for at least 1 min of rolling boil (Ukrainian Ministry of Health recommends 10 min if fuel allows) OR treat with plain, unscented ~5% bleach — 2 drops/L (4 drops for cloudy water; ~1% or unknown concentration — 10 drops/L), wait 30–60 min, OR SODIS 6 hours in direct sunlight
3. Chemical contamination or fuel in water — boiling will not make it safe; locate an alternative source
4. Store in sealed sanitized containers, label with date

30.10. Evacuating Home Indefinitely / Long-Term (Ch. 17.6, 26)

- ☐ Original documents + photocopies + emergency cash + 30-day supply of critical medications
- ☐ 2 L drinking water, 3 days of non-perishable food, warm layered clothing, sturdy footwear
- ☐ Phone + charged power banks, radio, flashlight, whistle
- ☐ Shut off domestic gas and water, turn off electrical main switch, latch windows securely
- ☐ Leave a hidden message note for family at your pre-agreed location
- ☐ Notify your designated relay contact; have route directions written in words; ensure phone is digitally sanitized before foreign checkpoints (Ch. 18)

30.11. Cold Night Without Shelter (Ch. 11–12)

- ☐ 2 hours before dark — stop traveling and begin building your shelter
- ☐ Site selection: avoid low depressions and ridge tops, watch for dead overhead branches ("widowmakers"), position back to the wind
- ☐ Insulation bedding 20+ cm thick — ground insulation takes priority over everything else
- ☐ Wear dry clothing against your skin; stuff damp clothing under your sleeping pad
- ☐ Campfire + heat reflector wall; never operate open fire inside an airtight enclosed space
- ☐ Eat high-calorie food, drink warm fluids, empty bladder before sleep, wear a warm hat + buff over nose

30.12. Search & Rescue: Signaling for Help (Ch. 14)

- ☐ Stay in one place, remain in an open, visible area
- ☐ Rule of three: 3 whistle blasts / 3 signal fires / 3 flashes of light, repeat periodically
- ☐ Signal mirror: flash along the horizon in series, even into empty space
- ☐ Ground visual markers: V (require assistance) / X (require medical assistance), 3+ m in size using contrasting materials
- ☐ Both arms raised overhead in a V-shape when aircraft or helicopters appear

30.13. Digital Security Checklist (Ch. 18)

- ☐ Call claiming "I'm in trouble, transfer money" → ask for family code word; if they cannot name it, hang up and call back on known number
- ☐ Evacuation order or "humanitarian corridor" → confirmed by at least two official sources?
- ☐ GPS navigator contradicts physical reality → rely on magnetic compass, paper map, and physical road signs
- ☐ Do not post online: strike locations, air defense positions, shelters, relief queues, "house is empty"; disable photo geotags
- ☐ Keep 2 weeks of emergency cash in small bills; carry paper photocopies of critical documents

- ☐ Before approaching foreign/hostile checkpoints: phone is digitally sanitized, sensitive backups stored securely in cloud

30.14. Emergency Telephone Directory

Number	Service	Notes
112	Single Emergency Number (EU, UK, Ukraine)	Toll-free from any network, even with zero balance; standard in Ukraine and across the EU. Without a SIM card: works in many countries, but blocked in some (e.g., Germany, France, Belgium)
911 / 999	Emergency Dispatch (US/Canada: 911; UK/Ireland: 999)	Universal primary emergency numbers in respective countries; connects directly to police, fire, or ambulance
101	State Emergency Service of Ukraine (DSNS)	Fire rescue, structural collapse / urban search & rescue, UXO/demining, CBRN chemical hazards
102	Police (National Police of Ukraine)	Missing persons, armed threats, looters, civil protection
103	Ambulance / Emergency Medical Services	State clearly: what happened, casualty count, exact address/GPS, visible landmarks
104	Emergency Gas Service (Ukraine)	Smell of gas: do not flip light switches, evacuate immediately, call from outdoors
Local Contacts	Regional administration, Point of Invincibility, municipal utilities, neighborhood medic	Fill in your local contacts in Appendix C

APPENDIX A

30-Day Preparedness Plan + Glossary

Preparedness does not require large sums of money — it requires 30 small steps, one day at a time. Check off each task as you complete it. After Day 30, repeat your preparedness reviews every 6 months (such as when clocks change for daylight saving time).

Week 1: Family Plan and Essentials

Day	Task
1	Family council: discuss potential emergency scenarios, assign responsibilities (Ch. 1.5). Designate an out-of-area emergency contact person in another city or country
2	Three rendezvous points (near home, in your neighborhood, outside the city) — record physical addresses. Agree on a family security code word (Ch. 18)
3	Identify the "two-wall safe zone" at home (Ch. 3.2), clear it of clutter, stage water, flashlight, and sleeping pad. Locate your nearest public shelter and walk the route on foot
4	Copies of all vital documents: paper copies in a waterproof sleeve + scans on an encrypted flash drive and cloud storage. Written emergency phone directory on paper for every family member
5	30+ day supply of essential prescription medications; written list of medical diagnoses and exact dosages; consult your doctor regarding an emergency contingency kit (Ch. 7.16)
6	Battery-powered radio receiver; write down frequencies of regional public radio, official regional administration / emergency services channels — two-source verification rule (Ch. 18)
7	Readiness check: does everyone know the contact person's phone number and Rendezvous Point #2 address by heart? Children: practice the identification rhyme: "Full name, parents' names, home address, emergency phone number"

Week 2: Go-Bag and Home Supplies

Day	Task
8	Home audit: identify which items from the checklist in Ch. 2.2 you already have at home (usually 60–70%)
9	Acquire missing items from the "Documents, Water, Light" tier: water filter / purification tablets, headlamp, spare batteries, signaling whistle
10	First aid kit: certified tourniquet, sterile gauze bandages, hemostatic gauze, oral rehydration salts, antiseptic (Ch. 7.16)
11	Clothing and sleeping gear for the go-bag: mylar emergency blankets x2, spare socks, rain poncho, warm hat. Portable foam sitting pad
12	Pack go-bag completely, weigh it (keep under 20% of your body weight), stage it near the exit. Equip children with their own small backpacks

13	2-week home food supply based on the table in Ch. 2.5: stock up on dry grains, canned foods, cooking oil, salt, sugar; initiate a rotation schedule
14	Timed evacuation drill: family-wide "grab-and-go in 2 minutes" practice run — frame it as a fun timed game

Week 3: Home Hardening, Energy, and Water

Day	Task
15	Water: store 20–30 L of drinking water per person (2-week supply, Ch. 2.5) in food-grade containers, label with date; obtain plain unscented bleach for disinfection (Ch. 8.4)
16	Label main gas and water shutoff valves; demonstrate electrical circuit breaker operation to all adults and teens. Mount dry-powder fire extinguisher and battery smoke detector (Ch. 2.6)
17	Windows: apply safety film or crisscross duct-tape grid across full window area in bedrooms; place sleeping spots at least 2 m away from windows (Ch. 2.6)
18	Backup power: charge 2 high-capacity power banks; secure a camp stove + 4–6 gas canisters; candles in glass jars. If budget permits: portable solar panel + portable power station (Ch. 20.3)
19	Emergency cash in small denominations for 2–4 weeks, divided across three separate hiding spots; portion kept in hard foreign currency (Ch. 17.4)
20	Vehicle (if owned): maintain the "never below half tank" rule, assemble vehicle emergency kit (Ch. 26.2). No car: map public evacuation routes and pickup points, arrange contingency ride with a neighbor
21	Evacuation routes: plot 3 route alternatives on a paper map, write turn-by-turn directions in words; download offline vector map data to smartphone (Ch. 26.1, 18)

Week 4: Practical Skills and Community

Day	Task
22	Skills training: spend 30 min practicing tourniquet application and direct wound pressure on a partner's leg, without cranking windlass rod to full occlusion (Ch. 7.2). Enroll in a certified first aid course
23	CPR practice: practice chest compressions on a floor cushion or CPR manikin (never practice live chest compressions or rescue breaths on conscious people); practice recovery position on a partner (Ch. 7.4, 7.7)
24	Drones: review safety rules from Ch. 4.2–4.5 with family; practice the "hear a buzzing motor — dive under cover" game with children; identify solid overhead shelters along your daily walking routes
25	Knots: figure-eight on a bight, bowline, square (reef) knot, clove hitch — tie each 20 times, then practice with eyes closed (Ch. 15)

26	Water & fire drill: disinfect 1 L of water using household bleach according to instructions and drink it; light a camp stove or small fire using a single match (Ch. 8.4, 10.4)
27	Community network: introduce yourself to immediate neighbors, exchange phone numbers, determine who has medical training, a four-wheel-drive vehicle, or a generator (Ch. 17.5). Locate nearest Point of Invincibility / public warming center (Ch. 20.5)
28	Digital hygiene: disable camera geotagging, create offline backups, sanitize unnecessary apps/data from phone, ensure social media posts do not expose your residence or stockpiles (Ch. 18)
29	Special needs: create tailored contingency plans for elderly relatives, chronic patients, pets, and infants (Ch. 22). Assemble a "missing persons" emergency dossier with recent photos of every family member (Ch. 17.7)
30	Full simulation drill: air raid siren alert → retreat to two-wall safe zone → rapid evacuation drill with go-bags on foot to Rendezvous Point #1. Debrief: identify gear omissions and mistakes. Mark calendar for the next 6-month review

Glossary of Survival Terms

Term	Definition / Meaning
Go-Bag / Bug-Out Bag	A pre-packed backpack containing essential survival supplies for at least 72 hours of self-sufficiency (Ch. 2)
EDC (Everyday Carry)	The bare minimum survival and emergency gear carried on your person every day (Ch. 2.4)
Two-Wall Rule	Positioning yourself behind at least two structural load-bearing walls between your body and the exterior street (Ch. 3.2)
KAB (Guided Aerial Bomb)	Heavy precision-guided glide bomb with devastating blast yield; only deeply buried bomb shelters provide protection against direct hits (Ch. 3.1)
FPV Drone	First-person view kamikaze drone piloted via video goggles; actively hunts and strikes pinpoint individual targets (Ch. 4)
Drone Drop	A loitering multicopter that hovers overhead to release modified grenades or antipersonnel munitions (Ch. 4)
MARCH	Tactical trauma assessment protocol: Massive hemorrhage → Airway → Respiration → Circulation → Hypothermia / Head trauma (Ch. 7.1)
Tourniquet	A mechanical arterial constricting band with a windlass rod used to halt life-threatening extremity hemorrhaging (Ch. 7.2)
Wound Packing	Tightly packing sterile or hemostatic gauze deep into a junctional wound cavity followed by firm direct pressure (Ch. 7.2)
CPR	Cardiopulmonary Resuscitation: emergency lifesaving chest compressions and rescue ventilations (Ch. 7.7)

Rehydration	Replenishment of water and essential electrolytes to treat acute dehydration (Ch. 7.10)
Crush Syndrome	Life-threatening systemic shock and acute kidney injury occurring when prolonged compressive force is suddenly released from trapped limbs (Ch. 3.5)
SODIS	Solar Water Disinfection: disinfecting water by exposing clear PET plastic bottles to direct sunlight UV radiation (Ch. 8.4)
Tinder / Kindling	Easily combustible fine material ignited by a spark / small dry twigs and split kindling used to build fire intensity (Ch. 10.1)
Dakota Fire Hole	A concealed two-hole subterranean fireplace that burns with high thermal efficiency and minimal visible smoke (Ch. 10.3)
Azimuth	Compass bearing: horizontal direction of travel expressed in angular degrees clockwise from magnetic north (Ch. 13.1)
GPS Spoofing	Deceptive transmission of false satellite signals causing GPS devices to compute erroneous coordinates (Ch. 13.1, 18)
Standing Part / Working End	The inactive, load-bearing section of a rope / the active end used to tie and dress a knot (Ch. 15.1)
Gray Man	The tactic and appearance of blending seamlessly into a crowd to avoid attracting attention during a crisis (Ch. 17.1)
Family Code Word	A confidential pre-agreed phrase used to authenticate callers and verify messages claimed to be from loved ones (Ch. 18)
Point of Invincibility	A designated public municipal warming shelter offering power, heating, internet, and drinking water during blackouts (Ch. 20.5)
Aftershock	A secondary earthquake tremor occurring after the initial main seismic shockwave (Ch. 19.2)
Clamp Storage (Root Clamp)	Traditional outdoor agricultural clamp/pit storage for root vegetables protected beneath straw and compacted earth (Ch. 25.3)

APPENDIX B

If You Are Abroad (EU / Germany)

Millions of Ukrainians live across Europe, and a crisis can strike there as well: severe storms, floods, blackouts, terrorist attacks, or military escalation. Most principles in this guide apply everywhere, but emergency numbers, alert systems, and shelters differ. This section covers those critical differences.

B.1. Emergency Numbers and Alerts

Item	EU Overall	Germany
Emergency call	112 — everywhere, toll-free, from any network (even roaming on another carrier or with zero balance); however, in Germany a call to 112 will NOT connect without an active SIM card inserted (likewise in France, Belgium, Bulgaria, Romania, and Slovenia) — keep a working SIM in any backup phone; in many countries dispatchers speak English as well (not guaranteed)	112 — fire and emergency medical services (EMS); 110 — police; 116117 — on-call non-emergency medical service
Mobile alerts	Cell Broadcast (EU-Alert) in most countries: loud tone and push notification without needing an app; in Poland — SMS from RCB	Cell Broadcast + warning apps NINA (official BBK app) and KATWARN ; sirens (currently being restored in many cities)
Test day	—	Warntag (Warning Day) — nationwide test of sirens and mobile alerts held annually in September: do not be alarmed
Radio	Local public service broadcasters	Regional ARD stations (e.g., Bayern 1, WDR 2) — official broadcast announcements during crises; record their frequencies in Appendix C

Install NINA/KATWARN (or the host country's equivalent) immediately upon arrival and enable notifications. Siren signals in Germany: rising and falling wailing tone for 1 minute — danger, tune in to local radio; continuous steady tone for 1 minute — all-clear.

B.2. Shelters: Almost None Exist — Prepare Your Own

- Public bomb shelters across Germany and most of the EU have largely been decommissioned; during a crisis, authorities rely on private basements, underground parking structures, and subway systems (where present).
- The two-wall rule (Chapter 3) applies here too: identify your interior safe zone in the apartment and inspect the building's basement (*Keller*) in advance — verify

accessibility and that it has two separate exits.

- In severe storms or tornadoes — use the basement or an interior room on the lowest floor (Chapter 19); in floods (Rhine, Ahr, Elbe river valleys) — move to upper floors and know your route to high ground (Sections 19.1, 19.7).
- In the event of an accident at a nuclear power plant in neighboring countries — follow the algorithm in Chapter 6; in Germany, potassium iodide (KI) tablets are distributed through local municipal authorities following an official public announcement (do not purchase or ingest prophylactically in advance).

B.3. Home Stockpiling per BBK Recommendations (German Civil Protection Agency)

- ☐ Non-perishable food requiring no cooking for **10 days** per person; water — **2 liters per person per day** (20 L for 10 days; this covers only drinking and cold food preparation — factor in 4 L per person per day to include basic hygiene, Section 2.5)
- ☐ Battery-powered or hand-crank radio, flashlights, candles, spare batteries
- ☐ First aid kit, personal prescription medications for 2+ weeks, disinfectant / hand sanitizer
- ☐ Cash (card terminals and ATMs will not function during a blackout), copies of vital documents in an emergency folder (*Notfallmappe*)
- ☐ Camping stove/burner, matches, personal hygiene supplies for 2 weeks

This is the official recommendation of the Federal Office of Civil Protection and Disaster Assistance (BBK) for every household in Germany (minimum — 3 days, target — 10 days), not "paranoia." The go-bag / bug-out bag packing list in Chapter 2 of this book fully covers these requirements.

B.4. Documents, Legal Status, and Money

- Keep together in one place: passport / international travel document, residence permit (*Aufenthaltstitel* / *Fiktionsbescheinigung*), address registration certificate (*Meldebescheinigung*), health insurance card (*Gesundheitskarte*), children's birth certificates, pet passport with microchip number and valid rabies vaccination; store digital copies in secure cloud storage and with trusted relatives.
- Change of address or extended travel — promptly notify the immigration office (*Ausländerbehörde*) and Jobcenter/Sozialamt; failure to do so can result in loss of

financial assistance and legal residence status.

- Consulate of Ukraine serving your district: write down the address and emergency telephone number in Appendix C. Keep the MFA consular emergency hotline and consulate website handy for lost documents and emergency evacuation coordination.
- Keep cash in euros for 1–2 weeks; payment cards issued by Ukrainian banks may be temporarily inaccessible during major cyberattacks (Chapter 18) — maintain an active account and payment card with a local European bank.
- Healthcare: in an acute emergency, medical care is provided regardless of insurance coverage status (call 112 or visit a hospital emergency department, *Notaufnahme*); for suspected poisoning — contact your regional Poison Information Center (*Giftnotruf*; record your federal state's number).

B.5. Specific European Risks for 2026–2036

- **Blackouts:** The European power grid is generally robust, but cascading grid failures (such as the 2025 Iberian event) demonstrated that 8–12 hours without electricity, cellular connectivity, banking, and municipal tap water in high-rise buildings is a realistic risk. Action protocol — Chapter 20; electric water booster pumps in multi-story residential buildings shut down immediately, making emergency water storage mandatory.
- **Floods and severe storms** (Ahr Valley disaster 2021, severe storms 2024): over the past 5–10 years, extreme flash-flooding events have become significantly more frequent; determine your property's flood risk level using state hazard maps (*Hochwasserkarten*).
- **Extreme heatwaves (40°C+ / 104°F+)** in European cities lacking residential air conditioning — the leading cause of summer fatalities across Europe: follow survival guidelines in Section 19.5.
- **Sabotage and hybrid threats:** undersea data cable severing, railway infrastructure attacks, drone incursions over civilian airports, cyberattacks on hospitals and municipal administrations, state-sponsored disinformation campaigns — the rules in Chapter 18 apply directly; always cross-verify critical breaking news with two independent official sources and do not propagate panic.
- **GPS spoofing and jamming:** reported across the Baltic region, Poland, and eastern Germany — vehicle and smartphone GPS navigation can experience

erratic jumps or signal loss; keep an up-to-date printed paper road atlas in your vehicle.

APPENDIX C

Personal Notes and Local Information

This handbook becomes truly yours once you record your personal contacts, addresses, and emergency routes. Fill in with pencil — and update during scheduled reviews every 6 months.

C.1. Family Information

Name / Relationship	Phone / Blood Type / Allergies / Regular Medications
Out-of-area contact (different city/country)	
Family code word / security question	

C.2. Rally Points and Routes

Point / Route	Address / Landmark / Directions
Point #1 near home	
Point #2 in neighborhood / district	
Point #3 outside the city	
Nearest shelter / basement	
Resilience center / warming hub ("Point of Invincibility")	
Evacuation route 1 (step-by-step description)	
Evacuation route 2 (alternate)	
Destination + backup location	

C.3. Local Emergency Services and Official Sources

Service	Phone / Frequency / Channel Name
Radio (frequencies of public radio / local stations)	
Official regional admin (OVA) / SES / Police channels (2 sources)	
Drone / air raid alert notification bot or app	
Family doctor / hospital / pharmacy	
Water utility / gas / housing management / electric grid	
Neighbor with medical skills / neighbor with car / generator	
Veterinarian	
Abroad: Consulate, Foreigners Authority (Ausländerbehörde), Poison Control	

C.4. Water, Energy, and Nearby Local Resources

Resource	Location / Instructions / Who Controls Access
Water sources (well, borehole, emergency distribution point)	
Home utility shutoffs (where gas / water / electricity shut off)	
Gas stations, grocery stores, pharmacies along routes	
Nearby industrial hazards (chemical plant, fuel depot) & safe direction	
Dam flood risk zone (yes/no); route to high ground	

C.5. Inspection Log

Date	Items Checked (go-bag, meds, water, batteries, documents, channels)	Next Due

C.6. Free Notes

APPENDIX D

Sources and License

The text of this guide is original authorial work. The facts, dosages, and emergency protocols in version 2.2 have been cross-checked with the open-access official sources listed below. None of the named institutions have reviewed or officially endorsed this handbook.

D.1. First Aid

- Ministry of Health of Ukraine Order No. 441 of 09.03.2022 "On Approval of Protocols for Providing First Aid to Persons in Emergency Conditions" — zakon.rada.gov.ua/go/z0356-22
- IFRC. International First Aid, Resuscitation and Education Guidelines (2020).
- European Resuscitation Council. Guidelines for Resuscitation 2025 — cprguidelines.eu; American Heart Association. Guidelines for CPR and ECC (2025).
- Committee on TCCC. TCCC Guidelines / MARCH protocol; Stop the Bleed program — stopthebleed.org

D.2. Radiation, Chemicals, Mines, and Drones

- Ministry of Health of Ukraine Order No. 408 of 09.03.2021 "Regulations on Conducting Iodine Thyroid Blocking in the Event of a Radiation Emergency" — zakon.rada.gov.ua/go/z0526-21
- Ministry of Health of Ukraine: "8 Answers to Questions About Iodine Prophylaxis" — kmu.gov.ua
- WHO. Iodine thyroid blocking: guidelines for planning and responding to radiological and nuclear emergencies (2017).
- State Emergency Service of Ukraine (DSNS): Public emergency guidance, mine safety, generator safety — dsns.gov.ua, bezpeka.dsns.gov.ua
- Ministry of Internal Affairs of Ukraine: "How to Reduce the Risk of FPV Drone Strikes" — mvs.gov.ua
- dovidka.info: "Safety Instructions" (revised 07.2026), "Mine Safety", "In the Combat Zone", "How to Survive a 'Dirty Bomb'..." — verified 20.09.2026 (shelling, mines, severe bleeding, radiation).
- UNICEF Ukraine: Mine safety educational materials.
- ICRC/WHO. Management of Dead Bodies after Disasters: A Field Manual for First Responders.

D.3. Communications, Emergency Numbers, and Abroad

- Ministry of Internal Affairs of Ukraine: 112 Emergency Service and "112 Ukraine" app — mvs.gov.ua
- National Toll-Free Hotline 527 (IOM) — 527.org.ua; Government Hotline 1547 — ukc.gov.ua
- BBK (Germany): "Disaster Preparedness and Emergency Action Guide" (*Vorsorgen für Krisen und Katastrophen*) — bbk.bund.de
- CEPT ECC Report 324; European Commission Report on 112 (COM(2024) 575) — on emergency calls without a SIM card.
- State Service of Ukraine on Food Safety and Consumer Protection (SSUFSCP): Traveling with pets to the EU — dpss.gov.ua

D.4. Other References

- Leach J. Survival Psychology (1994) — human behavioral responses in disaster situations (Section 1.3).
- USDA Forest Service, "If You Get Lost" — STOP method (Section 1.2).
- Smartphone preparation for checkpoint inspections (Chapter 18) — aligned with published guidelines by digital security specialists (vgoru.org, 08.07.2026).

D.5. Where to Find Up-to-Date Instructions

- dovidka.info — comprehensive Ukrainian civil safety database for wartime and disaster emergencies, continuously updated since 2022; also hosts the "Life During Wartime" brochure. Printed guides inevitably age — verify critical information here.
- dsns.gov.ua, moz.gov.ua — official announcements, public alerts, and current regulatory protocols.

D.6. License

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THE FIRST 60 SECONDS

1. **Stop.** Three slow, deep exhalations. Panic is the primary killer.
 2. **Safety.** Fire, water, shelling, drone, gas? — get out of the hazard zone and under cover: move crosswind from fire and smoke, move uphill from water.
 3. **People.** Is everyone intact? Severe bleeding → apply immediate direct pressure to the wound, place a tourniquet high and tight above the wound.
 4. **Secondary Threat.** Follow-up strike (double-tap), structural collapse, aftershock — do not return for at least 40 minutes (often 1–2 hours).
 5. **Communications.** One SMS: "Alive, [location], [heading to]". Then switch to power-saving mode; airplane mode only if there is no signal.
 6. **Rally Point.** Grab go-bag and vital documents only if it takes seconds. Move toward the agreed meeting place.
-

112 Universal emergency — Ukraine & entire EU (UK: 999 · US/Canada: 911), toll-free, zero balance. Active SIM required in DE, FR, BE

101 State Emergency Service (DSNS Ukraine): fire, rescue, structural collapse, UXO/mines, hazmat/CBRN

102 Police (Ukraine)

103 Ambulance / Emergency Medical Services (Ukraine)

104 Emergency Gas Service (Ukraine)

Survival Guide · Version 2.3 · September 2026 · Paper edition, works without electricity or internet · Keep together with your go-bag · Review contents of your bag and this book every 6 months

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Sources — Appendix D