



AL JARIYAH

إِنَّا لَمَّا طَغَا الْمَاءُ حَمَلْنَاكُمْ فِي الْجَارِيَةِ ﴿١١﴾

Verily, when the waters rose high, We bore you in the boat

Qur'an 69:12

30/04/2017

Dearest Huzur,

السَّلَامُ عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ

I hope and pray that this finds you in the best of health and circumstances.

We have produced this document after listening carefully to your warnings and addresses to the Jama'at and to various world leaders on the threat of nuclear war.

This document is our humble attempt to present information on possible strategies for individuals, families, and the Jama'at, in the event of a worldwide nuclear catastrophe. The examples given are, at times, specific to the UK Jama'at, but the principles can be applied anywhere in the world.

Please forgive any errors in this document. This document only contains our humble suggestions, and nothing more, made on the basis of our limited intelligence and perspectives. Please pray that Allah enables us to hold firmly to your obedience in every matter, especially at this critical time in human history.

Wassalaam

Syed Muhammad Taha Nasser

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Introduction

The Holy Qur'an has warned that the people of Gog and Magog will be destroyed by divine decree and that this destruction will come about through a severe punishment. Since nuclear weapons were created, the Khulafa of the Ahmadiyya Muslim Community have repeatedly admonished the world powers about the possibility of nuclear catastrophe as a result of injustice and inequity between nations. Unfortunately, the state of global politics has now become so dire that such an event seems more and more likely. In recent years, beloved Huzoor, may Allah strengthen his hand, has admonished all the leaders of the world, exhorting them to follow the dictates of justice towards their own people and to those of poorer nations. Unfortunately, many are failing to heed his warning. In addition, many members of the Ahmadiyya Muslim Community have seen dreams indicating the coming of catastrophic punishment and dire suffering for the western nations. The dreams indicate that the war will be nuclear and is approaching fast.

This document is an attempt to collate what is known about such an eventuality and to provide the basic outline of what would be needed in order to evacuate the members of the Ahmadiyya Muslim Community in the United Kingdom before a nuclear event. It has been written with significant care and concern for the sake of the community but is not absolutely exhaustive nor will it be able to cover every eventuality. It is hoped that this document will highlight for our beloved Khalifa, may Allah strengthen his hand, the key areas that may require preparation in advance of such events. The first section of the document entitled *Recommendations* is a summary of all the salient action points that have come out of this endeavour and which need to either be decided on by the community's leadership or acted on by individual members and their families. Taken in conjunction with the *Tables of Essential Items* that are at the end of each section, they form a fairly comprehensive preparatory checklist.

Community members on every other continent, especially those in the northern hemisphere (United States / Canada, European Union, Middle East, Far East) may wish to utilise this document also, in considering their own strategies in the face of such a catastrophe.

Chapter 1: Recommendations

The following recommendations constitute summarised action points, organised from the main text of this document. The recommendations contain suggested actions, and highlight areas where further decisions will be required to be made.

RECOMMENDATION 1: Team building

- To organise teams to start immediate work on each major section outlined herein, and to develop strategies both to stay in the UK safely, and to evacuate to safer locations abroad.
- Formation of temporary, national and regional evacuation-leadership structures integrating current Jama'at presidents and auxiliary organisation presidents, involving but not exclusive to, the National Jalsa organisation team, Humanity First, AMMA and Ahmadiyya Muslim Research Association (AMRA).
- To make enquiries from experts in the field of nuclear-bunker engineering, as detailed herein.

RECOMMENDATION 2: Information Dissemination

- Send information via leaflets to Jama'at families about recommended actions if caught in a nuclear exchange
- Such leaflets should include do's and don't's for both individual, family and community-level strategies.

RECOMMENDATION 3: Regional Preparations for National Community Gathering

- Formation of temporary, regional evacuation-leadership structures integrating current Jama'at presidents and auxiliary organisation presidents.
- Formation of Qiadat Convoy teams, consisting of "Callers" (call and arrange for convoy transportation) and "Sweepers" (ensure that all members are accounted for during the evacuation procedure). This involves prior identification of individuals best suited for each team, eg: medics/nurses/paramedics for "sweeper" teams.
- Utilisation of "buddy strategies" when evacuation, to ensure no family is lost
- Ensuring each mosque is stocked up with food/medical supplies, especially for those who cannot leave their homes

RECOMMENDATION 4: National Gathering Team Strategies

- Selection of UK gathering point for Jama'at members on the basis of criteria outlined herein. Consideration in particular for the UK of Hadeeqatul Mahdi/Islamabad/Hazlemere area as National Gathering Site.

- Ensure up to date AIMS database of all UK Jama'at members, including addresses/telephone numbers etc.
- Production of an evacuation plan to be disseminated to the heads of each Region. This should include key action points, as detailed herein. In summary, the following should be considered:
 - Ensuring members have valid breakdown cover.
 - Ensuring availability of GPS and maps.
 - Operation of a buddy system.
 - Folding-in strategy from UK Regions: Qiadats furthest from National Site should be scheduled to arrive first.
 - AIMS ID cards to be used for security as with national Jalsa.
 - Once all membership present at UK gathering site, need to re-organise according to who is staying and leaving.
 - Evacuation convoys to UK exit points should remain as per Qiadat, with smaller merging with larger.
 - Each caravan of cars should have a person in charge: quaid/medic/first aider
 - Keep extra space in vehicles so breakdowns passengers can be taken too
 - Those staying in the UK should take shuttles back to UK gathering site

RECOMMENDATION 5: Security Strategies

- Removal of Jama'at National Gathering point address from Internet
- No mass dissemination of information regarding National Gathering point eg: via MTA or social media
- Strict discipline and instructions conveyed to Jama'at members to not convey National Gathering point to wider public.
- Formation of security teams patrolling UK Gathering site
- Use of guard dogs and Jama'at members with firearms permits.
- Use of contact-based vetting system for any non-Ahmadis who seek to join us at the location, eg: family members of converts.
- Development of policy to help those who approach us peacefully seeking our help.

RECOMMENDATION 6: Shelters & Food Storage

- Need to organise shelter and sleeping for the whole of the UK community – marquees, tents, shelters.
- Membership should also bring their personal tents/caravans.
- Underground shelters could be built/utilised in urban areas for Ahmadis who cannot move to the National Gathering site, and stocked to provide food, water and medications for several months. Geiger counters should be made available at such storage sites, to be able to assess the radioactivity of the food/water stored.

- Simple underground bunkers may be needed at the National Gathering site also, in accordance with the building instructions provided herein.
- Daily food requirement for the whole community for up to several months will need to be met through pooling of stockpiles, both from the individual, family and Jama'at level.
- Need to order large quantities of non perishable foods and formation of a seed bank, prior to calamity, for storage, in addition to disaster-relief rations.
- Partitioning of land at National Gathering Site for growth of crops.
- Rationing of food will be required, with priority given to the young, women (pregnant and breastfeeding especially) and the elderly.
- Need to contact major seed banks and warn them of impending war, e.g. ensure backup power and staff etc

RECOMMENDATION 7: Water Resources

- Massive quantities of water, approximately 1.5 million litres/week required for 40,000 people. This is obtainable either through purchase, or through use of natural water sources.
- Bought and stored water will be required to be used in the initial fallout of a nuclear detonation; natural water resources may be contaminated with radiation. Use of Geiger counters are essential at this stage.
- Transition to longer term water resources as radiation levels fall: wells, rivers, aquifers.
- If Hadeeqat ul Mahdi/Islamabad/Hazlemere area chosen for National Gathering site, will need increased piped water facilities, increased toilet, shower facilities and cleaners
- Survey area around UK gathering site and determine best sources for water
- Invest in large water storage tanks on site
- Order ceramic water filters, sterilisation tablets, personal water filters and desalination kits
- Order Potassium Iodide tablets in bulk for thyroid protection.
- Keep Potassium Perchlorate as a backup to infuse water source if Iodide runs out

RECOMMENDATION 8: Medications, Homeopathic & Vaccinations

- All members in the UK should be instructed to apply for an EHIC (European Health Insurance Card)
- All members should be instructed to obtain a store of at least 6 months of all long term medications that they are on from local GP's, in the initial leaflet distributed.
- All members should have access to local homeopathic treatment.
- Should obtain large stores of anti-malarial prophylaxis and mosquito nets
- All members should be instructed to get up to date with all UK vaccinations

- Travel vaccinations should be heavily encouraged, especially for foreign destination if known.
- On site Fire, Health & Safety team should be made at the National Gathering Site.
- Temporary hospital at National Gathering site, run by the AMMA and Humanity First would likely be required.

RECOMMENDATION 9: Electricity, Heating and Transport

- Need to calculate the likely heating requirements of the UK community
- Consider investments in Solar Panels, Wind Turbines
- Consider investments in utility batteries and hybrid/electric cars for community use
- Consider Petroleum Enforcement Authority licence and bulk-buy fuel & containers
- Create a list of older diesel cars without Lucas injection pumps (can run on vegetable oil also)

RECOMMENDATION 10: Communication, Data and EMP-safe storage

- Families and regional Qaids/convoy leaders to obtain two-way radios, as recommended herein
- Community and individuals should save all of their important data on multiple portable hard drives & keep in Faraday cages (as detailed herein)
- Faraday cages should be made by the community to store electronics in during the evacuation.
- Archiving all Jama'at MTA footage abroad, such as with Ghanaian Jama'at.
- Importance of Faraday cages for the storage of all Jama'at MTA archives
- All members with pacemakers and ICDs should be evacuated as a priority or the community should prepare large faraday cages (e.g. metal containers) that are internally insulated and would act to shield them from EMP waves post-detonation.

RECOMMENDATION 11: Consolidation of Wealth, Resources & Skills

- All members to ensure their passport is in date and apply for a new one if not.
- Members to be advised to convert their bank deposits into hard-cash and precious metals such as Gold, to be physically kept.
- Jamaat to consider similar actions for purposes of preserving wealth-value
- Consideration of Gold Britannia coins in particular, which are capital gains tax free in the UK, and which are considered legal tender, making them eligible for transportation abroad without seizure, at a value of up to 100 coins (approx. £100,000) per person.
- All students to be advised to keep physical and digital copies of academic certificates, transcripts and job references.

RECOMMENDATION 12: Foreign Destination Selection

- Decide on destinations for evacuation of UK community and others; consideration of multiple sites across the world for different continents.
- Apply for visas en masse or negotiate means of large numbers of Ahmadis arriving abroad.
- Individuals to apply for visas early if they can or for jobs in that country to facilitate permanent stay
- Decide on single route or spread of routes out of the UK.
- Charter ferries if needed (as detailed herein).

RECOMMENDATION 13: Safety and Security for Khilafat

- Consideration of building of fully equipped nuclear bunker for beloved Huzur (aba) and his family in Islamabad/Hadeeqatul Mahdi, connected to the mosque via underground passage. Huzur (aba) and his family to be allocated with separate, pre-stored food and water supplies.
- Huzur's (aba) security team to be located and settled near Huzur (aba) so that security teams can stand watch with effectively.
- Consideration of purchasing separate boat/plane with fuel, prior to calamity, for Huzur(aba) and his family, to leave the country with ease to safer countries (as detailed herein).

Chapter 2: Nuclear War & Global -Weather Phenomena

Weather Patterns

It appears from the political alliances that are forming as this document is written, as well as the interpretations of revelations contained in the Qur'an, Old and New Testaments, Hadith and Tadhkirah by the Khulafa of the Ahmadiyya Muslim community, that the main combatants in the coming war will be the United States of America and the Russian Federation. Despite this, it is difficult to truly predict the exact course of the conflict such that definite safe havens can be identified. A best effort is made, using the given information and experience available.

The majority of likely nuclear targets given the scenario outlined above would be in the northern hemisphere, namely the cities of the United States, western Europe and the Russian Federation. This means that the places likely to suffer nuclear attacks will be between 30° and 66° of latitude and in the northern hemisphere. With regards selecting a safe place for the whole Ahmadiyya Muslim community in the western world to emigrate, one of the key concerns past avoiding death or serious injury from the blasts will be to avoid burns, radioactive nuclear fallout and the catastrophic mid and long term weather and climate effects that the conflict may cause.

Under normal weather conditions,^{1,2} global winds (with the exception of those at mid latitudes i.e. 30° to 60°) move from the poles to the equator, since colder high pressure air wants to move to warmer, lower pressure areas. On reaching approximately 60° latitude, the air warms and rises up off the ground creating a convection current. The coriolis effect means that this air naturally moves from the east to the west in both the northern and southern hemispheres. This creates the 'polar easterlies' between the poles and 60° of latitude and the tradewinds between 30° of latitude and the equator. Since both of these winds move from east to west, the convection currents and therefore prevailing winds in these zones cycle between sea level and higher altitudes whilst always moving in this direction. In the latitudes in-between these two belts, (30° to 60°) a convection current is formed to fill the vacuum created and moves in the opposite direction, with prevailing winds moving from west to east. These are known as the prevailing westerlies. Almost all of mainland United States, western Europe and approximately half of the Russian Federation lie within this latitude. The meeting point between the northern hemispheric prevailing westerlies and polar easterlies at 60° of latitude creates the jetstream which is a band of fast moving air that is the result of cold high pressure air from the polar easterlies meeting warmer lower pressure air from the westerlies and attempting to disperse and equilibrate itself within the lower pressure air that is moving from west to east. This results in the jetstream moving from west to east at this latitude. Unlike this unique situation, both the 30° and equatorial latitudes see relatively little mixing of air currents under normal conditions and are thus branded 'dead zones' with relatively still air and not much wind.

Thus, assuming that global wind patterns are not drastically altered by a nuclear exchange and that such an exchange mainly targets cities in North America, western Europe and the Russian Federation, the majority of nuclear fallout may remain confined to within 30° and 60° of latitude in the northern hemisphere. If this is the case then any countries that lie outside of this latitude range and which are not themselves targeted by nuclear weapons may potentially be safe. If, however, the nuclear exchange is colossal enough to alter the world's prevailing wind patterns from normal, this may not be the case.³ It could be hypothesised that nuclear blasts in this mid northern hemisphere latitude would cause a massive drop in ambient temperature, moving the boundary of the polar region toward the equator. This could mean that the polar easterlies prevail against the normal westerlies completely and that either a single east to west pattern is created in the northern hemisphere or that the mid latitude westerlies are pushed down towards 30° of latitude meaning that the jet stream would be nearer to the equator than usual. Such changes are hypothetically possible, but it should be noted that currently these are hypotheses and not borne out by evidential research.

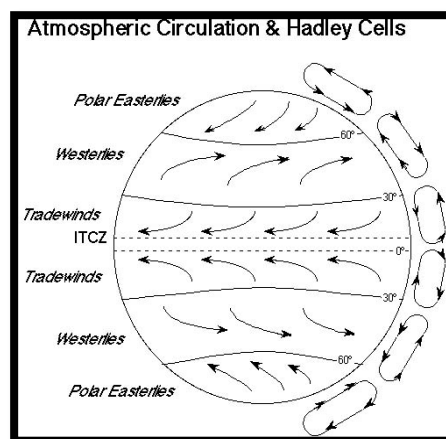


Fig.1: Atmospheric circulation of winds

Indeed there is a marked dearth of scientific research into the topic, likely due to its complexity and lack of observational or experimental precedent. What limited scientific analysis there is indicates that several effects are possible.⁴ Unfortunately none of the literature guarantees accuracy in prediction, since the calculations involve so many unknowns and variables that are, although observed in other contexts, hypothetical.

What is clear is that total yields of nuclear exchange and whether or not nuclear weapons are detonated as airbursts (far above ground) or surface bursts will have a significant impact on the severity and geographical reach of medium to long term phenomena. Turco et al. calculated that 'as little as ~ 100 MT is sufficient to devastate most of the world's major urban centers' and that even relatively small total yields of nuclear weapons could have major hemispheric or even global consequences not directly caused by the blasts themselves.⁵ These are postulated to occur through several different mechanisms:

Urban fires (from cities which often have stockpiles of combustibles) and forest fires releasing huge quantities of smoke into the upper atmosphere, blocking out the sun. This could cool continental land areas in latitudes affected to less than -23°C . The above study's simulations suggested that even a limited 100 MT attack on industrial areas (approximately 200 northern hemispheric cities targeted) could generate significant smoke that may not clear for up to a year afterwards.

Inter-hemispheric transport of smoke, soot and dust that could happen due to normal mixing of air from low northern latitudes across the equator, and or previously unanticipated tropospheric transport of debris between the northern and southern hemisphere. It is thus hypothetically possible that the southern hemisphere could experience similar climatological effects to those postulated in the northern hemisphere even if nuclear weapons do not target regions there.

Radiation exposure (due to the possible transport of particles related above) to those not directly affected by the blasts of up to or greater than 100 rad in a 5000 MT exchange in the northern hemisphere and a projected average hemispheric exposure of 20 rad in such a case. The median lethal dose for a short exposure is 300 rad, whilst 150 - 200 rad will induce radiation sickness and blood changes even if exposure is brief. 100 rad is sufficient to cause radiation sickness in a proportion of the population and to drastically increase the incidence of cancers and possibly birth defects in the next generation.

Release of other noxious agents and gases including highly toxic furans and dioxins as well as mono nitrogen oxides. The former are classified by the US environmental protection agency as carcinogens that in high doses also cause hormonal imbalance, foetal abnormalities, infertility and immunosuppression. Mono nitrogen oxides can cause lung disease and also destroy the ozone layer, meaning exposure to ultraviolet light (also carcinogenic) would increase once the sky cleared.

As a result of these possibilities, it seems wise for the community to plan for evacuation outside of major urban centres in the first instance and consider emigration to foreign destinations, especially those that are outside of the northern mid latitudes and around or below the equator. Other desirable factors for destinations are access to local food and water that may be safe from radiation exposure, relatively short journeys from the starting point of the journey and having an existing infrastructure capable of supporting a large influx of people (sanitation, living space, healthcare etc).

Nuclear Fallout

Nuclear fallout is a consequence of nuclear warfare. The energy that is produced by a nuclear weapon is distributed approximately as 50% shockwave, 35% heat, 5% initial nuclear radiation and 10% fallout radiation. Fallout is comprised of nuclear fission products mixed with ash, soil and dust drawn from the detonation site into the updraft of the explosion and can be propelled into the surrounding atmosphere. It is termed fallout

because it literally ‘falls out’ of the sky after the initial explosions have passed. Radiation takes four forms, all of which can potentially be harmful: alpha, beta, xray and gamma radiation (see image below).

Fallout constitutes a very dangerous form of radioactive contaminant that is spread initially through the explosions themselves, then through prevailing winds and later through the soil and water table. Ground burst explosions produce significantly more concentrated local radiation, but airburst explosions have the potential to release fine radioactive particles into the upper atmosphere, potentially spreading the fallout significantly further.

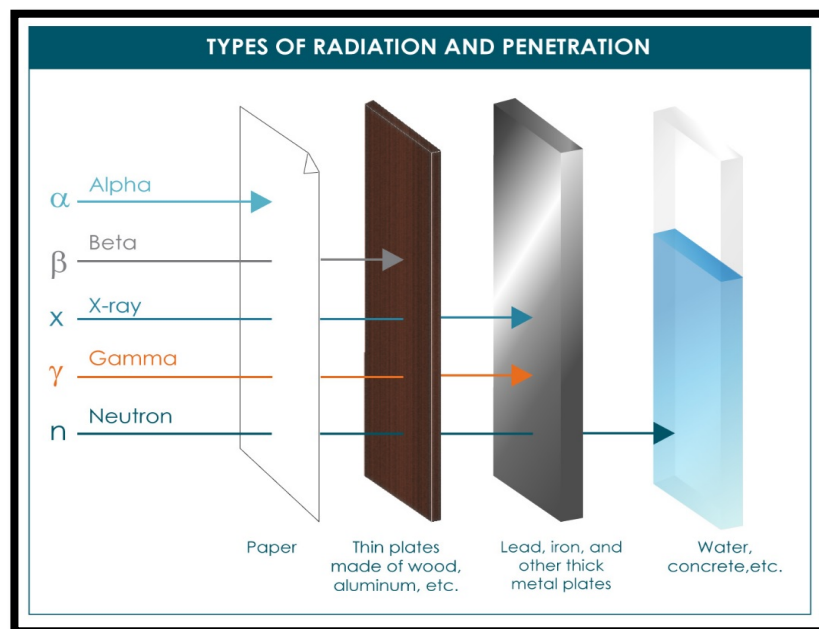


Fig 2: Types of radiation after a nuclear explosion, and their penetration. Source: <https://www.mirion.com/introduction-to-radiation-safety/types-of-ionizing-radiation/>

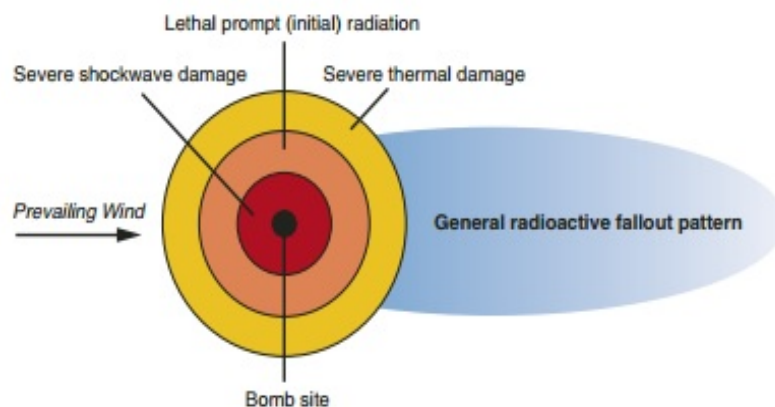


Figure 3: Fallout patterns are influenced by wind direction, speed, and the height of bomb detonation

A whole host of radioactive isotopes is produced by the nuclear fission of a heavy nucleus such as Uranium or Plutonium:

| Ordered by yield (thermal neutron fission of U-235) [edit] | | | | |
|--|----------------------|---|------------------|--|
| Yield | Element | Isotope | Half-life | Comment |
| 6.7896% | Caesium | $^{133}\text{Cs} \rightarrow ^{134}\text{Cs}$ | 2.065 y | neutron capture (29 bams) slowly converts stable ^{133}Cs to ^{134}Cs , which itself is low-yield because beta decay stops at ^{134}Xe ; can be further converted (140 bams) to ^{135}Cs |
| 6.3333% | Iodine, Xenon | $^{135}\text{I} \rightarrow ^{135}\text{Xe}$ | 6.57 h | most important neutron poison; neutron capture converts 10%–50% of ^{135}Xe to ^{135}Xe ; remainder decays (9.14h) to ^{135}Cs (2.3My) |
| 6.2956% | Zirconium | ^{93}Zr | 1.53 My | |
| 6.1% | Molybdenum | ^{99}Mo | 65.94 h | Its daughter nuclide $^{99\text{m}}\text{Tc}$ is important in medical diagnosing. |
| 6.0899% | Caesium | ^{137}Cs | 30.17 y | |
| 6.0507% | Technetium | ^{99}Tc | 211 ky | Candidate for disposal by nuclear transmutation |
| 5.7518% | Strontium | ^{90}Sr | 28.9 y | |
| 2.8336% | Iodine | ^{131}I | 8.02 d | |
| 2.2713% | Promethium | ^{147}Pm | 2.62 y | |
| 1.0888% | Samarium | ^{149}Sm | virtually stable | 2nd most significant neutron poison |
| 0.9% ^[2] | Iodine | ^{129}I | 15.7 My | Candidate for disposal by nuclear transmutation |
| 0.4203% | Samarium | ^{151}Sm | 90 y | neutron poison; most will be converted to stable ^{152}Sm |
| 0.3912% | Ruthenium | ^{106}Ru | 373.6 d | |
| 0.2717% | Krypton | ^{85}Kr | 10.78 y | |
| 0.1629% | Palladium | ^{107}Pd | 6.5 My | |
| 0.0508% | Selenium | ^{78}Se | 327 ky | |
| 0.0330% | Europium, Gadolinium | $^{155}\text{Eu} \rightarrow ^{155}\text{Gd}$ | 4.76 y | both neutron poisons, most will be destroyed while fuel still in use |
| 0.0297% | Antimony | ^{125}Sb | 2.76 y | |
| 0.0236% | Tin | ^{126}Sn | 230 ky | |
| 0.0065% | Gadolinium | ^{157}Gd | stable | neutron poison |
| 0.0003% | Cadmium | $^{113\text{m}}\text{Cd}$ | 14.1 y | neutron poison, most will be destroyed while fuel still in use |

Figure 4: Radioactive isotopes produced as a result of nuclear fission of heavy nuclei

Of the various fallous particles, the following are the most important when it comes to biological hazard:

- Strontium 90 is very long-lived with a half-life of 28 years. It is chemically similar to calcium, causing it to accumulate in growing bones. This radiation can cause tumors, leukemia, and other blood abnormalities.
- Iodine 131 has a half-life of 8.1 days. Ingestion of it concentrates in the thyroid gland. The radiation can destroy all or part of the thyroid. Taking potassium iodide can reduce the effects.
- The amount of tritium released varies by bomb design. It has a half-life of 12.3 years and can be easily ingested, since it can replace a hydrogen in water. The beta radiation can cause lung cancer.
- Cesium 137 has a half-life of 30 years. It does not present as large a biological threat as Strontium 90. It behaves similar to potassium, and will distribute fairly uniformly throughout the body. This can contribute to gonadal irradiation and genetic damage.
- When a plutonium weapon is exploded, not all of the plutonium is fissioned. Plutonium 239 has a half-life of 24,400 years. Ingestion of as little as 1 microgram of plutonium, a barely visible speck, is a serious health hazard causing the formation of bone and lung tumours.

These materials can produce alpha, beta and gamma radiation. Beta and Gamma radiation are more hazardous to health since they can penetrate body tissues and are ionizing forms of radiation. The site and severity of radiation effects and therefore the overall prognosis, are dependant on the dose of exposure which is a consequence of yield and type of nuclear explosion (ground burst/airburst), proximity to the epicentre, direction of winds,

availability and period of use of shelters that can block the radiation and the mode of dosage such as penetration from outside the body or ingestion through food or water. The key health hazards are:

Acute Radiation Poisoning: in those exposed to more than 125 rad (1.25 Gray) doses - death secondary to bone marrow failure, failure of gastrointestinal lining.

Acute Radiation Syndrome: in those exposed to between 50 - 100 rad doses (0.5-1 Gray) - nausea, vomiting, diarrhoea, reduced blood cell counts.

Fetal Radiation Syndrome: at doses lower than would be acutely harmful to adults - malformations, growth retardation, impaired brain development.

Malignancy: significantly increased lifetime risk of cancerous mutations, especially leukaemias - proportional to degree of exposure.

The dose that would be lethal to 50% of a population is a common parameter used to compare the effects of various fallout types or circumstances. This is referred to as the LD₅₀.

In the 1950s, the LD₅₀ for gamma rays was set at 3.5 Grays (Gy), while under more dire conditions of war (a bad diet, little medical care, poor nursing) the LD₅₀ was 2.5 Gy (250 rad). There have been few documented cases of survival beyond 6 Gy. One person at [Chernobyl](#) survived a dose of more than 10 Gy, but many of the persons exposed there were not uniformly exposed over their entire body. If a person is exposed in a non-homogeneous manner then a given dose (averaged over the entire body) is less likely to be lethal. For instance, if a person gets a hand/low arm dose of 100 Gy, which gives them an overall dose of 4 Gy, they are more likely to survive than a person who gets a 4 Gy dose over their entire body. A hand dose of 10 Gy or more would likely result in loss of the hand. A [British industrial radiographer](#) who was estimated to have received a hand dose of 100 Gy over the course of his lifetime lost his hand because of radiation dermatitis. Most people become ill after an exposure to 1 Gy or more. The foetuses of pregnant women are often more vulnerable to radiation and may miscarry, especially in the first trimester.

One hour after a surface burst, the radiation from fallout in the [crater](#) region is 30 grays per hour (Gy/h). Civilian dose rates in peacetime range from 30 to 100 µGy per year.

The 7:10 Rule of Thumb should also be borne in mind. This states that for every 7-fold increase in time after detonation, there is a 10-fold decrease in the exposure rate. In other words, when the amount of time is multiplied by 7, the exposure rate is divided by 10. For example, let's say that 2 hours after detonation the exposure rate is 15 Gy/hr. After 14 hours, the exposure rate will be 1/10 as much, or 1.5Gy/hr and after approximately a week, the level will be 1/100 as much, or 0.15Gy/hr (or 15 Rad/hr).

This refers to the total amount of radiation, as a sum of all the various radioactive decay occurring. For half-life decay rates of specific important elements, please refer to earlier list.

The exposure rate must be expressed in the same unit as the time increase. For example, if the time increase is expressed in hours, the exposure rate must be expressed as the radiation exposure per hour.

This should not however, engender reassurance. Given that a surface burst at the crater region is 30Gy/hr, a lethal dose that kills almost instantly, after two weeks, the dose at the same site will be 0.3Gy/hr. Given that the LD₅₀ is 2.5Gy for 60 days, one would expect a proportion of the population to succumb to illness and death in the weeks to months following a dose of 0.3Gy/hr.

Recommended Immediate Actions for a Nuclear Exchange

The immediate actions if caught outside in proximity of a nuclear blast, according to the US Department of Homeland Security are:⁶

1. Lie down flat covering exposed skin under the body, including hands and remain until heat and shock waves pass.
2. Cover mouth and nose with cloth as moving.
3. Decide whether or not to evacuate or find shelter.
4. If a cloud of debris is moving towards the area, consider evacuating - determine prevailing wind and move in a perpendicular direction to it.
5. If a cloud of debris is not visible, consider seeking shelter - a basement or centre of a high rise building away from windows or doors is best.
6. If seeking shelter: go as far below ground as possible - shut off ventilation systems and seal doors or windows until the fallout cloud has passed (generally within hours or days). If possibly exposed to contaminant dust or debris, remove outer clothing as soon as is reasonable; if possible, shower, wash hair and change clothes before entering a shelter. Do not scrub or scratch skin. Try to use stored and sealed food and water.
7. Listen for information from emergency services or through the radio if available.

Part 2: National Site Selection

The discussion below is based on two logical assumptions, and sets out plans/strategies for both:

1. Ahmadis, during a nuclear holocaust, would do best to live together as a single geographical community
2. The situation may arise when many Ahmadis - and indeed the Khalifa himself - may have to leave the UK.

Given the numbers of Ahmadi Muslims currently residing in the UK, it will be necessary to gather Ahmadis at either a single or multiple UK sites before decision is made as to whether to leave the country. This could be done either altogether or in stages.

In terms of security, leaving all at once may create publicity and also mean that those who cannot leave at the same time for various reasons will have to then make their way on their own. Logistically it would be more difficult to organise the movement, accommodation and maintenance of the whole UK community together as opposed to in stages. As a result of these considerations, it may be more practical for different regions in the UK to move at different times, as detailed later.

In order to create a clear plan, both gathering points in the UK and destination points overseas will have to be selected. Presented below are some of the options for each. UK gathering sites are assessed according to the following criteria:

1. Safety from nuclear blast zones and radiation
2. Adequate infrastructure including: shelter, water, food, sanitation and medical care.
3. Easy access using motorways and main roads from all parts of the UK
4. Safety from outside interference or hostility
5. Relative proximity to major exit points from the UK

Foreign site selection criteria are discussed at a later stage.

Hadiqat ul Mahdi, East Worldham, Alton, Hampshire UK

Safety from nuclear blast zones and radiation

It should be noted that the calculations made below are modelled on the likely scenario that London will be the epicentre of any nuclear strike. In the absence of any intelligence to the contrary, the same assumption will also be made for any similar calculations regarding other cities elsewhere in this document.

Hadiqat ul Mahdi is in East Worldham near Alton, Hampshire. According to Google Maps, the site is 49.8 miles / 80.2 km by road from the centre of London. The straight-line distance from the centre of London to the Hadiqat ul Mahdi site is 42.7 miles / 68.7 km.

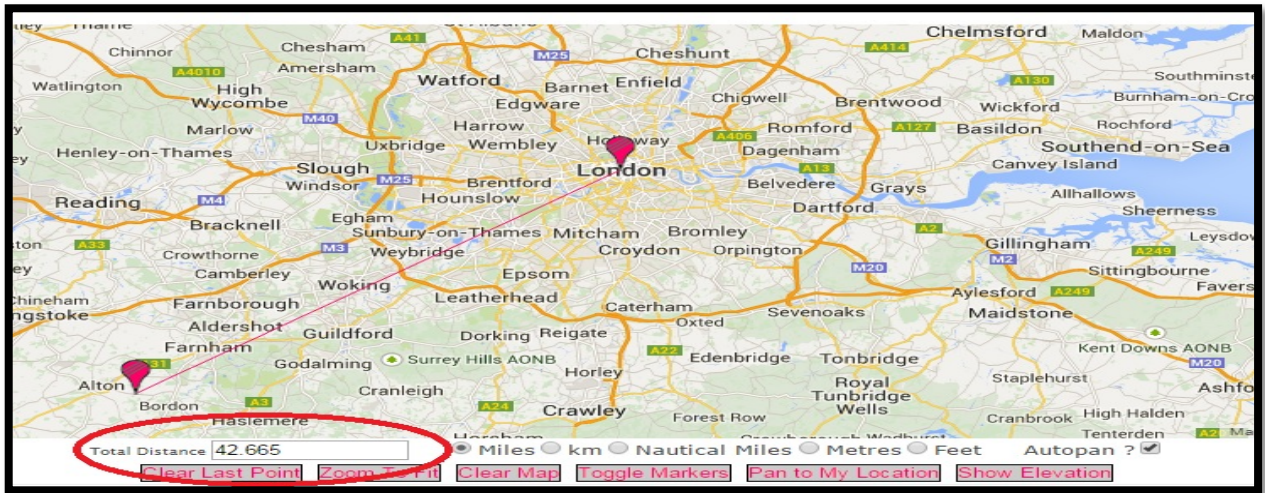


Fig.5: Distance of Hadeeqatul Mahdi from centre of London; Source: <http://www.daftlogic.com/projects-google-maps-distance-calculator.htm>

In this instance, calculating the safe distances from nuclear blasts would ideally require knowing which nuclear weapon would be used against London. Since this information is clearly not available, an estimate must be made.

The largest Russian bomb ever tested is the Tsar Bomb with a yield of approximately 50 megatons, whilst the largest Russian bomb ever designed had an approximate yield of 100 megatons. Assuming the worst case scenario that London was hit by the largest nuclear bomb ever designed, with a yield around 100 megatons, the Hadeeqat ul Mahdi site would be within the blast zone (bottom left corner) and anyone in that area would suffer third degree burns, which are often fatal.

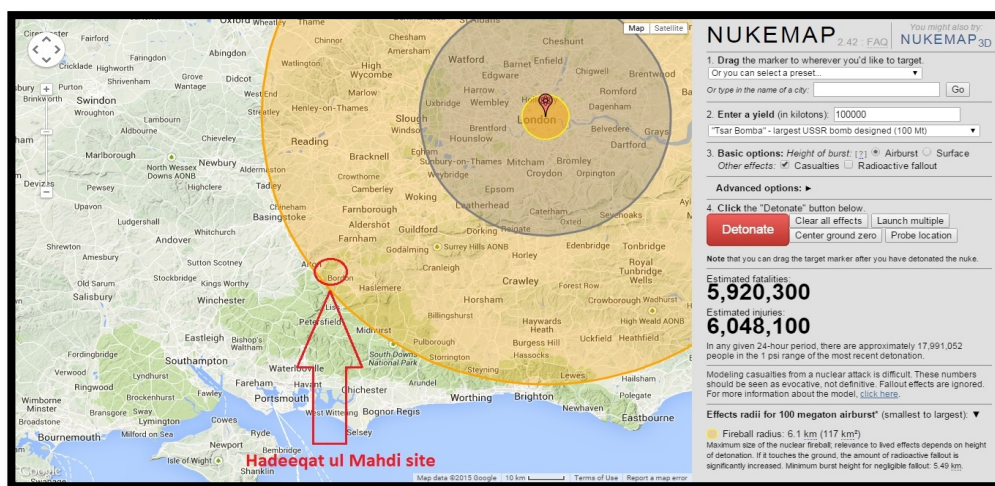


Fig.6: Blast radius if largest bomb ever dropped on London, and effects on Hadeeqatul Mahdi: 1st and 2nd degree burns; Source: nuclearsecrecy.com/nukemap

If, however, such a weapon is not currently in use, and London was hit by the largest warhead ever deployed by the Russians (the 50 Mt Tsar Bomba) then the Hadeeqat ul Mahdi site would fall outside of the largest blast radius by approximately 9 miles. However, it could be hypothetically be possible that people at the site could still suffer 1st and 2nd degree burns.

The largest currently deployed nuclear weapon in the US arsenal is thought to be the Titan 2 warhead, with a yield of 9 Mt. Assuming that the Russians currently have a similar capability and that such a weapon was used by them over London, the Hadiqat ul Mahdi site would be well outside of the 3rd degree burns radius. Nevertheless, it could still be possible, as with the 50 Mt bomb, to suffer lesser burns and be exposed to other radiation.

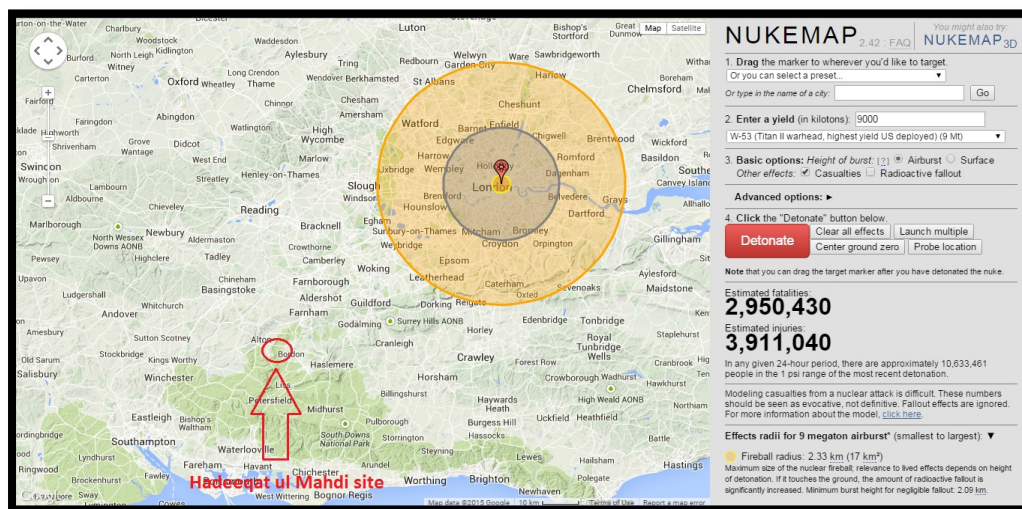


Fig. 7: Blast radius and effects on Hadeeqatul Mahdi if largest US bomb equivalent dropped on London; Source: nuclearsecrecy.com/nukemap

Infrastructure: shelter, food, water, sanitation, medical care

Hadiqat ul Mahdi has hosted the 'Jalsa Salana' of the community for several years. During these periods it is attended by upwards of 30,000 guests from various parts of the world. The organisers are used to providing overnight shelter for large numbers.

Water facilities are available for guests during the period of the annual gathering. Currently the water provision is sufficient for thirty thousand people, but will undoubtedly need to be increased if a sizeable part of the population is staying on the site, either before leaving the country or indefinitely. The availability of water can be augmented in the following ways:

- By utilising water storage tanks, which have been filled prior to the influx of people onto the site.
- By ensuring plentiful stores of water (e.g. bottled water).

- By using local river water (e.g. tributaries of the River Wey) and purification methods to make the water potable.
- By digging of wells;

Food supplies at Hadeeqat ul Mahdi will have to ultimately come from outside, but there are large preparation facilities that already exist, which are used during the annual gathering and are capable of producing enough food for upwards of 30,000 people. Depending on how long the period of stay is, there may be a requirement for significant stores of food or the ability to acquire it from outside.

Sanitation at the Hadeeqat ul Mahdi site is currently provided through portable toilets that exist on a semi permanent basis. Continuous use by the majority of the UK community would require significant maintenance to avoid the facilities becoming unusable. In order to lighten the load, it may be necessary to bolster the sanitation facilities with either permanent shower and toilet facilities that are built prior to the events or with more portable toilets.

The medical care that already exists at these sites during the annual gathering is always basic first aid and is not likely to be able to provide for the medical needs of the community at large for any prolonged time. As it is all major medical cases are taken to local hospitals. There will need to be some contingency in place for those individuals who become ill whilst still at home sites, before the community leaves the UK. This could potentially be catered for by smaller groups of community members leaving after the main migration has taken place, or through having home sites away from major cities that can form a refuge for those people who are not able to leave the UK.

Ease of access

The Hadeeqat ul Mahdi site is relatively easily accessible from all parts of the country. From the south it can be accessed via various routes including the M27, A31 and A3. From the north, the site can be accessed from any one of the major motorways running down the length of the United Kingdom. Visitors coming from north of the site may sometimes use the M25 in order to take the M3 going southbound. It remains to be seen whether or not the generally congested M25 will be usable during a time of crisis.

Safety from outside interference

The safety of the Ahmadi population will be dependent initially on remaining unnoticed. As such it will be very important that members of the community do not publicly broadcast their location unless given permission to do so. If it comes to the attention of the wider public during a time of crisis that water, food and shelter are available to the members of the community and others, it may pose a security threat. This could come from people wanting to take resources for themselves or from opponents of the Ahmadiyya community using the prolonged confinement of community members in one area to their advantage.

Security for those at the site could be provided in either through existing security teams actively patrolling the local area or; local law enforcement working with members of the

community to prevent incidents. The latter is of course predicated on the continuing existence of the local law enforcement authorities, which is doubtful, at least in the early aftermath.

Proximity to major exit points from the UK

The major exit points from the UK are for either air, sea or road travel. The major airports that could be used to leave the UK from this site are:

- London Heathrow airport (36 miles, approximately 49 minutes by car)
- London Gatwick Airport (52.5 miles, approximately 1 hour by car)
- Southampton Airport (33 miles, 45 minutes by car)

The major ports (less than 3 hours and 30 minutes journey) that could be used to leave the UK from this site are:

- Portsmouth (30 miles, 37 minutes by car)
- Southsea (32 miles, 44 minutes by car)
- Poole (66 miles, 1 hour 25 minutes by car)
- Newhaven (87 miles, 1 hour 41 minutes by car)
- Weymouth (90 miles, 1 hour 40 minutes by car)
- Folkestone (106 miles, 1 hour 50 minutes by car)
- Dover (114 miles, 1 hour 56 minutes by car)
- Ramsgate (119 miles, 2 hours 4 minutes by car)
- Harwich (138 miles, 2 hours 25 minutes by car)
- Plymouth (175 miles, 3 hours 13 minutes by car)

The only way of travelling by road out of the UK is via the Eurotunnel in Folkestone (106 miles away, 1 hour 50 minutes by car)

Overall assessment

The Hadeeqat-ul Mahdi site has the advantage of having established infrastructure on land that the community owns. Water, food and sanitation infrastructure that is already present can be built upon and members of the community are familiar with what is available locally, since the annual gathering has been at this site for several years. Thus from the point of view of accommodating members of the community, it is ideal. It is also demonstrably close to major exit points from the UK by air, sea and road. As with any site, Hadeeqat ul Mahdi may require increased toilet and shower facilities and significant manpower to maintain these as well as water supplies and the provision of food. However, the site has the advantage of already having all of those facilities in place to some extent. With entirely new sites or plots of land this would not be the case. From a security perspective, the site will be well known to those who would want to steal provisions and shelter or those who oppose Ahmadiyya beliefs. This may mean that security could potentially pose a challenge and anonymity could not be guaranteed. The main downside of using the Hadeeqat ul Mahdi site could be its proximity to London, meaning it could hypothetically suffer severe damage

if large nuclear weapons are used. Thus it could provide an ideal location for the community in the run up to a nuclear event, but possibly not during the nuclear war itself.

Islamabad, Sheephatch Lane, Tilford, Farnham, Surrey, GU10 2AQ

Safety from nuclear blast zones and radiation

The Islamabad site is approximately 9 miles away from the previously assessed Hadeeqat-ul Mahdi site, and is closer to London by this same distance. As such, the risks from the blasts and radiation of nuclear bombs are similar.

The largest designed Russian weapon (the 100 Mt Tsar Bomba) would create a damage radius that encompasses the Islamabad site such that inhabitants would suffer 3rd degree burns. The 50 Mt variant of the Tsar Bomba would create a radius of damage that only just encompasses the area, also causing 3rd degree burns. The 9 Mt caliber of nuclear weapon, the largest currently deployed by the US, would not have a blast radius large enough to cause 3rd degree burns at the Islamabad site. However, as with the Hadeeqat ul Mahdi site, it is difficult to rule out the possibility of 1st or 2nd degree burns or exposure to long-term radiation.

Adequate infrastructure including: shelter, water, food, sanitation and medical care

The Islamabad site is smaller than the Hadeeqat ul Mahdi site by 544,291 m². This will mean that the site will not be able to accommodate all of the Ahmadiyya community in the UK, and according to calculations. The Islamabad site (23 acres) can only physically hold a maximum of 4000 people with overnight accommodation as opposed to Hadeeqat ul Mahdi, which is likely to be able to fit more than ten times that number, being approximately 210 acres.

With regards water, the Islamabad site does have piped water running to it. However it is likely to suffer from the same shortfalls in terms of meeting demands that the Hadeeqat ul Mahdi site may experience, and the plan to meet the demands would be the same for both sites.

The site was previously capable of producing food. It is unclear as to whether it would be able to produce enough food for the community today. However, there is the possibility of using the Hadeeqat ul Mahdi site facilities as supplementary food storage and preparation sites if the Islamabad site is not able to output enough food for the whole community. It is likely that irrespective of which of these two sites is chosen, the food facilities at one will have to supplement the other.

Issues with sanitation and medical care are largely similar to those in Hadeeqat ul Mahdi.

Easy of access

Since the Islamabad site is close to the Hadeeqat ul Mahdi site, the distance from the site to the major exit points from the UK is similar. For completeness, they have been calculated here, beginning with the airports that could be used to leave the country:

London Heathrow Airport (29.9 miles, approximately 41 minutes by car)

London Gatwick Airport (45 miles, approximately 1hr 4 minutes by car)

Southampton Airport (50.9 miles, approximately 59 minutes by car)

The major ports (less than 3 hours and 30 minutes journey) that could be used to leave the UK from this site are:

Portsmouth (35.9 miles, approximately 43 minutes by car)

Southsea (38.1 miles, approximately 51 minutes by car)

Poole (74 miles, approximately 1hour 46 minutes by car)

Newhaven (62 miles, approximately 1 hour 38 minutes by car)

Folkestone (99.5 miles, approximately 2hours 10 minutes by car)

Dover (106 miles, approximately 2 hours 17 minutes by car)

Ramsgate (110 miles, approximately 2hours 25 minutes by car)

Harwich (130 miles, approximately 2 hours 37 minutes by car)

Plymouth (183 miles, approximately 3 hours 29 minutes by car)

The only way of travelling by road from this site out of the UK is via the Eurotunnel in Folkestone (97 miles, approximately 2 hours 22 minutes by car)

Overall assessment

The Islamabad site has a similar profile to that of Hadeeqat ul Mahdi. However, it should be noted that it is 9 miles closer to London, the nearest likely site of nuclear attack. Although 9 miles is not a great distance, given that the size of nuclear weapons that will be used is unpredictable it may be more prudent to select a site further away from London. Islamabad is also significantly smaller than the Hadeeqat ul Mahdi site and will not be able to house all members of the UK community. In terms of water and food supplies the site has an identical profile to Hadeeqat ul Mahdi with both sites likely requiring food from outside, either bought at the time or stored before hand. Sanitation might be more of a concern at a smaller site like Islamabad, with the possibility of illness spreading quicker in a more cramped environment and the likelihood of toilet facilities being closer to living quarters than in Hadeeqat ul Mahdi, but a smaller site like Islamabad would be easier to patrol and secure.

Part 3: National Community Evacuation Strategy

Overview

The evacuation process would need to be split into two phases: the first being getting from the local mosque or mission house to the UK gathering site and the second being travelling from this site to the point of exit from the UK, if the need to leave the UK arises.

Preparation

Preparation for the evacuation should begin early, with focus on the following tasks:

- a) **Teams:** Formation of both National Evacuation team and Regional Evacuation teams. Both sets of teams could be comprised of Jalsa Salana organisers, Humanity First members, Jama'at Nizam members, and other able individuals, such as medical health professionals.
- b) **Tajneed:** Ensuring that each region's Tajneed is up-to-date. The National evacuation team should also have an up-to-date list of Jama'at membership nationwide through collaboration with the Tajneed department. In order to ensure that this register is up to date, a registration and contact-detail checking period would need to be carried out by each regional team. This could utilise online surveys, phone auditing, door to door visits by regional teams and registration stalls during local and regional events. The information should ideally be stored on a relatively secure online system that allows for easy storage, editing and sharing with team members involved in the evacuation process. Regional qaids could be responsible for this process within the region and should share their information with the national Amir.
- c) **Emergency instructions to regional evacuation teams.** These may include the stocking up food/water in local mission houses and mosques, the formation of the relevant regional "calling" and "sweeper" teams, as detailed below, as well as details of an emergency 24/7 Jama'at hotline that regional presidents alone would have access to, once a state of emergency is declared by the Jama'at centrally, for questions and guidance from the National Evacuation team.
- d) **Emergency guidelines to Jama'at households:** Dissemination of leaflets to all Jama'at households, detailing important do's and don'ts during a Nuclear bomb, including precautions that can be taken beforehand. We do not recommend detailing the National Evacuation plan, however it would be necessary to detail that a process is in place, and that local and regional presidents would coordinate, in conjunction with auxiliary organisations, a known evacuation plan. Emphasis in this leaflet must be given to unity and obedience to the Nizam of the Jama'at.

Evacuation to National Gathering Site

Prior to leaving, the registration number of the lead cars of each Qiadat convoy should be communicated to the UK gathering site, so they know who to expect.

We suggest that different regions should come to the National Gathering site at stipulated times, over a 72 hour period, beginning with those regions furthest away, so that those nearest to the site arrive last in the 72 hour period. The aim of such a process would be:

- a) To prevent public shock and surprise at large numbers of Ahmadis arriving in the area
- b) To enable an orderly, manageable influx of Ahmadis

Two different teams need to be active in each region. In areas with a very small membership, crossover of roles may be required:

- a) **Calling Team:** should chase up each member of the qiadat ensuring that they are aware that a nationwide Ahmadiyya evacuation has been initiated, that they need to meet at the designated mission house or mosque with everything that they want to take with them and the date and time of the evacuation. In addition, the calling team needs to record who each individual will be travelling with and to assign, by mutual agreement, transport for those that are not travelling with their own family group and to ensure this is recorded.
- b) **Sweeper Team:** following behind the main convoy, a sweeper team should check that all the membership of that region who are supposed to be in transit are on their way, visiting those that can't be reached by phone and offering transport and help where appropriate. Sweeper cars should carry first aid kits and plenty of food and water for those that might need it. If possible, sweeper teams should consist of medical professionals. All members of the UK community should ensure that they have valid breakdown cover. Both teams should bring as many cars and supplies as possible.

The convoy of cars containing the whole membership of the qiadat should have both multiple GPS systems as well as A-Z maps of the UK. For the sake of safety, each convoy should operate a buddy system, such that each car has two buddies, one behind and one in front so no one is lost during the journey.

When people arrive at the UK gathering site they will need to undergo security checks in the same way as is usual for national gatherings. Their AIMS ID cards should be used to check them off the national register. Once all the relevant UK membership is present at the UK gathering site, the second stage of the evacuation should be begun, so as to prepare for the possible need to leave the UK.

The membership would need to be re-organised into those staying in the UK and those leaving. The leaving parties should remain according to their original Qiadats, with smaller

Qiadats being assimilated into an agreed minimum convoy size. Each caravan of vehicles will require a person in charge - ideally the regional Qaid, a medic or trained first aider if possible and a supply vans with spare capacity. There should be extra space kept in the vehicles of each caravan such that each group is self sufficient and able to keep their contingent together in the event that a vehicle breaks down and has to be abandoned. The buddy system of cars should remain in effect.

The UK exit point should have a shuttle system back to the UK National Gathering Site, for those unable to leave for whatever reason.

Determining regional meeting points and fastest routes of travel to UK gathering site

Part of the responsibility of each Regional Evacuation team, will be determining the optimal route for each convoy as it makes its way to the National gathering site. Regional meeting points, such as mosques and mission houses should be incorporated into the route if possible, or the route planners should at least be aware of their locations, should an overnight stop need to be made.

Mosques and mission houses should also be stocked up with several people's worth of essential items as listed in the essential list (see later). This could come in especially useful for members of the community who are not able to leave or missionaries who are asked to man mosques throughout the process.

Safety & Anonymity Before & During the Evacuation

Several factors threaten the safety of members of the community during the evacuation process. If the evacuation takes place before the nuclear war it is possible that a combination of economic recession and the recent surge in overt racism experienced by minorities could make a large group of people, who are gathered in one place and mostly from ethnic minority backgrounds, the target of fascist or right wing elements. It is possible that this could escalate into actual attacks on the UK gathering site, the members of the community or any guests. This is even more likely in the immediate post war scenario. The total destabilisation of the country, with the absence of effective policing or government would potentially allow attacks from others, either as acts of misguided revenge or in order to seize the resources and shelter that the community has put in place beforehand.

In order to prevent potential threats to safety escalating into actual incidents, efforts to prevent the unregulated spread of the address of the UK gathering site and protecting the site during the period of evacuation must be undertaken.

Limiting or entirely preventing online access to the addresses of potential UK gathering sites, including Hadiqat-ul-Mahdi and Islamabad, especially when searching using non specific terms related to the community may prevent or at least partially obstruct those who would wish to either attack or steal from the community. Additionally, Ahmadis should be counselled against freely distributing the address of the UK gathering site to those outside the community through anything other than direct messages to trusted individuals (such as

posts that are visible to the public on social networking sites) in the run up to the evacuation. This should be enforced by the Regional Evacuation team and by general community members.

During the process of evacuation, security at the UK gathering site will have to rival or even exceed that of annual gatherings. Members will have to be vetted by AIMS ID cards and guests could be dealt as detailed in the next section.

24-hour patrols around the borders of the gathering site land should be put into place and for this purpose dogs could also be used. This may require the training or buying of animals specifically for this purpose if we do not already have them.

Secrecy, permission to inform those outside of the community of gathering/evacuation and security checks

Some members of the community may want to inform their family members, friends or preaching contacts outside of the community of the commencement of the evacuation and even the location of the UK gathering site, in the hope that others are also saved from the calamity. This will be especially important for converts to the Jama'at who may wish to bring their non-Muslim/non-Ahmadi families into the safety of the Jama'at's National Gathering Site.

This naturally poses both a significant opportunity to, with Allah's permission, save others and also a significant risk that the community's location will become known and potentially a target for those looking to take resources or cause harm for other reasons.

One of several approaches could be taken. The community could maintain complete secrecy and forbid any member of the community from informing anyone outside of the community that the evacuation is underway (although the sheer volume of people gathered in one place may render such an injunction relatively pointless) or the community could take a similar approach to visitors as it does during annual gatherings.

A comprehensive security check and personal contact/reference system would be needed to be implemented as well as a well-manned and potentially armed security force that patrols the peripheries of the encampment. Any visitors who end up staying would also need their own accommodation and essential amenities and thus need to be factored into calculations for food, water, sanitation, clothing, shelter, medications, anti - radiation treatments and other essentials.

Weapons

In the absence of the deterrent of police or military intervention, criminal elements could be emboldened to attack the community using various weapons, including firearms. To have a contingency for this, members of the community who are trained or licensed firearms holders in the UK could be assessed and if suitable, preferentially assigned to security

duties. Others who may be suitable could be trained in the safe handling and use of weapons also beforehand. Any firearms legally held by the community would need to be located at the gathering site in appropriate storage and made accessible to members of the security team. Depending on how many firearms the community already has, more may be required and would need to be licensed, bought and stored beforehand. Those members of the community who are affiliated with gun clubs but who do not have a valid firearms certificate should consider applying for one. Forms can be found online.⁷ It should be noted that firearms licenses are not required for buying and owning a crossbow.

A clear, sequenced contingency for various types of attack would also need to be made and the layout of the gathering site would need to reflect safety concerns, namely that the bulk of people be protected from the edges of the site, giving the security teams the physical space to stop an attack before it reaches most community members, without endangering anyone.

Part 4: Shelters, Food Storage and Radiation protection

Better Shelter

Long or intermediate term accommodation should be organised at a community level. The company Better Shelter,⁸ in coordination with IKEA and UNHCR, has pioneered an excellent solution to the problem of emergency shelters.

The “Better Shelter” is a 17.5m² shelter, which provides warmth, electricity (from solar panels installed on the roof, from which phones can also be charged). It can house up to five people per shelter, and takes four people around 4 hours to set up by hand. It has doors, lockable from the inside and outside. The shelter resembles a house, and is made of semi-hard, non-transparent walls. The walls are made of polyolefin panels and are fire resistant, on a steel frame. The entire house comes pre-packaged in flat-pack boxes as with IKEA products and is easy to set up.

These shelters have been used to great success to house Syrian refugees displaced as a result of the civil war. It seems to provide a high level of warmth, ventilation, security, safety, dignity and privacy. The shelter can be dismantled, moved and reassembled if need be. In addition, since the shelters are themselves modules, they can be added on to one another, to double or triple the space, enabling the setting up of clinics.

From their website www.bettershelter.org it is possible to order these shelters and have them delivered anywhere in the world. This is a solution that may be worth investigation by Humanity First not only for the UK, but for Jama'ats around the world.

Accommodation of UK Jama'at population

From our calculations, we find that these shelters can comfortably accommodate the entire Jama'at in Hadeeqat-ul Mahdi site, with plenty of room to spare.

The site, at 208 acres, comes to 84,1746m². At a population of 40,000 individuals and with the Better Shelter housing 5 people per shelter, we would require a minimum of 8000 such shelters. These shelters, if arranged in a grid pattern as below, enabling enough space between each shelter, would take up approximately 78 acres, or 319,440m². This is only 1/3rd of the total space of Hadeeqat-ul Mahdi

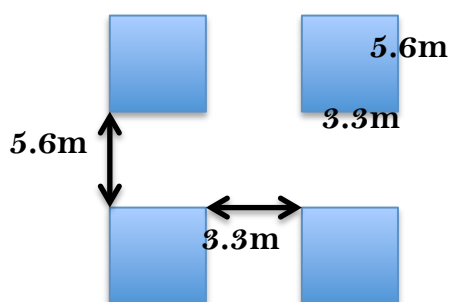


Fig. 8: Example layout of Better Shelters, enabling adequate space between shelters. With this layout, approximately 40,000 Ahmadis could be housed on 1/3rd of the Hadeeqat-ul Mahdi site



In numbers

- 2 One shelter is delivered in 2 flat pack boxes, which each weigh about 80 kg.
- 4 It takes 4 persons 4-8 hours to build a Better Shelter. No additional tools are required and most components are assembled by hand.
- 4 The shelter kit includes a solar panel, which charges an LED light during the day. Once fully charged, the light can be used for 4 hours and also charge a mobile phone through a USB port.
- 5 One shelter is designed to host 5 persons.
- 17,5 The shelter is 17,5 square metres.
- 68 One shelter consists of 68 unique parts, including manuals and spare parts. The shelter is modular and can be adapted to different fields of application.
- 169 One Better Shelter weighs 169 kilograms.
- 10 000 In 2015, Better Shelter delivered more than 10 000 units for humanitarian operations worldwide.

Fig. 9: Size and statistics of the Better Shelters

In lieu of such shelters, other options such as multiple large marquees in the UK gathering site could be considered. It should be noted that marquee companies operate on the same road as the Hadeeqat-ul Mahdi site⁹ and around the site.

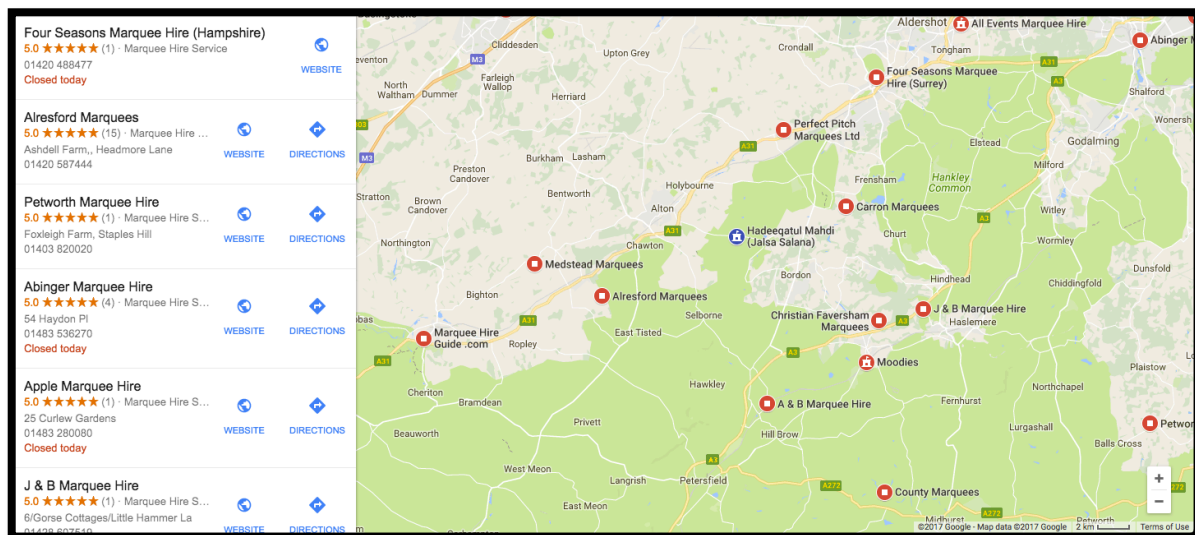


Fig. 10: Marquee companies operating within the vicinity of Hadeeqat-ul Mahdi

Smaller marquees, tents and shelters could also be used in order to best utilise available land. This is another area where Humanity First may be able to source large quantities of disaster relief shelters and tents. Failing this or as an adjunct to it, commercially available shelters can also be utilised. In the acute situation, especially for any members of the community who have not been evacuated, emergency shelters will be useful.

Shelters are useful because they can form a physical barrier to ionizing radiation from fallout. Since the overwhelming majority of the intense radiation exposure occurs within the initial hours and days, having a fallout shelter can be lifesaving if a safe place away from the nuclear blast cannot be found.

Shelters can take various forms, from very basic and quick to set up to those requiring significant construction. Those constructed with thicker walls and endowed with more comprehensive water, food and sanitation stores are more likely to be able to accommodate inhabitants for longer periods and will shield better from fallout, thus more effectively preventing radiation exposure.

Shelters should ideally be able to house all necessary inhabitants for 24 hours at the absolute minimum, since 80% of the exposure to radiation will occur in this timeframe. However, in order to be truly safe and depending on how close the epicentre of the explosion is to the shelter, it is probably prudent to prepare the shelter to be able to provide for at least a month and up to a year.

Fallout protection is almost exclusively concerned with protection from radiation. Radiation from fallout is encountered in the forms of alpha, beta and gamma radiation, and as ordinary

clothing affords protection from alpha and beta radiation, most fallout protection measures deal with reducing exposure to gamma radiation. For the purposes of radiation shielding, many materials have a characteristic *halving thickness*: the thickness of a layer of a material sufficient to reduce gamma radiation exposure by 50%. Halving thicknesses of common materials include: 1 cm (0.4 inch) of lead, 6 cm (2.4 inches) of concrete, 9 cm (3.6 inches) of packed earth or 150 m (500 ft) of air. When multiple thicknesses are built, the shielding multiplies. A practical fallout shield is ten halving-thicknesses of a given material, such as 90 cm (36 inches) of packed earth, which reduces gamma ray exposure by approximately 1024 times (2^{10}).^{[22][23]} A shelter built with these materials for the purposes of fallout protection is known as a fallout shelter.

It is important to remember that shelters are required not only for storing people, but also for storing food and water. In the immediate aftermath of a nuclear explosion, ensuring that one's food and water supply is safe from contamination is arguably one of the most important requirements.

Shelters come in three kinds - shelters built using DIY materials, shelters built using manufactured kits and permanent purpose built shelters. Basic instructions for the construction of these three kinds of shelters are reproduced below:

Domestic Nuclear Shelters: Types and Construction Instructions

| | Type 1 Improvised | Type 2 Indoor kit | Type 3 Outdoor kit | Type 4 Purpose built |
|---|---|--|---|--|
| Blast Protection psi (pounds per square inch) | Up to 1.5 | Up to 6 | Up to 11 | In excess of 11 |
| Fallout Radiation Protection Factor | Not less than 40 | Not less than 70 | Not less than 200 | In excess of 300. Also protects against INR |
| Distance from a one megaton air burst beyond which shelter will remain intact | 7 miles | 3 miles | 2 miles | Closer than 2 miles depending on design |
| Ventilation | Natural | Natural or forced | Forced | Forced |
| Site of installation | In house or garden | In house | In garden. Sectional for access through house | In garden. Appropriate access to garden necessary |
| Forethought and planning | Install in crisis. Some materials can be prepared in advance | Obtain in peace-time. Install in crisis | Obtain in peace-time. Install in peace time or crisis (Can be installed as a permanent shelter) | Install in peace-time using professional advice and help |
| Approximate expected cost (1980) | Nominal if using local materials: scaffold frame about £250 | Kit £500-£800 Bricks £300 | Kit £900-£1800 Plus any installation costs | £8000-£10,000 (but more sophisticated designs would obviously cost more) |

Fig. 11: Domestic Nuclear Shelters - Technical Guidance (1980)

Easily-constructed improvised garden shelter using household materials

This shelter is suitable for areas where under ground shelters are impracticable, for example, where there is a high water table, so that a deep hole fills with water. It can be constructed using only materials which are generally available, and could be *built in a time of crisis*. It would take two people about 24 working hours each to build.

The shelter consists of a shallow trench dug into the ground with a roof of doors or sheet timber that is supported above ground level by earth walls. The structure is then covered by at least 18 in. of earth.

This basic design will give good protection from fallout radiation particularly if the occupants keep away from the entrance area. If, in addition, a barrier of sandbags or packed soil is built about two feet in front of the entrance, and to the same height, the protection in the entrance area will be improved.

Construction

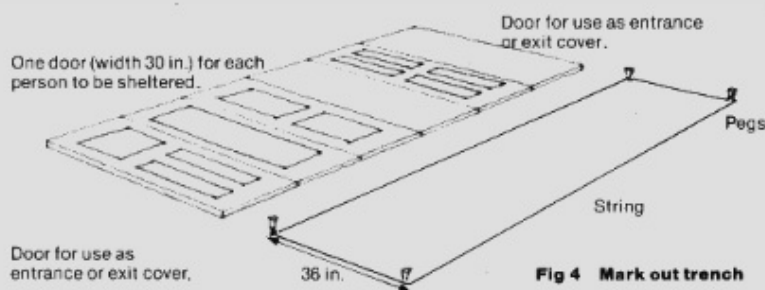
1. Select a site on level ground where there is little chance of rainwater collecting.

2. You will need:

- i. Pick, shovel or spade (preferably both), wheelbarrow or buckets, saw, screw-driver, knife, tape measure, pencil and paper, and a pair of gloves.
- ii. Pieces of large sheeting material. e.g. carpets, blankets, sheets, heavy duty polythene, sacking etc. for making earth rolls (Fig 7).
- iii. Plastic bags or pillowcases for making sandbags.
- iv. Timber: pieces of 2 in. x 4 in. wood at least 3 ft long are most useful although any suitable strong timber could be used for the cross braces (Fig 6). Floor-boards about 4 ft long could be used for entrance and exit tunnels (Fig 13).
- v. Nails: 100 x 2 in. steel nails, 30 x 4 in. steel nails.
- vi. Doors: one door (normally about 30 in. wide) per person is required, together with one door each for entrance and exit. Fittings such as handles should be removed. If you do not have enough doors, sheet timber can be used.
- vii. Rainproofing material to cover the doors, e.g. polythene sheeting, shower curtains and vinyl floorcovering.
- viii. Pegs and string for markers and tying sandbags.

3. Construct the shelter as shown in Figs 4-14.

4. Furnish the shelter as required.



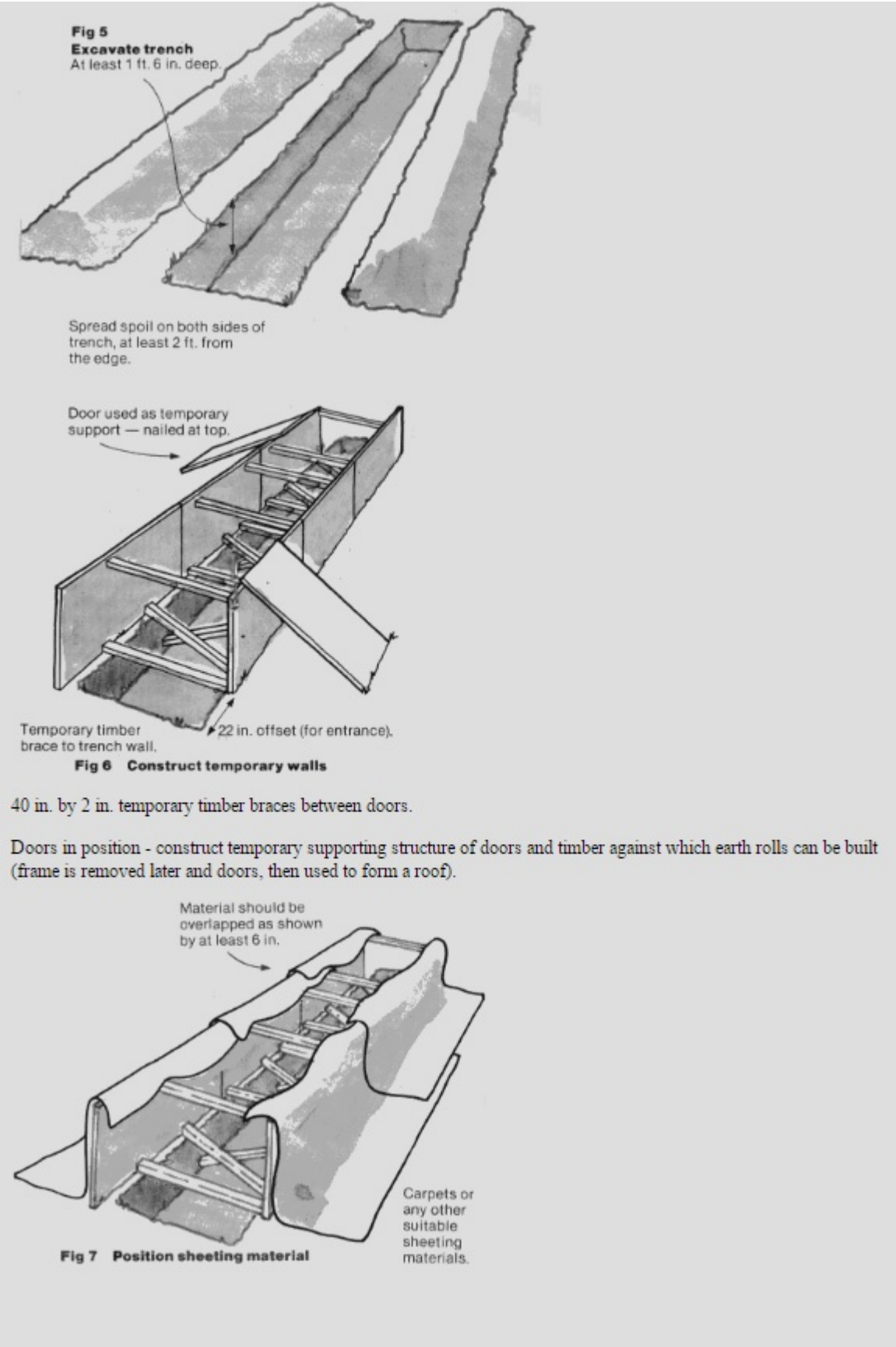


Fig 8 - Construction of earth rolls

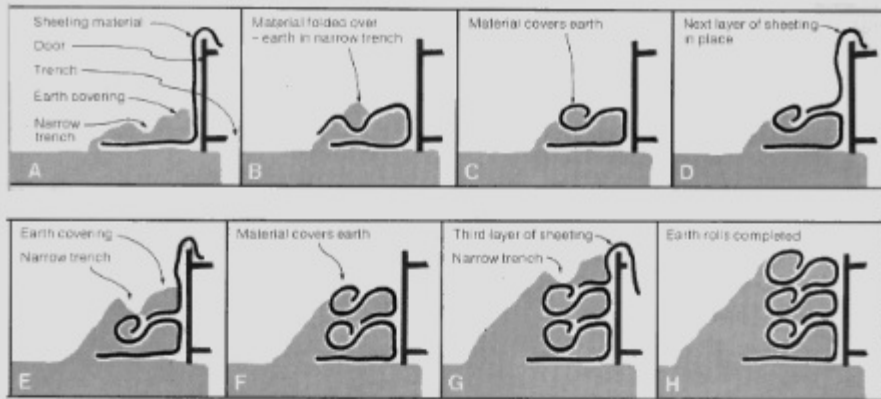


Fig 9 Remove temporary walls

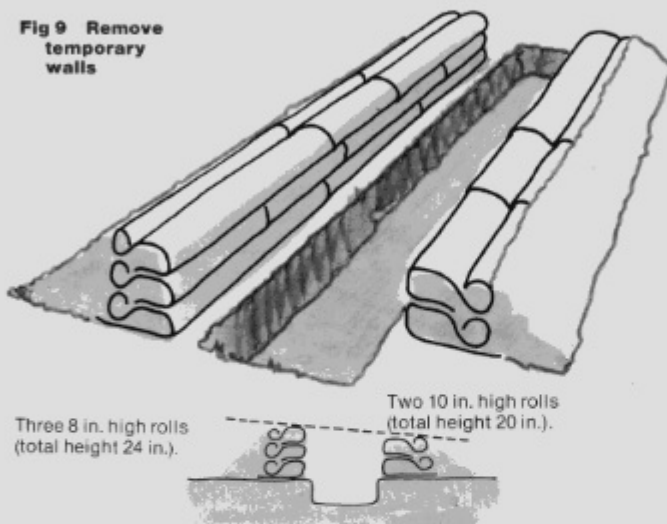


Fig 10 Construct entry/exit frames

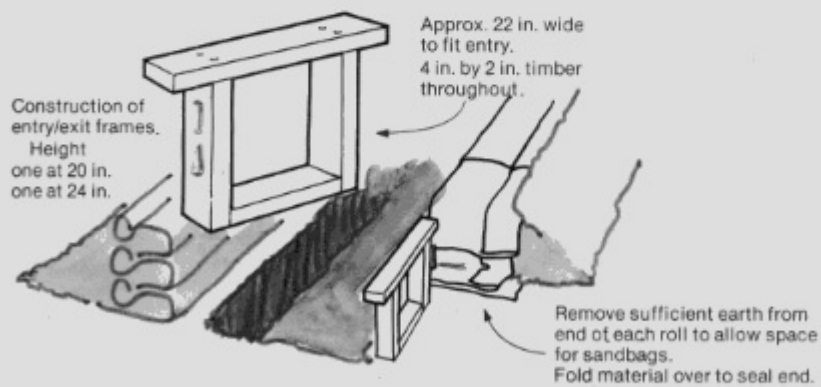


Fig 11

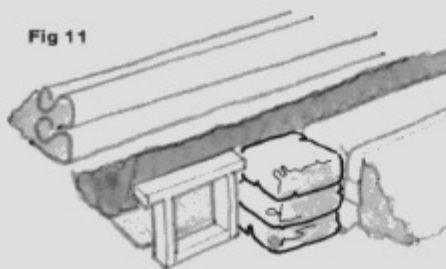
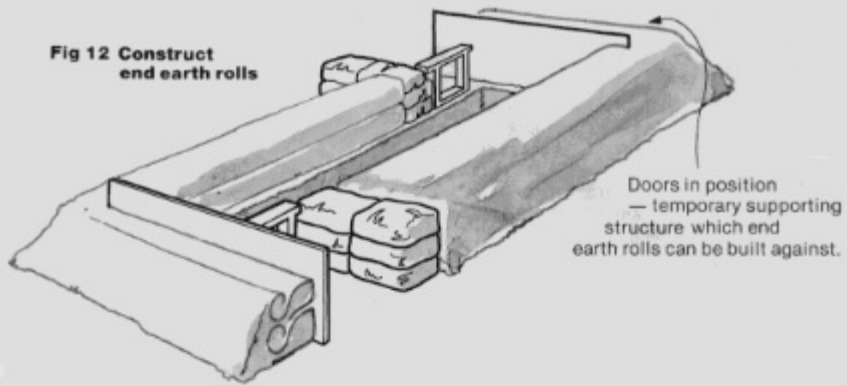


Fig 12 Construct end earth rolls



Doors in position on earth rolls. Waterproof covering — tucked under the edges of doors.

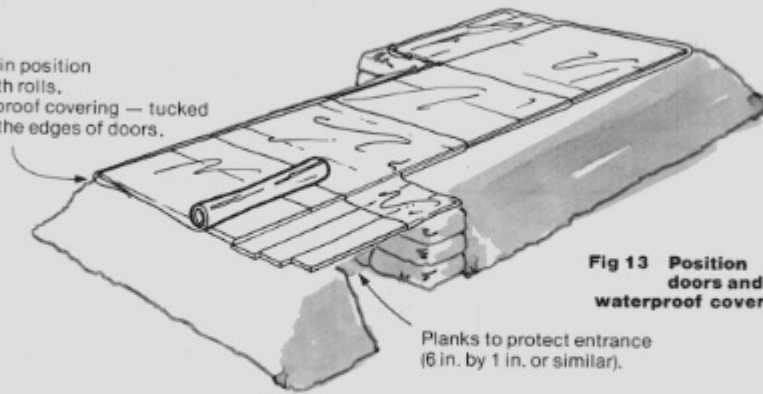


Fig 13 Position doors and waterproof cover

Earth spread over the door panels to at least 18 in. thick.

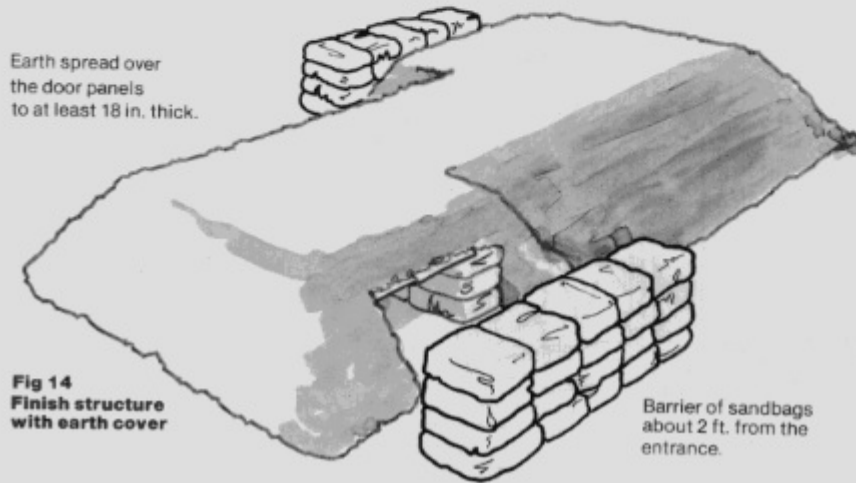


Fig 14 Finish structure with earth cover

Improvised outdoor shelter using do-it-yourself materials

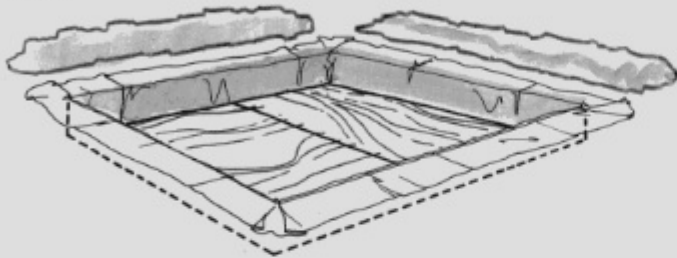
The following diagrams show how a basic shelter can be constructed from standard scaffold poles and other materials available from builders merchants, timber yards and do-it-yourself stores.

This type of shelter could be constructed in a time of crisis from materials previously purchased and stored. It would take two people about 24 working hours each to build this shelter - the size is adaptable.

The dimensions given would accommodate a family of four for a short period or two people plus provisions for longer. This shelter uses steel or alloy, standard diameter scaffold poles. These are arranged in a series of 'A' frames over a trench. It is necessary to brace the frames with further scaffolding both diagonally along its length and across the waists of the 'A' sections to give rigidity. In both cases proprietary clamps are the best method of securing the scaffold poles to each other.

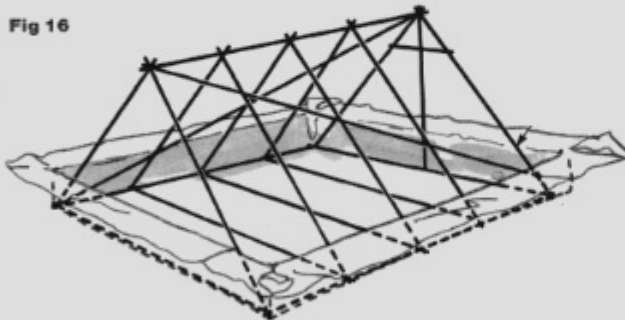
Prepare a trench 8 ft. x 8 ft. and at least 1 ft. 6 in. deep. Line it with heavy duty polythene sheeting. Lay a floor of two sheets of plywood, 3/4 in. thick and 4 ft. x 8 ft.

Fig 15



Construct the frame of scaffold poles (or you could use wood). This should be as strong as you can make it. You can increase the strength with vertical and diagonal bracing, or crossbars.

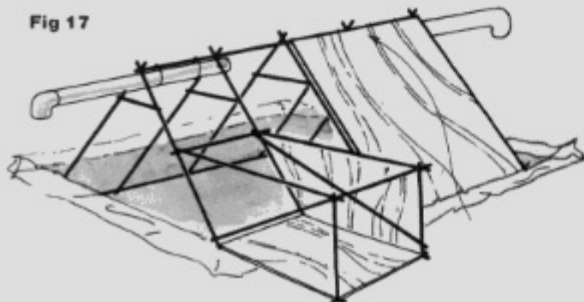
Fig 16



Add the frame for the entrance tunnel, and also the ventilation pipe (described opposite).

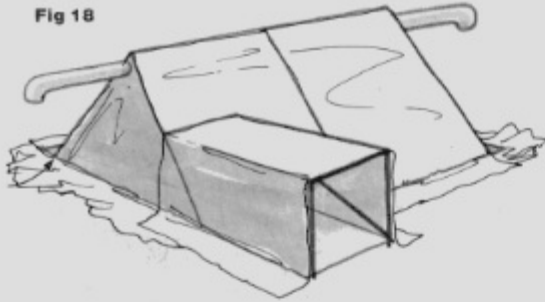
Cover the entire frame (except the entrance hole) with plywood boarding. Any small gaps or sharp edges should be covered with carpet or thick fabric.

Fig 17



Wrap the shelter with overlapping sheets of heavy duty polythene. Make sure the trench lining is within this cover.

Fig 18



Finally, cover the shelter with a thick layer of earth (about 18 in.). The earth removed from the trench may not be enough for this. If you decide to dig a deeper initial trench to get enough earth to cover, you may need to make some modifications to the design given here.

The shelter will give better blast protection if you put a layer of resilient material between the polythene and the earth covering. Straw, mattresses, or similar, would be suitable.

The entrance can be filled from within with small bags of sand or earth. You will have to store these inside the shelter.

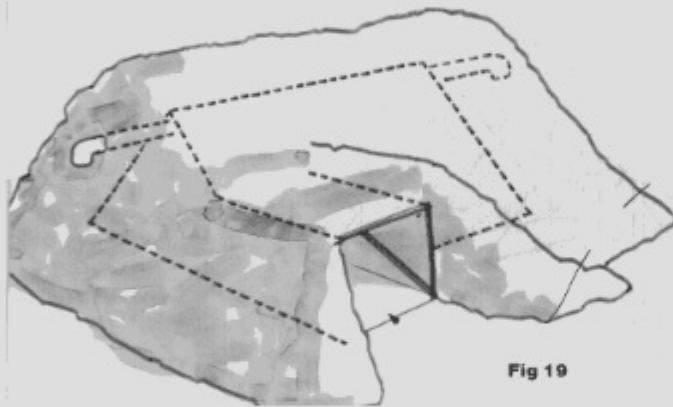
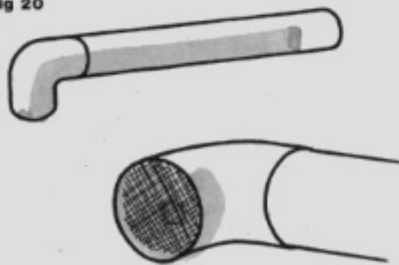


Fig 19

Ventilation

For this shelter you will need to make some provision for ventilation. The diagrams show metal drainpipes with a bend near the opening, so that this faces downward. The opening should then be filled with a filter of steel wool. It is extremely important to ensure that ventilation pipes are secure and kept free of obstruction.

Fig 20



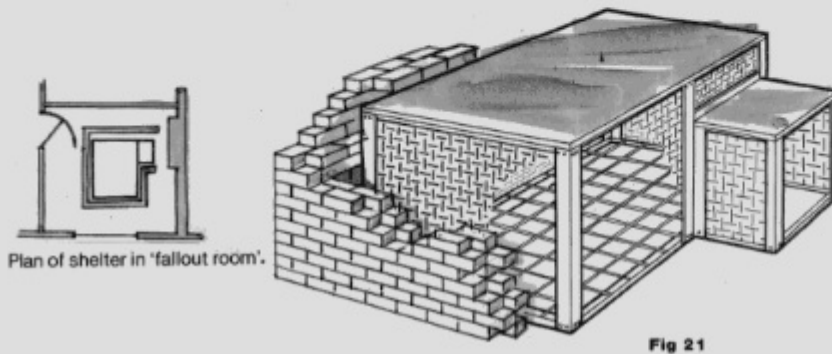
The following two designs are intended to be sold by manufacturers as kits together with installation instructions. Design drawings are to be found in *Domestic Nuclear Shelters - Technical Guidance*.

Indoor shelter from manufactured kit

This type of shelter - basically a protective steel table - is suitable for homes that have basements or rooms that can be converted into 'fallout rooms' (described in Protect and Survive) provided that the floor is strong enough to support it. This shelter will sustain the debris load resulting from the complete collapse of a normal two-storey house. To obtain protection from fallout, it must be surrounded with dry-laid bricks, sand or earth bags or heavy furniture filled with sand, earth or books.

The shelter is designed to accommodate two adults and two children. Two shelters or more may be put together to increase the capacity.

It would take two people about two hours to erect the shelter itself and up to an additional 20 hours to surround it with protective material.

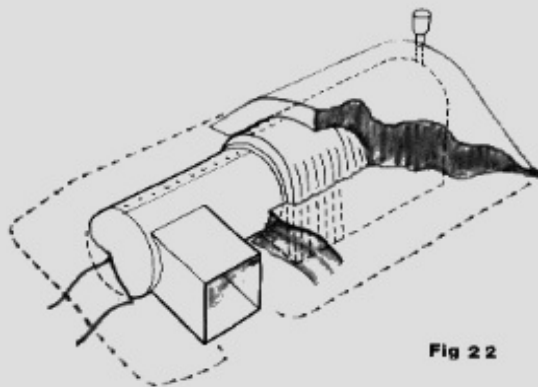


Outdoor shelter from a manufactured kit

This type of shelter is generally suitable where there is a garden or other convenient land near the living accommodation. It is formed by building a strong structural shell with prefabricated steel components bolted together to form a sealed room of sufficient size for up to six people. The shell is semi-sunk in the ground and covered entirely by earth from the excavation.

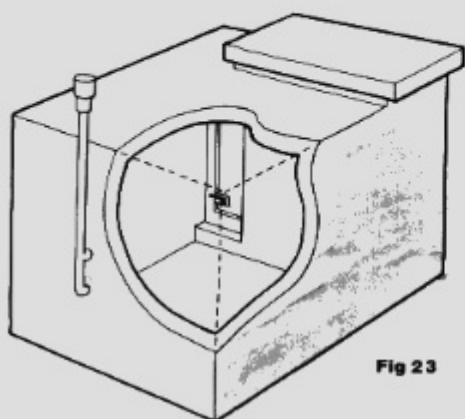
There will be variations both in materials and construction depending upon the costs. The assembly of the shell would take a full days work for two people. The excavation could, however, take at least a week for two people digging by hand.

While the kit could be bought in readiness and digging and installation done over a period of time the materials would have to be non-corrosive, and not likely to deteriorate.





Permanent purpose-built shelter

This reinforced concrete shelter must be erected by a building contractor under the guidance of a chartered civil/structural engineer. It should on no account be erected by unskilled or unsupervised labour. If properly constructed it will give a high degree of protection against both blast and radiation. It can be designed to accommodate from six to 12 people and the cost will vary accordingly.



Geiger Counters

Geiger counters are an essential means by which to detect radiation both in the surrounding atmosphere and on individuals or food and water sources. They may therefore become extremely useful for the UK community, especially if members are still present in the UK when the nuclear war itself happens. Geiger counters can be purchased from a variety of outlets and range in price from the relatively cheap to many hundreds of pounds.

| Model Name | Price | Image | Positives | Negatives | Link |
|---------------------------|-------|---|--|---|---|
| Smart Geiger FSG - 001 | £30 |  | Attaches to smartphone, doesn't require power source, highly portable, very cheap, audible | Only measure B and G Radiation, accuracy <30%, wide margin of error (+/- 15%) | https://goo.gl/xI5hKn |
| Radex RD1008 | £106 |  | Standalone, Reliable, not expensive, can detect sources like Stront 90, audible | Only seems to measure B and G radiation, only measures to 1 msV/hr | https://goo.gl/568DmZ |




| | | | | | |
|---------------|---------|---|--|---|---|
| Radex RD1503+ | £125.95 |  | Measures B, X & G radiation, Small, accurate, lasts 3-4 weeks on batteries, audible | More expensive than others, measure up to 9.99 msV/hr | https://goo.gl/yllZqg |
| DX-1 | £233.27 |  | Accurate, uses long lasting 9V battery, detects B, X & G radiation, analog display (?easier to repair), audible | Cost, slightly larger than other units, lesser range up to 0.1 msV/hr | https://goo.gl/aYWa1g |
| Radex RD1212 | £266.24 |  | Fast detection rate, B X & G radiation, highly accurate, software for computer, audible, measures up to 999 msV/hr | More costly than others | https://goo.gl/Zwyg1P |

Fig. 12: Geiger counters

Of all these units, the Radex RD1212 is probably the one that is best in terms of being able to accurately measure a wide range of radiation levels from all three major categories of ionizing radiation. It's cost may be prohibitive, so lesser alternatives such as the RD1503+ can be considered. However, they will not be able to accurately measure high levels of radiation and this will limit calculations about the time length of safe exposure in irradiated areas.

Anti - Radiation Supplements

The radioactive effects of most fallout cannot be counteracted with medications or supplements since it is ionizing beta or gamma radiation that penetrates the body and causes damage even without ingestion. Therefore for most radiation, the safest protection is to be physically distant or shielded from it. Potassium Iodide can protect the thyroid gland from radioactive iodine ingestion and Carcinisin and Radium Bromide homeopathy can help the body to ward off cell damage (see Medication section). Other supplements can potentially help the body to prevent damage to DNA but should not be seen as complete alternatives to the measures listed above,¹⁰ ie: shelter and physical protection:

Diet

- Ginger Stems - contain ginger rhizome
- Wild or corn mint, Mentha Arvensis
- Mango (Mangiifera Indica)
- Dark chocolate - Epicatechin a natural phenol and antioxidant. Not readily available in supplements.

- Inner peels of citrus fruits and grapefruits -Naringin, a flavonone, Hesperidin, Rutin and Pectin. Potent antioxidants and Pectin is a capable chelator of radioactive isotopes and should be considered taking in purified form if contaminated food has to be ingested.
- Coffee, lupin, fava beans, soy beans, kudzu, psoralea and the Flemingia Vestita and Flamingia Macrophylla plants found in southern and east Asia containing Genistein - a phytoestrogen and isoflavonone.
- Turmeric containing Curcumin. This compound is found in turmeric and is anti-inflammatory as well as having anti-tumour activity.¹¹ It may help in fortifying the body against radiation effects and other illnesses.
- Miso Soup - there is evidence that soybean and fungus (*Aspergillus Oryzae*) paste scavenges free radicals and prevents oxidative damage. It has been shown to lower rates of various malignancies.¹²
- Sodium Bicarbonate - purportedly binds uranium in soil samples. The applications of this within the body are unclear but it could hypothetically help to bind any ingested uranium and allow it to be excreted quicker.
- Alpha Lipoic Acid - this is a derivative of octanoic acid and is found in many food stuffs. It is an essential co-factor in multiple cellular enzyme systems and is part of DNA repair mechanisms also. Again, it is unclear whether above average levels improve DNA repair, but a lack of this factor in diet could be detrimental.

Vitamin & mineral supplements

- B Vitamins - important in maintenance of blood cell count.
- Vitamin C - an easily stored vitamin that contributes to cellular repair. The evidence for high levels of Vitamin C improving cellular protection are unclear but supplements to maintain at least normal levels seem sensible.
- Vitamin E and analogues - known to protect the body from oxidative damage.
- Zinc - known to help the elimination of heavy metals such as Cadmium, Aluminium and Lead.

Specialist Supplements

- Melatonin - has been shown to have significant whole body protective effects against ionising radiation. Animals exposed survived longer when administered melatonin.¹³ It does, however, cause significant drowsiness and should only be taken at night. Users can also become dependant on it for sleep.
- Dimethylsulfoxide - is a sulfur compound that has been shown to be radioprotective in mice exposed to gamma radiation.¹⁴ It may be worth considering taking this as a supplement during the war.
- Glutathione - an antioxidant that is available as a purified supplement.

Herbal Supplements

- Triphala - Ayurvedic mixture of three herbs: Amalaki (*emblica officinalis*), Haritaki (*terminalia chebula*) and Bibhitaki (*terminalia belerica*).
- Abana - herbal formulation supplement that contains multiple herbal extracts.
- Panax Ginseng - herbal extract, commonly available.
- Tinospora Cordifolia - heart leaved moonseed, supplements are sold online.
- Liv 52 - a herbal extract that is available in purified supplements.
- Septilin - a herbal mixture.

Present in certain geographic locations only

- Hippophae rhamnoides - common sea buckthorn
- Pilea Microphylla - Rockweed plant, most commonly found in southern United States and Central America.
- Mentha Piperita - a hybrid mint plant indigenous to Europe and the Middle East.
- Aegle Marmelos - a tree native to parts of South Asia.
- Amaranthus paniculatus - foxtail amaranthus plant.
- Agaratum Conyzoides - billygoat weed, common to Brazil. Is toxic in some doses, causing liver lesions.
- Vicenin - antioxidant flavonoid, does not appear to be available in purified form commercially.
- Myristica Fragrans - evergreen tree indigenous to the Spice Islands.
- Emblica officinalis - Indian Gooseberry, indigenous to South Asia.

Part 5: Food

The minimum caloric intake required to maintain body-weight varies between gender and existing body size. The UK Department of Health estimates that the average is 1950 calories per day for women and 2550 calories per day for men. Provisions of food need to take these minimum caloric requirements into account and also need to ensure that minimum daily levels of vitamins and essential compounds are met. Excess supplements of certain compounds, such as folic acid for pregnant women should also be considered.

Some kind of provision to fulfil the above dietary requirements will need to be made. The Ahmadiyya community is used to providing food for around 40,000 people each year at annual gatherings, using a combination of lamb, chicken, lentil and other dishes. A similar system of provision, though potentially for a period of several weeks or even months, would need to be instated. Ordering large quantities of these foodstuffs and storing them beforehand is likely to prove useful in the case of an international emergency when stocks may run low. Disaster relief rations and military surplus rations may also be very useful in supplementing food stores. It is possible that these could be ordered in bulk through Humanity First or their contacts. Rations could also be stored by each family or travelling group and could be used as an emergency supply, especially whilst travelling. The stocks of each family would also be important to pool together, as per the Sunnah.

Essential Seeds

There is a large variety of crop and flowering plant species in the world that will come under direct threat in the event of a nuclear holocaust, even one that is largely limited to the northern mid-latitudes. There are currently multiple seed repositories across the globe and a single 'doomsday' vault, which currently houses 865,000 seed samples from all over the world but has the ability to hold 2.5 billion samples.¹⁵ In reality, it may be difficult for members of the Ahmadiyya Muslim Community to gain access to or store seeds, but there are some measures that could be taken:

- a) For the leadership of the community to contact the operators of the Svalbard Seed Vault in Norway (and other northern hemispheric institutions) and advise them to prepare for a northern hemispheric nuclear war, ensuring that the vault has adequate staffing and backup electricity to survive such an eventuality.
- b) To contact other seed banks such as the Millennium Seed Bank in Kew, the Navdanya seed bank in India, the National Centre for Genetic Resources in Colorado and the Vavilov Research Institute in Russia¹⁶ as well as seed banks in Africa, to advise them to prepare for such an eventuality.

Table of Essential Intake¹⁷

| | Adult Male | Adult Female/ Pregnant/Lactating | 14-18 years | 9-13 years | 4-8 years | 1-3 years |
|------------------|--------------------|-------------------------------------|-------------|------------|-----------|-----------|
| Calories | 2550 | 1950 | | | | |
| Vitamin A IU | 3000 | 3000 | 1000 | 2000 | 1300 | 1000 |
| Folate mcg | 400 | 400/600/500 | 400 | 300 | 200 | 150 |
| Vitamin C mg | 90 | 75/85/120 | 75 | 45 | 25 | 15 |
| Vitamin D IU | 600-800 (>71 y/o) | 600-800 (>71y/o) | 600 | 600 | 600 | 600 |
| Calcium mg | 1000-1200 (>51y/o) | 1000-1200 (>51y/o) | 1300 | 1300 | 1000 | 700 |
| Iron mg | 8 | 18/27/9 | 11 - 15 | 8 | 10 | 7 |
| Vitamin E IU | 22 | 22 | 22 | 16 | 10 | 9 |
| Vitamin K mcg | 120 | 90 | 75 | 60 | 55 | 30 |
| Thiamin mg | 1.2 | 1.1/1.4/1.4 | 1.2 | 0.9 | 0.6 | 0.5 |
| Riboflavin mg | 1.3 | 1.1/1.4/1.6 | 1.3 | 0.9 | 0.6 | 0.5 |
| Niacin mg | 16 | 14/18/17 | 16 | 12 | 8 | 6 |
| Vitamin B6 mg | 1.3-1.7 (>51y/o) | 1.3/1.9/2 | 1.3 | 1 | 0.6 | 0.5 |
| Vitamin B12 mcg | 2.4 | 2.4/2.6/2.8 | 2.4 | 1.8 | 1.2 | 0.9 |
| Pantoth. Acid mg | 5 | 5/6/7 | 5 | 4 | 3 | 2 |
| Biotin mcg | 30 | 30/30/35 | 25 | 20 | 12 | 8 |
| Choline mg | 550 | 425/450/550 | 550 | 375 | 250 | 200 |
| Chromium mcg | 35-30 (>50y/o) | 25/30/45 | 35 | 25 | 15 | 11 |
| Copper mcg | 900 | 900/1000/1300 | 890 | 700 | 440 | 340 |
| Fluoride mg | 4 | 3 | 3 | 2 | 1 | 0.7 |
| Iodine mcg | 150 | 150/220/290 | 150 | 120 | 90 | 90 |
| Magnesium mg | 400-420 (>30y/o) | 310/320/320 | 410 | 240 | 130 | 80 |
| Manganese mg | 2.3 | 1.8/2/2.6 | 2.2 | 1.9 | 1.5 | 1.2 |
| Molybdenum mcg | 45 | 45/50/50 | 43 | 34 | 22 | 17 |
| Phosphorus mg | 700 | 700 | 1250 | 1250 | 500 | 460 |
| Potassium mg | 4.7 | 4.7/4.7/5.1 | 4.7 | 4.5 | 3.8 | 3.0 |
| Selenium mcg | 55 | 55/60/70 | 55 | 40 | 30 | 20 |
| Zinc mg | 11 | 8/11/12 | 11 | 8 | 5 | 3 |

Table of Essential Food Items

| Item | Quantity | Link |
|---------------------------------|----------|---|
| Rice (25kg) | 1 | |
| Flour (20kg) | 1 | |
| Pasta (15kg) | 1 | |
| Soup (Cans or Sachets) | 30+ | |
| Canned Meat (Long Life) | 10+ | |
| Dried Meat (Pack) | 10 | |
| Canned Tuna | 20+ | |
| Canned Chicken (Long Life) | 10+ | |
| Canned Vegetables (Long Life) | 10+ | |
| Dried Fruit and Dates | 1Kg | |
| Cane Sugar (500g pack) | 1 | |
| Nuts | 500g | |
| Lentils | 5Kg | |
| Beans (Cans) | 10 | |
| Oil (10L) | 1 | |
| Cereal | 5+ | |
| Spreads - Peanut Butter/Nutella | 2 | |
| Pitta Bread (6 pack) | 20 | |
| | | |
| ALSO TO BE CONSIDERED | | |
| Freeze Dried Food | 20+ | https://bit.ly/1lQrTJW |
| Dry Roasted Chick Peas (250g) | 1 | |
| Chocolate / High Energy Bars | 20 | |
| Edamame Beans (250g) | 1 | |
| | | |
| RADIOPROTECTIVE FOODS | | |
| Ginger | 10+ | |
| Dark Chocolate Large Bars | 10+ | |
| Mint | 10+ | |
| Citrus Fruits (Skin) | 30+ | |

| | | |
|--|-----|--|
| Coffee (Large Packs) | 20+ | |
| Fava Beans/Soy Beans | | |
| Miso Soup | | |
| Vitamin, Specialist & Herbal Supplements | | |

Part 6: Water

The minimum requirement of drinking water per day is between 1.5 and 2 litres. To sustain an individual for a week would require between 10.5 and 14 litres, at the minimum. If the UK community is rounded up to approximately 40,000 people, this means an absolute minimum potable water requirement to prevent dehydration and death of around 80,000 litres per day.

Bearing in mind that pregnant and lactating women require 0.3 - 0.7 litres more per day and that cooking, washing and hygiene also require significant quantities of water, a minimum safe level for short term survival could be estimated around 1.2 -1.5 million litres week.

If the community remains in the United Kingdom, access to adequate levels of water could be arranged through existing water provision from the local water board (assuming that such installations would still be functioning during and after a nuclear war - something of which there is no guarantee), or through pre-bought and stored water. The latter method could not, in any reasonable sense, provide enough water. If the community has to migrate or the stored water is unable to fulfil demand or becomes polluted, water collected during the crisis may need to be purified or desalinated in order to become potable. Multiple simultaneous approaches are likely to be required.

It should also be remembered that in the immediate aftermath of a nuclear explosion, water sources will likely become contaminated to a greater or lesser extent by radiation. This poses a significant threat. As such, in the immediate 24-72 hour period at least, after a nuclear explosion, water should be sourced from pre-bought and stored sources, rather than from the environment. Even after this period, Geiger counters should be used to analyse all natural sources.

Water Storage

Potable water will need to be stored before events unfold, when access to water supplies are still relatively plentiful. The community may already have links with suppliers of wholesale water tanks that should be leveraged to buy at discounted rates. Examples of other companies that sell water containers are:

- Direct Water Tanks - <https://goo.gl/kPMWBq>
- Tanks - Direct - <https://goo.gl/x9r0bn>
- Kingfisher Direct - <https://goo.gl/Y2rsGM>

Water sources near UK gathering sites

In the event that additional water is required during a crisis period and it is not available from the water board or through bottled water supplies, water will have to be sourced from the environment. In the immediate vicinity of Hadiqat ul Mahdi, is the source of the River Wey, in nearby Alton. The River Wey and its tributaries also flow in close proximity to the Islamabad site.

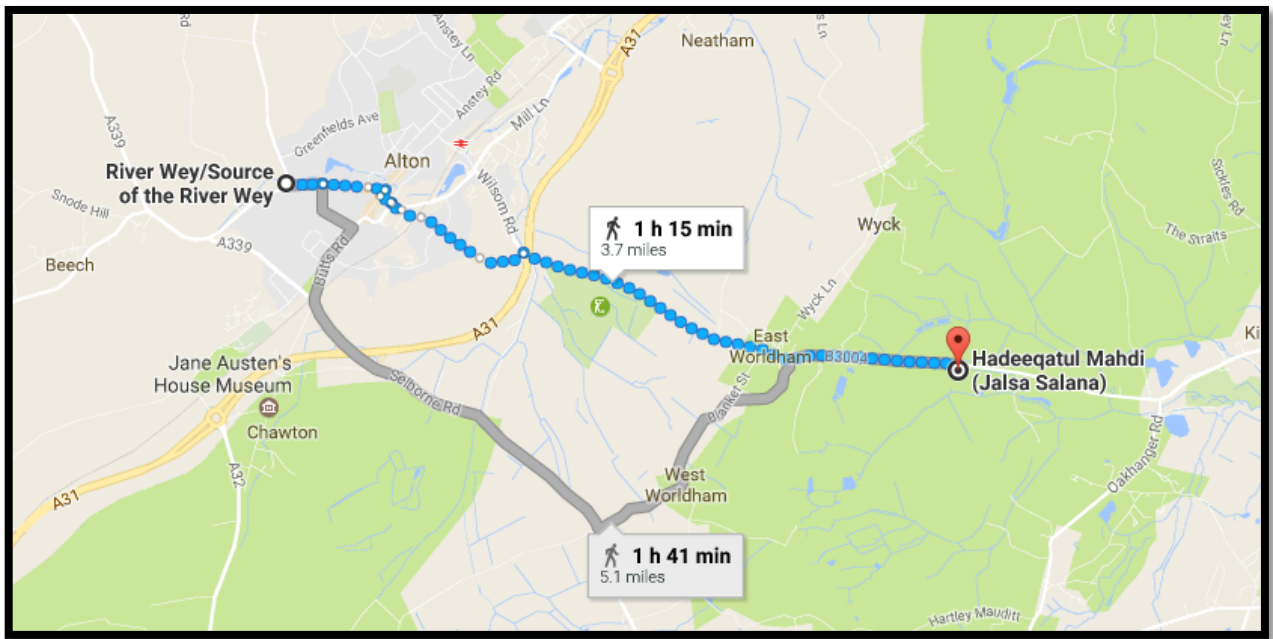


Fig. 13: Distance from source of river Wey to HM site

Rain-water can also be collected although this is unlikely to yield significant volumes of water. The average monthly rainfall is usually between 70 - 120mm per month. Over a period of a few weeks, unless there is an unusually significant and sustained downpour, an average volume of rain could not produce enough water to make a significant contribution towards the community's needs.

The nearest access to fresh seawater, which would need to be desalinated and purified, is likely to be from the south coast. It is approximately 37 miles or 45 minutes drive from the UK gathering sites to Portsmouth, the nearest major port with good road access.

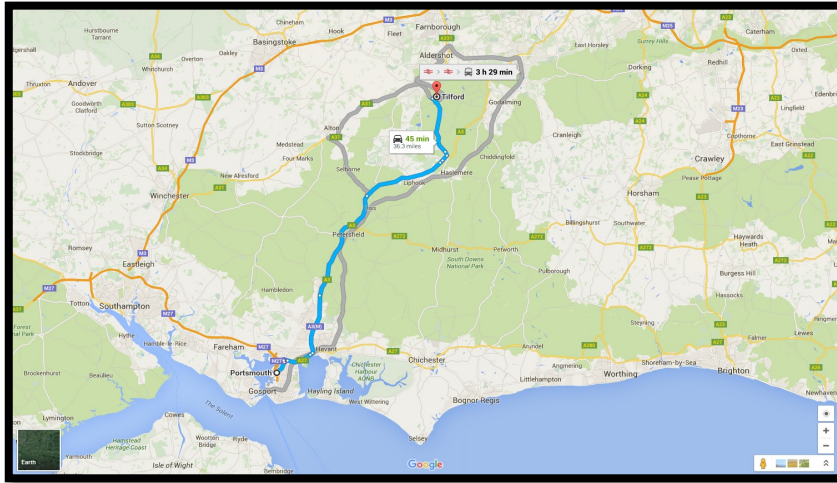


Fig. 14: Distance from sea to HM site

It should also be remembered that water can be accessed via the water table from ground water. For this purposes, wells would need to be installed, and in this regard, the role of IAAAE and Humanity First may be indispensable. There are, in addition, bore-hole drilling companies situated approximately 20 miles from the Hadeeqat ul Mahdi site.

The only proviso with use of groundwater drilling, would be the risk posed by fallout on groundwater sources. For this reason, groundwater must be analysed prior to use, for radioactive decay, using the Geiger counters mentioned earlier.

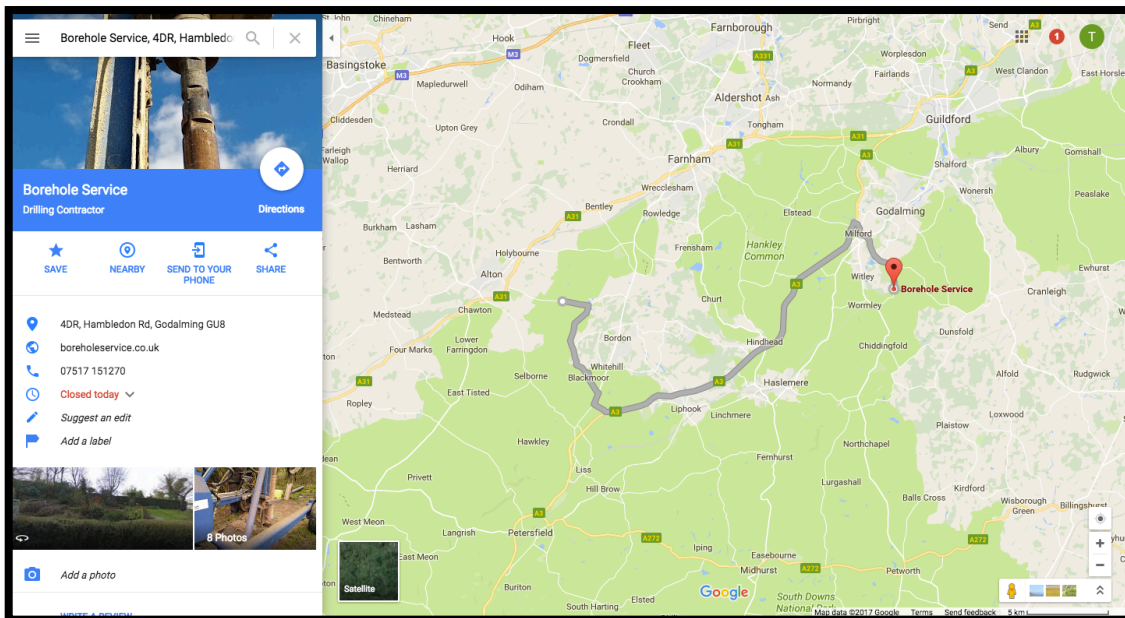


Fig. 15: Distance from HM site to Bore hole drilling company

Water Purification Methods

Ceramic Water Filters

Physical water purifiers act through different filtration mechanisms to make water potable. The gravity ceramic filter kit costs around £35 in total and requires putting together a water filter kit with two buckets on top of each other, with the ceramic filter cleaning water that is flowing from the top bucket to one below. It is able to remove 100% of dangerous micro-organisms and most other chemicals and compounds. These ceramic filters would need to be bought and stored beforehand.

Gravity Ceramic Water Purifier - <https://goo.gl/vCjQs0>

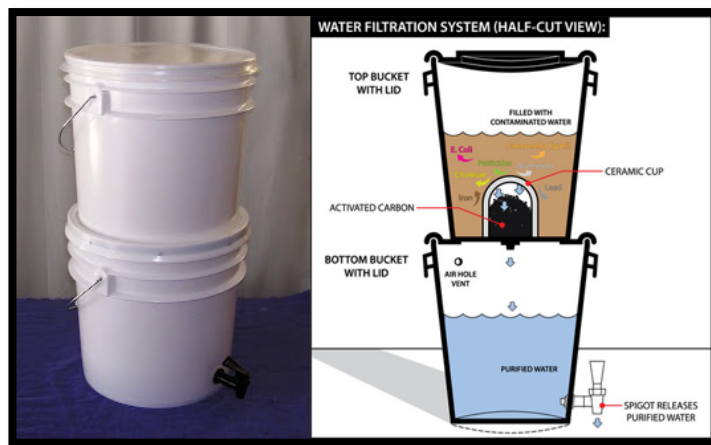


Fig. 16: Ceramic water filter cross section

Low cost ceramic water filters made of clay, water and rice husk with a silver nitrate coating can be made in large quantities at very low cost and are currently being used in the third world. They are able to produce between 20 - 30 litres per day of water that is rated as low risk by the World Health Organisation. Humanity First may be able to source large numbers of these and use them in gravity based filtration systems.



Fig. 17: Tools required for low cost ceramic filters

Personal Water Filters

Smaller individual water filters that require manual operation to make water potable can also be used and will be a low cost addition to the list of water purifiers available. Several companies make and distribute these including:

- Uvistar Water Purifiers - <https://goo.gl/xi6AJA>
- Lifestraw Water Purifiers - <https://goo.gl/Gs3qu1>
- Forfar Water Purifier - <https://goo.gl/4uGh9T>
- Sunix Water Purifier - <https://goo.gl/MFXowu>
- First Need Water Purifier - <https://goo.gl/HP6wNF>

Water Sterilisation Tablets

One Sodium Dichloroisocyanurate tablet is able to chlorinate a litre of water and make it safe to drink, killing harmful organisms. Tablets are very cheap (less than £3 for 50 tablets) and could easily be stockpiled in vast quantities as an adjunct to other measures or as a last resort if other measures fail.

Water Desalination Kits

Desalination of water can be made by a homemade kit consisting of a covered solid metal kettle connected to copper tubing in a descending spiral that is coiled within a bucket of cooler water. The water in the covered metal kettle is brought to the boil and this water travels through the copper piping as steam and is cooled by the cool water in the bucket. The cool water in the bucket needs to be stirred and replaced when it becomes hot or the steam inside the tubing will not condense. A hole allows the end of the copper tubing out of the bottom of the bucket and produces desalinated water. Up to 2 litres of water per hour can be produced. The kit consists of: Metal kettle, annealed copper tubing, copper fittings to allow coils to join together and plastic buckets.



Fig. 18: Inside of a constructed desalination kit

Avoiding Irradiated Water

Radiation spreads through dust or solid materials that fall outwards (hence the term 'fallout') after the initial shockwaves have passed. The width of distribution of radioactive

material depends on the direction and strength of prevailing winds at the time. Multiple radioactive isotopes are expected during fallout and of these, Iodine -131 is most readily distributed in the short term through food and water. It can therefore affect livestock, the milk produced by livestock and can also accumulate in human thyroid glands (due to the natural uptake of Iodine by the thyroid in order to produce thyroid hormones) and breast milk, causing cellular damage resulting in inflammation, destruction or malignancy.

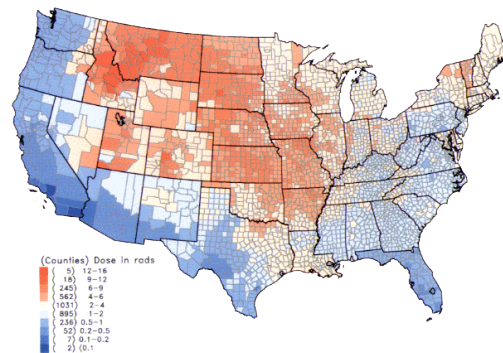


Fig. 19: Thyroid cancer incidence, US: Per capita thyroid doses in the continental United States resulting from all exposure routes from all atmospheric nuclear tests conducted at the Nevada test site from 1951 - 1962. A Centres for Disease Control and Prevention/National Cancer Institute study claims that nuclear fallout might have led to approximately 11,000 excess deaths, most caused by thyroid cancer linked to exposure to Iodine - 131

These harmful effects can be mitigated by avoiding water sourced after a nuclear event and using bottled water or tap/treated water that was stored in sealed containers before fallout. If water stores are not sufficient and water has to be drunk then Potassium Iodide tablets can prevent radioactive iodine uptake and damage. These work by preferentially binding non-radioactive Iodine 127 to glands, preventing uptake of radioactive iodine. FDA approved dosages of Potassium Iodide depend on the specific compound used and vary according to age:

| Age | KI in mg | KIO ₃ in mg |
|-------------------|----------|------------------------|
| <1 month old | 16 | 21 |
| 1 - 36 months old | 32 | 42 |
| 3 - 12 years old | 65 | 85 |
| > 12 years old | 130 | 170 |

Fig. 18: Table of KI requirements according to age

The ingestion of iodine can cause worsening of untreated hypothyroidism and hyperthyroidism (Jodd-Basedow phenomenon) in people with abnormal thyroid glands that are not under full control of the pituitary gland (Graves' disease, toxic multinodular goitre or thyroid adenoma). Those with normal thyroid glands often experience a transient hypothyroidism upon ingestion of excess iodine (Wolff-Chaikoff effect), which usually

resolves. Other side effects of prophylactic iodine ingestion are sialadenitis, allergies, rashes and exacerbation of rare conditions such as dermatitis herpetiformis and hypocomplementemic vasculitis.

An alternative to potassium iodide tablets would be the addition of potassium perchlorate to the water supply. This compound acts as a competitive inhibitor to the uptake of any iodide to the thyroid gland and thus causes goitres and hypothyroidism. However in a large-scale radioiodine contamination, infusing water sources with perchlorate levels of approximately 250 ppm of perchlorate ions in water (7.15mg perchlorate per kg body weight) would be preferable to the carcinogenic effects of radiation.

Essential Fluids & Water Purification Equipment

| Item | Quantity | Link |
|-------------------------------------|--------------|--|
| Water Storage Tank (500 Litres min) | 1 | www.tanks-direct.co.uk |
| Water Purification Tablets | 200 | http://ebay.eu/1NFY2yb |
| Tea bags (240 packs) | 1 | |
| Long Life UHT Milk 1 Litre | 40 | http://bit.ly/1meX0zl |
| | | |
| ALSO TO BE CONSIDERED | | |
| Bottled Water (5 Litres) | | |
| Energy Drinks | 10+ | |
| Powdered Milk (Nido) | 5 | |
| Milk for babies - Aptimil, SMA | | |
| Water Filters (personal / ceramic) | 1 per person | |
| Water desalination kits | 1 per family | |

Part 7: Clothing, Other Essentials & Protective Equipment

Access to clothing will likely be variable. Members of the community will be advised to bring ten days to two week's worth of essential clothing during the evacuation. Non essential items outside of that necessary transport and survival may be best left in storage or carried only if there is capacity, but not at the expense of helping those without transport to reach the UK gathering sites or the exit points from the UK.




| | |
|-------------------------------------|---|
| <i>Essential Clothing</i> | |
| Trousers/Jeans/Bottoms | Tops |
| Overcoats/Raincoats | Scarves/Hijabs |
| Shoes | Hiking Boots |
| Night clothing | Sandals |
| Towels | Wallet/Handbag |
| <i>Other Essential Items</i> | |
| Passport | Driving License |
| AIMS ID card | Phone & chargers |
| Computers & chargers | Curriculum Vitae, certificates (or transcripts for those still working towards full qualifications) and relevant references for employment. |

Fig. 20: Essential clothing items



Protective Equipment


Protective equipment may not be required for members of the community if we are saved geographically from debris and fallout effects. Nevertheless, it seems prudent, whilst there is still availability of resources to stock up, in case of individual members of teams having to go into irradiated or otherwise dangerous areas for any reason.

The mainstay of physical protection is barrier clothing such as chemical suits, gloves and boots. Respirators are also especially important and should be nuclear, biological and chemical (NBC) certified. It should be borne in mind that respirators should only be used after the filters are attached (people have suffocated from putting on respirators without filters) and that respirators need to be practiced with, since they can be especially difficult to put on under pressure. Men who have to wear them should remain clean-shaven or keep their beards very short in order to ensure a good seal. Spare filters manufactured to the same NBC standard should also be bought and stored.




| Price | Model Name | Image | Positives | Negatives | Link |
|---------|--------------------|--|--|-----------|---|
| £85 | Forsheda A4 |  | NBC certified < 1 pound weight Standard 40mm filters Comes with 1 filter | | https://goo.gl/gkDMbH |
| £139.01 | SGE 400/3 NBC |  | NBC standard Choice of 3 port sites Anti fog system Large visor Heat and impact resistant Comes with 1 NBC filter | Cost | https://goo.gl/ckHTNL |
| £213.90 | SGE 400/3 Infinity |  | Same as above Comes with military issue drinking canteen for use with port | Cost | https://goo.gl/qwJDzE |

Of the above, the Forsheda A4 and SGE 400/3 NBC seem to be the most cost effective.

| Price | Model Name | Image | Positives | Negatives | Link |
|--------|------------------------------|---|---|-------------------------------------|--|
| £17.99 | British Army Mark 1 NBC Suit |  | Lightweight Activated charcoal inner layer Water resistant outer layer Front pouch | Material not as resistant as others | https://goo.gl/Be5EgE https://goo.gl/lwxaiu |
| £25.99 | British Army NBC Mark 4 Suit |  | Possibly better fitting and thicker material than Mark 1 Activated charcoal inner layer | No front pouch like Mark 1 | https://goo.gl/tJAuZP |

| | | | | | |
|-----|----------------------|---|---|---|---|
| £30 | German Nato NBC Suit |  | Full suit with built in respirator cover Rubbery material possibly easier to clean and more durable Comes with gloves and boots | Won't work with full visor face masks. Boots may not be correct size | https://goo.gl/E3zfeR |
|-----|----------------------|---|---|---|---|

Both the German and British Army suits could work well.

| Price | Model Name | Image | Positives | Negatives | Link |
|--------|---|---|--|---------------------------------------|---|
| £1.95 | British Army NBC Gloves |  | NBC military standard | Available in sizes 8 - 10 | https://goo.gl/Sj5Dty |
| £5.00 | British Army NBC chemical warfare boots |  | NBC standard Go over regular shoes | Users may prefer wellies to overboots | https://goo.gl/PQ8ZXR |
| £12.49 | Dunlop Universal Black 43 |  | Good quality and relatively cheap wellington boot, likely to save feet from most chemicals and materials | Users may prefer overboots | https://goo.gl/zlUHQE |

Wellington Boots should be selected as per fit and preference. Regular shoes are not recommended.

Manual Washing Machines

If the community stays in the UK for longer than a few weeks, or for those who are caught in the UK after a nuclear exchange, there will be a need to wash clothes in order to maintain standards of hygiene and prevent illness. There are not many washing machines that are designed to be manually powered, which have good reviews. There are a few in development that will be available at the end of 2017.


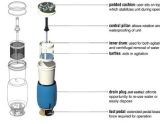

| Name | Image | Advantages | Disadvantages | Price | Link |
|--------------|---|--|----------------------------------|-------|---|
| Wonderwash |  | Small Portable | Cannot wash many clothes at once | £40 | https://goo.gl/053mXX |
| Giradora |  | Portable Can hold more clothes | Not yet commercially available | £40 | https://goo.gl/jf9auR |
| Yirego Drumi |  | Portable Excellent reviews Can hold more clothes | | £200 | https://goo.gl/T1DKch |

Table of Essential Clothing & Equipment

| Item | Quantity | Link |
|------------------------|----------|------|
| Underwear | 10 + | |
| Socks | 10 + | |
| Trousers/Jeans/Bottoms | 5 + | |
| Tops | 5 + | |
| Overcoats / Raincoats | 5 + | |
| Scarves / Hijabs | 5 + | |
| Shoes | 2 + | |
| Hiking Boots | 1 | |
| Night Clothing | 3 + | |
| Sandals | 1 + | |
| Towels | 3 + | |

| | | |
|------------------------------|--------------|--|
| <i>ALSO TO BE CONSIDERED</i> | | |
| Respirator + NBC filters | 1 per person | |
| NBC Suit & gloves | 1 per person | |
| Wellington Boots | 1 per person | |

Table of Essential Sanitary Items

| Item | Quantity | Link |
|-------------------------------------|-----------------|-------------|
| Antibacterial gels (hand sanitizer) | 10+ | |
| Wipes (Pack) | 20+ | |
| Toilet Rolls | 20+ | |
| Soap | 5+ | |
| All in one shower gel | 5 | |
| Feminine Products | - | |
| Nappies | - | |
| Nappy Sacks (pack of 200) | 1 | |
| Carrier Bags | 30 | |
| Toothbrushes | | |
| Toothpaste | 5 | |
| Disposable Shaving Blades | - | |
| Detergent (Pack) | 1 | |
| Anti-bacterial spray (Dettol) | 2 | |
| Sponges, Cleaning Cloths | 5+ | |
| Earplugs & Eye Covers | 5 + | |
| | | |

| ALSO TO BE CONSIDERED | | |
|--------------------------|---|--|
| Portable Toilet | 1 | |
| Manual Washing Machine | 1 | |

Part 8: Medications, Homeopathics & Vaccinations

European Health Insurance

Members of the community should also apply for a European Health Insurance Card before the scheme expires.

Long term medications

Many members of the community will likely be on long term medications. Many of these will be designed to prevent the occurrence or recurrence of diseases like heart disease or diabetes in the future but will not be imminently essential to survival in the short term. A proportion of those taking medications will need them in order to be able to survive in the short term. An example of such individuals are those on thyroxine for hypothyroidism, those who use insulin to control type 1 diabetes or those who are on antibiotics as prophylaxis for immunodeficiency. It should be borne in mind that many medications, such as insulin, require storage under controlled temperatures in fridges. For this reason, medication considerations should be looked at in light of potential energy resources, as outlined later.

Since access to health services will be lost when the community relocates, it will be essential to have these drugs available. Five methods of procurement are outlined:

1. Each individual should explain to their GP that they will be travelling for a significant period without access to a pharmacy and that they would like a long term supply of their regular antibiotics (3 months minimum is recommended, 6 months is ideal).
2. Ahmadi manufacturing and distributing - e.g. TilloMed Pharmaceutical Company (owned by Mr Musharraf Ghinai, Cambridge Qiadat, UK).
3. Local pharmacies and outlets in the country of emigration.
4. Humanity First may be able to provide some medicines for those who are unable to procure them by other means, from emergency stocks.
5. Members of the community themselves may be able to share medications and also give medications to others if they no longer need them. However, given the varying doses and variants of medications, this method should be a last resort.

Homeopathic Anti-Radiation¹⁸

Homeopathic medication has been used effectively by members of the Ahmadiyya Muslim Community since the time of the 2nd Khalifa and moreso since the time of the fourth head

of the community. The current Khalifa has also advocated for Homoeopathy and promoted it.

In this regard, Radium Bromide and Carcinisin are homeopathic remedies with protective effects against the carcinogenic effects of radiation, by themselves being highly diluted forms of radioactive materials.

Dosage: Carcinisin CM (1M for children under the age of 12) for 1 week, Radium Bromide CM for 1 week (1M for children under the age of 12) alternating weekly for 6 weeks in total to complete a treatment course. The treatment course should be completed up to twice a year (6 monthly).

Other prophylactic medications and supplies¹⁹

Certain regions of the world carry significant risk of diseases that are endemic to those areas. The most common of these that can become problematic when travelling to other countries is malaria.

Ghana:

Ghana is a high-risk country for malaria and schistosomiasis. Recommended precautions against malaria are:

- Anti - malarials: Malarone (Atovaquone & Proguanil) or Doxycycline or Mefloquine
- Use of mosquito nets at night
- Covering up arms and legs especially after sunset
- Using insect repellents

Recommended precautions against schistosomiasis are:

- Avoid activities in affected regions that involve direct water contact (swimming, paddling, diving, snorkelling, canoeing, water sports).
- Only swim in chlorinated swimming pools or safe sea water
- Check to ensure water facilities in accommodation / recreational facilities have treated water
- Only drink bottled water
- Have regular check ups and do not take treatment before 8 weeks after exposure

Southern Spain e.g. Granada:

The south of Spain is not an area usually affected by Malaria.

South America, e.g. Argentina:

Argentina carries a small risk of malaria and dengue fever, both of which are transmitted by mosquitos. The risk of malaria in Argentina is low and limited to rural provinces, namely Oran and San Martin in the Salta Province and the Corrientes and Misiones provinces. Anti-malarial prophylaxis is not usually recommended.

- Recommended precautions against both malaria and dengue fever are:
- Use of mosquito nets at night
- Covering up arms and legs especially after sunset
- Using insect repellents

Australia:

Australia has the risk of pertussis, Japanese encephalitis and dengue fever. Pertussis is normally vaccinated against in the UK as part of the DTaP vaccine and boosters are not generally recommended. Those wishing to have a booster can have one on arrival in Australia. Japanese Encephalitis can be vaccinated against, whilst dengue fever cannot. They are both carried by mosquitos and therefore prophylaxis against both is the same:

- Use of mosquito nets at night
- Covering up arms and legs especially after sunset
- Using insect repellents

New Zealand:

New Zealand does not require prophylaxis

General Vaccinations

All members of the Ahmadiyya Muslim Community UK should be up to date with their UK immunisation schedule. This will also cover them for some of the diseases that they may encounter abroad. Those diseases that are not covered by the UK immunisation schedule would have to be supplemented before leaving (see section below).

UK Childhood Immunisation Schedule

| | DTaP/ IPV/ Hib | PCV | Rota virus | MenB | MenC | Hib | MMR | Flu | dTaP/ IPV | BCG | Td/ IPV | HPV |
|--------------|----------------------|-----|---------------|------|------|-----|-----|-----|--------------|-----|------------|-----|
| At birth * | | | | | | | | | | ✓ | | |
| 2 months | ✓ | ✓ | ✓ | ✓ | | | | | | | | |
| 3 months | ✓ | | ✓ | | ✓ | | | | | | | |
| 4 months | ✓ | ✓ | | ✓ | | | | | | | | |
| 12-13 months | | ✓ | | ✓ | ✓ | ✓ | ✓ | | | | | |
| 2-4 years | | | | | | | | ✓ | | | | |
| 3-5 years | | | | | | | ✓ | | ✓ | | | |
| 12-13 years | | | | | | | | | | | | ✓ |
| 14 years | | | | | ✓ | | | | | | ✓ | |

Key:

- **DTaP/IPV/Hib** - Diphtheria - Tetanus - acellular Pertussis - inactivated Poliomyelitis - Haemophilus influenzae type b vaccine.
- **Flu** - Influenza, either live nasal preparation or inactivated injectable vaccine.
- **MenB** - Meningococcal serogroup B vaccine.
- **MenC** - Meningococcal serogroup C conjugate vaccine.
- **PCV** - Pneumococcal conjugate vaccine.
- **MMR** - Measles, Mumps, and Rubella vaccine.
- **dTaP/IPV** - low dose Diphtheria - tetanus - acellular Pertussis - inactivated Poliomyelitis.
- **BCG** - Bacillus Calmette-Guerin (for tuberculosis).
- **Td/IPV** - Tetanus - low dose Diphtheria - inactivated Poliomyelitis.
- **HPV** - Human papillomavirus vaccine.

Fig. 22: Childhood immunisation vaccine schedule²⁰

Travel Vaccinations

Some vaccinations are strongly advised, whilst others are simply recommended for prolonged periods of stay. It is likely to be safer for the community as a whole if both the vaccinations that are strongly advised and those that are recommended are taken before leaving.

| Vaccination | Method | Number of doses | Latest date to have vaccine | Ghana | Southern Spain, e.g. Granada | South America, e.g. Argentina | New Zealand | Australia |
|---------------------------------|---|-------------------------------|-----------------------------|-------|------------------------------|-------------------------------|-------------|-----------|
| Cholera | Oral liquid 2 years immunity after 2 doses (1-6 weeks apart) if older than 6 years. 6 months immunity after 3 doses if younger than 6 years old. | 1 oral liquid | 2 weeks before travel | ✓ | | | | |
| Diphtheria | Diphtheria, tetanus & polio single injection. Single booster if had as child, may need longer course if not. | 1 booster i | ? | ✓ | | | | |
| Hepatitis A | Single injection (alone or with Hep B or Typhoid Fever) gives immunity for 1 year. Booster dose at 6-12 months gives 20 year protection. | 1 injection | 2 weeks before travel | ✓ | | ✓ | | |
| Hepatitis B | 3 injections over 4 - 6 months, with 5 year booster if at risk. Protects until booster. | 3 injections | 2 months before travel | ✓ | ✓ | | | |
| Meningococcal Meningitis | Single injection quadrivalent vaccine gives protection against four strains. Needed even if had Men B/C vaccine as a child. | 1 injection | 3 weeks before travel | ✓ | | | | |
| Rabies | Three injections given on day 1, 7 and 21/28, | 3 injections | 1 month before travel | ✓ | | ✓ | | |
| Tetanus | As part of DTaP vaccine. | 1 booster | ? | ✓ | ✓ | ✓ | ✓ | ✓ |
| Typhoid | Single dose injection or three capsules taken on alternate days. Booster needed after 3 years. | 1 injection or three capsules | 2 weeks before travel | ✓ | | ✓ | | |
| Yellow Fever | Single Injection | 1 injection | 10 days before travel | ✓ | | ✓ | | |
| Japanese Encephalitis | Injections given on day 1 and day 28 | 2 injections | 1 month before travel | | | | | ✓ |

Fig. 23: Travel Vaccinations by destination

Fire & Medical Emergencies

Depending on how long the community stays at the UK gathering site prior to evacuation, an emergency medical ward and fire response may need to be arranged, since it is unclear if national services will still be functioning.

The essential functions that a medical ward will need to be able to discharge:

1. Dealing with common complaints such as minor injuries and self-limiting ailments
2. Stabilising patients with trauma
3. Delivering children if needed
4. Treating radiation sickness and poisoning

The coordination of organisations such as the AMMA and Humanity First in this regard, would be essential. Any fire response unit needs to have access to significant quantities of water.

It may be best for this to be organised and run by those members of the community who work as firemen. Both these institutions would likely best be organised and run by those members of the community who work as health professionals or firemen, respectively.

Table of Essential Medical Supplies & First Aid Equipment

| Item | Quantity | Link |
|-------------------------------------|----------------------------|------|
| Long term meds (6 months worth min) | Per individual | |
| Potassium Iodide | Per individual | |
| Carcinosin & Radium Bromide | As prescribed | |
| Anti Malarial Medications | 4 weeks minimum per person | |
| Mosquito nets | 1 per person | |
| Antiseptic Spray / Wipes | 10+ | |
| Gauze | 10+ | |
| Non stick dressings | 10+ | |
| Waterproof plasters | 10+ | |
| Wound dressings | 5+ | |
| Adhesive Strips (steristrips) | 10+ | |
| Triangular Bandages (Slings) | 5+ | |
| Crepe Bandages | 5+ | |
| Surgical Tape (Micropore) | 10+ | |
| Sterile Scissors | | |

| | | |
|------------------------------------|-----|--|
| Safety Pins | 10+ | |
| Tweezers | | |
| Thermometer | | |
| Sterile Gloves | 10+ | |
| Resuscitation Face Shield | | |
| Eyewash Solution + eye pads | | |
| Foil Blanket + Body Warmer | | |
| Medicines including antibiotics | | |
| Painkillers | | |
| Anti - diarrhoea medication pack | 5 | |
| Dioralyte pack | 5 | |
| Antiseptic creams | 5 | |
| Lemsip pack of 10 sachets | 2 | |
| Vicks Vaporub | 1 | |
| Bonjela | 1 | |
| Suturing Kit (if trained) | | |
| Intubation Kit (if trained) | | |
| Stretcher (if trained) | | |
| Immobilisation Collar (if trained) | | |
| First Aid Manual | | |

NB. For recommended medicines and vaccinations for the evacuation, please see the relevant sections

Part 9: Electricity, Heating & Transport

Lack of electricity is a very real concern for the community if it is decided to remain in the UK during the nuclear exchange. It is likely that many areas in the UK will suffer electricity outages as a result of either generating stations being destroyed, unmanned or not fuelled or due to the severance of conducting lines that carry electricity across the country. This has major implications for heating, the use of electronics, communication devices, healthcare and the prevention of widespread disease.

There are multiple power stations across the UK utilising a range of electricity generating methods, carried throughout the country using overhead lines, underground cables and substations. In England, Wales and Scotland this infrastructure is operated by The National Grid.



Fig. 24: Sites of National Grid stations around the UK


Electricity Requirements Per Person

In the UK, the average amount of electricity currently used is approximately 13 kWh per day.²¹ This takes into account total current usage, including heating and appliances that will likely not be in use in an emergency evacuation scenario. The main issue will be providing enough electricity to heat the accommodation and sleeping areas of the community, as well as to provide enough surplus electricity for essential appliances such as radios, phones and electric transportation. A calculation needs to be made about the likely size of the marquees used to house the community, the ambient temperature, the number of heaters required to maintain room temperature conditions and the likely electricity usage.

Solar Panels

A typical solar panel is able to produce around 200 Watts/hr of energy and so 5 panels can generate around 1 kilowatt/hr of energy, at full capacity. If each individual uses one third of their usual requirement (4kWh per day), the community would hypothetically need twenty solar panels per person. If each person was using 1/13th of their usual requirement, five solar panels per person would be required during clear daylight hours. It is clear then that solar panels will likely not be able to feasibly maintain the energy needs of all Ahmadis, and can be used as a supplement at best.

Several solar panel providers could hypothetically be used. There is the possibility of using solar panels attached to the large barns and also as solar farms on areas of south facing ground.

| Provider & Type | Image | Advantages | Disadvantages | Price | Link |
|--|---|---|---|------------------|---|
| Evo Energy Solar Panels for Business |  | Permanent Can fit many solar panels across the site & farm significant amount of electricity | Will take longer to install than single panels. Might be more difficult to maintain due to rooftop access | Price on enquiry | https://goo.gl/uuFngA |
| Solar Century Solar Farms |  | Can have a very large number of panels across the UK gathering site | May take longer to get installed due to scope of project | Price on enquiry | https://goo.gl/IH85ub |
| Buypvdirect individual solar panels 240W |  | Cheaper than buying from fitters or professional companies | Need to buy many individual solar panels and then fit and make functional | £120 | https://goo.gl/9deOTx |

Realistically, in order to provide electricity for the number of people in the UK community, a combination of a solar farm and solar paneled roofing on barns and existing buildings spread across the site would likely be needed.

Wind Turbines




An alternative or addition to solar panels for electricity generation could be wind turbines. Wind turbine technology is not yet as well established as solar panels but they are available for business applications. Prices vary on the specific installation and pricing is available on request from most companies that currently instal the turbines:

Wind - Direct: <https://goo.gl/Taf7Dd>

Ecotricity: <https://goo.gl/d86dQX>

Large Capacity Batteries

High capacity batteries that are able to store significant wattage and discharge it when needed, as would be needed to power heating for the whole community during a complete and continuous electrical outage or provide sufficient charge to electric transport, are still a new technology and as such are expensive. A few major producers have already released their battery models, but many are still developing the technology. Multiple batteries may be needed to power the community in a worst-case scenario.

| Name | Image | Advantages | Disadvantages | Price | Link |
|-----------------|---|---|----------------------------|------------------|---|
| Powervault |  | UK made Varying capacities up to 6.6kWh Cheaper than others 10 year warranty | | Price on enquiry | https://goo.gl/kUtngG |
| Tesla Powerwall |  | High quality 6.4kWh 10 year warranty | More expensive than others | £4500 | https://goo.gl/VkRaef |
| SonnenBatterie |  | 10 year warranty | 4kWh | \$5950 | https://goo.gl/O2E.54h |

Electric Transport

Whilst storage of fuel and preservation of cars and vans is one key approach to remaining mobile in an international crisis situation, the other is to circumvent the issue of fuel altogether. Combined with vast solar panel arrays coupled with wind turbines and powerful utility batteries, electric cars could allow the key elements of the community to remain mobile even if there is no remaining fuel otherwise.





A variety of cars and vans now exist in this market, although the majority are not pure electric cars but hybrids designed to increase mileage when using fuel. Such hybrids could be especially useful in a crisis or evacuation situation, and can save on fuel requirements or even avoid the need for fuel entirely if a an electric power source is available.

| Name | Image | Type | Advantages | Disadvantages | Price | Link |
|-----------------------|---|----------------|--|---|----------------------|---|
| Mitsubishi iMiEV 47kW |  | Battery Only | Not reliant on Fuel Cheap to run | Small 7 hours charge (30 min fast) compared to Citroen C-Zero 93 mile range | £24,054 | https://goo.gl/jBBTe6 |
| Renault Zoe |  | Battery Only | Not reliant on Fuel Cheap to run 250 mile range | | £19,895 - £23,445 | https://goo.gl/xiaCIg |
| Nissan e-NV200 |  | Battery Only | Not Fuel based Cheap to run 106 mile range Large capacity 4 Hour charge (30 min rapid) | Lesser range than Renault | £23,587 - £27,924 | https://goo.gl/r5027E |
| BMW i3 Hybrid |  | Plug in Hybrid | Very high mileage (471 mpg) | Only 4 seats Small | £25,980 - £30980 | https://goo.gl/Btm8cn |
| BMW 2 Series 225xe |  | Plug in Hybrid | 141 mpg 5 Seats | Lower mpg than BMW i3 | £30,155 | https://goo.gl/N9VZxX |
| Volvo V60 |  | Plug in Hybrid | 155 mpg 5 seat estate | | £35,605 | https://goo.gl/IzU7a3 |

If the community thinks there is a possibility that members will be in the UK during or after the economic crisis or nuclear exchange, then it may be worth investing in larger and smaller cars capable of transporting people and items even when fuel is scarce or unavailable.

Heating

Heating can be carried out through a variety of means. Large electric heaters are available but are likely to be prohibitively taxing on possibly limited supplies of electricity. Several other options for heaters are available, including wood burning stoves, gasoline powered generators, propane and kerosene space heaters and oil or kerosene lamps.

| Name | Image | Advantages | Disadvantages | Price | Link |
|---------------------------------------|---|---|---|------------------------------|---|
| Spear & Jackson 3765LM |  | Lightweight Carbon head | Larger than some firewood axes | £26.26 | https://goo.gl/vs4bI4 |
| Outbacker Portable Wood Burning Stove |  | Small Lightweight Comes with bag Cooking surface | Smaller radius than larger stoves | £129.99 | https://goo.gl/ewtQTT |
| The Frontier Stove |  | Small Lightweight Comes with bag Cooking surface | Smaller radius than larger stoves | £162 / £245 with tent bundle | https://goo.gl/uqLleM |
| 6KW Multi Fuel Wood Burning Stove |  | Large Big radius Multi fuel | Heavy (57kg) More expensive Harder to carry | £179.95 | https://goo.gl/SNx611 |
| Manhattan 3Kw Portable Gas Heater |  | Portable Runs on petrol | Has a perishable fuel source | £189.99 | https://goo.gl/2VYhj9 |
| Butane / Propane cylinder |  | Enables running of low cost non electric heaters | Heavy | £15.49 | https://goo.gl/sPKORi |
| Calor Gas Heater Butane |  | Portable Cheaper than others | Butane may be difficult to source | £63.88 | https://goo.gl/uBRi7i |
| Hawk Tools 10Kw Propane LPG heater |  | 10Kw power Overheat protection system | Propane may be difficult to source | £69.99 | https://goo.gl/zcvzFE |
| Draper 24581 Multi Fuel Heater |  | High output Able to use Diesel, Kerosene & Paraffin | For use in outdoor / semi outdoor areas only | £185.95 | https://goo.gl/n51ywl |

Fuel Purchasing and Storage

It is possible or even probable that the outbreak of war will be preceded by an economic collapse. Given this, and the potential changes in fuel prices that a war might spark, buying and storing fuel may be prudent.

In the UK, fuel storage regulations prevent more than 275 litres being stored without a licence.²² However, a licence can be gained from the local Petroleum Enforcement Authority. The PEA for Hampshire, the county with both candidates for a UK gathering site, can be contacted through the Hampshire County Council. Applications should be made earlier than needed in order to avoid delays causing problems and storage of fuel also needs to be considered.

Even in certified containers, fuel requires replacing every six months and so it should not be bought too far in advance of when it will be needed. Containers are either plastic, metal or demountable fuel tanks that are larger. Plastic containers are allowed to store a maximum of 10 litres, regular metal containers 20 litres and demountable fuel tanks can store up to 30 litres. Greater quantities may be allowed, but would likely require a permit. Fuel tanks are expensive but are available from several online retailers:

Fuel Tank Shop - <https://goo.gl/apw3aX>

Jerry Cans - <https://goo.gl/Q3hn4e>

Fuel Proof - <https://goo.gl/LYWQ8W>

Tanks - UK - <https://goo.gl/BolzDz>

Western Global - <https://goo.gl/YIKz0t>

Fuel can be bought from various outlets in bulk,²³ but it is likely that in order to buy enough to cover the whole UK community in case of a shortage, several thousand pounds would need to be invested.

Diesel cars are able to run on mixes of approximately 0.2 to 1 vegetable oil to diesel fuel. Older diesel cars without lucas injection pumps can operate on pure vegetable oil. Having a register of older diesel cars without lucas injection pumps that are owned by the community may be useful. Storing vegetable oil may be useful if there are a significant number of these cars available.

Table of Essential Utilities & Energy Items

| Item | Quantity | Link |
|--|----------|------|
| Gas Cooker / Stove | 1 | |
| Butane Cylinder + Regulator | 1 | |
| Heat Logs | 56 | |
| Lighters / Fire Starter Lighter Sticks | 10 | |
| Safety Matches Pack | 1 | |
| Candles Long Lasting 100 Hours | 5 | |
| Wind Up Torch / Radio / Charger | 1 | |
| Wind Up Torch / Lantern | 1 | |
| Batteries (AA, AAA, 9V and others) | 50+ | |
| Rechargeable batteries & chargers | 10/1 | |
| Electrical Converters | 10+ | |
| Extension Cables / Multiplugs | 10+ | |
| | | |
| ALSO TO BE CONSIDERED | | |
| Barbecue | 1 | |
| Charcoal and Lighter Fluid | 1 | |
| Wood Burning / non electric Stove | 1 | |
| Firewood | 50kg | |

NB: a flame should never be used in a shelter that is enclosed. These items are for general survival only.

Table of Essential Transportation Items




| Item | Quantity | Link |
|--|-----------|---|
| Car / Van | | |
| Valid Breakdown Cover Card/Document | | |
| GPS | 1 per car | |
| Fuel Container (20L) | 2 | https://goo.gl/bZLCtX |
| Jerry Can Petrol / Diesel for Car (5L) | 1 | https://goo.gl/kaP20F |
| Jump Leads | 1 | https://goo.gl/23792V |

| | | |
|--|---|---|
| Tyre Repair Foam | 2 | https://goo.gl/drXPJ3 |
| Foot Pump | 1 | https://goo.gl/pf5eMq |
| In Car First Aid Kit | 1 | https://goo.gl/9luc3a |
| Bicycles (Per Person) | - | |
| Bicycle Repair Kit & Inner Tubes (per bike) | - | |
| Compass | 1 | https://goo.gl/5ZL1Cp |
| Regional Road Maps | 1 | |

Part 10: Communication, Data & Electromagnetic Pulses

Radios

It is difficult to determine whether or not mobile phone reception will be available during or after the war. Given that it is based upon the prevalence of signal towers and that many of these may be destroyed, it is very possible that the phone infrastructure will collapse or be significantly more patchy than is functional, especially if the community has to migrate and needs to be coordinated. To this end, long and medium range radios may be of significant use.

| Price | Model Name | Image | Positives | Negatives | Link |
|--------|-----------------|---|--|--------------------------------------|---|
| £25.02 | Baofeng UV5R |  | Good frequency range, compact and cheap | Do not have the range of the UV82HP | https://goo.gl/sVE4gS |
| £50.77 | Baofeng BF F8HP |  | Good frequency range, better distance range than UV5R but possibly not as good as UV82HP | Same price as arguably better UV82HP | https://goo.gl/KRxs2h |
| £50.77 | Baofeng UV82HP |  | Good frequency range, 3 power levels, dual push to talk, high gain antenna, programmable double channel, up to 60 mile range | More costly than others | https://goo.gl/yQ16U7 |

For the price, the UV82HP is arguably the best of the radio systems and has the longer range. If individuals are on a stricter budget, the UV5R may suffice. Aftermarket antennas need to be bought in order to prolong the range of these radios.

Satellite Phones

Better than radios however, are satellite phones, which utilise geostationary satellites to coordinate calls around the world. Because they do not rely on terrestrial cell sites, they are more reliant in a nuclear war type scenario.

Selection of a satellite handset should be based upon a number of technical and user-criteria. These include:

- Cost of handset
- Economics of use
- Airtime pricing plans, either prepaid or monthly postpaid, and rollover minutes, and the cost of calls to landline and other mobiles
- Ease of use
- Geographic coverage requirements: global or regional
- Where the phone will be used and special option and feature requirements such as GPS, phone tracking, GPS location transmission, and panic alarm
- Bluetooth and WiFi capabilities
- Ruggedness and compliance with military specification
- Data capabilities including email, text, and messaging

There are only two truly global and reliable networks: Inmarsat and Iridium. Globalstar presents a less reliable network and as such, should be avoided, and Thuraya is not available all over the world.

Iridium can have patchy coverage also, but it has global coverage. Because it is based on satellites that fly overhead, it can work even in a canyon/tall buildings surrounding. The Inmarsat network is mature and has been in operation for about thirty years. It is a constellation of geostationary orbit satellites that are 23,000 miles from earth, circling the Equator. That means that once a connection is established, it is stable.

The IsatPhone-Pro is the least expensive satellite phone available while providing near-global coverage. While their design is not as aesthetically sophisticated as Iridium, they are simple to use, and provide superior connection stability over Iridium. While the audio quality is about the same between iridium and Inmarsat, the most important criteria is the stability of the connection, once established between the handset and the satellite. Once the IsatPhone-Pro logs into the Inmarsat network, it rarely disconnects during a call, even one that lasts an hour. The same cannot be said for Iridium.

The important things to know about Inmarsat include:

- Handsets are inexpensive, yet rugged;
- Antennas must be extended for the handset to work;
- The display is color and provides excellent prompts for non-technical users;
- Airtime rates are available, as with all of the other carriers, on a prepaid or postpaid basis, and are quite reasonable;
- The system takes longer to initially boot-up than Iridium, but it computes your location for sending your coordinates and for emergency requests;

- You must have a clear view of the horizon, either north or south depending upon your orientation to the Equator

The most common Inmarsat phone today available in Inmarsat IsatPhone2. The earlier model is cheaper, though not as readily available, as the Inmarsat company has ceased selling it and covering it with software updates.

| Price | Model Name | Image | Positives | Negatives | Link |
|---------|---------------------|---|---|------------|---|
| £635.00 | Inmarsat IsatPhone2 |  | Good coverage, reliable connection, simple to use | High price | https://tinyurl.com/m67usfj |

Data & Protecting Against EMPs

Nuclear devices are able to produce massive electromagnetic pulses, such that they can permanently damage or disable electronic devices. Different sizes and proximities of nuclear explosions and other EMP generating events can trigger different frequencies and radiuses of effect.

| Weapon | Frequencies | Field Strength | Area of Effect | Maturity | Notes |
|----------------------------|-------------------------|----------------------------------|----------------------------|----------|--|
| Low altitude nuclear | Wideband (3 Hz - 1 GHz) | Very High (100 kV/m at surface) | Medium (1-10 mile radius) | High | Detonated below an altitude of 25 miles |
| High altitude nuclear | Wideband (3 Hz - 1 GHz) | High (10 - 50 kV/m at surface) | Large (1000 mile radius) | High | Detonated at an altitude between 25 miles and 250 miles |
| Directional Microwaves | High (1MHz - 1 GHz) | Low (5-200V/m at target) | Small (hundreds of meters) | Low | Directional |
| Flux Compression Generator | Low (<1 MHz) | Medium (1kV/m at 1 mile range) | Medium (a few miles) | High | Low frequency content limits effectiveness |
| Virtual Cathode Oscillator | Very High (1-10 GHz) | Medium (900 V/m at 1 mile range) | Medium (a few miles) | Medium | Very high frequencies couple well into small electronics |



An EMP would have the effect of wiping data off a hard drive irreversibly. This has profound implications for Jama'at MTA archives.



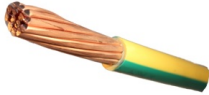


It is thus recommended that for any and all electronic devices, including radios, mobile phones, hard drives and computer equipment are transported abroad to safer countries, such as West Africa, as well as being stored in a faraday cage. A faraday cage is a construction,

which is able to seamlessly conduct the electromagnetic pulse around the device without allowing the pulse through into the device. Various different types of faraday equipment can be used, with different reported effectiveness.

| Frequency | Fire Safe | Static Bag | Ammo Can | Microwave Oven | Foil Box | Compost Can | Garbage Can | Taped Garbage Can | Taped Garbage Can with Static Bag |
|-----------|-----------|------------|----------|----------------|----------|-------------|-------------|-------------------|-----------------------------------|
| 100 kHz | 35 | 40 | >50 | >50 | >50 | >50 | >50 | >50 | >50 |
| 500 kHz | 39 | 37 | >50 | >50 | >50 | >50 | >50 | >50 | >50 |
| 1 MHz | 37 | 41 | >50 | >50 | >50 | >50 | >50 | >50 | >50 |
| 5 MHz | 32 | 22 | >50 | >50 | >50 | >50 | >50 | >50 | >50 |
| 10 MHz | 22 | 19 | >50 | >50 | >50 | >50 | >50 | >50 | >50 |
| 50 MHz | 23 | 22 | 41 | 48 | >50 | >50 | >50 | >50 | >50 |
| 100 MHz | 23 | 15 | 26 | 34 | >50 | >50 | >50 | >50 | >50 |
| 250 MHz | 16 | 17 | 21 | 24 | >50 | >50 | >50 | >50 | >50 |
| 500 MHz | 15 | 18 | 38 | 45 | 21 | 40 | 20 | 41 | >50 |
| 1 GHz | 6 | 18 | 28 | 9 | 19 | 13 | 21 | 32 | >50 |

Multiple faraday devices should probably be used such as a metallic garbage can with industrial aluminium tape sealing the edges and any devices inside sealed in static or anti-EMP bags. Each faraday cage should be made of a conductive tape such that any devices are not in direct contact with the metallic frame at any point. It can also be earthed for added protection and to prevent a handler receiving a shock after an EMP burst.

| Item | Image | Role | Cost | Link |
|-----------------|---|--|--------|---|
| Steel Can |  | To act as the faraday cage and conduct an EMP pulse around any electronics stored inside | £16.49 | https://goo.gl/xhJj11 |
| Conductive Tape |  | To seal over the edges of the faraday cage and ensure that there are no discontinuities between the two surfaces | £5.99 | https://goo.gl/Ah6BLs |

| | | | | |
|------------------|--|---|----------------------|---|
| Cardboard |  | To line the inside of the cage device and prevent anything put inside from contacting the metal | £19.99 | https://goo.gl/iXxiaT |
| Insulation Tape |  | To seal different planes of cardboard together on the inside of the cage | £0.59 | https://goo.gl/BKiBlc |
| Conductive Wire |  | To connect the cage to the ground and dissipate the charge | £2.19 / metre | https://goo.gl/LF4IYZ |
| Metal Pole |  | To allow the cable to directly connect to the ground if needed | £ varies on size | https://goo.gl/etlSww |
| Tech Protect Bag |  | To use as an additional layer of security around anything stored inside the faraday cage. | £36.09 for 32" x 38" | https://goo.gl/I6z1do |

When completed, the faraday cage should resemble the following picture:



Pacemakers and ICDs

Members of the community with pacemakers and implantable cardiac defibrillators (ICDs) are vulnerable to EMPs since the electronics could stop functioning. Any members of the community who do have such appliances should be advised not to stay back and to leave the UK before the nuclear exchange. Any community members who are still in the UK should make use of metal-woven clothing and be housed inside metal containers with insulated interiors, until the exchange is over.

Table of Essential Tools & Communication Devices

| Item | Quantity | Link |
|---|-----------------|-------------|
| Faraday Cage | 1 | |
| Two Way Radios (pair) | 1 minimum | |
| Toolbox | 1 | |
| Hammer | 1 | |
| Swiss Army Knife | 1 | |
| Axe | 1 | |
| Duct Tape - to seal windows, repairs etc. | 5 | |
| Pliers | 1 | |
| Cable Ties | 100 | |
| Saw | 1 | |
| Ratchet Driver (Screwdriver) | 1 | |
| Assortment of Nails / Screws (packs of 100) | 2 + | |
| Knife / Blade Sharpening Block | 1 | |
| Sewing Kit & Guide (if required) | 1 | |
| Tarpaulin Sheets | 3 | |
| Roll of String | 5 | |
| Heavy Duty Black Bags | 100 | |
| Shovel | 1 | |
| Buckets | 3 | |
| Heavy Duty Gloves (pairs) | 4 | |
| Cling Film | 2 | |

| | | |
|------------------------------|------|---|
| Foil Wrap (rolls) | 3 | |
| | | |
| ALSO TO BE CONSIDERED | | |
| Rope 15mm | 20m | |
| Bricks | 20 + | |
| Eye Protectors | 1 | |
| Syphon Pump | 1 | https://goo.gl/yBz7NW |

Part 11: Consolidation of Wealth, Resources and Skills

Effects of Nuclear war on asset types

For any community facing a multi-national catastrophe, the retention of wealth and its transference to forms that will survive will be essential. Attempting to prevent a significant cross section of the community from suddenly losing all their assets and effectively becoming refugees is an essential effort and vital in ensuring that we as a community are able to aid in post war recovery efforts across the world. Those who are themselves struggling to survive are unlikely to be able to aid others.

The majority of those who are likely to have to leave have most of their wealth tied up in bank accounts. It seems logical that if a nuclear war destroys the cities in which the servers of the main global banks are located, then these people may lose a large share (if not all) of their savings. Thus a key question in determining how best to avoid a sudden loss of wealth is to assess how severely a war is likely to affect the global banking system.

As discussed previously, a nuclear exchange between Russia and the United States is likely to involve targets in the United States, Western Europe and Russia. There appears to be little information available as to exactly where the world's commercial banks house their global banking servers, but assuming that at least some of the critical servers to keep records and maintain normal operation are in or near the northern mid latitudes seems reasonable. Eight of the world's major central banks are housed in central cities - the US Federal Reserve Bank in Washington, European Central Bank in Frankfurt, Bank of England in London, Bank of Japan in Tokyo, Chinese Bank in Shanghai and Beijing and others in major cities of Canada, Australia and New Zealand.²⁴

Thus, the major centres of global financial trading such as New York and London are well known to be within these geographic zones and would undoubtedly be targets of a Russian nuclear strike. In their paper 'The Consequences of Nuclear War: An Economic and Social Perspective',²⁵ Cochrane and Mileti cite the Office of Technology Assessment in their calculation dated 1979, that high altitude bursts above 21 Kilotons produce electromagnetic pulses (EMP), while other sources indicate that weapons with yields of 10 Kilotons or less could produce EMP effects and that even comparatively small yields of nuclear weapon could do the same, since the magnitude and range of EMP is proportional to the yield of the weapon and the altitude at which it is detonated.²⁶ The Federation of American Scientists concluded that pulses 'can easily span continent-sized areas, and this radiation can affect systems on land, sea, and air' and that 'a large device detonated at 400–500 km (250 to 312 miles) over Kansas would affect all of the continental U.S.' As a result, those banking servers not directly destroyed by blasts could be irreparably damaged by EMPs, causing a total and likely permanent collapse of the global banking network.

It is, therefore prudent to attempt transference of bank held assets to other modes of wealth. The forms of money that are likely to be of use depend on geographic location and the phase

of recovery that the world is in. Land and property, especially that which is either possible to use for farming or grazing or that which can be leased or rented may provide on-going income. At the least, it could provide tangible products that can be bartered locally. In the immediate post nuclear phase, the paper currency of the country being resided in may be useful, although that of any nation significantly affected by the war could likely become near worthless in comparison. In the extended global recovery phase, precious metals such as gold, platinum and silver may become valuable, but it should be remembered that despite these materials having intrinsic, industrial and technological value, their actual monetary worth is entirely dependent on consumer demand. Thus precious metals may not be of much worth until later in the global recovery, when buyers would once again seek them for industrial or other applications. The duration of each of these recovery periods is difficult to gauge and could be up anywhere from weeks or months to decades. As a result, a spreading of individual and institutional wealth across different modalities would be wise.

Currency

There is very little credible research or modelling of what the global economy might do in the event of a northern hemispheric nuclear war that destroys the main centres of global banking and trade. As such, an educated guess has to be made. In the event of a global banking meltdown secondary to nuclear attack, most bank accounts will likely be lost and the banks are unlikely to be able to honour their value in cash terms because cash reserves will have been destroyed and cash printing by a functioning government may not be possible. This will mean that survivor populations could be left with only the cash money and possessions for bartering as legal tender that they had with them at the time of the nuclear attack. Commensurately, the value of goods and services will plummet and having access to pre-war sums of cash will prove extremely useful in being able to buy good essentials for survival and even to invest in land and property.

Spreading this cash out amongst several different southern hemispheric currencies would likely be wise. Currencies of nations projected to be involved in the holocaust would be expected to become obsolete, certainly in the short term, but those of countries that are largely intact may become extremely valuable in comparison. With the exception of Spain's Euro, the currencies of the countries mentioned in this document as potential destinations may be worth investing in and keeping in hard cash.

Precious Metals

Precious metals have long been an economic reservoir in times of recession and often appreciate in price. This is likely because precious metals are known to be a store of financial value while the value of currency declines. It is often observed that precious metals increase in value when economies are in recession, since they are bought up by investors and governments in an effort to conserve net wealth.

Precious metals include Gold, Silver, Platinum, Palladium, Iridium, Rhodium, Osmium, Ruthenium & Rhenium. Each of the metals has a different profile of uses and it is likely that these will largely determine the likelihood of rising value after a cataclysmic nuclear war

scenario. Those precious metals with fewer industrial uses may take a longer time to rise again in value, in other words there may be little demand for them as individual wealth drastically falls. Gold has a strong historic value and is always used as a store of wealth, as well as having many industrial uses including in electronics. It is likely to be the strongest contender given this. Silver has a similar profile but tends to be used in fewer essential industrial items, while Platinum is used in both electronics and as a catalyst. Palladium has multiple industrial uses, albeit somewhat specialised such as the production of ball bearings, springs, watches and surgical instruments. Thus it may be a useful multiplier of wealth, as societies begin to show a rising demand for these kinds of products, which is unlikely in the immediate aftermath. Most of the other precious metals are used mainly in the production of alloys for industrial purposes. Overall, it appears that Gold, Silver and Platinum may see the highest rise in value during and after the likely recession and war, with Gold often being considered to be the safest bet.

At its height,²⁷ the great depression stimulated a rise in gold prices from \$237.45 per ounce in May 1920 to \$628.71 per ounce in January of 1934. Likewise the recessions of the latter half of the twentieth century saw gold go from \$221.15 per ounce in September 1970 to \$2066.45 per ounce in January 1980. A similar effect was observed in the stock market crash of late 2007. Gold went from a value of \$353.26 per ounce in February of 2001 to \$1910.78 per ounce by August of 2011. Silver also follows a similar trend.

Gold can be bought from multiple outlets. However, simply buying gold and having it stored remotely is not useful in the instance of a world war, since the actual gold will become more and more difficult to get during such circumstances. It is generally recommended that if a total societal breakdown is feared, gold should be bought and physically kept. Of the online outlets that sell gold, most will deliver the gold if requested. Some of the better known companies are:

Bullion by Post - <https://goo.gl/ph6Km7>

Bullion Vault - <https://goo.gl/8cqrq5>

Gold - <https://goo.gl/krXHpl>

Physical Gold - <https://goo.gl/FLVJBW>

The Pure Gold Company - <https://goo.gl/lzXzle>

Transportation of physical gold across state lines should also be considered. Of all the forms of gold in the UK, Gold Britannia coins, gold sovereigns, Queens Beasts and Lunar Bullion, are considered “legal tender”. This a legal status that means that apart from their gold-content value, they hold a “legal tender value.” For gold Britannia’s worth 1 ounce, this legal tender value is £100. According to British law, it is permissible to carry on one’s person up to £10,000 in legal tender, abroad. As such, it is legal to carry 100 x1 ounce gold coins abroad, per person, enabling one to carry (at current gold value) approximately £100,000 worth, on one’s person.

This could act as a significant store of wealth when transporting wealth abroad.

Academic Transcripts, Certificates and Job References

Certificates for any qualifications that have been achieved in the individual's life or academic transcripts for years of study completed towards full qualifications as well as written references from previous employers/seniors in the chosen field of employment may make a significant difference in making sure that members of the community are able to gain places in equivalent academic institutions and complete their education abroad or transition into employment.

Language Skills & Translation Aides

Given the fact that our routes of travel and final destinations may include countries where English is a second language, having linguistic skills may help. To this end, instructing members of the community to learn the different languages and also be in possession of basic language and communication aides such as phrasebooks and dictionaries for potential routes and destinations could be useful.

In Ghana, Australia and New Zealand, English is the official language meaning that members of the UK community should be able to communicate. In Spain and South America, Spanish is the predominant language, with Spain having a significantly higher proportion of English speakers (22% compared to 6.52%) than Argentina. Other languages that might be useful on the journey, depending on the route taken, are French & German.

Prominent language learning courses and communication aides are listed below:

Spanish audio courses:

Michel Thomas Spanish - <https://goo.gl/SAjQDZ>

Rosetta Stone Spanish - <https://goo.gl/Ey952i>

Fluentu Spanish - <https://goo.gl/71Yul1>

Collins Easy Learning Spanish - <https://goo.gl/vUOVwd>

Collins Learn Spanish with Paul Noble - <https://goo.gl/253Rrl>

Open Culture Free Spanish - <https://goo.gl/NV2RdD>

Spanish Dictionaries and Phrasebooks:

Collins Gem Spanish Phrasebook and Dictionary - <https://goo.gl/nO0kgL>

Lonely Planet Spanish Phrasebook and Dictionary - <https://goo.gl/mjw1T8>

Collins Spanish Phrase Dictionary - <https://goo.gl/aErHlb>

French audio courses:

Michel Thomas French - <https://goo.gl/hFonrP>

Rosetta Stone Spanish - <https://goo.gl/7sXwz7>

JeFrench - <https://goo.gl/Xpn43G>

Collins Easy Learning French - <https://goo.gl/929cR2>

Collins Learn French with Paul Noble - <https://goo.gl/tm25RB>

French dictionaries and phrasebooks:

Collins French Phrasebook and Dictionary - <https://goo.gl/KPLKhF>

Lonely Planet Phrasebook & Dictionary - <https://goo.gl/ddGMPY>

Dover Easy French Phrasebook - <https://goo.gl/6TL7cB>

Collins French Phrasebook & Dictionary - <https://goo.gl/K11wAo>

German audio courses:

Michel Thomas German - <https://goo.gl/16deHZ>

Rosetta Stone German - <https://goo.gl/GVdS1b>

Collins Easy Learning German - <https://goo.gl/vWuuqX>

German Phrasebooks & Dictionaries:

Lonely Planet German Phrasebook & Dictionary - <https://goo.gl/NIPAOO>

Collins German Phrasebook & Dictionary - <https://goo.gl/HBshnM>

Table of Essential Important & Miscellaneous Items

| Item | Quantity | Link |
|--|------------|------|
| Wallet/Handbag | All | |
| Money (Cash or Gold) | All | |
| Phone & chargers | All | |
| Passport | All | |
| Driving License | All | |
| International Driving License | | |
| AIMS ID card | | |
| European Health Ins Card | | |
| Computers & chargers | | |
| Curriculum Vitae, certificates / transcripts, relevant references for employment | | |
| ALSO TO BE CONSIDERED | | |
| Bedding & Blankets | Per Person | |

| | | |
|-----------------------------------|------------------------------|------------------------------|
| Disposable plates, cutlery, cups | | |
| Tent w/ groundsheet | | |
| Sleeping Bags | | |
| Thermals | | |
| Backpacks | | |
| Geiger Counter | | |
| Crossbow (experience adults only) | Does not need Firearms Cert. | Good for hunting and defense |

Part 12: Foreign Destination Selection

Assessment of Potential Foreign Destinations

Foreign site selection has been assessed on the basis of similar but different criteria as home site selection, discussed earlier, namely:

1. Safety from nuclear blast zones and radiation
2. Visa & Immigration requirements
3. Ease of access
4. Quality of life and employment prospects
5. Availability of land and property prices
6. Overall assessment

Ghana/West Africa

Safety from nuclear blast zones and radiation

Ghana is situated in west Africa, close to the equator. It is neither a member of NATO, nor allied to the Russian Federation and is not a nuclear country. It does not appear to hold any direct strategic relevance in a war between the eastern and western power blocs. Therefore, it seems unlikely to be directly targeted by nuclear weapons or invaded by one of the countries involved in the conflict.

The southern border of Ghana lies at a latitude of approximately 5.5° N, whilst its northernmost latitude is 10.5° N. The country spans the Prime Meridian and is therefore fairly central in both latitude and longitude. Crucially, it is outside of the northern mid latitudes, which are projected to be the worst affected by circulating radiation in a nuclear war. In normal circumstances, Ghana lies within the intertropical convergence zone, where the easterly trade winds from both northern and southern hemispheres meet warmer still air. This causes the winds to rise before dispersing and precipitating meaning that this area around the equator has consistent short bursts of rain, supplied by clouds that are formed from the easterly trade winds, arising below 30° of latitude. Thus assuming that the overall pattern of northern hemispheric winds does not change during the war, Ghana's weather should arise from the south Atlantic ocean and north or south Africa - all regions where conflict and radiation would not be expected. This being the case, Ghana should be protected from both direct attack and nuclear fallout. Being close to the equator, it should also maintain its climate better than other regions.

However, as previously discussed the introduction of huge volumes of soot and smoke into the northern mid latitudes would cause a massive drop in ambient temperature, This may lead to the polar easterlies prevailing against the mid latitude westerlies, creating either a single east to west northern hemisphere wind or pushing the current mid latitude westerlies and their accompanying jet stream nearer the equator. Even in these cases, it is still possible that Ghana would remain relatively unaffected, but this is not certain.

Visa & Immigration Requirements

Visas are issued by the Ghanaian embassy, high commission or consulate. Both visiting visas and longer term visas can be obtained but have different requirements.

Visiting visas for diplomatic relations can be issued for ‘members of diplomatic or consular services’²⁸ or ‘officials of international organisations who are entitled to diplomatic privileges by, or under the provisions of any enactment, such as the United Nations and its specialised agencies, World Bank officials on official duty or assignment in Ghana’. Immediate family members are also included.

Visiting visas

These are broken down into different categories:

- B-1: business visa
- B-2: holiday/tourist visa
- C-1 / C-2: transit visa
- D: crew visa
- F-1 / F-2: student visa
- H-1 / H-2: temporary workers visa

Extensions of visiting visas

These can be applied for by providing:

- Completed extension of stay forms (can be obtained from the immigration headquarters or local regional commands service)
- An application letter from the persons wishing to extend their stay (not exceeding six months)
- Two passport sized photographs
- Provision of a valid ticket showing that the visitor will leave the country at the end of the period
- Provision of a valid passport
- Payment of the requisite processing fee
- Provision of documentary evidence of intent to invest in Ghana (for would be investors only)

Long-term visas

This is currently allowed as one of five categories:

- Those staying under work permits

- Those staying under the government's immigration quota
- Those staying as part of the ongoing investment and promotion project
- Those who hold the free zone's license
- Those emigrating as refugees

All of these applications except those classed as refugees require submission of:

- A letter of application for residence from company (original and duplicate)
- Company documents: certificate to commence business, company's code certificate of incorporation (two copies each for fresh applications)
- A filled residence permit form
- 3 passport sized photographs
- Curriculum Vitae
- Police report from home country
- Medical report from a recognised hospital in Ghana
- Employment contract with employer
- Copy of company's tax clearance and certificate
- Additional documents (see below)

Additional documents needed:

- Applying under a work permit - need approval letter from the ministry of interior
- Applying under the ministry of interior's immigrant quota - need approval letter from immigrant quota committee
- Applying under Ghana investment & promotion centre quota - need approval letter from GIPC
- Applying under Free Zone's license - need to provide a copy of the Free Zone's license.

Applying for long term visas as a refugee:

- This requires refugees to submit to the nearest immigration office to apply for refugee status once in the country.
- An application for refugee status is submitted to the Ghana Immigration Service (GIS). Those individuals refused refugee status are permitted to remain in the country for 30 days whilst making an appeal.
- If the appeal is unsuccessful they are given 3 months to find another country of residence.

Driving licences & automobile regulations

UK licences are not valid and drivers who do not have a Ghanaian driving license can obtain formal permission to drive in Ghana through various means. The first is to obtain an

international driving permit which is the option recommended by the AA, the second is to gain a conversion (we assume the original UK licence is kept intact) to a Ghanaian licence.

Applying in the UK for an international driving permit ²⁹

- Applicant is over the age of 18 years
- Applicant holds a valid full UK driver's licence

Applications can be made via post, at post offices or at the AA in Folkestone (Eurotunnel). It should be noted that International Driving Permits are not valid without the UK driving licence (including paper copy).

Applying in Ghana for an international driving permit³⁰

- Original country driving licence and photocopy
- Passport and photocopy
- Photocopy of resident permit valid for more than 2 months from date of application
- Driving records or letter of authentication from the issuing authority or embassy of the applicant
- Introduction letter from employers in Ghana
- Non citizen registration card

Requirements for conversion of driver's licence³¹

- Legally resident in Ghana for not less than 12 months (unclear as to whether applicants must have already been resident for 12 months or projected to stay for 12 months)
- Applicant present
- Valid foreign driving licence (original and copy)
- Resident permit or and introduction letter from a company if non - nationals

Ease of access (travel routes and distance) from the UK

There are multiple ways to travel from the UK to Ghana;

Air:

London Gatwick to Accra: 1 stop, 9hrs 10mins - 14hrs 45mins total transit time: between £176 - £340 one way

London Heathrow to Accra: 1 stop, 11hrs 15mins - 20hrs 30mins total transit time: £343 + one way

London Stanstead to Accra: 1 stop 13hrs 20mins total transit time: £248 + one way

Birmingham to Accra: 1 stop 28hrs 25mins - 33hrs 05mins total transit time: £387 + one way

Southampton to Accra: 2 stops 29hrs 35mins total transit time: £519 + one way

Car:

The journey can be broken down into four legs; from Hadiqat ul Mahdi to the Eurotunnel in Kent, from Calais to the south of Spain, from the south of Spain to north Africa & from north Africa to Ghana

Hadiqat ul Mahdi to Eurotunnel Folkestone, Kent (M25→M20): 1hr 44mins: £14.40 petrol, £12.42 diesel

Calais to Algeciras / southern Spain (A16→A28→E5→E80→E803→E5): 18hr 28mins total transit time: £183.60 petrol, £158.03 diesel

Algeciras / southern Spain to north Africa (assuming 2 adults and 2 children per car):

Algeciras → Tanger Med: 11hrs 30mins total transit time: £91.06 - £235.07

Tarifa → Tanger Ville: 1hr 40mins total transit time: £243.28 - £256.72

Algeciras → Ceuta: 1hr 15mins total transit time: £165.92 - £212.69

North Africa to Ghana:

There are two routes: the Western Sahara route - more dangerous but shorter - and the Inland route through Algeria and Mali.

Western Sahara route (note this route passes through both the western Sahara desert and the region in Mali occupied by the Taureg rebels): Tanger Med → Tanger Tetouan → A1 → A7 → N1 → N3 → Kayes, Mali → RN1 → RN7 → Nielle, Ivory Coast → A300 → A3 → Koumbala → A12 → Botou → A1 → Bondoukou → R93 → Techiman, Ghana → N10 → N6 → Accra, Ghana.

Inland route (through Algeria and Mali via N6): Ghazaouet → N99 → Al Aricha → N22 → Mekmen Ben Amar → N6 → Ain Sefra → N6 → Beni Ounif → N6 → Taghit → N6B → Ighli → Timoudhi → Adrar → Tawirt → N6 → Mali → Tessalit (Mali) → Aguelhok → Anefis → Gao → RN15 → Hombori → Dala → Anakanda → Koro → RN14 → Thiou Department (Burkina Faso) → Ouahigouya → Gourcy → Mia → Bousse Department → Ouagadougou → N5 → Nobere → Bolgatanga (Ghana) → N10 → Karaga → N2 → Yendi → Tema → N1 → Accra

It should be noted that both of the above routes from North Africa to Accra, Ghana require approximately 70 hours of driving time in total. If sticking to AA recommendations that drivers take a fifteen minute break every 3 hours and a maximum of 8 hours is driven per day, the journey from North Africa to the capital of Ghana would take nearly 9 days in total and would require 8 overnight stops. If this option is considered, it would be wise to invest in tents that would allow members of the community to camp in communal shelters if need be. Since tents can become damaged, and would also leave members of the community

exposed to interference or attack, local jamaats (if they are near enough and sizeable enough in these countries) could hypothetically provide safe passage and stay.

However, given that these routes traverse through the Sahara desert or central Africa, have poor access to recovery and healthcare facilities in cases of breakdowns or ill health, and given the added danger of rebel groups operating in these areas, and that the those emigrating would be far away from concentrations of local Ahmadis who could help, travelling through Africa over land is not recommended.

Train:

There is no effective train service from north Africa to west Africa meaning that the last leg of the journey could not be completed using this mode of travel. However, it is possible to travel from the UK to the South of Spain via train (see later section on Spain).

Ro/Ro or Ro/Pax ferries:

Ro/Pax ferries are large freighter like ferries that can carry either cars alone or cars with passengers. When transporting only cars they are called Ro/Ro ferries, when passengers are also on board they are called Ro/Pax ferries.

Grimaldi group³² (*currently only Ro/Ro lines operate to west Africa, up to 2500 cars per voyage, would need contacting*): Tilbury, England → Tema, Ghana: 17 - 18 days (price on enquiry).

European Ro/Ro lines:³³ (would also need to be contacted for Ro/Pax travel) Le Havre, France → Togo Lome, Ghana: 17 - 19 days (price on enquiry).

There are several websites³⁴ that appear to have Ro/Pax ferries for sale. It appears that prices are disclosed on request. A wide range of charterable Ro/Pax ferries are available with space for up to approx passengers and 195 cars. The routes are not obvious and would need to be negotiated with the companies. If economically viable, to charter several such ferries, this option could permit the transport of large numbers of Ahmadis with many of their most important possessions in their own vehicles.

Commercial Ferries:

There do not appear to be any ordinary commercial passenger ferry companies that run services from Europe to west Africa. The only regular commercial services that run from European shores to the African continent are from the southern coast of Spain to Morocco or Algeria (see foreign destinations > Southern Spain P. for details).

It is possible to charter³⁵ a cruise ship with the following companies among others³⁶:

AMA Waterways, Avalon Waterways, Azamara Club Cruises, Carnival Cruise, Costa Cruises, Crystal Cruises, Cunard Cruise Line, Disney Cruise Line, Holland America Line,

Lindblad National Geographic, MSC Cruises, Norwegian Cruise Line, Oceania Cruises, Princess Cruises, Regent Seven Seas Cruises, Royal Caribbean International, The Yachts of Seabourn, Silversea, Windstar Cruises, Celebrity Cruises.

Price: An off-off peak charter for the Royal Caribbean International's freedom of the seas cruiser for three nights would cost between £500,000 - £600,000.

Freighter Ships:

Freighter ships usually carry commercial cargo in large shipping containers. However, they can take a very small number of passengers (usually 4-12).

Freighter expeditions:

Tilbury, England → Tema, Ghana: up to 40 days (shorter one way): E2,700 Euros per person (less for one way).

Maris Freighter cruises:

Tilbury, England → Abidjan, Ivory Coast: up to 18 days one way: E2030 - E7775.

No passenger accompanied vehicles are usually taken on this route.

An important use of freighters could be the transport of household items or jamaat possessions.

Quality of Life & Employment Prospects⁹⁷

Ghana is currently not ranked on the wikipedia quality of life index. The Numbeo world quality of life index also does not rank the country due to insufficient data. However, some markers of quality of life have been rated. It should be noted that this website utilises user submitted data on various issues to create an overall assessment.

The country is currently rated as 'very low' on the quality of life index because of ratings of: very low in purchasing power, very high property price to income ratio and very high pollution index. These factors are mitigated somewhat by moderate ratings in safety and healthcare, low consumer price index and very low traffic commute times.

Availability of Land & Property Prices⁹⁸

Any land that is not privately owned is either vested land, government land or heritage (customary/stool) land. All different types of land except heritage land can be sold to foreigners, with the proviso that the 'sale' is actually a fixed term lease of up to 50 - 70 years. Some sources indicate that Ghanaian law does not permit the extension of said leases for non Ghanaians. If true this could pose a serious issue with members of the jamaat being able to settle in Ghana.

Any sale requires registry at:

- The land title registry

- The survey department
- The administrator of stool lands

Acquisition of government or vested land must be filed with the executive secretary of lands commission or the regional lands officer.

Non-Ghanaians are recommended to use established real estate developers such as Magna Terris or PS Global. Any real estate developer should be registered with the Ghana Real Estate Developers Association.

Whilst land is available to buy in Ghana and on the whole property prices are considerably less than the UK (building a 3 bedroom house typically costs the equivalent of approximately £50,000 sterling), certain areas are considered more desirable. Tema, Sakumono, Prampram, Keta Denu or anywhere coastal that is not near a major city may be worth investing in. Accra or its suburbs are not generally recommended due to considerable pollution, but they may be more lucrative in terms of resale value.

Overall Assessment

Ghana appears to be in a region of the world that is both geographically and strategically ideal for evasion of the a northern hemispheric nuclear exchange. It is unlikely to be targeted or to have any countries near it targeted and does not lie in the latitudes that are hypothesised to be affected by fallout. Additionally, it is near enough to the equator that it could maintain an above freezing ambient temperature, unlike more northern regions.

With regards immigration, the information collected seems to indicate an arduous process for any kind of long term visa. This being the case, adequate time to organise visas before fleeing the UK would be needed. Alternatively, it may be advisable for jamaat Ahmadiyya to utilise our good relations with the government of Ghana to organise a fast track process for Ahmadis.

Driving licenses are available and land can also be bought although there are some potential pitfalls, such as problems with who actually owns the land. It is recommended that the advice detailed above is followed.

In terms of travel, the overland option appears extremely difficult and fraught with all kinds of dangers. Air travel is certainly a possibility and would be relatively affordable. The downside of air travel is that essential or household items have to be transported separately, which requires more planning. Ferries could provide a means by which Ahmadis could migrate along with their vehicles and some possessions also. For the numbers of people in the community, many ferries would be required and this might mean that a fund needs to be setup to bear the considerable cost of such a venture.

Southern Spain, e.g. Granada

Safety from nuclear blast zones and radiation

To our knowledge, there are no declassified maps or documents of nuclear targets in western Europe. This being the case, an estimation of which parts of a country are likely to be targeted has to be made. It is likely that major cities in western Europe, along with military installations might be targeted. The major cities in Spain (largest population to smallest) are Madrid, Barcelona, Valencia, Sevilla, Zaragoza, Malaga, Las Palmas, Bilbao, Murcia and Valladolid. These cities are spread throughout the country, meaning that no part of the country is likely to be entirely untouched. It should be noted that in Spain there are two prominent US bases in particular: 1) Moron air force base moron de la frontera. it is 50km from sevilla and 2. Naval station co-base in Rota town. This is close to El puerto de santa maria which is on the western coast of Spain. It is essentially a gate into the Mediterranean which means it will be a valuable target. The closest city of the top ten most populated cities in Spain to Granada is Malaga, which is 55 km away. This puts the area outside of the immediate blast zone.

However, the south of Spain is at 37° of latitude and -3.59° of longitude meaning that it is within the likely radiation zone of northern mid latitudes. This means that despite the other advantages that Spain has, some of which are discussed below, it may not be a wise choice for long term relocation.

Visa & Immigration Requirements

Spain does not require British nationals to have a visa for entry to the country as long as the individuals are British nationals and holders of valid passports. It appears that this also applies to immigration to and working in Spain.

Driving Licenses & Automobile regulations

Valid UK driving licenses can be used in Spain also. However, the minimum driving age in Spain is 18, not 17 as it is in the United Kingdom. Additionally, if a person spends more than 6 months in Spain, they may be required by Spanish law to register their vehicle with Spanish authorities. This process would require getting a new license plate also and is mediated by the Spanish equivalent of the DVLA, the Direccion General de Trafico.³⁹ All cars should have valid UK standard M.O.T, road tax and third party insurance covering the full time period the vehicle is in use in Spain.

Ease of access (travel routes and distance) from the UK

There are four ways to travel from the UK to the south of Spain; air, car, train or ferry.

Air:

- Southampton Airport to AGP (Malaga): 2hrs 40mins flight time (3hrs 22 mins total transit time): approx £60+ one way

- London Heathrow to AGP (Malaga): 2hrs 50mins direct (3hrs 36 mins total transit time): approx £100+ one way
- London Gatwick to AGP (Malaga): 2hrs 45mins direct (3hrs 45 mins total transit time): approx £40 + one way
- London Stanstead to AGP (Malaga): 2hrs55 mins direct (4hrs 37 mins total transit time): approx £45 + one way
- Luton Airport to AGP (Malaga): 3hrs direct (4hrs 17 mins total transit time): approx £55 + one way

Car:

According to Google Maps the car journey from Hadeeqat ul Mahdi to Granada in the south of Spain is 20 hours and 53 minutes long. The AA recommends that drivers take at least a 15 minute break every 3 hours of driving and that driving is limited to a maximum of 8 hours total per day in order to avoid accidents due to tiredness. This means that the 20 hour 53 minute journey would need a total of 7 breaks with two overnight stops (1st rest stop, 2nd rest stop, 1st overnight stop, 3rd rest stop, 4th rest stop, 2nd overnight stop, 5th rest stop). Thus in total this journey would take around 48 hours from start to finish including overnight stops.

Since on average cars made between 1997 and 2013 give approximately 8.7 / 10.4 miles per litre depending on whether they are petrol or diesel, this journey is likely to cost around £177 on average for a petrol car and £155 for the average diesel car given current average fuel prices (April 2015).

Train:

The train journey from London to Granada is possible but requires several changes and at least one overnight stay.

- Step 1: Alton train station Hampshire to London St Pancras via London Waterloo (1 change, 1hr 43min, £21.90)
- Step 2: London St Pancras to Paris Gare du Nord (0 changes, 2hr 20m - 2hr 50min, £90 - £180)
- Step 3: Paris Gare du Nord to Paris Gare de Lyon (0 changes, 0hr 8min, £1.30)
- Step 4: Paris Gare de Lyon to Barcelona Sants (0 changes, 6 h 26min, £145)
- Step 5: Stay overnight in Barcelona
- Step 6: Barcelona to Granada (1 change, 7 hr 40 min, £58.88)
- Total cost excluding overnight stay: £317.08 - £407.08

Ferry:

There are currently no direct ferry services from the United Kingdom to the south of Spain. However it is possible to go to the north of Spain (Santander or Bilbao) and then take other forms of transport onwards.

- Plymouth to Santander & car to Malaga: 28hrs 30mins:: £422.80 - £546.86 total
- Plymouth to Santander & train to Malaga: 27hrs 30mins: £474 - £489 total
- Plymouth to Santander & flight to Malaga: 21hrs: £425 total

Quality of Life & Employment Prospects

The 'where to be born' index, published by the Economist Intelligence Unit and previously known as the 'quality of life scale' indicates that the overall quality of life in the United Kingdom and Spain are similar, with the UK ranked 27th in the world and Spain ranked 28th. The alternative Numbeo quality of life scale ranks the UK 8 places above Spain in the world. However, even in this scale Spain is classified as safer, having marginally better health care, cheaper property relative to the average wage, and having less traffic on the roads. Overall the quality of life between the UK and Spain is comparable and as it stands currently, Spain has a better quality of life in some respects.

Currently the country has approximately 26% unemployment, significantly higher than the UK. This means that non essential professions and service providers may struggle to find employment as easily as in the UK. However, given that Spain's primary industry is tourism and that during a war the demographic of industry and employment alters, it is hard to predict how this may change in the future.

Availability of Land & Property Prices

Following the economic collapse in 2007 / 2008, Spanish property prices have lost around 40% of their value and only started recovering in 2014. Thus for foreign investors in property and land there is ample opportunity to buy good quality properties and plots. It should, however, be noted that the Spanish government has pursued sales tax rates on properties according to their pre - crash values, meaning that some buyers have been asked to pay more than originally thought⁴⁰. Despite this, however, the cost of equivalent land and property is still markedly cheaper than in parts of the UK.

Buying land in Spain is possible but has its own dangers, not least because of the language barrier and different legal system from the of the UK. The home office has issued advice for those attempting to buy in Spain⁴¹ They recommend seeking early advice from the notary, the use of a lawyer who is either a UK based specialist in international transactions or a Spanish lawyer who is registered and practising with the local bar association (Colegio de Abogados) and a qualified and certified Gestor. They also recommend the prompt use of an independent translator and if taking out a mortgage, to check if the lender is listed as licensed to lend in Spain with the Bank of Spain. Purchasers should ensure that they have met all of the gov.uk checklist recommendations for purchasers. Any land that is purchased off plan should meet the gov.uk recommendations for off plan buying also. As with property anywhere, it is recommended that independent chartered surveyors are used, either from the Royal Institute of Chartered Surveyors or the Spanish College of Architects.

Overall assessment

The south of Spain has many attractive features, such as easy access from the UK and an infrastructure that may stand a chance of contributing to relief efforts during an international disaster of this scale. Unfortunately it lies within the northern mid latitudes that are projected to almost certainly be heavily polluted with radiation and toxins. Thus despite being easier to get to, it may be a less attractive destination than others discussed, especially as a long term destination.

Argentina

Safety from nuclear blast zones and radiation

Argentina is located at $34^{\circ} 00' S$ and $64^{\circ} 00' W$ and as such, lies below the equator. This places Argentina at a safe location, as regards nuclear winds are concerned. Regarding Argentina as a target for nuclear strike directly, we must consider firstly the political leanings of the Argentinian government and also the size of Argentina

The Argentinian government is current centre-right (as of July 2016) with increasingly strong ties to the United States. The previous leftist government was supported by Putin, who also spoke in favour of Argentinian claims to the Falkland islands. Brazil, a nearby neighbour however, is a close ally of the United States, despite souring of relations in 2014-5 after the revelations that the US CIA had been spying on President Dilma Rousseff (now impeached as of June 2016). Nevertheless, the Brazilian population are very pro-US and though Argentina may not be an automatic target for nuclear strike, Brazil may very well be. In such a case of a direct strike, being in the southern hemisphere will not be a help.

Visa & Immigration Requirements

A British passport affords a person a 90-day visitor stay in Argentina, without need for a visa. Visas are required for periods of time beyond that. The same is the case with citizens from the US or Canada though the latter have to provide a fee of US\$72.

Beyond 90 days, different visa options are available. Visas take a notoriously long time.

Financier visa

This is a broad-based and flexible visa that merely requires proof that a guaranteed minimum monthly income of a specified amount can be paid into an Argentinean bank account. The immigration authorities require proof that this income will continue once expats have moved to Argentina. Income from investments, annuities and dividends from a business are all usually acceptable.

Work visa

This visa is relevant for foreigners employed by local Argentinean companies. Such companies need to be registered with the immigration ministry authorising the employment of non-Argentine staff. This visa can be processed either before or after moving to Argentina, provided all the relevant documentation is presented.

Be aware that for this kind of visa permission has to be given by the National Directorate of Migration in Argentina. This permission is normally applied for directly by the contracting company or institution in Argentina. In some cases the Consulate will apply for permission. The application costs for the visa are approximately 200 euros. The issuing costs of the visa are approximately 100 euros to be paid to the consulate.

If the company or institution that sends you to Argentina is not registered in Argentina, commercial references and declarations of the authorities in the company's or organization's country of origin have to be presented at the Argentinean consulate.

The requirements to apply for a work visa are:

- Labour contract with the company or institution in Argentina
- Birth certificate, translated into Spanish by a certified translator
- Marital agreement, translated into Spanish by a certified translator
- Passport with a minimum validity of a year and half after the visa is issued (for each family member)
- 3 passport photo's for each family member (4x4; preferably light blue background; ¾ profile right side)

Article 23 (A) visa (Hired Worker Contract – Temporary Residence Visa) – This visa is issued for employees and people on internships contracted by companies in Argentina. These are for a maximum of 3 years but can be extended after this period. You will be treated as a local employee which means a CUIL (Código Único de Identificación Laboral) has to be applied for as well. A formal labour contract between the company in Argentina and the employee is required in order to obtain the visa.

Article 15 (E) visa (Secondment – Temporary Residence Visa) under provision 18/94 – This visa is issued to employees sent abroad by their company for at least 6–12 months. A labour contract is not required.

Expats who own a company in Argentina that is registered with the immigration department can obtain a visa based on their appointment as managing director of the company.

Pensioner visa

Expats receiving payments from their country's state pension system, or who have a private pension, might qualify under a pensioner visa. Such expats only need to prove that the monthly income totals a specified minimum amount and that the money can be paid monthly into an Argentinean bank account.

Student visa

To apply for a student visa, expats must first enrol in an educational institute approved by the immigration department. Once enrolment has been confirmed, expats can apply for their student visa. The visa expires at the end of the course and cannot be renewed past that date. This is not an appropriate solution for clients looking for permanent residency.

Driving licences & automobile regulations

TOURISTS: US drivers can continue to use their US license in Argentina until it runs out. Others however must use an “International Driving permit” in Argentina.

FOREIGN RESIDENTS: Can switch their foreign driving license for an Argentinian license by showing a valid passport, valid driving license (plus Spanish translation), Argentine DNI (ie: ID with residency number) and proof of address.

Ease of access (travel routes and distance) from the UK

Argentina is of course a difficult country to reach from the UK. One-way flights begin in the range of £350 if booked four months in advance. However, Argentina is a far distance away from the United Kingdom.

For North America however, Argentina is well placed. It is situated in the southern hemisphere and though it has good relations with the US, it is not a strong strategic ally. It does however host many United States bases, even in Buenos Aires and so may be a target in a nuclear strike.

Quality of life (QOL) and employment prospects

The QOL in Argentina is among the highest in South America. Living in Buenos Aires in particular is safer and cheaper than Brazil’s mega-cities. While living in Argentina, you can expect to be largely free of dangerous infections. Only in a few northern, forested areas does yellow fever pose any risk to residents. Similarly, Malaria is not all too prevalent. However, in both 2009 and 2011 considerable dengue fever outbreaks were reported. Therefore, expats, as well as tourists, should protect themselves well against mosquito bites. Even the Buenos Aires area hasn’t entirely escaped such cases, so this is clearly something to watch out for. A significant health risk in Argentina is the air pollution however.

In terms of healthcare provision, Argentina has three tiers: a) state-funded healthcare system for those who cannot afford private healthcare; b) private healthcare and; c) social security sector, funded by obligatory insurance schemes. Around 50% of Argentinians are covered by ©; 9% by private healthcare; 4% by state funded healthcare with 37% having no healthcare. Healthcare was ranked 74th in the world.

Education-wise, Argentina has one of the highest literacy rates in South America, at 98%. The Argentinian education system is ranked middle in the world ranking system according

to the Education Index (a feature of the Human Development Index). Education in Argentina is free for primary, secondary, tertiary and undergraduate students.

The Argentine economy is however, stagnant and in trouble. In 2015 it had an inflation rate of 25%. The unemployment rate currently is 7.5% (for sake of comparison, UK is 5.4% and the US is 5%).

Cost of living in Argentina is around 60-70% cheaper than in the UK.

Availability of land and property Prices

In order to buy real estate (UK: property) in Argentina you are required to have a CUIL (*Clave Único de Identificación Laboral*), CUIT (*Clave Único de Identificación Tributaria*) or CDI (*Clave De Identificación*) number (these are tax identities). A CDI can be obtained through your lawyer or you can do it yourself. More information on CUIL, CUIT and DNI can be found in the Visa section of our guide. In Argentina, you will most likely find the real estate through a realtor (UK: estate agent).

The price of land is determined by its location and usage. Land in the winegrowing areas of for example Mendoza and land in the outskirts of Buenos Aires generally have the highest prices per hectare. It can cost up to US\$ 20,000-25,000/hectare. The lowest prices/hectare of land are generally found in the Northwestern part of the country. Land used for goat raising tends to start at US\$ 15/ hectare there.

Once you find a place you like, your realtor will contact the owner's realtor to initiate price negotiations. It is normal in Argentina that property is overpriced to give room for negotiation. When making an offer you are expected to make a security deposit which will be held by the realtor. This deposit is called *Reserva de Compra*. It is recommended not to leave a cash deposit in case the seller does not accept the offer. Normally a time period during which the owner can consider your offer is agreed upon.

If the seller accepts the offer made, the property is withdrawn from the market and preparations for the *boleto de compra-venta* or the *escritura* are made. The *boleto de compra-venta* is the sales agreement. At this point the buyer generally makes a down payment of 30% of the total amount. If the buyer backs out, he/she loses the down payment. If the seller backs out, buyer gets back the 30% down payment and the seller is fined an equal amount payable to the buyer. The percentage of down payment is normally 30% but can be negotiated between the parties. The boleto is drawn up by a lawyer or public notary.

After the *boleto* the parties finalise the sale at the *escribano* or public notary where the ownership title will be given to the buyer. If the parties wish to make use of a boleto a date to sign at the *escribano* is normally set at least 30 days after the signing of the boleto. If you want to finish of the buying process as soon as possible you can also go directly to the *escribano*.

General practice is that all costs occurred before signing the final papers at the notary public are to be paid by the seller. All the costs after the final contract at the notary public,

such as the costs of transferring names on the papers of ownership and the commission for the notary public are paid for by the buyer. Average property Prices:

| Rent Per Month | Avg. | Range |
|--|----------|----------------|
| Apartment (1 bedroom) in City Centre | 339.32 £ | 255.07- 456.84 |
| Apartment (1 bedroom) Outside of Centre | 263.89 £ | 190.35-342.63 |
| Apartment (3 bedrooms) in City Centre | 659.39 £ | 464.59-913.68 |
| Apartment (3 bedrooms) Outside of Centre | 527.28 £ | 394.07-761.40 |

| Buy Apartment Price | Avg. | Range |
|---|------------|-------------------|
| Price per Square Meter to Buy Apartment in City Centre | 2,237.88 £ | 1,617.03-3,045.60 |
| Price per Square Meter to Buy Apartment Outside of Centre | 1,553.47 £ | 1,142.10-2,055.78 |

Fig. 23: Average Rent and purchasing prices in Argentina 2016-7

Overall Assessment

Argentina is a good choice overall, given its location in the southern hemisphere and its fairly developed station about the Latin American countries. It's economy however is in a weak state, but no different in that respect to many other countries. It has a good standard of living with both educational and healthcare provision for its citizens. It offers ease of travel to individuals from North American and European (incl. UK) countries. The language barrier may be a difficulty for those wishing to find employment, and would likely be a barrier especially to the older generation. Argentina therefore offers relative safety from nuclear winds (if Argentina itself is not targeted) and a moderate standard of living. As such, it makes for a good choice, especially for North Americans fleeing to South America, as it is one of the most prosperous of the Latin American countries.

Australia

Safety from nuclear blast zones and radiation

Australia is not known to have nuclear weapons. It is, however, a military ally of the United States having entered into multiple formal treaties with them such as the 1951 ANZUS treaty, the 1955 SEATO treaty and the Five Eyes Intelligence Alliance. All of these treaties are still considered active by the United States and the 1951 ANZUS treaty is believed by many Australians to have underpinned Australian involvement in the illegal Iraq War of 2003. As such Australia is effectively a non nuclear ally of the United States, often willing to employ its own military in support of American ends. Australia also houses the Joint Defence Facility at Pine Gap, near Alice Springs in the Northern Territory, which is an intelligence satellite facility that houses multiple computer systems and antennas and is believed to control US spy satellites over at least one third of the world, including China, eastern Russia and the Middle East.⁴²

Despite being non nuclear, certain installations in the country such as the Pine Gap facility would likely make Australia a target for nuclear or non nuclear attack. Given the sheer size of the continent, the safety of people in the country would largely be dependant on the number of military or intelligence targets that are selected, how many of these are near major population centres and whether or not the main population centres, irrespective of proximity to such strategic locations, are also targeted. Some investigators believe that there are multiple Australian sites (more than 40) that could be targeted, including joint US facilities, Australian military installations and other critical infrastructure sites such as oil refineries.⁴³ The comprehensive list displays targets on both coasts and inland. Whilst the distances between these zones are considerable and people would likely survive blasts if not in the major cities, the prevailing winds could hypothetically carry some radiation across the continent. Overall it remains to be seen whether or not the Eastern Bloc powers would attack a non nuclear country that despite its alliances with the USA, could be of no benefit to it if the central command structures are destroyed. If Australia is targeted, the main population centres are unlikely to be safe.

Visa & Immigration Requirements

Australia is known to have stringent and strictly enforced travel and immigration laws. UK citizens require a visa to travel to or reside in Australia. In certain circumstances, for example if an individual is aged 75 years or older, a health examination needs to be passed before a visa is granted. New arrivals to Australia may be asked to show evidence of funds to support their stay and a return or onward ticket.

Electronic Visas

Electronic visas such as the eVisitor visa can be obtained for a fee of A\$20 through the Electronic Travel Authority via a travel agent or airline or for free from the Department of Immigration & Border Protection.

Other Visas

There are 70 other types of Visas that can be obtained through the Department of Immigration & Border Protection including Traveler Visas, Working Holiday Visas and Temporary Work Visas among others. The Australian High Commission in London can also help with visa applications.

Permanent Residency

Permanent residency can be obtained by migrants who have entered and worked in Australia as skilled migrants, have lived in Australia for at least two years and have worked for at least one of those years or those who have obtained sponsorship via the regional sponsored migration scheme.

Australian Citizenship

Migrants who have been granted permanent residence status in Australia are eligible to apply for citizenship. Other groups who are eligible to apply are:

- Children adopted outside Australia by an Australian citizen
- Children aged 15 years or under or an unaccompanied minor
- Children aged 16 or 17
- Children born outside Australia to an Australian citizen
- Children of a former Australian citizen
- Commonwealth Child Migration scheme arrivals
- New Zealand citizens living in Australia
- Persons born in Papua before independence in 1975
- Individuals wishing to resume Australian citizenship
- Spouses or partners of an Australian citizen
- Refugees and humanitarian entrants

Driving Licences & Automobile Regulations⁴⁴

UK driving licences are acceptable in Australia as long as the licence is valid and the holder remains a temporary overseas visitor. Once an individual is granted a permanent residency status, they have three months in which to get a local licence. Driving licences should be carried when travelling and owners should only drive vehicles that their driving licence specifies they are qualified to drive.

Ease of Access (Travel Routes and Distance from the UK)

Australia is one of the furthest foreign destinations that is considered. From the UK, it can realistically only be accessed through air travel, although hypothetically multiple long train

journeys and or ferries could allow a person to cross into Asia and then down to the southern hemisphere.

Quality of Life and Employment Prospects

Any assessment prior to a major international catastrophe that is likely to completely and irrevocably change the economic landscape may not remain valid after the event. Nevertheless, given that it is not possible to make an assessment without any information, an effort has been made to assess destinations as they currently are.

Currently, Australia is widely acknowledged to have a high quality of life. It is ranked at number two in the 'where to be born' and number three in the Numbeo quality of life index. Compared to other countries, it has a high disposable income per capita, high levels of employment, high levels of literacy, above average life expectancy and very high levels of civic participation. It should be noted that jobs can be difficult to find without higher qualifications and in certain professions re-certification under the Australian professional authorities may be required.

Unfortunately, parts of Australia, like many parts of the westernised world, are experiencing a surge in anti immigrant and specifically anti Muslim sentiment. While Australia has a high quality of life, it's benefits may be significantly offset by these factors for members of the Ahmadiyya community, especially in large numbers, wishing to settle there in the immediate pre-war period.

Availability of Land and Property Prices

Buying property in Australia is possible but significantly more difficult for British citizens than buying property in New Zealand.⁴⁵ Any investor who is not an Australian citizen, approved migrant or holder of permanent residency status or potential permanent residency status (such as a citizen of New Zealand), or someone whose spouse is not an Australian national needs to be approved by the Foreign Investment Review Board (FIRB) before a sale can be made final. Most applications are granted if the applicant is a temporary resident or owns a company buying property to accommodate employees working in Australia. For those who do not fall into this category and want to buy property in order to move to Australia, the FIRB recommendation appears to be contingent on the granting of a Permanent Residence Visa (PRV) - most often granted through either an employer, sponsorship from family members already living in Australia or approval to emigrate from the government based on skills that can be offered.

For those who do want to buy in Australia, it is recommended that up to 7% of the budget of the property should be set aside for transfer & registration fees, surveying, insurance and legal fees. Some advisers recommend using both a lawyer for advice on the best means of relocation as well as full legal transference of property and an independent representative to source, check and review properties that are of interest. These additional costs should also be factored into the budget.

For properties worth more than \$10 million (New Zealand dollars), those with more than 5 hectares of land or coastal properties larger than 2000 square metres, the buyer needs to apply to the Overseas Investment Office for approval.

Overall Assessment

The assessment of Australia as a valid foreign destination largely depends on whether or not it is likely to be hit directly by nuclear weapons. If the possible nuclear targets on the continent are hit with nuclear weapons, the existing advantages of the destination may become largely invalid as a result of a sudden nuclear crisis, possibly focused around the main population centres and without any viable aid from other countries. If not, the relative geographic isolation, existing high quality of life and significant natural resources could make the continent a viable option for members of the community. However, even without a direct nuclear attack, Australia as a destination for Ahmadis holds significant drawbacks, namely the high cost of travelling to the continent from the northern hemisphere, especially from the west, the relative difficulty in securing visas or refugee status and a societal resistance to a large influx of migrants or refugees. Overall, therefore, it does not seem to be a good candidate for a large migration of members of the community, but might be a valid option for young members of the community who are able to find employment before the war and who are currently in parts of the Eastern hemisphere that are likely to be involved in the nuclear conflict.

New Zealand

Safety from nuclear blast zones and radiation

This is perhaps New Zealand's strongest and most attractive feature as a foreign destination: its remoteness. It is located deep in the southern hemisphere so as to be unlikely to suffer from fallout caused by nuclear exchange in the northern hemisphere. It is also no longer in possession of nuclear capabilities, having fully disarmed in 1987, through the New Zealand Nuclear Free Zone, Disarmament and Arms Control act 1987. Under this act, all territories of New Zealand, whether of sea, air or land, are to be kept free of all nuclear weapons, whether of New Zealand origin or from New Zealand's allies.

As a result of this law, New Zealand was cast out of its defence treaty with the United States, known as ANZUS and diplomatic relations between the two countries became increasingly cold. The bombing of a Greenpeace vessel in 1985 by the French Director General for external security in New Zealand waters and the lack of outrage by Western nations led New Zealand foreign policy to turn away, to some extent, from allegiances with Western powers and to form closer ties to the South Pacific islands. It continues to have good relations with Australia and the UK.

These factors mean that New Zealand is unlikely to be targeted in a nuclear exchange, though its general allegiance to western powers may mean that a presumptive strike upon it could still take place by forces hostile to the United States and her allies. This, however, is

unlikely given that it is no longer a party to the ANZUS treaty, has no nuclear capabilities and has a small army, comprising only 4,500 regular soldiers.

*Visa & Immigration Requirements**

For visa and immigration purposes, New Zealand offers relatively easy access for UK citizens. It should be borne in mind that for most members of the UK community seeking to emigrate to New Zealand before the nuclear war, asylum would not be a viable option and more conventional modes of entering into the country would need to be found.

For UK passport holders, visas are not explicitly required for up to 6 months unless the immigration officer considers the person unfit for immigration and as long as the individual has an onwards ticket on arrival into New Zealand. If a visa does have to be applied for later one, there are many options that can be applied for depending on the specific whether the individual can obtain work at the outset or not.

Visitor Visa for UK passport holder

This allows the entrant to stay up to 9 months and requires an outbound flight and enough money to finance the trip or an acceptable sponsor.

Partner/Parent/Grandparent of a New Zealand Visitor Visa for UK passport holder

These visas allow family members or partners of those holding a visitor visa to remain in the country for up to 24 months in the case of partners, or up to 6 months at a time and 18 months total in the case of parents and grandparents. With partners, they have to be able to show that they are in a committed relationship (although with the exception of marriage, it is unclear how this could be demonstrated), that they both intend to stay for the same length of time and that the partner who is allocated the visitor visa supports the application of their significant other. Individuals on this visa can study for up to 3 months of their total stay, whilst parents and grandparents can enter and leave the country multiple times. Partnership resident visas can be granted.

Working Holiday Visa for UK passport holder

This allows entrants between the ages of 18 and 30 to stay for up to 23 months before having to re-apply and to work for 12 of those months or study or train for up to 6 months in total. Applicants would need to be able to show at least NZ \$350 for each month of their stay and enough money to buy a ticket home although an actual ticket home is not required.

Occupational Registration Visitor Visa for UK passport holder

This is a type of intermediate visa, which is valid for 3 months, that can be obtained whilst awaiting registration to a professional body in New Zealand. The visa requires the entrant

to have enough money to support themselves for 3 months or an acceptable sponsor. After this visa longer-term work or resident visas can be applied for.

Guardian of a Student Visitor Visa for UK passport holder

This visa allows the legal guardian of a child studying in New Zealand to stay with them. The child must be 17 and under and the entrant must have a ticket to leave New Zealand or a sponsor for the cost. The Visa lasts as long as the child remains in the country.

Other types of Visas

Multiple other types of visas exist such as worker visitor visas, partners of worker visitors visas and partners of student visitor visas. They all have similar stipulations to those listed with other visas and can be enquired about or applied for online.

Driving Licenses and Automobile Regulations⁴⁷

You can drive in New Zealand if you have a current and valid overseas licence or driver permit, and you haven't been given a disqualification or suspension in New Zealand, and you came into New Zealand less than 12 months ago, and your overseas licence is in English, or you have an accurate translation, and you haven't been granted a New Zealand driver licence since you last entered New Zealand.

You can drive any vehicle included on your UK licence for 12 months before having to apply for a New Zealand licence. A valid UK licence can be converted to a New Zealand licence.

Ease of access (travel routes and distance) from the UK

As with Australia, New Zealand would only likely be accessible through air travel prior to a nuclear conflagration starting, and disrupting air-routes.

Quality of Life and Employment Prospects

New Zealand is consistently ranked very highly across the board in terms of quality of life. It has high life expectancy, literacy, employment, civic engagement, income to cost ratio and residents are consistently measured to be happier than other parts of the world. Certain professions such as those within healthcare and teaching are especially sought after and can often find employment relatively easily. There are disadvantages such as relatively high cost of amenities and in recent years property in urbanised centres, but for the most part the country is ranked by most quality of life indices to be exceptional.

Availability of Land and Property Prices

UK citizens can buy land in New Zealand relatively easily. For most properties or plots of land there are no restrictions and buyers do not have to be residents of the country at the time of purchase. The first contract after signing is legally binding after a 10% deposit has been paid. The estate agent's fees are typically paid by the seller of the property and there is

no stamp duty, meaning that the process of buying is relatively cheap, costing around \$3500 NZ maximum for valuations, inspection reports, land information memorandum and transfer and solicitor's fees. The process normally takes no longer than 6 weeks and the use of a solicitor is advised.

Overall Assessment

New Zealand is a very attractive destination for many reasons. It is unlikely to be directly hit by nuclear attack and its closest neighbour Australia is still a considerable distance and unlikely to be a major source of radiation if attacked. It has significant natural resources and a small population, meaning that it could hypothetically become self sufficient in a global food and water crisis. It is developed, with a high standard of infrastructure, education and healthcare which might allow members of the community who are still young and not fully established in their professions to continue their work or training, even in the aftermath of a northern hemispheric war. The main disadvantages of the country are that it is very far from the main centres of Ahmadi populations, including the UK and the costs of travel would be relatively high. It is also less likely to take very large number of community members since it already has a well established visa and immigration system and does not have the same relationship with the Ahmadiyya community that countries such as Ghana do. Nevertheless, it remains an important alternative to consider, especially for certain groups of Ahmadis such as students and professionals who have not yet finished their education or training.

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