THE YORK EXPERIMENT

Fall-out Room and Shelter Core

20th – 22nd March, 1965

Introduction

In January 1963 the Home Office published a Civil Defence training handbook called "Advising the Householder on protection against Nuclear Attack". It cost 9d.

For many years the Home Office had been urged to publish a 'Householder's Handbook' of one sort or another, telling people what they could do to mitigate the effects of an attack. Some people had in mind the pamphlet issued for the Second World War, which the postman pushed through every letter box. Others had in mind a much more restricted issue.

In the event the publication was put on sale, as a Civil defence training pamphlet. This seemed a sensible way to issue advice in peacetime. The price would not deter anyone who really wanted to know.

The publication is commonly called 'The Householder's Handbook' and when the expression is used throughout this report it is Civil Defence Handbook No.10 that is meant.

Later in the same year the York Civil Defence Committee decided to arrange a small permanent exhibit depicting the advice in a visual and practical way, including a specimen fall-out room. This was on view for most of 1964 until the General Election, when publicity was suspended. It was not resuscitated during the winter, but was again available in March 1965.

In preparing the fall-out room it was obvious that we would have to give a considerable amount of thought to planning the accommodation, positioning the shelter core, arranging sanitation, and so on. It was also fairly obvious that we would learn more by occupying the fall-out room for a continuous period of 48 hours.

We invited volunteers from the Civil defence Corps, and the first three persons to put their names on the list were asked to participate in the experiment. Although it would have been more realistic to have a family as the subjects for the experiment we thought it best not to be involved with children in the first place.

Purpose of Experiment

The three women who had volunteered could best be described as 'youngish, active, healthy and sensible'; and were considered likely to accept the adverse conditions prescribed and co-operate in such a way as to yield meaningful results. They were Mrs. M. Jones, a housewife; Miss W. Smith, a welfare officer with British Railways; and Miss M. Veal, a Civil Servant.

The purpose of their occupying the fall-out room and shelter core was twofold.

Firstly, to find out if the advice given in the Householder's Handbook was adequate and secondly, to draw local public attention to the fact that the specimen fall-out room was available for inspection.

We decided not to test too many factors at once as this would make the interpretation of results somewhat complicated. For example, no attempt was made to sample and test the carbon dioxide content of the atmosphere at various stages. This could only have been done at the expense of other parts of the experiment which might have been to some extent forfeited. The experiment was therefore a straight forward occupation of the room and particularly of the shelter core, with a subjective interpretation of the results.

Setting

It was timed to last 48 hours, from 10.00 am. On Saturday, 20th March, and as summer time was introduced that week-end, the time to finish was 11.00 am. on Monday 22nd March.

An hour was allowed immediately before the experiment (09.00 am. To 10.00 am.) to make last minute preparations, such as collecting fresh food from the local shops that were less than 5 minutes travelling time from the house.

Water was turned off from the main outside the building before 10.00 am. (thus allowing one flush of the lavatory cistern) to simulate the action advised on page 20 of the Handbook. Electricity was turned off at the main switch outside the building at 5.30 pm. On the Sunday, as this was considered to be a realistic appraisal of the availability of electricity.

Arrangements were made to simulate Regional broadcasts, seven in all. As it was essential for the purpose of the experiment to ensure that the volunteers had switched on their set and had in fact received the broadcast, a simple buzzer signal was arranged and after each broadcast the volunteers signalled in this way that they had received it. There was no other communication except for a warden's message pushed through the letter box at the end of the experiment.

Each broadcast was preceded by 5 minutes of music. The purpose of this was to allow the set to be warmed up and be tuned in on the assumption that in some areas at any rate mains wireless sets may still be in use.

Description of Fall-out Room

The room was 9 ft. by 16 ft. without a fireplace, but due to a peculiarity of construction the available space was about 9 ft. by 13. ft. i.e. about 120 sq. feet which is a common size of room in an ordinary house. It was furnished with table, easy chairs, cupboards, book-shelves and the usual household furnishings. The floor was covered with lino and partly carpeted. An 'Elsan' type closet was screened in the room (all the women have camping equipment at home). A shelter core was constructed at one end as described in the following paragraph.

There was some residual warmth in the room which after disuse had been dried out during the preceding week.

The protective factor was about 25, a little above average.

No special arrangements were made about ventilation as there were two doors to the room with the usual space around them, and one of the windows was open about ½" to allow the wireless set cable to pass through. The windows were treated in the manner described in the Householder's Handbook with the result that no natural daylight came into the room. The walls were painted matt, and were thus relatively absorbent from a humidity point of view.

The Shelter Core

This was a lean-to type built at one end of the room using two old doors and 130 plastic sandbags. The doors were 6'6" by 2'6" each. They bulged under the weight of sand and we were a bit apprehensive about the possible effect on the occupants.

We therefore substituted better ones. One was tested to destruction when supported horizontally, and broke at 9½ cwts. It was impossible to break the door at an angle of 60° however much material was placed against it.

The gable end of the core was kept 9" away from the wall for a number of reasons. It did not significantly reduce the protection of the core – it allowed a free circulation of air, it assisted in 'breaking-bond' for the sandbags, it allowed more light to come into the core, it helped to remove any claustrophobic feelings.

The sandbags were partly filled to a weight of under 20 Ib. Each. This forms a good building block about 15" x 9" x 3". If more than this is put in, the bulbous contour makes it difficult to erect a wall and provides many weak points at joints where there is little if any sand at all. They had a tendency to slip on the lino floor (and on each other) and it was necessary to fix a batten at the base of the door, nailed to the floor, to prevent the sandbags sliding away. This was quite easy to do and should present no difficulty to the average householder.

When the doors were against the wall at a reasonable angle of repose – i.e. not taking up too much floor space and not taking an undue strain, it was found that the headroom inside the core was inadequate for a long stay unless considerable discomfort was to be anticipated. The top of the doors was therefore eased away from the wall by another batten, thus keeping the door a few inches from the wall. This also reduced the difficulty of positioning the top course of sandbags.

It also has the effect of reducing penetration through the roof as more bulk of sand can be positioned at the top of the core. The weight of sand was about half a ton on each door (i.e. 1 ton in all). Additionally there was a sandbag baffle wall at one end of the shelter but owing to the construction of the building this was put outside the door of the fall-out room. A plan of the core is shown in Appendix A.

It will be seen that the 'core' was 2'10" from the wall at the base, 5'8" at the maximum height up the wall, and 5' long. The angle between floor and door was 66°. The protective factor was about 80. This was probably a bit better than average and three times better than the room itself.

Provisioning

As the experiment was conducted away from the volunteer's homes it was necessary to ascertain what they would expect to have during the preliminary warning stage. They therefore provided a list of food stuffs and other items and with a few exceptions everything was supplied.

Although in normal circumstances a fortnight's supply of food would be available (if possible) only two days' supply was provided for this experiment.

Two gallons of drinking water were available, about 1⅓ pints per head per day. Additionally there was milk and of course the fluid from tinned foods. The quality of drinking water was considered not to be a significant factor in this experiment as it was not designed to test the effects of restriction of supply over such a comparatively short period.

The volunteers were also allowed to bring items that they could reasonably have expected to find at home such as books, sewing and knitting materials, playing cards, primus stove, 2 torches, hurricane lamp, candle's. There was no space heating. There was no electric fire, as we thought that the residual heating in the building would be adequate in the early stages and that in any case there would be no mains electricity in the later stages.

Planning

In planning an experiment of this kind in detail, we learned some lessons straight away even before it was carried out. They included the following –

a. Construction of Shelter Core

The limitations of the plastic type sandbag was found. Having tried various amounts of sand in the bags it was ultimately found that about 20 Ibs or slightly less produced the best results. It also gave a better building block that was malleable. The contours of these partly filled bags were not such as to leave voids in the sandbag wall.

The tendency of plastic sandbags to slip during construction was noticeable and in particular the bottom course slipped away from the lino floor. This was ultimately corrected by nailing a wooden batten to the floor.

b. In planning the attack pattern it was found that the advice on warnings given on pages 16 and 17 of the Householder's Handbook was confusing. In particular there is no advice on these pages about the occupation of the shelter core, and the advice given on page 9 which states, "in which to spend the first critical hours", does not differentiate between the various warnings. It should state clearly on page 17 that the shelter core should be occupied when a Black Warning is received and better advice should be given as to the amount of time to be spent in it. People are bound to want to know what they should do. The volunteers in the experiment were advised that 7 hours in the shelter core at the beginning of the experiment would be desirable and

that every extra hour beyond that gave an equivalent protection to very many hours the following day.

c. In planning for the final broadcast which would give advice in the evacuation of the fall-out room, it was found necessary to refer to both pages 15 and 22 of the handbook. Bearing in mind that people may have poor light to read instructions, it would be better to have a list of the items to be included in the blanket pack or suitcase, boldly listed, on one page.

d. The handbook recommends on page 12 that 14 day supply of food should be procured beforehand if possible.

On page 22 in a situation where people might have to be moved to safer places they are recommended to take enough food and drink for 24 hours. They would thus leave behind them some 10 or more days supply of food. It would seem sensible to advise them to have an especially good meal before they left, thus making better use of the available food.

e. The film illustrating the advice given in the Householder's Handbook advises people to collect fresh food during the period between the Grey and Black Warning. It would also be advisable to process any food in excess of a two days' supply.

For example anyone who found they had been able to acquire an excess of milk could boil it or make some of it into blanc mange, custard, junket, or preserve it in some similar way. Excess meat, sausage, and the like should be cooked while gas and electricity are available.

Publicity

Publicity was only a secondary feature of the experiment. An item appeared amongst the hundreds of items in the Council Minutes. This was noticed by the local newspaper so we thought it best at that stage to give a short statement to the Central Office of Information (see Appendix C) the local paper and a few of the national papers printed some of this in the fortnight before the experiment took place. The Yorkshire Evening Post included a 'Women's Feature' article and the Daily Express said that they wished to feature the matter at the end of the experiment.

As it has been a common experience for Civil Defence matters to be adversely reported in the Press positive steps were taken to inform the Press wherever interest seemed to be aroused. Every effort was made to ensure that they had full and accurate information and full access to everyone concerned in the experiment. It was also noticed on B.B.C. sound broadcasts.

Performance

The fall-out room was situated in the centre of York in a small building adjoining the Guildhall. It is not a residential area. A Civil Defence operations vehicle was installed in an adjoining yard and Civil Defence volunteers were in attendance through the whole period.

One of the principal duties carried out in the vehicle was the transmission of the simulated regional broadcasts which were recorded on tape beforehand. All the broadcasts were successfully transmitted with a slight exception that broadcast No. 5 was terminated a little prematurely but not before the complete message had been sent. This had quite a profound effect as will be mentioned later.

The Chief Constable arranged for the building to be included in a police patrol so as to prevent any interference with the experiment.

The ladies arrived as planned at 9.00 am. On the Saturday and had an hour for their last minute preparations which included the purchase of some fresh food. The door of the fall-out room was shut at 10.00 am. And there was no further communication with them until the end of the experiment on the following Monday morning.

During the week-end there appeared to be a growing interest on the part of the Press. Reporters were given more and more information and the Daily Express reporter who stayed in York during the Sunday night was allowed to hear the last of the simulated broadcasts on a monitor speaker.

On the Sunday the 'People' had a front page news item, with photograph. At first we were a little piqued at the way it was written but we relented the next day when we learned that this was partly responsible for the rash of reporters who arrived on the Monday.

Emergence

Soon after daylight on Monday morning a warden pushed a written message through the letter box to say that the occupants should be ready to leave at 10.00 am. (11.00 am BST).

From 9.00 am. Onwards reporters and television crews began to arrive. It was only at this stage that we were able to gauge the interest as, with only two exceptions, no reporters or newspapers had given us any advance notice, despite the fact that many of them must have stayed in York overnight. About 40 arrived in all, representing all the National dailies, B.B.C. and Granada television, local newspapers, and local free lance agents.

When the ladies opened the door at 11.00 am. We were relieved to see that they were extremely presentable and ready for the fray. They went back into the room for photographs to be taken and then into the Guildhall for interviews. No restriction whatever was placed on questions and answers. The ladies knew what they were doing, believed it to be important and obviously impressed the reporters by their sincerity. There were very few 'trick' questions, and only on one occasion did we have to ask reporters not to refer an item that arose.

One of the ladies was asked to do a 'live' T.V. broadcast from Leeds at 6.15 pm. The same day, and all three were recorded for Granada's 11.15 pm. Programme with peter Wheeler. B.B.C. sound took a recording for their Northern News.

The newspaper reports became a source of useful information as between them they covered many of the points that came out of the interviews.

Analysis

The raw materials on which lessons from the experiment are based is derived from three sources. The volunteers kept a detailed, timed log of their activities; they recounted their experience in long recorded interviews and there were the press reports.

The first point of interest was that during the whole of the 48 hours they did nothing that they had planned to do. They had planned to read – but did no reading; planned to sew and knit, but did none. In fact they did nothing but exist; the minimum of cooking but nothing else whatever.

This was surprising, and the reasons for it can only be conjectured. They spent the first seven hours in the shelter core in cramped and uncomfortable conditions where it was impossible to do any leisure activity; they could simply endure. Discomfort was increased by the fact that the core was hardly big enough for three adults and they were constantly having to huddle together to prevent overlapping the ends of the core.

When they came out of the core they were cold, miserable, aching, stiff, and much more than one degree under. They moved about, gossiped, and had something to eat. The time passed quickly. There was a few minutes broadcast at 4.00 pm. But they felt more miserable and isolated when it went off. At 5.00 pm. They cooked a meal which was finished an hour and twenty minutes later.

Two of them had some aspirins and one of these then spent an hour in the core. The paraffin smell was nauseating but the 10.00 pm. Broadcast soon arrived and they all went to bed, one sleeping in the shelter core.

It is fairly easy to understand why they did nothing they had planned to do on the first day.

The second day

After sleeping quite well they were awake at 8.20 am. On the Sunday but it was cold, yet stuffy. The atmosphere was humid, but not enough to condense on the walls and plastic sandbags. The broadcast at 10.00 pm. was eagerly awaited. The dustbin had an offensive smell when the lid was off, although there was no really offensive material in it. They each had five minutes out of the fall-out room in the adjoining room and this freshened, them up. They washed, using a half pint of water from a bucket of water that was unfit to drink. It was not until 12.30 pm. That they had a meal, two eating well and the third poorly.

The experiment had taken on an air of reality that they would not have believed beforehand. So much so that when the 1.00 pm. broadcast finished rather suddenly, due to a transmission error, they were fearful that the wireless had broken down and perhaps would not work again. This fear persisted for the next three hours. Some sewing and knitting was attempted but was

abandoned and later the work had to be undone because of mistakes. This is quite beyond their ordinary experience.

At 6.20 pm. they started to prepare the second meal of the day, but after 10 minutes the lights failed and they finished the meal in the light of torches and candles. After the meal at about 7.00 pm. they were cold, bored, fed-up and went to bed.

The same one stayed in the core. They could not sleep and at midnight were still awake. Tranquilisers (Serenesil) had no effect. They hardly slept all night and at 7.00 am. Monday they heard a knock on the door signifying that the warden had left a message. They were quite unmoved and apathetic about this – were in and out of bed preparing a makeshift breakfast, but did not start to dress until 9.15 am. At 10.00 am. They emerged into daylight, put their watches forward an hour, and faced the onslaught of photographers and reporters. Within minutes they were back in the fall-out room being photographed.

Discussion

It would be foolish to expect, or to make, any firm conclusions on the basis of a single experiment of this kind. All it can do is to suggest, to guide, to make proposals for the future.

The boredom and apathy are interesting. One could not have forecast that three women of intelligence and determination, well knowing that there was no real threat, could in a few hours have all their well laid plans frustrated and gradually come to believe that their self-imposed plight was a reality.

At first we thought that there may have been a risk of too much carbon dioxide in the air. The shelter core had only about 40 cubic feet of air. If this was static for an hour it would be uncomfortable even for one person, as by that time there would be about 1% of CO^2 in it. As it is heavier than air, we thought it may concentrate near the floor where the subjects were sleeping on mattresses. This may cause noticeable effects, as 0.5% of CO^2 can produce feelings of languor and headache although much more than this is usually necessary.

There were, however, draughts in the core. The volunteers at the two ends were occasionally smoking while one in the middle was not. The smoke blew in from each end to the centre. At floor level there was an air current from door to door.

As already explained, we did not attempt to measure CO^2 but there was no subjective evidence of its presence, such as increased respiration or headache.

Apathy

Perhaps the apathy was due to lack of stimuli. We were aware of the experiments of J. C. Lilly in 1956 in testing the effects of reduced stimulation. In reducing visual, auditory and sensory stimulation to a minimum, by being immersed in tepid water, he found that neither he or anyone else could ‘take it’ for more than three hours. Three other subjects were kept in a cubicle for 14 hours a day. They gradually became restless, with spells of acute unpleasant feeling. They appeared eager for stimulation and talked to themselves, gossiped, reminisced.

The reduced stimuli brought on weird hallucinations, irritability and childish disorganised thoughts. They concluded that a reduction of sensory stimulation can cause disorganisation of brain function similar to and in some respects as great as that produced by drugs or injuries. Varied stimulation is necessary for the normal functioning of the human brain.

In a fall-out room some sensory stimuli will be considerably reduced. The reduction in noise – no traffic noise, no radiogram, no background of transistor set music; in a well prepared fall-out room not even the sound of the wind. The reduction in visual stimuli – little or no light, no television, perhaps no fire; the reduction of sensory stimuli, especially in the core. Unvarying aches and pains due to cramped positions.

J. C. Lilly's work, and that of others, may be relevant to our problems.

Perhaps the apathy was due to the cold. It was very cold weather (snowing all the first day) and the primus stove was inadequate, and fuel supply too unreliable, to provide much heat. You cannot sew, knit, or read with any concentration when you are cold. Bed was the warmest place, and they spent more than half of the 48 hours in it.

Perhaps one further speculation is worth discussing. There was a degree of uncertainty about the circumstances in which the subjects found themselves. In an uncertain situation, reactions can be interpreted by reference to the degree of deprivation of human needs. No-one seems to have improved on Murray's list of such needs (Explorations in personality 1938) which include the need for freedom of movement, the need to be able to cope with various situations, the need for social contacts, the need to understand what is going on, the need for reasonable physical comfort.

When a person is denied these needs, a probable defence mechanism is withdrawal and apathy. This is a common experience in the face of the uncertainties of a real threat; even an imagined threat can evoke defences and perhaps a manufactured threat, as in this instance, can have a similar effect.

Lord Moran, in his 'Anatomy of Courage' studied the subjects of monotony and apathy. "Apathy", he said "keeps at arm's length the habit of introspection, which was the sure and certain herald of individual defeat. It was an insurance men took out against the unhinging of their minds".

There was no likelihood of our volunteers minds becoming unhinged, but we can well believe that in the real thing an apathetic and disinterested attitude may well be the means of keeping people going until things improve.

Food and Water

Our subjects hopelessly overestimated the amount of food needed for two days, and in the event, ate very little. One of them calls herself a 'compulsive eater' and expected to want to chew at something all the time. This did not happen. Lack of exercise and the general reluctance to do anything – even prepare meals – could well have accounted for the small quantity of food eaten.

Water supply was never a problem as the experiment was so short. It was, however, necessary to advise the volunteers on the best way to use available drinking water. On the assumption that the water content of the body would be normal at the beginning of the experiment, it would theoretically be desirable not to drink for the first 24 hours, causing moderate de-hydration after which less water than normal could be tolerated. The Medical Research Council have fixed three rations for water – the desirable, the minimum; and the compromise.

The desirable is 0.8 litres (28 fl. ozs.); the minimum is 0.4 litres (14 fl. ozs.) and the compromise 0.5 litres (18 fl. ozs.)

The subjects did not go without for the first day because they needed hot drinks to counteract the cold. They had about 26 fl. ozs. each day.

We think it best to give people advice about water consumption especially when on the M.R.C. figures the 'desirable' amount of water could be made to go twice as far if prudently used.

Sanitation

The three volunteers are used to emergency sanitation of one sort or another in caravans, camps, or yachts. They were well used to the 'Elsan' type provided in the fall-out room and it never caused any nuisance.

The dustbin, on the other hand was offensive. A small quantity of dry powdered disinfectant, sufficient for a few day, would have been useful. They kept the dustbin in the fall-out room for experimental purposes, but we confirm the advice given in the Householder's Handbook that it is best kept outside the fall-out room.

Radiation

They all spent the first 7 hours in the core. One spent a further hour in it, and another stayed in it for both nights, in bed.

The room and the core had better than average protective factors – 25 and 80.

We imagined the room to be on the edge of the Z zone, 1,000 rph at H+1, with a cumulative does in the open of 2,800 roentgens in 48 hours. This world, of course, be fatal before 48 hours had elapsed.

Their actual doses would have been:-

Miss Smith, and Mrs. Jones, about 68 r. As Mrs. Jones had an extra hour in the core, her dose would have been a roentgen or two less but the calculation is not so precise as that.

Miss Veal, who spent both nights in the core, would have a total dose of about 40 r.

The theoretical minimum dose, had they spent all 48 hours in the core, was about 35 r. (2,800 divided by 80) and the theoretical maximum for 48 hours in the fall-out room and

none in the core was 112 r. (2,800 divided by 25). There occupancy of the core thus determined how much of the 88 r. at issue (112 minus 35) they would avoid. Miss Veal avoided over 70 r. of this, indicating that the temporary discomfort would be well worth while.

Publicity

The Newspapers

The newspapers were quite kind to this experiment. What seemed to catch their imagination was their belief, shared by the newspapers but by no-one in authority in York, that the experiment was the first of its kind. Whether or not this was true is more or less irrelevant. A Sunday paper put the item on its front page using the well-known theme of three ladies 'locked in' the smallest room. One of the dailies had them 'sealed in', and another had them 'walled up'. Every national daily carried the story on Tuesday. The 'Times' gave a generous and accurate account, with one small typographical error noticed by the correspondent who wrote it, but probably by no-one else ('more acceptable' dose, instead of 'war acceptable' dose). The 'Sun' was given the best information because it asked for it later than the others. Strangely, it did not use the best of it in its Northern editions. The headlines were fairly accurate, but out of their context were somewhat misleading. It was obvious that the newspapers would select and exaggerate some of the statements made, as the following extracts show.

'York Women's' Lost week-end' Yorkshire Evening Press

This expression had been used in the Daily Express the day before and its sub-heading, "Three cut off from the World Outside" was used by the 'Sun' with a slight variation.

For the Yorkshire Post, it was 'Miserable Sunday in Fall-out shelter', but for the Daily Sketch, 'Terror in dark for A Test Women'. 'The 'H'-bomb that brought boredom and bad dreams' was how the daily Mail saw it, whereas the Express had the three volunteers 'Walled up' and were relieved on Monday to be able to say, 'Walled-up three 'safe'.

Prior to the test there was some speculation as to whether the three women, who were friends beforehand, would 'fall-out' in the ordinary sense of the term. With a sigh of relief the Mirror said, 'Bomb survivors are still friends'. Not to be out-shone the Northern Echo commented, 'Fall-out women better friends than before'. The Guardian thought it was, 'not a cosy fall-out party', so much so that the Sheffield Telegraph selected as its most important item of news in the whole experiment '007 lose glamour in fall-out room'. For the initiated, this of course, refers to the fact that one of the volunteers did no read any of the James Bond books that she took with her.

The Telegraph was more restrained, " 'A'bomb test women 48 hours in tiny room", and the Times, as might be expected, picked out the most important of the points that came out of the interviews and headlined, 'Lethargy troubled three women shut in fall-out room'.

The expression ‘shut in’ was of course absolutely accurate. They were not ‘locked in’, ‘sealed in’ or ‘walled up’. They were simply shut in and could have come out any time they wished.

Despite the headlines, the newspaper stories were reasonably accurate. There were a few technical errors which are due to the tremendous hurry that reporters seem to be in to get something into print. The stories about ‘hallucinations’ had a very little substance in them.

Television

The television teams were very fair indeed. Rehearsals were held before anything was recorded and an opportunity was given both to the Civil Defence Authority and to the volunteers concerned to alter anything they took exception to. In fact there was no need to alter anything. One of the volunteers appeared in a ‘live’ television interview from a Leeds studio the same evening and here again Granada television were very fair indeed, and the interview was a good one from a Civil Defence point of view.

The Householder’s Handbook

Some detailed comments about the Householder’s Handbook are given in appendix B. It must have been an incredibly difficult handbook to write and the comments are offered in no critical manner. In due course the Handbook will no doubt be revised as a result of advice and experience gained in exercises and experiments of all kinds.

Perhaps ‘The Times’ was right in saying-

“...an analysis of...(the York experiment)...may do much to justify the often criticised Civil Defence handbook No.10”.

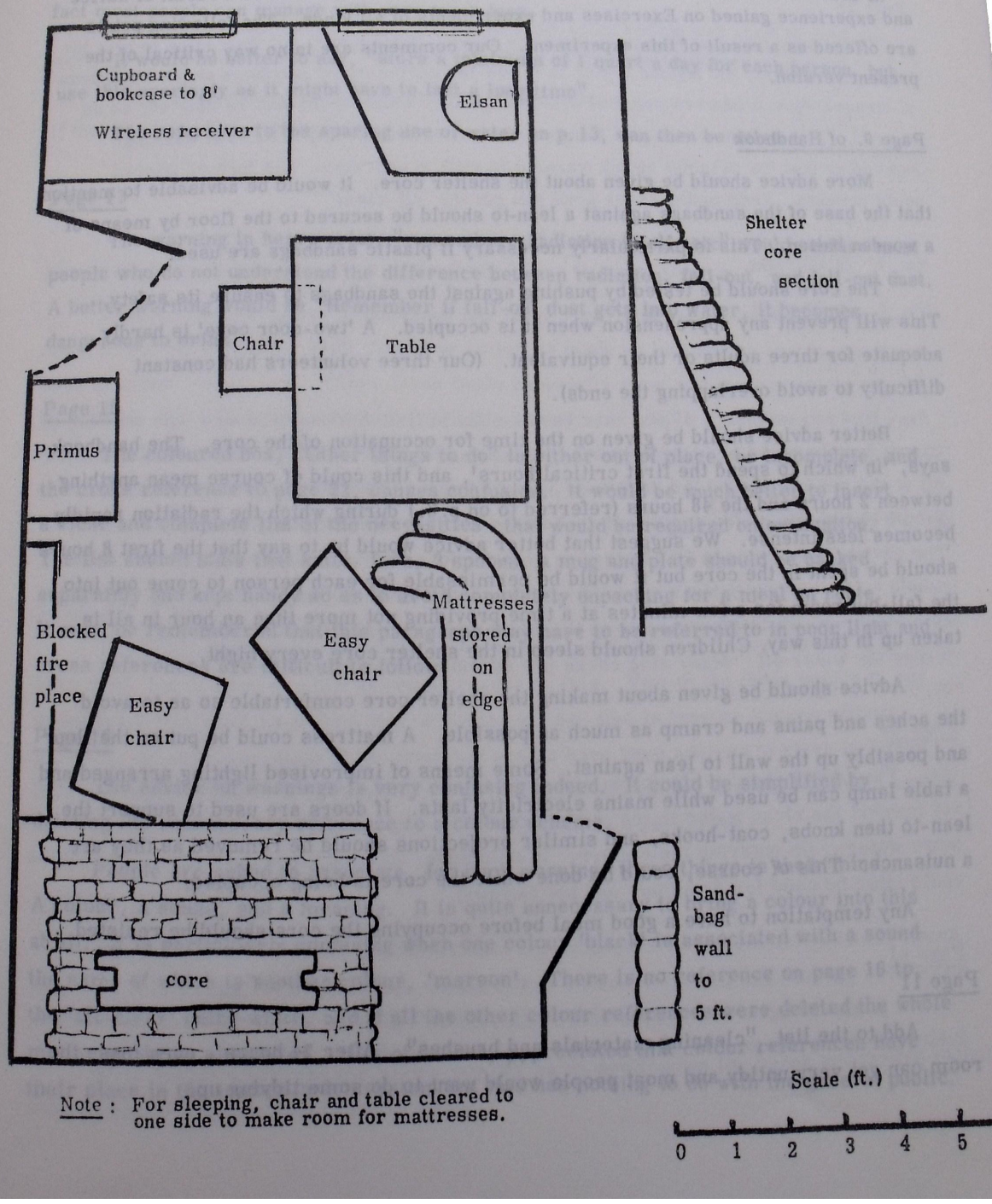
This experiment, within its limits, certainly has justified Handbook No.10. but has also suggested ways for improving it.

Acknowledgements

An experiment of this kind cannot be conducted without a lot of work behind the scenes as well as on the stage. To all who helped, in preparing the room and the core, by recording the broadcasts and being in attendance for them in helping with refreshments, remaining in the operations vehicle for the whole of two very cold nights, and clearing up afterwards – to all these we offer our best thanks; and we need hardly add, to the three volunteers who were the cause of it all. Without their help and the help of all who supported them we could not have carried out this useful experiment.

Appendix A.

Sketch plan of fall-out room with shelter core



Note : For sleeping, chair and table cleared to one side to make room for mattresses.

Appendix B.

Handbook No.10. Suggestions on Revision

When Handbook No.10. is revised it will no doubt be amended as a result of advice and experience gained on exercises and experiments of all kinds. The following points are offered as a result of this experiment. Our comments are in no way critical cot eh present version.

Page 9. Of Handbook.

More advice should be given about the shelter core. It would be advisable to mention that the base of the sandbags against a lean-to should be secured to the floor by means of a wooden batten. This is particularly necessary if plastic sandbags are used.

The core should be tested by pushing against the sandbags to ensure its safety. This will prevent any apprehension when it is occupied. A 'two-door core' is hardly adequate for three adults or their equivalent. (Our three volunteers had constant difficulty to avoid overlapping the ends).

Better advice should be given on the time for occupation of the core. The handbook says, 'in which to spend the first critical hours', and this could of course mean anything between 2 hours and the 48 hours (referred to on P.6) during which the radiation rapidly becomes less intense. We suggest that better advice would be to say that the first 8 hours should be spent in the core but it would be permissible for each person to come out into the fall-out room for a few minutes at a time providing not more than an hour in all is taken up in this way. Children should sleep in the shelter core every night.

Advice should be given about making the shelter core comfortable so as to avoid the aches and pains and cramp as much as possible. A mattress could be put on the floor and possibly up the wall to lean against. Some means of improvised lighting arranged and a table lamp can be used while mains electricity lasts. If doors are used to support the lean-to then knobs, coat-hooks, and similar projections should be removed as they are a nuisance. This of course, could be done while the core is being occupied.

Any temptation to have a good meal before occupying the core should be resisted.

Page 11

Add to the list, "cleaning materials and brushes". After 24 hours – even less, the room can get very untidy and most people would want to do some tidying up.

Page 12

With reference to the advice about water, it might be as well to consider advising people to drink as little as possible at first. The advice to, "allow a minimum of 1 quart a day for each

person", can easily be misunderstood as meaning that this is an entitlement or that this quantity of water should be consumed by each person whereas in fact most people can manage with very much less.

It would be better to say, "store a minimum of 1 quart a day for each person, but use this sparingly as it might have to last a long time".

The reference to the sparing use of water on P.13 can then be deleted.

Page 13

The warning in heavy print, "remember, radiation itself, etc." would confuse most people who do not understand the difference between radiation, fall-out, and fall-out dust. A better warning would be "remember if fall-out dust gets into water, it becomes dangerous to drink".

Page 15

The coloured box, "other things to do" is either out of place, or incomplete, and the cross reference to page 22, causes confusion. It would be much better to insert a clear complete list of necessities that would be required on evacuation. The list should state that knife, fork, 2 spoons, a mug and plate should be packed separately and kept handy so as to avoid completely unpacking for a meal en route. It must be remembered that this paragraph may have to be referred to in poor light and cross references are difficult to follow.

Page 16

The advice on warnings is very confusing indeed. It could be simplified by deleting the unnecessary reference to a colour scheme.

People are asked to associate, for each warning, three things in their mind. A colour, a sound, and a meaning. It is quite unnecessary to bring a colour into this at all. It is particularly confusing when one colour 'black' is associated with a sound the name the name of which is another colour, 'maroon'. There is no reference on page 16 to the 'all-clear' being white, and if all the other colour references were deleted the whole matter would be simplified. It is of course, appreciated that colour references have their place in the transmission system but this has nothing to do with the general public.

Page 17

The two items at the bottom of each column should read "go immediately to your fall-out room, and stay in the shelter core", with the garden shelter variation for the first column.

Page 18

The four items on this page are as it states, 'important', but they seem to be a bit vague particularly for anyone trying to follow the advice of the handbook under conditions of stress. Item 1 has two pairs of double negatives which could best be deleted, so as to read, "If the

siren warning of imminent attack is followed by a fall-out warning, remember that the original attack warning is still in operation, and further attacks could develop. Keep under cover until you get the 'all clear' ".

No.2 is all right

No.3 is all right.

This is confusing. If you have been caught in 'fall-out' out of doors, the washing of exposed parts of the body would mean turning on the water which has already been turned off at the main following the advice on page 13 (page 13 refers to page 20 which advises people to turn the water supply off at the stop cock as soon as possible after attack). The advice given on page 20 and that on page 18 does not necessarily apply to the same people. One person in the household may be caught out of doors or, as stated, it could be a stranger, while other people in the house have followed the advice on page 20 and turned the water off. Many stop cocks are of course outside houses.

Page 20

The advice about tying up the ball-cock on the W.C. cistern is misleading. It does not prevent the clean water in the cistern from being used for flushing but simply prevents more water from entering the cistern. Is it intended that the water already in the cistern could later be used for drinking, and not flushing?

Page 21

It should again be reiterated here that people should remain in their shelter core during the first hours. At the end of the page add, "and for how long?"

Page 22

The first sentence is badly phrased, as it could give the impression that people would be moved while the fall-out is heavy. The advice given against the first diagram should be put in reverse, i.e. "On no account leave home before you are told, but be ready to go at a moment's notice".

One must always bear in mind in bad light some people will start to read the advice but not finish reading it, and it is important to give the essential point first.

In the second paragraph it might be as well to advise people to have a good meal if there is time before they leave.

Food

The paragraph on food needs expanding, and it should be made clear that the paragraph is not a sub-paragraph of the 'very heavy fall-out' section.

Advice should be given to preserve any fresh foods that have been obtained beyond about a two day's supply. Milk should be boiled or made up into longer keeping products, such as

blanc-mange , etc. Other fresh foods especially meat and meat products should be cooked. Earlier in the pamphlet (probably on page 12) advice should be given to wash fresh vegetables while water is available, as many of these can later be eaten raw providing they have been cleaned.

Para. 23. Last para.

The blunt statement, "burn the contents of your dustbin and bury the ash", is all very well, but a large number of people cannot do this. Two of the three people in our experiment could not have done this at home, as they live in terrace houses without gardens. In any case much 0f the food that people have been advised to store is tinned food and burning does not reduce their bilk, but does of course, prevent offensive smells. More thought needs to be given to the advice given in this paragraph.

Page 24. First Aid Kit

The inclusion of a 'first aid kit' without any reference to the use to which the items may be put is wrong. The pamphlet should either contain first aid and nursing advice, or refer to the Ministry of health pamphlet 'Emergency home care'.

Most people would use the baking powder as an application for burns and scalds rather than as one of the ingredients for drinking.

The classification of items under sections (a) (b) (c) and (d) is not readily understandable, nor is the discrepancy between this list given on page 15 of 'Emergency Home Care'.

The heading of this page, 'First Aid Kit' is a misnomer as many of the items are not first aid items.

Finally, cross referencing of the pamphlet should be avoided, as people may have to read it in very poor light.

The above should not be thought of as criticism of the Handbook, but are given in the spirit of the 'Times' comment.

...."An analysis of.... the York experiment... may do much to justify the often criticised Civil Defence Handbook No.10."...

The experiment, within its limits, certainly has justified Civil Defence Handbook No.10. but has also suggested ways in which the handbook might be improved.

Appendix C.

General Information issued to Central Office of Information

and distributed by them to all news media

CITY OF YORK CIVIL DEFENCE

Experimental Fall-out Room

The York Civil Defence Committee have prepared a specimen 'Fall-out Room' in a small building adjoining the Guildhall in the Centre of the City. People are invited to see this on application to the Civil Defence Officer.

The room is to be used experimentally by three Civil defence volunteers for a period of 48 hours occupation. During this period they will be deprived of normal food and water supplies, gas and electricity, cooking facilities, light, sanitation, and will be confined to the room due to simulated radio-activity outside. They will have no television and the only wireless set will be one broadcasting war-time regional announcements and instructions.

Inside the room there will be a shelter'core' – a small improvised shelter giving additional protection – and the volunteers will occupy this from time to time for varying periods in accordance with warnings given over the wireless.

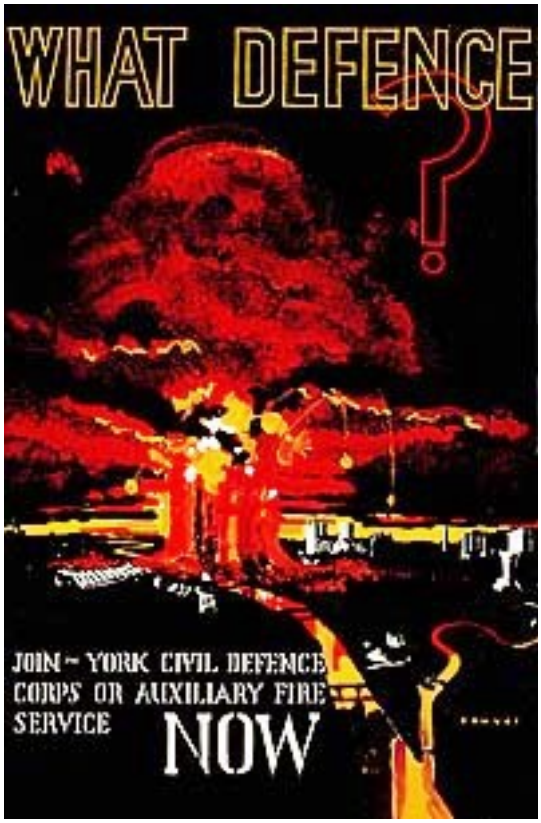
They will subsist on emergency supplies of food and water, and will have a limited supply of candles, torches or other light sources, and emergency sanitation.

The purpose of the experiment is twofold:-

1. As a result of their experience, to advise on the design, equipment and facilities for a domestic fall-out room and shelter core.

2. To draw attention to the need for public awareness of the manner in which problems created by fall-out can be overcome.

The volunteers will keep a record of their activities during the 48 hours. This will include a record of the time spent in the shelter core, the times, quantity and kind of food consumed, time spent sleeping, and timed details of all other activities. From this record Civil Defence scientists will assess the amount of radiation the volunteers would have absorbed under various assumptions of conditions outside, and the personal consequences' of this.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