electricity. The 10 kilowatt generator has insufficient current to power the autoclaves in addition to operating room and ward items (see page 11). There should be two 220 volt electrical outlets in the sterilizing area.

3. Steam couplings are supplied. If the building has a high pressure steam heating plant – (40 lbs. per sq. in) – the autoclaves may be heated from this source. Arrangements should be made in pre-planning to have steam outlets installed in the sterilizing area for emergency use, if they are not already present in this area of the building.

4. A fire box is provided to utilise wood or coal as a fuel source; however, the autoclaves must then be set up outside the building under suitable cover.

### Ventilation

Because of the heat radiated from autoclaves and the use of propane gas initially, the sterilising section of the Central Supply must have adequate ventilation. The autoclaves must be vented exteriorly using standard stove-piping which must be obtained from local resources.

### Surgical Instruments

Sufficient surgical instruments are provided on an austere basis to supply six sets of basic instruments and several sets for minor surgical procedures. Additional instruments for specialised surgical procedures – thoracic, renal gastro-intestinal are also provided. For additional information the specific manual on the Central Supply should be consulted. The Central Supply staff should familiarize themselves with the equipment content of Central Supply (see pages 64–71) and the particular boxes in which these supplies are to be found.

### Pre-Packed Trays

A number of basic trays (see appendix B) are pre-packaged and to be found in Central Supply Box No. 6. These trays should be sterilized first and made available to various functional areas on demand. The box may be placed for availability in Central Supply near the autoclaves (see plate 8) or held in Central Supply storage area (see plate 11). It should be noted that the contents of these trays are not supernumerary to the total contents of the hospital.

### Refueling of Propane-gas Tanks

The five propane-gas tanks are supplied, filled. It is estimated that this supply will provide heating for the sterilizing apparatus for approximately 48 hours, if used continuously. It is the responsibility of the Director of Pharmaceutical Services to ensure by adequate preplanning that further supplies of propane in larger tanks are obtained in sufficient time to ensure continuity of supply.

### X-Ray Room

The Radiographer (x-ray technician) will assume responsibility as Area Chief.

### Location of the Unit

The x-ray unit must be fairly close to the operating rooms and located in a room having masonry walls and as many external walls as possible. No x-ray shielding is provided with the hospital supplies; the control box for the unit should be placed, if possible, in a position in a corridor to afford the technician the protection of a masonry wall (see plate 12 page 30). Sandbags or solid concrete blocks may be used as a temporary shielding expedient if the inner walls have insufficient mass. If the protection of masonry walls is not possible, the x-ray room should be located 25 feet from any other area where personnel or patients are placed. To minimise the risk of fogging the radiographic paper by tracking dust particles into the x-ray room, the unit should not be located near an area where decontamination procedures are being carried out.

### Functions of the X-Ray Area

X-ray personnel in the initial shock may be actively engaged in the work of radiation monitoring and decontamination under the direction of the Radiation Defence Officer. Later, in the post-strike period, the radiological work load will increase and may become beyond the capacity of the unit. Nearby existing hospitals with extensive x-ray facilities will then be called upon to share in the work-load.

The majority of casualties in the immediate post disaster period are likely to be suffering from trauma and burns. Radiography will be mainly concerned with the location of foreign bodies in wounds and with fractures.

*In practise, it may happen that the shielding of the x-ray room may be adequate for the protection of staff yet not be sufficient to reduce the radiation environment to a level at which fogging of the unexposed radiographic paper will not occur. In these circumstances reliance must be placed on clinical diagnosis and fluoroscopy.*

### Supplies and Equipment

The Emergency Hospital is supplied with a portable x-ray unit which may be assembled within an hour and a half, even by unskilled personnel under the direction of the x-ray technician. It may be used for vertical or horizontal radiography or fluoroscopy. A portable developing unit is provided which utilises polaroid radiographic paper, requires no dark room facilities and produces a positive print in ten seconds.

There is no need for radiographic-film illuminators (see plate 12). The x-ray unit has a 15 milli-ampere tube head and is adaptable to a 20 or 100 milli-ampere tube head. The unit and the developing unit may be operated from line voltage (110–220 volt, 50–60 AC 1500 watts). A 3 kilowatt portable and gasoline-powered generator is supplied as an auxiliary power source (see plate 14). As the x-ray unit may also be used for fluoroscopy, a lead-rubber apron, lead gloves, a dark adaptation lamp and goggles are provided (see plate 12). Cord extensions and a multiple electrical tap are also supplied.

### X-ray Reports

An x-ray requisition and report form is provided (see page 102). In the absence of a radiologist, surgeons will read the positive prints themselves, particularly in the initial shock-phase.

### Fluoroscopy

Opaque window screening is supplied for use should fluoroscopy be required. Window area in the room selected for the x-ray area should be minimal.

### Laboratory Area

The laboratory technician will act as Area Chief.