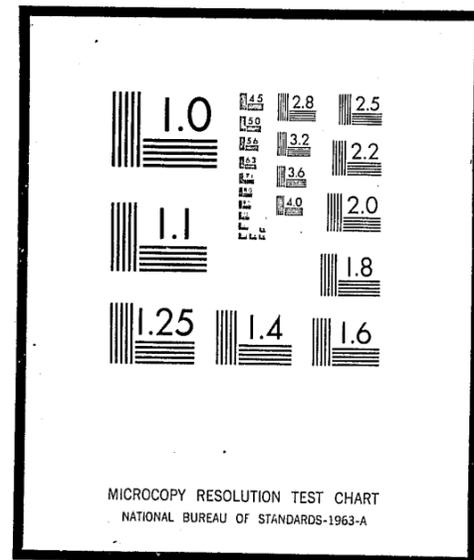


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LAW ENFORCEMENT ASSISTANCE ADMINISTRATION  
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HELICOPTER RESCUE SCHEME  
FOR  
HIGH RISE BUILDINGS

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CITY OF LONDON POLICE

EMERGENCY HELICOPTER RESCUE SCHEME FOR HIGH-RISE BUILDINGS

INTRODUCTION

1. Over the past decade the number of high-rise buildings in the City of London has continued to increase. At the present time there are 105 such buildings which do not possess a ready means of escape from their own rooftops to either adjoining rooftops or rooftops within 30 feet vertical distance below them.

2. Whilst the Force was considering contingency plans for major incidents, it became apparent that, irrespective of what had caused an emergency, the result could well be that persons became trapped or marooned on such rooftops, they having been unable to leave the building by moving downwards in the normal manner. Such conditions would naturally cause concern to such persons and it appeared necessary that they either be rescued or there be a facility to place police officers onto the rooftop to advise them on what action to take whilst the incident below them was being dealt with.

3. The versatility of the helicopter has been clearly demonstrated during the past few years at disasters throughout the World where persons were rescued from rooftops.

4. An approach was made to Civil Helicopter operators and it was learned that, should a life saving mission become necessary, all available helicopters would be placed at the disposal of the emergency services. Similarly the Armed Forces, who operate the larger capacity helicopters, stated that their units would be made available.

5. Having obtained the services of helicopters, it became apparent that, unless contingency plans were made to effectively control rescue operations, there could exist considerable delay and misunderstanding, together with an air safety problem, should such an incident occur.

6. It was therefore desirable that there should be an emergency landing ground for such helicopters to operate from and that the pilots of the aircraft should be in possession of all possible information relating to the building subject of the emergency. There was also a need for the strict control of trapped persons on rooftops if the helicopters were to operate in safety.

7. A survey of the 105 high-rise buildings is being undertaken by police officers in order to ascertain the rooftop suitability for helicopter rescue purposes. Of the 85 buildings so far surveyed, the following pattern has emerged:-

- 1 building has a purpose-built helipad;
- 65 buildings have sufficient clear roof area to permit a helicopter to land or hover;
- 11 buildings could possibly permit a helicopter to land but the available landing area is restricted in size;
- 8 buildings are either so constructed or obstructed that helicopters could not hover over or land upon them.

8. Under normal conditions, Flight Safety Rules prohibit helicopters being used over heavily built up areas in the manner envisaged in the Scheme, however, where there is a definite life-saving operation to be performed, sufficient of these rules are waived by the legislation as to permit the operation to take place.

HOW THE SCHEME WORKS

- 9. The scheme is based on the immediate call-up of any suitable helicopter, either civil or military, which is airborne in the London area or is parked at a heliport or airport in the vicinity. The rescue operation can thus be commenced immediately the requirement arises and before conditions on the affected building prevent the safe operation of a helicopter.
- 10. The Scheme can be used whenever there is a life-saving requirement, whether it be for the immediate evacuation of persons from an affected rooftop or merely to place police, fire and ambulance personnel onto the rooftop to control, reassure or render first aid to persons trapped thereon. The operation can therefore be restricted to preventing persons panicking whilst the incident below them is brought under control, following which they could leave the building in the normal manner.
- 11. If, on attending the scene of an incident, police, fire and ambulance officers find that persons are trapped or gathered on a rooftop without the means to escape by conventional methods, the City of London Police Force Control Centre will be alerted. The Centre will then activate the Scheme by telephoning the alert to London Air Traffic Control Centres at Battersea and Heathrow through laid down procedures.
- 12. The Air Traffic Control Centres will direct suitable helicopters with experienced pilots to rendezvous at the emergency helipad at the Artillery Ground of the Honourable Artillery Company, City Road, E.C.1. (Grid Ref: TQ 3282 SE 32708210). Helicopters will normally approach the helipad by using the established "Helicopter Routes" laid down by the Air Traffic Control Centre. The actual landing at the Artillery Ground Helipad will normally take place from a northerly direction. The flight safety control of all helicopters approaching or leaving the operational area remains at all times with the Air Traffic Control Centre.
- 13. Once the Scheme has been activated, the airspace over the incident site will be prohibited to all aircraft other than those engaged with the incident. This is established by the Civil Air Traffic Control Centre in order to avoid conflict of general air traffic with aircraft engaged on the rescue mission.
- 14. Police officers establish a ground control unit at the emergency helipad. This unit will be responsible for the operational movement of helicopters between the helipad and the affected building and for liaison between all other emergency services present at the helipad. Training is being given to officers in connection with such control duties, marshalling, safety procedures and communication procedures.
- 15. On arrival of the first helicopter at the helipad, the pilot will be contacted by the Police Controller who will, having satisfied himself that the pilot is experienced in the restricted type of flying the Scheme requires, brief the pilot as to his rescue mission and hand him a plan of the affected rooftop. The plan contains all relevant detail relating to operations over the buildings including:- landing area available, weight capacity of rooftop, obstructions, serial number of the building, loose chippings, etc. All later arrivals of helicopters are similarly briefed.
- 16. Police and Fire Officers, equipped with personal radio sets, then board the first helicopter, which flies them to the affected rooftop. On arrival over the rooftop the pilot assesses the situation from the flying and safety aspects and either lands or hovers his helicopter whilst police and fire officers disembark.
- 17. At this stage the pilot will broadcast, over the Air Traffic Control communications system, information for all other helicopter pilots involved. This would contain details of thermal heat rise, smoke, wind, landing area suitability, etc.

- 18. On disembarking at the rooftop, police and fire officers will assess the situation and radio this back to their respective ground control officers at the helipad. Police will provide a rooftop marshaller to guide future flights onto the landing area and will also establish control over persons on the rooftop in accordance with the situation. Any person requiring evacuation from the rooftop would be conducted by police or fire officers into the helicopter. If necessary, fire officers will demolish light obstructions (wireless aerials, etc.) in order to improve landing conditions.
- 19. The first helicopter will, when loaded with evacuees, take off from the rooftop under the guidance of the police marshaller.
- 20. At the helipad, police, fire and ambulance ground controllers will, if required, arrange for further reinforcements of manpower and equipment to be made available. Subsequent helicopter flights to the building would transport such reinforcements/equipment as was required.
- 21. The Police Ground Controller is in overall charge of the helicopter operation throughout the period of the emergency. Other services Controllers will give their requirements to the Police Controller in so far as lifting reinforcements to the rooftop are concerned and the Police Controller will arrange transportation.
- 22. By means of radio messages, the rooftop Police Marshaller will advise the Police Ground Controller as each helicopter leaves the affected building, the ground controller will then despatch the next helicopter and so on until the incident has been effectively dealt with. By keeping this strict control in force, the risk of air collision will be minimised and the number of helicopters actually airborne will be restricted to three machines.
- 23. Light civil helicopters will be used in the early stages of the operation. If the number of persons to be rescued reaches large proportions, then the Police Ground Controller will, as and when larger capacity helicopters become available, replace the smaller helicopters with the larger ones in order to speed up the rescue.
- 24. When rescued persons are brought to the helipad by the helicopters, the helicopter will be "hover-taxed" by police marshalls to an unloading point adjacent to the ambulance loading point. The injured person will be immediately transferred to an ambulance and conveyed to Hospital. Uninjured persons will pass through a police documentation point and, having received light refreshments, will be allowed to proceed about their normal business.
- 25. Where a critically injured casualty is delivered to the helipad and it is apparent that treatment is required at a distant specialist hospital, it may be advantageous to transport the casualty by helicopter. If a helicopter pilot is directed to carry out this operation by the Police Ground Controller he must contact the Civil Air Traffic Control Centre to obtain clearance for a direct flight to the Hospital concerned. During such a flight he will keep Air Traffic Control informed of his progress by use of the grid reporting system used in the Greater London area. A copy of this grid reporting system is provided to each pilot on the back of his building plan when he initially arrives at the helipad.
- 26. At all times throughout the operation, the Fire Brigade will provide fire cover for helicopters on the helipad. Where a helicopter has shut off its engines and subsequently restarts them, the fire cover will be concentrated on that specific helicopter, using suitable portable equipment.

FACILITIES ON THE ROOFTOP OF HIGH-RISE BUILDINGS

- 27. Since the introduction of the Scheme there have been many enquiries from architects, civil engineers, consulting engineers, building owners and occupiers regarding the requirements that are needed at rooftop level in order to facilitate the landing of a helicopter under emergency conditions.

28. There is also a problem as regards identifying the affected building from the air when effecting a rescue. Obviously where there is fire present in a building, the smoke and flames would indicate it. Under other conditions, i.e. gas leaks, explosions, chemical hazards and radiation hazards, one might think you would identify the building by the persons gathered on the rooftop. However, as a result of exercising this Scheme it was found that surrounding buildings had an equal number of "sightseers" on the rooftops as the affected building had "trapped persons".

29. Ideally, every high rise building should have a helipad built into its original construction. Under current London Building Regulations this is not mandatory. However, the Local Authority is now prepared to permit "helipads" to be constructed on rooftops but they are subjected to a planning clause "for emergency use only". To assist in identification of all buildings, the City Police have allocated a "Code Number" to each building and occupiers are being encouraged to paint this number in 5 feet figures on the rooftop.

30. The following advice is being given to all those interested persons involved with new buildings or those wishing to improve their existing emergency arrangements:-

- (a) Ideally the rooftop should be built as a "helipad" conforming to standards set out by the Civil Aviation Authority.  
  
If a "helipad" is impracticable, then consideration should be given to the following:-
- (b) Staircases leading to the rooftop should be of normal tread and riser type and NOT of the "steel vertical ladder" type and must conform to fire regulations;
- (c) An area at one corner of the rooftop covering a minimum size of 50 feet by 50 feet should be preserved and kept clear of all obstructions;
- (d) The 50 foot square should be at a higher level than the surrounding rooftop and protective parapets;
- (e) The rooftop should be constructed so as to be capable of withstanding a 30 lbs per square foot impact load;
- (f) Waterproof quartz-halogen white lights should be installed on each corner of the 50 foot square area. They should not exceed 1 foot in height and should illuminate the landing area;
- (g) All obstructions on the rooftop over 1 foot in height should be painted in fluorescent red or orange paint;
- (h) If rooftop obstructions are unavoidable, then they should be fitted with a "hinge" facility so that they can be readily lowered in an emergency;
- (i) An identifying Code Number (allocated by the Police) should be painted on the rooftop to guide helicopter pilots to the building.
- (j) The "Code Number" should be painted onto the landing area in either yellow or white paint or applied by the provision of retro-reflective tapes
- (k) Each character of the Code Number should measure:-  
1.5 metres high;  
1 metre wide;  
20 centimetres in line width.
- (l) If a number can be misinterpreted, (e.g. "66", "99", "86", "98") then a bold line should be drawn underneath the figures.

HELICOPTER SAFETY PROCEDURES

31. Persons have been injured, some fatally, in helicopter accidents which would not have occurred if the correct methods of boarding and alighting from the helicopter had been adopted.

32. The following procedures are therefore to be strictly adhered to:-

- (a) No person should approach the helicopter unless he is being personally escorted to the aircraft by a member of the emergency services;
- (b) Approach or leave the helicopter within the pilot's field of vision;
- (c) Approach or leave the helicopter in a crouching attitude for extra clearance from the main rotor. Never grope or feel your way towards or away from the helicopter; if blinded by blowing objects, smoke or dust, stop, crouch lower or better still sit down and await help;
- (d) The landing area must be kept clear of loose articles, e.g. empty tins, luggage, ground sheets, etc.;
- (e) When directing a helicopter to land, stand with your back to the wind with arms outstretched towards the landing area;
- (f) Carry all tools and equipment horizontally, below waist level, never upright or over the shoulder;
- (g) If leaving a helicopter at the hover, get out and off in one smooth unhurried action;
- (h) If directing a pilot to land by radio, give instructions that require no acknowledgements, because the pilot will have both hands busy.

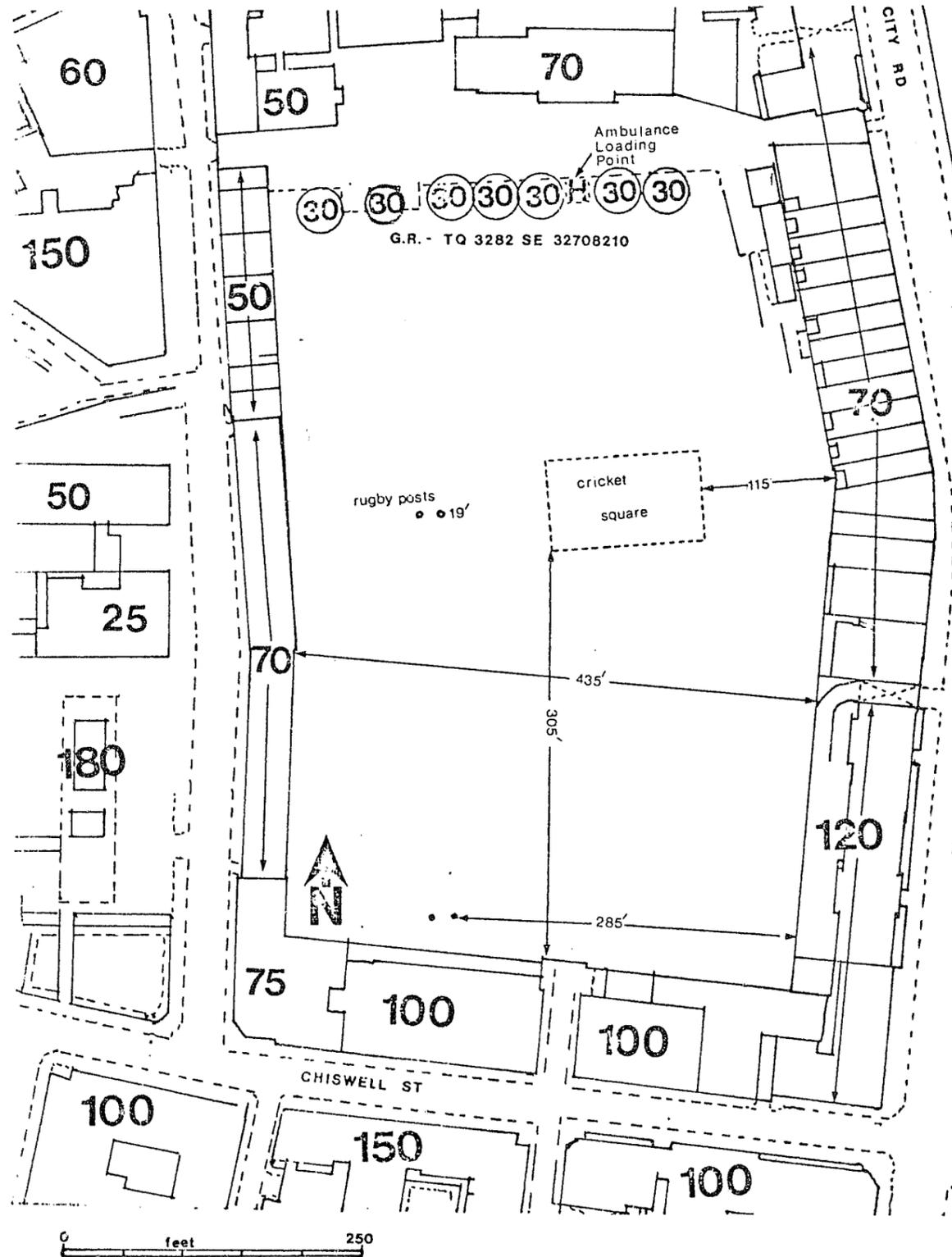
Chief Inspector B.E.Fisher,  
City of London Police,  
26 Old Jewry,  
London, EC2R 8DJ

Tel:- 606-8866 Ext.282

May, 1974.

PLAN OF EMERGENCY HELIPAD AREA AT ARTILLERY GROUND, HONOURABLE ARTILLERY COMPANY, CITY ROAD, E.C.1

Figures shown on buildings indicate their gross height. Figures "30" in circles at North End of ground indicate height of row of trees. "H" - indicating helipad will be painted on ground at Ambulance Loading Point.

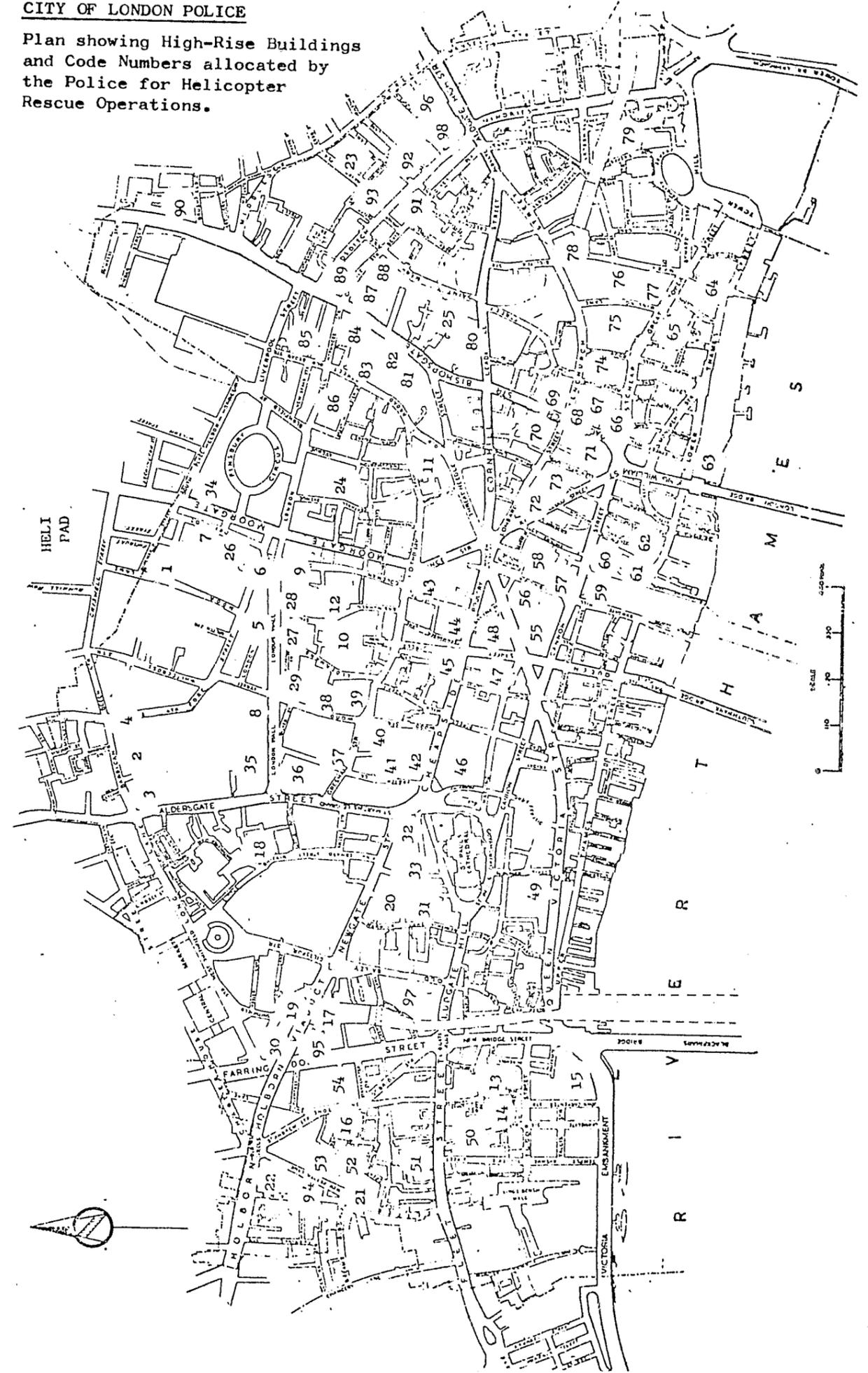


LANDING ARRANGEMENTS

Police Ground Control Unit will designate "landing strip" according to wind direction. It will run either South-East to North-West or North-East to South-West and will be indicated by red tape pegged to the ground. Police Ground Marshalls will "hover-taxi" helicopters to Ambulance Loading Point once they have landed. Take-Off will be 100feet to one side of strip.

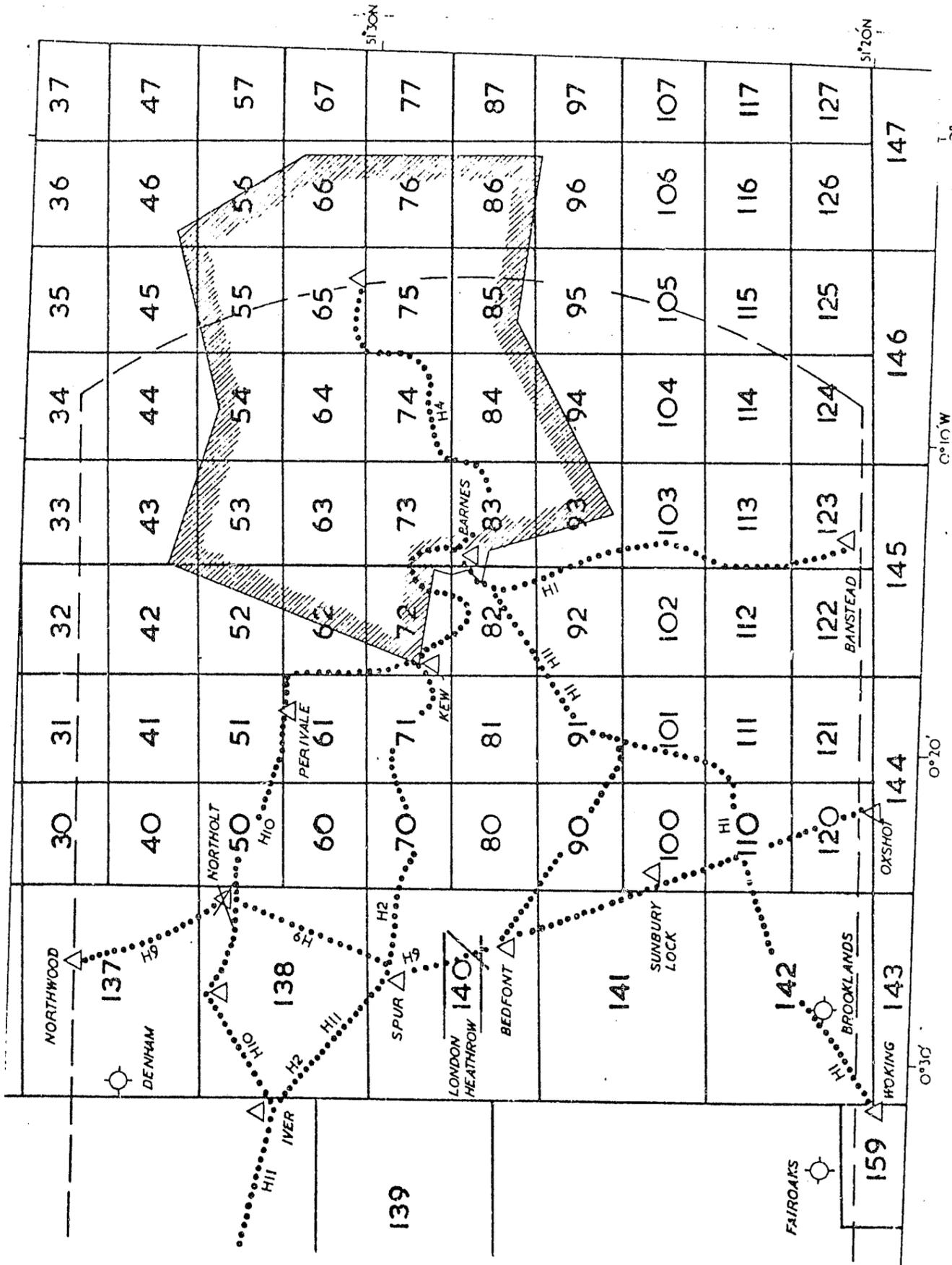
CITY OF LONDON POLICE

Plan showing High-Rise Buildings and Code Numbers allocated by the Police for Helicopter Rescue Operations.



GRID REFERENCE REPORTING SYSTEM FOR USE BY HELICOPTERS REPORTING THEIR LOCATION TO HEATHROW & BATTERSEA AIR TRAFFIC CONTROLS

The City of London lies wholly within the Southern Half of Grid Square 65.



City of London Police. Helicopter Rescue Scheme

|   |                          |
|---|--------------------------|
| Name of Building  | Identity No.             |
| Address   |                          |
| HEIGHT (in feet)  | NOT DISPLAYED on rooftop |
| Strength of Roof  |                          |
| Obstructions  |                          |
| Loose Equipment/Materials   |                          |
| Not to Scale  |                          |
| <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin: 0 auto;">N</div> |                          |

Largest clear area shown in diamond hatching

**HIGH RISE BUILDING - SCENE OF RESCUE OPERATION**

**HELIPAD**



**POLICE CONTROL AND FIRE LIASON OFFICERS FLOWN IN BY FIRST HELICOPTER**

**HELICOPTER RETURNS TO PAD WITH RESCUED PERSONS**

**HELICOPTER FLIES TO ROOF**



**HELICOPTERS DIRECTED TO HELIPAD BY CIVIL AIR TRAFFIC CONTROL**

**POLICE HELIPAD CONTROLLER**  
**PILOT BRIEFED BY POLICE**

**HELICOPTER LEAVES HELIPAD WITH POLICE AND FIRE OFFICERS ON BOARD**

**END**