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TERRAIN CLEARANCE

1 Introduction

1.1 Controlled flight into the ground or obstacles, often in deteriorating weather conditions, is not an uncommon cause of aircraft accidents. Some have been as a result of a descent in order to remain below cloud whilst others have been the result of a pilot being lost and consequently unaware of the high ground or obstacles in the vicinity. A system has, therefore, been developed to assist pilots in establishing terrain clearance in such circumstances.

1.2 Whilst it is anticipated that the system will be used when airborne, it may be more effective, and would reduce the pilots' workload at a critical stage of flight if the likely terrain clearance levels were established before taking off, during the planning process, and noted in the flight log.

2 Application

2.1 The system is designed for use in two specific situations. The first being where a pilot is unsure of his/her position but knows, or is reasonably certain, that he/she is flying within a particular Altimeter Setting Region (ASR); in this situation the pilot uses the individual Regional Pressure Setting (RPS) for that region. The second situation is where a pilot is completely lost but believes he/she is within one of the larger coloured ASRs shown on the map; the Met Office will issue a colour coded RPS for these regions, eg 'The GREEN RPS is 1002 mb'.

2.2 When a pilot is completely lost, establishing the terrain clearance level utilising the large coloured ASRs on the map may require him/her to fly to a higher level than necessary; terrain clearance in these regions is based on the highest ground or obstacle in the whole of the coloured region whereas the aircraft may be in an area where the highest ground or obstacle is much lower. However, there are many recorded instances where the Distress and Diversion (D & D) organisation have located an aircraft a long way, even hundreds of miles, from its estimated position. The aim, therefore, is to help a pilot who is completely lost and under such a situation there is no alternative to taking the highest terrain clearance level, at least until the aircraft has been located by the D & D cell and its position re-established. It is essential that, at the earliest opportunity, the pilot request assistance from D & D (121.500 MHz).

2.3 The system may not resolve every situation; for example, a non-instrument rated or non-IMC rated pilot may find that the terrain clearance level would entail flying in IMC. However, establishing this level will give the pilot an additional piece of information on which to base any action needed to resolve his/her predicament. In this instance it is even more important that a pilot contacts D & D without delay.

2.4 Nothing in the system absolves a pilot from the responsibility for carrying out thorough pre-flight planning or for taking early action when he/she is lost or uncertain of his/her position.

2.5 This Circular contains instructions for using the system and a coloured, laminated map/table that has been designed to be carried in the aircraft. Queries about the system or requests for additional copies of the map/table should be addressed to:

Directorate of Airspace Policy
ORA 3
K6 Gate 3
CAA House
45-59 Kingsway
London
WC2B 6TE

Tel: 020-7453 6543

This Circular is issued for information, guidance and necessary action.

ANNEX

HOW TO USE THE TERRAIN CLEARANCE TABLE

OPTION 1

Unsure of your position but know that you are within a particular Altimeter Setting Region (ASR):

Apply the Regional Pressure Setting (RPS) for that ASR and read off the terrain clearance flight level.

Example: You know that you are somewhere within the PORTLAND ASR where the RPS is, say, 980 mb. Apply 980 mb to the left hand column of the table (headed REGIONAL QNH) and, following the row across the table to the column headed PORTLAND, establish that you should fly at FL 40 to maintain clearance within the PORTLAND ASR.

OPTION 2

Completely lost but know (or estimate) that you are somewhere within one of the coloured regions of the map:

(a) Apply the Colour Coded RPS for that coloured region, (see note) read off the terrain clearance flight level.

Example: You know (or estimate) that you are somewhere within the YELLOW region of the map and the YELLOW RPS is, say, 1004 mb. Apply 1004 mb to the left hand column (headed REGIONAL QNH) and, following the row across the table to the column headed 'YELLOW', establish that you should fly at FL 55 to maintain terrain clearance within the **whole of the 'YELLOW' region**.

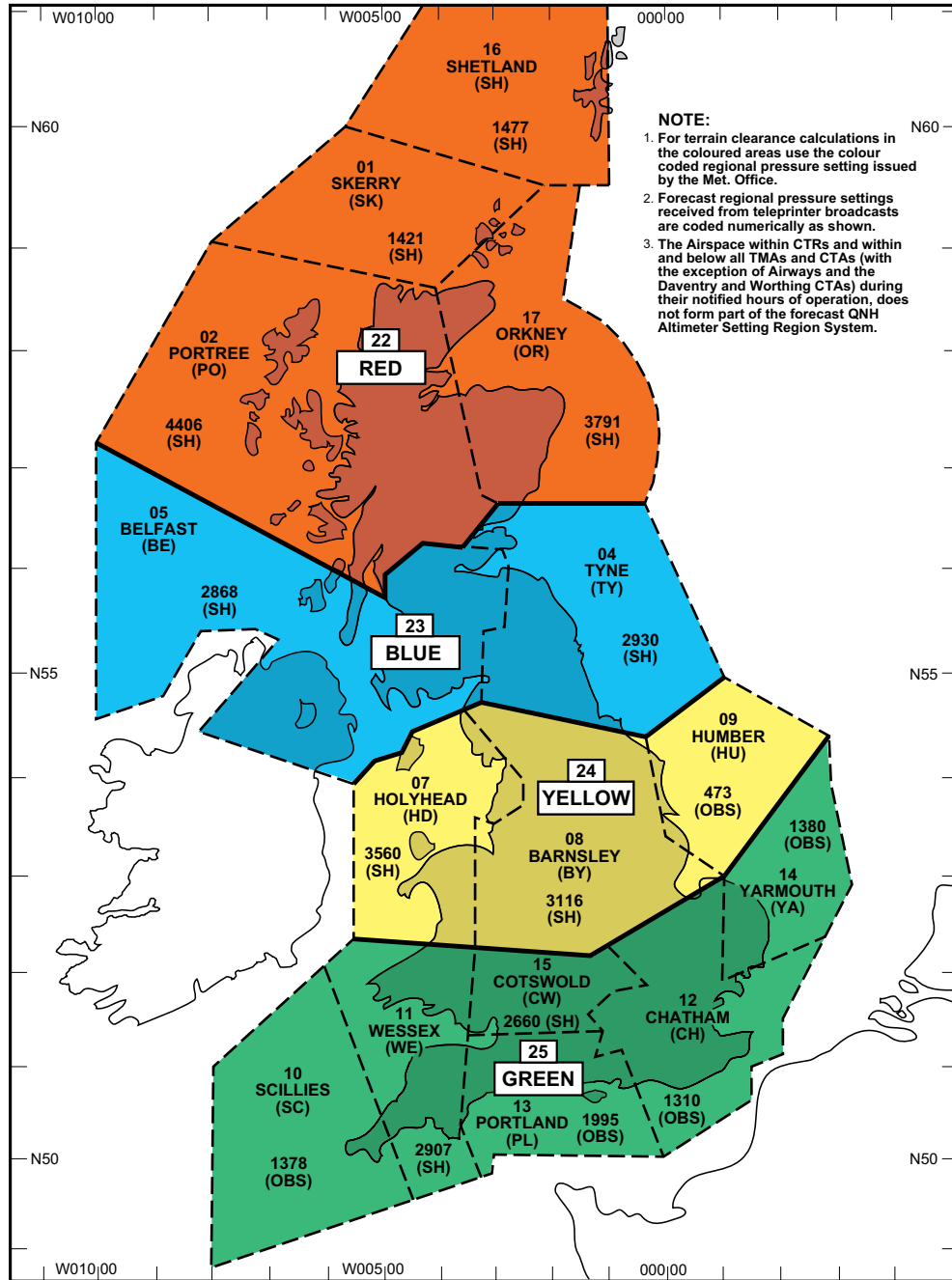
(b) If you estimate that you are flying close to the boundary between two of the coloured regions then you should fly at the higher of the two levels indicated for those regions.

REMEMBER: ALTHOUGH YOU USE THE REGIONAL PRESSURE SETTING TO OBTAIN THE TERRAIN CLEARANCE FLIGHT LEVEL, YOU MUST SET 1013 mb ON THE ALTIMETER SUB-SCALE TO FLY AT THAT FLIGHT LEVEL.

IMPORTANT: WHEN LOST OR UNCERTAIN OF YOUR POSITION ALWAYS CALL THE DISTRESS AND DIVERSION CELL ON 121.500 MHz AT THE EARLIEST OPPORTUNITY.

NOTE: The Met Office at Bracknell will promulgate the lowest Regional Pressure Setting in each of the coloured regions as a colour coded RPS eg 'The YELLOW RPS is 1004 mb'.

ALTIMETER SETTING REGIONS



TERRAIN CLEARANCE TABLE

ASRs	WESSEX	Scillies	Cotswold	Portland	Chatham	Yarmouth	TYNE	Belfast
Highest Obstacle	2907ft	1378ft	2660ft	1995ft	1310ft	1380ft	2930ft	2868ft
Minimum Altitude	4300ft	2400ft	4000ft	3000ft	2400ft	2400ft	4300ft	4200ft
REGIONAL QNH	GREEN						BLUE	
1032 or Above	FL40	FL20	FL35	FL25	FL20	FL20	FL40	FL40
1014 - 1031	FL45	FL25	FL40	FL30	FL25	FL25	FL45	FL45
995 - 1013	FL50	FL30	FL45	FL35	FL30	FL30	FL50	FL50
977 - 994	FL55	FL35	FL50	FL40	FL35	FL35	FL55	FL55
960 - 976	FL60	FL40	FL55	FL45	FL40	FL40	FL60	FL60
943 - 959	FL65	FL45	FL60	FL50	FL45	FL45	FL65	FL65
927 - 942	FL70	FL50	FL65	FL55	FL50	FL50	FL70	FL70
IMPORTANT - SET 1013mb ON THE ALTIMETER SUB-SCALE TO FLY AT A FLIGHT LEVEL.								
ASRs	PORTREE	Orkney	Skerry	Shetland	HOLYHEAD	Barnsley	Humber	
Highest Obstacle	4406ft	3791ft	1421ft	1477ft	3560ft	3116ft	473ft	
Minimum Altitude	5800ft	5100ft	2800ft	2800ft	4900ft	4500ft	1500ft	
REGIONAL QNH	RED				YELLOW			
1032 or Above	FL55	FL50	FL25	FL25	FL45	FL40	FL15	
1014 - 1031	FL60	FL55	FL30	FL30	FL50	FL45	FL20	
995 - 1013	FL65	FL60	FL35	FL35	FL55	FL50	FL25	
977 - 994	FL70	FL65	FL40	FL40	FL60	FL55	FL30	
960 - 976	FL75	FL70	FL45	FL45	FL65	FL60	FL35	
943 - 959	FL80	FL75	FL50	FL50	FL70	FL65	FL40	
927 - 942	FL85	FL80	FL55	FL55	FL75	FL70	FL45	

1. REMEMBER: Although you use the Regional QNH to obtain the Terrain Clearance Flight Level you must set 1013mb on the altimeter sub-scale to fly at that Flight Level.
2. Geographical minimum alt (SH) has been adjusted to 300ft to allow for uncharted obstacles.
3. IMPORTANT: When lost or uncertain of your position always call the Distress and Diversion cell on 121.5MHz at the earliest opportunity.
4. For information on how to use this table refer to AICs.