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POOLEYS

Meteorology Audio CD Sleeve Illustrations

Fig. 1–Structure of the Atmosphere

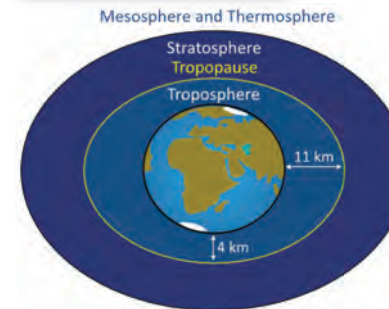


Fig. 2–Solar Radiation

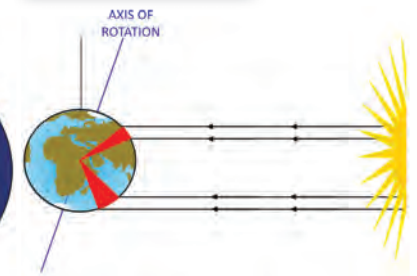
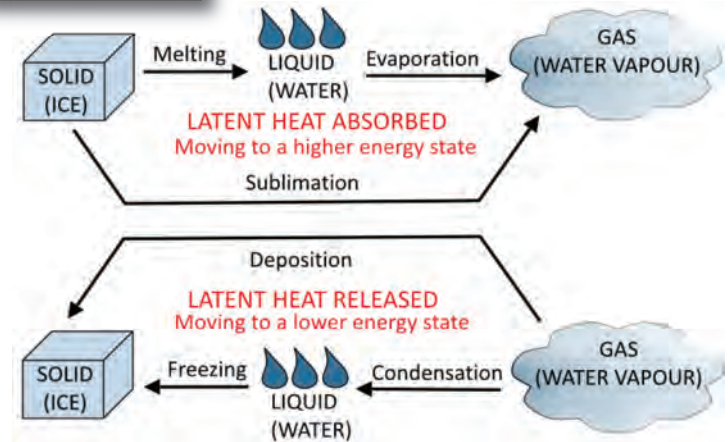


Figure 27 Answers:

13.	<table border="1"> <tr><td colspan="3">5230N 00E</td></tr> <tr><td>24</td><td>040 40</td><td>-39</td></tr> <tr><td>18</td><td>020 10</td><td>-31</td></tr> <tr><td>10</td><td>050 15</td><td>-14</td></tr> <tr><td>05</td><td>070 10</td><td>-06</td></tr> <tr><td>02</td><td>130 10</td><td>-03</td></tr> <tr><td>01</td><td>150 05</td><td>+00</td></tr> </table>	5230N 00E			24	040 40	-39	18	020 10	-31	10	050 15	-14	05	070 10	-06	02	130 10	-03	01	150 05	+00	14.	<table border="1"> <tr><td colspan="3">50N 05W</td></tr> <tr><td>24</td><td>340 25</td><td>-39</td></tr> <tr><td>18</td><td>360 25</td><td>-27</td></tr> <tr><td>10</td><td>020 25</td><td>-12</td></tr> <tr><td>05</td><td>020 20</td><td>-04</td></tr> <tr><td>02</td><td>080 05</td><td>+02</td></tr> <tr><td>01</td><td>080 05</td><td>+06</td></tr> </table>	50N 05W			24	340 25	-39	18	360 25	-27	10	020 25	-12	05	020 20	-04	02	080 05	+02	01	080 05	+06
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Fig. 3–Latent Heat



TEMPERATURE DEGREES C	RELATIVE HUMIDITY %					
30	16	24	31	45	57	100
20	28	42	54	79	100	
15	36	53	69	100		
10	52	77	100			
5	67	100				
-5	100					
WATER CONTENT g/cubic metre	5	7	9	14	17	30

Fig. 4—Relative Humidity

Relative Humidity =

$$\frac{\text{Mass of Water Vapour}}{\text{Mass of Water Vapour for Saturation}} \times \frac{100\%}{1}$$

Fig. 5—Atmospheric Stability

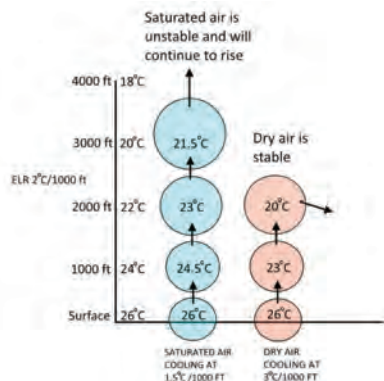
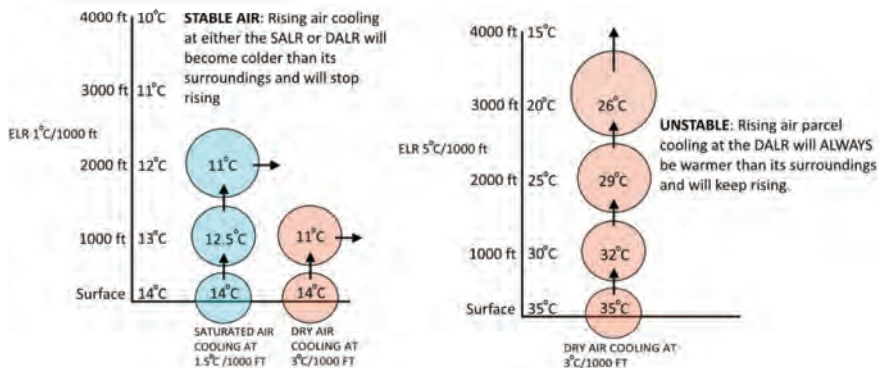


Fig. 26—Practical Examples

Refer to Figure 23 (Page 11) to determine the following:

- What is the 3,000 feet wind vector and temperature at position 52 30N 00E?
- What is the 4,000 feet wind velocity and temperature at position 50N 05W?
- What is the 4,000 feet wind velocity and temperature at position 55N 01 15W?

(See back page for the answers to questions 13-15)

Refer to Figure 24 (Page 12) to decode the following:

- What is the forecast surface visibility, weather, cloud & freezing level in Area B?
- What is the forecast surface visibility, weather, cloud & freezing level in Area D?
- What is the feature depicted in Area A and how fast is it moving?
- What is the outlook?
- What is the feature in Area D and what is its speed and direction of travel?

Fig. 25—Met Symbols

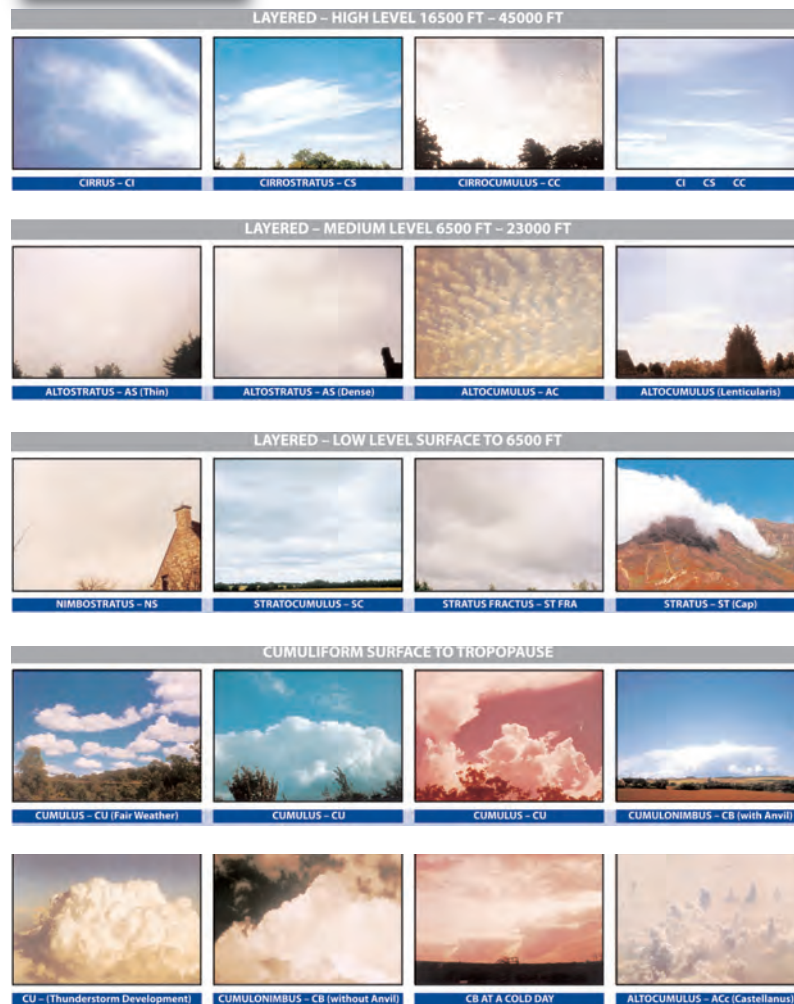
Table 3.5.10.1 — Significant Present and Forecast Weather Codes				
Intensity or Proximity	Qualifier		Weather Phenomena	
	Descriptor	Precipitation	Obscuration	Other
- Light	BC — Patches	DZ — Drizzle	BR — Mist	DS — Duststorm
Moderate	BL — Blowing	GR — Hail	DU — Widespread Dust	FC — Funnel Cloud(s) (tornado or water-spout)
+ Heavy (Well developed in the case of FC and PC)	DR — Drifting	GS — Small hail (<5 mm diameter) and/or snow pellets	FG — Fog	PO — Dust/Sand Whirls (Dust Devils)
VC In the vicinity (not at the aerodrome but not further away than approx 8 km from the aerodrome perimeter)	FZ — Freezing (Super-Cooled)	IC — Ice Crystals (Diamond Dust)	FU — Smoke	SQ — Squall
	MI — Shallow	PL — Ice-Pellets	HZ — Haze	SS — Sandstorm
	PR — Partial (covering part of aerodrome)	RA — Rain	SA — Sand	—
	SH — Shower(s)	SG — Snow Grains	VA — Volcanic Ash	—
	TS — Thunderstorm	SN — Snow	—	—

Fig. 26—Practical Examples

TAFs and METARs

- FC GLOUCESTERSHIRE EGBJ 051358Z 0515/0520 23015G25KT 9999 BKN015 PROB40 TEMPO 0515/0520 8000 -RADZ BKN012
- FC BOURNEMOUTH EGGH 051403Z 0515/0524 25020KT 9999 SCT010 BKN020 TEMPO 0515/0524 25023G35KT 6000 +RA BKN010
- TAF LYDD EGMD 081359Z 0815/0820 29025KT 6000 BKN008 TEMPO 0815/0820 24028G40KT RADZ SCT008 BKN010
- SA LUTON EGGW 051250Z 25028G41KT 9999 BKN023 12/08 Q1015
- SA GLASGOW EGPF 231500Z 01005KT CAVOK 12/03 Q1032 NOSIG
- SA BRISTOL EGGD 121050Z 23005KT 200V270 CAVOK 22/02 Q1031 NOSIG
- SA CARDIFF EGGF 301450Z 30009KT 9999 VCSH FEW010 BKN014 05/02 Q0998 BECMG BKN025
- FT NEWCASTLE EGNT 081445Z 0816/0901 23027G38KT 7000 BR SCT025 BKN035 TEMPO 0818/0921 4000 -RADZ SCT007 BKN012 PROB30 TEMPO 0818/0921 BKN005
- TAF BRUSSELS EBBR 130500Z 1307/1316 31015G25KT 8000 -SHRA FEW005 SCT010 SCT018CB BKN025 PROB30 1314/1316 TSRA BKN010CB
- METAR BIGGIN HILL EGKB 270820 00000KT 0500 FG VV002 02/M01 Q1028
- METAR BIGGIN HILL EGKB 270850 VRB04KT 0200 FG VV/// 02/M01 Q1028
- TAF LUTON EGGW 081700Z 0818/0918 16007KT 9999 FEW030 PROB30 0820/0824 8000 BKN012 BECMG 0900/0903 4000 BR BKN004 PROB40 0903/0909 0300 FG OVC000 BECMG 0909/0912 8000 NSW BKN010 BECMG 0912/0914 9999 SCT020

Fig. 6—Clouds



This cloud poster is available to purchase from www.pooleys.com

Fig. 7—Clouds in Reports

Cloud in TAFs and METARS:

- a. FEW007 SCT016 BKN045
- b. SCT012CB
- c. SCT030TCU

Cloud in Area Forecasts:

- d. 4/8AC 7000FT/15000FT

Fig. 10—Geostrophic Wind

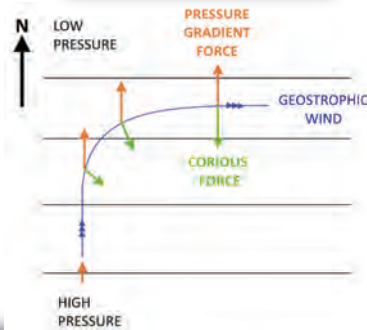
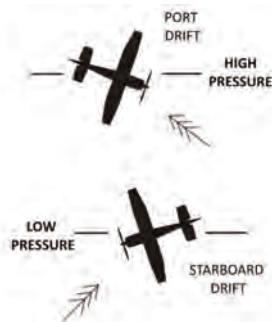
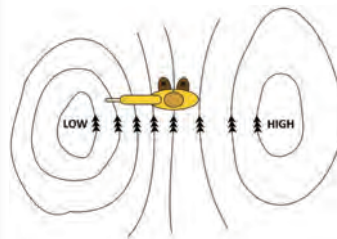


Fig. 10a—Buys Ballot's Law & Drift



	Cold front at the surface
	Warm front at the surface
	Occluded front at the surface
	Quasi-stationary front at the surface

Cloud Types

- CI = Cirrus
- CC = Cirrocumulus
- CS = Cirrostratus
- AC = Alto cumulus
- AS = Altostratus
- NS = Nimbostratus
- SC = Stratocumulus
- ST = Stratus
- CU = Cumulus
- CB = Cumulonimbus (its insertion implies hail moderate or severe icing and/or turbulence)
- LYR = Layer or layered (instead of the cloud type)

Fig. 8—Pressure Gradient Force

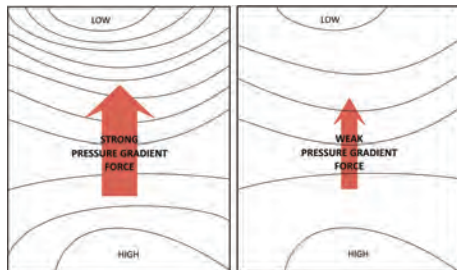
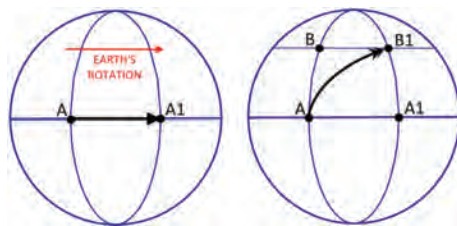


Fig. 9—Coriolis Effect



Cloud Amounts

Clouds except CB

- SKC = Clear (0 okta)
- FEW = Few (1/8 or 2/8)
- SCT = Scattered (3/8 or 4/8)
- BKN = Broken (5/8 to 7/8)
- OVC = Overcast (8/8)

CB Only

- ISOL = Individual CB's (isolated)
- OCNL = Well separated CB's (occasional)
- FRQ = CB's with little or no separation (frequent)
- EMBD = Thunderstorm clouds contained in layers of other clouds (embedded)

Fig. 24—Metform 215

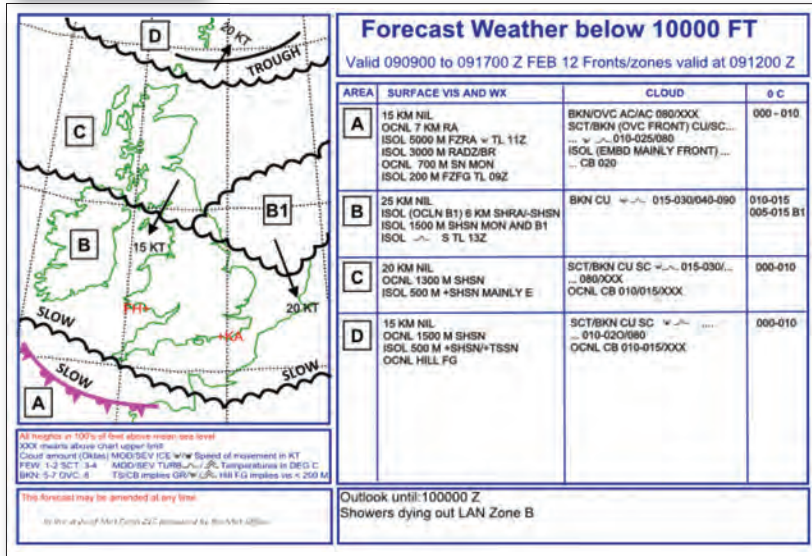


Fig. 11—Gradient Wind

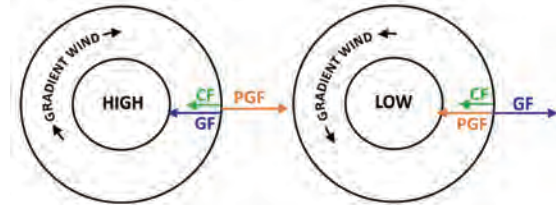


Fig. 12—Turbulence Layer

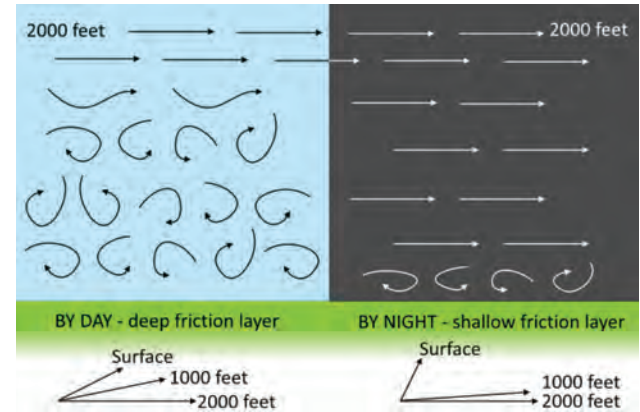


Fig. 25—Met Chart Symbols

	Thunderstorm		Rain
	Tropical cyclone		Snow
	Severe squall line		Widespread blowing snow
	Hail		Shower
	Moderate turbulence		Severe sand or dust haze
	Severe turbulence		Widespread sandstorm or duststorm
	Marked mountain waves		Widespread haze
	Light aircraft icing		Widespread mist
	Moderate aircraft icing		Widespread fog
	Severe aircraft icing		Freezing fog
	Freezing precipitation		Widespread smoke
	Drizzle		Volcanic eruption

Fig. 13—Sea Breeze

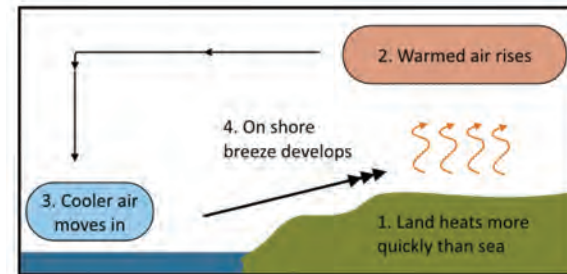


Fig. 14—Air Masses

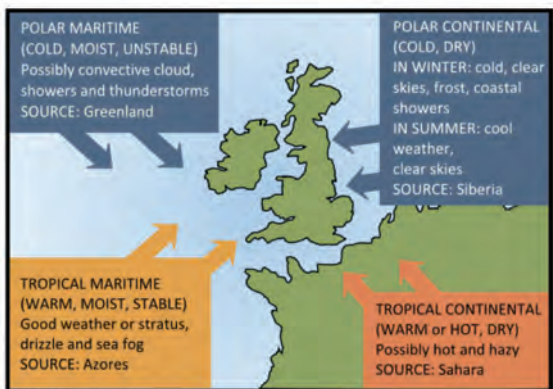


Fig. 23—Metform 214

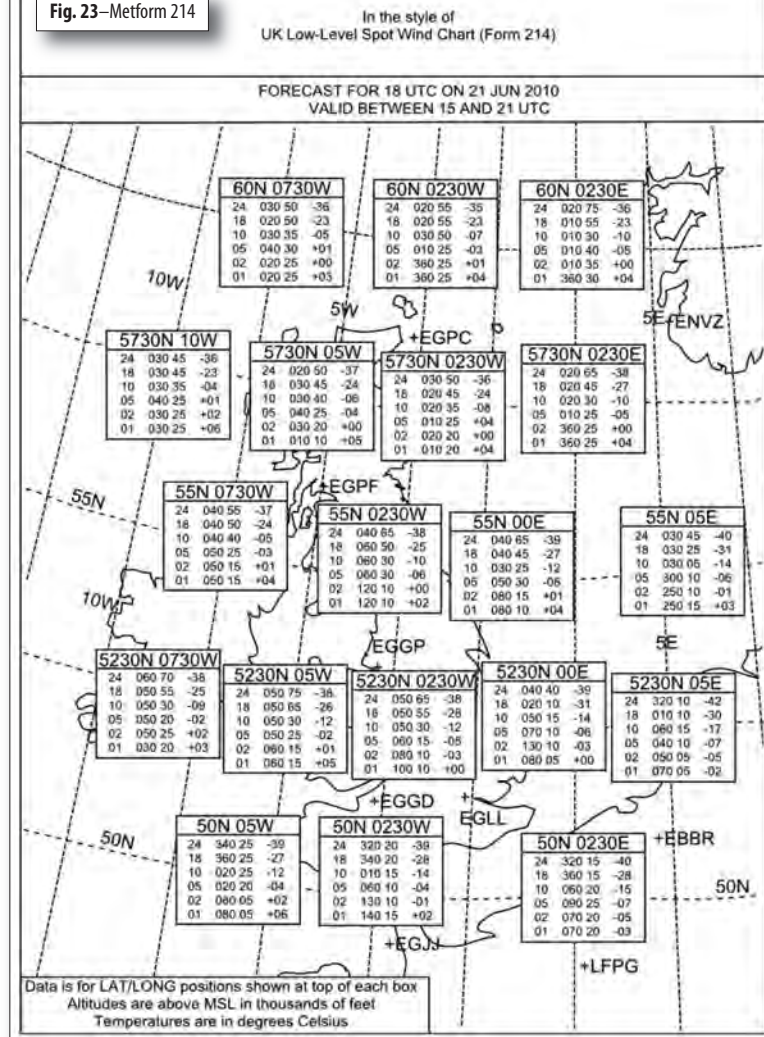


Fig. 15—Warm Front

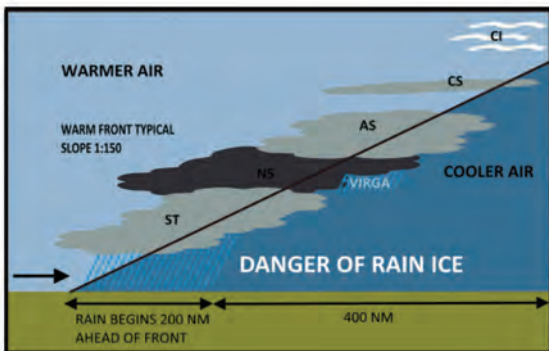
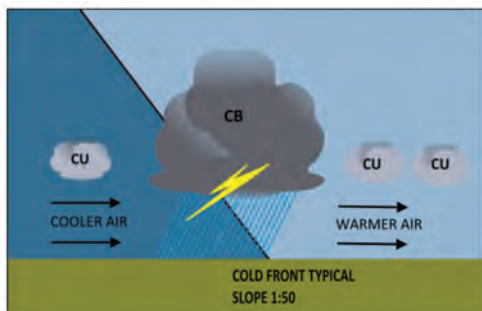
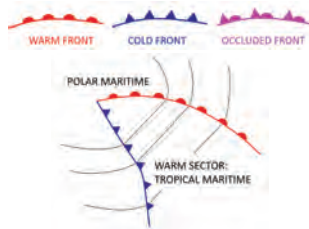


Fig. 16—Cold Front and Typical Warm Sector Depression



Example AIRMET

884

FAUK39 EGRM 021200

AIRMET AREA FORECAST, CROSS CHANNEL,
VALID FEB 02/1300Z TO 02/2100Z.

MET-SITUATION: AT 18Z A COLD FRONT LIES FM IPSWICH TO
QUIMPER, MOVING SE AT 25KT. THIS IS FOLLOWED BY ANOTHER
COLD FRONT.

STRONG WIND WRNG: MEAN WINDS 20KT WITH GUSTS 30-35KT.

WINDS:

1000FT: 230/25KT, BECMG 230/35KT BY 19Z. PS03.

3000FT: 250/25KT, BECMG 250/35KT BY 19Z. PS05.

6000FT: 270/25KT, BECMG 270/40KT BY 19Z. ZERO.

FREEZING LEVEL: 6000FT.

WEATHER-CONDITIONS: 2 ZONES AT 18Z:

ZONE 1: NW OF A LINE FROM N5200 E00100 TO CHERBOURG,
MOVING SE AT 25KT.

GEN 20KM, WITH 0-3/8ST 1200FT/2000 AND 5-7/8CUSC
2500FT/7000 AND 6-8/8AC 9000FT/15000.
OCNL, 7KM IN RA, WITH 2-5/8ST 800FT/2000 AND 7-8/8CUSC
2000FT/8000 AND 8/8ACAS 8000FT/16000.
ISOL, BUT OCNL WINDWARD COT AND UPSLOPES, 2000M IN RADZ
AND BR, WITH 4-7/8ST 300FT/1500 AND 7-8/8CUSC 1500FT/8000
AND 8/8ACAS 8000FT/16000.

WRNG: HILL FG. MOD ICE AND MOD TURB IN CLD. MTW MAX VSP
1000FPM AT 8000FT UK. OCNL MOD, ISOL SEV, TURB BLW
6000FT.

ZONE 2: REST OF REGION.

GEN 15KM, WITH 3-6/8SC 1500FT/3000.
OCNL, 7KM IN HZ, WITH 5-7/8STSC 700FT/3000.
ISOL, 2500M IN BR, WITH 7-8/8STSC 400FT/3000.

WRNG: HILL FG.

OUTLOOK: UNTIL FEB 03/0100Z:

SIMILAR.

Fig. 17—Formation of a Warm Sector Depression

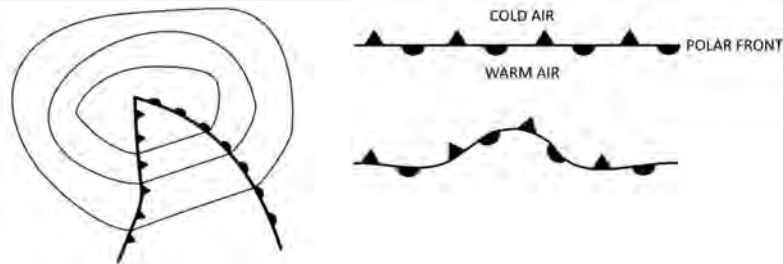


Fig. 18—Occluded Fronts

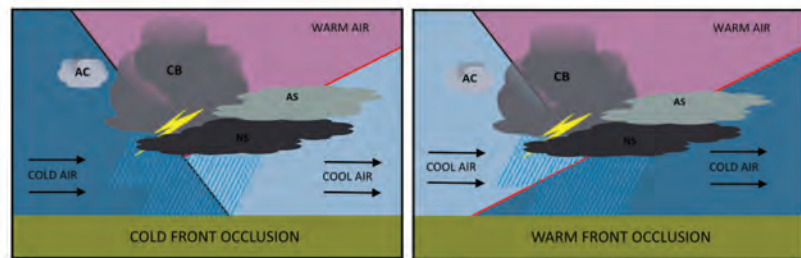


Fig. 19—Col

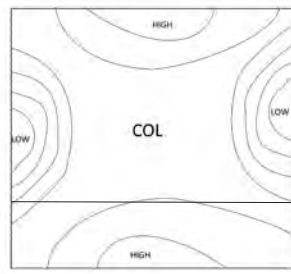


Fig. 20—Slant Visibility in Fog



Fig. 21—Engine Icing

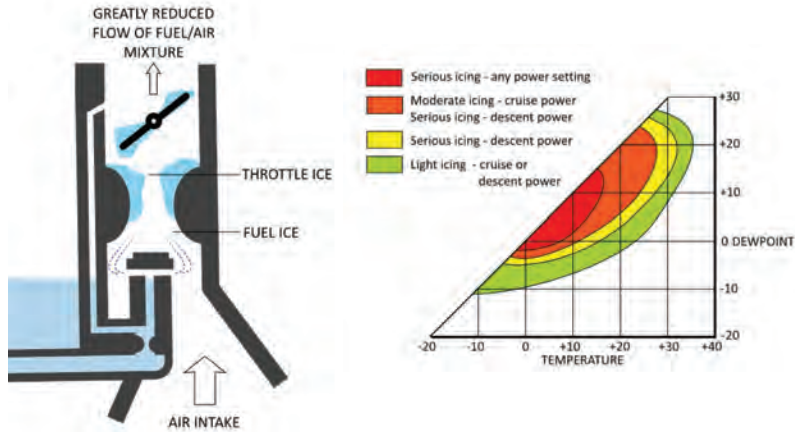
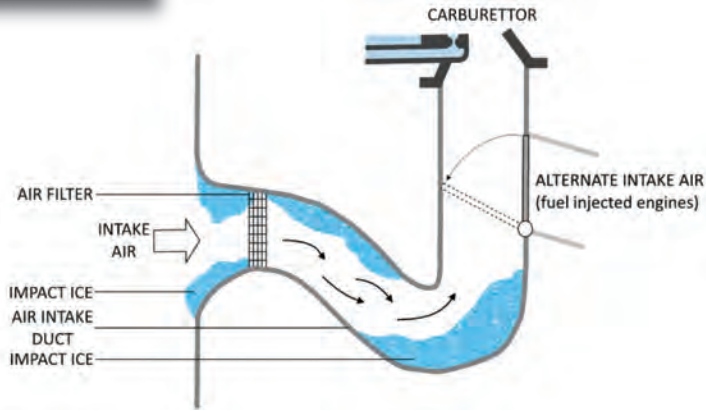
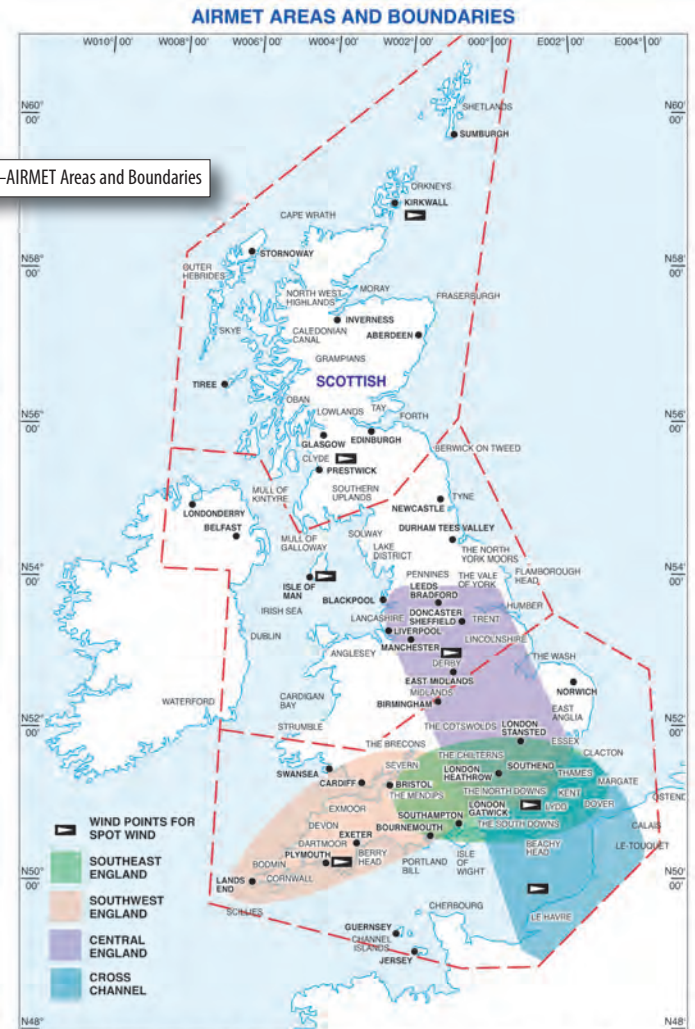


Fig. 22—AIRMET Areas and Boundaries



The place names shown on the map will be used by forecasters to locate the position of Fronts and other weather features.

Extract from the Pooleys Flight Guide to the United Kingdom