PPL VFR FIight Planning & Navigation

V6 – Updated April 2021

VFR Flight Planning & Navigation

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- Navigating / flying the route
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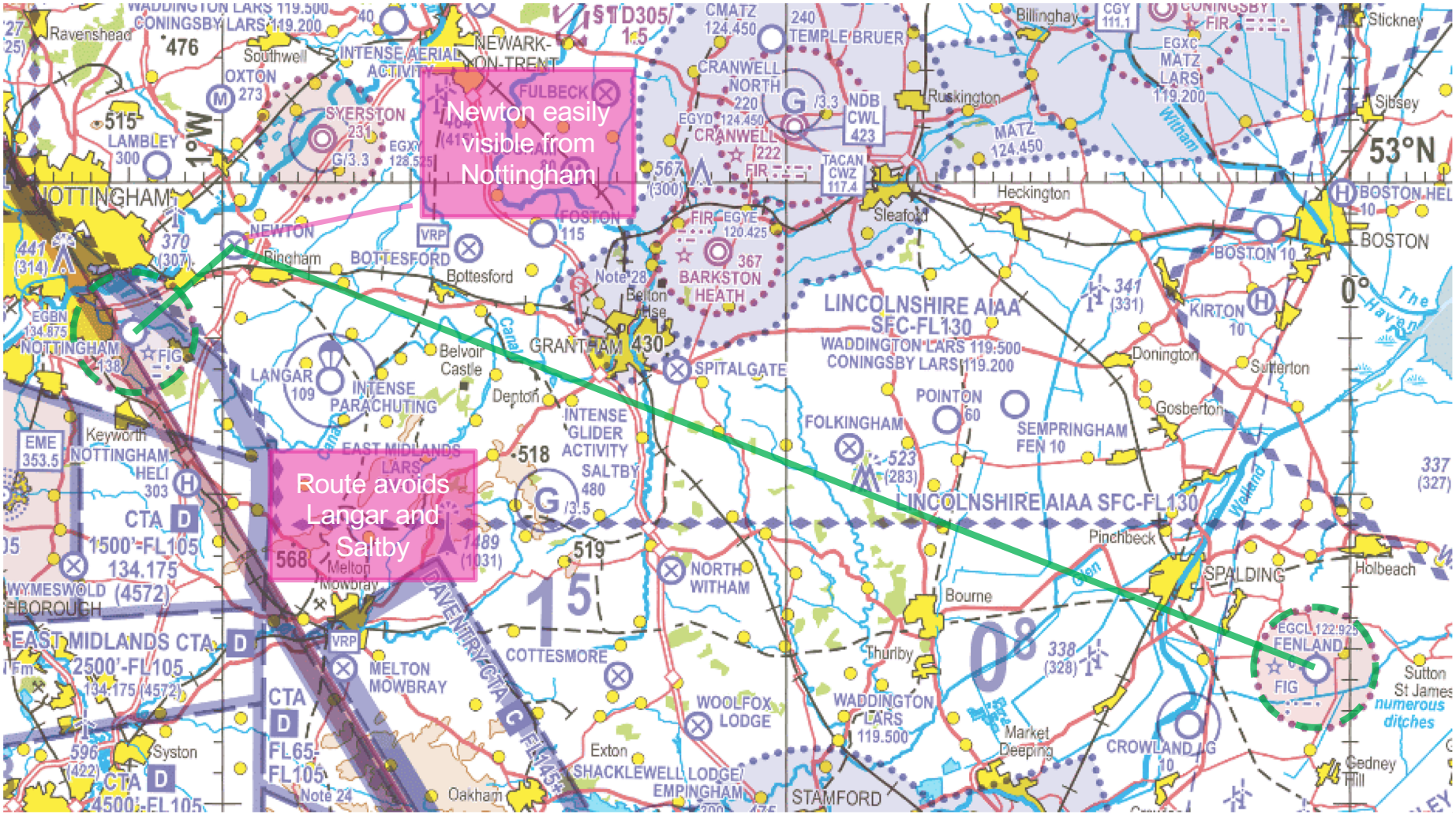
  - Controlled airspace / MATZ / Basic/Traffic Service
  - Lost procedures

Finding the initial route

Aim: Find a suitable initial route from departure to destination

- Mark departure and destination with dotted outline
- Choose an obvious first waypoint near departure (ideally where you can be straight and level, at cruising speed)
- Find a route (avoiding danger areas, glider sites, active airfields, airspace)



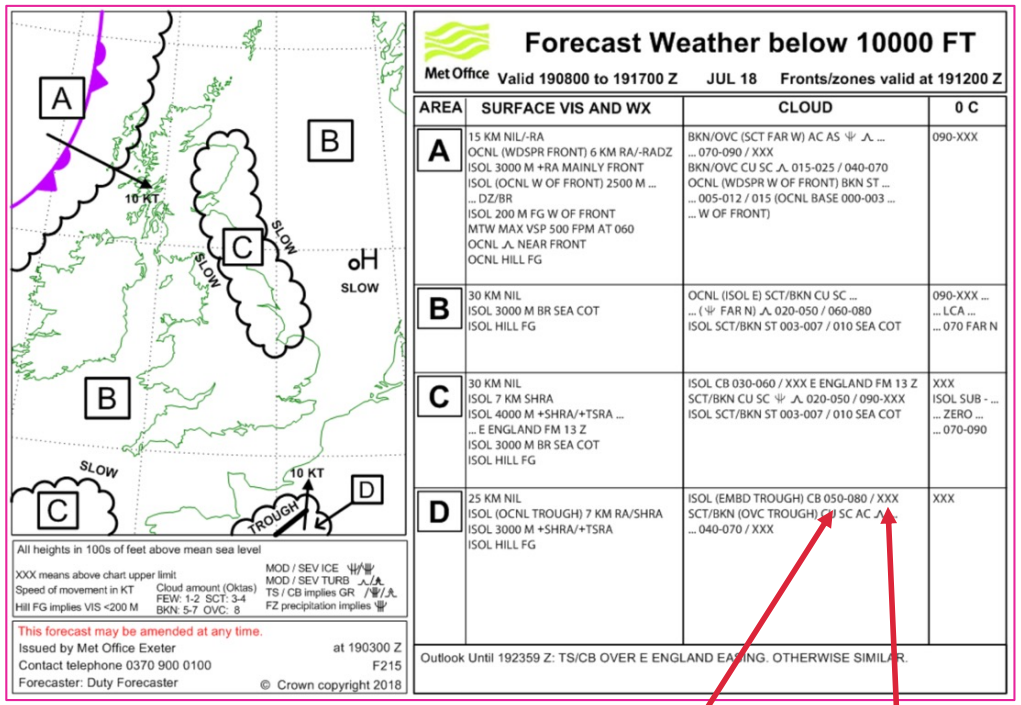
Collecting pre-flight information: Weather (part 1)

Aim: Collect weather information and amend the plan accordingly

- Form F215 and F214 from the Met Office give an overview of the weather and the winds aloft which you need for your plog

https://www.metoffice.gov.uk/premium/generalaviation/#/briefingcharts

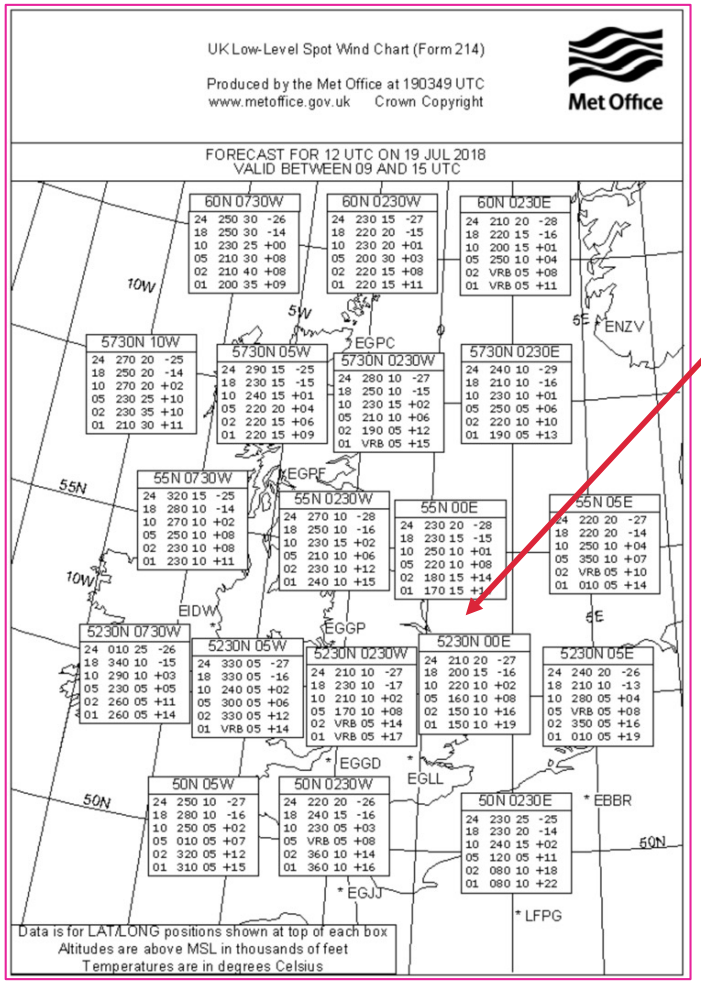
F215



Cloud base 5000 – 8000 ft

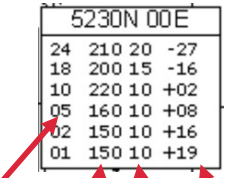
XXX = Cloud tops >10,000ft

F214



5230N 00E is 8 miles East of Peterborough (so use this mostly)

5230N 0230W is 20 miles West of Birmingham



Altitude

Wind direction

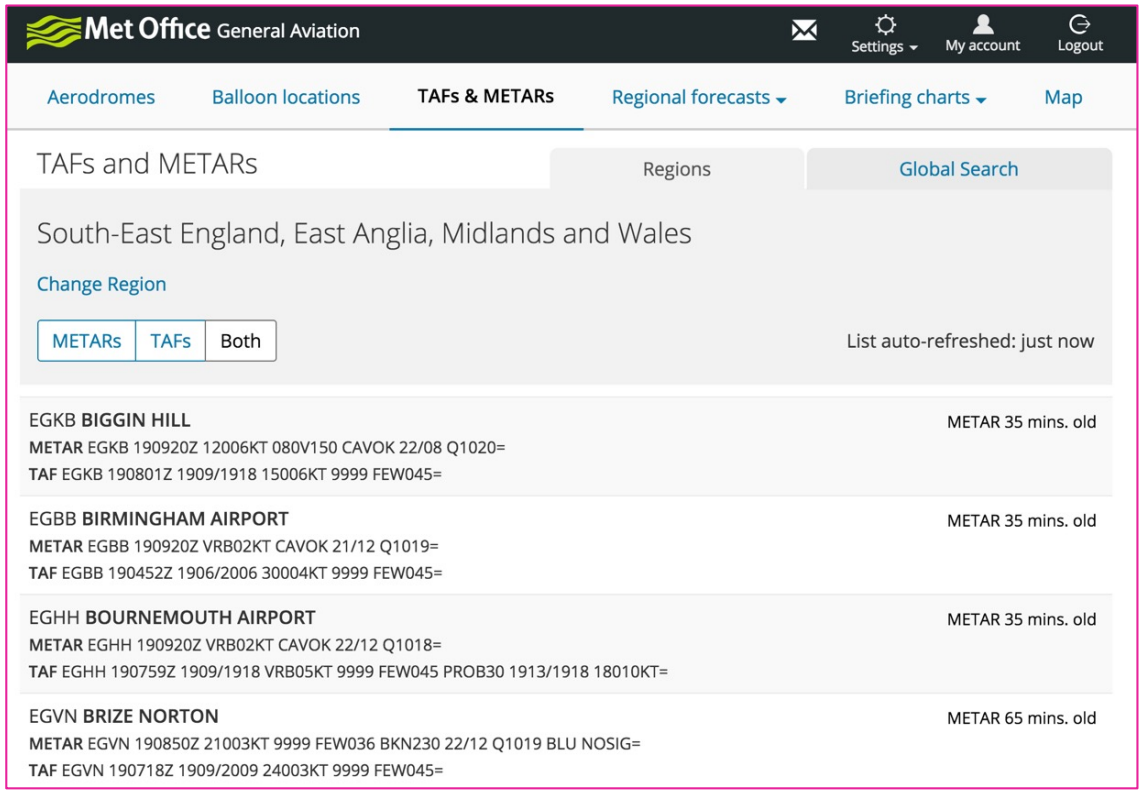
Wind speed (kt)

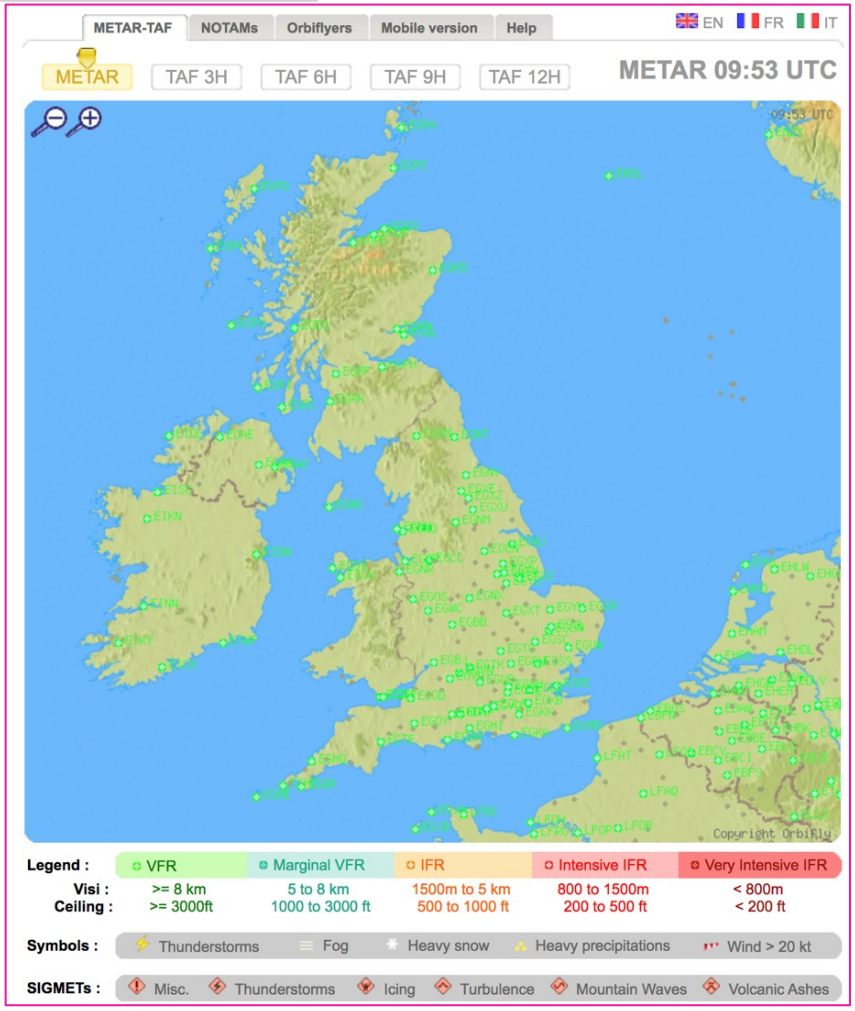
OAT

Collecting pre-flight information: Weather (part 2)

Aim: Collect weather information and amend the plan accordingly

- Collect METAR and TAFs for departure, destination and relevant airfields en route and alternates
- https://www.metoffice.gov.uk/premium/generalaviation/#/tafsAndMetars
- Unofficial tools like Met N Map can help provide useful additional perspective: http://www.orbifly.com/member/metmap.php?region_choose=UKI&mode=METAR&lang=ENG

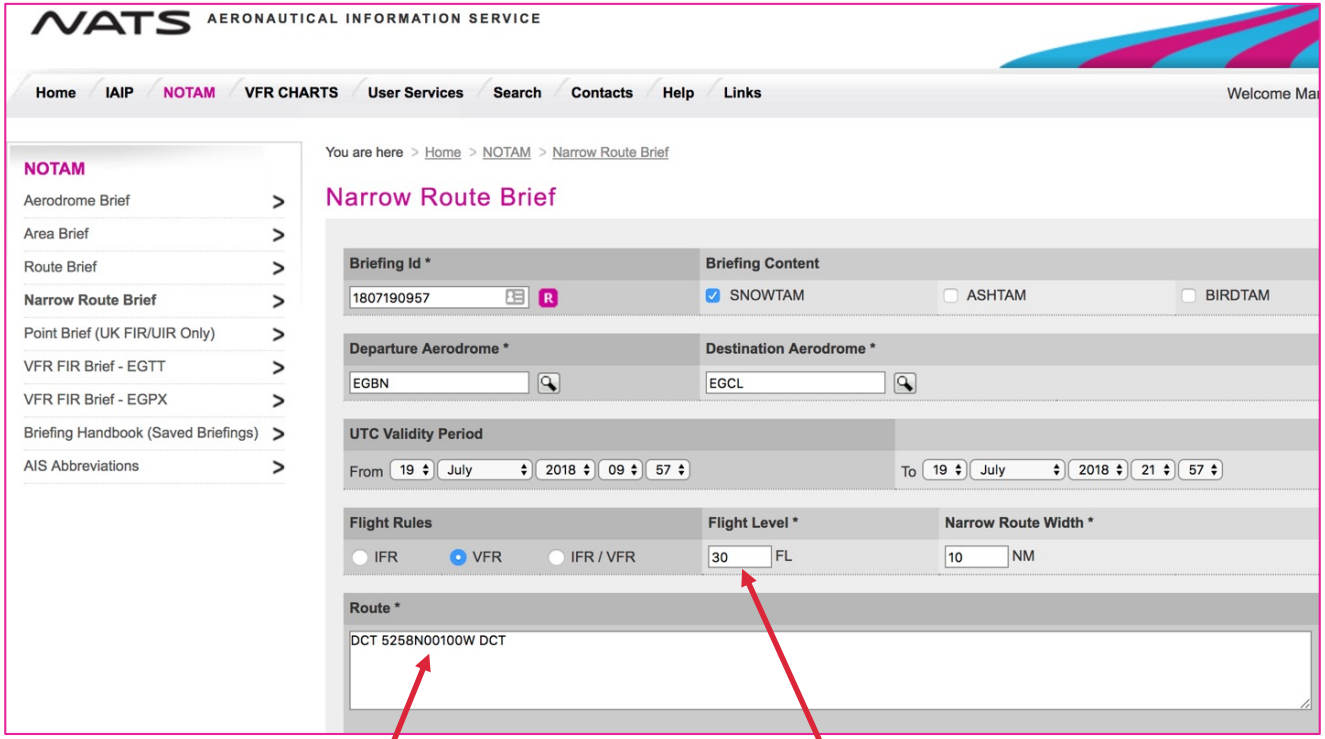




Collecting pre-flight information: NOTAMs

Aim: Collect NOTAM information and amend route accordingly

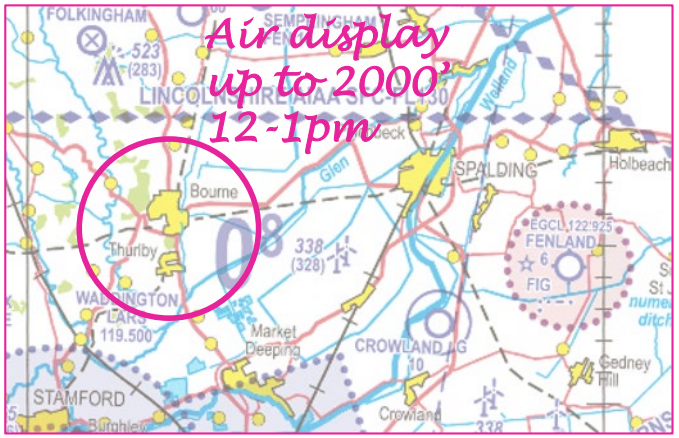
- Official NOTAM information is available from NATS. You can register for a free account online
- http://www.nats-uk.ead-it.com/public/index.php%3Foption=com_content&task=blogcategory&id=166&Itemid=4.html
- Unofficial sites can be helpful to locate NOTAMs e.g.: http://notaminfo.com/ukmap



How to enter Lat/Long waypoints

En Route altitude 3000' = FL30

- Once you have any relevant NOTAM information, draw it on the map



Collecting pre-flight information: Airfield Information

Aim: Collect Airfield information and plan accordingly

- Official Airfield information is available from NATS AIP
- http://www.nats-uk.ead-it.com/fwf-natsuk/restricted/user/common/cms.faces?page=aip
- Then choose "Current AIP"
- Many airfields are PPR (prior permission required) and even if not, it is worth telephoning them for the latest information

Current eAIP

AIRAC 03/2021 electronic AIP

NATS eAIS Package United Kingdom
See cover page for details.

History | Help | EN
PDF | About | UK AIS Website

AIP | AMDT | SUPs | AICs

Effective 25 MAR 2021

- PART 1 - GENERAL (GEN)
  - + GEN 0
  - + GEN 1 NATIONAL REGULATIONS AND REQUIREMEN
  - + GEN 2 TABLES AND CODES
  - + GEN 3 SERVICES
  - + GEN 4 CHARGES FOR AERODROMES/HELIPORTS A
- PART 2 - EN-ROUTE (ENR)
  - + ENR 0
  - + ENR 1 GENERAL RULES AND PROCEDURES
  - + ENR 2 AIR TRAFFIC SERVICES AIRSPACE
  - + ENR 3 ATS ROUTES
  - + ENR 4 RADIO NAVIGATION AIDS/SYSTEMS
  - + ENR 5 NAVIGATION WARNINGS
  - ENR 6 EN-ROUTE CHARTS
- PART 3 - AERODROMES (AD)
  - + AD 0
  - + AD 1 AERODROMES/HELIPORTS - INTRODUCTION
  - − AD 2 AERODROMES
    - + EGPD ABERDEEN/DYCE
    - + EGJA ALDERNEY
    - + EGSL ANDREWSFIELD
    - + EGPR BARRA
    - + EGNL BARROW/WALNEY ISLAND
    - + EGBF BEDFORD
    - + EGAA BELFAST ALDERGROVE
    - + EGAC BELFAST/CITY

- EGCL FENLAND
  - AD 2.1 EGCL AERODROME LOCATION INDICATOR AND N
  - AD 2.2 EGCL AERODROME GEOGRAPHICAL AND ADMINIS
  - AD 2.3 EGCL OPERATIONAL HOURS
  - AD 2.4 EGCL HANDLING SERVICES AND FACILITIES
  - AD 2.5 EGCL PASSENGER FACILITIES
  - AD 2.6 EGCL RESCUE AND FIRE FIGHTING SERVICES
  - AD 2.7 EGCL SEASONAL AVAILABILITY - CLEARING
  - AD 2.8 EGCL APRONS, TAXIWAYS AND CHECK LOCATION

At the bottom of the page you will see a link to the charts for the aerodrome

EGCL AD 2.24 CHARTS RELATED TO AN AERODROME

AERODROME CHART - ICAO
AD 2.EGCL-2-1

EGCL — FENLAND

EGCL AD 2.1 AERODROME LOCATION INDICATOR AND NAME

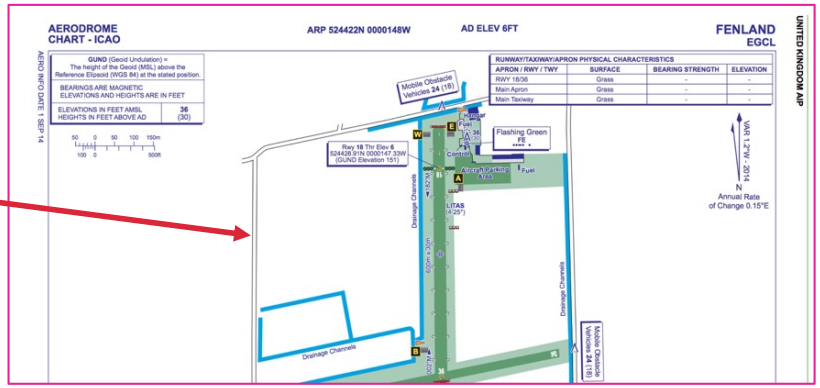
EGCL — FENLAND

EGCL AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	ARP coordinates and site at AD	Lat: 524422N Long: 0000148W Mid point of Runway 18/36
2	Direction and distance from city	6 NM SE of Spalding.
3	Elevation / Reference temperature / Mean Low Temperature	6 FT / 19 °C / -
4	Geoid undulation at AD ELEV PSN	151 FT
5	Magnetic Variation / Annual Change	0.45°E (2022) / 0.20°E
6	AD Administration	FENLAND AERO CLUB (LICENSING) LTD.
	Address	Fenland Aerodrome, Jekylls Bank, Holbeach S t. Johns, Spalding, Lincolnshire, PE12 8RQ.
	Telephone	01406-540330 (Club House and ATC - Weekends only) 01406-540461 (Flying School)
	Telefax	01406-540461 (Flying School)
	E-mail address	facsecretary@fenlandairfield.co.uk
	Web address	www.fenlandairfield.co.uk
7	Type of Traffic permitted (IFR/VFR)	VFR
8	Remarks	

EGCL AD 2.3 OPERATIONAL HOURS

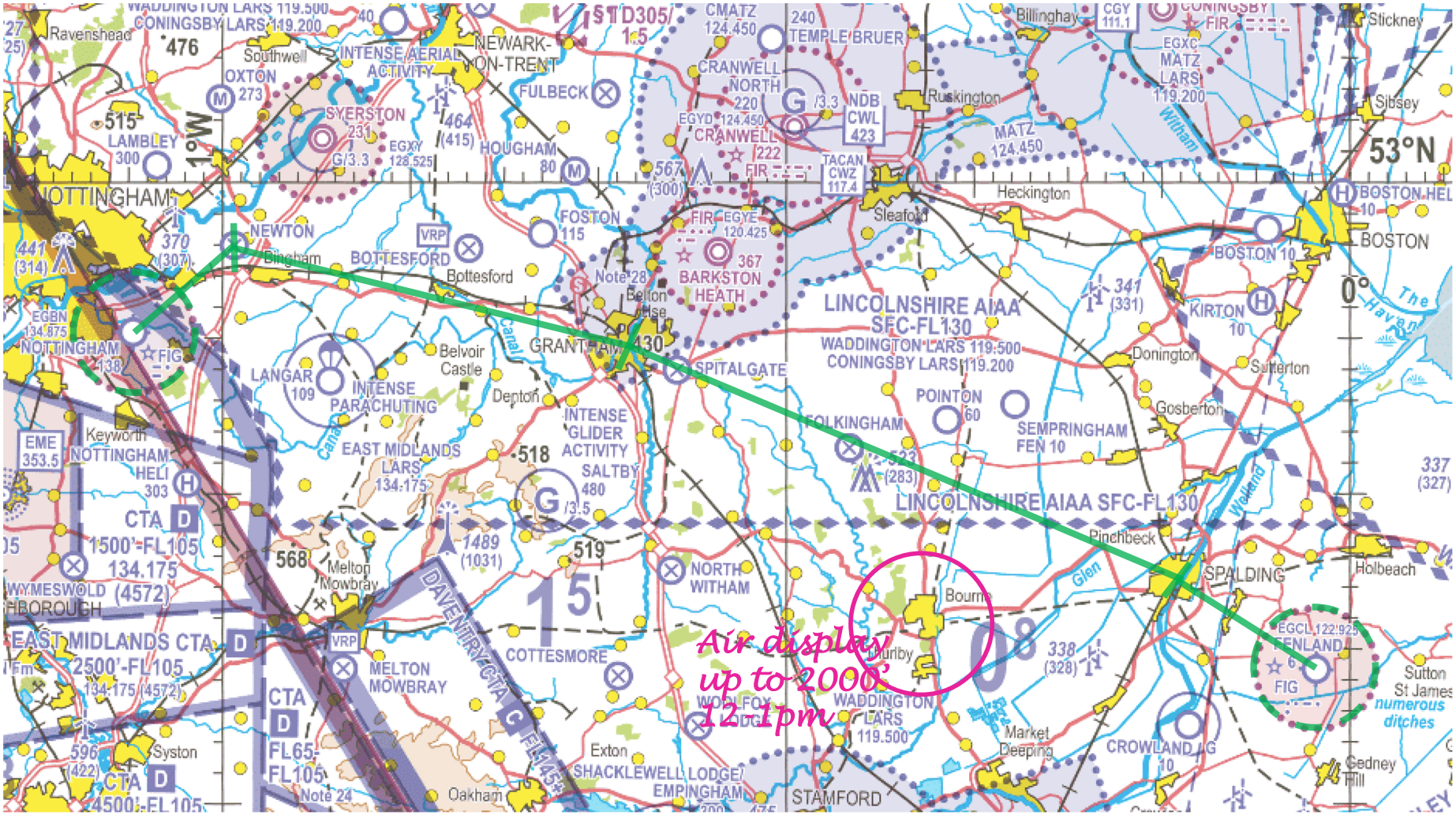
1	AD Administration	Tue-Sun 0900-1700 (0800-1600) or SS, whichever is earlier; and by arrangement.
2	Customs and immigration	By arrangement.
3	Health and sanitation	
4	AIS Briefing Office	
5	ATS Reporting Office (ARO)	
6	MET Briefing Office	
7	ATS	As AD hours.
8	Fuelling	As AD hours.
9	Handling	
10	Security	
11	De-icing	
12	Remarks	Non Radio aircraft require PPR. Mondays, aerodrome not licensed, but self service AVGAS 100LL and AVGAS UL91 fuel available. Grass cutting could be taking place.



Finalising the route and drawing on the map

Aim: draw final route on map

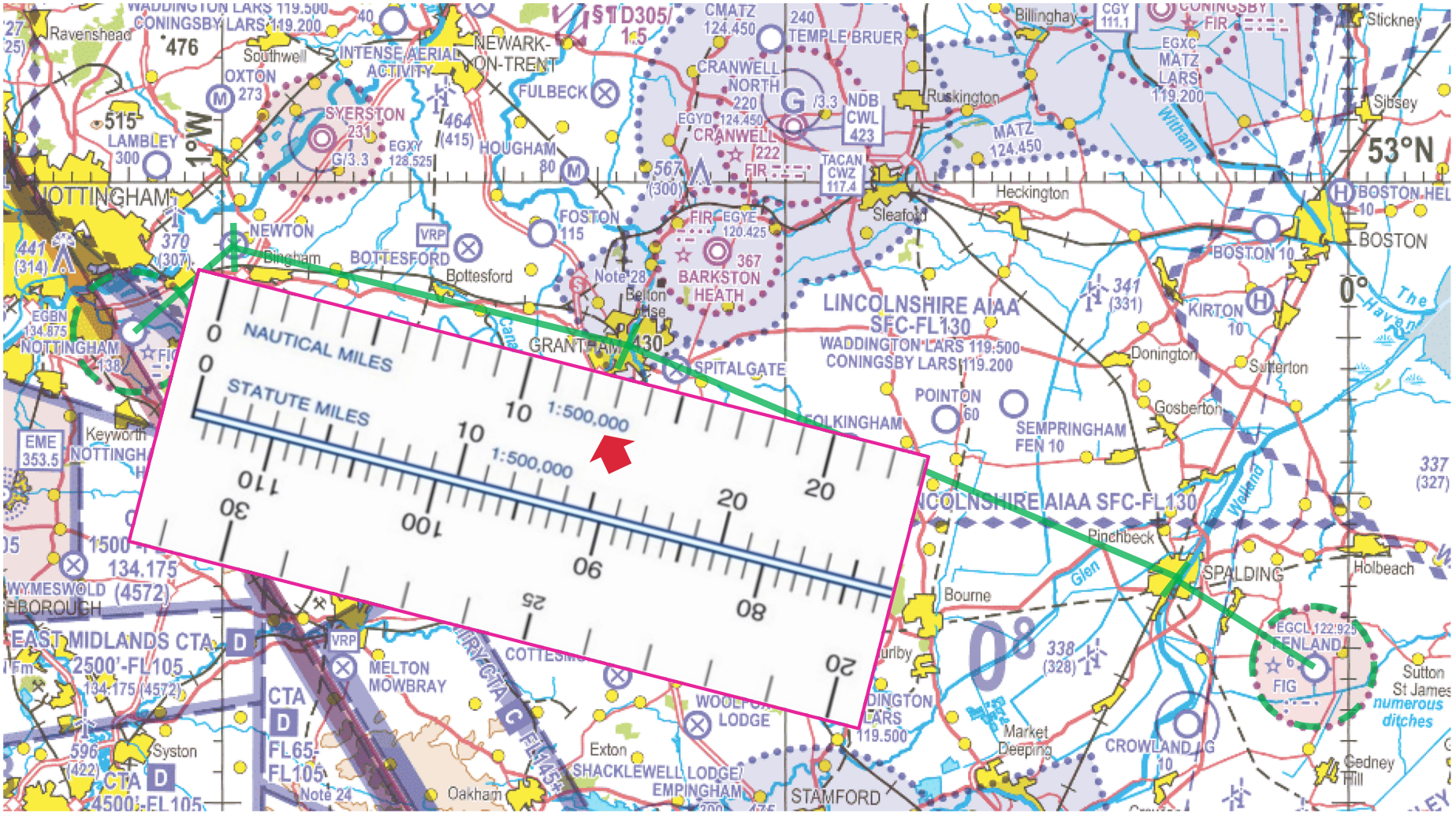
- Final route uses obvious turning points (Grantham and Spalding) and keeps clear of the air display
- It does cross the MATZ but we can climb above or request a MATZ penetration



Completing the PLOG – Measuring the legs

Aim: Measure the Distance of each leg on the chart

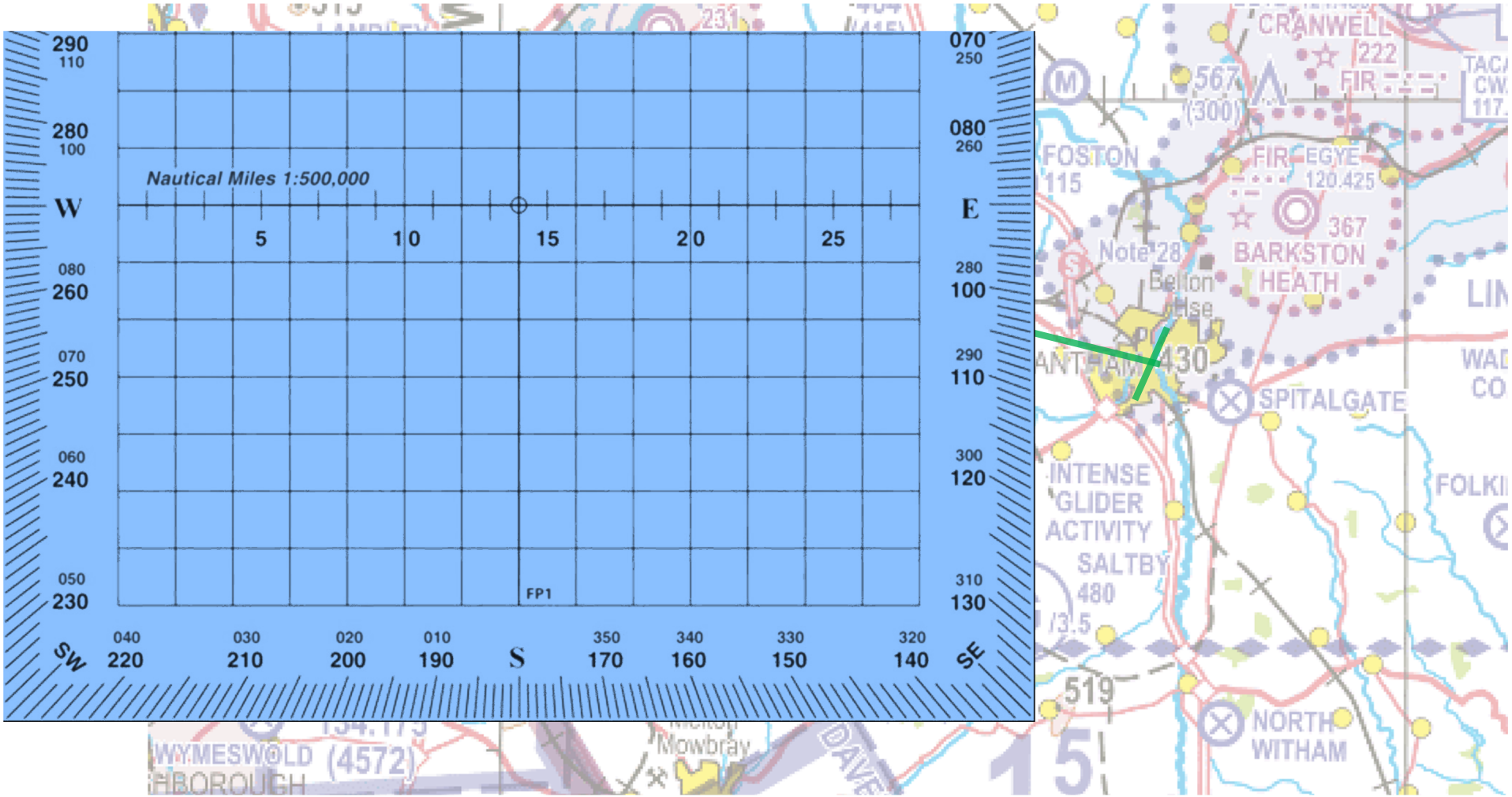
- Measure the distance for each leg using the scale ruler
- Ensure the scale you use on the ruler matches the chart - 1:500,000 in this case



Completing the PLOG – Measuring the True Track

Aim: Measure the True Track from the chart

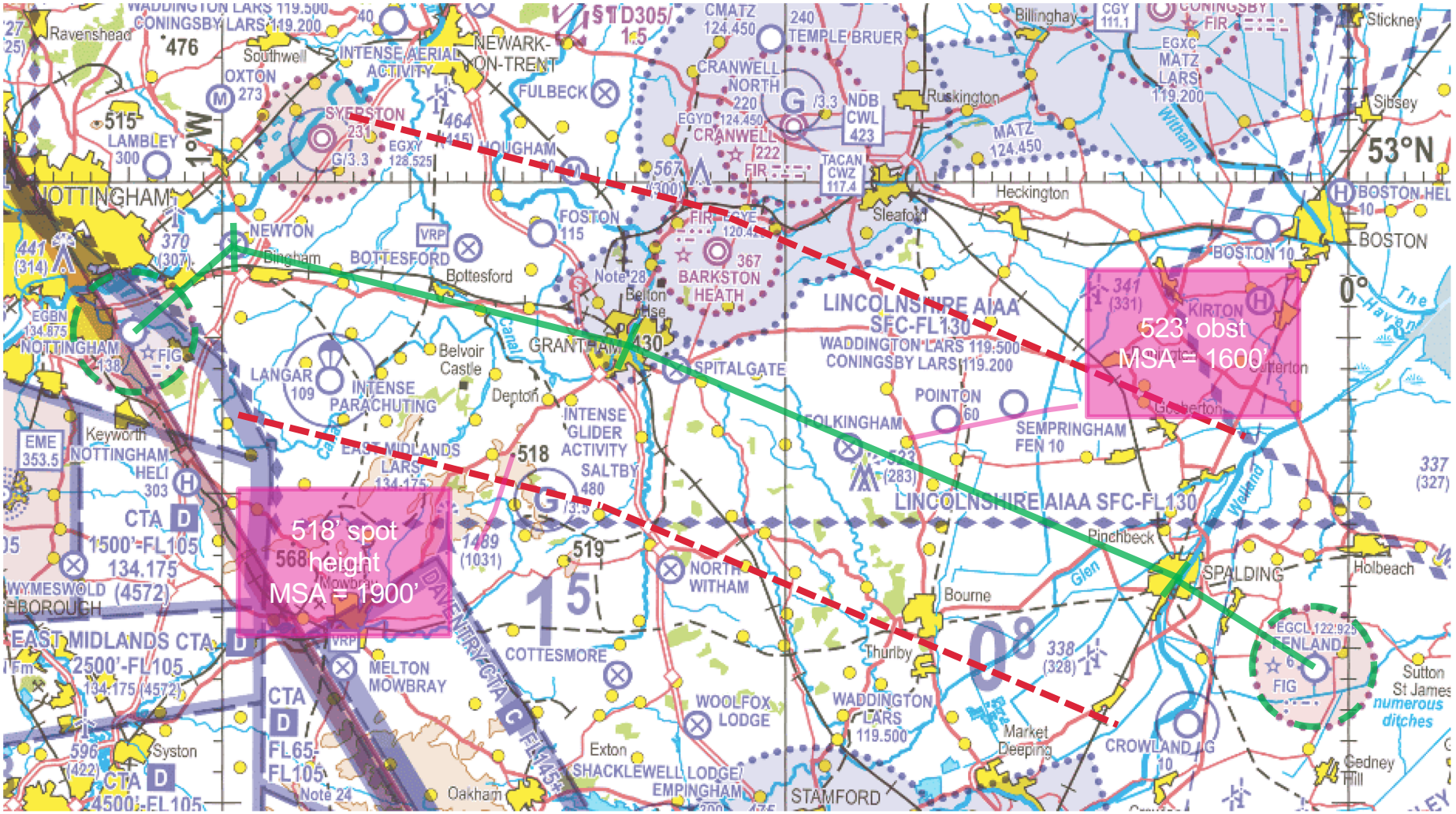
- Align North on the Compass with the vertical gridlines on the chart
- Measure off the track of the leg. If the legs are long, do this in the middle of the legs, not at the ends



Completing the PLOG – Determining Minimum Safe Altitude (MSA)

Aim: Find obstacles and heights from the chart and calculate the MSA

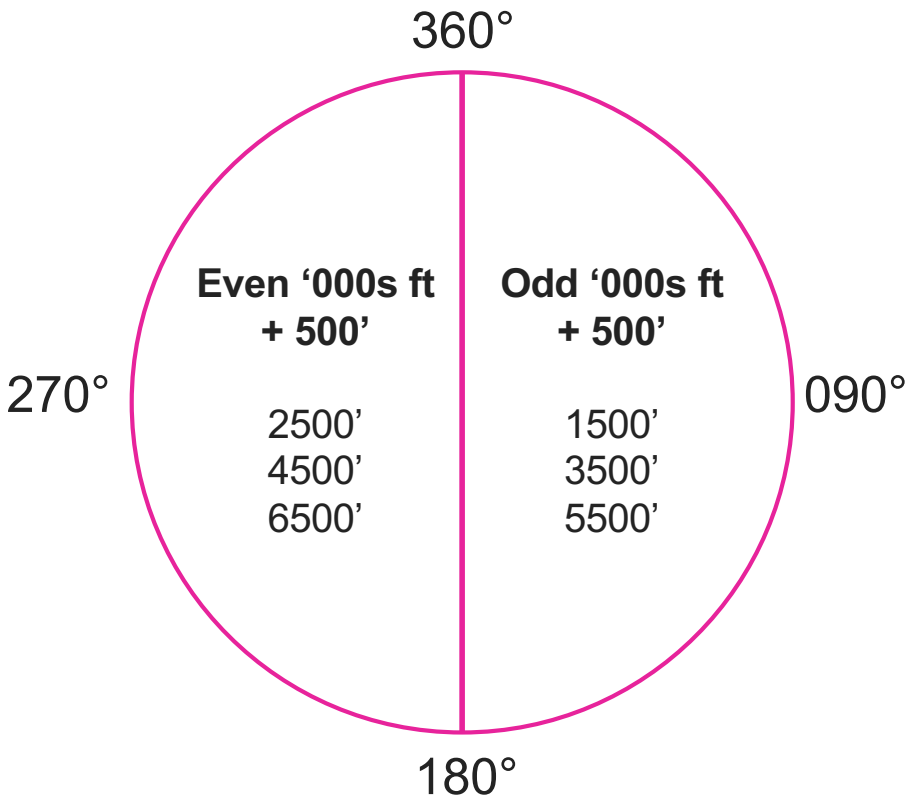
- Find the nearest obstacle +/- 5nm of Track and round it up to the nearest 100ft and add 1000ft
- If there are no obstacles, take the spot height, round up to nearest 100ft, add 1,300ft



Completing the PLOG – Choosing a cruising altitude

Aim: Choose an altitude to fly at for each leg

- You can use any altitude you like as long as you remain 500ft from any person, vehicle, vessel or structure and you are able to glide clear of any built up areas
- But it's wise to cruise above the MSA (Minimum Safe Altitude)
- And to use the Semi Circular rule for VFR flights in uncontrolled airspace
  - This is based off our true track we are flying

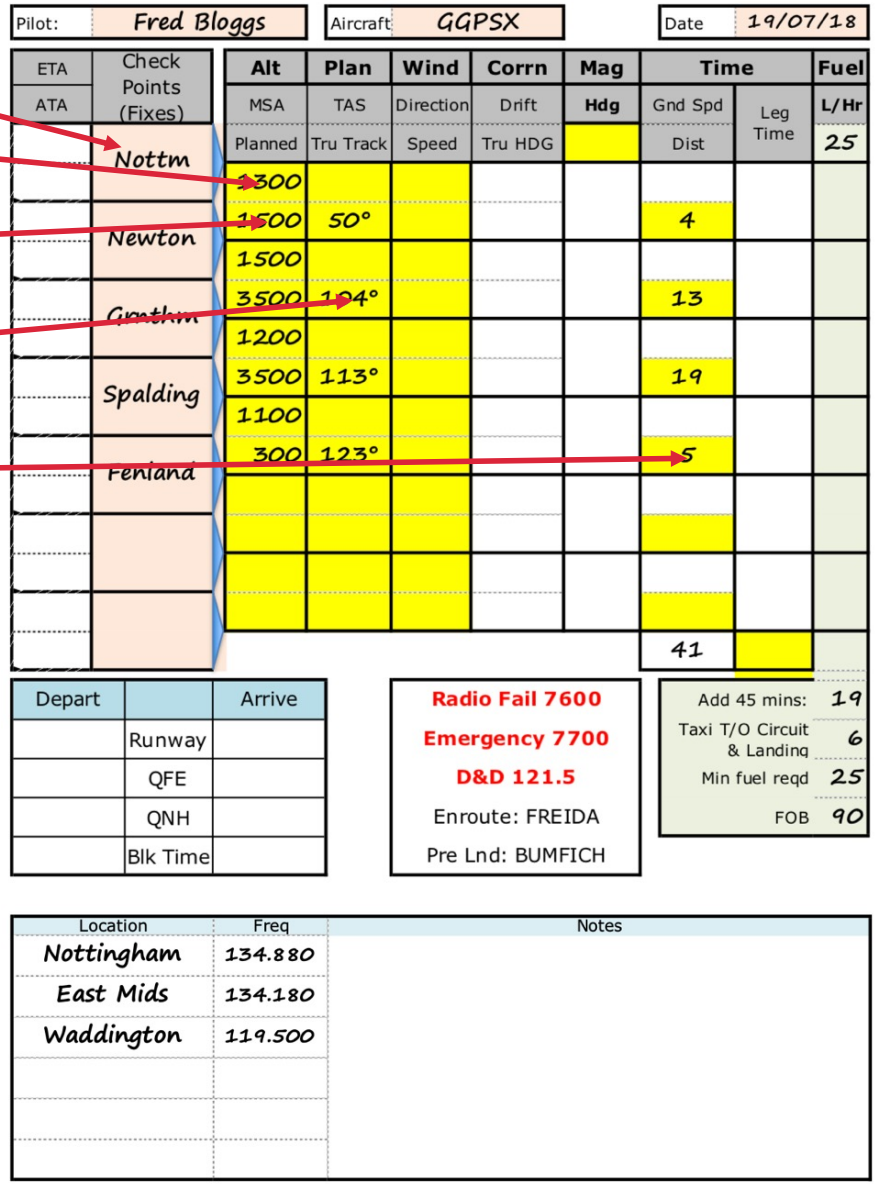


- For our flight to Fenland, we are generally flying Eastward so we could pick 1,500ft or 3,500ft or 5,500ft
- 1,500ft would be below MSA in places
- 5,500ft would take quite a while to climb to for a relatively short flight
- So 3,500ft is probably a good choice
  - It also means we will be just above the Barkston Heath MATZ

Completing the PLOG – Filling in the PLOG

Aim: Complete the measured / chosen information in the PLOG

- Enter the waypoints
- Enter the MSA we calculated from the chart
- Enter the chosen Planned Altitudes to fly at
- Enter the True Track measured with the compass
- Enter the Distance of each leg measured with the ruler



Pilot:	Fred Bloggs	Aircraft	GGPSX	Date	19/07/18

ETA / ATA	Check Points (Fixes)	Alt MSA / Planned	Plan TAS / Tru Track	Wind Direction / Speed	Corrn Drift / Tru HDG	Mag Hdg	Time Gnd Spd / Dist	Time Leg Time	Fuel L/Hr 25
	Nottm	1300							
		1500	50°				4		
	Newton	1500							
		3500	104°				13		
	Grnthm	1200							
		3500	113°				19		
	Spalding	1100							
		300	123°				5		
	Fenland								
							41		

Depart		Arrive
	Runway	
	QFE	
	QNH	
	Blk Time	

Radio Fail 7600
Emergency 7700
D&D 121.5
Enroute: FREIDA
Pre Lnd: BUMFICH

Add 45 mins:	19
Taxi T/O Circuit & Landing	6
Min fuel reqd	25
FOB	90

Location	Freq	Notes
Nottingham	134.880	
East Mids	134.180	
Waddington	119.500	

The Yellow sections of the PLOG are measured / looked up.

The white and green need to be calculated

Completing the PLOG – Calculating Wind Drift

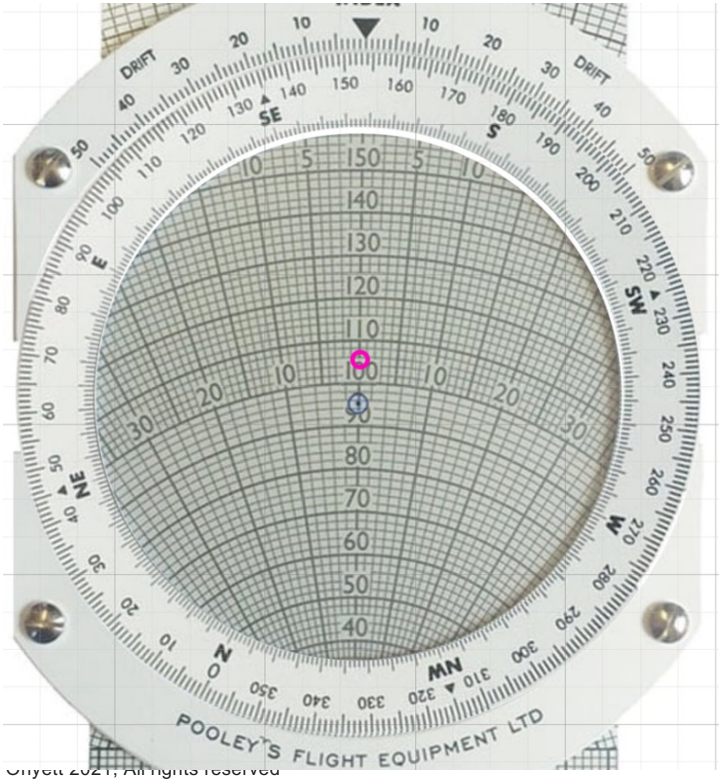
Aim: Use CRP-1 to calculate True AirSpeed, Wind Drift and Ground Speed

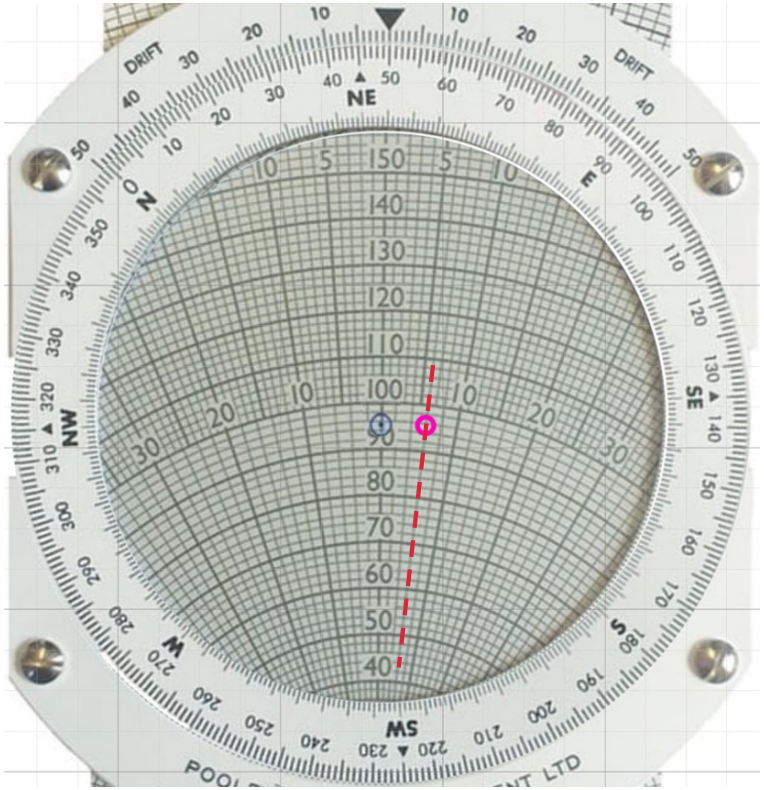
- First we need out True Airspeed (TAS) calculated from our cruising Indicated Airspeed (IAS)
  - Use the inside of the CRP-1 computer, align temperature and altitude and then read IAS on the Inside of the Wheel and TAS on the outside
  - Enter the TAS on the PLOG
- Then we need to calculate the Wind Drift based on the wind we got from Met Office F214
  - We are cruising at 3,500 so interpolate between 2,000 and 3,500 i.e **155° at 10 kts**

5230N 00E			
24	210	20	-27
18	200	15	-16
10	220	10	+02
05	160	10	+08
02	150	10	+16
01	150	10	+19

For Drift and Ground Speed, On CRP-1

- Turn wheel round so 155 is at the top
- Put the middle dot on 95 kts (our TAS)
- Count up 10 squares (the 10 knots windspeed) and mark a dot
- Turn the wheel so 50° (our first true track) is at the top
- Move the slider so that the dot you marked is on 95 kts
- Now read off the drift from the angled line (6 degrees)
- And read off Ground Speed from the centre of the wheel (97 knots)

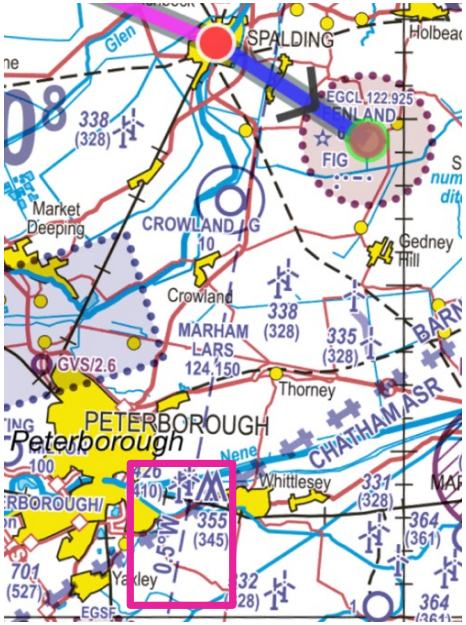




Completing the PLOG – Magnetic Heading

Aim: Calculate heading and enter into plog

- Enter the Wind speed and direction
- Enter the drift from the CRP-1 (remember if the dot was right of centre that is +ve, left is –ve)
- Calculate the True Heading
- Look up the magnetic variance on the chart



- Enter the magnetic variance on the PLOG (West is + / Add, East is - / Subtract)
- Add / subtract the magnetic variance from the True heading to get Magnetic Heading
- Enter the ground speed calculated

Pilot:	Fred Bloggs	Aircraft	GGPSX	Date	19/07/18

ETA / ATA	Check Points (Fixes)	Alt / MSA / Planned	Plan / TAS / Tru Track	Wind / Direction / Speed	Corrn / Drift / Tru HDG	Mag / Hdg	Time / Gnd Spd / Dist	Time / Leg Time	Fuel / L/Hr
						+1°			25
	Nottm	1300	95	155°	+6°	57°	97		
		1500	50°	10	56°		4		
	Newton	1500	95	155	+5°	110°	88		
		3500	104	10	109°		13		
	Grnthm	1200	95	155°	+4°	118°	87		
		3500	113°	10	117°		19		
	Spalding	1100	95	155°	+3°	127°	86		
		300	123°	10	126°		5		
	Fenland								
							41		

Depart		Arrive
	Runway	
	QFE	
	QNH	
	Blk Time	

Radio Fail 7600
Emergency 7700
D&D 121.5
Enroute: FREIDA
Pre Lnd: BUMFICH

Add 45 mins:	19
Taxi T/O Circuit & Landing	6
Min fuel reqd	25
FOB	90

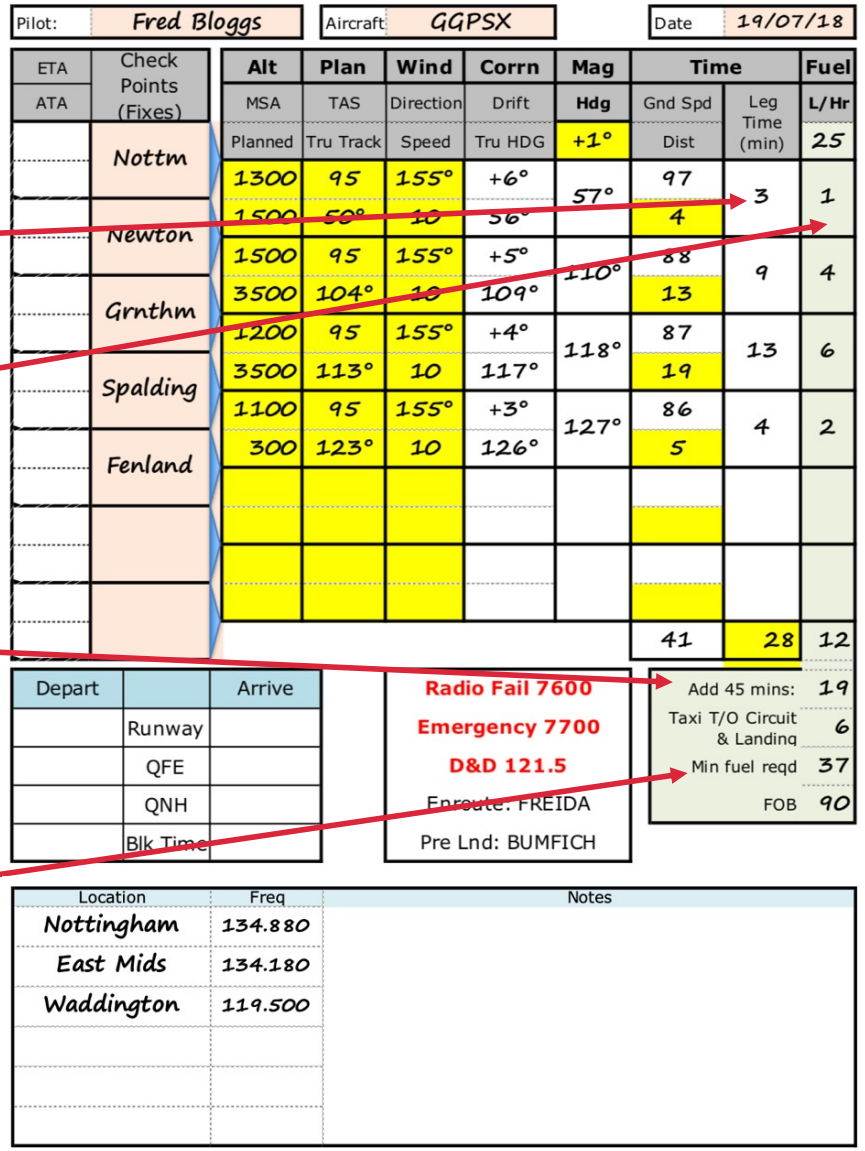
Location	Freq	Notes
Nottingham	134.880	
East Mids	134.180	
Waddington	119.500	

Completing the PLOG – Leg Times and Fuel Calculation

Aim: Calculate Times for each leg and enter into PLOG

Calculator method

- Time = Distance / Ground speed
  - This time is hours so multiply by 60 to get minutes
  - E.g 4 ÷ 97 = 0.0412
  - 0.0412 x 60 = 2.5 - Round to 3 mins
- Fuel used
  - 3 ÷ 60 = 0.05 hours
  - 0.05 x 25 litres / hour = 1.25 litres– round to 1 litre
  - (Fuel burn e.g. 25 litres per hour can be found in POH)
- Fuel required
  - Add 45 mins of fuel
    - 45 ÷ 60 = 0.75 hours
    - 0.05 x 25 litres / hour = 18.75 litres
  - Add fuel for taxi, take off, circuit on arrival and landing – say 6 litres (find this in the POH)
  - Add minimum fuel required on landing e.g 1 hour or 25 litres (from ops manual)
  - Total all of this to the total fuel planned to be used to get minimum fuel required
  - Compare to Fuel On Board and check sufficient



Pilot: Fred Bloggs | Aircraft: GGPSX | Date: 19/07/18

ETA / ATA	Check Points (Fixes)	Alt MSA / Planned	Plan TAS / Tru Track	Wind Direction / Speed	Corrn Drift / Tru HDG	Mag Hdg +1°	Time Gnd Spd / Dist	Time Leg Time (min)	Fuel L/Hr 25
	Nottm	1300	95	155°	+6°	57°	97	3	1
	Newton	1500	50°	10	56°		4		
		1500	95	155°	+5°	110°	88	9	4
	Grnthm	3500	104°	10	109°		13		
		1200	95	155°	+4°	118°	87	13	6
	Spalding	3500	113°	10	117°		19		
		1100	95	155°	+3°	127°	86	4	2
	Fenland	300	123°	10	126°		5		
							41	28	12

Depart		Arrive
	Runway	
	QFE	
	QNH	
	Blk Time	

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D&D 121.5
Enroute: FREIDA
Pre Lnd: BUMFICH

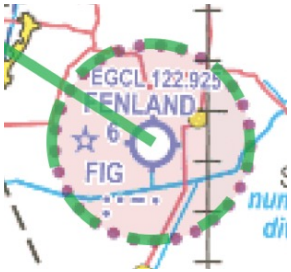
Add 45 mins:	19
Taxi T/O Circuit & Landing	6
Min fuel reqd	37
FOB	90

Location	Freq	Notes
Nottingham	134.880	
East Mids	134.180	
Waddington	119.500	

Completing the PLOG – Finishing off - Frequencies & notes

Aim: Find relevant frequencies from chart and enter into PLOG

- Read off any relevant frequencies from the chart
- Enter into the PLOG



Pilot:	Fred Bloggs	Aircraft	GGPSX	Date	19/07/18

ETA / ATA	Check Points (Fixes)	Alt / MSA / Planned	Plan / TAS / Tru Track	Wind / Direction / Speed	Corrn / Drift / Tru HDG	Mag / Hdg / +1°	Time: Gnd Spd / Dist	Time: Leg Time (min)	Fuel / L/Hr / 25
	Nottm	1300	95	155°	+6°	57°	97	3	1
	Newton	1500	50°	10	56°		4		
		1500	95	155°	+5°	110°	88	9	4
	Grnthm	3500	104°	10	109°		13		
		1200	95	155°	+4°	118°	87	13	6
	Spalding	3500	113°	10	117°		19		
		1100	95	155°	+3°	127°	86	4	2
	Fenland	300	123°	10	126°		5		
							41	28	12

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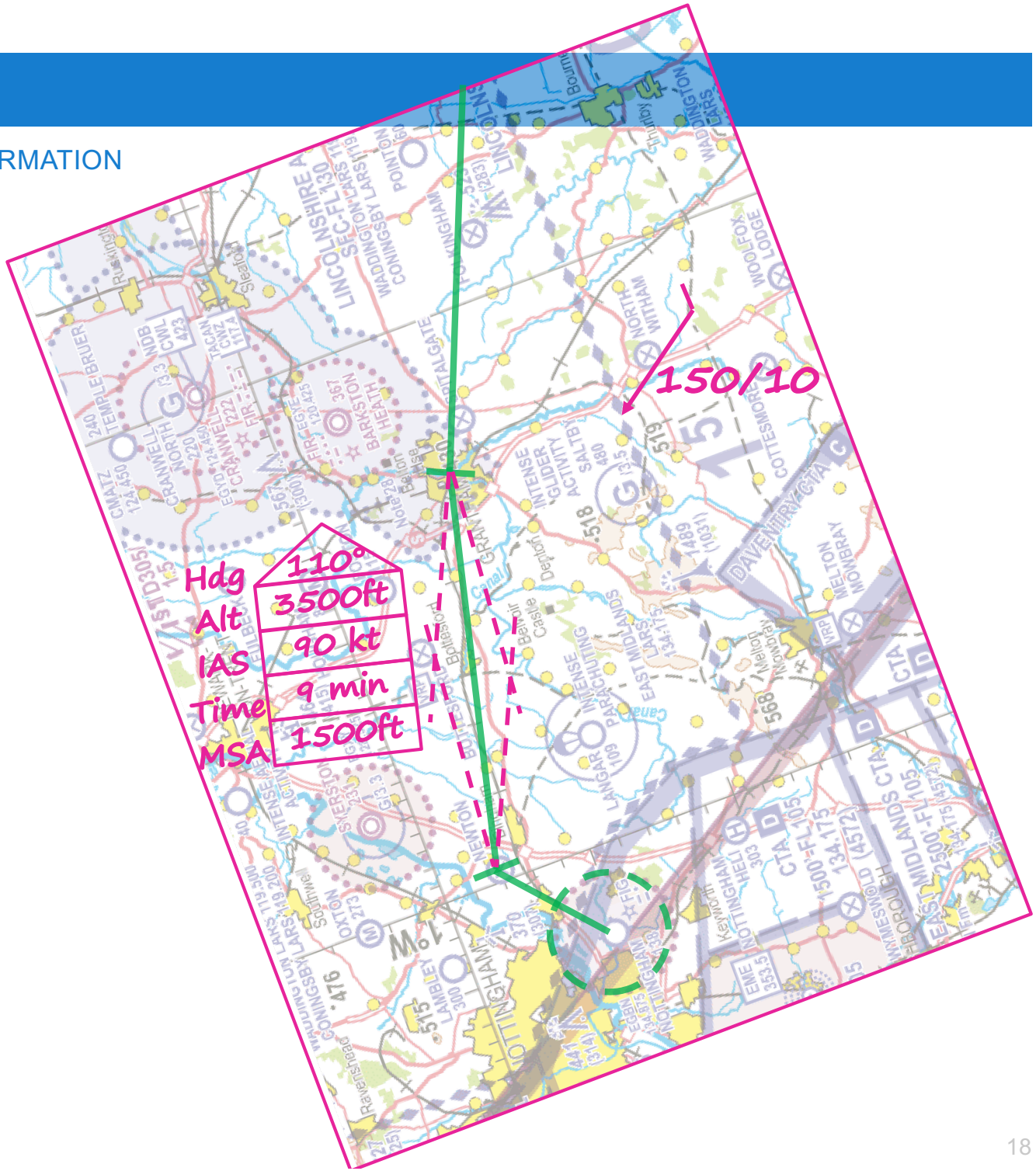
Location	Freq	Notes
Nottingham	134.880	
East Mids	134.180	
Waddington	119.500	
Conningsby	119.200	
Fenland	122.925	

Mark up the chart

Aim: Mark the chat with key information

- Mark the wind speed and direction on chart
- Mark the key leg information on the chart aligned with the direction of flight so that you can read it easily
  - Magnetic heading
  - Altitude
  - Indicated airspeed
  - Time
  - Minimum Safe Altitude
- Add some error bars 10° out from your start point and 10° back from your end point so that you can estimate and errors during the flight



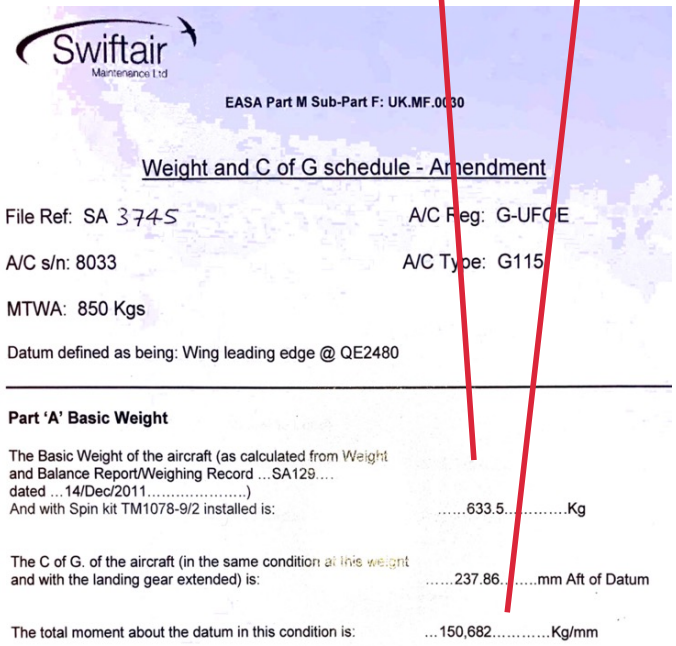
Calculating Mass and Balance

Aim: Calculate take-off and zero fuel weight and balance

- Find the mass and balance calculation table in the aircraft manual or weight and balance schedule
- Look up the empty aircraft weight and moment. This is in the aircraft manual or in a weight and balance schedule with the aircraft docs
- Enter these values in the weight and balance table
- Add in the pilot and instructor / passenger weight and multiply this by the arm to get the moment
  - 150 x 250 = 37,500
- Enter the take fuel volume in litres. Multiply this by 0.72 to get the weight in kg. Multiply the weight by the arm to get the moment
  - 65 x 890 = 57,772
- Enter the baggage weight and multiply this by the arm to get the moment
  - 10 x 900 = 9000
- Add up all the weights (848 kg) and the moments (254,854)
- Divide the total of the moments by the total of the weights to get the arm / Centre of gravity position
  - 254,854 ÷ 848 = 300
- Create another table with zero fuel and repeat the calculation to get zero fuel weight and arm

Weight and Balance Table for Grob 115

		Arm	Moment
Aircraft empty weight	633 kg	237.86	150,682
Pilot + Instructor	150 kg	250	37,500
Fuel vol	88 L		
Fuel weight	63 kg	890	56,390
Baggage	5 kg	900	4,500
Take off mass	**847**	**294**	249,072



Swiftair Maintenance Ltd

EASA Part M Sub-Part F: UK.MF.0030

Weight and C of G schedule - Amendment

File Ref: SA 3745 A/C Reg: G-UFOE

A/C s/n: 8033 A/C Type: G115

MTWA: 850 Kgs

Datum defined as being: Wing leading edge @ QE2480

Part 'A' Basic Weight

The Basic Weight of the aircraft (as calculated from Weight and Balance Report/Weighing Record ...SA129.... dated ...14/Dec/2011.....) And with Spin kit TM1078-9/2 installed is: .....633.5.....Kg

The C of G. of the aircraft (in the same condition at this weight and with the landing gear extended) is: .....237.86.....mm Aft of Datum

The total moment about the datum in this condition is: ...150,682.....Kg/mm

Ensure Mass and Balance is within limits

Aim: Use Centre of Gravity envelope to ensure mass and balance is within limits

- Plot the two points you calculated on the C of G envelope chart (take off and zero fuel)

Take off:

Mass = 847

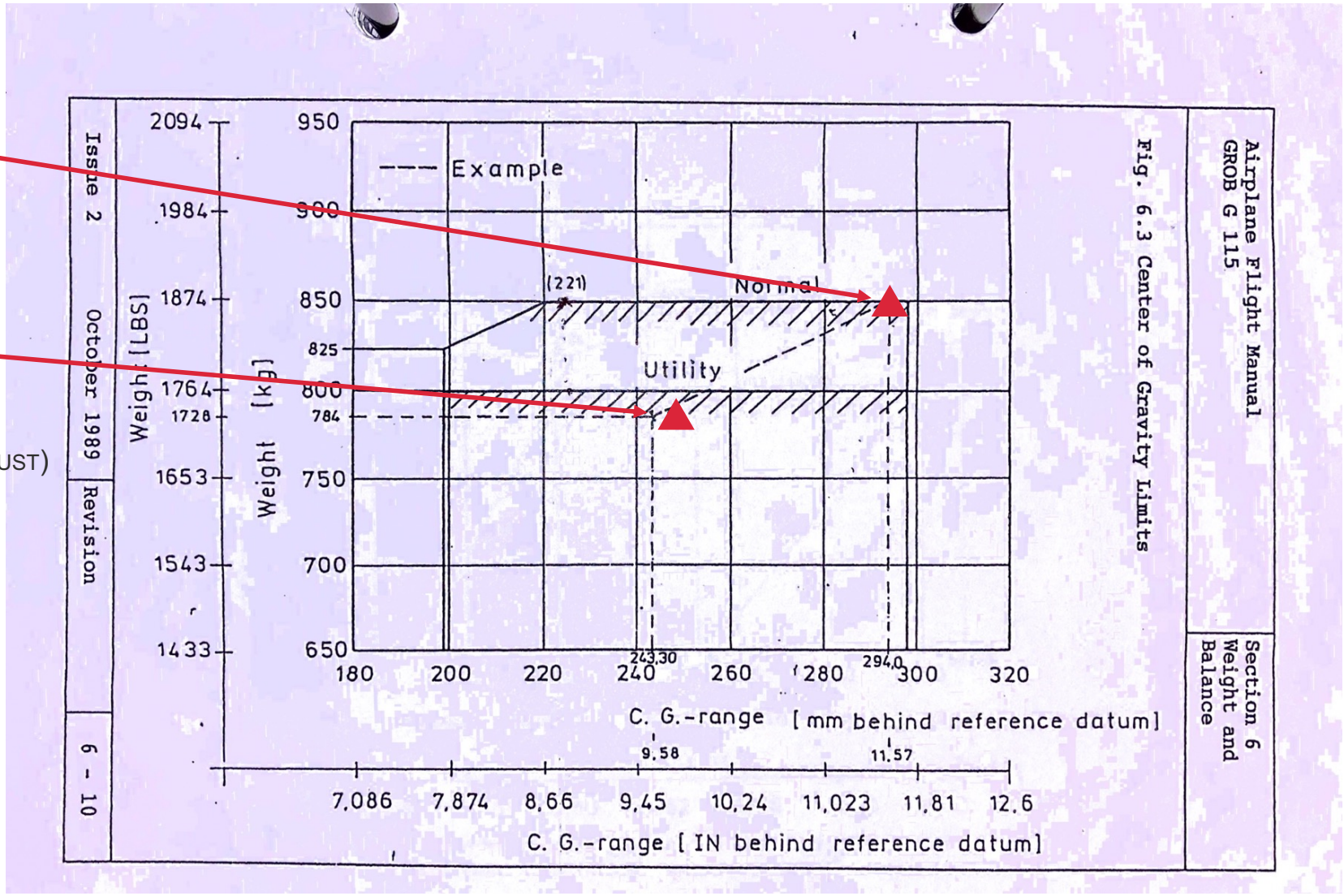
Arm = 294

Zero fuel

Mass = 783

Arm = 246

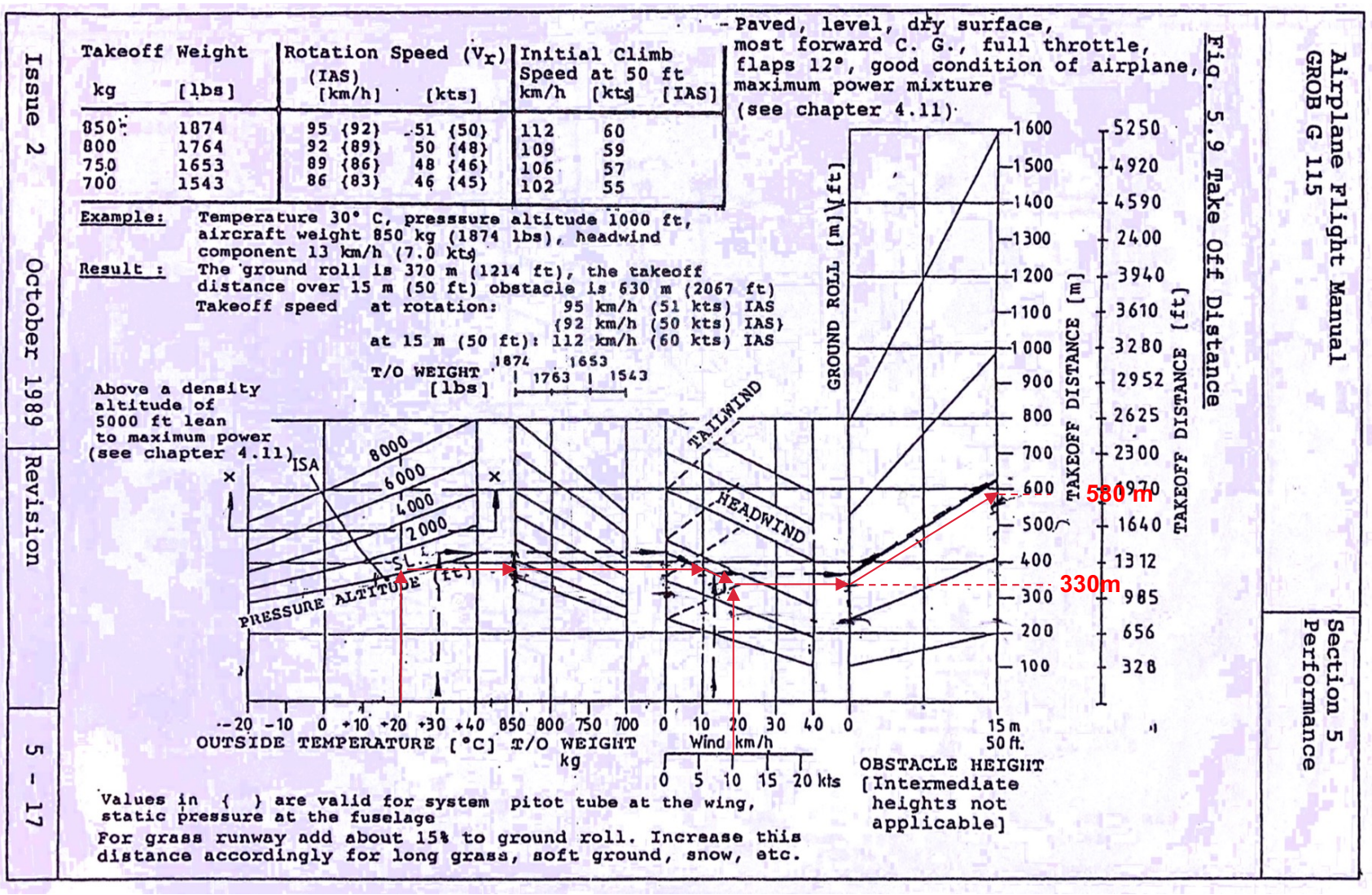
Note these are (just) inside limits



Performance – Take off Distance

Aim: Calculate the take off distances

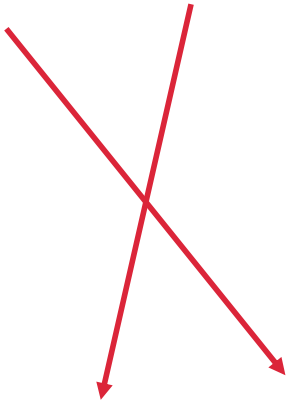
- Look up the take off distance chart in the operating manual for the aircraft based on air temperature, pressure altitude, take off weight, wind
- In this example ground roll is **330m** and take off distance (over 50 ft obstacle) is **580m**



Performance – Take off Distance

Aim: ensure the runways are sufficiently long for take off

- From the our lookup, we got ground roll of **330m** and take off distance (over 50 ft obstacle) is **580m**
- We need to factor these by 1.33. So 330 x 1.33 = **439m** and 580 x 1.33 = **771m**
- We now need the AIP text for the airport we are departing from
- Section AD 2.13 has the declared distances
- We need to ensure the TORA (take off run available) is greater than our factored ground roll (439m)
- And that TODA (take off distance available) is greater than our factored take off distance (771m)



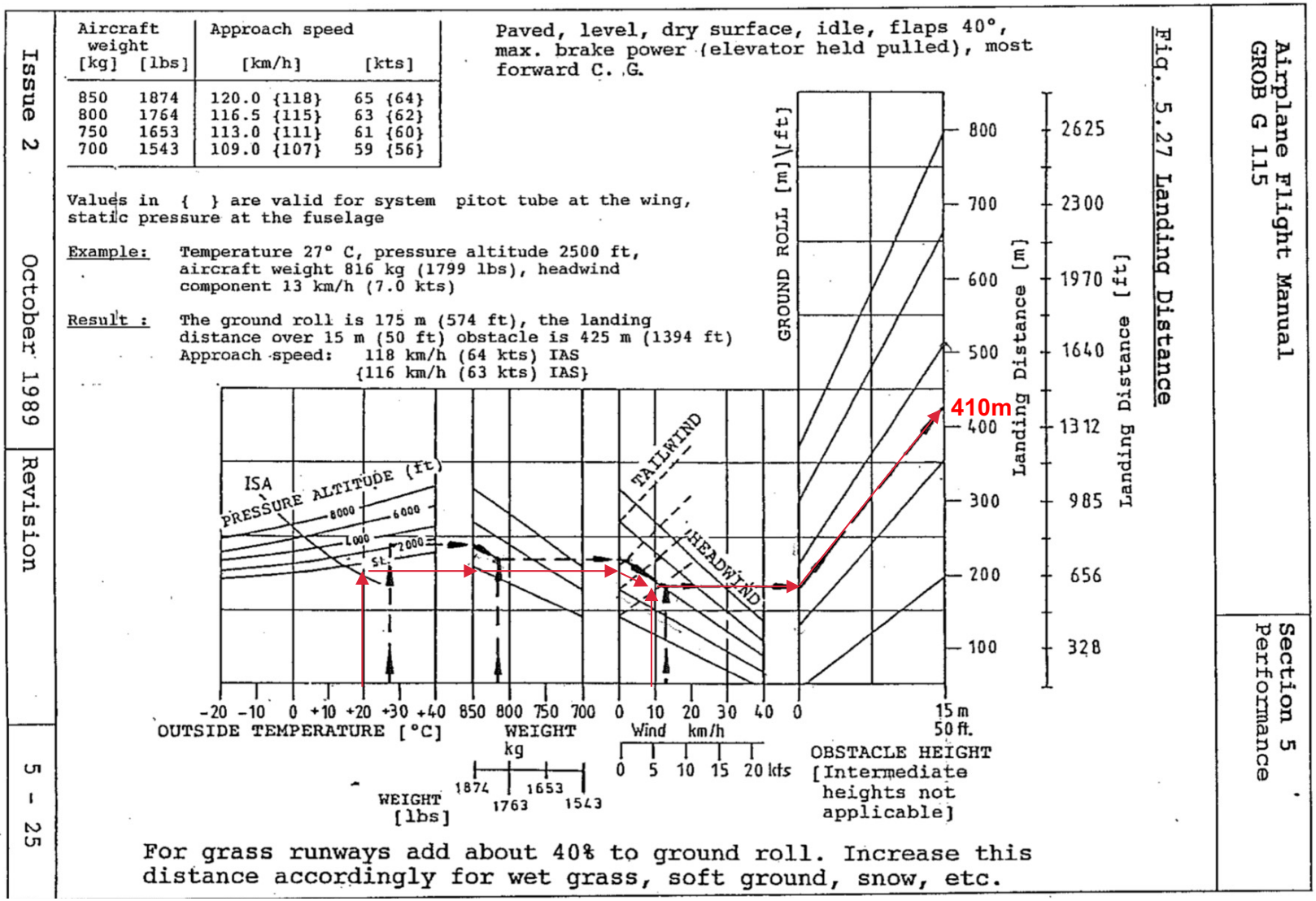
EGBN AD 2.13 DECLARED DISTANCES

Runway designator	TORA	TODA	ASDA	LDA	Remarks
1	2	3	4	5	6
09	989 M	1091 M	989 M	837 M	
27	970 M	1070 M	970 M	929 M	
03	799 M	799 M	799 M	821 M	
21	799 M	799 M	799 M	821 M	

Performance – Landing Distance

Aim: Calculate the landing distance required

- Look up the landing distance chart in the operating manual for the aircraft based on air temperature, pressure altitude, take off weight, wind
- In this example the landing distance (over 50 ft obstacle) is **410m (always use the 50ft distance)**



Performance – Landing Distance

Aim: ensure the runways are sufficiently long for Landing

- From the our lookup, we got landing distance of 420m
- We need to factor these by 1.43. So 410 x 1.43 = **586m**
- We now need the AIP text again for the airport we are arriving at
- Section AD 2.13 has the declared distances
- We need to ensure the LDA (landing distance available) is greater than our factored landing distance over 50ft obstacle (586m)

EGCL AD 2.13 DECLARED DISTANCES

Runway designator	TORA	TODA	ASDA	LDA	Remarks
1	2	3	4	5	6
18	600 M	600 M	600 M	518 M	
36	600 M	600 M	600 M	600 M	

Flying The Route

Aim: Depart the airport to join and fly the route

- Take off from the active runway as usual
- Either turn on track if it is relatively straight ahead or follow a normal circuit to downwind but continue climbing and turn into the overhead (above circuit height) and then turn on route heading
- Continue climbing to cruising altitude
- Complete after takeoff checks (e.g. fuel pump off)
- At the initial reference point (RAF Newton in this example):
  - Turn onto heading (check compass card for any corrections)
  - Start the timer and note down the time on the plog
  - Work out the ETA at the next point and write it on the plog
- Complete a FREDA check
  - Fuel – sufficient? Pressure OK?
  - Radio – tuned to the right frequency. Is the next frequency in stanby
  - Engine – T&P's in the green, de-ice the carburettor
  - DI & compass aligned – **IMPORTANT!**
  - Altimeter – correct QNH, time to change to QFE? (destination in sight)
- Approaching our waypoint / Visual reference points
  - Hold map with track up
  - Are we on track?
    - Look for features on the map and then look for them on the ground
      - Water features often easy to see
      - Roads crossing with railways / rivers
      - Large towns

Flying The Route - Radio

Aim: Recap getting air traffic services and crossing airspace

- Basic service: *"provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights"*. i.e. no traffic info
- Traffic service: *"in addition to the provisions of a Basic Service, the controller provides specific surveillance-derived traffic information to assist the pilot in avoiding other traffic"*

Requesting service

- You: **'East Midlands Approach, GGPSX, request basic service'**
- *ATC: 'G-SX, East Midlands Approach, pass your details'*
- Note if they abbreviate your callsign to G-SX you can then use that abbreviation from then on

- You:
- Who: **'G-SX is a Grob 115,**
- What (are you doing): **From Nottingham to Nottingham via Boston**
- Where: **5 miles north of Rutland Water, altitude 3000 ft QNH 1014, VFR,**
- Why (did you call): **Request basic service.** and possibly: **And CTA transit**

- *ATC: 'G-SX, basic service' … and possibly… "SQWAWK 3455, East Midlands QNH 1012"*
-
- You: **'Basic service, SQWAWK 3455 QNH 1012, G-SX'**

- i.e. repeat everything. As a general rule you always have to read back "Basic Service" or "Traffic Service" and anything with a number in it.

- Note: When on solo nav etc, use Student callsign e.g. "East Midlands Approach Student GGPSX…"

- For more info Google "**CAP 413**"
  - https://publicapps.caa.co.uk/docs/33/CAP413%20MAY16.2.pdf

Flying the route – correcting when off track

Aim: How to correct the heading when off track

Minor corrections to track

- Standard closing angle - How to get back onto track
- First find modified standard closing angle (can do this before the flight) from this table:

TAS	Mod SCA
80	23
90	20
100	18
110	16
120	15

- Use it as follows:
  - Estimate miles off course e.g 3 miles
  - Add or subtract Modified SCA to your heading
    - Add if you are left of course
  - Turn onto the new heading and start timer
  - Fly 2 minutes for every mile off course
    - E.g. 6 minutes in this case
  - Analyse why you were off course
    - Wind incorrect
    - DI misaligned
    - Poor flying

Lost procedure

- Confess – Accept you are lost
- Conserve – reduce power to conserve fuel. Circle to try to identify features
- Climb – up to a higher altitude where you can see more and have better radio reception (don't go into cloud!)
  - Try tuning a VOR / NDB
    - Select frequency
    - Ident – listen to morse
    - Display – turn VOR CDI knob to centre the line with FROM flag showing. This is your magnetic radial from the VOR
    - If you have DME, tune this also for distance from the VOR
- Communicate
  - Contact a station with radar e.g East Midlands and ask for a steer
  - Or call 121.5 (Distress and diversion)
- Comply
  - Follow ATC instructons
  - Tell them if you will fly into cloud

Checklist

- Weather
  - Forecasts, actuals
  - Departure, enroute, destination, possible diversions
- NOTAMS
- Danger, prohibited, restricted areas
- Route plotted correctly
- MSAs calculated and planned altitude correct
- Wind corrections correct
- PLOG completed
- Controlled airspace / MATZ / planned ATC services en route / agencies
  - Radio comms script / plan
  - Comms Frequencies noted on PLOG
- Altimeter setting plan
- Destination aerodrome
  - PPR
  - Frequencies, joining procedures, circuit patterns / directions / heights, runway orientation, taxi-ways, parking, booking in/out, fuel uplift
  - Controlled vs uncontrolled aerodromes
- Unplanned events
  - Intrusion into controlled airspace
  - Weather deterioration
  - Fuel shortage
  - Lost / unsure of position
    - Distress / 121.5 usage, Pan, Mayday
  - Action in the event of an unplanned landing
- Aircraft
  - Servicability
  - Documents checked
  - Mass and balance
  - Performance calculations
  - Fuel and oil calculations and sufficient on board

BLANK PLOG

Pilot:		Aircraft		Date	

ETA / ATA	Check Points (Fixes)	Alt	Plan	Wind	Corrn	Mag	Time		Fuel
		MSA / Planned	TAS / Tru Track	Direction / Speed	Drift / Tru HDG	Hdg	Gnd Spd / Dist	Leg Time (min)	L/Hr

Depart		Arrive
	Runway	
	QFE	
	QNH	
	Blk Time	

Radio Fail 7600

Emergency 7700

D&D 121.5

Enroute: FREIDA

Pre Lnd: BUMFICH

Add 45 mins:	
Taxi T/O Circuit & Landing	
Min fuel reqd	
FOB	

Who: G-XXXX, Grob 115, **What (doing):** From Nottm to Nottm, **Where:** 5 miles E of XX, X000ft QNH XXX, **Why:** Request Basic service

Location	Freq	Notes
Nottingham	134.880	
East Mids	134.180	
Waddington	119.500	