Flight Control and Guidance (from the pilot's perspective, part 2)

ASL AIRLINES IRELAND

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Table of Contents (part 2)

B737NG settings: normal operation 2 engines

Valid for:	m = 63 tons at TO, 60t at LDG/GA wind calm	Std Conditions (p and T) at EGNX airport engines CFM56-7B24

Phase	Pitch angle (°)	Fuel flow (kg/h)	Engine N1 (% rpm)	Speed (kts)	Flaps (°)
Takeoff roll	0	-	~ 86%	V1 = 144 (138 if wet rwy) Vr = 145 V2 = 148	5
Takeoff	18 - 20°	-	~ 86%	163 to 173 *(V2 + 15 to 25 kts)*	
Climb < FL100 > FL100	13 - 15° ~ 10° ~ 7°	- 2400 kg/h 2400 kg/h	~ 86% 80% 80%	163 to 173 *(V2 + 15 to 25 kts)* 250 300	5 Up Up
Level Flight (< FL100)	5 – 6° 5 – 6°	1100 kg/h 1100 kg/h	60% 60%	210 170	Up 5
Descent	-1° 2°	400 kg/h 600 kg/h	Idle 40%	300 170	Up 5
3° Glide slope	1 – 2°	1000 kg/h	55%	147 *(VREF30 + 5 kts)*	30 (+ GD)
Go-around	16 – 17°	2500 kg/h	85%	154	15

Flight Simulator 2004 settings


YAW DAMPER
NAVIGATION
VHF NAV
IRS
DISPLAYS
CONTROL PANEL
STANDBY POWER
DRIVE
DISCONNECT
BUS TRANS
GRD PWR AVAIL
GRD PWR
CROSS FEED
FUEL PUMPS
EQUIP COOLING
SUPPLY
EXHAUST
EMER EXIT LIGHTS
ARMED
NO SMOKING
FASTEN BELTS
ATTEND
GRD CALL
COCKPIT VOICE RECORDER
ERASE
TEST
HEADPHONE
L WIPER
R WIPER
RECIRC FAN
L PACK
ISOLATION VALVE
WING ANTI ICE
BLEED
ALT HORN CUTOUT
FLT ALT
LAND ALT
RUNWAY TURNOFF
TAXI
APU
ENGINE START
LOGO
POSITION
STROBE/ STEADY
ANTI COLLISION
WING
WHEEL WELL
FREINS DE PARKING - Appuyez sur ; pour relâcher

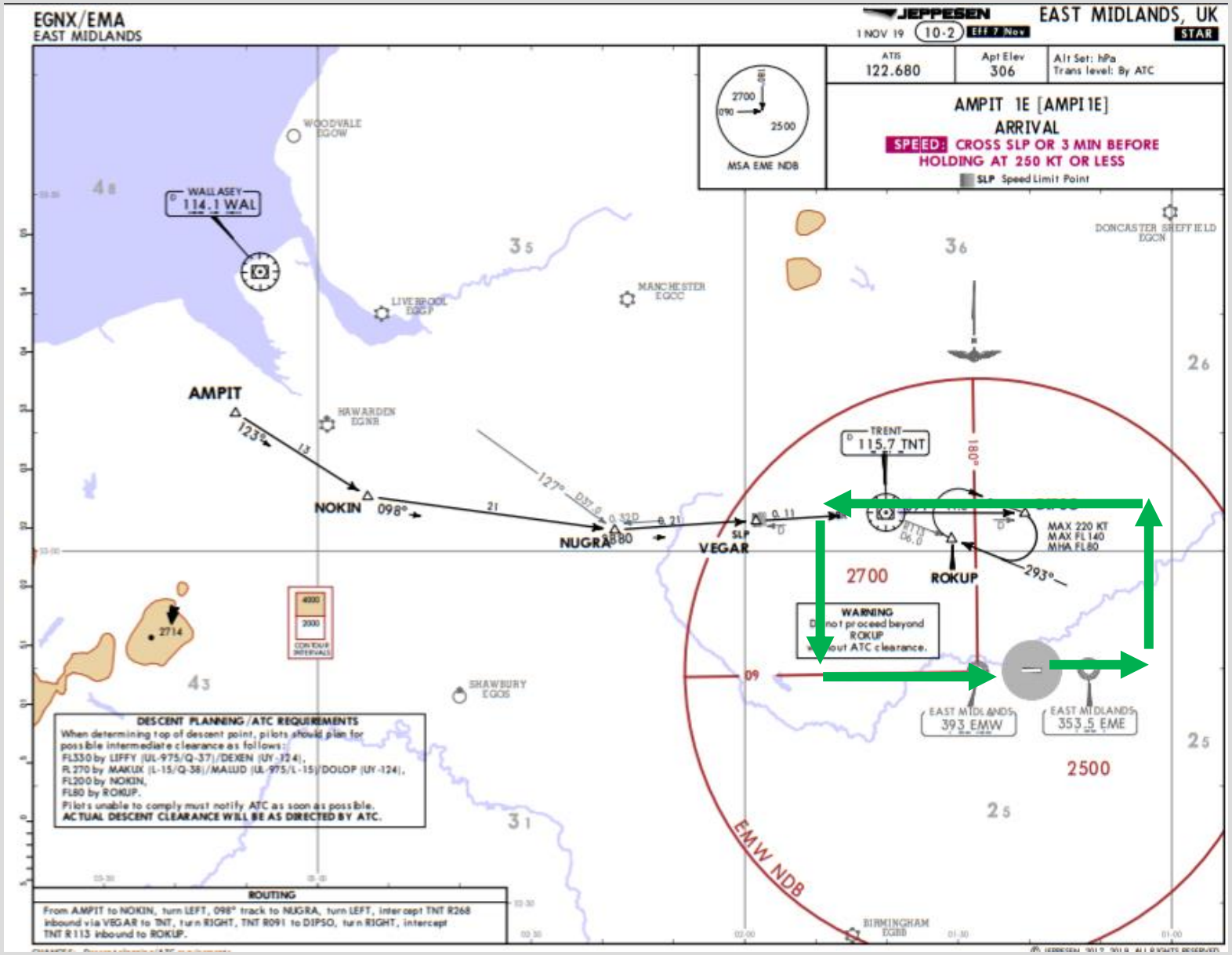
Flight controls settings	
To roll to the left/right (ailerons)	Left/Right arrow or numeric pad 4/6
To yaw to the left/right (rudder)	Numeric pad 0/Enter
To pitch up/down (elevator)	Down/Up arrows or numerci pad 2/8
To fully retract flaps	F5
To retract flaps (step by step)	F6
To extend flaps (step be step)	F7
To fully extend flaps	F8
To extend/retract speed brakes	:
To arm speed brakes	MAJ + :
Engines settings	
Automatic engines start	CTRL + E
Idle thrust	F1
Reduce thrust	F2 or numeric pad 3
Increase thrust	F3 or numeric pad 9
Full thrust	F4
Reverse thrust	F2 (key pressed)

General settings	
Parking brakes ON/OFF	CTRL + ;
Brakes	;
Brakes left/right	F11/F12
Gear down/up	G
Radio settings	
VOR 1 identification	CTRL + &
VOR 2 identification	CTRL + é
Choose a Radio Comm	C
Choose a Radio Nav	N
Choose a DME	F
Choose an ADF	A
Choose a Transponder	T

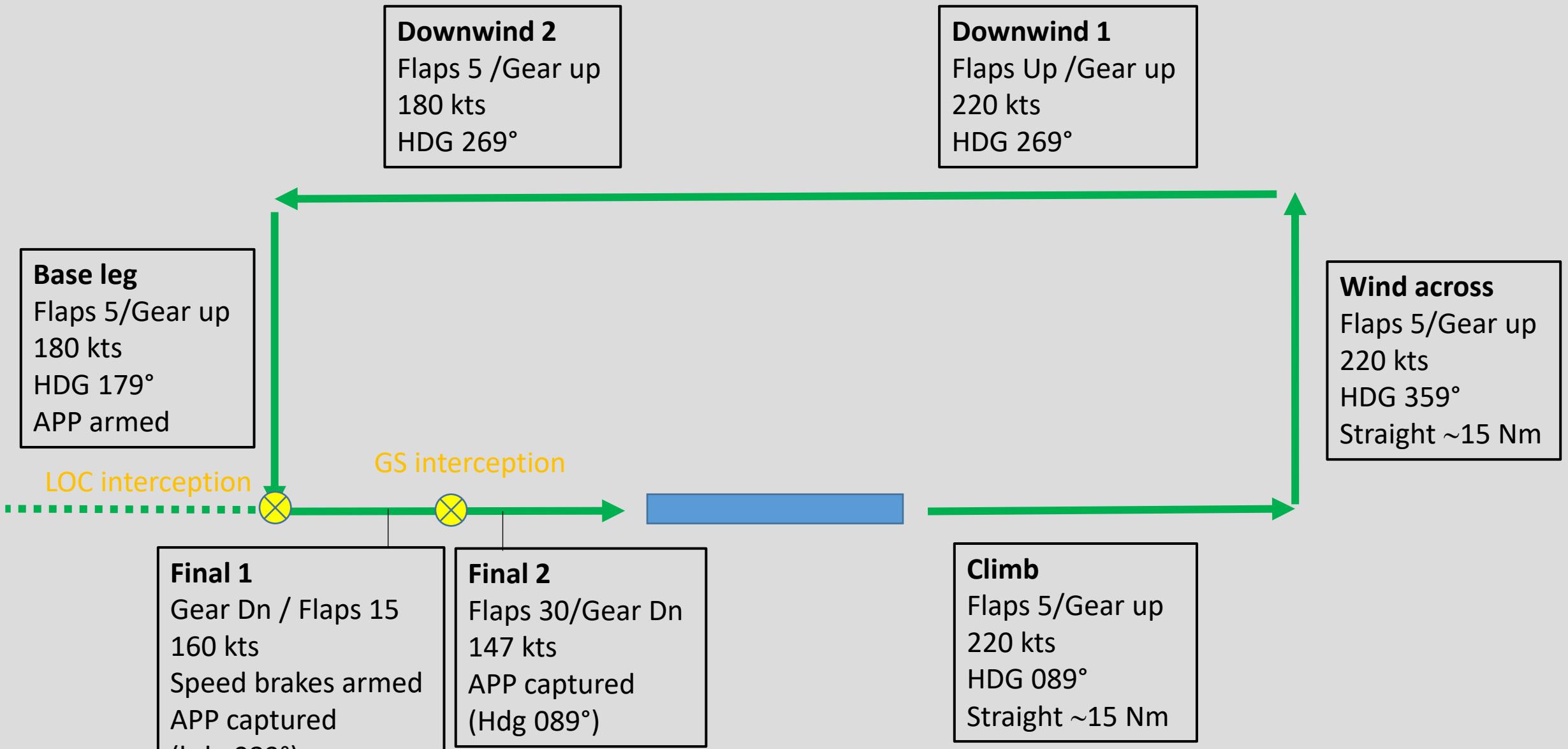
Case study 1: *Briefing pack for visual circuits at EGNX airport (VFR)*

Takeoff from EGNX: HDG 089°
Right turn: 359°
Right turn: 269°
Right turn: 179°

Weather conditions
Day flight and sunny day
Wind calm



Remark: No official visual circuit (adapted for FS9 use)

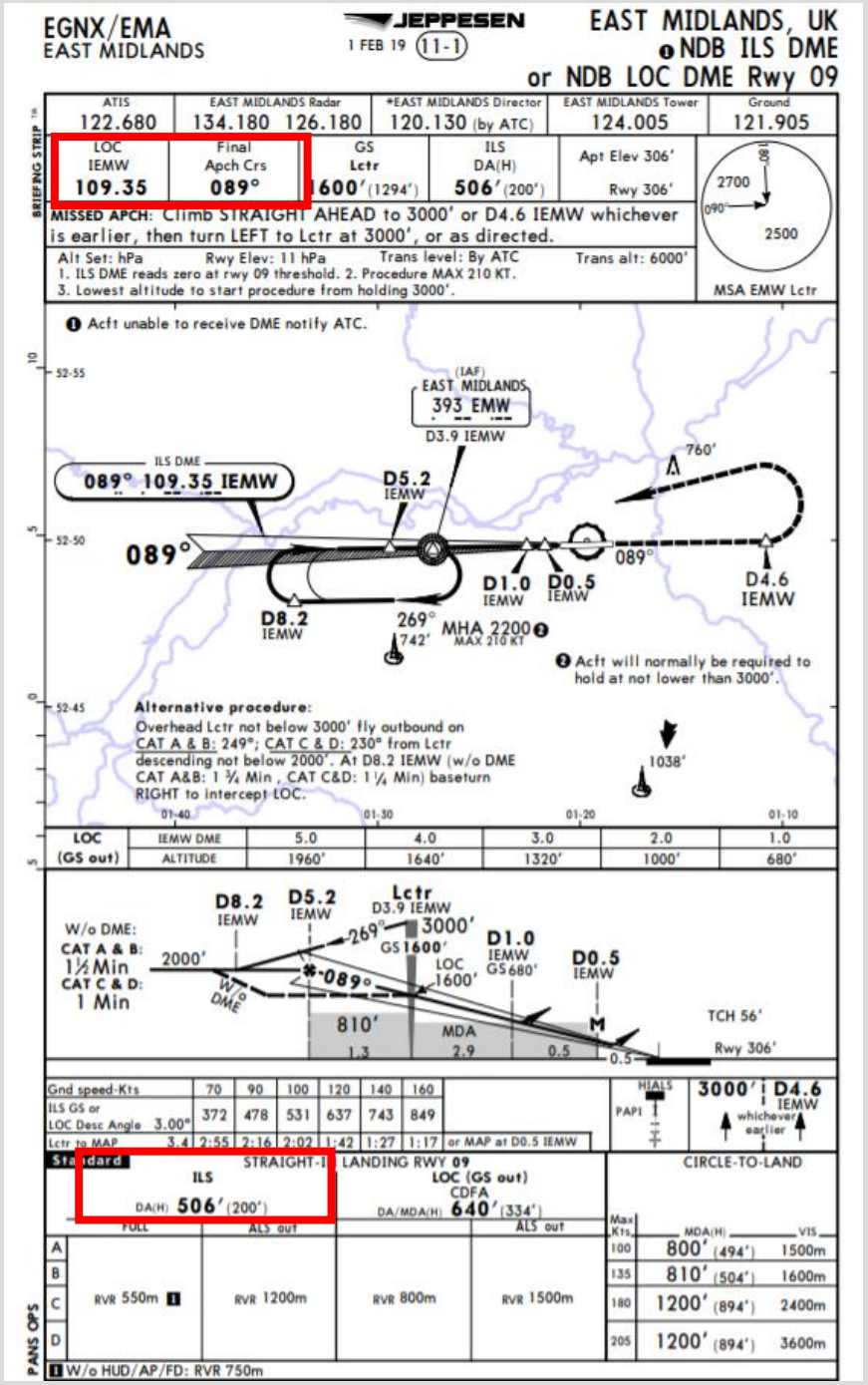


ILS approach in VMC

ILS Freq = 109.35 MHz

Final approach course = 089°

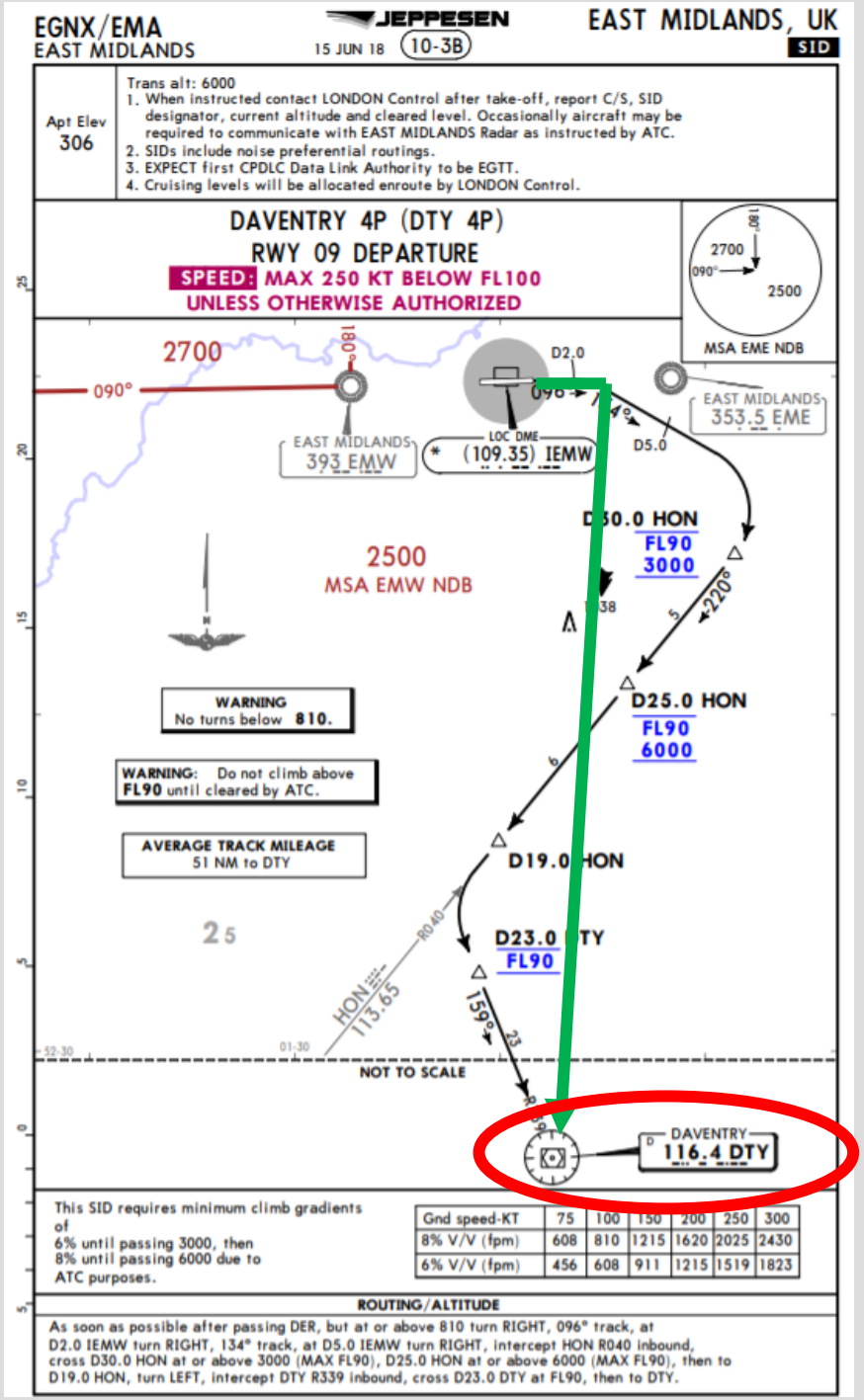
Minimums = 506 feet AMSL



Case study 2:
Briefing pack for an IFR flight EGNX-EBLG (IFR)

SID (departure) from EGNX
DAVENTRY 4P
Rwy 09
Right turn to DTY 116.4 shortly after takeoff (simplified routing)
Climb altitude 5000 ft

Weather conditions
Day flight with stormy conditions
Strong winds

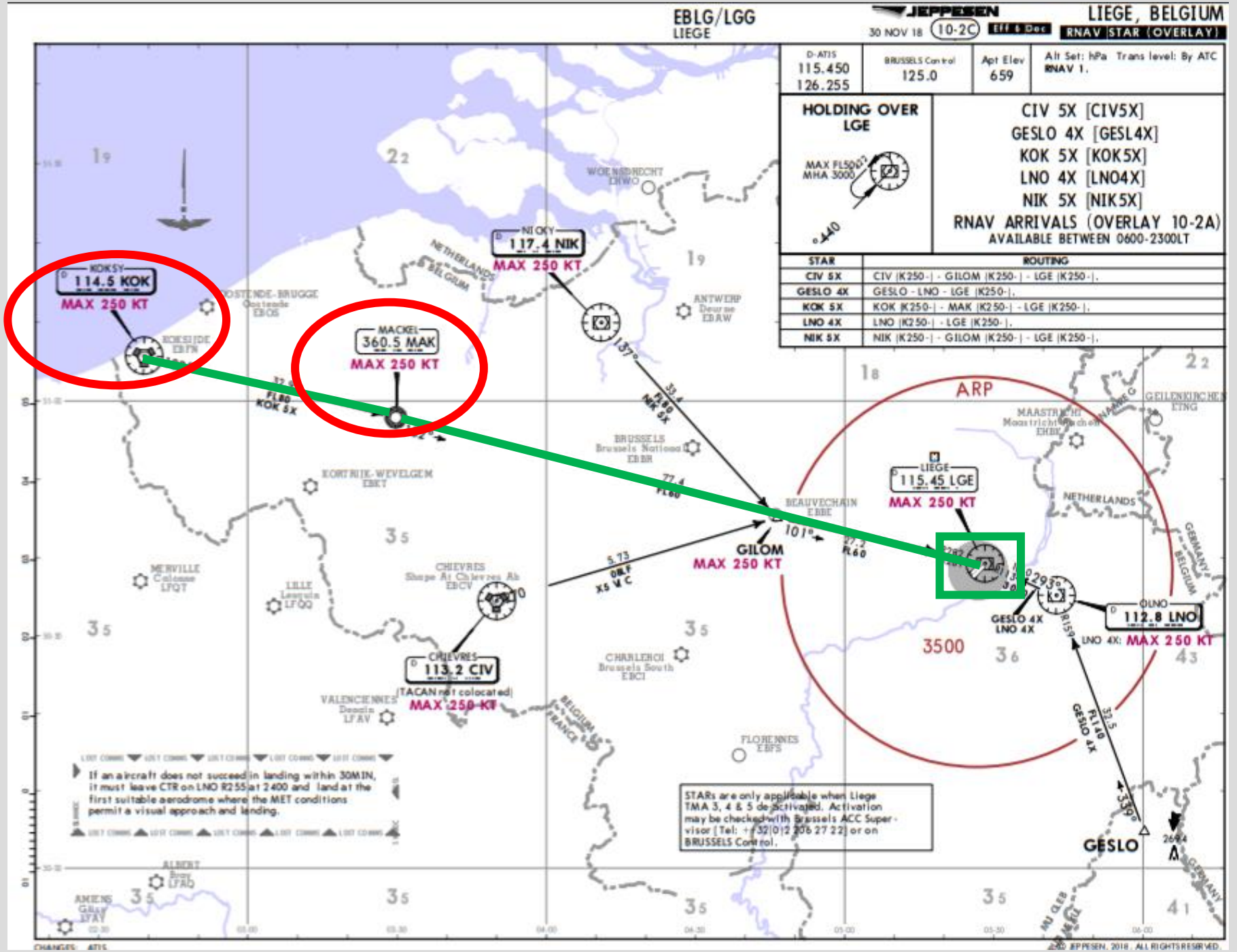


Routing (Waypoints or VOR)
EGNX – DTY - SIVDA – RAPIX – KOK – MAK – EBLG
Distance = 317 NM
FL330 (Flight Level)

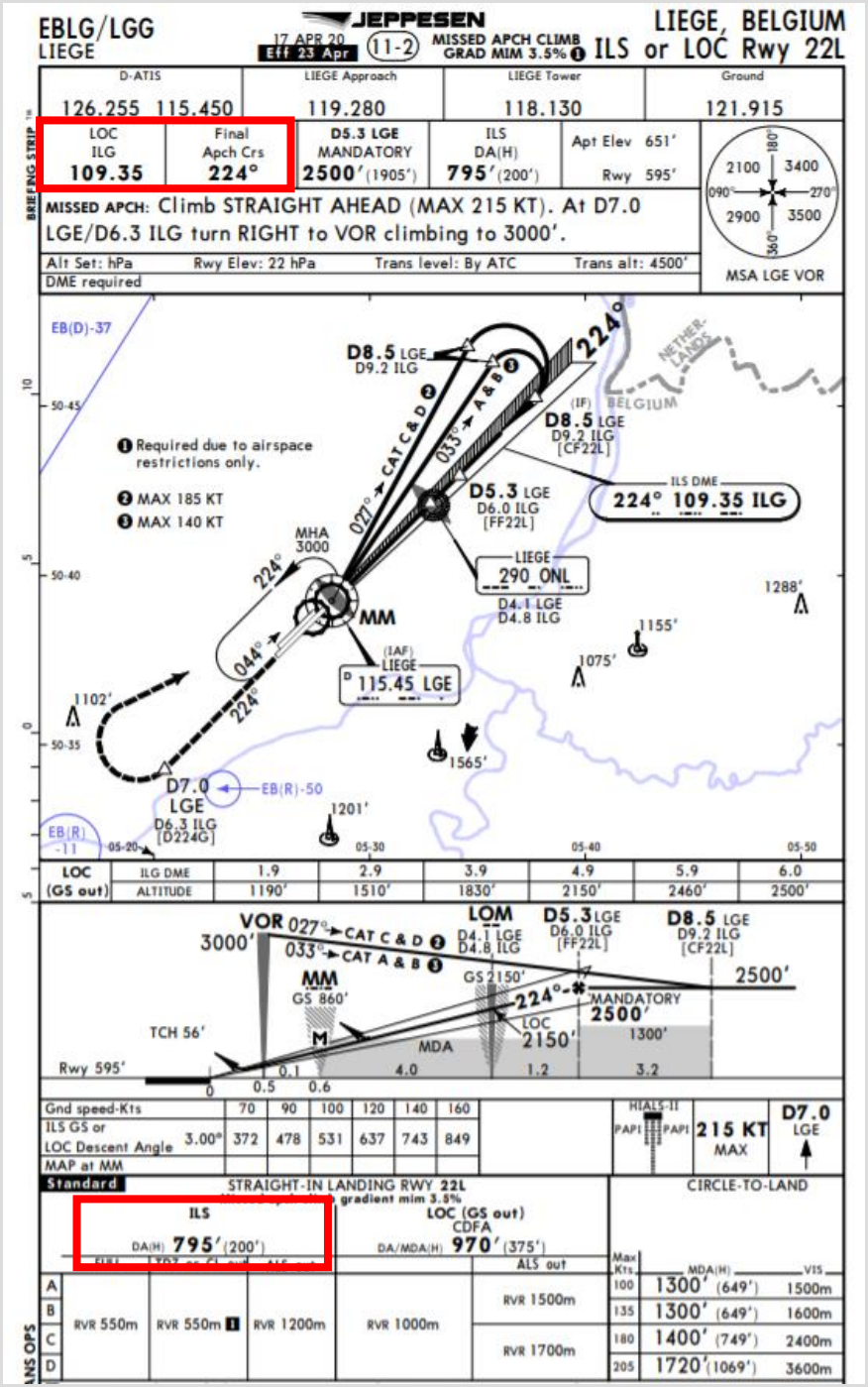
Alternative route for FS9 compatibility (VOR only)
EGNX – DTY - CLN – KOK – MAK – EBLG
Distance = 308 NM
FL330 (Flight Level)

RNAV STAR at EBLG airport

KOK 5X



ILS approach at EBLG airport
ILS 22L Freq = 109.35 MHz
Final approach course = 224°
Minimums = 795 feet AMSL



The END!

Questions?