


Simulator Assessment Preparation

Aims and Objectives

Aim

To prepare you for the Ryanair simulator assessment



Objectives

-  Review 737 handling characteristics
-  Review 737 instrument scan technique
-  Practice manoeuvres done during airline assessment.
-  Develop competency areas for both PF and PM roles.

Simulator Assessment Preparation

Sim Check Day



Met at reception by HR Staff



Brought to Briefing room – Generally 8 pilots



Intro and “Q and A” session re the days events



Candidates are paired as crews and given SID / Appch Plates



You are told there are Two Notams



All SID's have a 5000 ft level off altitude



All Go Arounds are straight ahead to 3000 ft



You are given 20 mins alone to Brief you sim partner

You can write these two
information on chart on
white space at the bottom
5000 ft stop - go-around
3000 ft straight ahead

Simulator Assessment Preparation

Sim Check Day



You are given 20 mins alone to Brief you sim partner

During briefing use this slide (especially next one) to remember what to brief with the sim partner ↗

It is critical to discuss the next three points with your sim partner

as if they have not flown the 737 or have not done any formal training for the

Ryanair Sim Check profile the they will not know these items

AND

THEIR MISTAKES IN THE NEXT THREE AREA COULD LEAD TO YOU FAILING

Simulator Assessment Preparation

Briefing your Sim Partner

Navaid set up and callouts for departure

PF has 1st VHF Navaid set – “The VOR”

PNF has the ILS set – For DME callout – for initial turn

Both Pilots have the first VOR Radial set on the Course bars

First radial = radial that we have to intercept to go to nav aid -> the first two are headings

Once PNF has called DME for turn – He / She will then tune the VOR on their Radio Navaid

Setting MCP

PNF reads back all ATC instructions but does not bug anything till instructed by PF –

This avoids confirmation Bias and PNF setting wrong speeds / headings etc

Configuration callouts

Ensure PNF understands what “Flap 1 match Speed” means

Note this call makes no sense to someone who has not flown a 737 – so explain this to PNF

When in briefing room, use slide to brief and remember to talk about every step starting from TO to landing

Things to talk about with sim partner:

- when you ask for "Flap 1, match the speed" this means that he/she has to first set the flap on the desired position and then a bug that represent the manoeuvring speed for that configuration will appear so he/she will rotate the speed knob to set the bug 1
- When asking for Flaps 30 he/she has to set to match the speed the $V_{ref} + 5 \text{ kt}$ that can be set by placing the bottom of the bug on the V_{ref} bug
- Do not set heading on CRS knob -> can only set RDL
- For BARTN 1T brief that you will turn immediately as radial comes alive to not overshoot radial

During the setting WE HAVE TO OPERATE MINIMUM CHANGES ON PF SIDE BELOW MSA -> RYR philosophy

All briefing are done in the briefing room -> you will repeat the approach briefing and a brief TO briefing
Pay attention to TO briefing and emergency brief -> are the first 2 item that are evaluated

PM role: the standard call out as PM must be

- "Check speed/heading/altitude" during normal phase of flight
- "Radial/LOC/GS alive" -> important to demonstrate situation awareness
- On approach standard ILS call-out are "Check heading" for LOC and "Check V/S" for glide -> must be called when deviating from normal parameter like when using vertical speed differential than that expected to anticipate the error

Margin for error —> +/- 10 degree and seconds for turn, +/- 100 ft altitude

We need to watch V/S when moving THRUST through thrust levers and when using Flaps

Simulator Assessment Preparation

Navaid set up for departure

PF has 1st VHF Navaid set – “The VOR”

PNF has the ILS set – For DME callout – for initial turn

Both Pilots have the first VOR Radial set on the

Course bars

PM “Approaching 1 NM”
PF “Set heading 299”

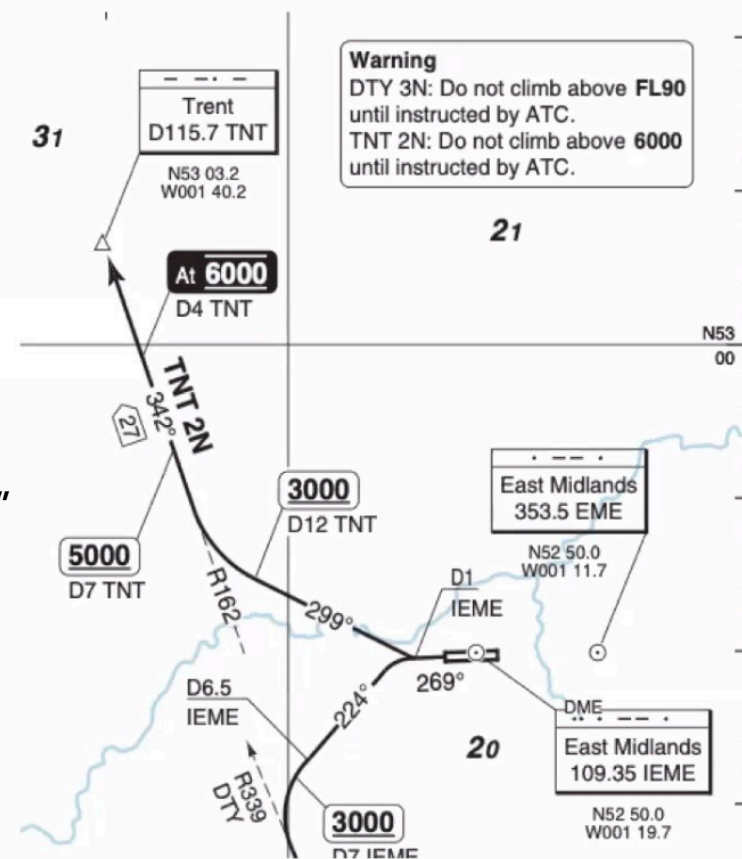
Once PNF has called DME for turn He / She will

then ① First will change HDG on MCP

② Switch from Apch to VOR on the EFIS Control

Panel

③ Switch to the VOR on their Radio Navaid



PM sequence -> MCP - EFIS - NAV

Simulator Assessment Preparation

Mode Control Panel



Use of MCP during the Sim Check (to avoid confirmation bias !)



PM reads back all clearances and does not bug anything



PF verbally Commands the MCP setting

{ PF "Set HDG/speed ____" then PM set and "Set", so PF "Check"
Altitude -> "Set" then PM "____ FL/alt set", so PF "____ FL/alt Check"



Then PM sets the MCP (Speed, Heading, Altitude, etc)

Simulator Assessment Preparation

Know your Briefings



Examiner Returns after 20 Mins



You are asked to give a “**Take Off Emergency briefing**” !!!



You are asked to “**Brief and Synopsise the SID**”



You are asked to “**Brief and Synopsise the Approach Plate**”

Simulator Assessment Preparation

Take Off Emergency Briefing

“Above 80kts I will only reject the takeoff for

- Fire or fire warning :
- Engine failure :
- Predictive windshear warning :
- Airplane is "unsafe" or "unable to fly."”

“Before V1, if I call "STOP" I will:

- Simultaneously close the thrust levers and disengage the autothrottle
- Apply maximum manual braking or verify operation of RTO autobrakes
- Manually raise the speedbrake lever,
- apply maximum reverse thrust and stop the aircraft,
- I will set the parking brake

“If the call before V1 is “KEEP GOING”, there will be no actions below 400’ AGL except to cancel any warnings and raise the landing gear with a positive rate of climb.

Above 400’ AGL, verify heading select and complete the memory items

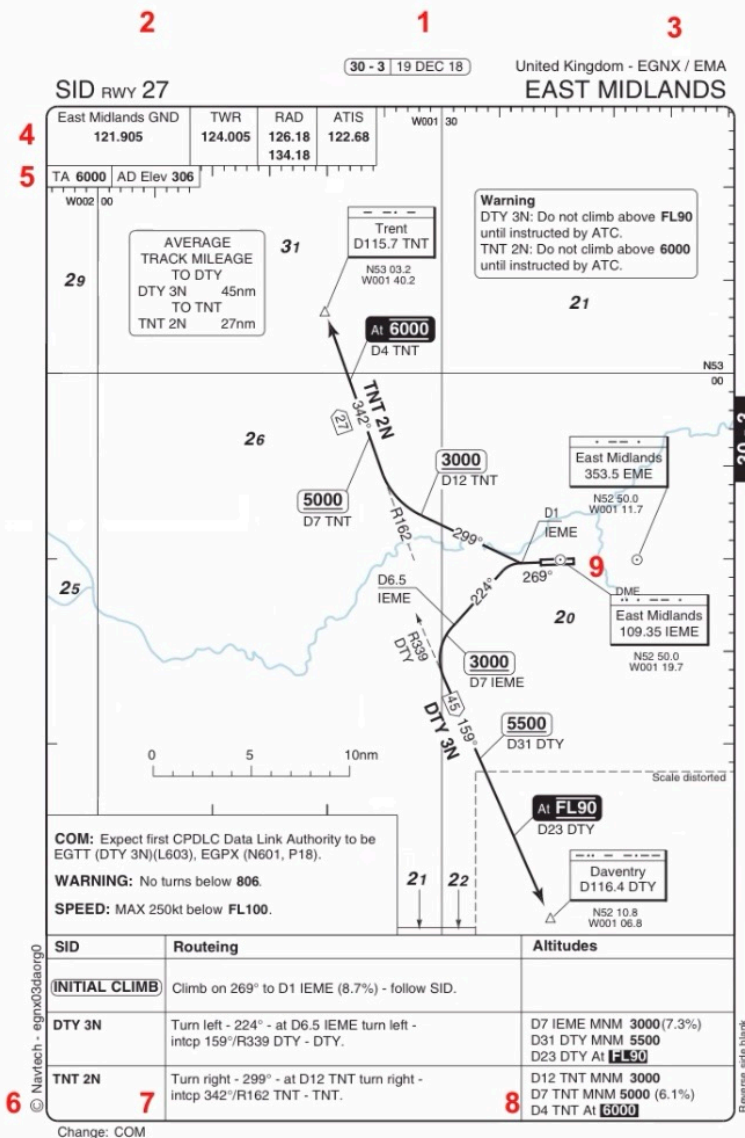
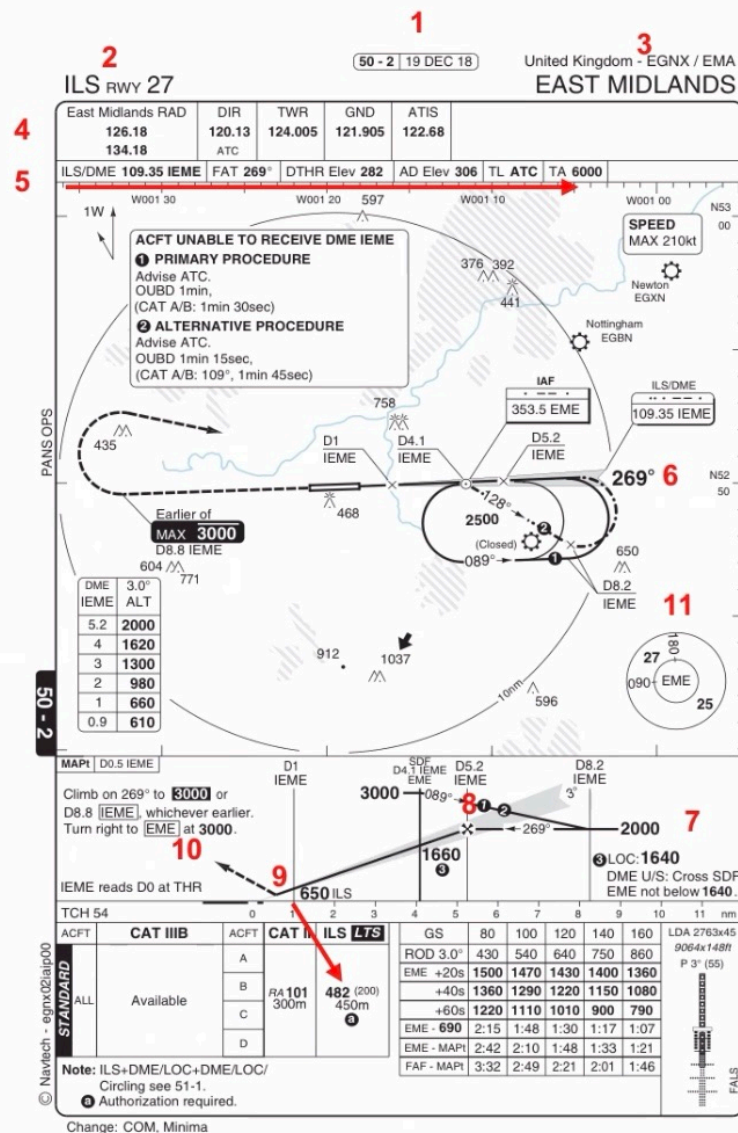
At MFRA, bug up and retract the flaps on schedule

At flaps up, no lights, select

- LVL CHG,
- Confirm MCT,
- Engage the A/P
- Climb to the MSA”.

Simulator Assessment Preparation

Briefing the SID - Sequence



TO BRIEFING

1. "Plates is 30 dash 3, effective 19 DEC 18"
2. "SID for runway 27"
3. "At EAST MIDLANDS airport"
4. "Com and frequency (for departure) set and checked"
5. "Transition alt 6000, aerodrome elevation 306 ft"
6. "TNT 2N"
7. "Turn right, heading 299, at 12 NM TNT turn right, intercept RDL IMB 342 TNT, then TNT"
8. "Crossing alt and restrictions check, 5000 ft level off as per NOTAM"
9. FSP = Frequency - CRS - Procedure → Frequency "DME frequency 109.35 IEME set active on your side standby on mine, ADF frequency 353.5 EME set active both side on NAV1, VOR frequency 115.7 TNT set active my side standby yours" + CRS "Both CRS set on 342 (RDL IMB TNT VOR)" + Procedure "After TO you will call me 1 NM DME, I will ask you to set heading 299 then you will set TNT VOR frequency active and VOR mode on your EFIS panel"

APPROACH BRIEFING

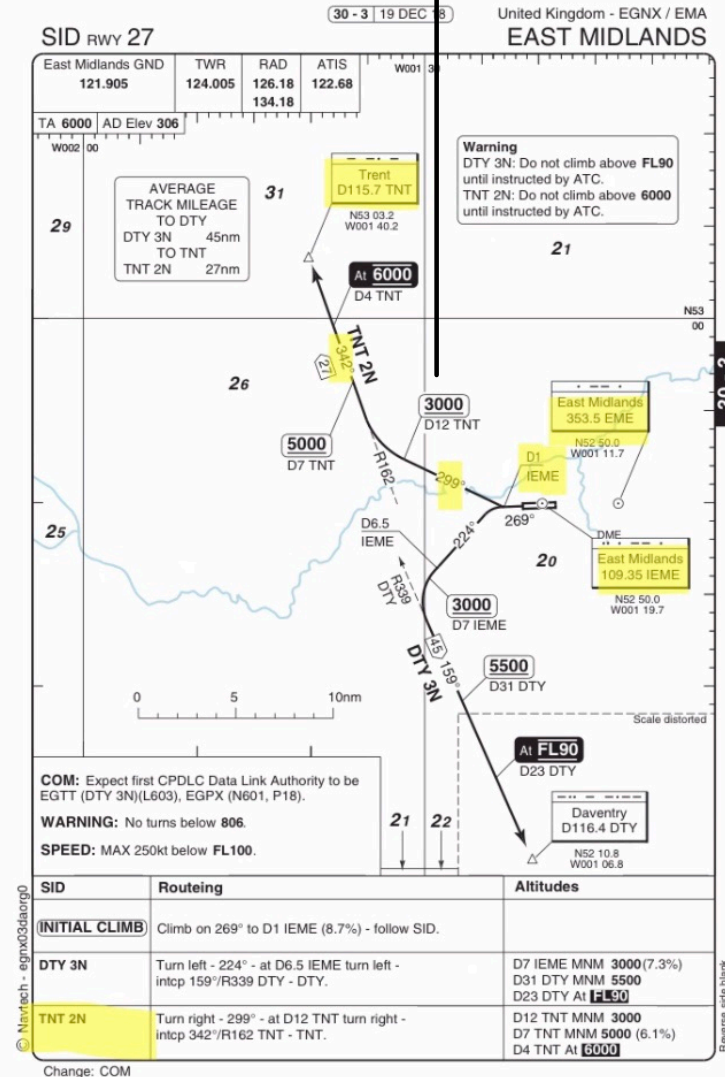
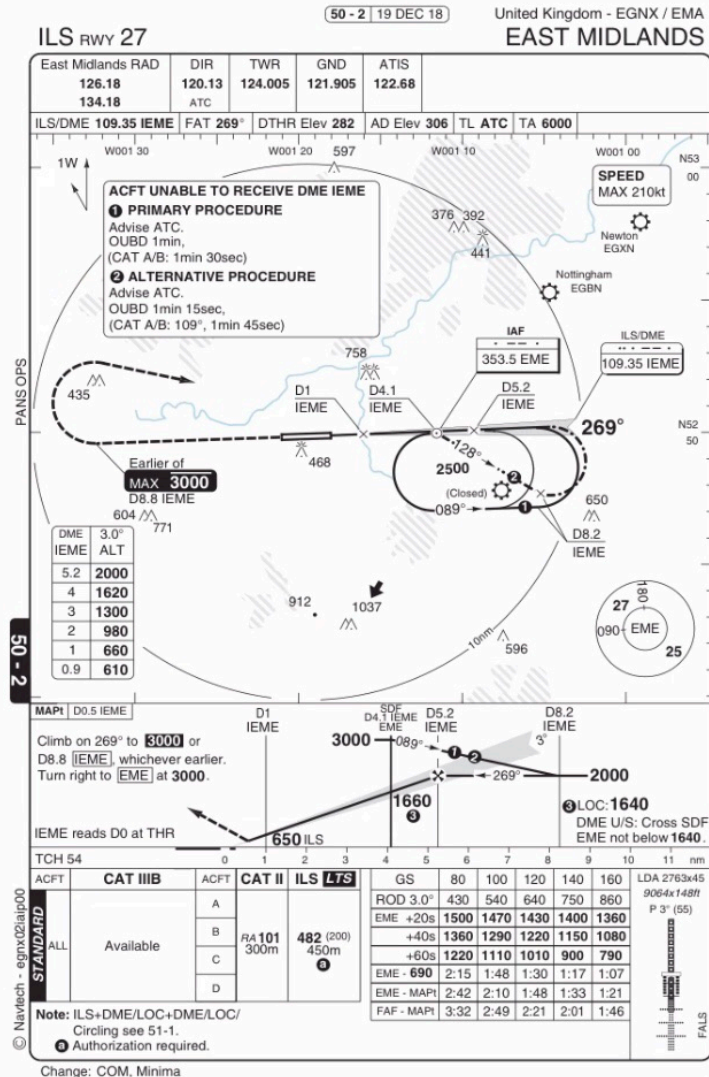
1. "Plates is 50 dash 2, effective 19 DEC 18"
2. "ILS runway 27"
3. "At EAST MIDLANDS airport"
4. "Com and frequency set and checked"
5. Briefing strip -> "ILS/DME primary frequency 109.35, final approach track 269, threshold elevation 282, aerodrome elevation 306, Transition level by ATC, Transition altitude 6000 ft"
6. "We will track inbound on a heading of 269"
7. "Platform altitude 2000 ft"
8. "Glideslope intercept at 5.2 NM"
9. "Descending on a 3 degrees slope up to baro minimum. What do you think is our minimum/What do you see the baro minimum of being, please?" → NEVER CALL BARO MINIMA AS PF, if the PM call for wrong baro min "Okay standby, lets investigate this"
10. "At baro minimums of 482 if we visual reference with rwy land the aircraft. In the event of go-around straight ahead 3000 ft as per NOTAM"
11. "MSA (based on EME ADF) 2700 ft North West, 2500 ft for the rest of the sectors"

NB. Ignore other altitude limitation -> just remember 5000 ft level off

Simulator Assessment Preparation

East Midlands Sid

TNT treat = at 12 NM turn from 299 to 330 (NO 342 otherwise will fly parallel to radial)



Liverpool Sids

Liverpool Sids

POL 4T treat = given that we are far away from VOR
POL (32 NM) don't turn immediately when radial alive
because will take time to intercept



Birmingham SID

United Kingdom - EGBB / BHX

BIRMINGHAM

SID RWY 33 DTY 4F

Birmingham DLV 121.93	GND 121.805 OR	TWR 118.305	APP RAD ① 123.98 131.33 by ATC	ATIS 136.03
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WARNING
Do not climb above 6000 until instructed by ATC

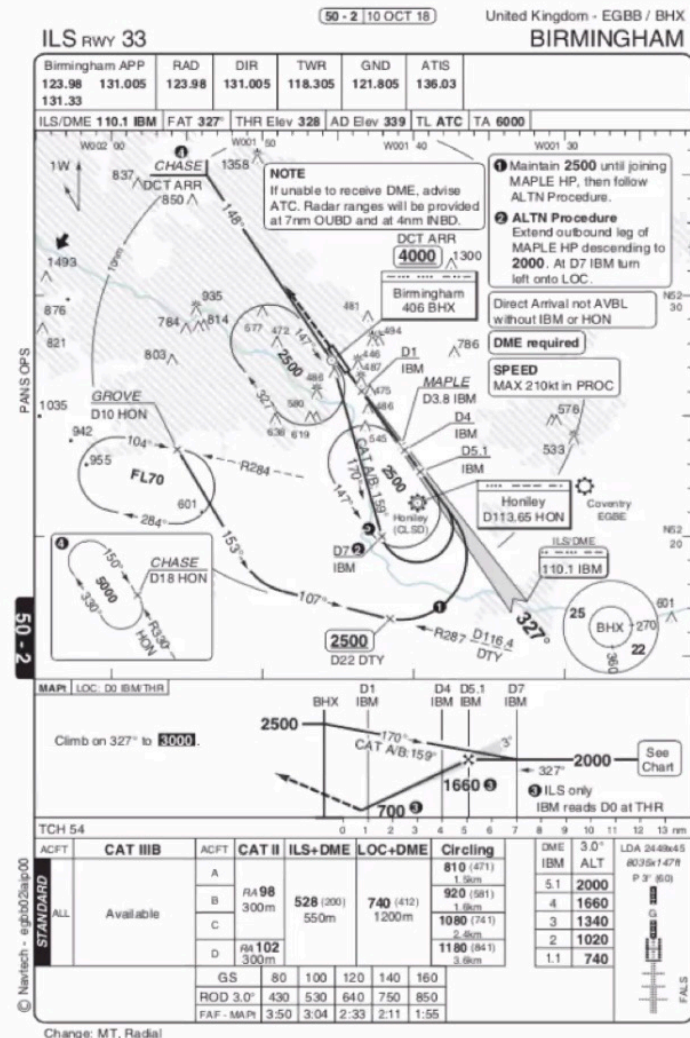
DTY 4F for use when Birmingham RADAR not AVBL

① In the event of Radar failure, the Birmingham Approach callign should be used on channel 123.98 or 131.005.

WARNING: Do not turn below 830.
SPEED: MAX 250kt below FL100.
MNM CLIMB GRADIENT: DTY 4F 7.8% to 5000.
NOTE: Close-in OBST.
 Enroute cruising levels will be allocated after TKOF by London Control.

SID	Routing	Altitudes
DTY 4F	Climb on 326° to D2 IBM or 830, whichever later - turn right - intcp 009°/R189 TNT - at D26 TNT turn right - 117° - establish on 147°/R327 DTY before D27 DTY - DTY.	R323 DTY MNM 5000 D9 DTY At 6000

© NAVBLUE - egbb07dsorgo



Simulator Assessment Preparation

Know your Abbreviated Briefings

Quick briefing to perform in SIM
before departure

BARTN 1T

- "267 TO 1.5 DME - RIGHT TURN 019 – INTERCEPT 081 WAL"

POL 4T

- "267 TO 1.5 DME - RIGHT TURN 019 – INTERCEPT 062 POL"

DTY4F

- "326 TO 2.0 DME – RIGHT TURN – INTERCEPT 009 TRN"

TNT 2N.

- "269 TO 1.0 DME – RIGHT TURN 299 – INTERCEPT 342 TNT"

Simulator Assessment Preparation

In the Sim !



You and your sim partner are brought to the Simulator



Set up and pre flight checks are completed by examiner



Sit in whichever seat works best for you



The Examiner will assist in setting your seating position



You will operate as PF and PM during the sim session



When you are PF assume you are the Captain

Simulator Assessment Preparation

Be Organised !!! - 123 - 123 - DME

Clip Plate onto control column

Adjust Seat – seating position is critical to hand fly the 737

123 { **1 - 2 - EFIS Control Panels**
3 - MCP



During EFIS setting ask for weather info
During MCP setting ask for departure clearance

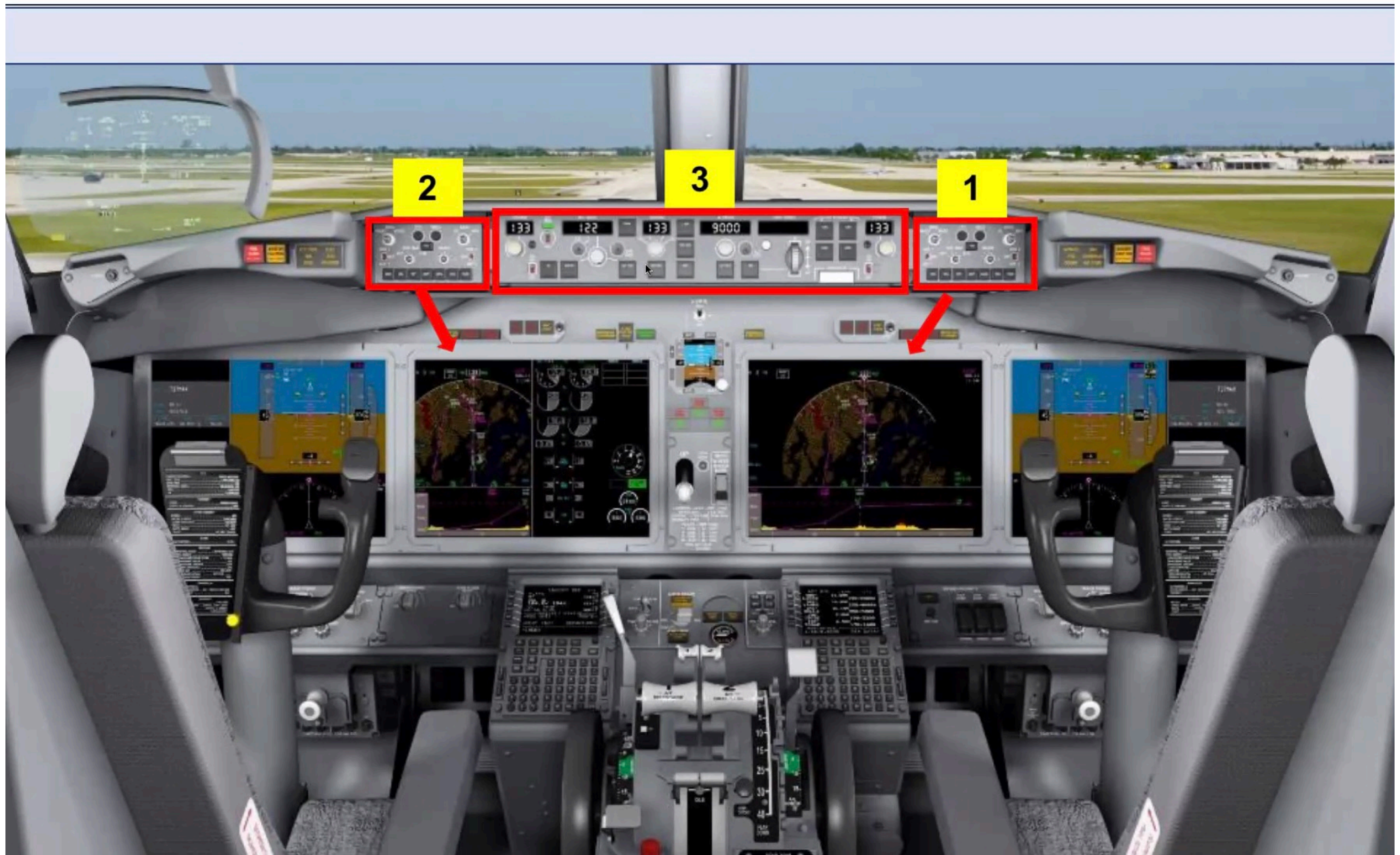
123 { **1 - 2 - 3 - Set Nav Radios**

DME { **DME - Point out ILS DME on the ND to PNF**

Once cleared for T/off call for “Before take off Checklist”

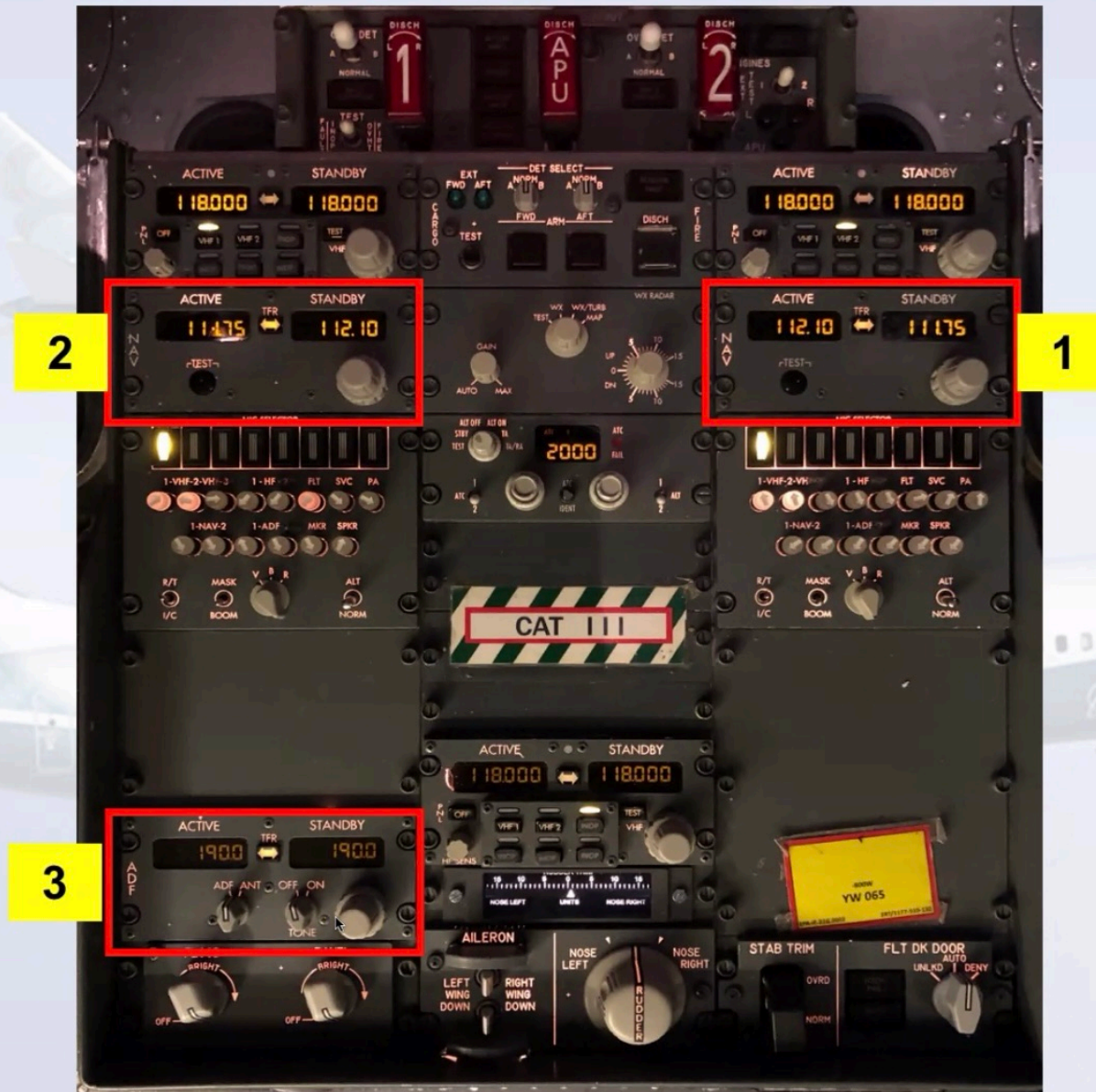
Simulator Assessment Preparation

B737 MAX Flight Deck



Simulator Assessment Preparation

Radio Tuning Panels



Simulator Assessment Preparation

Point out ILS DME readout to PNF

Point out the DME position to PM (indicate where is the FME)



Simulator Assessment Preparation

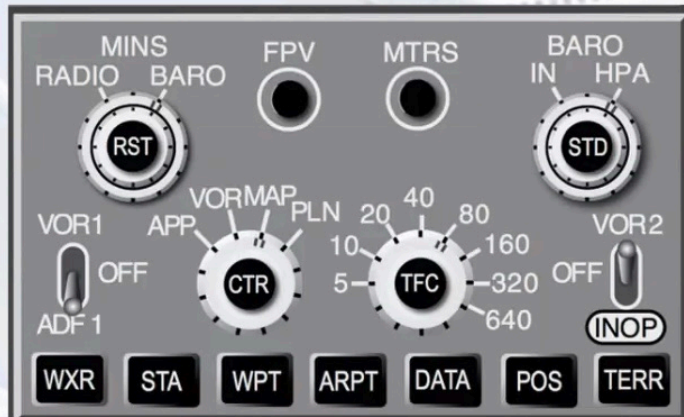
EFIS Control Panel

EFIS controls ND

Note – units are not “Butterflied”

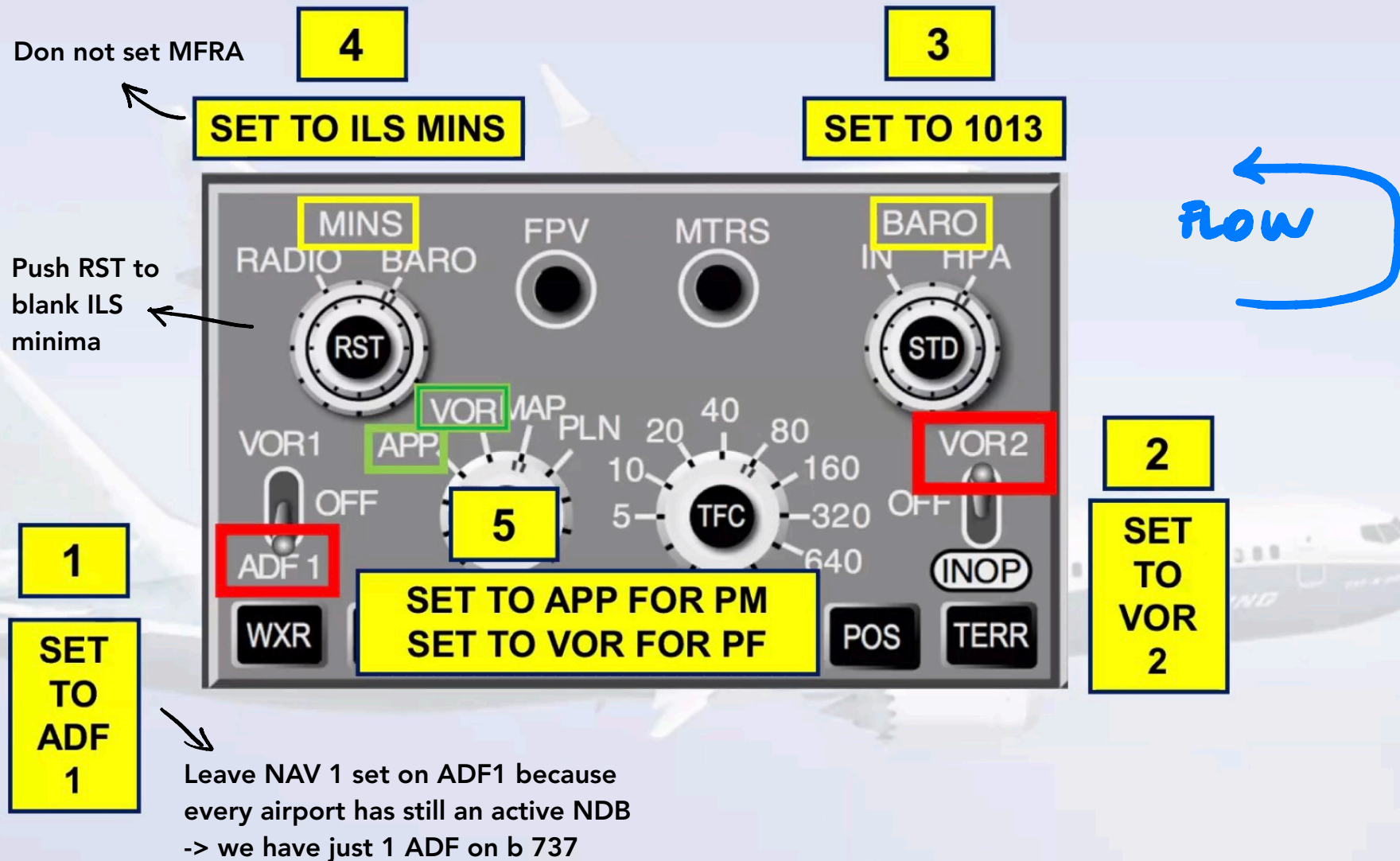
2

1



Simulator Assessment Preparation

EFIS Control Panel – setting sequence for Sim Check



MFRA = minimum flap acceleration altitude with OEI, speed at which we can accelerate x flaps retraction

Simulator Assessment Preparation

EFIS Control Panel

**Set to ADF
and Leave
on this
setting**



**Set to VOR
and Leave
on this
setting**

**Set to ADF
and Leave
on this
setting**

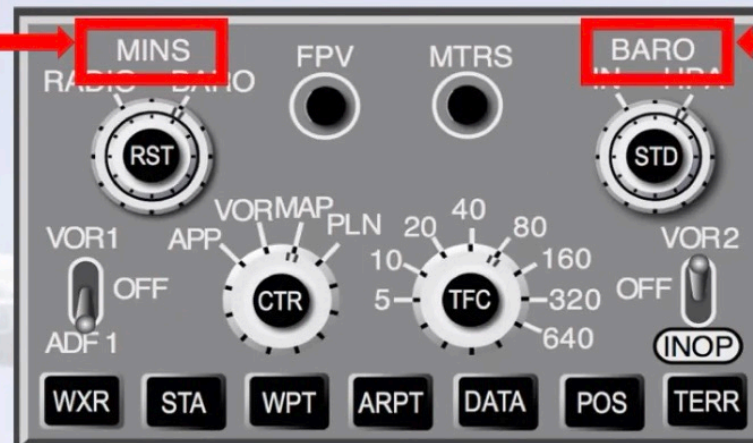


**Set to VOR
and Leave
on this
setting**

Simulator Assessment Preparation

EFIS Control Panel

**Minimums
Selector**



**Altimeter
Baro
Selector**

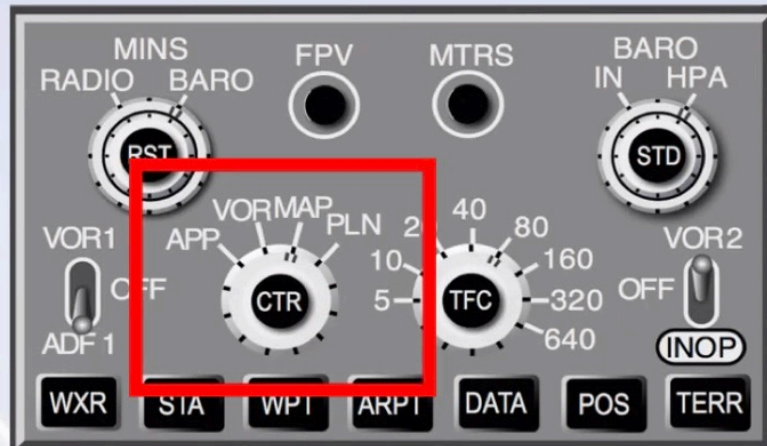
Minimums



Baro

Simulator Assessment Preparation

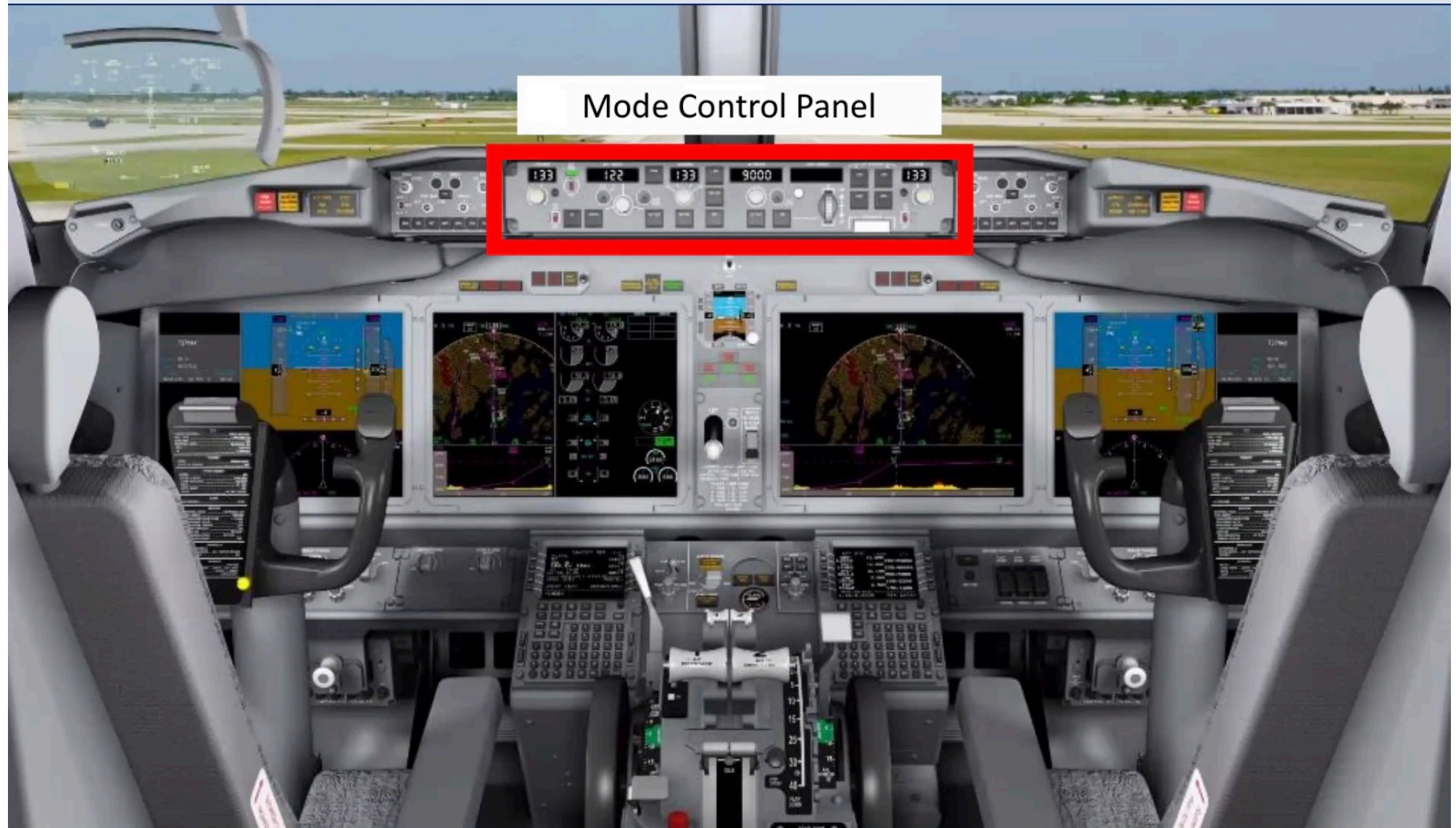
EFIS Control Panel



Simulator Assessment Preparation

B737 MAX Flight Deck

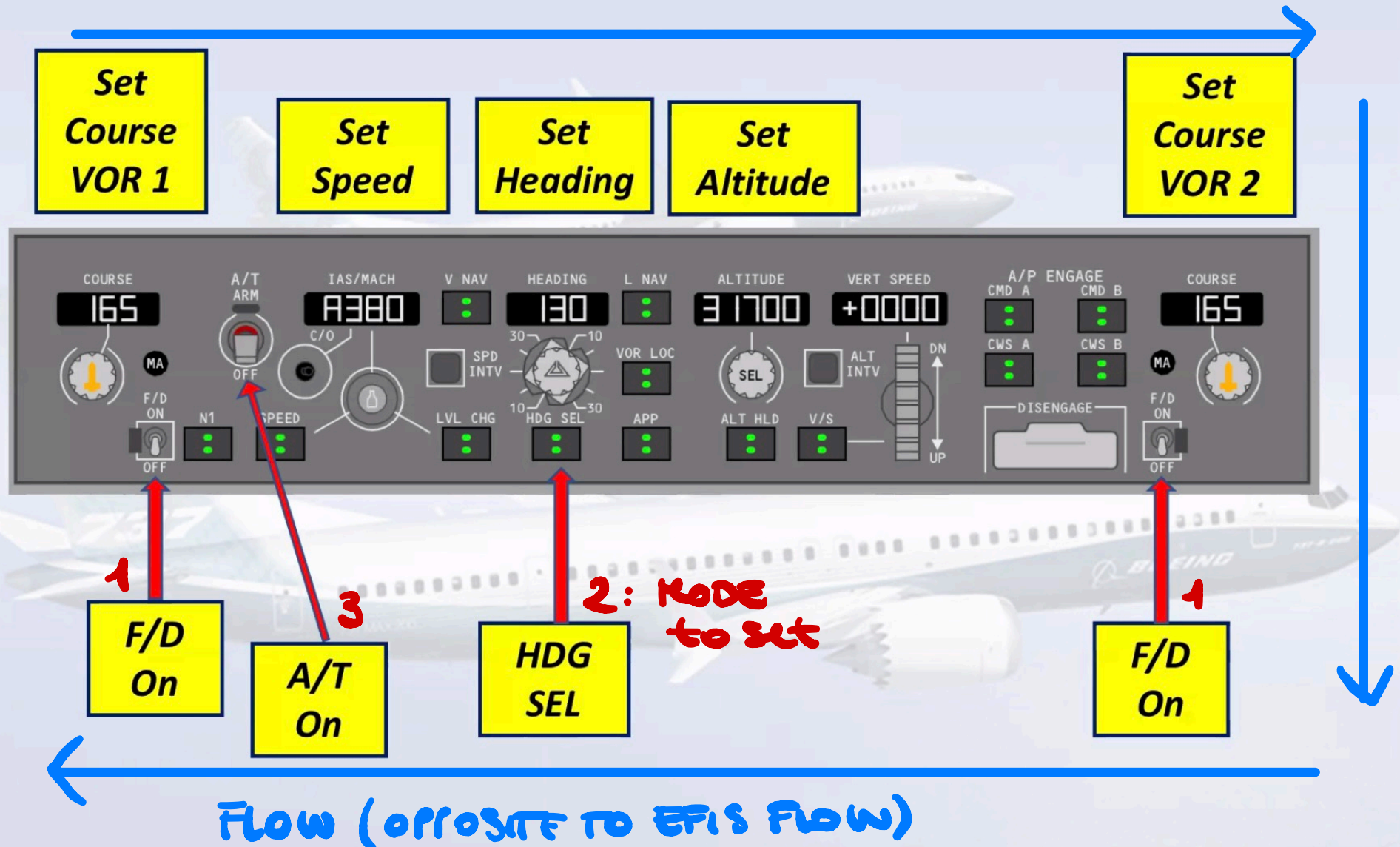
MCP = interface between pilot and AP



Simulator Assessment Preparation

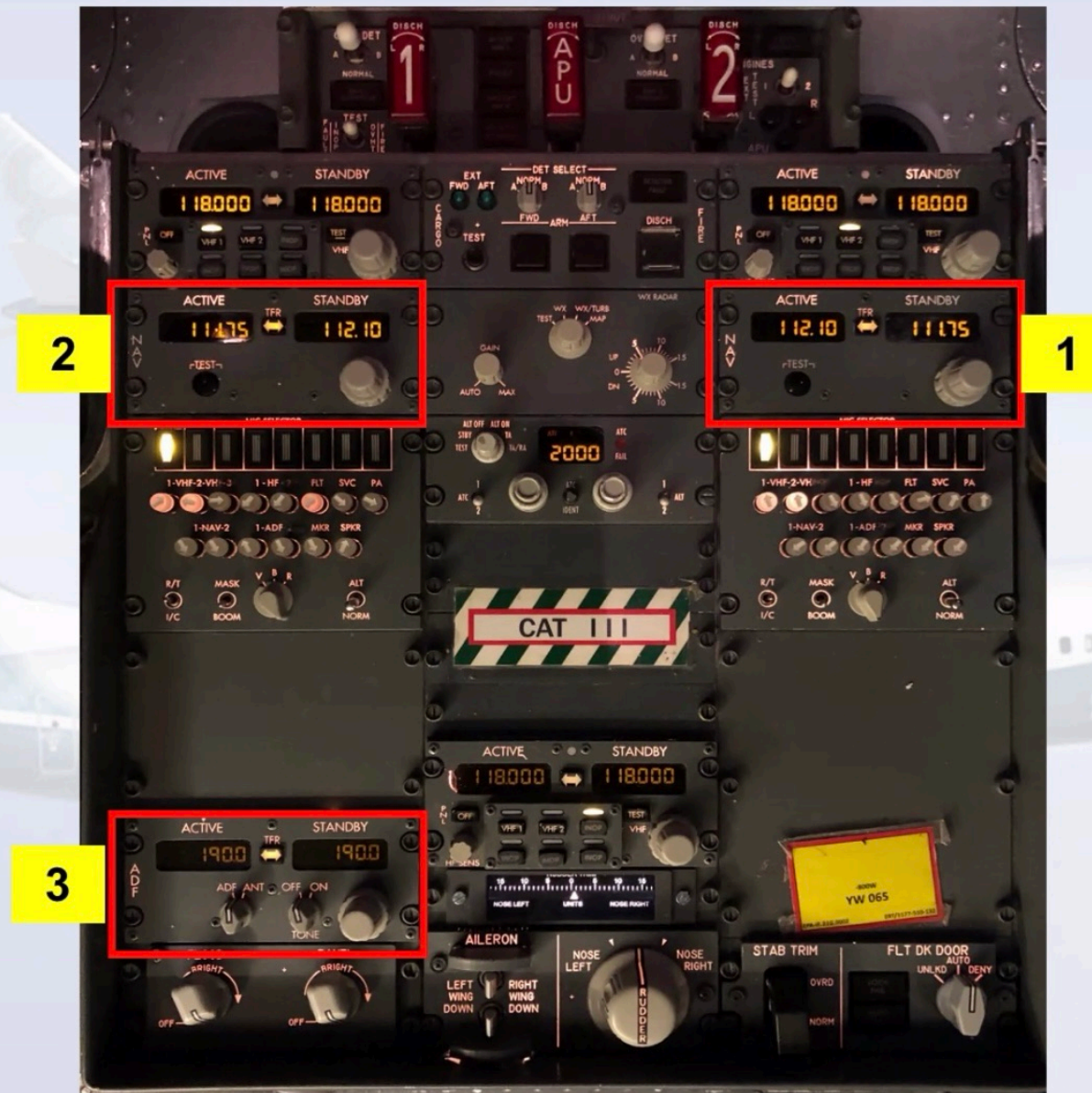
Mode Control Panel

Master (MA) must be on the side of PF
To select AP mode we must first have FD ON



Simulator Assessment Preparation

Radio Tuning Panels



Simulator Assessment Preparation

Primary Flight Display (PFD) → **SCAN FLOW**

IVIS = instantaneous vertical speed indicator -> is the most important to check altitude



Primary Flight Display (PFD)

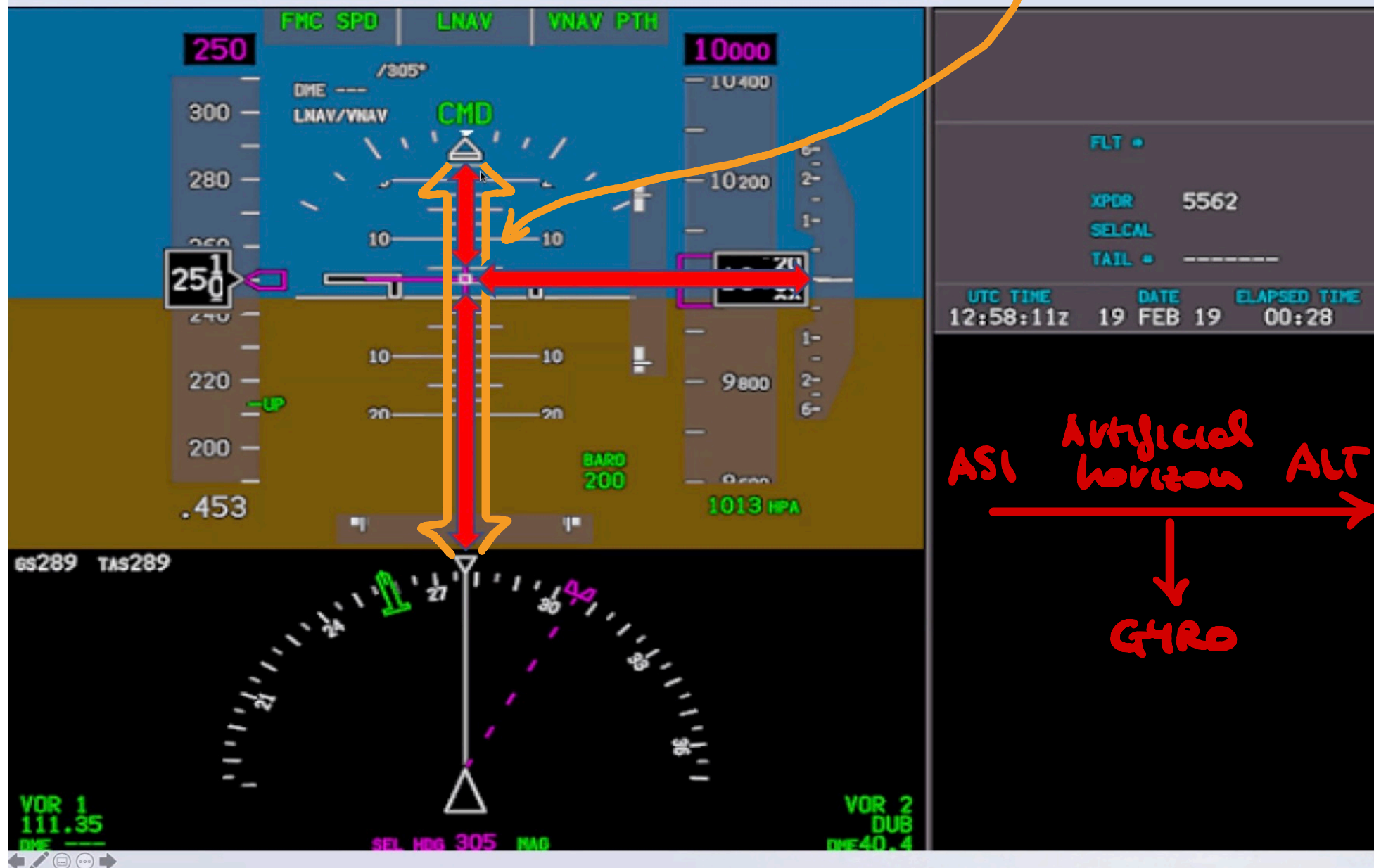


Simulator Assessment Preparation

Primary Flight Display (PFD) Scan

Concentrate between artificial horizon and V/S

Turn and slip indicator and HDG on gyro must be in line to have wing level



Simulator Assessment Preparation

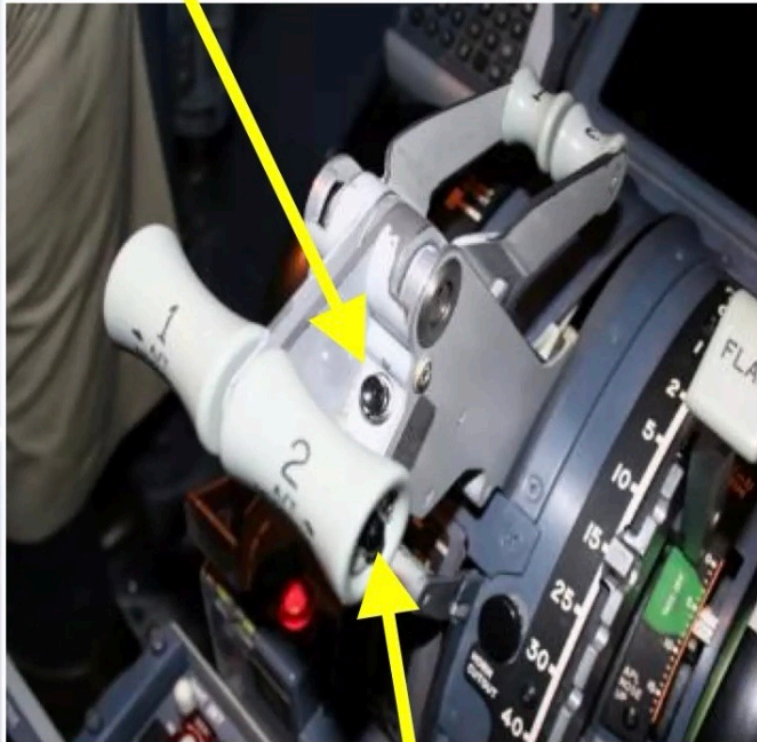
Engine Indications

Once TOGA buttons have been pressed thrust lever will move automatically -> do not force

For STABILIZE —> set at least 40% (not low)

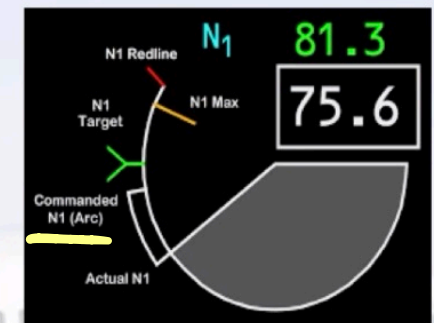
EVERY TIME YOU DISCONNECT A/T -> CHECK N1

**TOGA
Switches**



**A/T
Disconnect**

N1 Setting



When moving thrust levers -> takes 8 sec from IDLE to cruise thrust (must be considered when descending/climbing)

Simulator Assessment Preparation

Takeoff Profile

During TO FD will pitch up to indicate attitude

to reach V2 speed (V2 + 15 kt)

FD PITCH UP TO SPEED -> NOT ANGLE

NOTE: Do not use rudder pedals once airborne, except in an engine failure situation!

Advance thrust levers to 40% N1 & pause

Allow engines to stabilise at this thrust setting for 3 seconds

Push one of the TOGA switches

Look out of window and steer aircraft with rudder pedals

Otherwise brief with PM that he will hold thrust levers

Hold Thrust levers Until V1

PM
"V1"

Rotate gently but firmly to an initial attitude of 15° up

Don't chase the Flight Directors !

PM
"Rotate"

V1

VR

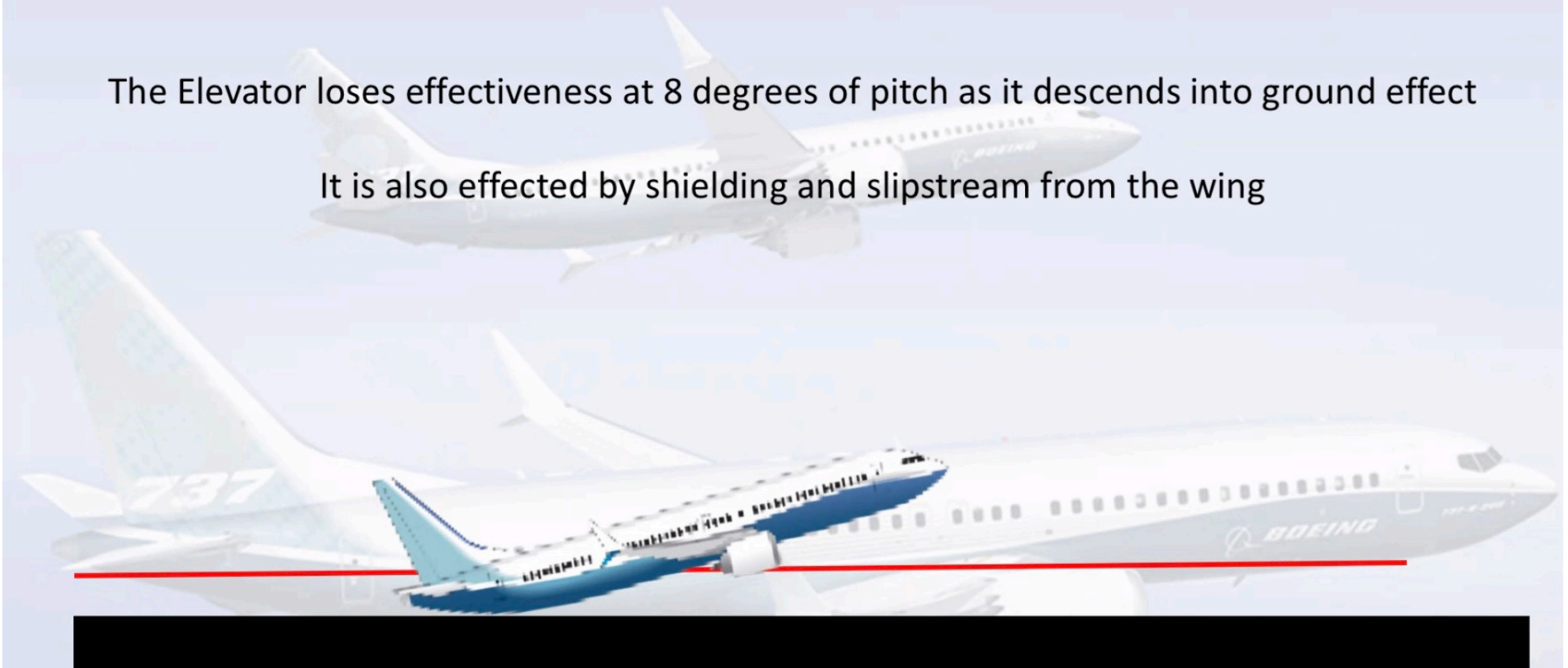
Simulator Assessment Preparation

The Effect of the Dead Band during Rotation

Rotation must be done in certain way to avoid indication of more than 15 degree from FD -> slow up to 8 degree - pop-up (tiro velocemente verso di me) - slow rotation up to 15 degree

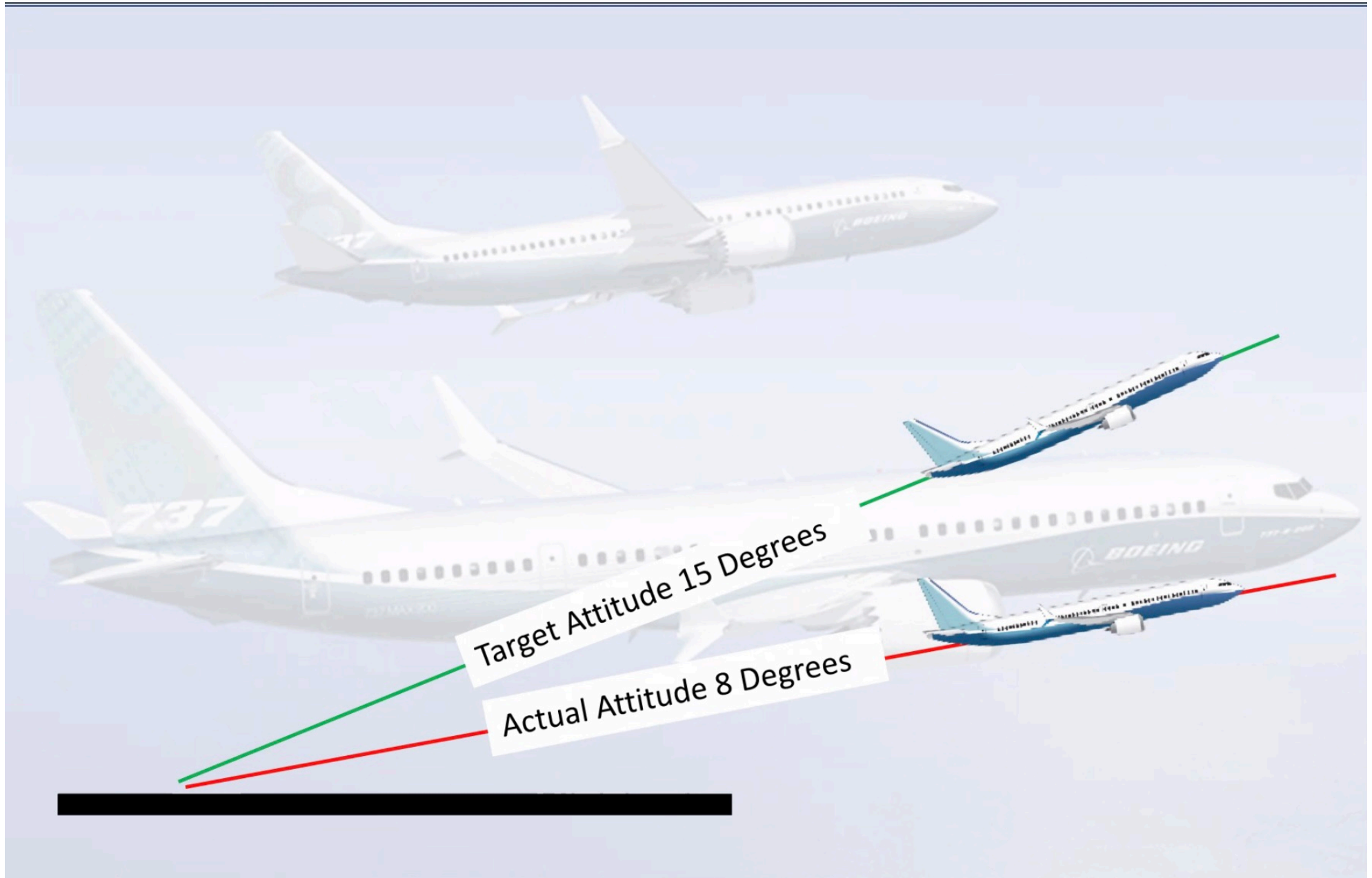
The Elevator loses effectiveness at 8 degrees of pitch as it descends into ground effect

It is also effected by shielding and slipstream from the wing



Simulator Assessment Preparation

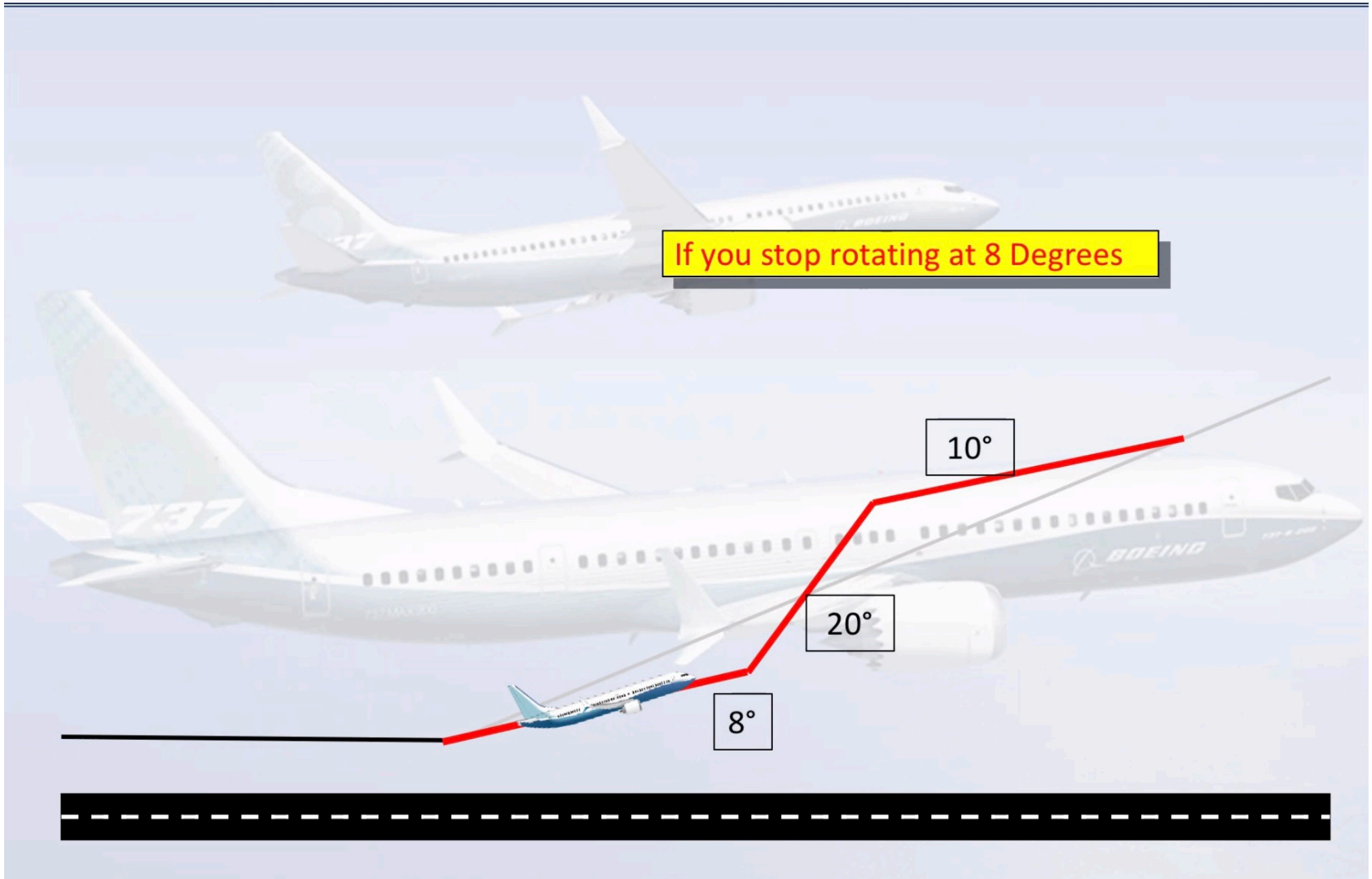
The Effect of the Dead Band during Rotation



Simulator Assessment Preparation

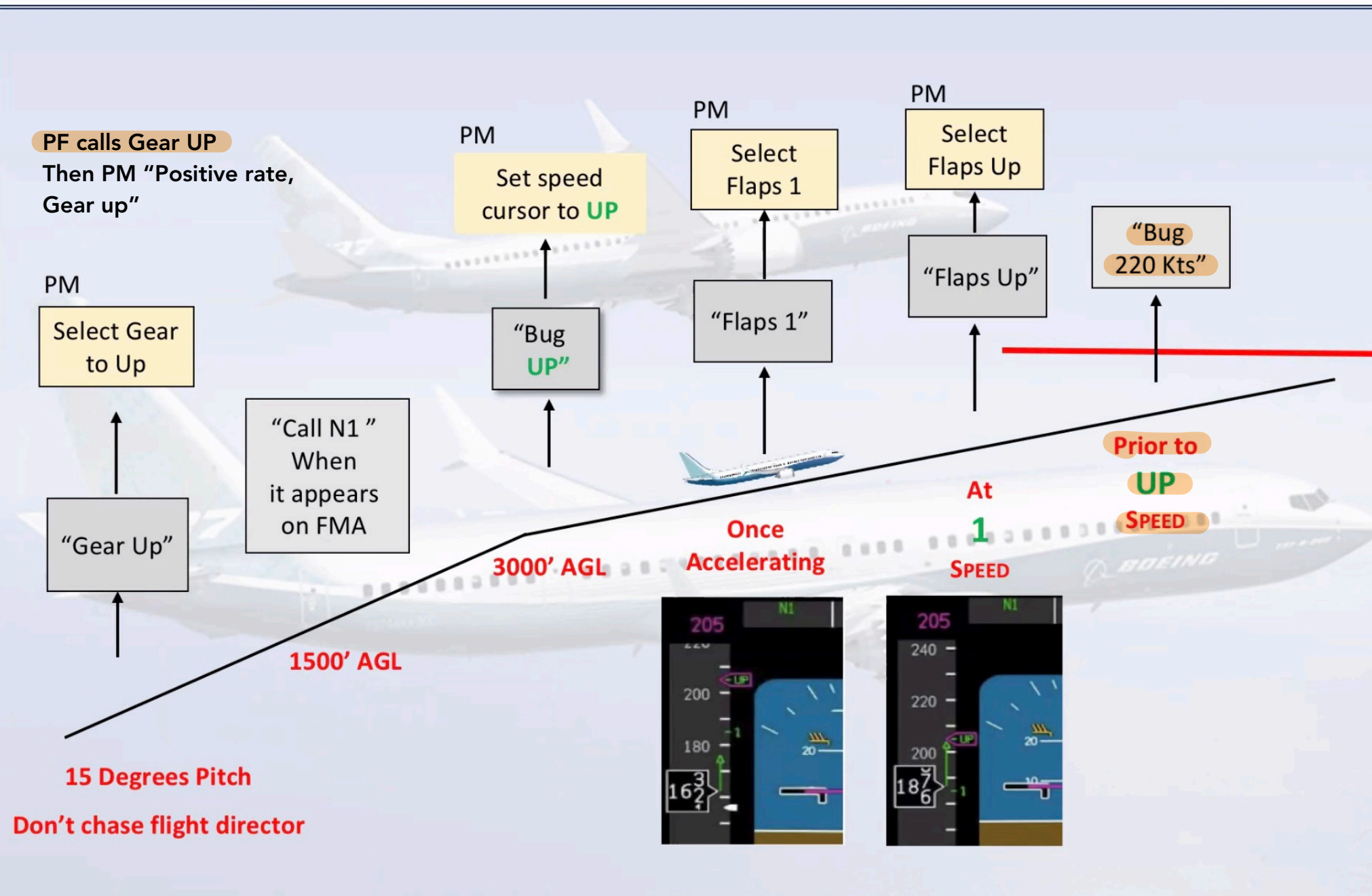
The Effect of the Dead Band during Rotation

If you stop rotating at 8 Degrees



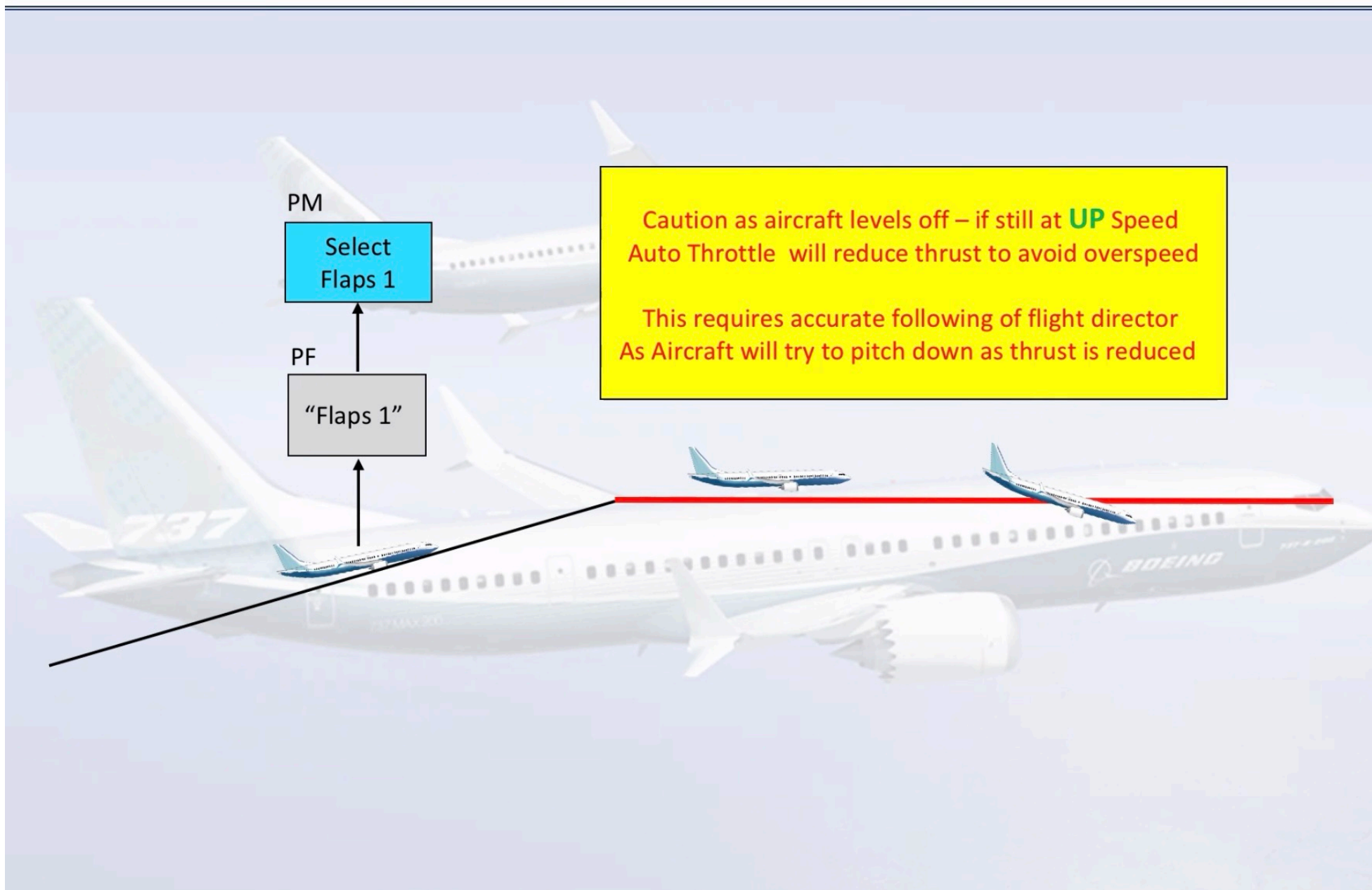
Simulator Assessment Preparation

Climb Profile – level off 5000 or above



Simulator Assessment Preparation

Problem if you level off and flaps are not retracted



Speed trend indicator = indicate speed in the next 10 sec (if we have no changes in configuration and thrust setting)

When reaching 1500 ft —> do not use "Set climb thrust" to avoid PM to disconnect A/T

UP speed (green dot speed) = speed below which we must be configured (flaps extended) and above which we must be clean (flaps retracted)

White bug = min manoeuvring speed

To retract flaps we must meet these 2 conditions:

- We must be in excess of manoeuvring speed of current configuration (Flaps __ bug)
- We must have a positive speed trend vector

Pay attention to level off —> A/T will reduce when reaching UP speed so if we are still climbing FD will command wrong pitch so we need to set 220 kt before UP speed in order to continue to climb without change in FD

Roll rate = rate at which aircraft rotate around it's longitudinal axis

Rate of roll = controlled by the angular deflection of aileron -> to increase rate of roll we need to have high angular deflection

Simulator Assessment Preparation

Sequence of Flight “Events”

Situational Awareness QDR / QDM ???

- 1/ Confirm correct Freq is tuned in to Nav Boxes
- 2/ Confirm EFIS selector is set to ADF / VOR as required
- 3/ Confirm Nav Aid is identified on screen
- 4/ Read QDR / QDM and confirm with PNF
- 5/ Check Hold entry on approach plate and check with PNF

General Handling

- Climbs at specified speeds
- Climbing Turns (20 Degree banks)
- Steep Turns (30 / 45 Degree Banks)
- Descents at specified speeds
- Descending Turns (20 Degree banks)
- Acceleration level to 320 Kts
- Deceleration to 250 Kts
- Climbs at specified rates
- Descents at specified Rates

Non-Normal Event

1. Call from ATC with a problem
 2. Call from Cabin Crew with a problem
1. “Master Caution” Alert
 2. “Fire Warning” Alert

DEAL WITH THE PROBLEM - THEN DO

- A. PIOSEE
- B. ATC Notify of Divert Request
- C. NITS Do Briefing
- D. PA You wont be asked to do this

Set up for Approach - 7 essential items

Do Approach Briefing

Look at QDR and identify where you are

Take back control

Call for Descent / Approach Checklists

Simulator Assessment Preparation

Sequence of Flight “Events”

**BOTH QDM/QDR AND HOLDING ENTRY EXERCISE
ARE DONE WITH ADF**

Situational Awareness
QDR / QDM ???

- 1/ Confirm correct Freq is tuned in to Nav Boxes
- 2/ Confirm EFIS selector is set to ADF / VOR as required
- 3/ Confirm Nav Aid is identified on screen
- 4/ Read QDR / QDM and confirm with PNF
- 5/ Check Hold entry on approach plate and check with PNF

Possible scenario

ATC “What is your QDM/QDR from the station?”

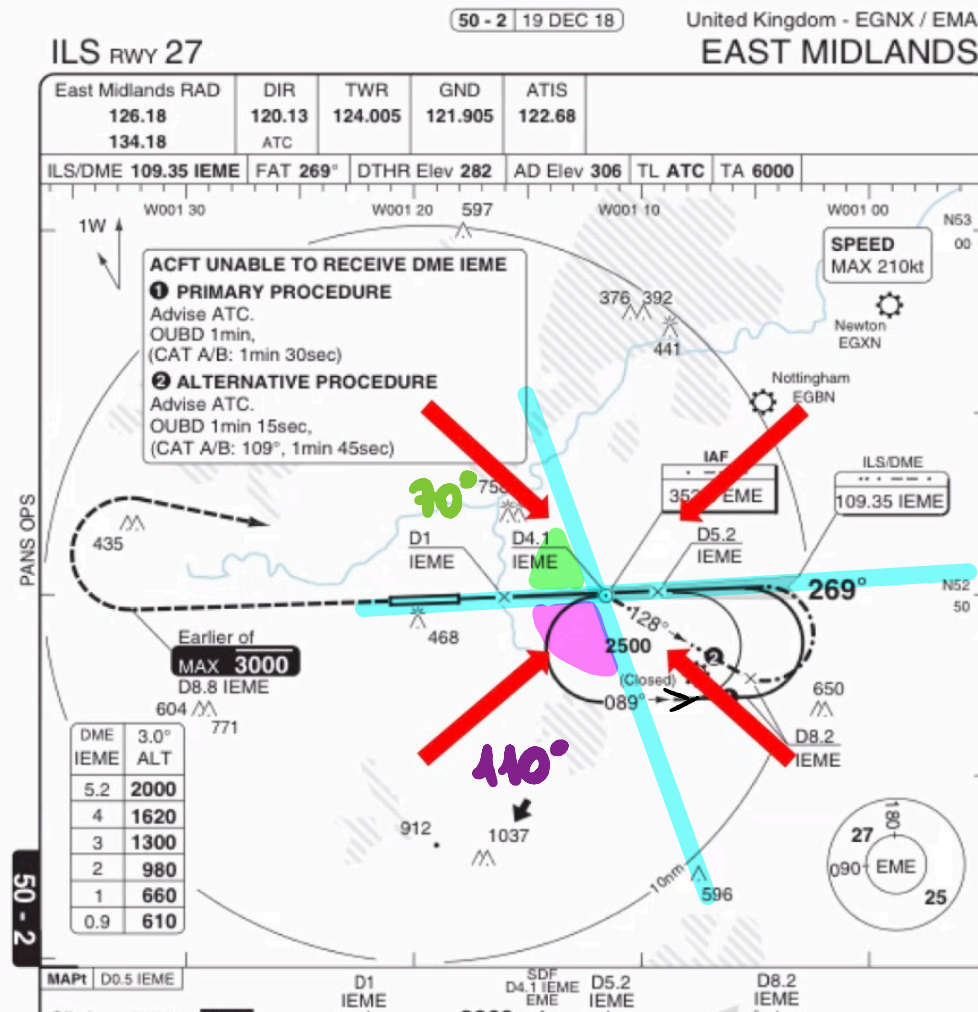
PM “Standby”

PF stay focused on PFD, without watching (or quick control/ask to PM to confirm) “Frequency check, EFIS selector on ADF1, ___ identified, QDM/QDR ___”



Simulator Assessment Preparation

QDM / HOLD ENTRY



Simulator Assessment Preparation

Sequence of Flight “Events”

General Handling

Climbs at specified speeds

Climbs at specified rates

Climbing Turns (20 Degree banks)

Steep Turns (30 / 45 Degree Banks)

Acceleration level to 300 Kts

Descents at specified speeds

Descending Turns (20 Degree banks)

Most probable exercise

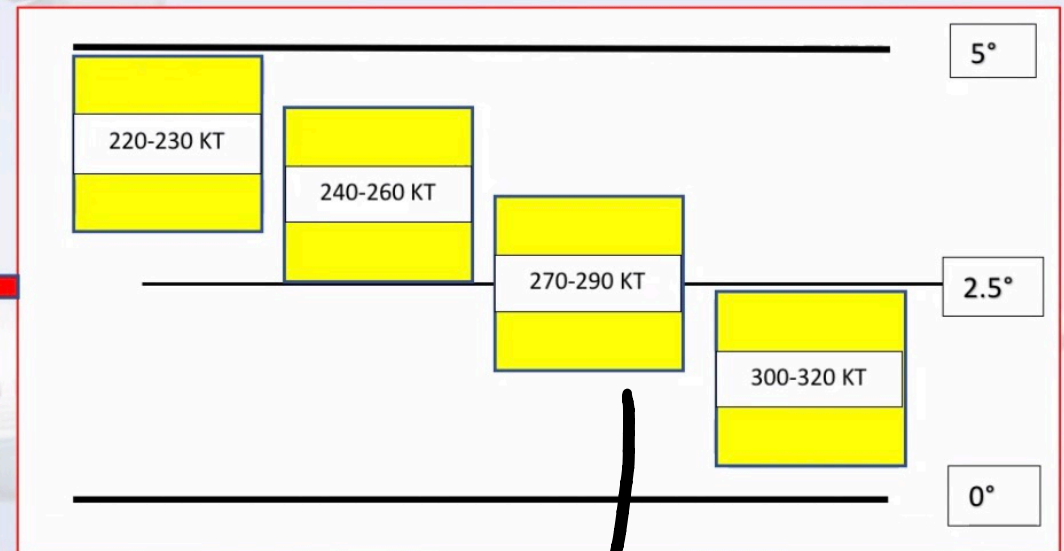
- Acceleration to 320 kt
- Steep turn 45 degree
- Deceleration to 280 kt

**AVOID
USING 25°
ANGLE →
USE INSTEAD
20° BANK
X ALL**

Simulator Assessment Preparation

If V/S indicate 0 this means that we have the correct attitude (for wings level)

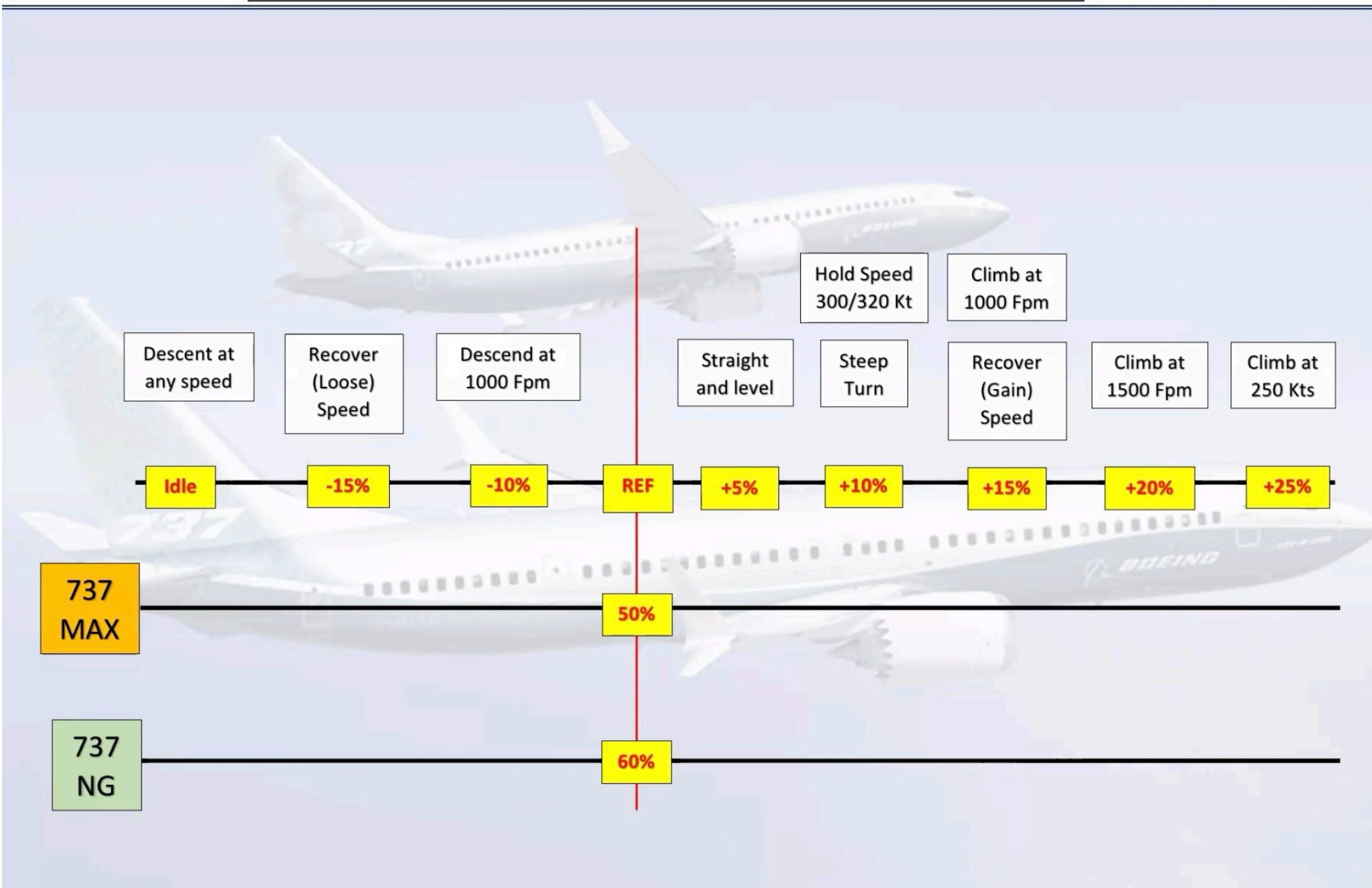
POWER SETTINGS & PITCH ATTITUDES (Approx for Straight and Level)



PIP

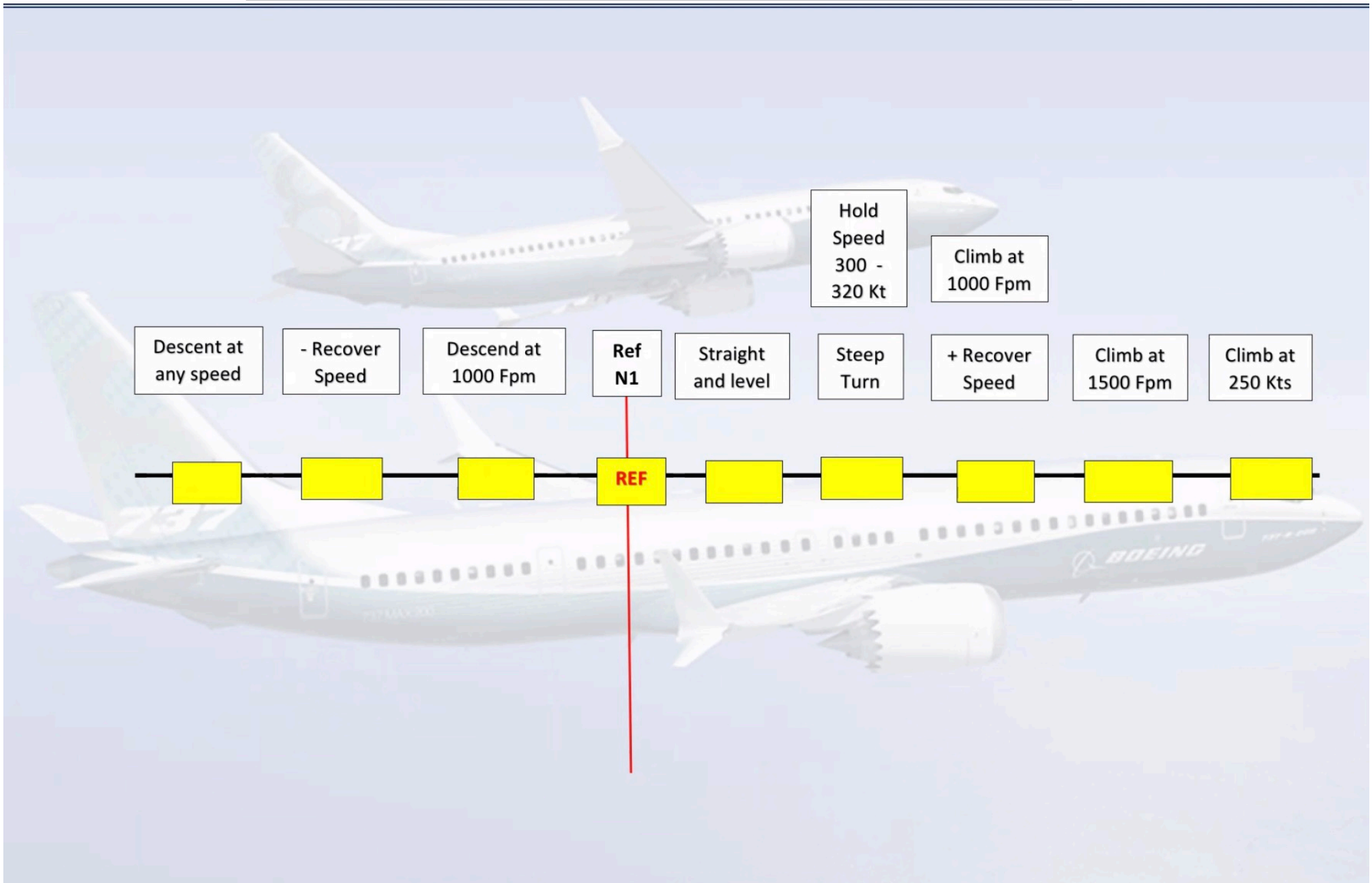
Simulator Assessment Preparation

Thrust Setting



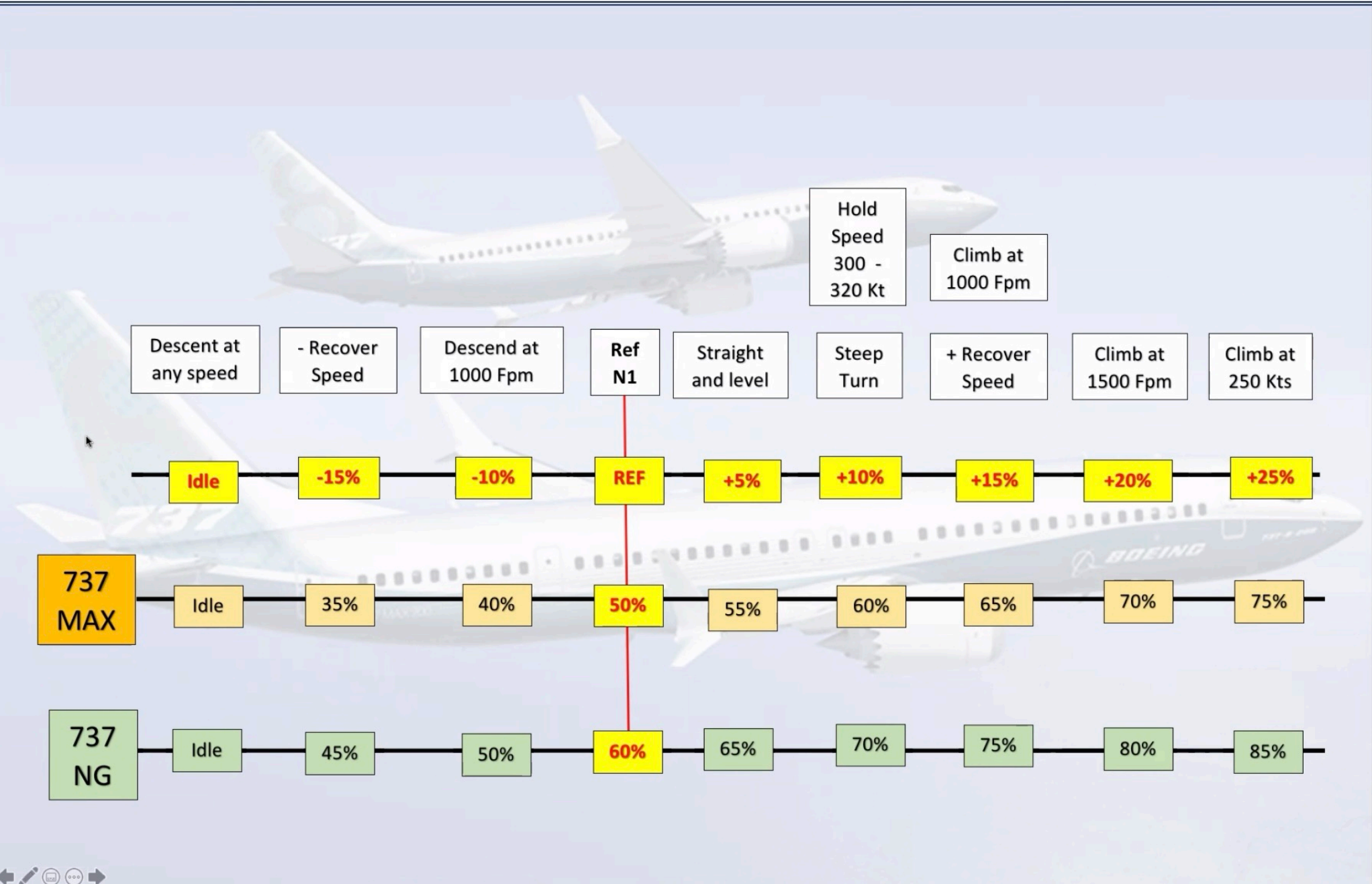
Simulator Assessment Preparation

Thrust Setting



Simulator Assessment Preparation

Thrust Setting



Simulator Assessment Preparation

First we have to accelerate, then when we reach the speed we can climb at that speed

Climb at higher speed

Add +25 % (very Slowly) (Scan Pip – VSI – N1)
At Target Speed Pitch to 7.5 Degrees

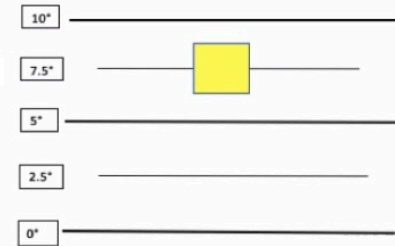
Level at 220
Kts
55 % MAX
65% NG

Bug 250 Kts
Inc N1 –
Ref N1 + 25%
75% in Max
85% in NG
Accelerate
Level

At 250 Kts
Pitch to
7.5°

75% & 7.5°
Result in a
climb rate of
approx.
2000 – 2500
FPM

CLIMB

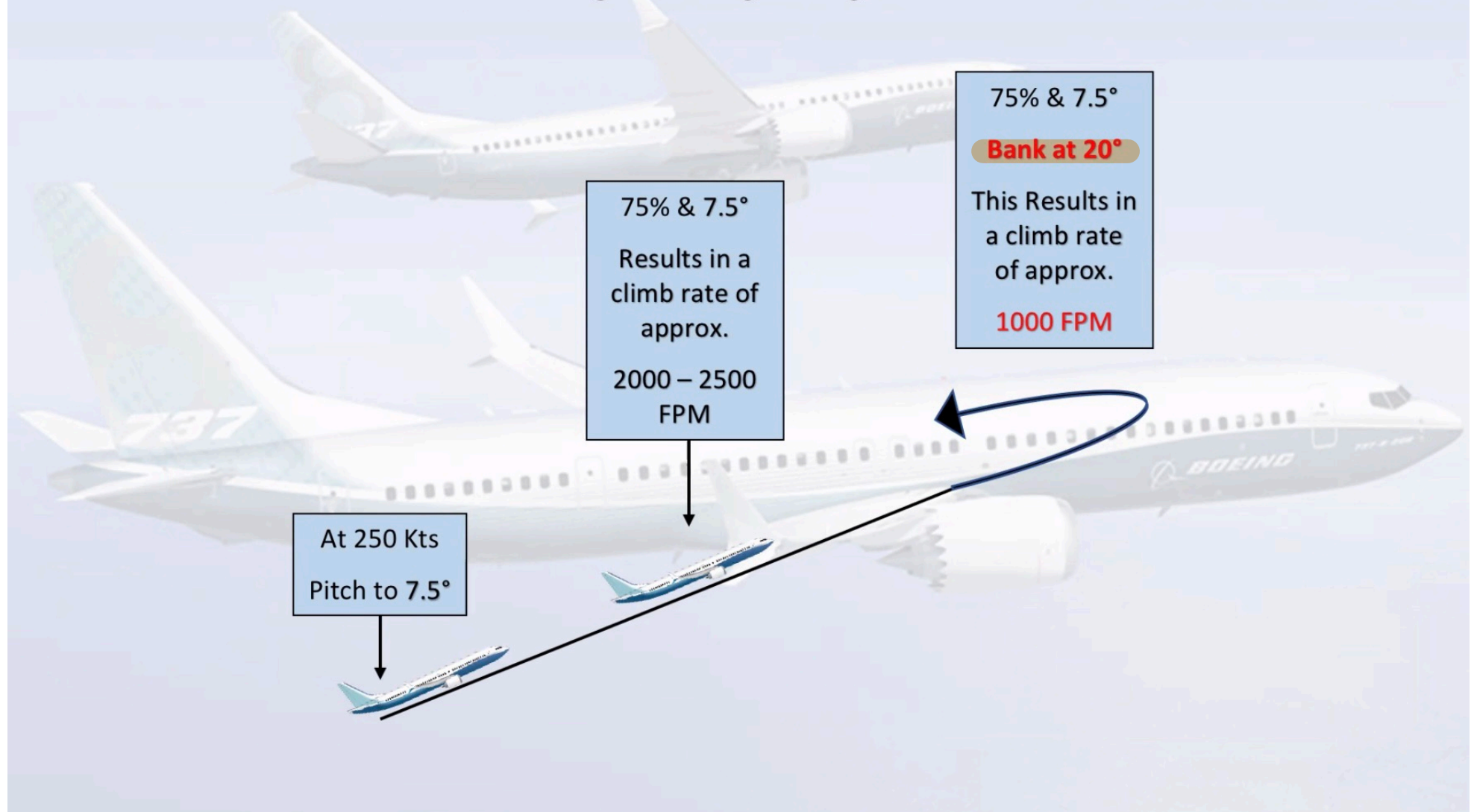


In case of acceleration with FULL THRUST -> full thrust then both hand on controls column and push down + trim (3 sec of trim)

Simulator Assessment Preparation

Change Heading during the climb

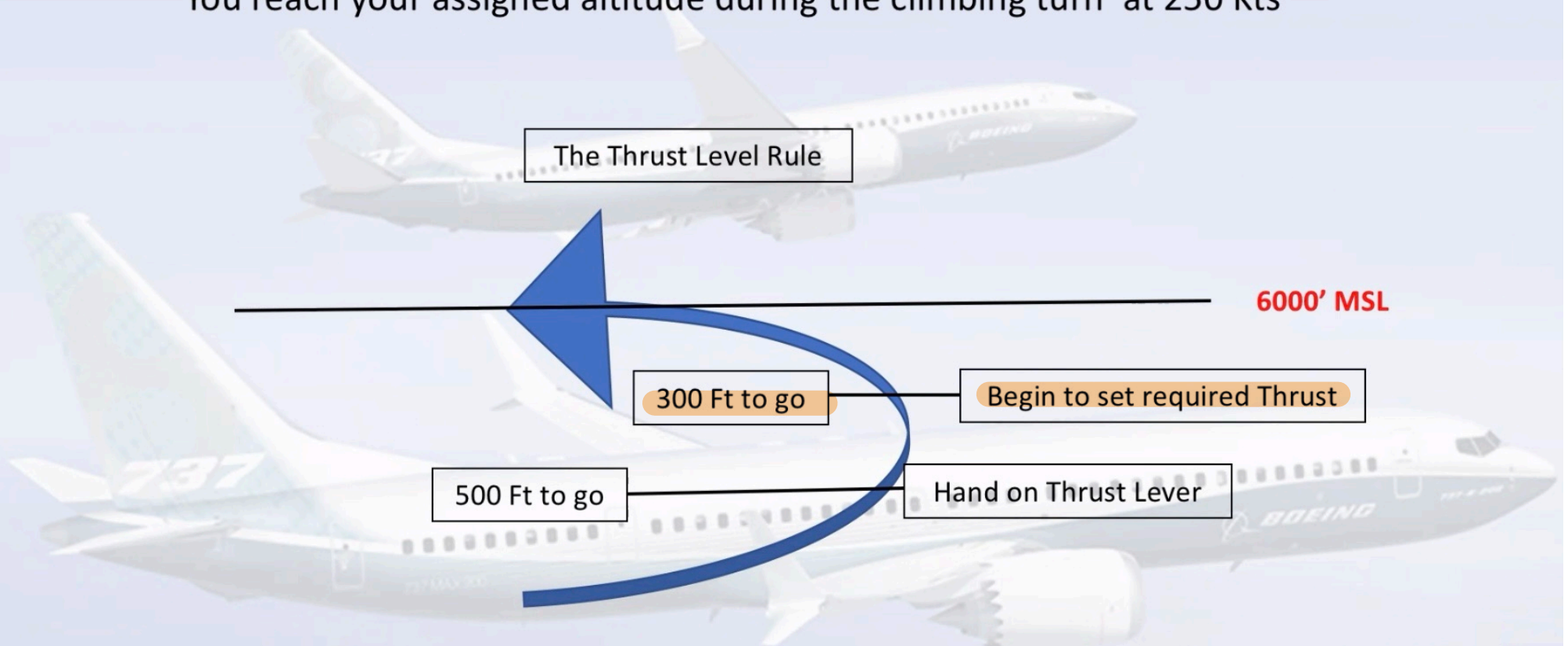
You are told to change heading during the climb at 250 Kts



Simulator Assessment Preparation

Levelling off during climbing turn

You reach your assigned altitude during the climbing turn at 250 Kts



When levelling off remember not to set PIP on horizon level (on artificial horizon) because we will need higher PIP to sustain higher speed

Simulator Assessment Preparation

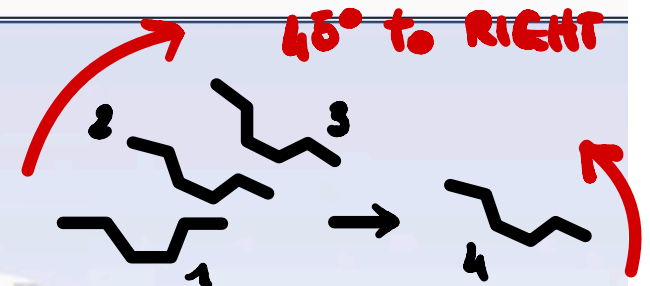
Steep Turn - 45 Degree Bank

4 aileron inputs to accomplish 45 degree turn -> 3 on the same side of rotation, 1 on the opposite side

Set Thrust before starting Roll

Roll at a very low rate of roll –

ROLL SLOWLY WATCH THE PIP AND THE VSI



Level at
250 Kts

Level at 250 Kts

Ref + 10% N1

Max 60%

NG 70 %

Level at
250 Kts
+10 % N1

Level at 250 Kts
Reduce to
cruise N1

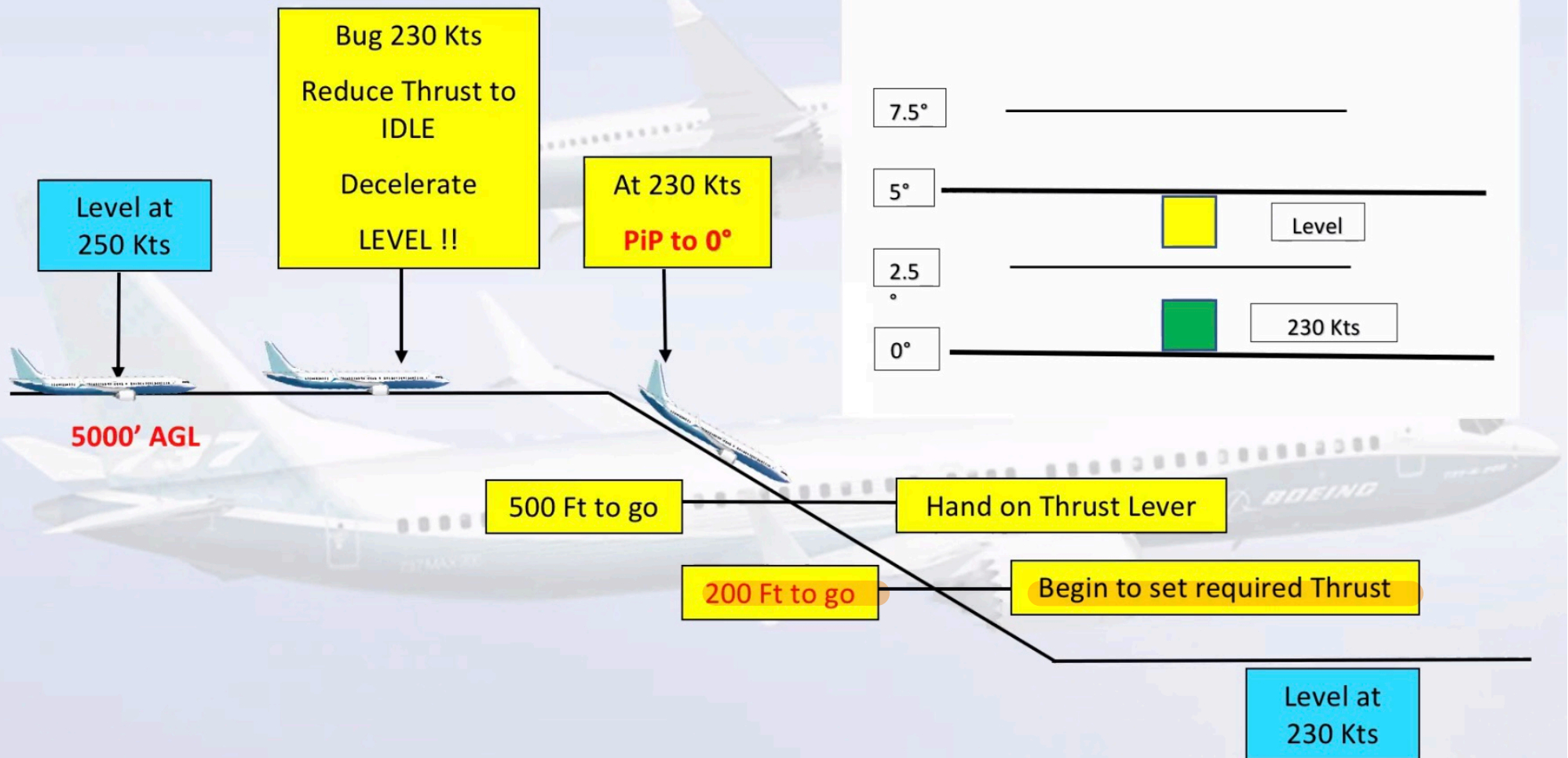
If we want to use trim (trim nose up) during turn we need to remember to trim nose down when exit from turn

Simulator Assessment Preparation

Descend at 230 Kts

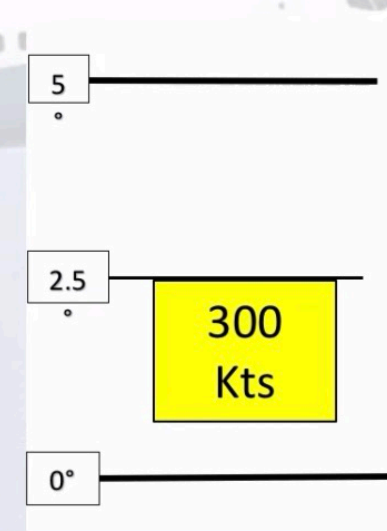
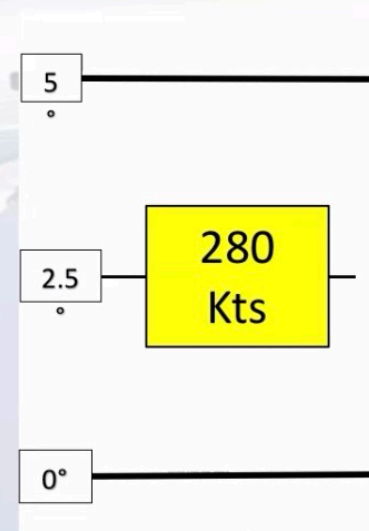
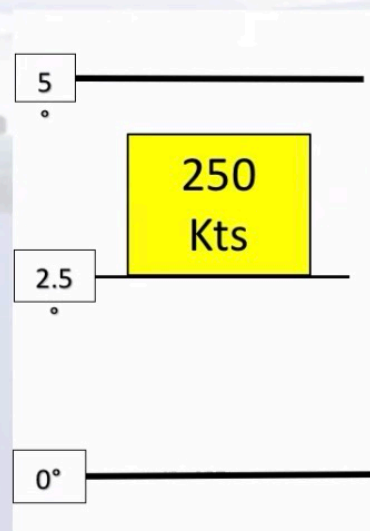
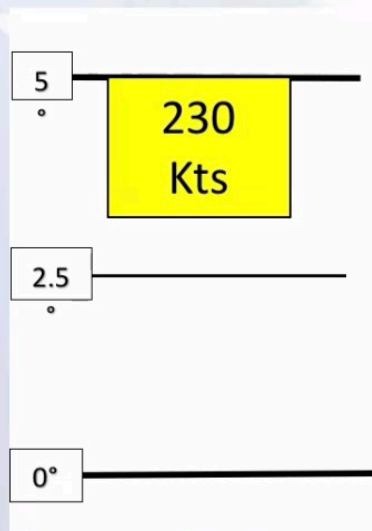
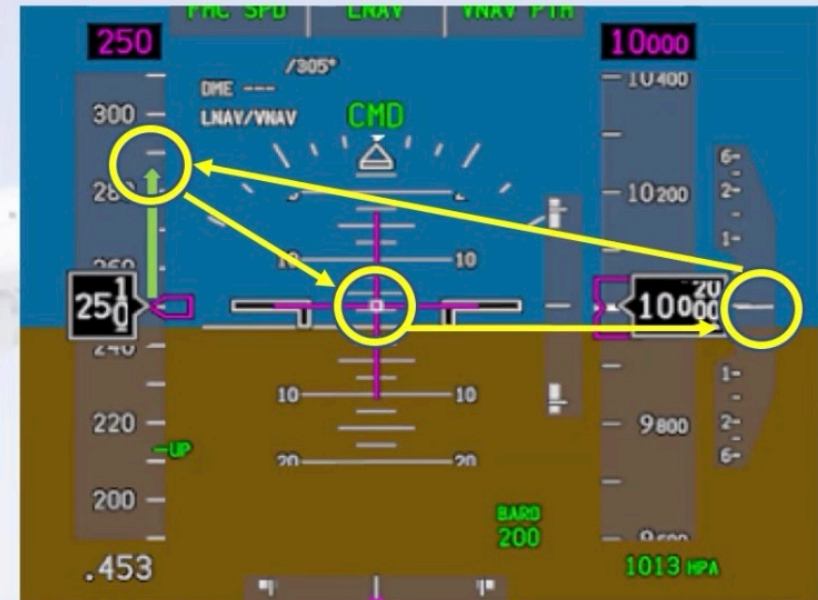
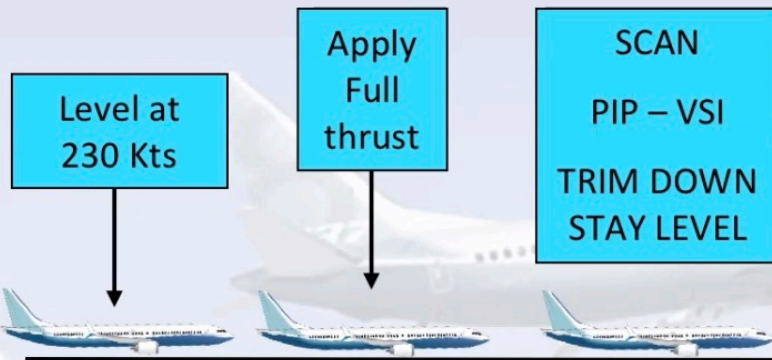
ALL THE DESCENT NEED TO BE MADE AT IDLE POWER

You are at 250kt and told Descend at 230kt



Simulator Assessment Preparation

Accelerate to 300 Kts



Simulator Assessment Preparation

Accelerate to 300 Kts

When reducing thrust before reaching 300 kt -> reduce a bit but make sure the positive trend will touch 300 kt (doesn't have to disappear)



Simulator Assessment Preparation

Climb at 1000 FPM

We can climb in 2 way = with constant speed or constant rate of climb

Speed climb → thrust first (accelerate first to the speed thrust) then pitch

Climb at rate → pitch first then thrust

Level at
250 Kts
REF% N1

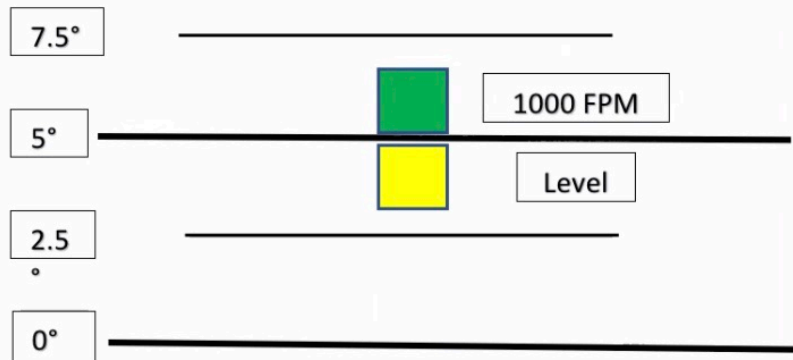
Increase Pitch slowly to
bring VSI alive (**100FPM**)

Once VSI comes alive then
Increase Thrust by 15%

It Should take 10 seconds
to go from 0 FPM to
1000FPM

Don't Reduce Thrust
with 300ft to level off

Leave thrust till
Aircraft is level at
target Altitude before
reducing Thrust



Simulator Assessment Preparation

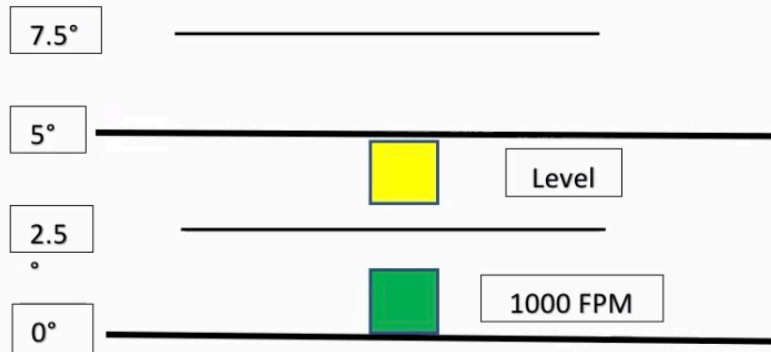
Descend at 1000 FPM

Level at
250 Kts
REF% N1

Decrease Pitch slowly to
bring VSI alive (-100FPM)
Once VSI comes alive then
reduce 10% thrust
It Should take 10 seconds
to go from 0 FPM to
1000FPM

Don't Increase Thrust
with 300ft to level off

Leave thrust till
Aircraft is level at
target Altitude before
reducing Thrust



Simulator Assessment Preparation

Sequence of Flight “Events”

PF → AVIATE

PM → COMMUNICATE, NAVIGATE

Non-Normal Event

- Call from ATC with a problem
- Call from Cabin Crew with a problem

- “Master Caution” Alert
- “Fire Warning” Alert

DEAL
WITH
THE
PROBLEM

THEN DO

- A. PIOSEE
- B. ATC
- C. NITS
- D. PA

Set up for Approach - 7 essential items

Do Approach Briefing

Look at QDR and identify where you are

Take back control

Call for Descent / Approach Checklists

Simulator Assessment Preparation

Non-Normal Event

Call from ATC

Call from ATC to Inform Crew that

"We think you have had a tail Tail Strike" (**Do QRH**)

"Tyre Debris on Runway – we think you have had a Burst Tyre" (**Do QRH**)

"Report of possible Bomb on board"

"Your Destination is Closed due weather"

"The wrong Bags / Pax have been loaded on your aircraft"

Call from Cabin

Cabin Chime –

PNF Answers

1/ Critically Ill Passenger

2/ Violent Passenger or Passenger claiming to have Bomb / explosives

3/ Crack in a window

4/ Smell of Burning

Master Caution Warning

PF

'Master Caution **Elec**
State the Malfunction'

PNF

"**Source Off**"

PF

"Cancel the warning'

QRH Non - Normal Checklist for **SOURCE OFF**

"I have the radios" "

Fire Warning

PF

"Fire warning"
"Cancel the warning "

"State the Malfunction"

PNF

"**APU FIRE**"

"QRH Non - Normal Checklist for APU FIRE"

"I have the radios" "

PIOSEE (Avoid using DODAR etc)

ATC (Notify of Divert Request)

NITS Briefing

PA

Set up for Approach - 7 essential items

Do Approach Briefing

Look at QDR and identify where you are

Take back control

Call for Descent / Approach Checklists

Simulator Assessment Preparation

Non-Normal Event

Call from ATC

Call from ATC to Inform Crew that

"We think you have had a tail Tail Strike" **(Do QRH)**

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"Your Destination is Closed due weather"

"The wrong Bags / Pax have been loaded on your aircraft"

Call from Cabin

Cabin Chime –

PNF Answers

1/ Critically Ill Passenger

2/ Violent Passenger or Passenger claiming to have Bomb / explosives

3/ Crack in a window

4/ Smell of Burning

Stavare che chime - stavare chime

ATC ...

R4R737 → "London Control, go ahead, R4R737"

*CLEARANCE → clearance + call sign
"clear to ... , R4R737"*

PIOSEE (Avoid using DODAR etc)

ATC (Notify of Divert Request)

NITS Briefing

PA

Set up for Approach - 7 essential items

Do Approach Briefing

Look at QDR and identify where you are

Take back control

Call for Descent / Approach Checklists

When receiving a **CALL FROM ATC**:

- ATC "RYP737 we think you have had a tail strike/burst tyre"
- PM "RYP737 Roger"
- PF "I'm gonna give you controls and radio and I'm gonna deal with this problem" -> "Altitude 5000 ft, HDG 250, speed 230 kt, you have controls" then will wait that PM take control of control column and release it —> AS CAPTAIN PF HAS TO MANAGE SITUATIONS

NEVER TRY TO MANAGE SITUATION WHILE FLYING AIRCRAFT -> after receiving information give controls to PM

1. **Tailstrike** = if you have had tailstrike cabin crew seated on rear will notice that -> 4 cabin crew = 1 and 4 seated in front (1 train number 4) while 2 and 3 seats back

{
Speak with cabin crew
Do QRH
Recovery = PIOSEE, ATC, NITS, PA

Spoke to cabin crew to confirm you had tail strike:

- After receiving call from ATC and give control to PM, PF "I'm gonna speak to the cabin crew to see if they heard anything unusual during rotation" then press CALL CHIME
- Cabin crew call you back "Hello, it's the number 1"
- PF "Hello number 1, I need to speak with number 2 or 3"
- Number 2/3 "Hello captain, number 2/3"
- PF "Hello number 2, ATC reported that we may have had a tail strike at rotation. Did you hear anything at the rear of aircraft as we rotate?"
- Number 2/3 "Yes captain, I heard a big bang "
- Pf "Okay, thank you very much, will call you back"

Spoke to PM about the situation:

- PF "Okay I've spoken to the cabin crew, they think we have a tail strike, so I am going to do the QRH non-normal ckl for tail strike"

Do QRH -> Examiner will tell you that QRH is completed but you must divert as soon as possible

- PF "Okay we have completed QRH and we must divert"

Recovery -> PIOSEE, ATC, NITS, PA

2. **Burst tyre** = if you have had a tyre burst when retracting the gear it will not enter properly into the hole (B737 has no landing gear doors -> has round hole and gear go in) so will try to retract and then fall down because cannot be locked in (you cannot retract burst tyre) so you will have one red light -> GEAR RED LIGHT = gear not in commanded position (gear disagree light)

- { Identify gear disagree light illuminate
- Do QRH
- Recovery

Discuss and identify gear disagree light illuminate:

- PF "Okay, ATC thinks we had a burst tyre on departure, let's investigate this"
- PF will look at landing gear light to discover that one red light is illuminated "We have a gear disagree light illuminate, so I'm going to do the QRH non-normal ckl for gear disagree"

3. **Destination closed/wrong bags or pax** -> no QRH

Recovery -> quick PIOSEE "Let's go for quick PIOSEE"

- ATC "RZR737 you're destination airport is closed"
- PM "RZR 737 Roger, standby"
- PF "I've heard the call, I'm gonna give control and radios," -> go straight to PIOSEE
- ATC "RZR737 you're company has called and you have the wrong bags/passenger on board"
- PM "Roger, standby"
- PF "I've heard the call, I'm gonna give control and radios," -> go straight to PIOSEE

4. **Bomb on board**

- { Report to ATC
- Hand over (give) controls
- PF speaks to N1 -> use questions in the slide used for CALL FROM CABIN events

- ATC "RZR737 we have a report from security, you may have possible bomb on board"
- PM "RZR737 Roger"

When receiving a **CALL FROM CABIN:**

- Cabin crew call sound

There is 2 options to manage this situation (both correct)

1. give controls to PM and speak with cabin crew -> PF gives control then answer the call "Hello, you're speaking to the captain. Who am I speaking to?"
2. or ask to PM to speak with cabin crew -> "Okay there's a call from the cabin, I need you to take the calls please. I have controls, I have radios" but will turns out examiner want captain to speak with PF (more workload)
 - Cabin crew "Hello captain is ___ I'm the number 1"
 - PF "Okay ___ what's the problem?"
 - Number 1 "Captain we got a ___"
 - PF "Okay, I have a few questions that I need to ask you" -> will use question from next slide that will ask to number 1, that will be the same questions that ATC will ask to us

CRITICAL/ILL PAX

- Most of the time the problem is -> pain in chest
- Family/Friends = If there are friends and family they can deal with the problem -> they know if it's serious or use medication on pax, if they are not there situation gets worse
- Doctors = Probably there will be no doctor on board -> get worse
- Number 1 evaluation = what is the number 1 opinion? Does he think this is life threatening? -> if yes this have priority so PF "Standby I will call you back for Nits briefing in few minutes"

PAX CLAIMING TO HAVE BOMB/EXPLOSIVE DEVICE

- First question (if acting alone or not) has 2 reason -> bomb on board is always a potential HIJACKING (successfully if more than 1 individual) and to profile the pax
- Do not invite cabin crew into cabin for NITS -> do not open door

CRACKED WINDOW

- Window generally don't crack with themself, so if window goes you generally have pieces of fuselage going to (if ahead engine can cause engine failure) -> if in row 1 to 11 we will probably have engine vibrations after bang (then cabin depressurisation)
- Outer window is the one for pressurisation -> we want no one to touch other window (because of low temp)

SMOKE OF BURNING IN CABIN

- First question "Is there any visible smoke" -> we ask because people die of smoke inhalation (they don't die of bad smell)
- Second information "what is the approx location of smell? Is the centre of the cabin, ...?" -> we divide the cabin on 3 zone: front of cabin, rear of cabin, center of cabin —> front and rear of the cabin has galley and toilet (so people smoking cigarettes or galley fire), while center of the cabin has nothing so can be only the cargo
- Outcome will be that they cannot locate fire and that number 1 assessment is that they think is a fire and they cannot locate it
- So after a few minutes we will have have cargo fire indication on cockpit -> PM "Okay I just spoke with the cabin crew and they say there is a smell of burning in the middle of the cabin" then fire bell will sound

Simulator Assessment Preparation

Smoke - Fire - fume = MAYDAY
Any other PAN PAN

- **CRITICALLY ILL PAX (PAN PAN)**

- Seating position ? Gender? Approx Age?
- What is Medical issue?
- Is passenger Travelling Alone or accompanied?
- Have you made an announcement for medical staff on board?
- What is Number ones assessment? is the medical condition life threatening?
- Standby I will call you back for a NITS Briefing in a few Minutes
-

- **VIOLENT/AGGRESSIVE PAX (or Passenger claiming to have a bomb or explosive device) (PAN PAN)**

- Is the pax acting alone or as part of a group?
- Is the situation escalating or deescalating and Can this be brought under control?
- Has anybody been injured?
- Standby I will call you back for a NITS Briefing in a few Minutes

- Bomb
- Is the pax acting alone or as part of a group
- Has the passenger given you the package
- Have you followed your own procedure and placed suspicious package at the R2 door
- Standby I will call you back for a NITS Briefing in a few Minutes
-

- **CRACK IN WINDOW (PAN PAN)**

- In which row is window cracked; (Note for pilots only - Row 1 – 11 means in front of engine, and the debris can go into the engine and cause engine faults or failure)
- Is it the inner or outer window (Inner window is just a plastic window prevents injuries due to people touching low temperature glass)
- Are there any pax seated there and if so can they be moved to other seats ??
- **STATEMENT TO CABIN CREW "Seat belts sign going one , no more Passengers movment in the cabin and be aware that if the window breaks entirely masks will not drop as we are below 10,000 feet – cabin crew can continue to move around cabin for essential duties only"**
-

- **SMELL OF BURNING (NO SMOKE) – (MAYDAY)**

- Is there any visible smoke?
- **What is the approximate location of the smell? Front/mid/rear aircraft**
- Have you followed your own procedures to locate the source of the smell
- What is the Numbers ones assessment – does He / She think there may be a fire you cannot locate
- Standby I will call you back for a NITS Briefing in a few Minutes

Simulator Assessment Preparation

Non-Normal Event

Master Caution Warning

PF

'Master Caution Elec
State the Malfunction'

PNF

"Source Off"

PF

"Cancel the warning"

QRH Non - Normal Checklist
for **SOURCE OFF**

"I have the radios"

Fire Warning

PF

"Fire warning"
"Cancel the warning"

"State the
Malfunction"

PNF

"**APU FIRE**"

"QRH Non - Normal
Checklist for APU FIRE"

"I have the radios"

APU FIRE NON-NORMAL
CKL, MY RADIOS

PIOSEE (Avoid using DODAR etc)

ATC (Notify of Divert Request)

NITS Briefing

PA

Set up for Approach - 7 essential items

Do Approach Briefing

Look at QDR and identify where you are

Take back control

Call for Descent / Approach Checklists

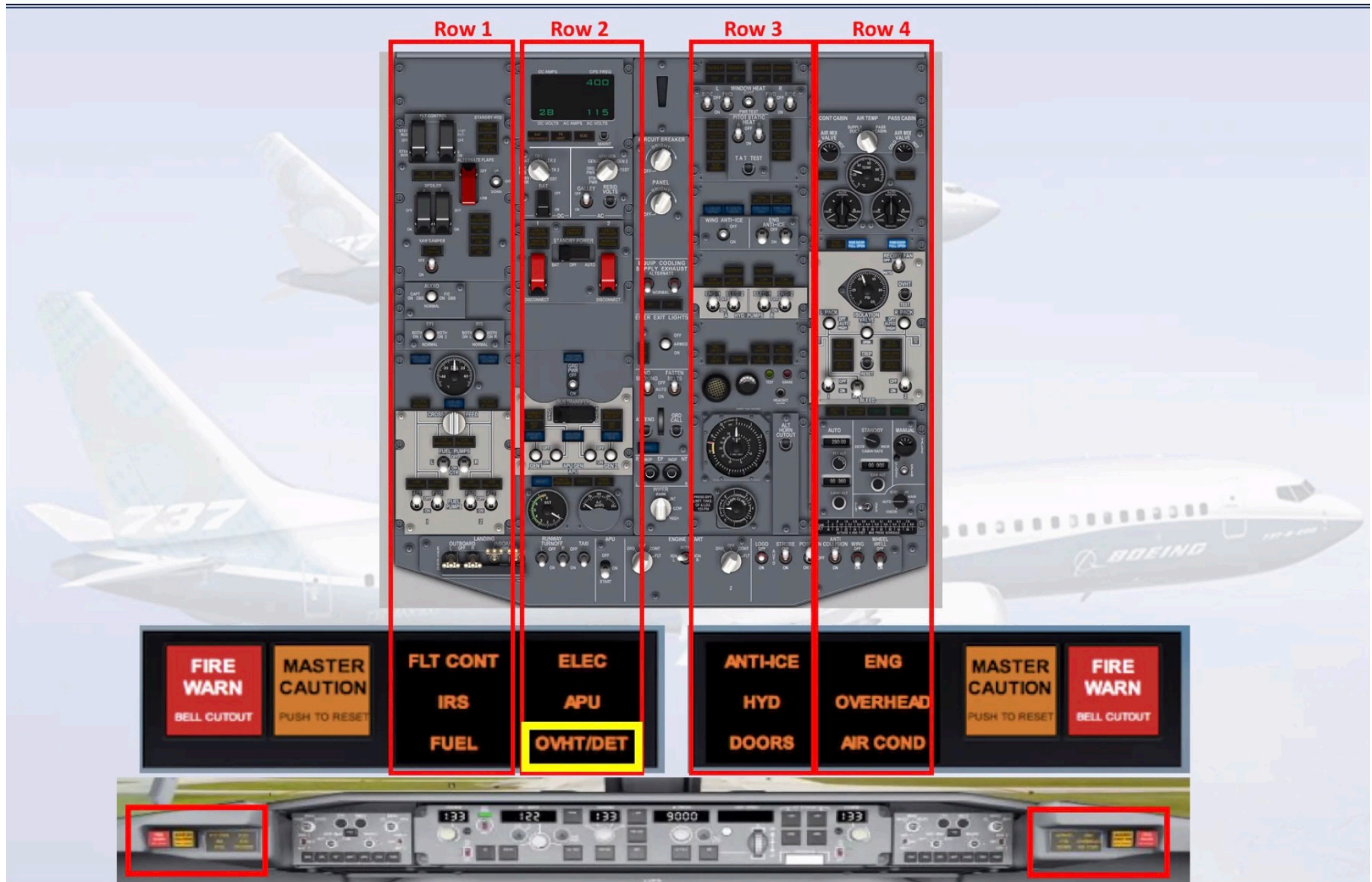
PF "State Malfunction"

il primo
che lo vede
lo chiama

Simulator Assessment Preparation

Master Caution Alert System

In each row there are 3 system, except for row 2 that has only ELEC and APU + indication about OVHT/DET that is in the central panel -> highlights that panel



Fire Warning

APU, 2 Cargo, 1 wheel well



Simulator Assessment Preparation

Cancel warning = recall the MASTER CAUTION for further problem

PF 'Master Caution Elec State the Malfunction'

PNF "Source Off"

PF "Cancel the warning"

"QRH Non - Normal Checklist for SOURCE OFF"

"I have the radios" "

SOURCE OFF

MASTER
CAUTION

PUSH TO RESET

ELEC

MASTER
CAUTION

PUSH TO RESET

Simulator Assessment Preparation

The PIOSEE Briefing method

PIOSEE -> PF "Are you ready for PIOSEE?"

P – PROBLEM

- Correctly Identify the primary Problem
- Identify other related Problems this will cause
- Discuss implications of the problem on continuing flight

Example "The problem: ATC call and said that we had possible tail strike, we spoke to the cabin crew, they confirm this so we completed the QRH, but the QRH says we have to land as soon as possible"

I – INFORMATION

- Gather Information –
 - **Fuel Status** = "we have sufficient fuel to divert"
 - **Landing weight** – "I have checked the landing performance"
 - **Get Weather** – al have Radios and I will get the weather at all surrounding airports

We don't need to really check, just we need to mention it during PIOSEE

- for fuel just point fuel indication on display
- For landing weight just point FMC

O – OPTIONS

- Continue / Divert / Return

S – SELECT AN OPTION

- Discuss Pros and Cons of each of the above
- Choose the best option

Identify each part of PIOSEE by pointing out loud -> P the Problem:

Problem -> how did we discover the problem, what did we do to solve the problem, what do we have to do now

E – EXECUTE OPTION

- Continue / Divert / Return – **Note in the sim this is your trigger to call ATC**

E – EVALUATE

- Does the course of action taken solve the problem **(this step is not applicable to the profile in the sim check)**

STAY THE SAME

Simulator Assessment Preparation

Sequence of Flight “Events”

JUST AFTER TAKING BACK CONTROLS -> CALL DESCENT AND
APPROACH CKL + start to decelerate = BUG UP and IDLE

Situational Awareness

When to Configure to Flap 5???

PF “I’m ready to take back controls”

PM “Altitude you have controls”

PF “..... I have controls, Descent and Approach ckl, set BUG UP” +
ask for descent to platform altitude

Localizer
Intercept

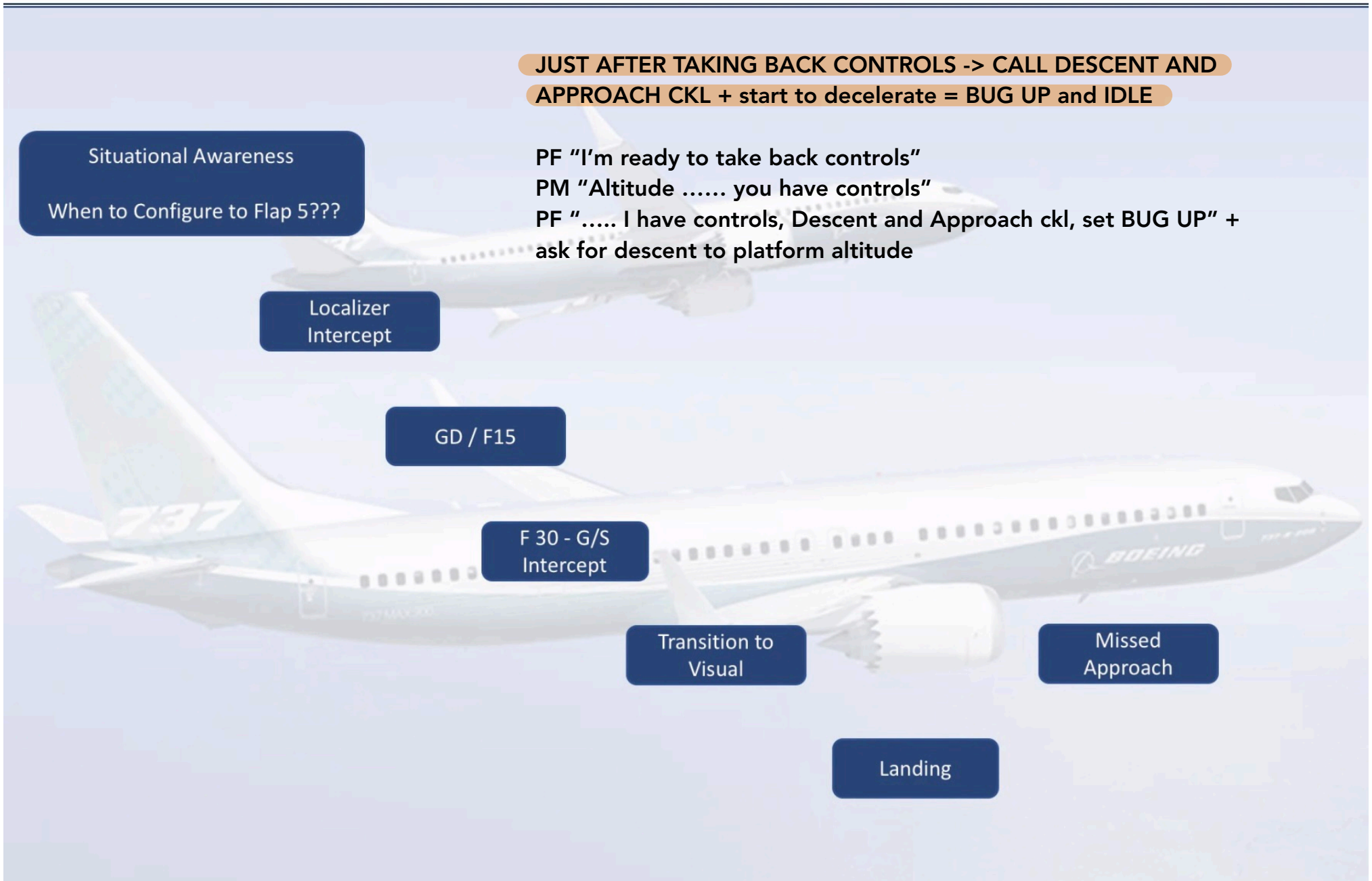
GD / F15

F 30 - G/S
Intercept

Transition to
Visual

Missed
Approach

Landing



Simulator Assessment Preparation

Sequence of Flight “Events”

We know that we need 5 NM to be stabilised from 250 kt to FLAPS 5 while descending to platform

We have to be at FLAPS 5 when G/S comes alive —> generally 2 NM before FAP the G/S comes alive

SO WE NEED TO START DECEL AT LEAST 7 NM BEFORE FAP -> if we have less do not accept vectors

Situational Awareness

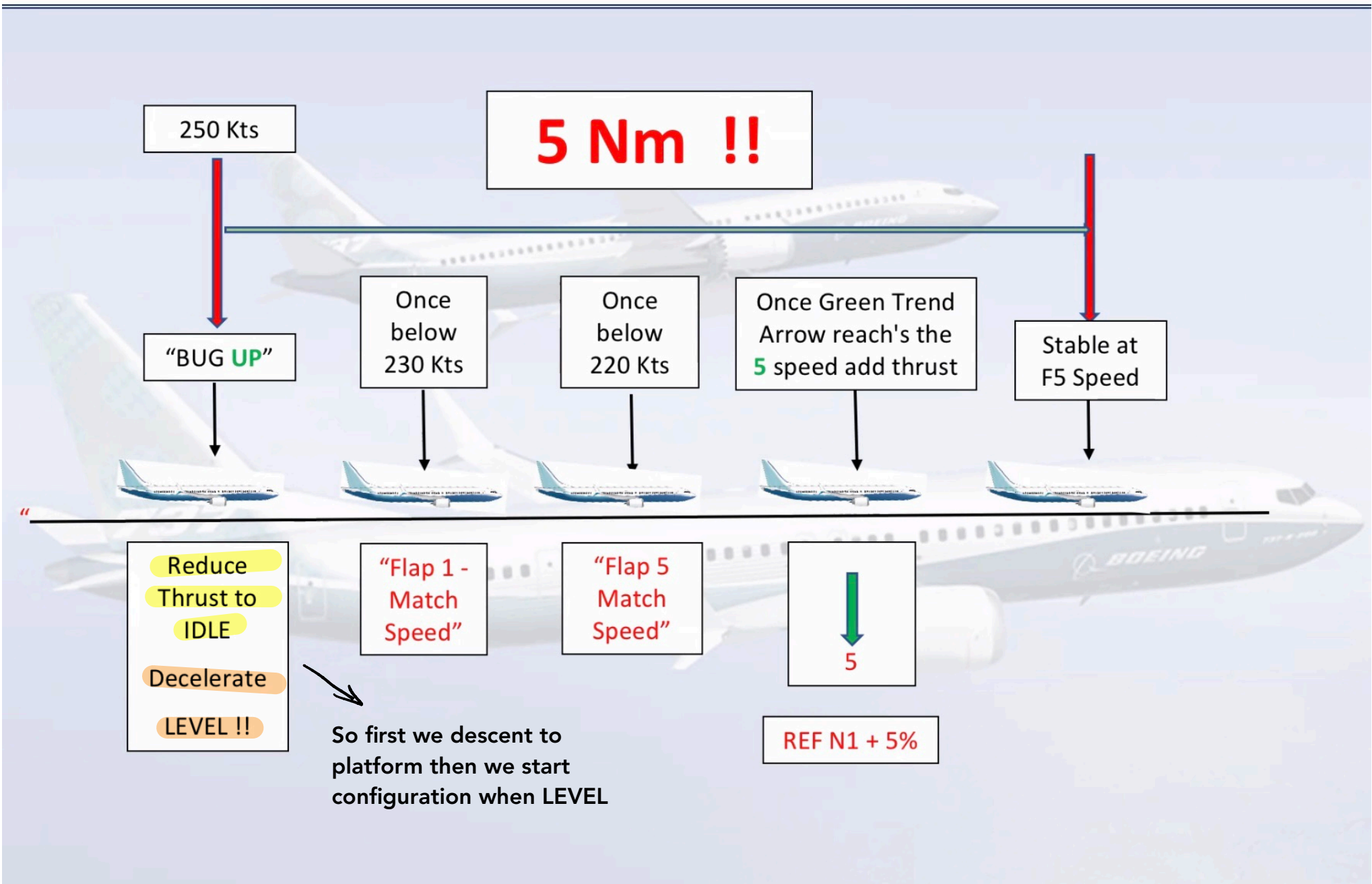
When to Configure to Flap 5

???

Example: FAP at 5 NM so this means that at least at $5+7 = 12$ NM before we need to start configuration

Simulator Assessment Preparation

Configuring Level - Distance required !!!!!



Simulator Assessment Preparation

- Be configured at Flap 5 by the time the Glideslope comes alive

Glide Alive



Generally 2NM

Glide Slope Capture



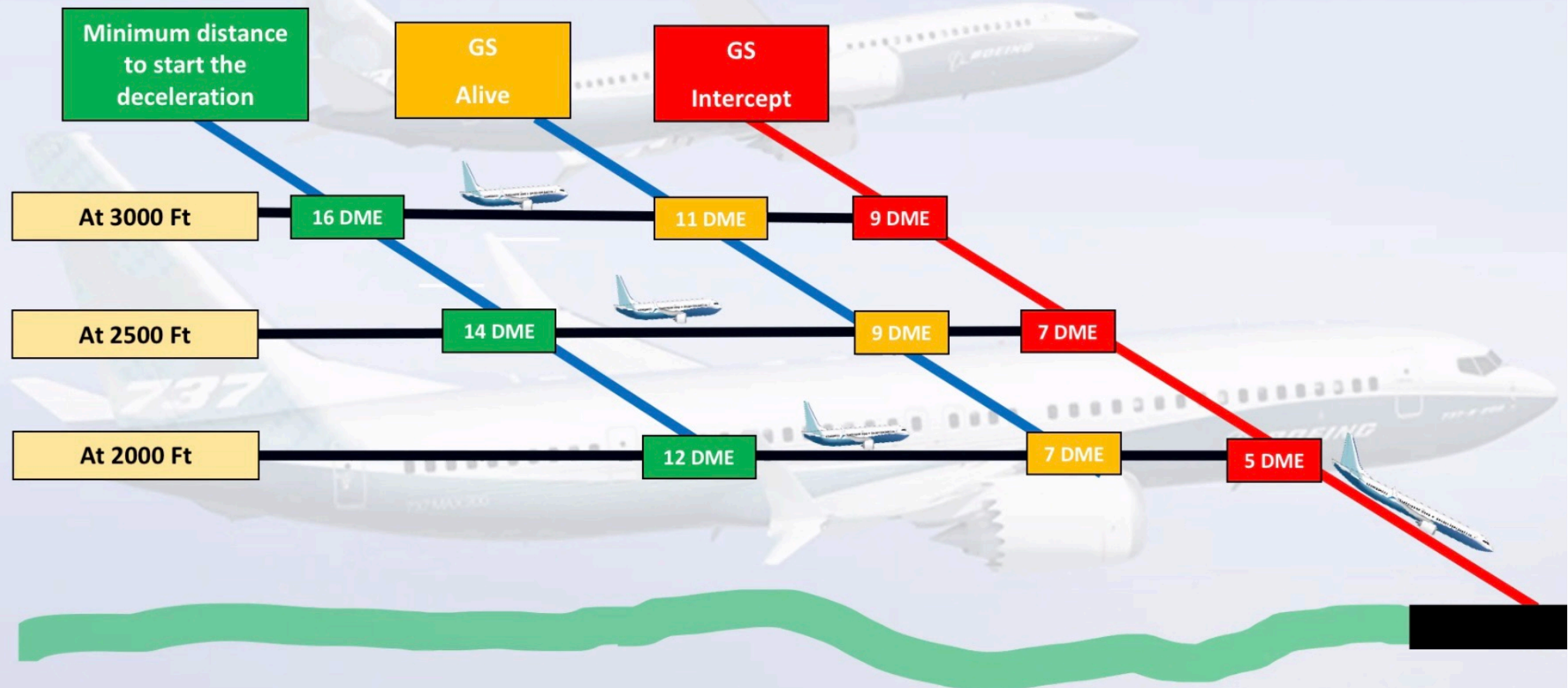
“Glideslope Alive”

We are aiming
to be stable
at the F5 Speed

Flap 5 = PIP 5 deg → Flap 15 = PIP 2.5 deg

Simulator Assessment Preparation

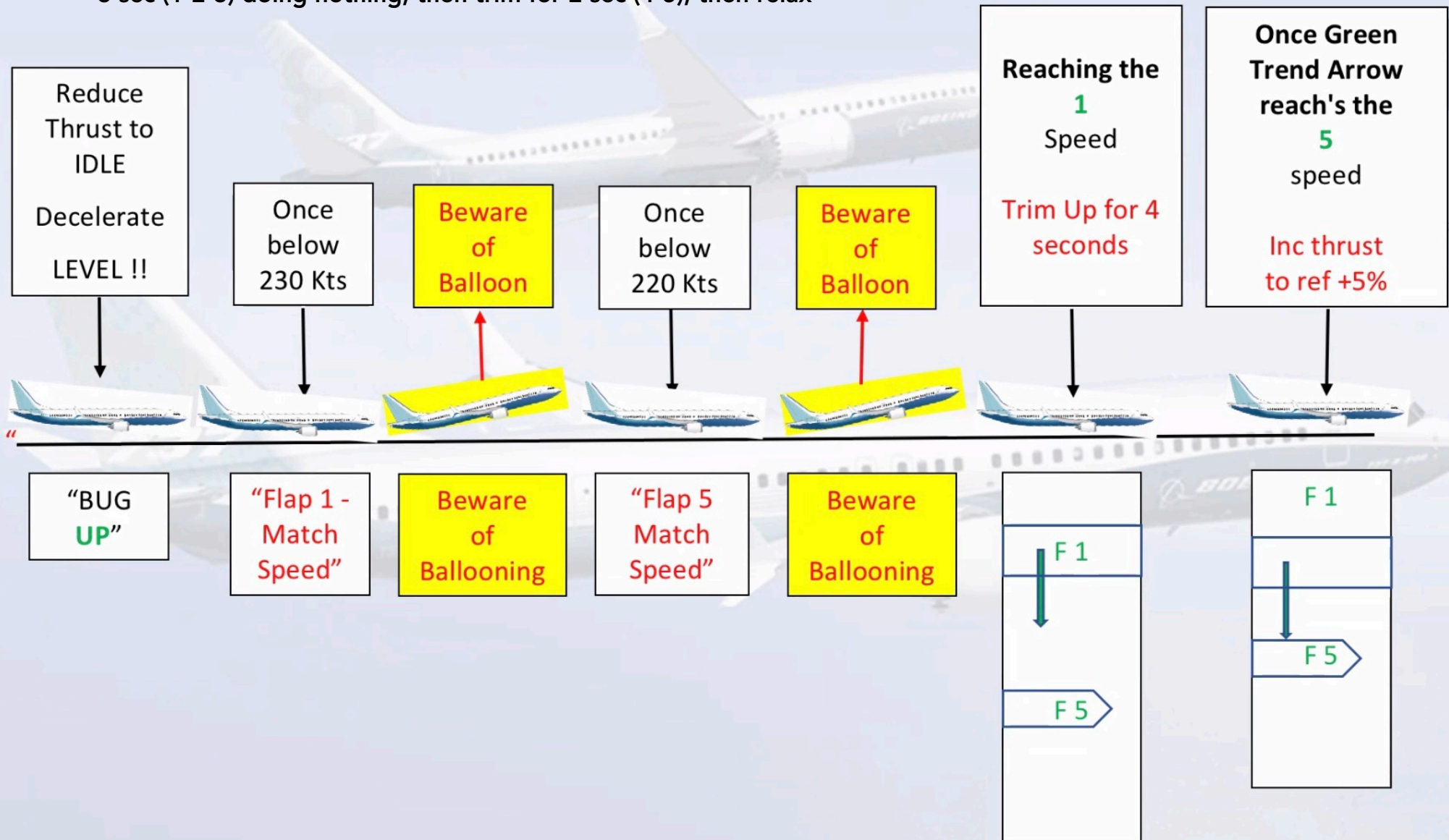
Distance for configuring



Simulator Assessment Preparation

Configuring Level -Configuring Technique required !!!!!

When setting flaps be aware for ballooning —> after set flap 1/5 wait 3 sec (1-2-3) doing nothing, then trim for 2 sec (4-5), then relax



Simulator Assessment Preparation

Final Approach

