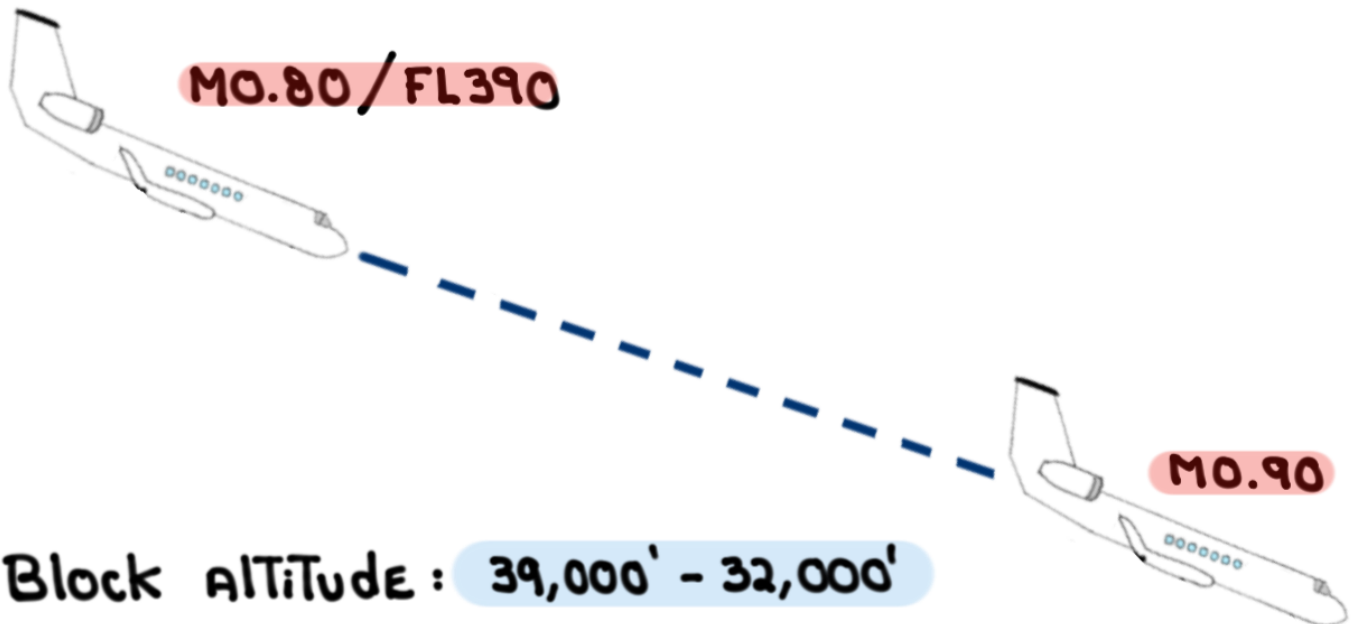


AIRWORTHINESS FLIGHT TEST

INITIATE RECOVERY AT **MO.90**



For study purposes only

AIRWORTHINESS FLIGHT TEST

A Certificate of Airworthiness (C of A) for an aircraft registered in Hong Kong by the Civil Aviation Department (HKCAD) is valid for one year. As part of the C of A renewal process an Airworthiness Flight Test (AFT) is carried out by the holder of a valid/current AFT authorization letter issued by the HKCAD.

The (AFT) consists of 21 test items, 7 of them conducted on the ground with the remaining 14 conducted while inflight. Although similar in nature to a post-maintenance functional flight check the AFT is conducted exclusively on behalf of the HKCAD, on a B-HK registered aircraft, and for the sole purpose of issuing or renewing its C of A.

What follows are my personal AFT notes for the Gulfstream G550. These notes are used during the pre-AFT briefing to ensure we - as a crew - know exactly what is required by the regulator as well as to make sure we know what to expect from each other. During the flight they help us perform all required tasks in the correct sequence. Lastly, these notes are used once again during the post-AFT debriefing.

These notes reflect the organizational process involved in the execution of an AFT. They set the tone, help minimize risks, and assist with the safe, effective, and efficient completion of the flight.

PRE - AFT BRIEFING

① PURPOSE:

- AIRWORTHINESS FLIGHT TEST (AFT)
- RENEWAL of C of A

② OBJECTIVE:

- SAFE, EFFECTIVE AND EFFICIENT COMPLETION of AFT
- ACCURATE COMPLETION AND SUBMISSION of AFT DOCUMENTATION

③ ROLES, DUTIES AND RESPONSIBILITIES:

<u>IL</u>	<u>DL</u>	<u>LS</u>
PIC	SIC	OBSERVER
PF	PM	SAFETY PILOT
LHS	RHS	JUMP SEAT

④ SUCCESSFUL OUTCOME:

- EVERYONE ON SAME PAGE
- COORDINATION BETWEEN US
- COORDINATION BETWEEN US AND ATC

⑤ ROUTE: HK TMA

PECAN - LEMON - EPDOS - CARSO - BETTY

⑥ CONDITIONS:

- DAY / VMC
- TOGW: 75,000 - 76,000 lbs
- T.O. fuel: 27,000 lbs.

⑦ HK BAC (FBO):

MEET AT -- : -- L

ETD -- : -- L / -- : -- UTC

ETE 02:30 - 02:45

PASSPORTS, HKCAD PILOT'S LICENSES AND MEDICALS
ARA/TRA PERMITS, SMART CASUAL

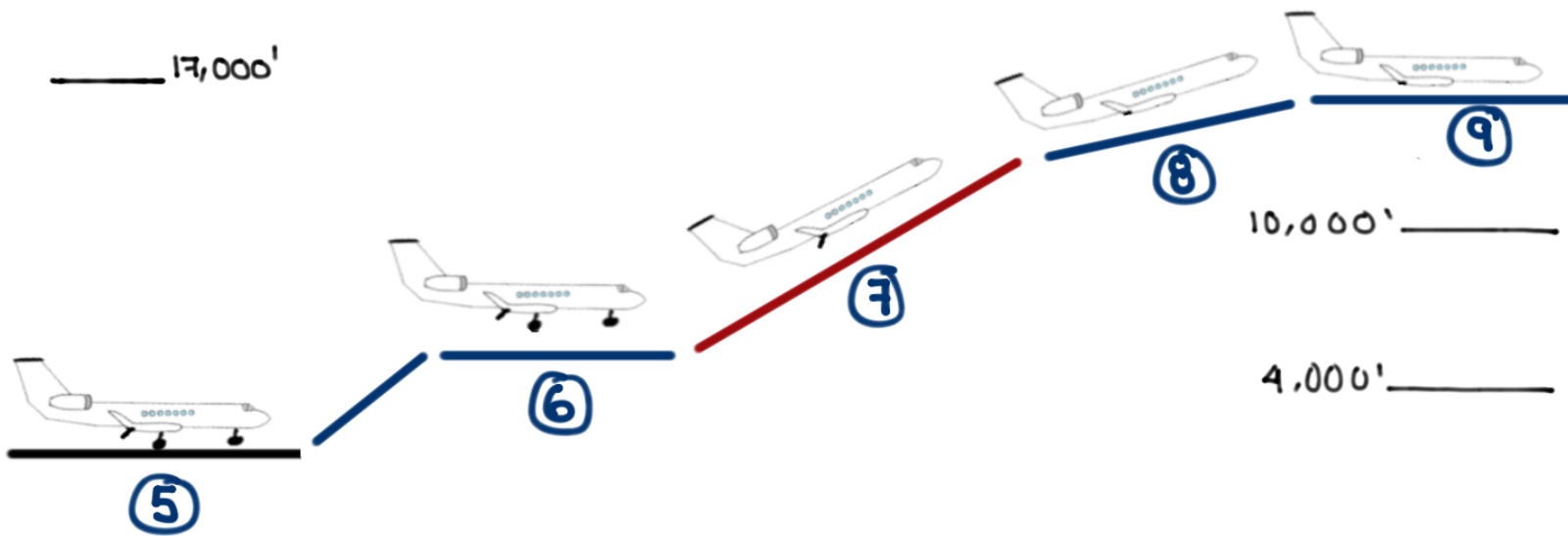
⑧ PROFILES / TASKS:

21 $\left\{ \begin{array}{l} 7 \text{ GROUND} \\ 14 \text{ INFLIGHT} \end{array} \right.$

NOTES:

1. ENSURE validity of HKCAD AUTHORIZATION LETTER
2. COORDINATE with CAMO, Flight Dispatch AND DFO
3. COORDINATE with ATC WATCH MANAGER 2-3 hours BEFORE SCHEDULED DEPARTURE
4. PRINT OUT THREE COPIES of CURRENT HKCAD AFT form
5. VERIFY pilot LICENSES AND MEDICAL CERTIFICATES
6. REVIEW Flight plan, WEATHER, NOTAMS, WKB, PERFORMANCE CALCULATIONS, AIRCRAFT DOCUMENTS
7. ATC :
 - ADVISE THAT CAN ACCEPT RADAR VECTORS
 - REQUEST block ALTITUDES
8. CREW:
 - MONITOR distance, fuel, ATIS
 - COORDINATION/CONFIRMATION BEFORE MOVING SWITCHES

Profiles 5-9



⑤ TAKEOFF

⑥ ENGINE ACCELERATIONS - 4,000' AGL

⑦ CLIMB 1 @ V_2 - 4,000' TO 10,000'

⑧ COWL/WING ANTI-ICING CLIMBING TO 17,000'

⑨ PRESSURIZATION AND RAM AIR - 17,000'

PROFILES 10 - 14



⑩ Climb 2 @ VSE - 15,000' To 20,000'

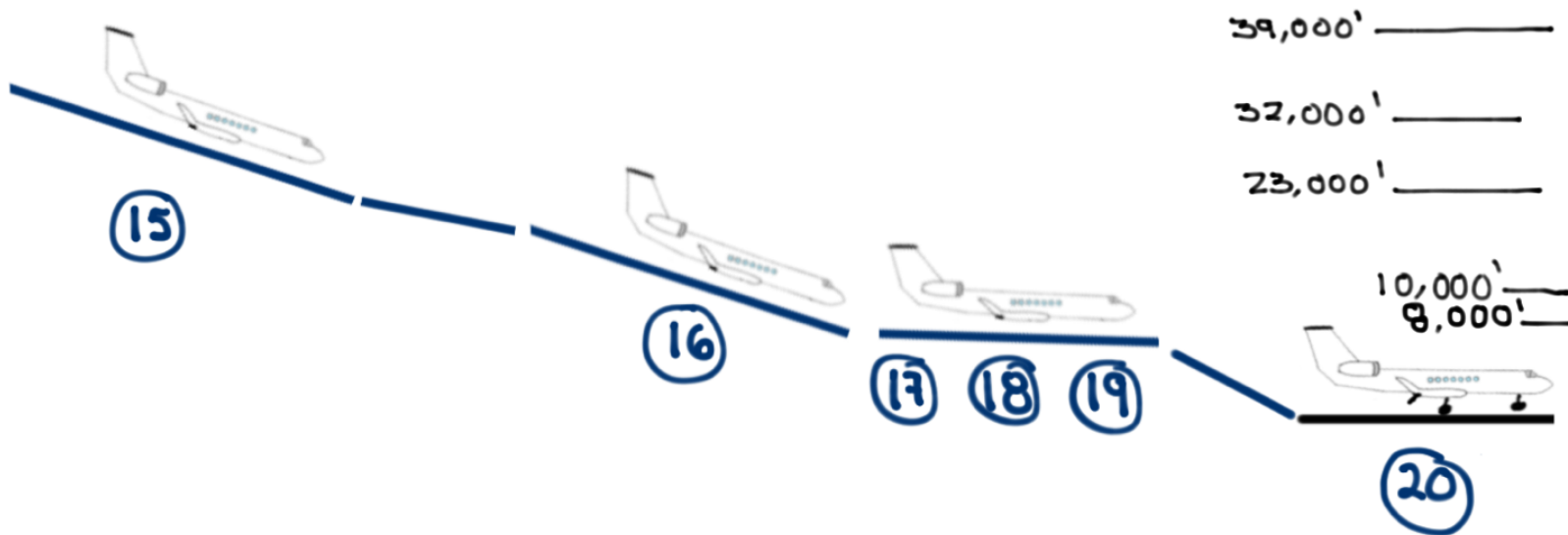
⑪ Climb To FL390

⑫ Windshield HEAT - FL390

⑬ PRESSURIZATION - FL390

⑭ APU START Refer to AFM OIS G550-2016-03 APU SEALANT

Profiles 15-20



⑮ High Mach RUN - FL390 To FL320

⑯ High KCAS RUN - FL230 - FL120

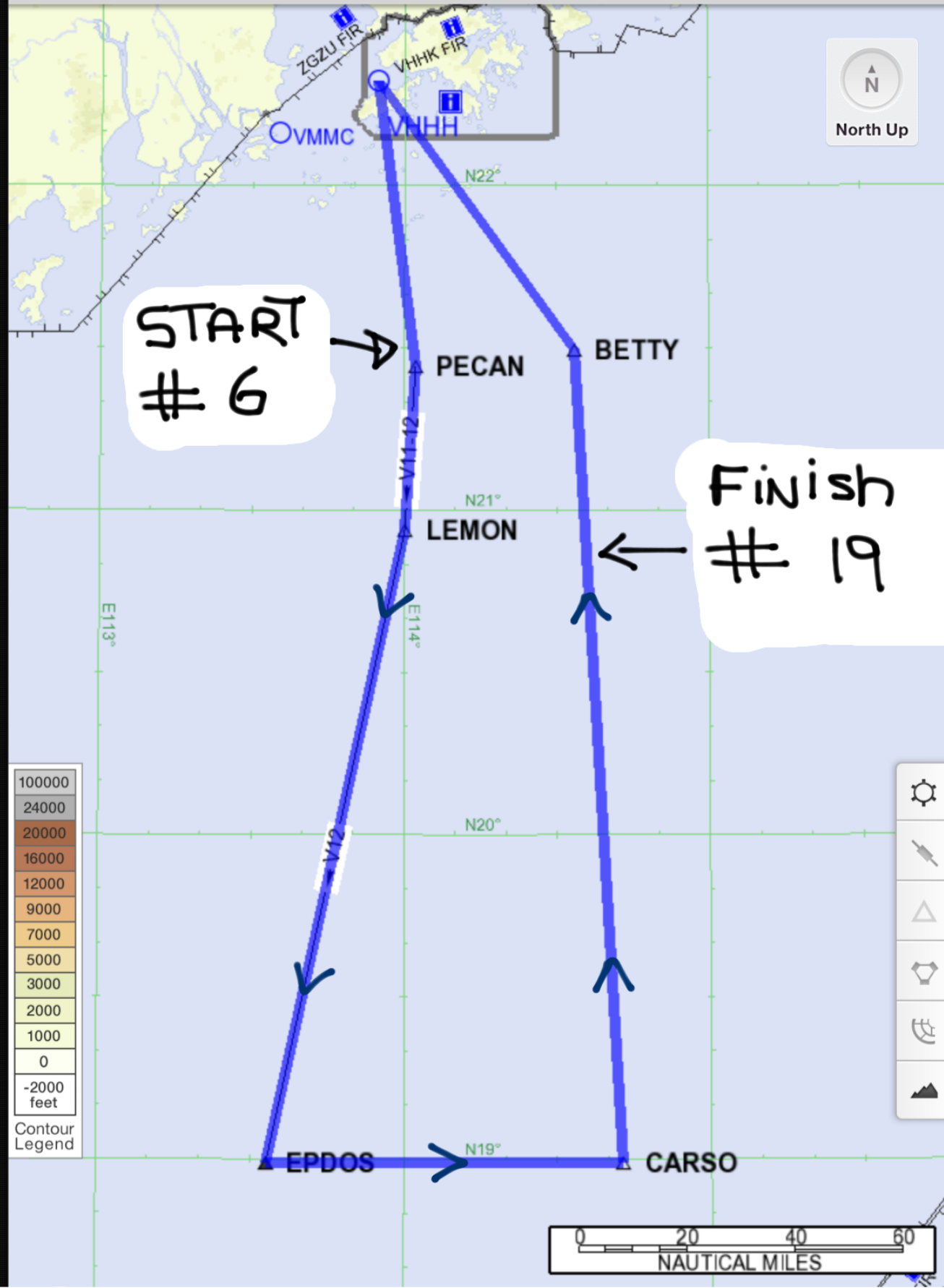
⑰ STALL TEST - 10,000'

⑱ Spoiler blowdown - 8,000'

⑲ LANDING GEAR / FLAP OPERATION - 8,000'

⑳ LANDING / THRUST REVERSERS

VHHH-VHHH



① Initial checks:

Standby Rudder check

- Landing gear safety pins installed
- GUST Lock off
- OBSERVER outside and visible from the cockpit
- MAIN BATTERIES ON / Standby Rudder ON
- C WOW CB (POP/c2) pulled
- Rudder - MOVE left and right ✓

Nose Wheel Steering (NWS) check

- C WOW CB (POP/c2) RESET
- NWS switch ON
- Tiller - MOVE left and right ✓

② PRE-flight checks:

CONFIGURATION WARNING check

- APU GEN ON
- ADVANCE EACH THRUST LEVER FOR EACH WARNING

W AIRCRAFT CONFIGURATION **W**

1. Hold BRAKES / PARKING BRAKE OFF
SELECT FLAPS 0°
2. SET FLAPS 20° (VERIFY AREA IS CLEAR FIRST)
SET TRIM OUT OF TAKEOFF RANGE
3. RESET TRIM
EXTEND SPEED BRAKES
4. RETRACT SPEED BRAKE
GPWS / GND SPLR FLAP O'RIDE ON
5. GPWS / GND SPLR FLAP O'RIDE OFF
PARKING BRAKE ON

③ AFTER ENGINE START checks:

- AFTER RIGHT ENGINE START - PTU PRESSURE ✓
- AFTER LEFT ENGINE START - PTU PRESSURE ✓

- ELEV DISCONNECT ✓
- AILR DISCONNECT ✓

- Pitch TRIM ENGAGE / DISENGAGE switch ✓
- RUDDER TRIM ✓
- AILERON TRIM ✓

- STALL BARRIER ✓
- EMER STAB ✓

- PERFORM AFTER STARTING ENGINES checklist

④ Taxi checks:

- ANTI-skid OFF
- EMERGENCY BRAKES - Apply ✓ (GENTLY!)
- ANTI-skid ON

- THRUST REVERSER - LEFT
- T/REV MANUAL STOW - LEFT ✓
- THRUST REVERSER - Right
- T/REV MANUAL STOW - Right ✓

- Pedal disconnect ON
- Rudder pedals - full left and right ✓
- Pedal disconnect OFF

- PERFORM Taxi/BEFORE TAKEOFF checklist

⑤ TAKEOFF:

- RATED EPR
- APU ON
- CABIN PRESSURE CONTROL PANEL - SEMI mode
- CABIN ALTITUDE - SET AT 8,000'

⑥ ENGINE ACCELERATIONS:

- 4,000' AGL
- 150 KCAS
- LANDING GEAR DOWN
- FLAPS 39°

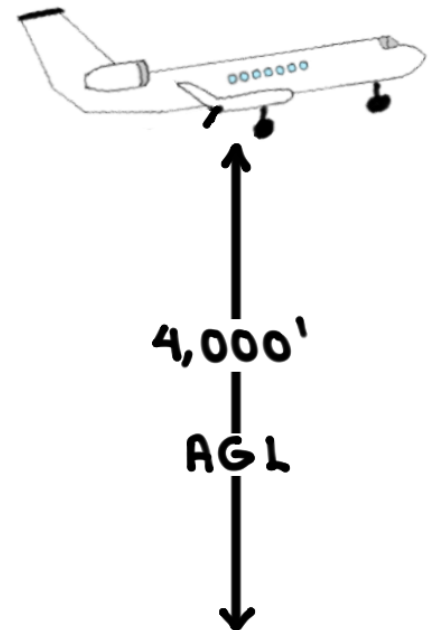
- LEFT ENGINE:

TIME FROM idle TO TO/GA EPR ✓

- RIGHT ENGINE:

TIME FROM idle TO TO/GA EPR ✓

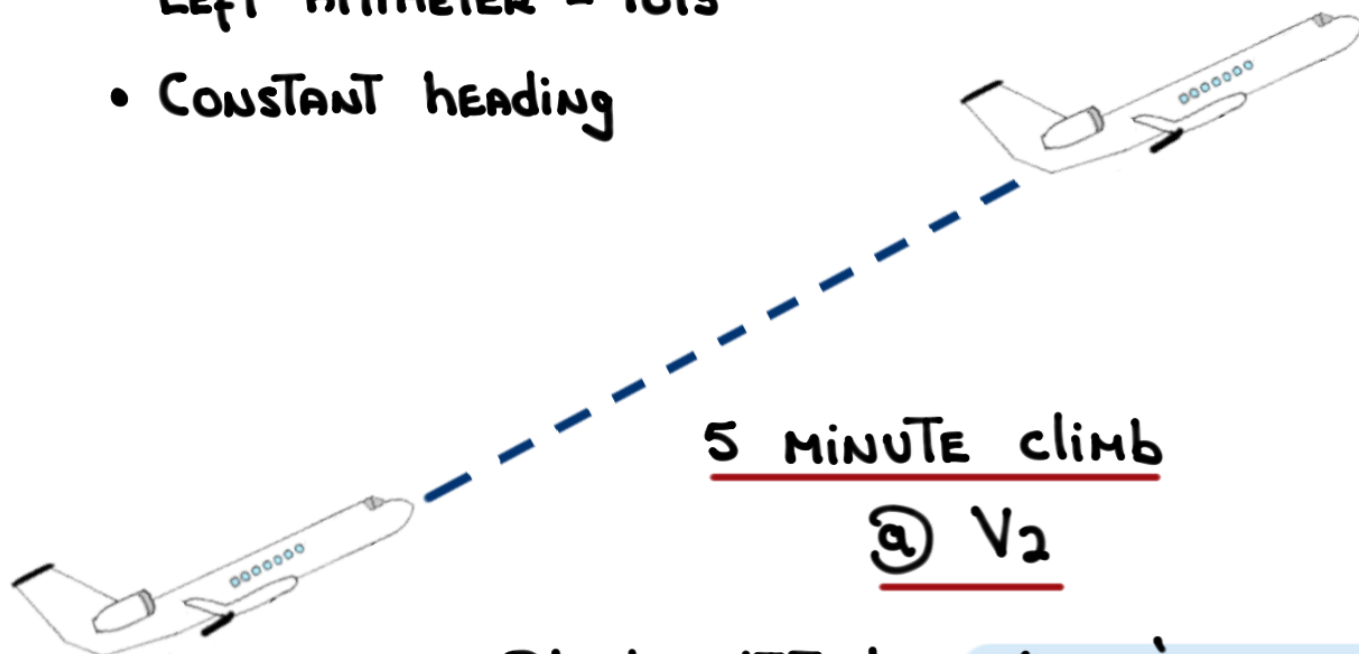
(MAXIMUM 8 SECONDS)



⑦ Climb 1 @ V₂:

Configuration:

- ENG SYN - OFF
- FLAPS 20°
- LANDING GEAR UP
- LEFT ENGINE - TO/GA
- Right ENGINE - **IDLE**
- Cowl AND wing ANTI-ICE OFF
- LEFT ALTIMETER - 1013
- CONSTANT heading



Block ALTITUDE: 4,000' - 10,000'
(OPEN X-FLOW VALVE)

⑧ Cowl/Wing ANTI-ice checks:

- L/R Cowl A/I ON - PRESSURE ✓
- L/R Wing A/I ON - TEMPERATURE ✓

⑨ PRESSURIZATION AND RAM AIR:

17,000' / 250 KCAS

O₂ MASKS ON / MICROPHONE ✓

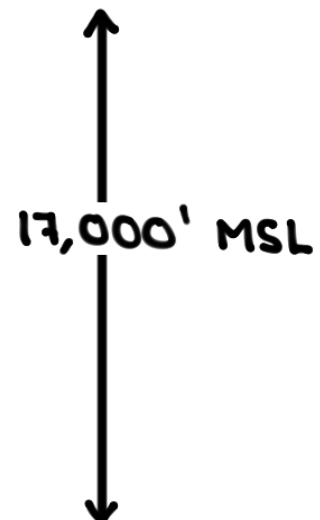
SEMI Mode / LANDING / 15,000' / + 2,500 fpm

W **Cabin Pressure Low** **W** @ 14,500'

PAX O₂ MASKS AUTO DEPLOYMENT @ 14,750' ± 250' ✓

AUTO Mode / FLIGHT

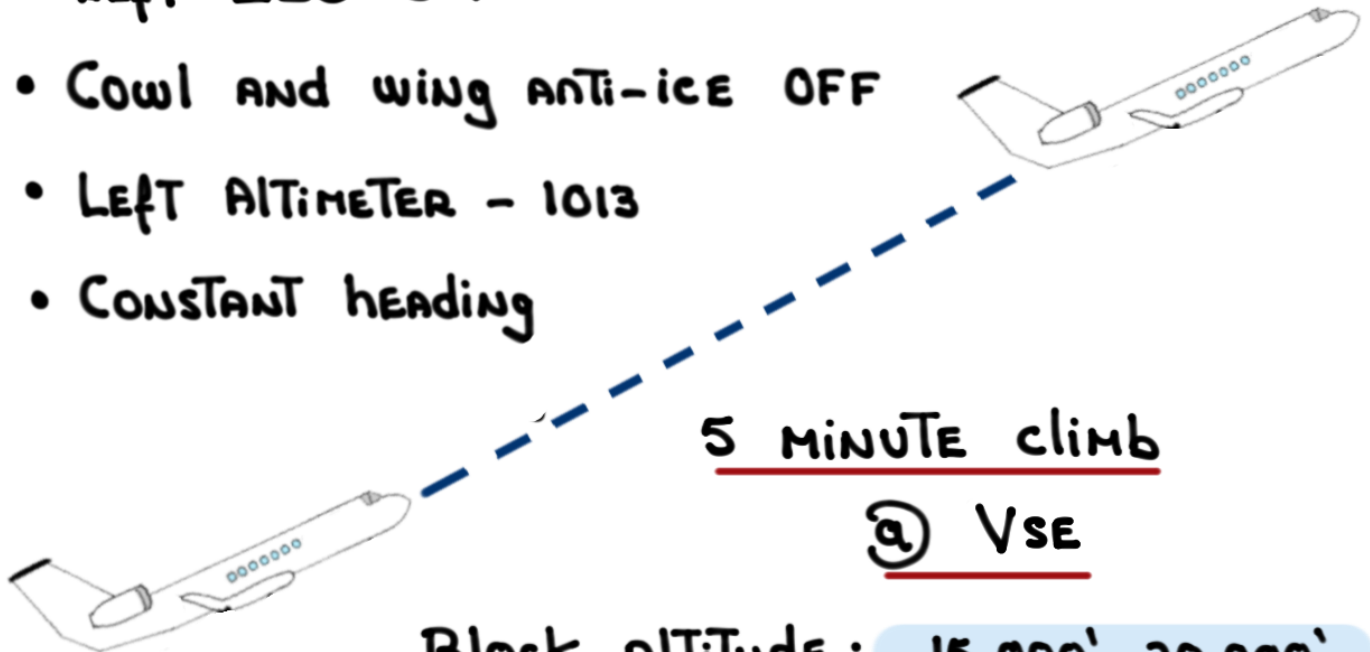
RAM AIR ✓



⑩ CLimb 2 @ VSE:

CONFIGURATION:

- APU ON
- ENG SYN - OFF
- FLAPS UP
- LANDING GEAR UP
- LEFT ENGINE - **IDLE**
- Right ENGINE - MCT
- LEFT ENGINE BLEED / PACK OFF
- LEFT IDG OFF
- Cowl AND wing ANTI-ICE OFF
- LEFT ALTIMETER - 1013
- CONSTANT heading



Block ALTITUDE: 15,000' - 20,000'

(OPEN X-flow VALVE)

⑪ Climb To FL390: * Shutdown APU

- Flight CONTROL checks ✓
- TRIMS ✓
- EMER STAB ✓
- YAW DAMPER (FGC 1 & 2) ✓

⑫ Windshield HEAT - FL390:

- Cabin Window HEAT ✓ (NO CAS MESSAGES)

⑬ PRESSURIZATION - FL390:

- AUTO/FLIGHT @ _____ psi
- MANUAL/Cabin ALTITUDE - DECREASE @ 1,000 fpm
- PRV OPENS @ _____ psi ✓
- RETURN TO AUTO/FLIGHT

⑭ APU START - FL390:

- APU RELIGHT AT MO.80
- * Shutdown APU

⑮ High Mach RUN:

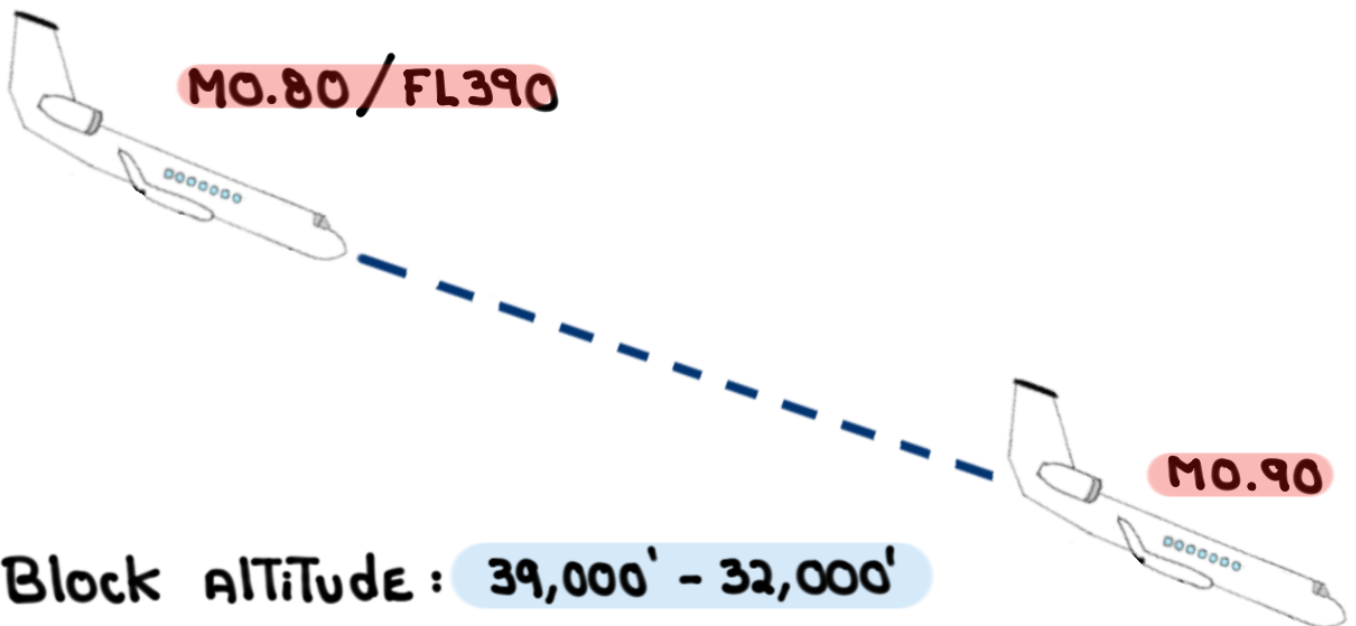
- LEVEL flight (FL390)
- MO.80
- TRIMMED
- INCREASE speed slowly To MO.90 in shallow dive

TRIM @ MO.80 _____ ✓

IMN @ MACH TRIM OPERATION _____ ✓

OVERSPEED AURAL WARNING (M_{MO}) P1 _____ P2 _____ ✓

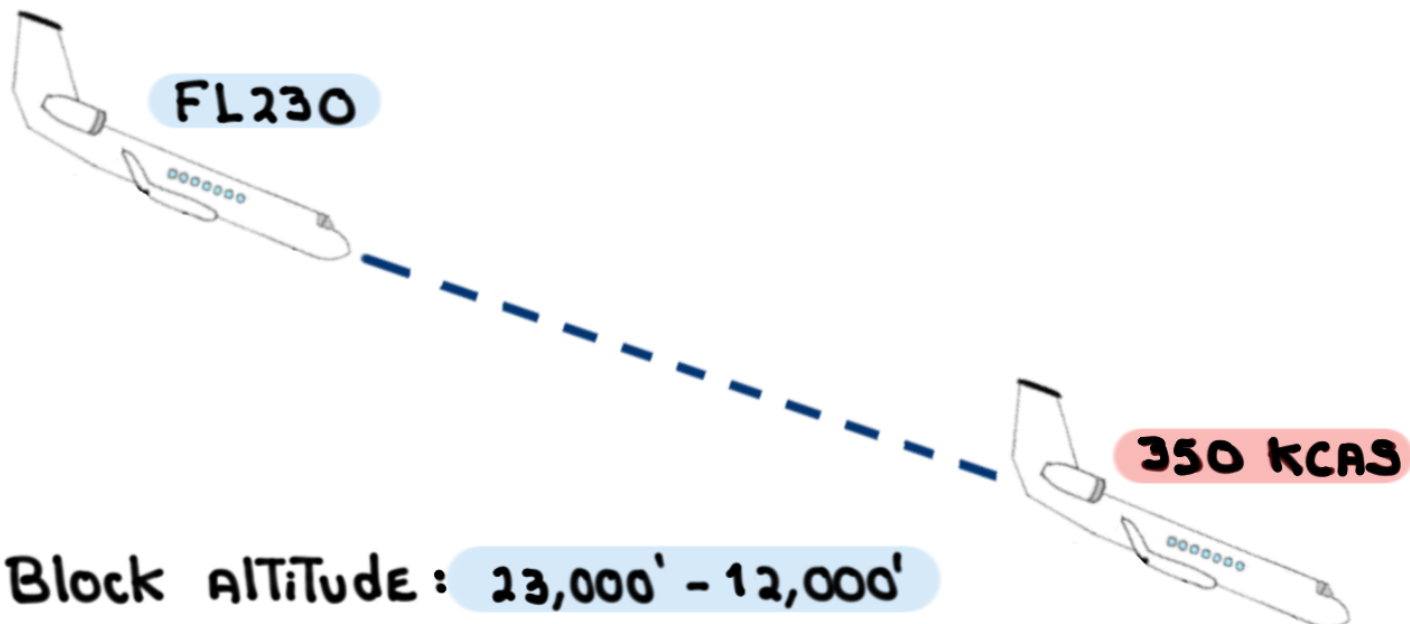
INITIATE RECOVERY AT MO.90



⑩ High KCAS RUN:

- INCREASE SPEED TO 350 KCAS
- RECOVER USING SPEED BRAKES
- OVERSPEED AURAL WARNING (VMO) P1 — P2 — ✓
- FLIGHT CONTROLS ✓
- SPEED BRAKE OPERATION ✓
- AIRFRAME BEHAVIOR ✓
- ENGINE BEHAVIOR WITH THRUST LEVERS @ idle ✓

INITIATE RECOVERY AT **350 KCAS**



①7 STALL TEST:

Block ALTITUDE: 10,000' - 5,000'

- STALL 1: Flap 0°, LEVEL flight

SHAKER _____ KCAS PUSHER _____ KCAS ✓

- STALL 2: Flaps 39°, 600-800 fpm DESCENT

SHAKER _____ KCAS PUSHER _____ KCAS ✓

①8 Spoiler blowdown:

- 250 KCAS @ 8,000'

- SPEED BRAKES EXTENDED

- SPLR CONTROL OFF

- 170 KCAS, Flaps 20°, LANDING GEAR DOWN



- SPEED BRAKES RETRACTED

- SPLR CONTROL ON

- ACCELERATE AND RECONFIGURE

⑱ LANDING GEAR / FLAP OPERATION:

- Flaps EXTEND 10° @ 250 KCAS 8,000'
- LANDING GEAR DOWN @ 225 KCAS
- LANDING GEAR UP @ 225 KCAS
- Flaps EXTEND 20° @ 220 KCAS
- Flaps EXTEND 39° @ 170 KCAS

CONFIRM GEAR WARNING CANNOT BE SILENCED ✓

EXTEND SPEED BRAKES AND CONFIRM:

AIRCRAFT CONFIGURATION

RETRACT SPEED BRAKES

- Flaps RETRACT 20° @ 220 KCAS
- Flaps RETRACT 10° @ 250 KCAS

②① LANDING / THRUST REVERSER:

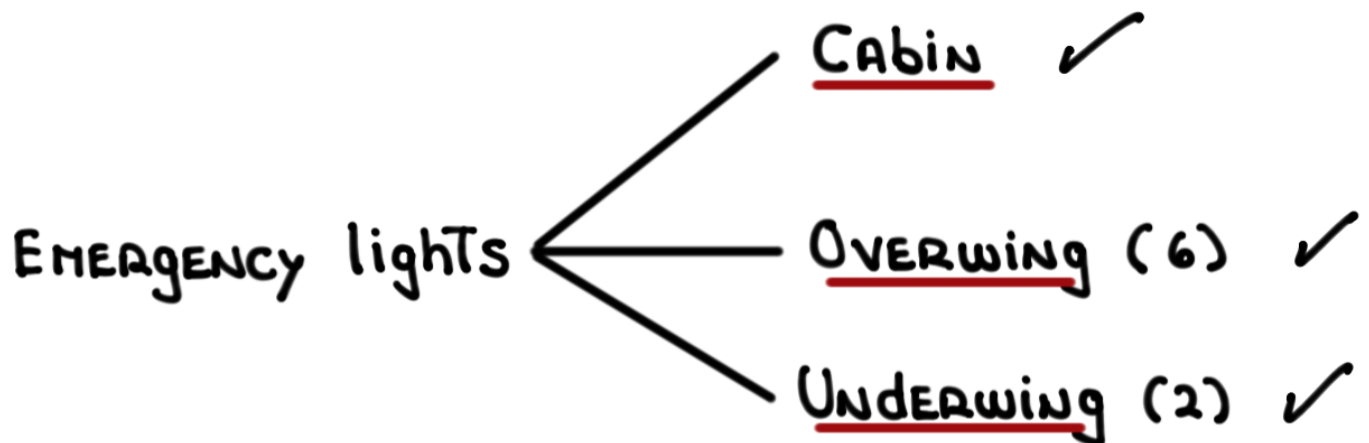
- NORMAL landing

- MAXIMUM THRUST REVERSER

CONFIRM LP RPM 70% \pm 2% ✓

②② Post-flight:

EMERGENCY POWER ON



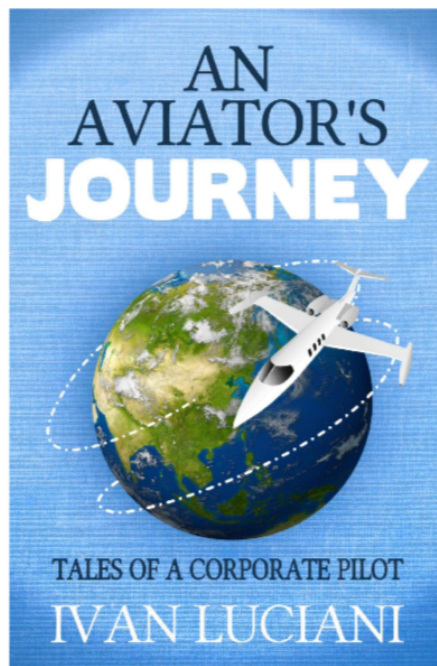
Upon completion of AFT:

- ① CREW de-brief
- ② Notify DFO
- ③ Notify CAMO
- ④ Submit completed AFTS form to CAMO
AND confirm receipt

REMINDER: these system notes are intended for study purposes only. Always refer to official Gulfstream manuals and other approved references when operating your aircraft.

NOTE: these system notes are updated from time to time and what is posted on Code450.com will always be the most recent version.

Questions, comments or errors...please do send me an email:
ivan@code7700.com



Thank you!