

Simulator Training

Policy

Objectives

The aim of Simulator Training is to assist the trainee:

- To apply theoretical knowledge to the practical task of operating the aircraft.
- To gain familiarity and confidence in handling and operating the new aircraft.
- Develop CRM and Team skills through LOFT exercises.

Standard Required on Completion

On completion of Simulator Training the trainee should have:

- Achieved a 'good' overall standard of aircraft operation and CRM during the LST.
- Completed all Mandatories: LST, LPC, AWOPs, FST, LOFT.
- Achieved a 'good' overall standard on the Pre-Base or ZFT detail.
- Achieved a recommendation to commence Base or Route training.

Syllabus

Briefing Times

- The normal briefing time is 1½ hours before entering the simulator and allows time for a break. However, with the agreement of the trainer, briefings for details 6, 7a, 9a, 10 and 11 may be begin 1 hour before.
- An exception is the early morning detail when the report time is always 1hr before - 0600hrs.

TEPs

- TEPs will complete 14 details:
- 0, 1, 2, 3, 4, 5, 6, 7, 7a, 8, 9, 9a, 10, and 11.

Other Trainees

- All other trainees will complete 12 details:
- Firstly combining 0 + 1 then 2, 3, 4, 5, 6, 7, 7a, 8, 9, 10, and 11.

Quick Set-Up

- Full pre-flight preparation is only required on details 1, 3, 7, 7a and the LST detail 10.
- For the remaining details the intention is that training time is saved by the instructor setting-up the simulator with engines running ready for taxi or take-off with the appropriate checklists complete.
- The trainees should not need to complete a departure briefing on these details. If they wish to practice briefing encourage them to do so in the briefing room.

Unused Page

Objectives – Detail 0

- To practice basic handling.
- To learn how to use the Flight Path Vector.
- To practice visual circuits.
- To learn the take-off and landing techniques.
- To practice using the normal checklist.

Standard Required on Completion**Handling**

- Handling was smooth without excessive over-controlling.
- Circuits were flown reasonably with some prompting.
- The correct rotation rate was achieved.
- Reasonable approaches and landings were achieved with some trainer input.

Non-Handling

- The checklist was used correctly.

Team Skills

- Communications: were free and open.
- Crew Self Feedback: was objective and constructive.
- Workload / Distractions: tasks were shared efficiently.

Detail 0		
Briefing	Base Trainer LHS	LHR 27L – LHR 27L
Initial State	Engines running	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	32.0	52.0	8.0	59.8	33	1		

Initial Position	Threshold 27L	Route	EGLL/EGLL WOBUN SID Cruise FL70 then circuits 27L
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ATIS	240/10 80k OVC 8000ft 18/12 1023	Clearance	WOBUN Squawk 4711
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ATC	Delivery 121.975	LHR TWR 118.500	LHR GND 121.900	LHR DEP 133.175		
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P1: Pilot A

Trainer: LHS

001. Simulator safety briefing

002. Quick set-up

Trainees load route into FMGS.

Instructor sets simulator ready for T/O.

003. Briefing

Minimum briefing.

Seat and armrest position.

004. Take-off - SID

005. Sidestick priority

Each pilot to use sidestick in opposite directions - algebraic summing of displacements.

Press & hold take over pushbutton - aural & visual warnings.

Hold for longer than 40 secs to de-activate other stick.

F/D			ATHR
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006. Familiarisation with FPV

FL100, 250kt.

Handling with alt/speed changes.

Fly tracks and headings using blue PFD index.

Use FPV to fly a (simulated) 3° approach.

	FPV		
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007. Pitch & roll familiarisation

Note basic attitudes and power.

'g' selector in pitch and rate selector in roll.

Avoid over-controlling on sidestick.

Apply TOGA thrust then IDLE - only small pitch change.

No back stick required in normal turns.

JAR-FCL 3.1: Turns with and without spoilers.

3.1		FPV		
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008. Roll limit protection

3.7		FPV		
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33-67° increasing side and back pressure to maintain level turn.

67° achievable with full lateral sidestick.

Release sidestick - 33° descending turn.

Autotrim ceases at > 33°.

Bank angle limited to 40-45° if α -protection or high speed protections active.

Green roll flashes on PFD.

JAR-FCL 3.7: Steep turns with 45° bank, 180° to 360° left and right.

009. Pitch limit protection

	FPV		
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30° nose up (25° at low speed).

15° nose down.

Green flashes on PFD.

010. Energy sharing: Climb/acceleration
Descent/deceleration

F/D		A/P	ATHR
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Climb to FL150 whilst accel to 300kt.

Descend to FL80 and decelerate to 210kt.

Show difficulty of reducing speed and descending at the same time.

011. Deceleration rates

F/D		A/P	ATHR
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Note DME distance required for:

320kt to 210kt without speedbrake.

320kt to 210kt with speedbrake.

VLS rises to approx. 240kt and so must be progressively retracted to reach 210kt.

012. Visual approach 27L with PAPIs

	FPV		ATHR
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013. Landing

014. Take-Off for right hand circuits

015. Touch and Go's with PAPIs

	FPV		ATHR
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016. Full stop landing

P1: Pilot B Trainer: LHS

017. Takeoff - SID

018. Sidestick priority

F/D			ATHR
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019. Familiarisation with FPV

	FPV		
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020. Pitch & roll familiarisation

3.1		FPV		
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JAR-FCL 3.1: Turns with and without spoilers.

021. Roll limit protection

3.7		FPV		
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JAR-FCL 3.7: Steep turns with 45° bank, 180° to 360° left and right.

022. Pitch limit protection

	FPV		
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023. Visual approach 27L with PAPIs

	FPV		ATHR
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024. Landing

025. Take-Off for right hand circuits

026. Touch and Go's with PAPIs

	FPV		ATHR
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027. Full stop landing

Unused Page

Objectives – Detail 1

- To practice basic handling.
- To introduce FMGS, auto-flight and FCU handling.
- To use SOP's during a single sector trip.
- To learn the techniques for the ILS and go-around.
- To practice approaches without autothrust.
- To practice departure and arrival briefings.

Standard Required on Completion

Handling

- The correct take-off technique was used without prompting.
- General handling was of a good standard.
- ILS approaches and go-arounds were of a good standard.

Non-Handling

- Sound knowledge of standard callouts and SOPs was demonstrated.

Team Skills

- Communications / Decisions: auto-system changes were verbalised.
- Briefings: were open, interactive and relevant.

Natural Crew

- Use normal SOPs: handover control for an approach.
- Allow use of AP for climb, cruise and descent.

Non Natural Crew

- Manual approaches: operate non-SOP, do not handover control for an approach.
- To avoid confusion with callouts at MDA on non-SOP approaches - remember:
 - The HP calls 50 above/decide.
 - The NHP calls Land or Go-Around.
 - The HP retains control and completes the Landing or Go-Around.
- Allow use of AP for climb, cruise and descent.

Detail 0 + 1

- When combining 0 + 1, load detail 1 and once airborne complete the sign off items for detail zero (roll limit protection etc) whilst en-route to MAN.
- Try to cover these items thoroughly but avoid the tendency to spend too long discussing theory that might easily be covered in the briefing room.
- Complete some visual approaches at the end of the detail.

Detail 1- Sector 1

Briefing	Pilot B: P1	LHR 27R – MAN 24R
Initial State	Engines shutdown	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	27.0	54.0	6.0	59.8	28.7	1		

Initial Position	Gate B 25	Route	LHRMAN1 WOBUN SID Cruise FL180 TNT - MAN 24R
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ATIS	27R CALM 20km OVC 200ft 18/8 1010	Clearance	WOBUN Squawk 4515
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ATC	Delivery 121.975	LHR TWR 118.500	LHR GND 121.900	LHR DEP 133.175	MAN DTR 121.350	MAN RAD 119.400
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Detail 1- Sector 2

Briefing	Pilot A: P1	LHR 27R – MAN 24R divert LHR 27R
Initial State	Engines running	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	27.0	54.0	6.0	59.8	28.7	1		

Initial Position	Threshold 27R	Route	LHRMAN 1 WOBUN SID Cruise FL110 BNN - LHR 27R
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ATIS	As Sector 1	Clearance	WOBUN Squawk 4515
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ATC	Delivery 121.975	LHR TWR 118.500	LHR GND 121.900	LHR DEP 133.175		
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P1: Pilot B

101. Cockpit preparation

Cockpit safety check before powering aircraft.

Demonstrate Flightdeck Preparation.

Demonstrate Before Start Checklist and Briefing.

Be aware of individual duties but share preparation.

102. Normal engine start

HP obtains ATC clearance.

HP talks to engineer on intercom.

NHP starts engines.

Wait until XX has disappeared before moving engine master.

N1/N2 XX until 3.5%.

N2 highlighted.

Ignition between 10 and 16% N2 (16% CFM).

30 seconds after Master on, Fuel flow (22% CFM).

43% Start valve closes (50% CFM).

After start scan pattern.

'Engines stabilised, waiting for final clearance'.

After engineer has disconnected, use intercom.

After start checks.

103. Taxi

1.5				
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HP maintains lookout while NHP reads checklist.

NHP checks full control movement with sidestick.

HP additionally checks full rudder deflection.

NHP actions remainder of checklist.

Non linear steering rates, algebraic summing of displacements. Difficult to take-over control in a turn.

JAR FCL 1.5: Taxiing in compliance with ATC.

P1: Pilot B

104. Take-off 27R & SID

Climb to FL180.

F/D			ATHR
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105. Hold at Dayne

JAR-FCL 3.9.2: Holding Procedures.

3.9.2	F/D		A/P	ATHR
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106. Manual ILS 24R

JAR FCL 3.9.3.2: ILS approaches down to a decision height (DH) not less than 200ft manually, with flight director.

3.9.3.2	F/D			ATHR
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107. Manual go-around - no visual contact

*"Go-around flap 3" (or Flap 2 if appropriate).**Apply TOGA thrust and rotate to SRS or 15° (18° max).**"Positive climb".**"Gear up".**"TOGA/SRS/GA TRK".**"Select Managed Nav".**After Takeoff Checklist.**JAR-FCL 4.1 :Go-around after ILS from DA.*

4.1	F/D			ATHR
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108. Standard missed approach 24R

F/D			ATHR
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109. Reposition for ILS 24R

F/D		A/P	ATHR
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110. Manual ILS without autothrust

F/D			
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111. Land - from CAT 1 minima

JAR-FCL 5.1 : Normal landing after ILS to DA.

5.1	F/D			
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P1: Pilot A

112. Take-off 27R & SID

Allow crew to practice SOPs and standard callouts by climbing to FL120 then....

F/D			ATHR
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113. FMGS set-up for Destination change

Lateral revision at a waypoint - destination change to EGLL 27R via BNN.

F/D		A/P	ATHR
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114. Study of Flight Director Mode Reversions

Approaching FL70, wait for ALT, then select FL90 and do not pull. Reversion to SPD - V/S.*

Descent to FL80. When in ALT, attempt to V/S down below selected ALT.*

Select speed 340kt and V/S 6000fpm UP When speed reaches VLS, reverts to OP CLB.

Select speed 250kt and V/S 6000fpm DOWN When speed reaches VMO, reverts to OP DES.

F/D		A/P	ATHR
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115. Hold at BNN

JAR-FCL 3.9.2: Holding Procedures.

3.9.2	F/D		A/P	ATHR
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116. Manual ILS 27R

JAR FCL 3.9.3.2: ILS approaches down to a decision height (DH) not less than 200ft manually, with flight director.

3.9.3.2	F/D			ATHR
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117. Manual go-around – no visual contact

JAR-FCL 4.1 :Go-around after ILS from DA.

4.1	F/D			ATHR
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118. Standard missed approach RW 27R

F/D			ATHR
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119. Reposition for ILS 27R

F/D		A/P	ATHR
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120. Manual ILS without autothrust

F/D			
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121. Land - from CAT 1 minima

JAR-FCL 5.1 : Normal landing after ILS to DA.

5.1	F/D			ATHR
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122. Taxi in and shutdown

1.5

JAR FCL 1.5: Taxiing in compliance with ATC.

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Objectives – Detail 2

- To fly a Raw Data ILS without Autothrust.
- To fly NDB/DME and Circling Approaches.
- To introduce ECAM procedures.
- To employ Team Skills and introduce DODAR.

Standard Required on Completion**Handling**

- ILS approaches and go-arounds were flown to a good standard.
- NDB and circling approaches were flown to a safe and consistent standard.

Non-Handling

- The correct use of the checklist was demonstrated throughout.
- Knowledge of appropriate SOPs was demonstrated.
- The correct procedures were employed using ECAM.

Team Skills

- Workload / Distractions: tasks were shared efficiently.
- Enquiry/Advocacy/ Assertion: information or directions were sought.
- DODAR was used effectively.

**Natural
Crew**

- Use normal SOPs: handover control for an approach.

**Non Natural
Crew**

- Manual approaches: operate non-SOP, do not handover control for an approach.
- To avoid confusion with callouts at MDA on non-SOP approaches - remember:
 - The HP calls 50 above/decide.
 - The NHP calls Land or Go-Around.
 - The HP retains control and completes the Landing or Go-Around.
- Automatic approaches: use normal SOPs - handover control.

Detail 2- Sector 1

Briefing	Pilot A: P1	MAN 06L
Initial State	Engines running	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	30.0	54.0	8.0	61.8	30.9	1		

Initial Position	RW06L	Route	EGCC/EGCC HONILEY FL 60 DAYNE ILS RW06L
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ATIS	06L 060/10 10km OVC 300ft 16/14 1005. Wind @ 3000ft: 120/30	Clearance	HONILEY SID Squawk 4212
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ATC	Delivery 121.75	MAN GRD 121.85	MAN TWR 118.62	MAN DEP 124.2	MAN RAD 119.4	
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Detail 2- Sector 2

Briefing	Pilot B: P1	MAN 06L
Initial State	Engines shutdown	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	30.0	54.0	8.0	61.8	30.9	1		

Initial Position	RW06L	Route	EGCC/EGCC HONILEY FL 60 DAYNE ILS 06L
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ATIS	06L 090/10 10km OVC 300ft 16/14 1005. Wind @ 3000ft: 150/30	Clearance	HONILEY SID Squawk 4212
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ATC	Delivery 121.75	MAN GRD 121.85	MAN TWR 118.62	MAN DEP 124.2	MAN RAD 119.4	
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General	Don't forget to change the 3000ft wind for Sector 2.
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P1: Pilot A

201. Quick set up

*Trainees load route.**Instructor sets simulator ready for T/O.*

202. Briefing

Minimum briefing.

203. SID 06L to HONILEY

Position freeze.

F/D			ATHR
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204. HYD Y RSVR LO LVL

Emphasise correct ECAM procedures.

F/D		A/P	ATHR
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205. Re-instate Yellow Hydraulics

F/D		A/P	ATHR
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206. Raw Data ILS 06L no autothrust

*Brief approach, practice instrument scan, then release freeze.***JAR-FCL 3.9.3.1:Manually without flight director.**

3.9.3.1		FPV		
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207. Go-around

Flight director and autothrust restored automatically on selection of TOGA.

F/D			ATHR
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208. Radar to manual NDB 06L

Use position freeze when appropriate to enable trainees to gain confidence at interpreting the PFD and ND.

	FPV		
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209. Go around

*Following Go-around, re-instate auto-pilot and prepare for second NDB.***JAR-FCL 4.2 Other missed approach.**

4.2	F/D			ATHR
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210. Auto-NDB 06L / Circle to land 24R

JAR-FCL 3.9.5 Instrument approach to circling MDA followed by circle to land >90° to runway.

3.9.5	F/D	FPV	A/P	ATHR
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211. Full stop landing

	FPV		ATHR
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P1: Pilot B

212. Quick set up

Re-load FMGS and quick set up.

213. Briefing

Minimum briefing.

214. SID 06L to HONILEY

Position freeze.

F/D			ATHR
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215. HYD G RSVR LO LVL

Emphasise correct ECAM procedures.

F/D		A/P	ATHR
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216. Re-instate Green Hydraulics

F/D		A/P	ATHR
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217. Raw Data ILS 06L no autothrust

Brief approach, practice instrument scan, then release freeze.

JAR-FCL 3.9.3.1:Manually without flight director.

3.9.3.1		FPV		
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218. Go-around

Flight director and Auto thrust restored automatically on selection of TOGA.

F/D			ATHR
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219. Radar to manual NDB 06L

Use position freeze when appropriate to enable trainees to gain confidence at interpreting the PFD and ND.

	FPV		
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220. Go around

Following Go-around, re-instate auto-pilot and prepare for second NDB.

JAR-FCL 4.2 Other missed approach.

4.2	F/D			ATHR
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221. Auto-NDB 06L / Circle to land 24R

JAR-FCL 3.9.5 Instrument approach to circling MDA followed by circle to land >90° to runway.

3.9.5	F/D	FPV	A/P	ATHR
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222. Full stop landing

	FPV		ATHR
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Objectives – Detail 3

- To practice SOPs during a short sector.
- To consolidate NDB/DME approaches.
- To fly a procedural automatic VOR/DME approach.
- To introduce manual VOR/DME approaches using the Flight Director.
- To practice operations in icing conditions.
- To consolidate FMGS procedures.

Standard Required on Completion**Handling**

- Non-precision approaches were flown to a good standard.
- The correct use of the FCU and autopilot was demonstrated.

Non-Handling

- Checklists were used correctly.
- Correct SOPs were employed.
- Awareness of icing and adverse weather was demonstrated.

Team Skills

- Briefing: potential problems were identified.
- Leadership / Followership: all resources were used and time was managed.
- Communications / Decisions: auto-system changes were verbalised.

**Natural
Crew**

- Use normal SOPs: handover control for an approach.

**Non Natural
Crew**

- Manual approaches: operate non-SOP, do not handover control for an approach.
- To avoid confusion with callouts at MDA on non-SOP approaches - remember:
 - The HP calls 50 above/decide.
 - The NHP calls Land or Go-Around.
 - The HP retains control and completes the Landing or Go-Around.
- Automatic approaches: use normal SOPs - handover control.

Detail 3- Sector 1

Briefing	Pilot A: P1	MAN 24L NCL 25
Initial State	Engines shutdown	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	30.0	52.0	6.0	57.8	30.9	1		

Initial Position	Gate 48	Route	EGCC/EGNT POL SID FL90 Cleared to DCS initially. Turn right when ready, Arrival Via NCL for RW25
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ATIS	24R Wet 270/10 10km Drizzle OVC 300ft 2/0 1005	Clearance	POL SID Squawk 4212
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ATC	Delivery	MAN GRD	MAN TWR	MAN DEP	NCL APP	NCL TWR
	121.75	121.85	118.62	124.2	124.375	119.7

Detail 3- Sector 2

Briefing	Pilot B: P1	NCL 25 – MAN 24R
Initial State	Engines running	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	30.0	520	6.0	57.8	30.9	1		

Initial Position	Hold 25	Route	EGNT/EGCC FL 90 POL DAYNE RW 24R
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ATIS	25 Wet 270/10 10km Drizzle OVC 300ft 2/0 1005	Clearance	Left turn on track to POL Squawk 4212
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ATC	Delivery	MAN GRD	MAN TWR	MAN DEP	NCL APP	NCL TWR
	121.75	121.85	118.62	124.2	124.375	119.7

P1: Pilot A

301. Cockpit Preparation

1.4
3.4.14

JAR FCL 1.4: Use of checklist prior to starting, engine starting procedures, radio and nav equipment check, selection and setting of navigation and communication frequencies.

JAR FCL 3.4.14: Auxiliary power unit.

302. Engine start

303. Use of anti-icing

304. Immediate takeoff

Rolling T/O.

JAR-FCL 2.1: Normal take-off with different flap settings including expedited take-off.

305. POL SID 24R

FMGS set-up for NCL NDB 25.

JAR FCL 3.9.1: Adherence to departure and arrival routes and ATC instructions.

306. Manual NDB/DME 25 without F/D

Consolidation.

307. Go-around

FMGS set up for the VOR approach.

308. Procedural auto VOR/DME 25

Set cloud base to 1000ft.

Watch for over activity on the FCU.

JAR-FCL 3.9.4: Automatic NDB, VOR or LLZ approach down to the MDA. Automatically with autopilot.

309. Go-around

ATC call for Go-around at 50ft runway blocked.

JAR FCL 4.4: Rejected landing at 50ft.

310. Radar vectors to auto LOC 25

311. Land

Vacate and complete the after landing checklist.

P1: Pilot B

312. Quick set-up

FMGC set up for return to MAN.

Minimum briefing.

313. Use of anti-icing

314. Immediate takeoff

Rolling T/O.

JAR-FCL 2.1: Normal take-off with different flap settings including expedited take-off.

2.1	F/D			ATHR
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315. Depart 25 to Pole Hill

After noise abatement - direct Pole Hill.

JAR FCL 3.9.1: Adherence to departure and arrival routes and ATC instructions.

FMGS set-up for NDB MAN 24R.

3.9.1	F/D		A/P	ATHR
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316. Manual NDB/DME 24R without F/D

Consolidation.

	FPV		ATHR
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317. Go-around

FMGS set up for the VOR approach.

F/D			ATHR
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318. Procedural auto VOR/DME 24R

Set cloud base to 1000ft.

Watch for over activity on the FCU.

JAR-FCL 3.9.4: NDB, VOR or LLZ approach down to the MDA. Automatically with autopilot.

3.9.4	F/D	FPV	A/P	ATHR
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319. Go-around

ATC call for Go-around at 50ft runway blocked.

JAR FCL 4.4: Rejected landing at 50ft.

4.4	F/D		A/P	ATHR
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320. Radar vectors to auto LOC 24R

F/D	FPV	A/P	ATHR
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321. Land

	FPV		ATHR
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322. After landing and shut down checklists

Taxi to gate.

Full shut down procedure.

Objectives – Detail 4

- To introduce Single Engine handling and procedures.
- To introduce techniques for Rejected Take-Offs.
- To consolidate ECAM procedures.

Standard Required on Completion**Handling**

- EFATO were handled safely.
- Single engine approaches and landings were safe and consistent.
- RTO techniques were used correctly.

Non-Handling

- Evacuation procedures were understood.
- Correct ECAM procedures were demonstrated.
- The correct use of the QRH was demonstrated.
- Correct R/T procedures were followed.

Team Skills

- Workload / Distractions: overload was admitted and recognised in others!
- Communications / Decisions: decisions were clearly stated and acknowledged.
- Enquiry / Advocacy / Assertion: actions and decisions were questioned.

**Natural
Crew**

- Use normal SOPs: handover control for an approach.

**Non Natural
Crew**

- Manual approaches: operate non-SOP, do not handover control for an approach.
- To avoid confusion with callouts at MDA on non-SOP approaches - remember:
 - The HP calls 50 above/decide.
 - The NHP calls Land or Go-Around.
 - The HP retains control and completes the Landing or Go-Around.
- Automatic approaches: use normal SOPs - handover control.

Detail 4

Briefing	Pilot B: P1 first	LGW 08R
Initial State	Engines running	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	30.0	53.5	10.0	63.3	30.9	1		

Initial Position	RW 08R	Route	EGKK / EGKK DVR 6000ft return via MAY RW08R
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ATIS	08R 100/02 20km OVC 200 20/20 1020	Clearance	DVR Squawk 5105
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ATC	Delivery 121.95	LGW GRD 121.8	LGW TWR 124.225	LON CTL 120.525	LGW DIR 118.950	
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Notes	Allow use of AP for briefing and FMGS re-programming. Autothrust optional for all approaches. Flight Director optional for manual non-precision approaches.
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P1: Pilot B

401. Quick set-up for RW08R

*Trainees load route.**Instructor sets simulator ready for T/O.*

402. Briefing

Minimum briefing.

403. Take-off – SID – Hold MAY

F/D		A/P	ATHR
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404. ECAM actions - ENG 1 (2) FAIL

Allow trainees to gain familiarity with the ECAM procedure required for EFATO.

F/D		A/P	ATHR
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405. Relight drill

*Engine relight drill using QRH.***JAR FCL: 3.6.3 Engine failures, shut-down and restart at a safe height.**

3.6.3	F/D		A/P	ATHR
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406. ECAM actions - ENG 1 (2) FIRE

*As 404.***JAR FCL: 3.6.1 Fire drills.**

3.6.1	F/D		A/P	ATHR
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407. Single engine ILS

*Reposition to 12nm final.**Set cloud base to 150'.***JAR FCL 3.9.3.4: ILS approaches down to a DH not less than 200ft, manually, with one engine inoperative; engine failure has to be simulated during final approach from before passing the OM until touchdown or through the complete missed approach procedure.**

3.9.3.4	F/D			
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408. Single engine go-around

JAR FCL 4.3: Go - around with one engine simulated inoperative after an ILS approach on reaching DH.

4.3	F/.D			ATHR
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409. Single engine ILS

*Reposition to 12nm final.**Set cloud base to 1000'.*

F/D			
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410. Single engine landing

F/D			
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411. Take-off – engine failure at V1

Demonstrate/repeat as necessary.

Re-position to 12nm at 3000'.

JAR FCL 2.5.3: Take-offs with simulated engine failure as close as possible after V1, when V1 and V2 or V1 and VR are identical.

2.5.3	F/D			ATHR
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412. Single engine NDB

Set cloud base to 1000'.

		FPV	
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413. Single engine landing

JAR-FCL 5.5: Landing with critical engine simulated inoperative.

5.5			FPV	
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414. Takeoff – engine failure before V1

Demonstrate/repeat as necessary.

JAR FCL 2.5.4 : Rejected takeoff before reaching V1.

2.5.4	F/D			ATHR
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P1: Pilot A

415. Take-off – engine failure at V1

*Demonstrate/repeat as necessary.**Re-position to 12nm at 3000'.***JAR FCL 2.5.3: As 411.**

2.5.3	F/D			ATHR
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416. Single engine ILS

Set cloud base to 1000'.

F/D			
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417. Single engine landing

F/D			ATHR
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418. Take-off – failure and fire at V1

JAR FCL:3.6.1 Fire drills.

3.6.1	F/D			ATHR
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419. Single engine ILS

*Reposition to 12nm final.**Set cloud base to 150'.***JAR FCL 3.9.3.4: as 407.**

3.9.3.4	F/D			
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420. Single engine go-around

JAR FCL 4.3: as 408.

4.3	F/D			ATHR
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421. Single engine NDB/DME

*Reposition to 12nm final.**Set cloud base to 1000'.*

	FPV		
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422. Single engine landing

JAR-FCL 5.5: Landing with critical engine simulated inoperative.

5.5		FPV		
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423. Takeoff – engine fail and fire before V1

*Demonstrate/repeat as necessary.***JAR FCL 2.5.4 : Rejected takeoff before reaching V1.**

2.5.4	F/D			ATHR
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424. Evacuation

Unused Page

Objectives – Detail 5

- To introduce AWOPs procedures.
- To re-enforce SOPs applicable to the approach and go-around.
- To introduce Normal Law protections.
- To practice handling in Alternate Law, Direct Law and Mechanical Back-UP.
- To learn to intercept the Glideslope from above.

Standard Required on Completion**Handling**

- The correct use of the FCU and autopilot was demonstrated.
- Manual handling was completed to a good standard.

Non-Handling

- Clear and accurate standard call-outs were made.
- A good working knowledge of AWOPs SOPs was demonstrated.

Team Skills

- Preparation, Planning and Vigilance: the crew 'projected' ahead of the aircraft.
- Briefing: operational guidelines were stated.
- Workload / Distractions: the crew were aware of auto-system distractions.

**Natural
Crew**

- Use normal SOPs: handover control for an approach.

**Non Natural
Crew**

- Manual approaches: operate non-SOP, do not handover control for an approach.
- To avoid confusion with callouts at MDA on non-SOP approaches - remember:
 - The HP calls 50 above/decide.
 - The NHP calls Land or Go-Around.
 - The HP retains control and completes the Landing or Go-Around.
- Automatic approaches: use normal SOPs - handover control.

Detail 5 - Sector 1

Briefing	P1: LHS	LHR 27R – LHR 27R
Initial State	Engines running	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	30.0	51.5	10.0	61.3	30.9	1		

Initial Position	Remote hold	Route	EGLL/EGLL WOBUN 6000 return 27R
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ATIS	RW 27R 300/03 100m FG RVR 150/150/150 SKO 4/4 1020	Clearance	WOBUN Squawk 4416
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ATC	Delivery 121.975	LHR TWR 118.500	LHR GND 121.900	LHR DEP 133.175		
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Detail 5 - Sector 2

Briefing	Pilot A: P1	LHR 27R – LHR 27R
Initial State	Engines running	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	30.0	51.5	5.0	56.3	30.9	1		

Initial Position	27R	Route	EGLL/EGLL WOBUN 6000 return 27R
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ATIS	Amend to: 12k and OVC 600	Clearance	WOBUN Squawk 4416
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ATC	Delivery 121.975	LHR TWR 118.500	LHR GND 121.900	LHR DEP 133.175		
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P1: LHS

501. Quick set-up for 27R
Instructor sets simulator ready for taxi.
502. Briefing
503. Low visibility taxiing
504. Take Off – RVR 125m
505. CAT 3b ILS DH 17R Set RVR 10m
JAR FCL 6.2: ILS Approaches down to DH, using flight guidance system.
506. Auto go-around
JAR-FCL 6.3: Go-around from DH.
507. CAT 3b ILS DH 17R Set RVR 75m
JAR FCL 3.4.8: Auto-pilot/Flight director.
508. Autoland
JAR FCL 6.4: Landing with visual reference established at DH. (Auto-land if fitted).
509. Vacate runway
510. Take-off - RVR 125m - RTO
JAR-FCL 6.1: Aborted take-off at minimum authorised RVR.
511. Evacuation
512. Take-off - RVR 600m
JAR FCL 2.2: Instrument take off.
Quick reposition to 8nm.
513. CAT 3b approach Set RVR 400m
Teach glideslope capture from above.
514. Localiser deviation - auto go-around
Quick reposition to 8nm.
515. CAT 3b approach Set RVR 400m
516. Rad Alt failure @ 2000' - downgrade
517. Auto-land

6.2

6.3

3.4.8

6.4

6.1

2.2

3.9.3.3

P1: Pilot A

518. Take off SID

F/D		A/P	ATHR
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519. VMAX warnings, protection & recovery

3.2	F/D		A/P	ATHR
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Slew to 35000'.

Green flashes indicate start of protection.

Select 380kt in FCU speed window. Autothrust prevents speed exceeding VMAX.

Select TOGA thrust. Autothrust no longer active. Speed increases past MMO.

Aircraft starts to pitch up.

Overspeed aural warning masks the autopilot disconnect aural warning.

Reduce thrust and use half speedbrake.

The autopilot warning can be heard after the overspeed warning has ceased.

JAR-FCL 3.2: Tuck under and Mach buffets after reaching the critical Mach number, and other specific flight characteristics.

520. Low speed indications & protection - clean

3.8		FPV		
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Slew to 5000', reduce thrust to IDLE, maintain a suitable attitude to achieve a gentle deceleration.

Speed scale markings, α -prot, α -floor, α -max.

Speed below α -prot, back stick required.

α -floor activates, remains latched until de-activated by thrust lever pushbutton.

Full back stick = α -max.

Aerodynamic buffet.

Bank angle limited to 45°.

Reduce airspeed progressively, starting with a reduced thrust setting and allowing alpha-floor to operate normally until a stabilised condition is achieved with full back stick selected.

Recovery - Full thrust, neutral then forward stick, maintain positive flight path.

JAR-FCL 3.8: Early recognition and counter measures on approaching stall

521. Not used

522. Low speed indications & protection
flap 3 + gear

*Start with a reduced thrust setting and allow
alpha-floor to operate normally until a stabilised
condition is achieved with full back stick selected.*

*Recovery - Full thrust, neutral then forward stick,
maintain positive flight path. Positive climb, gear
up. Speed above VLS, flap up one step.
Accelerate and clean up at F and S speeds.*

**JAR-FCL 3.8: Early recognition and counter
measures on approaching stall.**

3.8		FPV		
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523. F/CTL ELAC 1+2 FAULT

	FPV		
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524. Alternate/Direct Law

	FPV		
--	-----	--	--

525. Static stability beyond VMO

Accelerate to VMO.

	FPV		
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526. Low speed indications and warnings

*Power idle, reduce speed slowly.
Note change in speed scale and stall warning.*

	FPV		
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527. Recovery from stall warning

JAR FCL 3.4.9: Stall warning devices.

3.4.9		FPV		
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528. Landing gear down - direct law

Direct law handling.

	FPV		
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529. Approach config - recover from stall
warning

Flap 3 required for landing in direct law.

**JAR FCL 3.8.1: Recovery from full stall in
approach configuration.**

3.8.1		FPV		
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530. Mechanical backup

*ELACs 1,2 , SECs 1,2,3 OFF.
(Do not attempt Mech Back-Up approach
Use spare time later to consolidate S/E etc).
Restore SECs 1,2,3. ELACs remain failed.*

	FPV		
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531. Alternate/Direct law ILS

**JAR-FCL 3.4.6 Flight control and Trim
system.**

3.4.6	F/D			ATHR
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532. Direct law landing

F/D			ATHR
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Objectives – Detail 6

- To consolidate AWOPs procedures.
- To re-enforce SOPs applicable to the approach and go-around.
- To introduce Normal Law protections.
- To practice handling in Alternate Law, Direct Law and Mechanical Back-Up.
- To learn to intercept the Glideslope from above.
- To consolidate Single Engine handling.

Standard Required on Completion

Handling

- The correct use of the FCU and autopilot was demonstrated.
- Manual handling was completed to a good standard.

Non-Handling

- Clear and accurate standard call-outs were made.
- A good working knowledge of AWOPs SOPs was demonstrated.

Team Skills

- Preparation, Planning and Vigilance: the crew 'projected' ahead of the aircraft.
- Briefing: operational guidelines were stated.
- Workload / Distractions: the crew were aware of auto-system distractions.

Natural Crew

- A natural crew may have completed their AWOPs training on detail 5. In this case use the spare time to revise RTOs and single engine handling.
- Use normal SOPs: handover control for an approach.

Non Natural Crew

- Manual approaches: operate non-SOP, do not handover control for an approach.
- To avoid confusion with callouts at MDA on non-SOP approaches - remember:
 - The HP calls 50 above/decide.
 - The NHP calls Land or Go-Around.
 - The HP retains control and completes the Landing or Go-Around.
- Automatic approaches: use normal SOPs - handover control.

Detail 6 – Sector 1

Briefing	P1: LHS	LGW 08R
Initial State	Engines running	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	30.0	51.5	10.0	61.3	30.9	1		

Initial Position	Remote hold on 'J'	Route	EGKK / EGKK DVR 6000ft return RW08R
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ATIS	RW08R 100/03 100m FG RVR 150 / 150 / 150 SKO 4/4 1020	Clearance	DVR Squawk 4416
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ATC	Delivery 121.95	LGW GRD 121.8	LGW TWR 124.225	LON CTL 120.525	LGW DIR 118.950	
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Detail 6 – Sector 2

Briefing	Pilot B: P1	LGW 08R
Initial State	Engines running	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	30.0	51.5	5.0	56.3	30.9	1		

Initial Position	08R	Route	EGKK / EGKK DVR 6000 return RW08R
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ATIS	Amend to : 12k and OVC 600ft	Clearance	DVR Squawk 4416
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ATC	Delivery 121.95	LGW GRD 121.8	LGW TWR 124.225	LON CTL 120.525	LGW DIR 118.950	
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P1: LHS

601. Quick set-up for 08R
Instructor sets simulator ready for taxi.
603. Low visibility taxiing
604. Take Off – RVR 125m
605. CAT 3b ILS DH 17R Set RVR 10m
JAR FCL 6.2: ILS Approaches down to DH, using flight guidance system.
606. Auto go-around
JAR-FCL 6.3: Go-around from DH.
607. CAT 3b ILS DH 17R Set RVR 75m
JAR FCL 3.4.8: Auto-pilot/Flight director.
608. Autoland
JAR FCL 6.4: Landing with visual reference established at DH. (Auto-land if fitted).
609. Vacate runway
610. Take-off - RVR 125m - RTO
JAR-FCL 6.1: Aborted take-off at minimum authorised RVR.
611. Evacuation
612. Take-off - RVR 600m
JAR FCL 2.2: Instrument take off.
Quick reposition to 8nm.
613. CAT 3b approach Set RVR 400m
Teach glideslope capture from above.
614. AUTO FLT AP OFF @ about 500ft.
Manual go-around.
Quick reposition to 8nm.
615. CAT 3b approach Set RVR 400m
616. AUTO FLT A/THR OFF @ about 3000ft

6.2

6.3

3.4.8

6.4

6.1

2.2

3.9.3.3

617. Auto-land

P1: Pilot B

618. Take off SID

F/D		A/P	ATHR
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619. VMAX warnings, protection & recovery

3.2	F/D		A/P	ATHR
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Slew to 35000'.

Green flashes indicate start of protection.

Select 380kt in FCU speed window. Autothrust prevents speed exceeding VMAX.

Select TOGA thrust. Autothrust no longer active. Speed increases past MMO.

Aircraft starts to pitch up.

Overspeed aural warning masks the autopilot disconnect aural warning.

Reduce thrust and use half speedbrake.

The autopilot warning can be heard after the overspeed warning has ceased.

JAR-FCL 3.2: Tuck under and Mach buffets after reaching the critical Mach number, and other specific flight characteristics.

620. Low speed indications & protection - clean

3.8		FPV		
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Slew to 5000', reduce thrust to IDLE, maintain a suitable attitude to achieve a gentle deceleration.

Speed scale markings, α -prot, α -floor, α -max.

Speed below α -prot, back stick required.

α -floor activates, remains latched until de-activated by thrust lever pushbutton.

Full back stick = α -max.

Aerodynamic buffet.

Bank angle limited to 45°.

Reduce airspeed progressively, starting with a reduced thrust setting and allowing alpha-floor to operate normally until a stabilised condition is achieved with full back stick selected.

Recovery - Full thrust, neutral then forward stick, maintain positive flight path.

JAR-FCL 3.8: Early recognition and counter measures on approaching stall

621. Not used

622. Low speed indications & protection
flap 3 + gear

*Start with a reduced thrust setting and allow
alpha-floor to operate normally until a stabilised
condition is achieved with full back stick selected.*

*Recovery - Full thrust, neutral then forward stick,
maintain positive flight path. Positive climb, gear
up. Speed above VLS, flap up one step.
Accelerate and clean up at F and S speeds.*

**JAR-FCL 3.8: Early recognition and counter
measures on approaching stall.**

3.8		FPV		
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623. F/CTL ELAC 1+2 FAULT

	FPV		
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624. Alternate/Direct Law

	FPV		
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625. Static stability beyond VMO

Accelerate to VMO.

	FPV		
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626. Low speed indications and warnings

*Power idle, reduce speed slowly.
Note change in speed scale and stall warning.*

	FPV		
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627. Recovery from stall warning

JAR FCL 3.4.9: Stall warning devices.

3.4.9		FPV		
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628. Landing gear down - direct law

Direct law handling.

	FPV		
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629. Approach config - recover from stall
warning

Flap 3 required for landing in direct law.

**JAR FCL 3.8.1: Recovery from full stall in
approach configuration.**

3.8.1		FPV		
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630. Mechanical backup

*ELACs 1,2 , SECs 1,2,3 OFF.
(Do not attempt Mech Back-Up approach
Use spare time later to consolidate S/E etc).
Restore SECs 1,2,3. ELACs remain failed.*

	FPV		
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631. Alternate/Direct law ILS

**JAR-FCL 3.4.6 Flight control and Trim
system.**

3.4.6	F/D			ATHR
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632. Direct law landing

F/D			ATHR
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Objectives – Detail 7

- To practice the use of SOPs during a normal sector.
- To introduce de-icing and operations in adverse weather.
- To introduce complex failures and ECAM procedures.
- To fly a Raw Data ILS.
- To practice pilot incapacitation procedures.

Standard Required on Completion**Handling**

- All handling - both manual and automatic - was to a good standard.

Non-Handling

- Good technical knowledge was displayed.
- Supplementary procedures and SOPs were employed effectively.

Team Skills

- Communications / Decisions: both crew members contributed to decision making.
- Briefings: potential problems were identified.
- Interpersonal Relationships: crew members remained relaxed and supportive.

**Natural
Crew**

- Use normal SOPs: handover control for an approach.

**Non Natural
Crew**

- Manual approaches: operate non-SOP, do not handover control for an approach.
- To avoid confusion with callouts at MDA on non-SOP approaches - remember:
 - The HP calls 50 above/decide.
 - The NHP calls Land or Go-Around.
 - The HP retains control and completes the Landing or Go-Around.
- Automatic approaches: use normal SOPs - handover control.

Detail 7 – Sector 1

Briefing	Pilot A: P1	MUC 26L
Initial State	Engines shutdown	ADD: 1. APU – U/S. 2. CAB PR SYS 2

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	28.0	51.8	6.8	58.4	32.0	2		TOGA

Initial Position	Gate 118	Route	EDDM/EGLL MIQ DIR LAM LHR 27L
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ATIS	RW26L 200/2 2000m SN OVC 4000ft -1/-1 1001	Clearance	LHR MIQ Squawk 4711
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ATC	Delivery 121.725	MUC GRD 121.825	MUC TWR 120.5	DE-ICE 130.6	MUC CTL 123.9	LON 118.825
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Detail 7 – Sector 2

Briefing	Pilot B: P1	LHR 27L
Initial State	LHR Base leg 4000ft	ADD: 1. APU – U/S 2. CAB PR SYS 2

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	28.0	51.8	6.8	58.4	32.0	2		TOGA

Initial Position	Base leg LHR	Route	EDDM/EGLL MIQ DIR LAM LHR 27L
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ATIS	RW27L 230/10 5k OVC 400ft -1/-1 1001	Clearance	LHR MIQ Squawk 4711
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ATC	LHR DIR	LHR TWR 118.5		MUC TWR 120.5	MUC CTL 123.9	MUC DIR
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P1: Pilot A

701. Cockpit preparation

1.1/1.3

*JAR-FCL: 1.1 Performance calculation.**1.3 Cockpit inspection.*

702. Briefing – external air / crossbleed start

3.4.14
3.4.0*External air start / Crossbleed start**JAR-FCL: 3.4.14 Auxiliary power unit.**3.4.0 Engine.*

703. Taxi – remote de-icing

1.6

JAR-FCL: 1.6 Pre-flight checks.

704. Take-off flap 2

2.1
2.4
3.4.7

F/D

ATHR

*JAR FCL: 2.1 Take-off - different flap settings.**2.4 Take-off at MTOW.**3.4.7 Anti-icing system.*

705. Departure & Climb FL 160

F/D

A/P

ATHR

706. Cruise / Position freeze

3.4.1
3.4.3
3.5

F/D

A/P

ATHR

*CAB PR SYS 1 & 2 FAULT.**Fuel Leak.**TCAS.**FMGC 1 failure.**JAR-FCL: 3.4.1 Pressurisation and air con.**3.4.3 Fuel system.**3.5 TCAS.*

707. Descent

F/D

A/P

ATHR

Dual FMGC – fail during descent.

708. ILS

3.4.11

FPV

*Raw Data, and RMP radio aid tuning.**JAR-FCL 3.4.11 Radios/Nav equip / FMS.*

709. Land

FPV

P1: Pilot B

710. ILS

LHR 27L.

Raw Data, and RMP radio aid tuning.

Commence from base leg at 4000'.

	FPV		
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711. Land

Reposition for take off MUC.

	FPV		
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712. Reposition to MUC - Take-off flap 2

JAR FCL: 2.1 Take-off - different flap settings

2.4 Take-off at MTOW

3.4.7 Anti-icing system

Incapacitation during SID.

2.1 2.4 3.4.7	F/D			ATHR
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713. ILS and Land

JAR-FCL: 3.6.7 Flight Crew Incapacitation.

3.6.7	F/D		A/P	ATHR
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714. After landing procedure and checklist

715. Shutdown and secure

Use any spare time to practise RTOs and single engine handling.

Objectives – Detail 7a

- To conduct LOFT.
- To identify any Team Skills that might benefit from development
- To consolidate Single Engine handling and procedures.
- To consolidate RTO procedures.

Standard Required on Completion**Handling**

- LST standard was achieved.

Non-Handling

- Correct SOPs were employed.
- Correct ECAM procedures were employed.

Team Skills

- Effective CRM was employed.
- Situation Awareness was maintained at a high level.

LOFT Menu

- Toilet Smoke.
- Aft Cargo Smoke.
- Cabin fire shortly after take off.
- Red Bomb Threat.
- SWORD fuel. LHR arrival EAT +1 Hour - force diversion to an alternate not on SWORD.
- PAX refuses to stop smoking and is aggressive to cabin crew. Either becomes:
 - Violent or,
 - Calm after written warning from Captain.
- Generator failure with APU U/S.
- LHR arrival - SWORD fuel - nose gear fails to extend, Ops request: prefer divert to STN rather than block LHR.
- Sword fuel. Dayne Hold. 24R blocked. 24L VOR only. OVC 400ft, throughout all UK.

Briefing

Refer to FTM 06 - 8 for guidance on briefing and conducting LOFT.

Detail 7a – Sector 1

Briefing	Pilot A: P1	EDI 24
Initial State	Engines running	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	30.0	53.5	10.0	63.3	30.9	1		

Initial Position	Holding Point	Route	EGPH/EGBB Route 3 FL 270 BHX RW 15
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ATIS	RW 24 Wet 150/06 9k LTRN OVC 200ft 5/5 998	Clearance	DCS SID Squawk 5105
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ATC	EDI ATIS 132.075	EDI GRD 121.75	EDI TWR 118.7	SCOTISH 124.825	EDI RAD 121.2	
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Detail 7a – Sector 2

Briefing	Pilot B: P1	EDI 06
Initial State	Engines running	

DATA INIT	MAC	ZFW	FUEL	TOW	STAB	FLAP	PERF	FLEX
	30.0	53.5	10.0	63.3	.1DN	1		

Initial Position	Holding Point	Route	EGPH/EGBB Route 3 FL 270 BHX RW 15
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ATIS	RW 06 Wet 150/06 9k LTRN OVC 200ft 5/5 998	Clearance	DCS SID Squawk 5105
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ATC	EDI ATIS 132.075	EDI GRD 121.75	EDI TWR 118.7	SCOTISH 124.825	EDI RAD 121.2	
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P1: Pilot A

LOFT

701a. Cockpit preparation

702a. Briefing

703a. LOFT Exercise

*Choose an exercise from LOFT Menu.
Act only as ATC / CSD etc.
Allow approximately 1.15 for this item.*

F/D		A/P	ATHR
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LST Practice

Allow approximately 45 mins for this practice.

704a. Takeoff – flameout and fire above V1

*A/P available when at Green Dot Speed.
Radar vectors after emergency turn.*

F/D		A/P	ATHR
-----	--	-----	------

705a. Single engine ILS RW 24

*Manual.
A/THR optional.*

F/D			ATHR
-----	--	--	------

706a. Single engine go-around

*Non Standard Go-Around - Straight ahead then...
Reposition to Base Leg for.....*

F/D			ATHR
-----	--	--	------

707a. Single engine auto LOC/DME RW 24

A/P available.

F/D		A/P	ATHR
-----	--	-----	------

708a. Single engine landing

F/D			ATHR
-----	--	--	------

709a. Takeoff – flameout and fire below V1

F/D			ATHR
-----	--	--	------

710a. Evacuation.

P1: Pilot B

LOFT

711a. Quick set-up for RWY 06

Trainees load route.

Instructor sets simulator ready for take off.

712a. Briefing

Commensurate with detail.

713a. LOFT Exercise

Choose an exercise from LOFT Menu.

Allow approximately 1.00 for this item.

F/D		A/P	ATHR
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LST Practice

Allow approximately 45 mins for this practice.

714a. Takeoff – Fire and flameout after V1

A/P available when at Green Dot Speed.

Radar vectors after emergency turn.

F/D		A/P	ATHR
-----	--	-----	------

715a. Radar single engine ILS RWY06

Manual.

A/THR optional.

F/D			ATHR
-----	--	--	------

716a. Single engine go-around

Non Standard Go-Around - Straight ahead then...

Reposition to Base Leg for.....

F/D			ATHR
-----	--	--	------

717a. Single engine auto LOC/DME RWY06

A/P available.

F/D		A/P	ATHR
-----	--	-----	------

718a. Single engine landing

F/D			ATHR
-----	--	--	------

719a. Takeoff – Fire and flameout before V1

F/D			ATHR
-----	--	--	------

720a. Evacuation

Objectives – Detail 8

- To introduce further complex failures and ECAM procedures:
 - Dual Generator Failure
 - No Flaps and no Slats
 - Dual Hydraulic Failure.
- To practice windshear recovery techniques.
- To practice crosswind take-off and landing techniques.

Standard Required on Completion**Handling**

- Aircraft handling during complex failures was safe.
- Windshear recovery was flown to a good standard.

Non-Handling

- Correct ECAM procedures were used.
- A good standard of normal SOPs was demonstrated.
- Appropriate calls were made during the windshear exercise.

Team Skills

- Interpersonal relationships: the crew remained calm under stress.
- Workload: tasks were shared effectively.
- Leadership / Followership: the crew acted decisively when required.
- DODAR was used effectively.

**Natural
Crew**

- Use normal SOPs: handover control for an approach.

**Non Natural
Crew**

- Manual approaches: operate non-SOP, do not handover control for an approach.
- To avoid confusion with callouts at MDA on non-SOP approaches - remember:
 - The HP calls 50 above/decide.
 - The NHP calls Land or Go-Around.
 - The HP retains control and completes the Landing or Go-Around.
- Automatic approaches: use normal SOPs - handover control.

Detail 8

Briefing	Pilot B: P1	LGW 26L
Initial State	Engines running	ADD: APU U/S

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	25.5	52.0	8.0	59.7	27.0	1		

Initial Position	RW 26L	Route	EGKK / EGKK DVR FL90 return RW 26L via MAY
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ATIS	RW 26L 320/15 20k OVC 1500ft 14/12 1015	Clearance	DVR Squawk 6016
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ATC	Delivery 121.95	LGW GRD 121.8	LGW TWR 124.225	LON CTL 134.125	LGW DIR 126.825	
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P1: Pilot B

801. Quick set-up for 26L

*Trainees load route.**Instructor sets simulator ready for take off.*

802. Briefing

803. Crosswind take-off – Windshear

*Windshear profile FAA 3.***JAR-FCL 2.3: Crosswind take-off.**

804. ILS

*Pilot A to fly ILS. Pilot B takes control when visual before encountering windshear.**Windshear profile FAA 1.*

805. Windshear on finals - go-around

JAR-FCL 3.6.5: Windshear at take-off/land.

806. ILS - crosswind landing

JAR-FCL 5.3: Crosswind landing.

807. Take-off – ELEC GEN 2 FAULT

*Re-set surface wind 280/15.**SID to FL 60.*

808. GEN 1 FAULT → ELEC EMERG CONFIG

JAR FCL 3.4.4: Electrical system.

809. Raw Data ILS - Direct law landing

810. Reposition to 2500ft on finals

*Select Config 2:**Slat and wing tip brake fault.**Set-up and brief then release freeze*

811. SLATS and FLAP FAULT in Conf 0 – ILS

JAR FCL 3.4.13: Slat and flap system

812. NO FLAPS AND NO SLATS LANDING

JAR-FCL 5.4: Landing without slats & flaps.

2.3	F/D			ATHR
-----	-----	--	--	------

F/D		A/P	ATHR
-----	--	-----	------

3.6.5	F/D		A/P	ATHR
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5.3	F/D			ATHR
-----	-----	--	--	------

F/D			ATHR
-----	--	--	------

3.4.4		FPV		
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	FPV		
--	-----	--	--

F/D			ATHR
-----	--	--	------

3.4.13	F/D		A/P	A/THR
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5.4	F/D			
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813. Reposition to Hold

LOFT Consolidation Exercise (Pilot B).

	F/D		A/P	ATHR
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814. Jammed stabiliser - ILS

	F/D			ATHR
--	-----	--	--	------

815. Jammed stabiliser landing

JAR FCL 5.2: Landing following frozen THS.

5.2	F/D			ATHR
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P1: Pilot A

816. Crosswind take-off – Windshear

Windshear profile FAA 3.

JAR-FCL 2.3: Crosswind take-off.

2.3	F/D			ATHR
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817. ILS

Pilot B to fly ILS. Pilot A takes control when visual before encountering windshear.

Windshear profile FAA 1.

F/D		A/P	ATHR
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818. Windshear on finals - go-around

JAR-FCL 3.6.5: Windshear at take-off/land.

3.6.5	F/D		A/P	ATHR
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819. ILS - crosswind landing

JAR-FCL 5.3: Crosswind landing.

5.3	F/D			ATHR
-----	-----	--	--	------

820. Take-off – HYD Y RSVR LO LVL

Re-set surface wind 280/15.

SID to FL60.

F/D			ATHR
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821. HYD G LO PR → Dual Hydraulic Failure

Green system pump failure.

JAR FCL3.4.5: Normal / abnormal hydraulics.

3.4.5	F/D			
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822. ILS 26L

JAR FCL 3.4.12: Normal and abnormal operations of landing gear and brake system.

3.4.12	F/D			
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823. Direct Law landing

JAR FCL 5.2: Landing following frozen THS.

5.2	F/D			
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Use any spare time to practise RTOs and single engine handling.

Objectives – Detail 9

- To introduce further complex failures and ECAM procedures:
 - Dual Pack Failure
 - Rapid Decompression
 - Avionics Smoke
 - Dual Engine Failure
- To practice GPWS recovery techniques.
- To practice emergency descents.
- To practice pilot incapacitation.

Standard Required on Completion**Handling**

- Aircraft handling during complex failures was safe.
- GPWS recovery was flown to a good standard.

Non-Handling

- Correct ECAM procedures were used.
- A good standard of normal SOPs was demonstrated.
- Appropriate calls were made during the windshear exercise.

Team Skills

- Interpersonal relationships: the crew remained calm under stress.
- Workload: tasks were shared effectively.
- Leadership / Followership: the crew acted decisively when required.
- DODAR was used effectively.

**Natural
Crew**

- Use normal SOPs: handover control for an approach.

**Non Natural
Crew**

- Manual approaches: operate non-SOP, do not handover control for an approach.
- To avoid confusion with callouts at MDA on non-SOP approaches - remember:
 - The HP calls 50 above/decide.
 - The NHP calls Land or Go-Around.
 - The HP retains control and completes the Landing or Go-Around.
- Automatic approaches: use normal SOPs - handover control.

Detail 9 – Sector 1&2

Briefing	Pilot A: P1	Geneva RW 23
Initial State	Engines running	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	25.5	52.0	8.0	59.7	27.0	1		

Initial Position	RW 23	Route	LSGG/EGLL DIJON SID FL90 return to LSGG
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ATIS	RW 23 180/10 80k 14/12 Sky Clear 1015	Clearance	DIJON Squawk 6016
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ATC	ATIS 135.57	GVA GND 121.75	GVA TWR 118.7	GVA RAD 131.325		
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Notes	Load route to LHR – practice destination change. Reposition sim clear of the Alps prior to emergency descents!
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P1: Pilot A

901. Quick set-up

*Trainees load route.**Instructor sets simulator ready for take off.*

902. Briefing

903. Take-off – DIJON SID

F/D			ATHR
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904. GPWS clean

JAR-FCL 3.4.10: GPWS

3.4.10		FPV		ATHR
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905. GPWS in landing configuration

JAR-FCL 3.4.10: GPWS

3.4.10		FPV		ATHR
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906. Emergency Descent entry technique

*Reposition to 35000' Slew simulator clear of Alps.**Demonstrate oxygen mask donning, 100% selection and purging.**Both pilots to practice HP and NHP initial entry duties.*

F/D		A/P	ATHR
-----	--	-----	------

907. AIR PACK 1 + 2 FAULT

ECAM actions and note leak rate.

F/D		A/P	ATHR
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908. Emergency Descent (non-structural) (B)

*Complete descent profile**Reposition to 35000'*

3.6.6	F/D		A/P	ATHR
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909. CAB PR EXCESS CAB ALT

Oxygen masks on. Establish communication

F/D		A/P	ATHR
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910. Emergency Descent (structural) (A)

JAR-FCL 3.6.6: Emergency descent*After completion of descent, Pilot B incapacitated*

3.6.6	F/D		A/P	ATHR
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911. Pilot incapacitation

JAR-FCL 3.6.7: Incapacitation of flight crew member

3.6.7	F/D		A/P	ATHR
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912. ILS

F/D		A/P	ATHR
-----	--	-----	------

913. Land

P1: Pilot B

914. Take-off DIJON SID

F/D		A/P	ATHR
-----	--	-----	------

915. GPWS clean

JAR-FCL 3.4.10: GPWS

3.4.10		FPV		ATHR
--------	--	-----	--	------

916. GPWS in landing configuration

JAR-FCL 3.4.10: GPWS

3.4.10		FPV		ATHR
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917. AVIONICS SMOKE

Advise crew of perceptible smoke.

JAR FCL 3.6.2: Smoke control and removal

3.6.2		FPV		
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918. ILS

	FPV		
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919. Land

	FPV		
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920. Take-off – DIJON SID

Reposition to 35000'

F/D		A/P	ATHR
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P1: Pilot A

The next item develops into a LOFT Consolidation Exercise (Pilot A).

A non-natural crew will need to swop seats.

921. Volcanic ash encounter

*Advise crew of previous aircraft encountering ash.
After 2 minutes.....*

3.6.8	F/D		A/P	ATHR
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922. ENG DUAL FAILURE

After the initial actions are complete allow relight of one engine then.....

LOFT Consolidation Exercise (Pilot A).

	FPV		
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923. Not used

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924. Land

F/D		A/P	ATHR
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Objectives – Detail 9a - TEPs Only

- To practice for the LST.
- To introduce Emergency Turns.
- To practice an Engine Fire at 600 feet.

Standard Required on Completion**Handling**

- LST standard was achieved.

Non-Handling

- Correct SOPs were employed.
- A sound knowledge of aircraft technical subjects was demonstrated.
- Correct ECAM procedures were employed.

Team Skills

- Team Skills were used effectively.
- Situation Awareness was maintained at a high level.

TEPs

- Manual approaches: operate non-SOP, do not handover control for an approach.
- To avoid confusion with callouts at MDA on non-SOP approaches - remember:
 - The HP calls 50 above/decide.
 - The NHP calls Land or Go-Around.
 - The HP retains control and completes the Landing or Go-Around.
- Automatic approaches: use normal SOPs - handover control.

Detail 9a – Sector 1

Briefing	Pilot A: P1	EDI 24
Initial State	Engines running	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	30.0	53.5	10.0	63.3	30.9	1		

Initial Position	Holding Point	Route	EGPH/EGBB Route 3 FL 270 BHX RW 15
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ATIS	RW 24 Wet 150/06 9k LTRN OVC 200ft 5/5 998	Clearance	DCS SID Squawk 5105
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ATC	EDI ATIS 132.075	EDI GRD 121.75	EDI TWR 118.7	SCOTISH 124.825	EDI RAD 121.2	
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Detail 9a – Sector 2

Briefing	Pilot B: P1	EDI 06
Initial State	Engines running	

DATA INIT	MAC	ZFW	FUEL	TOW	STAB	FLAP	PERF	FLEX
	30.0	53.5	10.0	63.3	.1DN	1		

Initial Position	Holding Point	Route	EGPH/EGBB Route 3 FL 270 BHX RW 15
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ATIS	RW 06 Wet 150/06 9k LTRN OVC 200ft 5/5 998	Clearance	DCS SID Squawk 5105
-------------	---	------------------	--------------------------------

ATC	EDI ATIS 132.075	EDI GRD 121.75	EDI TWR 118.7	SCOTISH 124.825	EDI RAD 121.2	
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P1: Pilot A

901a. Quick set-up for RWY 24

Trainees load route

Instructor sets simulator ready for take off

902a. Briefing

Commensurate with detail

903a. Takeoff – flameout and fire above V1

F/D			ATHR
-----	--	--	------

904a. Single engine ILS RW 24

Radar available after emergency turn

F/D			
-----	--	--	--

905a. Single engine go-around

F/D			ATHR
-----	--	--	------

906a. Single engine automatic ILS

F/D		A/P	
-----	--	-----	--

907a. Single engine landing

F/D			
-----	--	--	--

908a. Takeoff – engine fire and fail at 600ft –
emergency turn

Auto-pilot available

F/D		A/P	ATHR
-----	--	-----	------

909a. Single engine auto LOC/DME RW 24

Radar vectors after emergency turn

F/D		A/P	ATHR
-----	--	-----	------

910a. Single engine landing

F/D		A/P	ATHR
-----	--	-----	------

911a. Takeoff – flameout and fire below V1

F/D			ATHR
-----	--	--	------

912a. Evacuation.

P1: Pilot B

913a. Quick set-up for RWY 06

Trainees load route EDIBHX3

Instructor sets simulator ready for take off

914a. Briefing

Commensurate with detail

915a. Takeoff – Fire and flameout after V1

F/D			ATHR
-----	--	--	------

916a. Radar single engine ILS RWY06

Radar available after emergency turn

F/D			
-----	--	--	--

917a. Single engine go-around

F/D			ATHR
-----	--	--	------

918a. Single engine automatic ILS

F/D		A/P	
-----	--	-----	--

919a. Single engine landing

F/D			
-----	--	--	--

920a. Takeoff – Engine fire and fail at 600'

Auto-pilot available

F/D		A/P	ATHR
-----	--	-----	------

921a. Single engine auto LOC/DME RWY06

Radar available after emergency turn

F/D		A/P	ATHR
-----	--	-----	------

922a. Single engine landing

F/D		A/P	ATHR
-----	--	-----	------

923a. Takeoff – Fire and flameout before V1

F/D			ATHR
-----	--	--	------

924a. Evacuation

Objectives – Detail 10

To Complete the LST:

- Briefing /Pre-flight checks
- Engine fire/failures.
- Departure and Arrival procedures.
- Single engine flying.
- RTOs.
- Raw Data ILS.
- Incapacitation.
- Cargo Smoke.

**Natural
Crew**

- Use normal SOPs: handover control for an approach.

**Non Natural
Crew**

- Manual approaches: operate non-SOP, do not handover control for an approach.
- To avoid confusion with callouts at MDA on non-SOP approaches - remember:
 - The HP calls 50 above/decide.
 - The NHP calls Land or Go-Around.
 - The HP retains control and completes the Landing or Go-Around.
- Automatic approaches: use normal SOPs - handover control.

Detail 10

Briefing	P1 handling	FRA 25R
Initial State	Engines shutdown	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	33.0	58.5	6.2	58.0	32.7	1		

Initial Position	Remote hold taxiway A just short of F	Route	EDDF KIRN EGLL
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ATIS	RW 25R 200/12 800m FG SKY OB 1/0 1023 RVR 600/600/650 LVPs	Clearance	LHR KIRN SID Squawk 6712
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ATC	START 121.9	FRA GRD 121.8	FRA TWR 119.9	FRA DEPT 121.7	RADAR 120.15	FRA DIR 124.0
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Pilot B

1001. Pre-flight check and briefing

1				
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1002. Low visibility taxi

1.5				
-----	--	--	--	--

1003. Take Off

ENG Fire/Fail @ VR
Extinguishes after Agent 2

2.5.3	F/D			ATHR
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1004. Departure procedures

A/P available when at Green Dot Speed

3.9.1	F/D		A/P	ATHR
-------	-----	--	-----	------

1005. Radar vectors S/E ILS 25R

A/THR optional.

3.9.3.4	F/D			ATHR
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1006. Single-engine Go-around

4.3	F/D			ATHR
-----	-----	--	--	------

1007. Procedural S/E VOR/DME 25R

A/P available.

3.9.4		FPV	A/P	ATHR
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1008. Single Engine Landing

5.5		FPV		ATHR
-----	--	-----	--	------

1009. RTO

ENG Failure/Fire @ 130Kts

2.5.4	F/D			ATHR
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1010. Take Off

	F/D			ATHR
--	-----	--	--	------

1011. Raw Data ILS

3.9.3.1		FPV		ATHR
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1012. NHP Incapacitation at 500ft radio

3.6.7		FPV		ATHR
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Pilot A

1013. Low visibility taxi

1.5				
-----	--	--	--	--

1014. Take Off

ENG Fire/Fail @ VR
Extinguishes after Agent 2

2.5.3	F/D			ATHR
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1015. Departure procedures

A/P available when at Green Dot Speed

3.9.1	F/D		A/P	ATHR
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1016. Radar vectors S/E ILS 25R

A/THR optional.

3.9.3.4	F/D			ATHR
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1017. Single-engine Go-around

4.3	F/D			ATHR
-----	-----	--	--	------

1018. Procedural S/E VOR/DME 25R

A/P available.

3.9.4		FPV	A/P	ATHR
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1019. Single Engine Landing

5.5		FPV		ATHR
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1020. Take Off

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1021. SMOKE FWD (AFT) CARGO

Clear fault when extinguisher discharged.

3.6.2	F/D		A/P	ATHR
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1022. Raw Data ILS

3.9.3.1		FPV		ATHR
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1023. RTO

ENG Failure/Fire @ 130Kts

6.1	F/D			ATHR
-----	-----	--	--	------

1024. Evacuation

3.6.1	F/D			ATHR
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Documentation

- Complete TRANCOMM
- Complete **BOTH** LST/MPA (part one) Forms

Objectives – Detail 11

- To practice circuits.
- To land the aircraft using the correct technique.
- To introduce base training procedures.

Standard Required on Completion**Handling**

- Circuit work was flown to a good standard.
- The correct take-off and landing technique was demonstrated.

Non-Handling

- All non-handling duties were carried out to a good standard.

Team Skills

- Briefings: were open and interactive.
- Communications: all crew contributed to decision making.
- Preparation / Planning / Vigilance: the crew sought the big picture!

Detail 11

Briefing	Base Trainer LHS	SNN 24
Initial State	Engines shutdown	

DATA INIT	MAC	ZFW	FUEL	TOW	MAC	FLAP	PERF	FLEX
	25.0	43.0	18.0	60.8	26.6	1		

Initial Position	Remote hold	Route	EINN / EINN Circuit altitude 1550ft
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ATIS	RW24 200/10 CAVOK 15/10 1020	Clearance	Squawk 2525
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ATC	ATIS 130.95	GRD 121.8	TWR 118.7	APP 120.2		
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Notes	Use Day and Dusk Vary the wind - up to 15kt crosswind for TEPs, - as appropriate for other trainees. Use light and moderate turbulence. There is no mandatory requirement to fly approaches in manual thrust. There is no mandatory requirement to fly approaches without glideslope guidance.
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1101. Pre-flight check and briefing

1102. Taxi

180 turns

1103. Take-off

1104. Landings with autothrust and PAPIs

Flap Full and Flap 3

F/D			ATHR
-----	--	--	------

1105. Landings without PAPIs

Not mandatory

	FPV		ATHR
--	-----	--	------

1106. Landings without autothrust

Not mandatory.

	FPV		
--	-----	--	--

1107. Landings without A/T and without PAPIs

Not mandatory.

	FPV		
--	-----	--	--

1108. Go-arounds

	FPV		ATHR
--	-----	--	------

1109. Full stop landing

Minimum total landings: 6

Minimum landings without TI: 3

	FPV		ATHR
--	-----	--	------

Non ZFT.....

Check LST/MPA form completed correctly.

Check all necessary data entered on Course Completion Certificate.

Give trainee file to hand to next TC.

Remind trainee to carry licence and passport on all flights.

ZFT.....

Additionally, instruct trainee to take CCC to FTM - it will be faxed to CAA.

Unused Page