AIRBUS A319/320/321

Flight Scenario Q and A July 1, 2004 (Updated 5/23/05)

Prior to gate departure

1. The crew briefing sets the tone for a positive and safe working environment. What are the required crew brief items? (FOM 5.3)

The mandatory briefing items are:

- Statement of captain's focus on safety
- Stress open communications
- Necessary items from the Flight Operations Update

2. When you pick up your release, you notice the Speed Brake Control System is on MEL. Refer to the following MEL information to determine what actions are required on your part. (FOM 11.4)

MEL	ITEM	REPAIR			
27-0201	Speed Brake Control System	1	1	ALQUINED 0	
27-9201	Speed Blake Control System	L	L.	U	
May be inoperative Operations Procedure – Accomplish each flight					
 Refer to SF 	PAR (TL/GSP)				
	END		Revision D	ate 03/10/99	

What does the term "Refer to SPAR (TL/GSP)" in the MEL mean? (PH 4.2)

An MEL/CDL item containing "Refer to SPAR" indicates that the item has a performance adjustment (weight, speed, runway length, altitude, etc.) or W&B adjustment (CG, ZFW, cargo, loading, etc.). The T refers to a Takeoff performance adjustment, while the L is a Landing performance adjustment. The GSP is one of many three letter codes identifying the adjustment the dispatcher uses to calculate information in the TPS, TOW, and W&B data.

Your Flight Release and TPS do not document this MEL. Are they valid? (PH 4.2)

No. For MEL 27-9201 the MEL/CDL SPAR Table (PHB 4-4) has a three letter code of GSP. If the MEL/CDL has a three letter code in the table, ensure the code appears in the TPS Departure Plan and the Final TOW and W&B Message. If the code is <u>not</u> present in the TPS, call the dispatcher and do <u>not</u> use the existing TPS. An amended Flight Release is required when a change is made in MEL/CDL items.

3. (True or False) During the interior preflight inspection the first officer observes the three aircraft gear collars/pins are missing. According to the pilots handbook the flight may proceed if the crew ensures that all three gear collars/pins are removed from the landing gear. (PH 3.4)

True

4. During the captain's flow the PACK FLOW selector (A319/320) should be set to HI for <u>abnormally hot and humid conditions</u>. (PH 3.4)

PACK FLOW Selector (A319/320)

- LO: if number of pax is less than 50 or for long haul flights.
- HI: for abnormally hot and humid conditions.
- NORM: for all other operating cases.

ECON FLOW Selector (A321)

- ON: ECON FLOW if number of pax is less than 140.
- OFF: for normal flow

Note: If the APU is supplying bleed air for air conditioning, pack controllers select high flow (A319/320) or normal flow (A321) automatically, regardless of selector position.

5. The minimum oil quantity for dispatch is <u>12.5 quarts</u>. (PH 3.4)

6. If a Cargo Fire warning occurs on the ground with the associated cargo door open, notify <u>appropriate</u> <u>ground personnel</u> and do not discharge the cargo fire extinguisher. (PH 21, FOB 7-03)

7. (True or False) When conducting the oxygen mask check, warn any ground personnel whose headset may be connected to the nose intercom that a loud noise may be heard while the crew is performing the test. (PH 3.4)

True

8. The A/SKID & N/W STRG switch should be placed in the <u>OFF</u> position prior to pushback. The action is normally part of the <u>Captain's</u> flow. (PH 3.5)

Selecting the A/SKID & N/W STRG OFF ensures nosewheel steering remains disconnected throughout pushback even if the Nose Landing Gear Electrical Box fails.

9. (True of False) If NW STRG DISC is not displayed on ECAM, but the ground crew confirms the steering selector bypass pin is in towing position, pushback may be performed. (PH 3.5)

False

10. Target Arrival Fuel procedures are designed to help the <u>dispatcher</u> and flight crew establish a common baseline for determining the correct fuel necessary for each domestic flight. The VFR Target Arrival Fuel (No Alternate) is <u>5.600</u> lbs. for the A319, <u>5.900</u> lbs. for the A320, and <u>7.100</u> lbs. for the A321. (FOM/PH 3C/FOB 7-03)

11. When a digital computer behaves abnormally, the flight crew may be able to stop the abnormal behavior by interrupting the power supply to its processor for a short time (approx. 10 seconds). The "On the Ground Computer Reset" table is available in what section of the Pilot Handbook?

Section 3B – Supplemental Normal Procedures.

12. The Captain calls for the Before Start Checklist without completing the Departure Review. Is this acceptable? (FOM 4.4)

No - Checklist items should be accomplished before calling for the pertinent checklist.

13. (True or False) The A319/320/321 aircraft are authorized to takeoff and land on PHL Runway 17/35.

True. Refer to FIL 01-04.

14. Washington (DCA) ATIS states that departures are using runway 19. US Airways Departure Review procedures require a review of the expected taxi route. You anticipate using taxiways Kilo and Juliet. You note that there is a runway incursion hotspot at the intersection of taxiway <u>Mike</u>.

15. If a substance is causing unexplained widespread medical distress to passengers or crew, accomplish the <u>Dangerous Goods/Chemical/Biological Incident or Threat</u> procedure located in FOB 1-04.

16. (True or False) When departing KDCA, the flight crew should review the ENGINE FAILURE-TAKEOFF 10-7 page. It should be noted that the crew may use the USAIR01 FMS PROCEDURE, for both normal takeoff, and in an emergency after engine loss.

True. RNAV capable aircraft may utilize the FMS procedure.

Pushback and Taxi

1. (True or False) Selecting A/SKID & N/W STRG ON prior to receiving the "thumbs up" signal could result in injury to ground crews or damage to equipment. (PH 3.6)

True

2. Single engine taxi is our <u>normal</u> mode of operation. The remaining engine is started in time for it to be operated for <u>5</u> minutes prior to applying takeoff thrust. (PH 18.2, FIL 02-04)

Engine 2 must be started to provide at least 5 minutes for the engine to stabilize before applying takeoff thrust for the first flight of the day. For subsequent takeoffs plan for a 5 minute warm up for workload management; however, the warm up time may be reduced to 3 minutes.

3. During taxi operations in the normal mode of operation (single-engine) is it permissible to use engine anti-ice? (FIL 02-04)

Yes

4. The engine start on the number #2 engine was normal, but after starting engine #1 you receive the ECAM stating: <u>ENG</u> FADEC ALTERNATOR. The flight crew should? (PH)

Return to the gate and contact maintenance. Flight is <u>not</u> permitted.

5. During taxi, if icing conditions last longer than 30 minutes, or if significant engine vibration occurs, the crew should? (PH 3.6)

Accelerate the engine to approximately 70% N_1 for at least 30 seconds before operating at a higher thrust. If the airport surface conditions and congestion do not permit acceleration to 70% N_1 , then power setting and duration should be as high as practical. Prior to takeoff, accomplish a static engine run up to approximately 70% N_1 and check all engine parameters normal.

CAUTION: Do not exceed 75% N_1 (A319/320) or 70% N_1 (A321) on both engines with the parking brake ON.

6. During taxi, if the brakes grab or if the crew experiences braking/steering difficulty reset the BSCU. To reset the BSCU on the ground the crew would? (PH 3.7)

- Stop the aircraft and set the parking brake.
- Turn the A/SKID & N/W STRG switch OFF for approximately 5 seconds and then back to ON.
- Release the parking brake.
- Accomplish a brake check after the aircraft starts moving.

7. During taxi both pilots shall have the <u>airport diagram/taxi</u> chart in view and will crosscheck the chart against airport <u>displays and signage</u>. (FOM 5.5)

Minimize "heads down" time. The F/O will advise the captain when continuing with non-monitoring tasks.

8. The minimum visibility for taxi is <u>determined by the captain</u>. (FOM 5.5)

Taxi operations are authorized if the captain decides visibility is sufficient.

9. (True or False) During the FLIGHT CONTROLS check the F/CTL page is automatically shown when full sidestick is applied, hold full sidestick for sufficient time for full control surface travel to be reached, accomplish this check in a slow and deliberate manner. (PH 3.8)

True

10. Icing conditions exist on the ground and for takeoff when: (PH 2.6)

Ground and takeoff:

- Outside Air Temperature (OAT) is 10°C (50°F) or below **and**
- visible moisture in any form is present (i.e., clouds, fog with visibility of 1 mile or less, rain, snow, sleet, or ice crystals), or
- when operating on ramps, taxiways, or runways where surface snow, standing water, or slush may be ingested by the engines or freeze on engines, nacelles, or engine sensor probes.

In flight:

- Total Air Temperature (TAT) is 10°C (50°F) or below and
- visible moisture in any form is present (i.e., clouds, fog with visibility of 1 mile or less, rain, snow, sleet, or ice crystals).

Engine anti-ice operation:

- Engine anti-ice must be ON during all ground and flight operations when icing conditions exist or are anticipated (except during climb and cruise when the temperature is below -40°C SAT).
- Engine anti-ice must be ON prior to and during descent in icing conditions (including temps below -40° SAT).

Wing anti-ice operation:

- Select WING ANTI ICE ON after thrust reduction altitude
- Normally, WING ANTI ICE should be selected OFF at the FAF
- If in severe icing conditions, WING ANTI ICE may be left ON for landing

Wing anti-ice is not permitted on the ground or in flight when the TAT exceeds 10°C.

11. The ACARS fails during taxi-out prior to receiving your final Weight and Balance. First, you must comply with the <u>Discrepancy – After Dispatch Before Takeoff</u> procedure to determine if the flight can be continued. (FOM 5.4)

	Discrepancy – After Dispatch Before Takeoff		
Step	Action		
	Does the captain want to continue the flight?		
1	If no, goto Step 2		
	If yes, goto Step 3		
	Return for maintenance action.		
2	 Enter the discrepancy in the Maintenance Logbook. 		
	 Obtain a new/amended Flight Release, if appropriate. 		
2	Contact the controlling dispatcher via phone patch,		
5	relay through Operations, or ACARS to discuss flight issues.		
	Can the flight be safely executed?		
4	 If no, return to Step 2. 		
	If yes, goto Step 5		
F	Comply with any applicable MEL/CDL and		
5	supplemental/non-normal procedures		
	When time permits and not in a critical phase of flight		
6	 Enter the discrepancy in the Maintenance Logbook, and 		
0	 Send an ACARS message of the discrepancy using the 		
	procedures outline in FOM 5, "Mechanical Discrepancies In-Flight"		

12. If it is decided to continue and you have a valid TPS use form <u>OF-11B side 1 shaded items</u>.

13. As you taxi out, ATC advises there is a ground stop due to thunderstorms. What are the On Aircraft Delay guidelines when the aircraft is parked and the extended delay is projected to be 15 minutes or more? (FOM 5.3)

The captain will contact the controlling dispatcher and local station personnel, discussing viable options with passenger comfort as the primary goal. After conferencing with dispatch, station personnel, and his crew, the captain decides if the flight should return to the gate.

The flight crew will provide customers with updated delay status every 15-20 minutes. The announcement should include current status, reason for the delay, forecasted weather, ETD, and any other pertinent information (including if there is no new information).

14. When entering the runway: (FOM 5.6)

- Verify assigned runway by <u>whatever means available</u>.
- During low visibility and night operations slightly offset the aircraft <u>from runway centerline to avoid</u> <u>blending in with the runway lights.</u>
- Consider using <u>TCAS</u> to display approaching traffic.
- If holding in position for more than <u>90</u> seconds or upon seeing a potential conflict, contact ATC.

Takeoff and Climb

1. The main factors that result in tail strikes are <u>early rotation, over-rotation, excessive pitch, or some</u> <u>combination</u>. If either pilot observes excessive nose up attitude during landing the callout is <u>"PITCH"</u>. (PH 18.7)

2. What is the maximum crosswind for takeoff and landing? (PH 2.3)

29 knots

3. What is the maximum takeoff weight for the A319, A320, and A321? (PH 2.2)

Maximum Takeoff Weight		
A319	166,400 lbs	
A320	169,700 lbs	
A321	205,000 lbs	

4. If you receive a Predictive Windshear Advisory while aligned for takeoff the crew should: (PH 18.8)

Predictive Windshear Procedures				
	ADVISORY	CAUTION	WARNING	
INDICATIONS:			·	
ND	Windshear icon			
PFD		<u>Amber</u> W/S AHEAD	<u>Red</u> W/S AHEAD	
AURAL	(N/A)	"MONITOR RADAR DISPLAY"	"WINDSHEAR AHEAD" (Twice on takeoff) "GO AROUND WINDSHEAR AHEAD" (On approach)	
PHASE OF FLIGHT:				
Aligned for Takeoff	Delay the takeoff until the alert no longer exists.			
Prior to V1	TOGA. <u>Continue</u> the takeoff	Reject the takeoff if sufficient runway remains.		
At or Above V1	 TOGA Rotate no later than 2,000 feet of runway remaining Follow SRS commands Retract gear and flaps on schedule If a PWS Warning occurs – roll wings level <u>unless terrain is a factor</u> in order to maximize aircraft performance. 			
During Approach	<u>Continue</u> the approach	 Execute a normal <u>go-around</u> using TOGA thrust. Retract gear and flaps on schedule. If a PWS Warning occurs – roll wings level <u>unless terrain is a factor</u> in order to maximize aircraft performance. 		

In all cases, notify ATC and if windshear is encountered, as evidenced by the Reactive Windshear aural warning "WINDSHEAR, WINDSHEAR, WINDSHEAR" and red WINDSHEAR message on both PFDs, initiate windshear recovery maneuver.

5. If the decision is made to discontinue the takeoff the captain will callout <u>"REJECT"</u>. The first officer will: (PH 18.3)

- Divert his attention to airspeed and speed trend line (Ensure the speed trend line indicates deceleration).
- Advises the control tower of the rejected takeoff and intentions, when able.
- Informs the flight attendants and passengers of the situation, via the PA, in a timely manner.

6. Prior to takeoff, the final weight and balance shows the need for an APU BLEED ON TAKEOFF. If your aircraft's APU has been placed on MEL and is out of service you should: (PH 3b.7.6)

If the APU Bleed System is inoperative:

Before takeoff a. PACK 1 and 2 ... OFF After thrust reduction: b. One PACK ... ON After flap reduction: c. Other PACK ... ON

7. (True or False) After takeoff your aircraft experiences a non-normal indication with the landing gear, the crew should recycle the gear and if the problem still persists reference the QRH. (FOM 7.2, FIL 11-3)

False - Crewmembers will follow the non-normal procedures located in the QRH or electronic checklist to cope with or contain non-normal situations.

8. While accomplishing QRH "confirm" checklist items, the PF guards the operative control or switch and states <u>"CONFIRMED</u>" when ready for the action to take place. (FOM 7.2)

9. When a TCAS RA occurs, the PF _____. The PM _____ (PH 18, FIL 01-04).

PF	РМ			
 Respond promptly and smoothly to an RA. AUTOPILOT - OFF "FLIGHT DIRECTORS - OFF" Adjust vertical speed as required to remain within the green area of the vertical speed scale. Respect stall, GPWS, or windshear warning. 	 Select Both FDs OFF Notify ATC Verify all actions have been completed and coordinate with PF to accomplish omitted items 			
Attempt to see the reported traffic.				

10. Pilot response to an RA should be immediate, even if the action conflicts with <u>an ATC clearance</u>. (FOM 12.2)

Cruise and Descent

1. (True or False) Pilots will be proficient operating in <u>all</u> levels of automation. Pilots are authorized to choose what they believe to be an appropriate level of automation. (PH 18.1)

True

Note: Use of the A/THR system is required unless a non-normal situation exists.

2. Acknowledge all clearances with a <u>complete readback</u> including your full call sign. If there is anything other than total agreement by both pilots during the verification process (altitude awareness, ECAP, or any ATC clearances) <u>contact ATC immediately</u> to resolve the conflict. (FOM 4.10, PH 18.4)

3. In addition to CRZ altitude, the PROG page displays optimum (OPT) and recommended maximum (REC MAX) altitudes. REC MAX altitude provides <u>1.3</u> g protection. (PH 18.4)

The recommended maximum altitude based on present GW and deviation from ISA. It gives the aircraft a 0.3g buffet margin, a minimum rate of climb at MAX CL thrust, and level flight at MAX CRZ thrust. It is limited to FL 390. With an engine out, it shows the recommended maximum EO altitude, computed for long-range cruise, antiicing off.

The optimum flight level indicates the most economic flight level for a given cost index, weight, and weather data and is continuously updated in flight. It is a compromise between fuel and time saving, and may show steps due to slight GW, ISA, or wind changes. As a consequence, the pilot may observe jumps in optimum flight level.

4. (True or False) Before changing the filed route significantly (e.g., 10 minutes after departure from SFO ATC offers direct PHL) coordinate with the dispatcher. The revised route can be analyzed in SABRE to determine if it is beneficial. (PH 3C, FOM, FIL 01-04)

True

5. Flight attendants will employ the basic fire fighting guidelines in the <u>Flight Attendant Emergency</u> <u>Manual</u> to combat a fire. This manual states that any fire inside the aircraft must be aggressively located and fought. One flight attendant will maintain continuous communication via cabin interphone with the flightdeck. (FOM 7.11)

Note: Pilots should not leave the flightdeck to fight a fire.

6. When an in-flight fire is discovered the QRH "Smoke" procedure must be accomplished immediately. The flight crew's main task is to <u>Land</u> as soon as possible unless the source has been positively identified and is no longer a threat. (QRH 42)

7. (True or False) If a fuel boost pump C/B trips in flight, it is permissible for the crew to try one and only one C/B reset. (PH 2.7)

False

WARNING: Do <u>not</u> reset a tripped C/B for any fuel boost pump. If all fuel boost pumps fail, use the GRAVITY FUEL FEEDING procedure in the QRH.

8. What is the maximum landing gear extension altitude? (PH 2.10)

25,000 feet

9. During cruise the crew should periodically review system display and check: (PH 3.10)

- ENG Oil pressure and temperature
- BLEED BLEED parameters
- ELEC Parameters, GEN loads
- HYD Quantity and pressure (Fluid contraction during cold soak can be expected. A slight decrease in quantity is normal. Following landing gear retraction, green system quantity is lower than on the ground)
- FUEL Fuel distribution
- COND Duct temperature compared with zone temperature (Avoid large differences for pax comfort)
- DOORS Oxygen pressure
- FLT CTL Control surfaces (note any unusual position of control surfaces)

10. If a TCI (Tactical Cost Index) has not been received and the flight is projected to be over 10 minutes early should the crew adjust the cost index? (PH 3c)

The crew may adjust airspeed, altitude, or route of flight to maximize cost savings where possible. The dispatcher can help in this assessment.

- If the ETA is more than 10 minutes early, operate the flight so as to minimize fuel consumption, while ensuring that the flight will arrive at or before the scheduled arrival time.
- If the ETA is within 5 minutes of the scheduled time, adhere to the flight plan.

The best method to reduce airspeed in all flight phases is by reducing the cost index. Reduce the cost index gradually to allow the FMGC to recalculate the ETA and EFOB at the destination. This way, the crew can compare ETAs and fuel consumptions.

11. The Captain should contact the <u>controlling dispatcher</u> prior to diverting. Normally ATC will not relay this information. (FOM 7.16)

12. A FAULT in the PACK 2 p/b indicates: (PH 10.4)

Comes on AMBER, and a caution appears on ECAM if:

- The pack flow control valve position disagrees with selected position, or
- Compressor outlet overheat, or
- Pack outlet overheat

13. The FAIL light on the ATC Transponder indicates: (PH 13.4)

The selected transponder has failed.

14. On the MCDU PROG page if the UPDATE AT is selected or an entry accidentally made the crew should: (PH 17.6)

Select another mode key to clear the entry.

15. Enroute to Los Angeles you are given the clearance to descend via the Paradise arrival. Descend via authorizes the pilot to: (FOM 5.9)

Navigate vertically and laterally, in accordance with the depicted procedure, to meet published restrictions. Vertical navigation is at pilot's discretion; however, adherence to published altitude crossing restrictions and speeds is mandatory unless otherwise cleared.

Approach and Land

1. If upon arrival at a domestic airport, no delays can be accepted due to fuel considerations, the Captain should declare <u>Minimum Fuel</u> status. This does not establish or imply a need for priority handling, but indicates little or no delay can be accepted. If the remaining usable fuel supply suggests the need for traffic priority to ensure a safe landing, you should declare an emergency due to low fuel and report <u>estimated minutes of fuel remaining</u>. (FOM 7.17)

2. If not stabilized by <u>1,000</u> AFE in IMC, the first pilot recognizing the unstable condition calls <u>"UNSTABILIZED"</u> and the PF performs the go-around. In VMC, compliance with stabilized approach parameters, except rate of descent, may be delayed until <u>500</u> AFE if the deviation is verbalized. (FOM 5.10)

3. (True or False) The VOR approach procedure is nearly identical to the RNAV approach procedure. One difference is on the VOR approach there is NO need/requirement to enter an RNP value. (PH)

True

4. (True or False) A NAV accuracy downgrade on a VOR approach requires an immediate missed approach. (PH)

False

5. What is the maximum allowable raw data deviation on the final approach course on a VOR approach? (PH)

Once established inbound on the approach a go-around must be executed if the raw data (VOR needle) indicated on the ND differs by more than $+/-5^{\circ}$ from the charted inbound approach course(except for station passage).

6. On a VOR approach with a published MDA of 660' and a note which states "only authorized operators may use VNAV DA(H) in lieu of MDA (H)", the pilots should enter <u>660</u> in the MDA field on the PERF page of the MCDU. (PH)

- RNAV (LNAV/VNAV) approaches have a published DA.
- RNAV (LNAV only) and VOR approaches have a published MDA. If a non-precision approach contains a
 VNAV path but has a published MDA, a DA <u>must</u> be calculated by adding 50 feet to the published MDA.

If the approach procedure specifies "Only authorized operators may use VNAV DA(H) in lieu of MDA(H)", the MDA(H) value provided should be entered into the FMGC PERF APPR Page MDA field.

7. (True or False) It is permissible to fly a VOR approach single engine. (PH)

True – If both APs have failed, and/or an engine has failed, a manually flown FD RNAV/VOR approach is permitted if an ILS approach is not available.

8. When landing in an Airbus A321 in moderate to severe icing conditions what is the required flap setting for landing? (PH, FIL 09-03)

Note: The A321 Approach and Landing Roll Control restriction has been removed with the completion of ELAC modification.

9. (True or False) When speedbrakes are deployed, extending the flaps beyond FLAPS 1 may induce a roll. 5 to 7 degrees of roll is not unreasonable. (PH 18.6)

True

10. The Airbus A319/320/321 is equipped with a Low Energy Warning Function. The aural warning SPEED, SPEED, SPEED is triggered every 5 seconds whenever the aircraft energy goes below a threshold under which thrust must be increased to recover a positive flight path angle. The pilot's response to the SPEED, SPEED, SPEED voice would be to: (PH 18)

THR LEVERS ... PUSH Increase the thrust until the warning disappears.

11. During ILS PRM approaches, if the controller's instructions include vertical guidance that conflicts with RA vertical guidance, the pilot should: (PH 18.6)

Follow the RA vertical guidance while complying with the controller's lateral instructions.

12. On an RNAV approach, after the final approach fix, if the vertical speed exceeds 1,000 fpm, the PF should: (PH 18.6)

Go-around

13. Position orientation and energy management are critical to a stabilized visual approach. At 10 nm flying distance from the end of the runway the aircraft should be configured at: (PH 18.6)

- 15 nm Flaps 1
- 10 nm Gear down
- 7 nm Flaps 2
- 3 nm Final flaps set

14. What is the purpose of the flare mode on the Airbus aircraft? (PH 12.1)

Transition to flare mode occurs at 50' RA during landing. The system memorizes the pitch attitude at 50' and then begins to progressively reduce pitch, forcing the pilot to flare the aircraft. In the event of a go-around, transition to flight mode occurs again at 50' RA.

15. A red Autoland Warning Light will illuminate when: (PH 14.1)

The following situations, when occurring below 200' RA with the aircraft in LAND mode, trigger the flashing AUTOLAND red warning, and a triple-click warning:

- Both APs OFF below 200' RA
- Excessive deviation in LOC (1/4 dot above 15' RA) or GLIDE (1 dot above 100' RA). In addition, LOC and GLIDE scales flash on the PFD.
- Loss of LOC signal (above 15' RA) or loss of GLIDE signal (above 100'). In addition, FD bars flash on the PFD. The LAND mode remains engaged.
- The difference between both radio altimeter indications is greater than 15'.

Go-Around is mandatory during a CAT II/III approach if AUTO LAND caution light illuminates during the approach.

16. PHL weather is 360/20G30 3R OVC1100. RWY 27 BRAF B737. The runway is wet. The X-wind guidance is _____. (QRH OD)

The max crosswind is 15 knots.

17. Use of MED AUTO/BRK should be limited to: (PH 3.12)

Use the autobrake when operating in any of the following conditions:

- Short or contaminated runway
- Operations in low visibility
- High crosswinds

The captain will determine the type and level of braking to use. The following is provided as selection criteria:

- OFF To be used for bare and dry runways where landing distance is not a factor
- LO To be used when moderate deceleration is required
- **MED** to be used for contaminated runways or when landing distance is a factor
- MAX not to be used for landing

18. The Airbus Windshear Detection System is available on takeoff from liftoff to $\underline{1,300}$ feet, and on approach from $\underline{1,300}$ feet to $\underline{50}$ feet, in flap configuration 1 or greater. (PH 14.1)

19. You have captured the localizer and glide slope for LGA Runway 13. You contact the tower as you descend through 3,000 feet. Tower advises TDZ RVR is 2,000. Can you continue the approach? (FOM 5.10, Introduction to Jeppesen pages 5, 110, 111)

No

Prior to the Final Approach Fix or the Final Approach Segment – Do not continue an approach past the final approach fix; or where a FAF is not used, begin the final approach segment of an instrument approach procedure; if the reported visibility is less than the required visibility for that approach.

On Final Approach Segment Prior to MDA or DA(H) – If established on the final approach segment of an instrument approach procedure and the reported visibility is less than the required visibility for that approach, then the pilot may continue to the MDA or DA(H).

20. A takeoff or landing with windshear conditions reported or expected should not be attempted if severe weather cannot be avoided by a minimum of three nautical miles horizontally when the aircraft is at or below <u>1,000</u> feet AGL. (QRH OD-4)

21. (True or False) If the flight crew elects to increase approach speed for convective conditions it should be known that an additional 20 KIAS (maximum of VLS + 15 for Airbus) at touchdown can increase stopping distance as much as 25%, and in some cases may exceed brake energy limits. (QRH)

True

22. If the flight crew encounters a windshear on approach the callout by the PF would be <u>"WINDSHEAR</u> <u>TOGA"</u>. (PH 18.8)

23. You have been given a predicted wind shear on landing. The maximum increased approach speed would be $V_{LS} + 15$. (QRH)

24. (True or False) During a windshear encounter, or in recovery from an unusual attitude it is perfectly acceptable to use aggressive, full, or nearly full opposite rudder pedal inputs. (PH 18.12)

False. Aggressive, full, or nearly full opposite rudder pedal inputs must not be applied. Extreme inputs applied during any flight condition can impose high stress loads resulting in structural damage or failure. The rudder travel limiter system is not designed to prevent extreme rudder pedal inputs from resulting in structural damage or failure.

Recovery from stalls, wake vortices, windshear, or unusual attitudes require immediate and precise pitch and roll inputs, however the use of large rudder inputs is not recommended nor necessary for recovery. A rudder input is never the preferred initial response for these events.

25. After touchdown the PF encounters a loss of braking. The PF should: (PH 18.14)

Initiate the Loss of Braking Procedure:

IF AUTOBRAKE IS SELECTED:

BRAKE PEDALS ... PRESS

IF NO BRAKING AVAILABLE:

- REV ... MAX
- BRAKE PEDALS ... RELEASE
- A/SKID & N/W STRG ... OFF
- BRAKE PEDALS ... PRESS
- MAX BRK PR ... 1000 PSI

IF STILL NO BRAKING:

• PARKING BRAKE ... SHORT AND SUCCESSIVE APPLICATION

26. Many times a go-around occurs at an altitude where TOGA thrust is not needed. When using the Climb Thrust During Go Around, the thrust levers may be retarded to the CL detent during the go-around but only after: (PH 18.6)

This would be accomplished only after verifying that MAN TOGA | SRS | GA TRK is annunciated on the FMA.

<u>Taxi to gate</u>

1. After landing the flight crew observes a BRAKES HOT ECAM message. The flight crew should know: (PH 3.15)

Brake fans selection should be delayed for a minimum of 5 minutes or just prior to the turn into the gate area, whichever occurs first.

2. (True of False) It's important to not select brake fans "ON" if any ground personnel are in the area of the wheel wells. (PH 3.15)

True

CAUTION: Do <u>not</u> select brake fans ON if any ground personnel are in the area of the wheel wells. If a BRAKES HOT ECAM occurs after gate arrival, coordinate with ground crew before turning brake fans on.

3. What is the maximum taxi speed? (PH 18.2)

Do not exceed 30 knots on straight tracks and limit speed to approximately 10 knots in turns.

4. After landing, Engine #2 should be shutdown after completing the <u>After Landing Checklist</u>, but not sooner than <u>1</u> minute(s) after reverser operation.

Caution: Airplane must be taxied with no braking or steering inputs or stopped with the parking brake set during engine start or shutdown. Unwanted steering and/or braking response may occur during electrical power source transfer.

(Please refer to the Introduction section of Volume 2 of your Jeppesen manual to answer the following airport signage questions.)

5. If you are cleared on taxiway A to the runway you should <u>continue straight ahead</u> when approaching this sign.

6. As you continue on Taxiway A, you observe a red sign with "4-APCH" in white. Adjacent to this sign are parallel yellow dashed lines and parallel solid yellow lines painted on the taxiway. This indicates that you are:

At a holding position in an approach area.

7. Chevron markings painted prior to the threshold indicate a surface that is <u>unusable</u> for use by aircraft.

8. When taxiing onto the runway you see a sign with yellow numbers and a yellow border with a black background. This sign contains the designation of the <u>runway</u> on which the aircraft is located. These signs are intended to complement the information available to pilots through their <u>magnetic compass</u> and typically are installed where the proximity of two or more runways to one another could cause pilots to be confused as to which runway they are on.

9. In the Approach Chart Additional Runway Information section, you see "CL" for the runway you are landing on. This means you will see alternating red and white lights between <u>3,000 to 1,000</u> feet from runway end and <u>red</u> lights for the last <u>1,000</u> feet.

ADDITIONAL MEMORY LIMITATIONS

OPERATION LIMITS					
Structural Weight Limits	A319	A320	A321		
Maximum Takeoff	166,400 LBS	169,700 LBS	205,000 LBS		
Maximum Landing	137,800 LBS	142,200 LBS	171,500 LBS		

Maximum 90 degree crosswind component (including gusts) for takeoff and landing: **29 knots** Maximum 90 degree crosswind component (including gusts) for CAT II/III approaches: **15 knots** Limiting tailwind component for takeoff: **15 knots**; landing: **10 knots** Maximum operating altitude: **39,000 feet**

SPEED LIMITS

Maximum operating airspeed (V_{MO}): **350 KIAS** Maximum operating mach number (M_{MO}): **0.82M** Maximum gear extension speed (V_{LO}): **250 KIAS** Maximum gear retraction speed (V_{LO}): **220 KIAS** Maximum gear extended speed (V_{LE}): **280 KIAS/0.67M**

Maximum Flaps/Slats Extended Speeds (V_{FE})						
FLAPS	FLAPS 1 1+F 2 3 4					
A319/320 V _{FE}	230 KIAS	215 KIAS	200 KIAS	185 KIAS	177 KIAS	
A321 V _{FE}	235 KIAS	225 KIAS	215 KIAS	195 KIAS	190 KIAS	

Turbulence Penetration Speeds	A319/320	A321
At or above 20,000 feet	275 KIAS/.76M	300 KIAS/.76M
Below 20,000 feet	250 KIAS	270 KIAS

ICE & RAIN PROTECTION

Engine Anti-ice ON when OAT (Ground) / TAT (Flight): **10 degrees C or below** (except during climb and cruise when the temperature is below -40 degrees C SAT)

Engine anti-ice must be ON prior to and during descent in icing conditions (including temperatures below -40 degrees C SAT)

FUEL

Usable Fuel Tank Quantity				
	A319/320 A321			
Wing Tanks	27,500 lb	27,500 lb		
Center Tank	14,500 lb	14,500 lb		
ACT	-	10,500 lb		
TOTAL	42,000 lb	52,500 lb		

Maximum allowable fuel imbalance between the left and right wing tanks (A321), inner tanks (A319/320): **2,500 lbs**

Maximum allowable fuel imbalance between left and right outer wing tanks (A319/A320): 1,000 lbs

HYDRAULICS, BRAKES, & LANDING GEAR

Maximum landing gear extension altitude: **25,000 feet**

FLIGHT CONTROLS

Maximum operating altitude with slats, or flaps and slats extended: 20,000 feet

AUTO FLIGHT SYSTEM

Autopilot Engaged – Minimum Height: **100 feet AGL** After Takeoff (if SRS is indicated)

Maximum Winds for Automatic Approach, Landing, and Rollout		
Headwind	30 knots	
Tailwind	10 knots	
Crosswind other than CAT II/III	20 knots	

POWERPLANT

Minimum oil quantity for dispatch: 12.5 quarts

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