



U·S AIRWAYS

NAME: _____

EMPLOYEE NO: _____

BASE: _____

PHONE NO: _____

If you are unable to report to simulator as scheduled:

Simulator Scheduling is available 7 days a week. The office hours are Monday through Friday from 0700 to 1730, and Saturday/Sunday from 0800 to 1630. Simulator Scheduling can be reached by calling the Pilot Call Distribution Network at 800-872-7456, prompts 1-3-1, then follow the prompts for the appropriate scheduler. After normal business hours, call the Pilot Call Distribution Network at 800-872-7456, and utilize prompts 1-3-1-5.

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Welcome Back to Airbus Flight Training!

You will soon be attending Airbus A319/320/321 Recurrent Simulator Training. This is an important and valuable continuation of your Airbus Flight Training and an excellent opportunity to share information about the operation of our Airbus A319/320/321 aircraft. Our Flight Training Department is totally committed to safety, standardization and the support of you, the line pilot, with the best training possible.

Every minute of simulator time is extremely valuable and cannot be wasted. To ensure that we maximize this training opportunity, both the Check Airman and the pilot must arrive prepared. In the weeks prior to your training date, please do your part by reviewing this handout, your Pilot's Handbook and the Flight Operations Manual.

This guide was designed to aid US Airways pilots in preparation for Proficiency Checks (PC), Proficiency Training (PT) and Recurrent Loft (RLF) simulator events. The contents herein include a listing of all required maneuvers as defined by FAR 121, Appendix F.

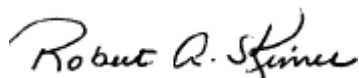
There is a description of required maneuvers and sample oral review questions. A sampling of questions from this list will be asked during the briefing session. In addition, pilots must possess a thorough knowledge of aircraft limitations, systems, procedures, profiles, the Flight Operations Manual (FOM), and the use of the Quick Reference Handbook (QRH). Recent policy and procedure changes, Flight Operations Bulletins (FOB), and Flight Information Letters (FIL) will also be discussed during the briefing session. This guide is presented as a reference, and nothing herein is intended to supersede FARs, the Pilot's Handbook, or the Flight Operations Manual. Should a conflict exist, Company manuals will always take precedence.

The simulator event will consist of a 1½-hour briefing period, 4 hours in the simulator covering two sessions, a break, and a debriefing session.

Our training program is constantly evolving and seeking to reach new levels of excellence. This can only be accomplished through your continued input. You are the true experts of the day-to-day operation of this aircraft. Please list any questions and/or suggestions on the attached Pilot Survey Form. If your questions cannot be addressed during the training session, your form will be forwarded to my office and a response will be returned to you.

Recurrent Training is an important part of your professional development and continuing education as a pilot. We look forward to seeing you again in Charlotte.

Respectfully,



Captain Robert A. Skinner
Fleet Captain,
Airbus

AIRBUS A319/320/321 FLIGHT SIMULATOR PROFICIENCY CHECK, PROFICIENCY TRAINING & RECURRENT LOFT GUIDELINES

Based on FAR 121, Appendix F

PREFLIGHT BRIEFING & ORAL EXAMINATION

The briefing conducted prior to a PC, PT or RLF is scheduled for one hour and thirty minutes. A briefing and debriefing is a requirement for all PC, PT and RLF sessions.

FAR 121, Appendix F, requires the briefing to include, (1) subjects requiring a practical knowledge of the airplane, its power plants, systems, components, operational and performance factors; (2) normal, non-normal, supplemental-normal procedures, and the operations and limitations relating thereto; and (3) the appropriate provisions of the approved airplane flight manual. This comprehensive listing requires Check Airman discretion in order to satisfy this requirement.

In addition, our FAA approved training program also requires the briefing to include a discussion of maneuvers and procedures to be accomplished during the session. This discussion need not include every item and maneuver; in fact, pilots shall not depend on such advance briefing to familiarize themselves with maneuvers that will be accomplished. A sufficient briefing will inform the pilot(s) what is expected and will determine if they have a satisfactory level of knowledge regarding procedures.

The briefing is not designed to be a lecture period for the Check Airman but will include two-way communications with the pilot(s) throughout. Recent policy/procedure changes and accident/incidents in the industry and Company bulletins will be discussed.

The debriefing period will consist of a review of the session, emphasizing the positive aspects as well as reviewing any deviations from policy or procedure. The debriefing shall encourage participation by all and should serve to answer any questions from the pilot(s).

LINE ORIENTED FLIGHT TRAINING (LOFT)

LOFT is a training session flown in real time by a standard crew complement on representative flight segments. It combines technical and human factor skills in an operational environment to allow crews to improve their performance. This provides invaluable training for addressing normal and non-normal situations in actual line operations.

There are currently two different LOFT programs at US Airways: the Qualification LOFT and the Recurrent LOFT (RLF). Qualification LOFTs are required for crews completing Initial Training on an aircraft not previously flown. Recurrent LOFTs are completed annually by all crewmembers. The RLF fulfills the requirements for a Captain's Proficiency Training (PT), and a First Officer's CRM training.

QUALIFICATION LOFT

Qualification LOFTs provide crews with an opportunity to practice their newly acquired skills in a line environment. Frequently, these LOFTs involve flights to three different airports, and include normal and non-normal operations. This training is intended to be uninterrupted; although, in certain cases Check Airmen may intervene to meet instructional objectives.

RECURRENT LOFT (RLF)

The RLF is designed to heighten awareness of the important role human factors play in line operations, as well as to accomplish recurrent training as required by FARs. The RLF consists of a series of SPOTs (Special Purpose Operational Training), SET (Selected Events Training), a LOFT leg, and supplemental training.

During the LOFT leg, the Check Airman represents the roles of flight attendant, gate agent, ground crew, ATC, maintenance, etc. They are not permitted to interact with the crew in an instructional capacity. During the SPOTs, SET, and supplemental training, the Check Airman will provide instruction.

Proficiency must be demonstrated on all required maneuvers presented during a Recurrent LOFT.

SPECIAL PURPOSE OPERATIONAL TRAINING (SPOT)

A SPOT is designed to achieve a specific training objective. It does not necessarily begin with a takeoff or end with a landing. Repetitive windshear training, rejected takeoffs, engine failures during takeoff, etc., can be presented in a SPOT format. Crews are provided the advantages of repetitive training with full interaction of their Check Airman.

SELECTED EVENTS TRAINING (SET)

SET events are those identified by the industry as timely and significant. Some of these events include: unusual attitude recovery, high angle of attack maneuvering, engine failure at low altitudes and low airspeeds, CFIT (controlled flight into terrain) training, PRM approach training, etc.

SUPPLEMENTAL TRAINING

Supplemental training is additional training beyond that which is required by the FARs. Your Check Airman can conduct the supplemental training already scripted in his/her RLF syllabus or time permitting, provide other training requested by the crew.

RECURRENT LOFT STRUCTURE

Following the briefing, your Check Airman will introduce a series of SPOTs. Prior to commencing the SPOTs, the Check Airman will position the simulator on an intercept heading for final approach to the ILS 16R at KSEA. The aircraft will be configured for a CAT III ILS approach, the approach preparation, approach briefing, and Preliminary Landing Checklist will be completed prior to commencing training. Check Airmen are permitted to interact with crews during SPOTs.

The LOFT leg will be conducted during the last portion of the simulator session. This sequence is designed to enhance the LOFT debriefing. After the LOFT leg, there may be time remaining for supplemental training. This training will afford First Officers an opportunity to practice selected maneuvers, and/or provide the crew with exposure to requested profiles.

Crewmembers work together to resolve operational challenges presented during the session. A videotape is used to assist in debriefing the LOFT leg in order to obtain maximum benefit from the session. These tapes are erased immediately following the debriefing, so no record of them is retained.

The debriefing is central to the learning process. Crews are expected to critique the session. The ultimate goal is to apply lessons learned to line operations.

RECURRENT LOFT DURATION

Four hours of training are required to meet the objectives of a Recurrent LOFT. The time spent briefing and debriefing is in addition to the four hour period.

PREPARATION FOR THE RECURRENT LOFT

Preparation for the RLF is the same as preparation for every line operation. Review the Pilot Handbook and the FOM. Additionally, the following list addresses some of the subjects that will be emphasized during the session:

FOM	FOBs	
	CH 4	Monitoring responsibilities
	CH 5	Departure review
		Low visibility taxi
		Takeoff briefing
		Turns below 400 feet
		Stabilized approach
	CH 7	Engine failure during takeoff
	CH 10	SWAP and CDR procedures
	CH 12	TCAS

PREPARATION FOR THE RECURRENT LOFT (Continued)

PH FILs
 CH 3 Single engine taxi
 CH 4 MEL and SPAR procedures
 TPS Departure Plan Training Aid
 CH 18 ASR approaches
 Windshear
 CFIT/EGPWS
 TCAS

QRH Fuel Imbalance.
 Fuel Leak
 Gravity Fuel Feeding
 OPS Data Section

Monitoring Section

RLF-G Document Package

Pre Departure

1. During the exterior aircraft inspection, ensure that the Fan Cowl Doors are:
PH 3.1.2

2. During the exterior aircraft inspection, the green disk associated with the crew oxygen system is missing. What does this signify?
PH 15.1.2

3. During preflight of the air conditioning panel, select the PACK FLOW selector (319/320) – LO when the number of passengers is less than ___ or during _____. Select the ECON FLOW selector (A321) – ON when the number of passengers is less than ____.
PH 3.4.1

4. Is it permissible to use external (LP) conditioned air simultaneously with the air conditioning packs?
PH 2.9.3

5. During preflight of the electrical panel during the Originating flow, select BAT 1 and BAT 2 pushbutton switches OFF then ON. Ten seconds after selecting ON, check on the ECAM ELEC page both battery charge currents are below ___ amps and _____.
PH 3.4.1

6. Name the three hydraulic systems and describe how they are powered.
PH 11.1

7. During preflight panel preparation of the ECAM control panel, press the RCL pushbutton for at least 3 seconds to recall any warnings that have been cleared or cancelled. What action should be taken if an ENG TYPE DISAGREE message is displayed?
PH 21.1.4
8. While at the gate with the aft cargo door open, the crew receives an ECAM, SMOKE AFT CARGO SMOKE. Should the crew initiate AGENT DISCHARGE?
PH 21.1.4
9. What occurs when the Radio Management Panel (RMP) NAV key is engaged?
PH 13.4.4
10. During Automatic Flight Plan Initialization, what action should be taken as soon as the CRZ field changes from dashes to amber boxes?
PH 3.4.1
11. If a fuel boost pump circuit breaker trips, is reset permitted?
PH 2.7.2
12. When the APU ECAM page LOW OIL LEVEL message appears, the remaining oil quantity permits normal APU operation for how many additional hours?
PH 2.14.9
13. When validating TPS, the actual altimeter setting can be no lower than TPS QNH minus _____.
PH 4.5.2
14. When validating TPS, if the actual OAT is above the TPS TEMP, when can the data in the THRUST/V-SPEED Section still be used?
PH 4.5.2

15. A Domestic VFR Target Arrival Fuel (No Alternate) has been established and is based on maximum landing weight, no destination alternate, no expected delays, and landing with 75 minutes of fuel. This target arrival fuel is _____ lbs for the A319, _____ lbs for the A320, and _____ lbs for the A321.

FOB 02-03

16. If there is a dangerous goods spill at your gate, do not take chances or risk exposure. Alert _____ and expedite the movement of _____.

FOM 7.28.1

17. Upon arrival at the aircraft, maintenance advises that they have been trying to repair SEC 3 but will have to MEL the system. Refer to the following MEL information to determine the actions that are required by the flight crew.

FOM 11/PH 4.3

MEL	ITEM	REPAIR CATEGORY	QUANTITY INSTALLED	MINIMUM REQUIRED
27-9401	Spoiler Elevator Computer 3 (SEC 3)	B	1	0
<p>May be inoperative provided:</p> <ol style="list-style-type: none"> SEC 1 and SEC 2 are operative, All ailerons and roll spoilers associated with SEC 1 and SEC 2 are operative, SFCS 2 flap channel is operative, Sidestick transducers associated with ELACs and SEC 1 and SEC 2 are operative, and ELACs, ADIRs, SFCCs, LGCIUs, FACs, and RAs are operative. <p>Maintenance Procedure - Accomplish during the initial application of the MEL (May be accomplished by Flight Crew when advised by Maintenance Control)</p> <ol style="list-style-type: none"> Open FLIGHT CONTROLS / SEC3 SPLY circuit breaker 21CE3 (panel 121VU, location Q19). Collar at first US Airways maintenance station with mechanics on duty. <p>Operations Procedure - Accomplish each flight</p> <p>Prior to departure, accomplish the following:</p> <ol style="list-style-type: none"> Refer to SPAR. Ensure SEC 3 p.b. on overhead FLT CTL panel 24VU is OFF. 				
END		Revision Date 03/01/99		

- What does the term “Refer to SPAR” mean?
- The Flight Release and TPS do not document this MEL. Are they valid?

- What affect does this MEL have on takeoff procedures?

18. The TPS should be reviewed prior to conducting the Departure Review. If the current weather is 330010 3SM BR OVC 008 27/25 A29.65, is the TPS in the RLF-G Document Package in this guide valid?

PH 4.5

19. Assume there is a need to apply takeoff precautions for windshear. Using the weather observation from the question above, and the weight and balance information in the RLF-G Document Package, calculate an increased V_R for runway 31 based on a CONF 2 takeoff.

FOM 10.6.3

20. What is the minimum flight crew oxygen pressure for 2 crewmembers + 2 observers with reference temperature of 20 degrees C?

PHB 3.4

Pushback/Taxi

1. When planning a single engine taxi, which engine is started first?

PH 3.5.1

2. During delayed engine start operations, why must the PARKING BRAKE be selected ON prior to starting engine 2?

PH 3.6.1

3. If during engine start with the parking brake ON, the aircraft starts to move due to parking brake failure, the pilot should:

PH 3.5

4. When TAKEOFF DATA UPLINK data is inserted for an intersection departure runway, is the Takeoff Shift automatically loaded?
PH 3.6
5. Maximum taxi speed is:
PH 18.2.3
6. Single engine taxi is not permitted with APU OFF or inoperative. (True or False)
PH 18.2.4
7. During single engine taxi operations, what is the required engine warm-up period after starting the non-running engine and before takeoff?
PH 18.2.4
8. Is single engine taxi authorized when engine anti-ice is required?
PH 18.2.4
9. In the event a Crew Awareness ECAM displays while the aircraft is on the ground, dispatch _____ or _____ may apply.
PH 21.1.4
10. If a Predictive Windshear Caution or Warning occurs during takeoff, reject the takeoff. (True or False)
PH 18.8.3
11. If a NAV FM/GPS POS DISAGREE ECAM occurs during takeoff initiation, how should the pilot respond?
PH 18.3.2
12. If CG is > 34%, what action is required on takeoff?
PH 18.3.2

13. Is FLEX takeoff thrust permitted with engine anti-ice ON?

PH 4.3

14. If the Captain elects to reject the takeoff below ____ knots, autobrake activation will not occur and manual braking must be used.

PH 18.3.6

15. A tailstrike can occur on takeoff with struts compressed at what pitch attitude on an A321 aircraft?

PH 18.3.2

16. Upon completion of pushback, the captain gives the thumbs up signal when the ground crew is no longer required. The captain must verbally state to the first officer when receiving the thumbs up signal from the ground crew. The first officer must _____.

FOM 5.4.1

17. At least one pilot must monitor the aircraft during low workload and both pilots must monitor the aircraft as much as possible during _____.

Monitoring Section of this guide

18. Both pilots must be thoroughly familiar with airport orientation and taxi route. In addition, both pilots will have taxi charts _____, when taxiing the aircraft.

FOB 01-03

19. When a turn below 400 feet AGL is operationally required, the Jeppesen 10-7 procedure will specify that the turn commence either at a specific point (e.g., at .6 DME), or the term _____ will be used.

FOM 5.7.8

20. If an engine failure occurs after turning from either the runway centerline or the engine failure takeoff ground track as defined on the Jeppesen 10-7 page, the crew must determine _____ . As a guide, the closer the aircraft is to the runway, the more likely the _____ is the safest lateral path. However, as altitude increases and ATC/departure turns are accomplished, other lateral flightpaths may provide the safer option.

FOM 7.12.2

21. In PIT, the surface RVR is 600. Is it permissible to taxi to Runway 28R even though PIT does not have a Surface Movement Guidance and Control System (SMGCS)? If the surface RVR is < 600, is it permissible to taxi?

FOM 5.5.3

22. The ACARS fails before the crew receives their final weight and balance data; however, they have a valid TPS. What form should be used to assist in obtaining the abbreviated final weight and balance information necessary via the radio?

FOM 13, 9.1.4

23. While taxiing to the runway, the ACARS fails. Since this failure occurs prior to takeoff, are there any specific procedures to follow?

FOM 5.4.3

Climb

1. What are the recommended severe turbulence airspeeds for A319/320/321?

PH 3a.3.3

2. What are visual indications that indicate airframe icing is occurring?

PH 3a.1.3

Cruise

1. When an RA occurs, the pilot flying should respond immediately to RA displays and maneuver as indicated, unless doing so would jeopardize the safe operation of the flight or the flight crew can assure separation with help of definitive visual acquisition of the aircraft causing the RA. Pilot response to an RA should be immediate, even if the action conflicts with _____.
FOM 12.2.1

2. The REC MAX altitude on the PROG Page provides what?
PH 17.6.40

3. What action must be taken to ensure proper stowage after oxygen mask use?
PH 3.4.1

4. If GPS PRIMARY is lost during cruise, check the PROG page for navigation accuracy. Is any action required if navigation accuracy is HIGH?
PH 3.10

5. When does the Ram Air Turbine (RAT) automatically deploy?
PH 7.1.7

6. What occurs by depressing the MAN ON pb on the EMER ELEC PWR panel?
PH 7.2.3

7. What does an amber MODE SEL FAULT light on the A319/320 and A321 fuel panel indicate?
PH 9.2.1

8. What does an amber ACT FAULT p/b light indicate on the A321 fuel panel?
PH 9.2.1
9. Where is the fuel leak procedure located?
QRH
10. If the Approach phase of flight is activated inadvertently, (by manually activating and confirming, for example), how can the Cruise phase be reactivated?
PH 17.3.2
11. If you were advised that smoke came out of a galley oven and then received a SMOKE/AVNCS SMOKE ECAM, what procedure should be followed?
QRH/ PH 21
12. What is the maximum altitude for APU bleed operation?
PH 2.14.8
13. If an engine fails during cruise flight, where can the target Drift Down Altitude be found?
QRH
14. How is the Optimum Flight Level (OPT) on the MCDU PROG page defined?
PH 17.3.3
15. Doors of the passenger chemical oxygen generator containers open automatically when the cabin altitude exceeds what altitude?
PH 15.1.3

Descent

1. If the Captain decides it is necessary to divert to another airport, he should contact the _____ if possible, prior to selecting a diversion airport. Normally ATC facilities will not relay this information to OCC.

FOM 7.16.1

2. If there is an emergency situation that could require an evacuation, at a minimum, what information should be communicated to the flight attendants?

FOB 01-03

3. During the preliminary landing flow, the flight crew will evaluate the need for autobrakes during landing. In general, when should autobrakes be used?

PH 3.12

4. During a managed descent, if the aircraft is above the descent profile, the intercept symbol displayed on the ND (blue lightning bolt symbol) indicates the point where the aircraft will intercept the decent profile based on what assumption?

PH 17.4.3

5. When does an amber SPD BRK memo appear on ECAM?

PH 12.1.3

6. What does the Energy circle symbol (green dashed arc) on the ND indicate?

PH 17.3.3

7. When flying in NAV and managed descent (DES) mode, what vertical reversion occurs when heading (HDG) is selected, (causing a loss of NAV)?

PH 14.1.5

8. During an Emergency Descent which pilot assumes PF duties?

PH 18.5.2

Approach

1. What is the definition of a Stabilized Approach?

FOM 5.10.10

2. If not stabilized at 1,000 ft AFE in IMC conditions _____. In VMC conditions, compliance with flight parameters (shown above) may be delayed until 500 ft AFE when the deviation _____. However, by 1,000 ft AFE, the descent rate must be transitioning to no greater than 1,000 fpm.

FOB 03-03

3. If not stabilized at or below 500 ft AFE, the first pilot recognizing the unstable condition will call _____. The PF will execute a _____.

FOB 03-03

4. If the Captain is on “High Minimums” and the RVR RWY10L at PIT is reported at 1200 ft, can the crew accept the approach?

FOM 4.14.8

5. The PF may call _____ when the aircraft is cleared to land, in a position to land safely, and the runway environment (as defined in the Glossary section of the FOM) will remain in sight until touchdown.

FOM 5.10.2

6. How is the flightdeck-to-cabin signal for "Brace for Impact" given?
FOB 01-03
7. Speedbrake extension is inhibited during which flap configuration(s)?
PH 12.1.3
8. When is the use of OPEN DES prohibited on approach?
PH 2.13.2
9. What is the maximum crosswind component (including gusts) for CAT II/III approaches?
PH 2.3.1
10. LDA approaches must have a usable _____ to a DA and are not authorized if it is inoperative.
PH 18.6.8
11. If a landing is made in the emergency electrical configuration, what is the flap lever position for landing, the approach speed increment, and landing distance multiplier?
QRH
12. During a CAT I approach, when the weather is at or better than 1,000' / 3 miles, the final flap setting (3 or FULL) may be delayed no lower than _____.
PH 18.6.6
13. When speedbrakes are extended, extending the flaps may induce a slight _____.
PH 18.6.1

14. During a CAT II approach where “RA NA” or “RA NOT AUTH,” the decision height is predicated on the _____. During this approach, the “100 ABOVE” and “MINIMUMS” callouts must be made by the ____.
- PH 18.6.9**
15. A319/320/321 aircraft are certified for engine-out CAT ____ approaches that require a ____ of ____ feet.
- PH 18.6.9**
16. An ECAM, “FM/GPS POS DISAGREE” is received after the FAF during an RNAV approach. What action is required?
- PH 18.6.12**
17. During an RNAV approach, after FINAL APPROACH is annunciated on the FMA, what altitude should be set in the FCU altitude window?
- PH 18.6.13**
18. During an ASR approach, if the missed approach altitude is set when the FMA vertical mode is ALT*, what vertical reversion occurs?
- PH 14.1.5**
19. What is the correct procedure if a predictive windshear warning is received during an approach?
- PH 18.8.3**

Landing/Go-Around

1. During landing, the PM will call “PITCH” if the following pitch attitude is reached:
A319/320: ____ degrees, A321: ____ degrees.
- PH 18.7.1**

2. If a TCAS RA, “CLIMB” or “INCREASE CLIMB” is triggered on final approach, the PF should execute a go-around. (True or False)

PH 18.13

3. The thrust levers may be retarded to the CL detent during a go around when TOGA thrust is not required. This would be accomplished only after verifying that _____ is annunciated on the FMA.

PH 18.6.18

4. During landing, when does partial ground spoiler extension occur?

PH 12.1.3

Taxi-in/Parking

Please refer to pages 151 to 157 in the Introduction section of the Jeppesen Route Manual, Volume 2 to answer the following airport signage questions.

1. As you taxi off the runway, you notice a series of parallel dashed and parallel solid yellow lines painted on the taxiway. Adjacent to these lines is a yellow sign with black stripes identical in design to those painted on the taxiway. The purpose of this sign is to help you identify when you are clear of the _____.



2. As you taxi to the gate, you observe a sign with a black background and a yellow B. This sign identifies the taxiway _____.



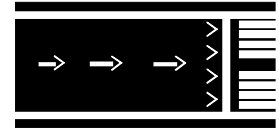
3. As you continue to taxi, you observe a red sign with white numbering. Painted on the taxiway adjacent to this sign are parallel yellow dashed lines and parallel solid yellow lines. This indicates that you are approaching an _____.



4. If you see a red sign with a white circle and a dash in the middle, it indicates that entry into this area is _____.



5. A series of arrows painted on the approach end of a runway indicates a _____ threshold that is usable for taxi and takeoff but not for landing.



6. If brake temperature exceeds 300 degrees C, brake fan selection should be delayed for a minimum of ___ minutes or accomplished at the ____, whichever occurs first (unless turnaround times are short or brake temperatures are likely to exceed 500 degrees C).

PH 3.15

7. Prior to shutting down engine number 2 in preparation for single engine taxi after landing, wait at least ___ minutes after reverser operation, and select _____.

PH 3.15.1

8. After the aircraft is parked, perform an ADIRS residual groundspeed check within ___ minutes following aircraft stop.

PH 3.16

9. The Display Units (EFIS, ECAM and MCDU) should be turned OFF during a Securing Checklist. (True or False)

PH 3.16

Monitoring

To ensure the highest levels of safety, each flight crewmember must carefully monitor the aircraft's flight path and systems, as well as actively cross-check the actions of each other. Effective crew monitoring and cross-checking can literally be the last barrier or line of defense. When a crewmember can catch an error or unsafe act, this detection may break the chain of events leading to an accident scenario. Conversely, when this layer of defense is absent the error may go undetected, leading to adverse safety consequences.

Inadequate monitoring is cited by a number of sources

Inadequate flight crew monitoring has been cited by a number of sources as a problem for aviation safety:

- the NTSB determined in a special study of crew-caused air carrier accidents that 84 percent of the 37 reviewed accidents involved inadequate crew monitoring or challenging
- the Flight Safety Foundation's Approach and Landing Accident Reduction (ALAR) efforts revealed that 63% of the reviewed ALA accidents involved inadequate monitoring and cross-checking
- inadequate monitoring was a factor in 50% of the CFIT accidents reviewed by ICAO
- data collected in over 3,000 audited airline flights using Line Operations Safety Audits (LOSA) showed 62% of "unintentional errors" went undetected by flight crew

A plan to improve monitoring

While it is true that humans are not naturally good monitors, crew monitoring performance can be significantly improved through policy changes, training and by pilots following an active monitoring concept.

There are four components to the US Airways active monitoring concept: Developing well thought-out SOPs; Training monitoring skills; Practicing those skills, and; Evaluating the programs effectiveness.

Developing well thought-out SOPs. SOPs are developed to support the monitoring concept. If you are aware of any SOPs that do not support active monitoring, let your Fleet Captain or Chief Pilot know.

Training monitoring skills. Beginning with the first day of training, instructors will ensure all monitoring/ cross-checking SOPs are followed. To emphasize proper monitoring, occasional, subtle failures are introduced during simulator training, such as failure of automation to level off at proper altitude. This helps reinforce the importance of monitoring, and that it must be continuous. Examples of some SOPs that are stressed during training are:

- both taxi charts out
- both pilots monitor taxi clearance
- both pilots monitoring the approach to any active runway
- when making autoflight system inputs use CAMI
- FMS inputs by PM during high workload
- perform non-essential duties/activities during lowest workload periods

- when able, brief anticipated approach prior to top-of-descent
- compliance with altitude awareness procedures
- during the last 1,000 feet of altitude change, both pilots will focus on making sure the aircraft levels at the assigned altitude

Instructors will discuss how barriers are cut in half with one pilot out of the loop. At least one pilot should always be monitoring during low workload and both pilots should be monitoring as much as possible during high workload.

Practicing monitoring skills. Know and comply with SOPs. Actively monitor the aircraft even when the autopilot or other pilot is flying. Monitor the flight instruments just as you would when hand flying. If the aircraft (or other pilot) is not doing what it is supposed to do, action should be taken to rectify the situation. According to a study conducted by the ASRS:

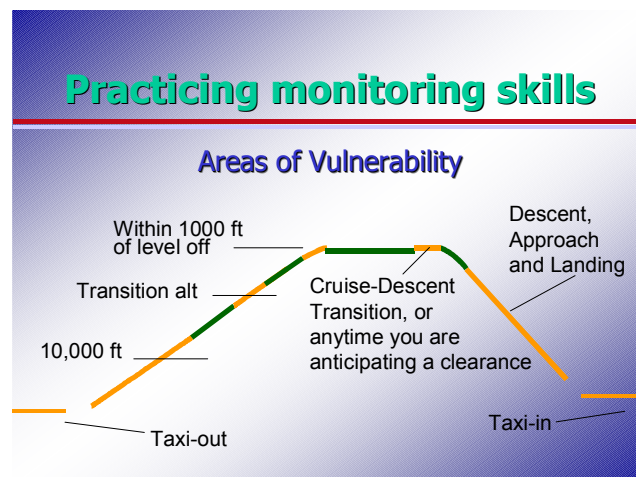
- 76 percent of monitoring errors occurred when aircraft was climbing, descending or on approach (“vertical flight phase”)
- 30 percent of the reports indicated that pilots were programming the FMS shortly before or during the monitoring error

Recognize those flight phases where poor monitoring can be most problematic and strategically plan workload to maximize monitoring during those areas of vulnerability (AOV). Examples of non-monitoring tasks that should be conducted during lower AOV include stowing charts, programming the FMS, getting ATIS, accomplishing approach briefing, PA announcements, etc. A chart that graphically depicts higher AOV is shown here. The lighter lines represent higher AOV.

For example, attempt to brief the anticipated instrument approach prior to beginning descent from cruise altitude. By pre-briefing the approach during a low-workload period, greater attention can be devoted to monitoring/cross-checking during descent. This practice is consistent with the Flight Safety Foundation Approach and Landing Accident Reduction Task Force recommendations. Further, data from our

LOSA indicates that crews who briefed the approach after top-of-descent (TOD) committed 1.6 times more errors during the descent/approach/land flight phase, compared to crews who briefed prior to TOD.

Since it is not possible to remain 100% vigilant during low workload portions of all flights, especially long-haul flights, it is a good idea to take turns monitoring during these low workload periods. At least one pilot must actively monitor the aircraft at all times during low workload, and both pilots must actively monitor as much as possible during high workload and in areas of vulnerability (vertical flight, FMS entries, taxiing, etc.). During high workload there is a natural tendency to fixate and lose the big picture. It is important that both pilots monitor the instruments and stay ahead of the aircraft under these conditions.



An ASRS monitoring study indicates that 89 percent of the monitoring errors occurred when pilots were involved with one or more non-monitoring task(s). Recognize the inherent risks of having both pilots involved with the same task. For example, both pilots should not be concentrating on programming the FMS at the same time. Instead, one pilot should monitor the aircraft while the other pilot programs the FMS. This is not to imply that there should be no cross-check of the other's work, but rather that one pilot must always monitor. The pilot monitoring can cross-check the other pilot's entry prior to activation. Also, in those situations where one pilot's attention is called away from monitoring, such as programming the FMS, that pilot should inform the other pilot he/she will be "out of the loop" and make a conscious effort to frequently shift their attention back to monitoring.

Evaluating the program's effectiveness. Evaluation of the program's effectiveness is accomplished by observing monitoring skills. If you find that you are fixating or unintentionally missing SOPs, like the 1,000' to level-off altitude callout, you need to ensure you are properly monitoring the aircraft. Accomplish the ABC'ss of Threat and Error Management when this happens. Assess your potential for error, maximize your Barriers / Balance your resources, Communicate risks and intentions, follow SOPs and check for Sensibility.



Airbus A319/320/321

RLF-G

DOCUMENT PACKAGE

- IFR USA247/01JUN 124/N101US KLGA KBWI ALTN KPHL
 FUBO 4526 GATE REL 010785
 ELV KLGA 0022 KBWI 0146

RAMP WT P02000 TIME P00 FUEL P0019 COST P0002 FL 160

RWT 134285 PLD 026300 D000779 GND26/06 Q00 CI-070 SKD2000/2115
 BIAS P01.0 AVG WIND DIR/COMP 171/M005 AVG TD P014

	FUEL	TIME	FL	DIST	WIND
BURN..... LGA BWI	003746	0028	160	0168	M004
ALTN*..... KPHL	001975	0022	110	0112	M003
ALTN..... NONE					
HOLD.....	002167	0030			
RSV.....	004092	0045			
CTNGCY...	000000				
MEL/CDL..	000000				
-----	-----	-----	-----	-----	-----
T.O. MIN.	010005				
-----	-----	-----	-----	-----	-----
TAXI.....	000780	0026			
TANKER...	000000				
EXTRA....	000000				
GATE REL.	012785				

ACFT RESTR -NONE

MEL/CDL ITEMS -NONE

RMKS/ DISPATCHER HAS CONFIRMED FUEL/MEL SUFFICIENT FOR ALL
 CDRS ... ADVISE DISPATCHER OF SPECIFIC CDR

DISP PAUL MORELL DTR3 412-747-3370

RTX - PLAN 1 OF 1 - RTE 1 - FAA PREF

USA1959003 FP USA247 T/A320/E 0361 LGA P2000 160
 LGA..BIGGY.V3.MXE.V378.BAL..BWI/0028

TO	MC	DST	FL	OAT	IAS	ETE	ETA	BO	EFOB	LAT
ROUTE	MH	DTGO	TROP	WIND	G/S	E/TM	ATA	T/BO	AFOB	LONG
FREQ			TRB		M		DIFF		DIFF	

LA GUARDIA N4046.6 W07352.3

TOC	259	039	16	M01		007	....	023	0105	
DCT	256	0129	49	17014	307	0007	....	0023	....

BIGGY	259	016	16	M04	280	003	....	003	0102	N4025.1
DCT	257	0113	49	17010	359	0010	....	0026	....	W07458.3
			0		565		....		....

HARRS	239	007	16	M04	280	001	....	001	0101	N4020.4
V3	238	0106	50	16010	357	0011	....	0027	....	W07505.0
			0		565		....		....

MAZIE	236	002	16	M04	280	000	....	000	0101	N4019.3
V3	235	0104	50	16010	356	0011	....	0027	....	W07506.4
			0		565		....		....

MXE19	239	017	16	M04	280	003	....	003	0098	N4007.8
V3	238	0087	50	16010	357	0014	....	0030	....	W07522.6
			0		565		....		....

MXE	238	019	16	M04	280	004	....	003	0095	N3955.0
V3	237	0068	46	17011	355	0018	....	0033	....	W07540.2
113.20D			0		565		....		....

TOD	248	034	16	M03	280	005	....	005	0090	
V378	246	0034	43	18013	355	0023	....	0038	....
			0		565		....		....

BELAY	248	001	15	P00		000	....			N3935.2
V378	247	0033	43	18013	432	0023	....		....	W07618.0
			0				....		....

BAL	225	030	01	P27		005	....			N3910.2
V378	224	0003	47	17012	431	0028	....		....	W07639.6
115.10D			0				....		....

BWI	284	003	00	P30		000	....	007	0083	N3910.5
DCT	283	0000	47	19006	439	0028	....	0045	....	W07640.1
			0				....		....

ALTN RTE - R01 /FL090 SWANN V433 DQO
 ///// APPENDED MESSAGES /////

/// SPECIAL INFO MESSAGES ///

SPC MSG NBR 1325
SUBJECT- CODED DEPARTURE ROUTES

REFERENCE- VALID ONLY AFTER DISPATCHER HAS CONFIRMED

LGABWIPH 11 LGA..BIGGY.J75.MXE.V378.BAL..BWI
LGABWIPL 12 LGA..BIGGY.V3.MXE.V378.BAL..BWI
LGABWIWH 13 LGA..WHITE.V1.LEEAH.V268.BAL..BWI

/// END OF SPECIAL INFO MESSAGES ///

END
AUZD CAPT SIGNATURE..... 13SEP01/131959

STA QNH FLT/DTE AIRPL DTE/TIME
 LGA 30.10 247/01 101 01/2000Z

*** A320 / CFM56-5B4/P ***

TEMP PTOW ATOW ZFW ZFW CG FUEL TXI FUEL
 68F/20C 133.5 135.5 121.5 36.2 12.8P 0.8

***** THRUST / V-SPEED *****

TOW CG STAB
 MAX N1 35.3 N/D 1.4
 APU OFF 89.1
 APU ON 89.8 F S GRN DOT
 144 186 206

RWY	CONF	APU	N1	V1	VR	V2	AT	MTOW
04	03	OFF	86.9	128	136	138	131F/55C	145.9L
13	03*	OFF	89.1	124	134	138	MAX-WT	145.9L
31	03	OFF	87.0	129	136	138	129F/54C	145.9L
22	03*	OFF	89.1	125	134	138	MAX-WT	145.9L

***** AIRPORT NOTES *****

RWY 4V TKOF DURING VFR CONDITIONS ONLY / SEE JEPP KLGA-4
 RWY 31V TKOF DURING VFR CONDITIONS ONLY / SEE JEPP KLGA-4

 RWY 31X - TKOF ON RWY 31 FROM TXWY W (6600 FT)
 LGA RWY 13 DEPARTURES
 SPECIAL TURN PROCEDURE - SEE JEP 10-7 PAGE
 FOR LGA VOR INOP SELECT RWY 13N

***** AIRPORT ANALYSIS DATA *****

STRUCT WT LIMIT 169.7

CONF	APU	CLIMB LIMIT	TEMP C	RWY 04	RWY 13	RWY 31	RWY 22
	OFF	186.8	20	142.9	142.9	142.1	142.1
01	OFF	186.7	22	142.4	142.4	141.6	141.6
	ON	191.8	20	145.2	145.2	144.4	144.4
	ON	191.7	22	144.7	144.7	143.9	143.9
	HDWND ADD	/ KT		327	323	329	312
	TLWND SUB	/ KT		1135	1123	1146	1107

	MIN LVL OFF	- FT		1000	1000	1000	1000
		/MSL/ FT		1020	1020	1020	1020

IMPROVED PERFORMANCE							
	ON		20	158.7	157.7	157.9	156.0
01	ON		22	158.2	157.3	157.4	155.6
	HDWND ADD	/ KT		0	0	0	0
	TLWND SUB	/ KT		N/A	N/A	N/A	N/A

	OFF	180.6	20	151.3	151.3	150.4	149.5
02	OFF	180.5	22	150.8	150.8	149.9	149.1
	ON	185.4	20	154.0	154.0	153.0	152.3
	ON	185.3	22	153.5	153.5	152.5	151.9
	HDWND ADD	/ KT		293	203	217	170
	TLWND SUB	/ KT		1143	1133	1149	1102

	MIN LVL OFF	- FT		1000	1000	1000	1000
		/MSL/ FT		1020	1020	1020	1020

IMPROVED PERFORMANCE							
	ON		20	163.5	159.5	160.5	157.2
02	ON		22	163.0	159.1	160.2	156.9
	HDWND ADD	/ KT		0	0	0	0
	TLWND SUB	/ KT		N/A	N/A	N/A	N/A

	OFF	179.2	20	152.1	151.8	151.2	149.9
03	OFF	179.1	22	151.6	151.3	150.7	149.5
	ON	184.0	20	154.8	154.8	153.8	152.8
	ON	183.9	22	154.3	154.3	153.3	152.4
	HDWND ADD	/ KT		236	192	214	175
	TLWND SUB	/ KT		1146	1120	1151	1084

	MIN LVL OFF	- FT		1000	1000	1000	1000
		/MSL/ FT		1020	1020	1020	1020

IMPROVED PERFORMANCE

	ON	20	164.5	160.1	161.0	158.0
03	ON	22	164.2	159.8	160.7	157.8
	HDWND ADD / KT		0	0	0	0
	TLWND SUB / KT		N/A	N/A	N/A	N/A

LENGTH - FT	7000	7000	7000	7000
SLOPE - PCT	-.1	-.1	.1	.1

END

***** WEIGHT AND BALANCE DATA *****

-----LOAD-----TOTALS-----LIMITS-----CMPT MAX--AS LDED--

EOW	97200	ZFW	123520	MZFW	134500	FC	7500	2000
PSGR WT	22320	FUEL	10786P	*** STD ***		AC	13300	2000
CGO WT	4000	RMP	134306	MRMP	170600			
BALLAST	0	TXI	780					
		TOW	133526					

FLT PYLD 26300

CNFIG A 16 B 48 C 78 0

PSGRS A 14 B 40 C 70 0 W-0 X-0

CRT ADDRESS WB49

AGENT PAUL MORELL

PHONE 747-8949

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FIL 247/01XXX   LGA   APAX                               01/1300Z
DEP/ARV **DEPARTURE** ** ARRIVAL **                   CREW SOURCE
STA STA ACT TIME SKED ACT TIME SKED PSG CNX A/C COCKPIT F/A
LGA BWI SKD 0915 0915 SKD 1011 1015 111 1 606
FIL 115/01XXX
BWI PIT SKD 1125 1125 SKD 1230 1230 127 0 606
PIT CLT SKD 1305 1305 SKD 1415 1415 100 0 606
END OF DISPLAY
    
```

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WXM-FLT USA247/06 LGA BWI RTE 01 ALT PHL TOA 06/1300
SKD 1415/1511Z
    
```

MAP FEATURES NCUS
 VALID 01/1300Z-02/1100Z XXX 01
 SURFACE LOW OVER WRN SD HAS A STATIONARY FRONT THAT ARCS
 ENEWD ACROSS THE NRN PLAINS INTO NRN WI THEN SSEWD ACROSS
 SW MI INTO INDIANA-KY-ERN TN. SCT-BKN SHOWERS FORMING ALONG
 AND 100 MILES SOUTH AND WEST OF FRONT OVER NRN PLAINS/NRN
 OHIO RIVER VALLEY. ADDITIONAL SCT AIRMASS SHOWERS EXPECTED
 TO DEVELOP IN THE HEAT OF THE AFTERNOON ACROSS WRN GREAT
 LAKES/N CENTRAL MS RIVER VALLEY/REMAINDER OF OHIO/TN VALLEYS.
 TSTM OUTLOOK...SCT-BKN CLUSTERS OVER SW MN/NW IA MOVING
 EWD INTO WRN WI LATE TODAY. SCT TSTMS IN NE-SW ZONES ACROSS
 MI INTO CENTRAL ILLINOIS. ADDITIONAL SCT TSTMS EXPECTED TO
 DEVELOP OVER NRN PLAINS. MAX TOPS TO FL450.
 AA WEATHER SERVICES/SA

MAP FEATURES NEUS
 VALID 01/1500Z-02/0900Z XXX 01.
 HIGH PRESSURE WILL CONTINUE TO PROVIDE CLEAR SKIES ACROSS
 MOST OF THE NEUS TODAY AND TONIGHT. LOW CLOUDS WILL GRADUALLY
 ERODE THROUGH EARLY AFTERNOON ACROSS WRN NC AND NRN SC.
 TSTM OUTLOOK...AN UPPER LEVEL FEATURE WILL PROVIDE WIDELY SCT
 MD
 TSTM TO SERN ONTARIO AND FAR WRN NY FROM LATE AFTERNOON THROUGH+
 MIDNITE.ISOLATED TSTM WILL BE POSSIBLE OFF THE COAST OF NC
 THROUGH THE EVENING.

AA WEATHER SERVICES/ DP/AD

LGA

011251Z 13005KT 1/2SM R31R/1600FT OVC003 20/20 A3006 RMK
A02 SLP187 T10441139

BWI

011251Z 10010KT 1/2SM BR OVC003 20/16 A2999 RMK
SLP197 T00111133

PHL

011251Z 27007KT 10SM OVCO70 20/16 A2999 RMK

TRMNL SIGMEC
NONE ISSUED

CAT SIGMEC
NONE ISSUED
TSTM SIGMEC
NONE ISSUED

VASH SIGMEC
NONE ISSUED

ICING SIGMEC
NONE ISSUED

TRMNL SIGMEC
NONE ISSUED

LGA LGA RAMTAF 011057Z 061108
FM1100 00000KT P6SM SCT250
FM1500 16008KT P6SM SCT080 SCT250
FM0000 16005KT P6SM SCT100 BKN250 TEMPO 0008 P6SM BKN100

BWI BWI RAMTAF 011222Z 011208
FM1200 00000KT P6SM SKC
FM1500 03005KT P6SM SKC TEMPO 1518 P6SM SCT045
FM1800 12005KT P6SM SCT050
FM0100 00000KT P6SM SKC TEMPO 0104 P6SM SCT045
FM0400 00000KT P6SM SKC

PHL PHL RAMTAF 011220Z 011208
FM1200 00000KT P6SM SKC
FM1500 12005KT P6SM SKC TEMPO 1518 P6SM SCT045
FM1800 15005KT P6SM SCT050
FM0100 00000KT P6SM SKC TEMPO 0104 P6SM SCT045
FM0400 00000KT P6SM SKC
FM0700 00000KT P6SM SKC TEMPO 0708 3SM BR

MK1 WST 011755
 CONVECTIVE SIGMET 69E
 VALID UNTIL 1955Z
 FL CSTL WTRS
 FROM 40SE OMN-190ENE VRB-160E PBI-90ENE PBI-40SE OMN
 AREA TS MOV LTL. TOPS ABV FL450.
 NOTAMS
 LGA NO/
 END DATA
 03/025 LGA RCAG 254.275 CMSND WEF 0103231700
 05/060 LGA 22/04 NONSTD MARKING
 BWI NO/
 /NONE
 07/151 BWI 28 ALS OTS
 IAD NO/
 05/007 PHL 9L/27R RCLL OTS
 05/012 PHL 27L ALS OTS
 07/018 PHL TOWER UNKN 300 AGL 8.1 W LGTS OTS TIL 0107311800MD
 RYS 11/008 RYS NDB UNMNT
 CGG 06/309 CGG VOR RTS
 PNU 07/007 PNU NDB OTS
 APE 07/094 APE VOR NOW UNRSTD
 TSO 07/138 TSO NDB OTS
 PILOT REPORTS
 FIELD CONDITIONS

TOW WND HW 00 OAT 20C
 R04 R31
 CNF DRY DRY
 03-27K 152100 151800
 02-27K 151300 151300
 LND BWI OAT 27C WND 0
 R10/28 WET OR DRY
 CNF FULL 142200
 CNF 03 142200

ZFW 121520
 FOB 12786
 RAMP 134306
 MTOW 145900L

PAX 124

F 2000 A 2000
 MAC 35.3 STAB 1.4D
 CNF R04 AT R31 AT
 03 86.9 55C 89.1M
 02 87.0 54C 89.1M
 E/O 1020 MSL 1020 MSL

ADJ V-SPEEDS
 GTOW 133526 A3006

CF 03 V1 VR V2
 R04 128/136/138
 R31 124/134/138
 CF 02 V1 VR V2
 R04 129/137/140
 R31 125/135/140

GSI-NO

L/A F-00 A-00
 R/A F-00 A-00

RECURRENT LOFT CRITIQUE

To ensure the Flight Training Department is providing the Line Pilot with effective training during the Recurrent LOFT (RLF) we are asking you to complete the form below. Your inputs are essential to determine the success of the training and will assist in ensuring the goals of the RLF are being accomplished. This information will be utilized to improve the training provided in the current RLF and future RLFs. Thank you in advance for taking the time to assist us in providing the Line Pilots at US Airways with effective and meaningful training.

BRIEFING

During the briefing you were shown video segments on revised “confirm” and stabilized approach procedures. What are your thoughts on the use of video segments to present information and encourage discussions on this type of subject matter?

Did the PC/PT/RLF Study Guide prepare you for these briefing discussions?

What are your thoughts on your Check Airman’s conduct of the briefing?

SIMULATOR SPOTS AND LOFT

Your simulator session began with a series of Special Purpose Operational Training scenarios. These SPOTS covered Category III ILS, ASR approach, low visibility and single engine taxi, CFIT, RNAV approach, Jeppesen –7 procedures, engine-out ILS and missed approach using the autopilot, RTO, windshear on approach, etc.

Did you feel you were provided enough time and direction to feel comfortable before you started your first SPOT in the air?

Which SPOTS did you find most useful?

Which SPOTS did you find least useful?

Was the LOFT leg useful?

Would you like to see more LOFT legs and fewer SPOTS or is it a good mix now?

Did the briefing adequately prepare you for the simulator?

What are your thoughts relating to the manner in which your Check Airman conducted the simulator portion of your RLF training today?

DEBRIEFING

Was the debriefing useful?

Did your Check Airman integrate LOFT video footage into the debriefing? If so, what are your thoughts on the use of video as a debriefing tool?

What changes would you suggest to the RLF syllabus to make it more effective in providing you with training that is relevant to line operations?

Please feel free to include any final thoughts on your RLF training session today? Thank you for your time and candor in completing this critique form.

fold here

**RLF Committee Chairman
PIT/H510
15 Commerce Drive
Pittsburgh, PA 15275**