

## **2010 NIFA LOFT CONTESTANT BRIEFING**

You are flying a group of executives for an extremely important meeting. It is imperative that they arrive to attend their meeting. Your routing, weather, and other pertinent information will be provided for you. You will have 45 minutes to look over the material before you get into the simulator. The flight will already be planned for you. You will need to familiarize yourselves with the route of flight, airports, weather, and NOTAM's. You will receive all the Jeppesen charts that are required at that time. You will be flying a generic piston twin aircraft.

### **YOU ARE NOT BEING JUDGED ON YOUR MULTI-ENGINE FLYING SKILLS AND SYSTEMS KNOWLEDGE!!!!**

We realize this is an aircraft you may not be familiar with, and therefore, we are not going to grade your ability to fly the aircraft, other than basic airmanship. No one will be allowed to use the autopilot or flight directors. The only pure flying skills that will be judged will be adherence to the simplified profiles that we provided (checklists, briefing guidelines, takeoff, landing, go-around procedures, etc.) as well as basic navigation and airmanship. We are also going to judge your compliance with the pertinent regulations that affect this flight (FAR Part 91, AIM considerations, etc.) and your ability to work as a team in the cockpit.

You are going to be graded upon a number of items. Everyone will be graded upon the same criteria. To give you a general idea of what the judges are looking for, here are some of the GENERAL items that will be evaluated:

- Is there a clear definition of cockpit duties?
- Are elements of CRM displayed?
  - Command, Leadership, Resource Management, Communication, Situational Awareness, Decision Making, Workload Management, etc.
- Is someone always flying the airplane?
- Departure briefing
- Flight attendant briefing
- Approach briefing
- NAVAID set-up (Are radios pretuned? Are OBS/HSI courses preset/correctly set? Transponder codes set? Etc.)
- Are cleared altitudes selected and verified?
- Are proper callouts made? (1000 feet to level off, approaching MDA/DH, course alive, etc.)
- Are checklists done at the appropriate time and completely done?
- Is pertinent weather/NOTAMs discussed at the appropriate time?
- Are the simplified King Air procedures followed?
- Are proper IFR procedures/FARs/AIM followed?

Obviously, this list could go on and on, but the above should give you a general idea of the items that the judges are looking for. Proper use of CRM should preclude errors that are going to be evaluated above.

The judges will act as everyone you need to talk to. They will be your flight attendant, ATC, FSS, etc. If you need to talk to the flight attendant, turn around to face the judge behind you and treat him/her as your flight attendant. If you need to talk to someone in the ATC system, set up the radios and transmit as you normally would in a real aircraft. The judges will respond as the appropriate ATC/FSS facility if the radios are set up properly (proper frequency, transmitting on correct radio, etc.). ***If you have any questions about how to operate the simulator, please ask before we start your LOFT.*** The judges cannot answer questions once the LOFT is started, unless there is a problem with the simulator.

One important part of teamwork in the cockpit is good, concise crew briefings. Below are some suggested items that you might want to consider. The generic score sheet shows the exact items we are looking for.

#### PRE-DEPARTURE BRIEFING (COCKPIT)

Trim	Wind Effects	Takeoff Profile
Altimeter Setting	Crew Duties	Clearance/SID
Flap Setting	Runway Condition	Terrain/Obstacles
Takeoff Power Setting	Rejected Takeoff	Traffic Watch
Airspeeds		

#### PRE-DEPARTURE BRIEFING (FLIGHT ATTENDANT)

Cockpit Access Signal	Ground and Flight Delays	Enroute weather
Taxi Times	Unusual Situations	Destination Weather
Sterile Cockpit	Enroute Time	

#### APPROACH BRIEFING

Chart Index Number/Date	Airport Name	ATIS
NAVAIDS & Frequencies	NOTAMS	Target Speed
FAF/Crossing Altitude	Missed Approach Point	Minimums
Missed Approach Procedure	Runway Exit Plan	

In order to successfully complete the CRM event, it is very important that the flight crew use the standard callouts and procedures that were provided to you. You will be graded upon their proper usage.

## **Standard Callouts and Procedures**

The following mandatory callouts will be utilized during the CRM/LOFT event. They simulate common calls made in the commercial aviation industry. The callouts will help keep both pilots focused on the task at hand. They are divided by pilot flying (PF) and pilot not flying (PNF) responsibilities. For example, just after rotation the PNF will call “*positive rate*” when the altimeter and VSI indicate a positive climb. The PF will respond with “*gear up.*” The PNF then places the gear handle to the up position. These are not the only callouts the competitors should make. For example, if the PF is getting low on the glideslope, the PNF should alert them of that fact. Good CRM is not limited by a list of standard callouts.

### **Takeoff**

PF - “*Set Power*” while advancing the power levers toward takeoff power.

PNF - “*Power Set*” after setting takeoff power by reaching under the PF’s hand and further advancing the power levers to the takeoff power setting.

PNF - “*VI, VR*” when the appropriate speeds are reached. They are usually the same speed in light turboprops. The PF will then rotate the aircraft to the initial pitch setting.

PNF - “*Positive Rate*” when the altimeter and VSI indicate a positive climb.

PF - “*Gear Up*” The PNF then places the gear handle to the up position.

### **Climb**

PF - “*Climb Checklist*” when the aircraft reaches 1,500 feet above the airport elevation. The PNF will complete the items on the checklist to include the initial climb power setting. After this time it will be the responsibility of the PF to maintain the appropriate climb power setting.

### **Cruise**

PF - “*Cruise Checklist*” when the aircraft reaches the final cruise altitude. The PNF will again set the cruise power setting and complete the items on the cruise checklist.

PNF - “*Course Alive*” when the course comes alive (moves off full scale deflection)

### **Descent**

PF - “*Descent Checklist*” The PF will call for the checklist as soon as practical after commencing the descent. The PNF will then complete the items on the descent checklist.

### **Approach and Landing**

PF - “*Approach Flaps*” The PNF will set the approach flaps.

PF - “*Gear Down; Landing Checklist*” The PNF will put the gear down and complete the items on the landing checklist.

PF - “*Landing Flaps*” The PNF will set the final landing flap position.

### **Precision Approach**

PNF - “*Localizer Alive*” when the localizer comes alive (moves off full scale deflection)

PNF - “*Glideslope Alive*” when the glideslope comes alive (moves off full scale deflection)

PNF - “*200 Above*” when 200 feet above the appropriate minimums for the approach.

PNF - “*100 Above*” when 100 feet above the appropriate minimums for the approach.

PNF - “*Minimums, Runway In Sight*” upon reaching the appropriate minimums for the approach if the runway is in sight.

OR;

PNF - “*Minimums, Negative Runway*” upon reaching the appropriate minimums for the approach if the runway is not in sight.

### **Non-Precision Approach**

PNF - “*Course Alive*” when the final approach course comes alive (moves off full scale deflection)

PNF - “*200 Above*” when 200 feet above the appropriate MDA for the approach.

PNF - “*100 Above*” when 100 feet above the appropriate MDA for the approach.

PNF - “*MDA, Runway In Sight*” upon reaching the appropriate minimums for the approach if the runway is in sight.

OR;

PNF - “*MDA, Negative Runway*” upon reaching the appropriate minimums for the approach if the runway is not in sight. Note: This does not necessarily mean a missed approach should be executed at this point. Follow good IFR procedures.

### **Go-Around**

PF - “*Max. Power, Approach Flaps*” while pushing the power toward max power and pitching the aircraft to the go-around pitch attitude. The PNF will make the final adjustment to the power setting and set the flaps to approach if extended beyond the approach setting.

PNF - “*Positive Rate*” when the altimeter and VSI indicate a positive climb.

PF - “*Gear Up*” The PNF then places the gear handle to the up position. The PF will complete the climb by utilizing the normal climb procedures by calling for the climb checklist at 1,500 feet above airport elevation.

### **Miscellaneous**

PNF - “\_\_\_\_\_ (*name of checklist*) *checklist complete,*” when the final item on a checklist has been accomplished.

PNF - “*10,000 Feet* (or other appropriate altitude)” when a new altitude is assigned by ATC. The PNF will set the new altitude into the altitude alerter and be sure the PF verbally responds to the change. Both pilots should point to the new altitude until the other pilot does the same. This helps to assure and altitude deviation does not occur.

PF - “*10,000 Feet* (or other appropriate altitude)” when the PNF correctly sets a newly assigned altitude into the altitude alerter and verbally states it. They should also point to the altitude alerter until the other pilot does the same. This is a back-up check to assure an altitude bust does not occur.

PNF - “*1,000 Feet To Level Off*” whenever 1,000 feet above or below the assigned altitude during a climb or descent. This does not apply to the MDA or DH of an instrument approach. Those calls are listed separately.

# Takeoff and Climb Profile

## **Takeoff Roll**

- Props full forward
- Power full
- Rotate at 75 knots

## **Initial climb**

- Pitch 7-8 degrees nose up  
(At 500 feet *and* 100 knots)
- Flaps up

## **1,500 feet above the airport**

- Complete climb checklist
- Props 2,500 RPM
- MP full
- 140 knots climb speed

## **Cruising altitude**

- Complete cruise checklist
- Props 2,400 RPM
- MP 24"

# Precision Approach

## **Initial Arrival**

- Obtain ATIS
- Brief approach
- Complete descent checklist
- Clean configuration
- 160 knots

## **Approach Inbound or Outbound for Procedure Turn**

- Flaps approach
- 120 knots

## **One Dot Low On Glideslope**

- Landing gear down
- Landing checklist

## **Glideslope Intercept**

- 100 knots minimum

## **Visual and Landing Assured**

- Full flaps
- Transition to Vref (80 knots full flaps/100 knots no flaps)
- Power to idle crossing the threshold

## **Go-Around**

- Max. power
- Pitch 10 degrees nose up
- Airspeed Vref (80 knots full flaps/100 knots no flaps)
- Establish normal takeoff climb procedures and airspeeds when clear of obstacles
- Flaps Up
- Gear Up
- Complete climb and cruise checklists as appropriate
- Follow missed approach procedures

## **Holding**

- Landing gear up
- Flaps up
- 140 knots

# Non-Precision Approach

## **Initial Arrival**

- Obtain ATIS (must be done first)
- Brief approach
- Complete descent checklist
- Clean configuration
- 160 knots

## **Station Passage on Outbound Leg**

- Start timing
- Set altitude alerter

## **Procedure Turn Outbound**

- Start timing
- Flaps approach
- 140 knots

## **Procedure Turn Inbound**

- Reset altitude alerter (if required)

## **Final Approach Course Inbound**

- Intercept final approach course
- Reset altitude alerter (if required)
- Configure (Landing gear down, flaps approach, 120 knots)

## **Final Approach Fix**

- Start timing
- 100 knots

## **Leveling off at MDA**

- 100 knots

## **Visual and Landing Assured**

- Full Flaps
- Transition to Vref (80 knots full flaps/100 knots no flaps)
- Power to idle crossing the threshold

### **Go-Around**

- Max. power
- Pitch 10 degrees nose up
- Airspeed Vref (80 knots full flaps/100 knots no flaps)
- Establish normal takeoff climb procedures and airspeeds when clear of obstacles
- Flaps up
- Gear up
- Complete climb and cruise checklists as appropriate
- Follow published or assigned missed approach procedures

### **Holding**

- Landing gear up
- Flaps up
- 140 knots

# CRM/LOFT Event Piston Twin Checklist

## **Before Start**

Seats - Positioned Left - Positioned Right  
Brakes - Set  
Fuel Quantity - Checked  
Instruments and Radios - Set  
Altimeters - \_ \_ . \_ \_ Set Left - Set Right  
Flight Plan and Weather - Onboard

## **Before Takeoff**

Trims - Set  
Flaps - Up  
Takeoff Briefing - Complete

## **Takeoff**

Transponder - On  
Landing Lights - On  
Props - Full Forward

## **Climb**

Landing Gear - Up  
Flaps - Up  
Climb Power - Set full power  
Propellers – 2,500 RPM  
Landing Lights - Off

## **Cruise**

Cruise Power - Set (24" MP/2,400 RPM)

## **Descent**

Altimeters - \_ \_ . \_ \_ Set Left - Set Right  
Passengers - Notified  
Approach Brief - Complete  
Landing Airspeeds - Briefed

## **Landing**

Flaps - Approach  
Landing Gear - Down  
Landing lights - On  
Props - Full Forward

# 2010 Generic CRM/LOFT SCORE SHEET

The following generic score sheet gives examples of basic penalty points that will be assessed for errors made during the LOFT. The actual point values may vary greatly during the event given the gravity of the omission or error. All teams will be given the same penalty points for the same error or omission. This sheet is only intended to guide the contestants in the correct direction during their preparation.

## EVENT

## PENALTY POINTS

(circle if penalty applies)

### On ground before takeoff

#### Departure Briefing - If they fail to cover...

Airspeeds	10 points
Trim	10 points
Altimeter Setting	10 points
Flap Setting	10 points
Takeoff Power Setting	10 points
Wind	10 points
Crew Duties	10 points
Runway Condition	10 points
Rejected Takeoff	20 points
Takeoff Profile	10 points
Clearance/SID	30 points
Terrain/Obstacles	30 points
Traffic Watch	10 points

#### Flight Attendant Briefing If they fail to cover...

Emergency Procedures	25 points
Sterile Cockpit	10 points
Taxi Length	10 points
Ground and Flight Delays	10 points
Enroute Time	10 points
Enroute Weather	10 points
Destination Weather	10 points

Transponder Code not preset 10 points

#### If they miss the lack of any of the following in the clearance?

Clearance limit	30 points
Route	30 points
Altitude	30 points
Frequency	30 points
Transponder code	30 points

#### Before taxi

Before start checklist not completed or called complete	50 points
Comm radios not set-up	10 points
NAV radios not set-up	10 points

If they incorrectly set-up for the S.I.D.:

Incorrectly set HSI ( $\pm 3^\circ$ )	10 points
Incorrectly set nav frequency	10 points
Fails to preset before taking the active runway	10 points
Fails to identify NAVAID(s)	50 points
Fails to/won't likely make a crossing restriction	200 points
Before takeoff checklist not completed or called complete	50 points

ANY GENERAL IFR/CRM ERRORS

(EXPLAIN NEXT TO DEDUCTION)

10 points

PF/PNF not sharing appropriate duties

(EXPLAIN NEXT TO DEDUCTION)

25 points

During Takeoff

Takeoff checklist not completed or called complete	50 points
Improper takeoff procedure	20 points
Missed callouts:	
"Set Power"	5 points
"Power Set"	5 points
"V1/Vr"	5 points
"Positive Rate"	5 points
"Gear Up"	5 points

ANY GENERAL IFR/CRM ERRORS

(EXPLAIN NEXT TO DEDUCTION)

10 points

PF/PNF not sharing appropriate duties

(EXPLAIN NEXT TO DEDUCTION)

50 points

During Climb

Improper climb procedure	10 points
Fails to switch to departure	10 points
Climb checklist not completed or called complete	50 points
Fails to keep needle within $\frac{1}{2}$ scale during S.I.D.	100 points
Full-scale needle deflection during S.I.D.	200 points
Enroute navigation once cleared on course	
Proper VOR's not selected	10 points
TO/FROM indication not proper	10 points
VOR's not identified	50 points
HSI/OBS not set properly ( $\pm 3$ degrees)	10 points
"Course alive" not called	10 points
Intercept course within 10 nm	20 points
Pass $\frac{1}{2}$ waypoint of airway and fails to switch VOR's	15 points
Fails to identify VOR's	50 points
Fails to set-up VOR's ( $\pm 3$ degrees)	10 points
"1,000 feet to level off" not called	10 points

ANY GENERAL IFR/CRM ERRORS  
(EXPLAIN NEXT TO DEDUCTION)

10 points

PF/PNF not sharing appropriate duties  
(EXPLAIN NEXT TO DEDUCTION)

25 points

During Cruise

Cruise checklist not completed or called complete

50 points

Pass ½ waypoint of airway and fails to switch VOR's

15 points

    Fails to identify VOR's

50 points

    Fails to set-up VOR's ( $\pm 3$  degrees)

10 points

Excessive airway deviation ( $> \frac{1}{2}$  scale)

40 points

Approaching any change in course (within 3 minutes)

20 points

and fails to set-up for bend in airway

Fails to set 29.92 at FL180

200 points

ANY GENERAL IFR/CRM ERRORS  
(EXPLAIN NEXT TO DEDUCTION)

10 points

PF/PNF not sharing appropriate duties  
(EXPLAIN NEXT TO DEDUCTION)

25 points

During Arrival

Fails to get or consider weather/NOTAMS

350 points

Gets weather/NOTAMS after choosing to divert

100 points

Fails to reset local altimeter setting when descending below FL180

200 points

Fails to ask passengers (the boss) for preferred airport if diverting

50 points

Descent checklist not completed or called complete

50 points

Arrival not announced to flight attendant/passengers

30 points

Fails to keep needle within  $\frac{3}{4}$  scale deflection during arrival

75 points

“1,000 feet to level off” not called

10 points

ANY GENERAL IFR/CRM ERRORS  
(EXPLAIN NEXT TO DEDUCTION)

10 points

PF/PNF not sharing appropriate duties  
(EXPLAIN NEXT TO DEDUCTION)

25 points

## Precision approach

### Approach Briefing If they fail to cover...

Approach Chart Index Number/Date	10 points
Name of Airport	10 points
ATIS	10 points
NOTAMS	10 points
Landing Speed	10 points
Minimum Safe Altitude	10 points
NAVAIDS and Frequencies	10 points
Final Approach Course	10 points
FAF/Crossing Altitude	10 points
Minimums	10 points
Missed Approach Point	10 points
Missed Approach Procedure	10 points
Runway Length & Exit Plan	10 points
Fail to set-up properly for approach while receiving vectors	
Radios not pre-tuned after receiving vector	10 points
ILS not identified	50 points
HSI/OBS not set-up	10 points
OM/MM not set up	10 points

### Procedure Turn (if applicable)

Fails to do procedure turn	100 points
Time not used for procedure turn	20 points
Completes procedure turn incorrectly	50 points
Exceeds 10 nm from the FAF/FAP	50 points
Reverse sensing inbound from procedure turn	30 points
Approach flaps not set	10 points
“Localizer Alive” not called out	10 points
Localizer not intercepted	50 points
“Glideslope Alive” not called out	10 points
Glideslope not intercepted	50 points
“Gear Down; Landing Checklist” not called	10 points
Landing checklist not completed or called complete	50 points
Excessive course deviations	
Prior to final approach fix	50 points
After final approach fix	150 points
Full scale course deviations (Executes missed approach)	
Prior to final approach fix	100 points
After final approach fix	300 points
Full scale course deviations (No missed approach)	
Prior to final approach fix	300 points
After final approach fix	DQ
Missed Callouts	
- “200 above”	10 points
- “100 above”	10 points
- “Minimums; runway in (not in) sight	10 points
MDA deviations during approach (-50 feet for 5 seconds, -100 feet for 1 second, or +100 feet for 5 seconds)	300 points
“Landing Flaps” not called	10 points
Land without landing flaps set	30 points
Unable to land from the approach due to pilot error	50 points
Failure to turn on pilot controlled lighting	100 points

### Go Around (if applicable)

Go Around not executed in a timely manner	100 points
“Max Power/Approach Flaps” not called	10 points
“Positive Rate/Gear Up” not called	10 points
Improper Go-Around power setting	10 points
Improper Go-Around configuration	20 points
Should have gone missed but didn’t	350 points
Turn started too early/late during go around	100 points
Missed approach not set up during the approach or approach brief	100 points
Missed approach not set up properly by PNF	50 points
Hold not discussed properly/timely manner	30 points
Climb checklist not completed or called complete	50 points
Cruise checklist not completed or called complete	50 points

### ANY GENERAL IFR/CRM ERRORS

(EXPLAIN NEXT TO DEDUCTION)

10 points

PF/PNF not sharing appropriate duties

(EXPLAIN NEXT TO DEDUCTION)

50 points

### Non-Precision Approach

Approach Briefing If they fail to cover...

Approach Chart Index Number/Date	10 points
Name of Airport	10 points
ATIS	10 points
NOTAMS	10 points
Landing Speed	10 points
Minimum Safe Altitude	10 points
NAVAIDS and Frequencies	10 points
Final Approach Course	10 points
FAF/Crossing Altitude	10 points
Minimums	10 points
Missed Approach Point	10 points
Missed Approach Procedure	10 points
Runway Length & Exit Plan	10 points
Fail to set-up properly for approach while receiving vectors	10 points
Radios not pre-tuned once on vector	10 points
VOR/NDB not identified	50 points
HSI/OBS not set-up	10 points

### Procedure Turn (if applicable)

Fails to do procedure turn	100 points
Time not used for procedure turn	20 points
Completes procedure turn incorrectly	50 points
Exceeds 10 nm from the FAF/FAP	50 points
Reverse sensing inbound from procedure turn	30 points
Approach flaps not set	10 points
“Course Alive” not called	10 points
Course not intercepted	50 points
Fails to start time at FAF/FAP	20 points
“Gear Down; Landing Checklist” not called	10 points
Landing checklist not completed	50 points

Excessive course deviations	
Outside final approach fix	50 points
Inside final approach fix	150 points
Full scale course deviations (Executes missed approach)	
Outside final approach fix	100 points
Inside final approach fix	300 points
Full scale course deviations (No missed approach)	
Outside final approach fix	300 points
Inside final approach fix	DQ
Missed Callouts	
- "200 above"	10 points
- "100 above"	10 points
- "Minimums; runway in (not in) sight"	10 points
MDA deviations during approach (-50 feet for 5 seconds, -100 feet for 1 second, or +100 feet for 5 seconds)	300 points
"Landing Flaps" not called	10 points
Land without landing flaps set	30 points
Unable to land from the approach due to pilot error	50 points
Failure to turn on pilot controlled lighting	100 points
 <i><u>Go Around (if applicable)</u></i>	
Go Around not executed in a timely manner	100 points
"Max Power/Approach Flaps" not called	10 points
"Positive Rate/Gear Up" not called	10 points
Improper Go-Around power setting	10 points
Improper Go-Around configuration	20 points
Should have gone missed but didn't	350 points
Turn started too early/late during go around	20 points
Missed approach not set up during the approach or approach brief	100 points
Missed approach not set up properly by PNF	50 points
Hold not discussed properly/timely manner	30 points
Climb checklist not completed or called complete	50 points
Cruise checklist not completed or called complete	50 points
 <b>ANY GENERAL IFR/CRM ERRORS</b> <i>(EXPLAIN NEXT TO DEDUCTION)</i>	
	10 points
 PF/PNF not sharing appropriate duties <i>(EXPLAIN NEXT TO DEDUCTION)</i>	
	50 points
 <i><u>Holding</u></i>	
Fails to get EFC time	100 points
Gets EFC time after entering the hold	50 points
Reverse sensing	30 points
Wrong radial/bearing	100 points
Hold on wrong side (Incorrect turn direction)	100 points
Fails to start time/hold to wrong distance	100 points
Fails to report entering hold	10 points
Improper configuration	10 points
Improper speed ( $\pm 20$ knots)	10 points

Exceed allotted holding fuel

300 points

*General errors seen at any time during the LOFT*

*(Same points not deducted elsewhere - explain next to deduction)*

Outcome of flight seriously in doubt	DQ
Crash	DQ
Gross navigational error	500 points
Deviation from ATC clearance	300 points
Rate of descent is twice AGL altitude	300 points
Exceed basic aircraft limitation	300 points
Fails to cancel IFR clearance at a non-towered airport	200 points
Altitude bust ( $\pm 200$ feet)	200 points
Heading bust ( $\pm 20^\circ$ )	100 points
ATC not notified of cruise speed changed more than 5% or 10 knots	100 points
Fails to set altitude alerter properly	50 points
Fails to identify (verbally or non-verbally) altitude alerter changes	50 points
Nav/Com radio not tuned properly	10 points
OBS not set properly (within $3^\circ$ )	10 points
PF doing PNF duties (specify)	25 points
PNF doing PF duties (specify)	25 points
Any general IFR/CRM errors (specify)	10 points