Learning Goals
Basic information for the Approach controller

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APPROACH (APP)

Responsibility

- All tasks as DEL, GND and TWR when positions are not online
- ATIS setup
- Control departing and arriving traffic IFR
- Traffic information VFR
- Labelling IFR
- Emergency handling

Approach, abbreviated as APP, is the most difficult position especially at times when there is lot of traffic.
make sure you are well prepared for the position and are acquainted with the final approach procedures.

Tasks

Approach controllers must coordinate a lot with the center controller...as you need to tell him when he should hand off to you the traffic and at what flight level you should send him the traffic.

Approach controller is a challenging and nice position in which you are responsible for the whole airport TMA usually 40 nm from the airport.

Approach controller is responsible for all Outbound and Inbound traffic.

ATIS setup

The tower is responsible for the setup of the ATIS. Aircrafts need to depart with an upwind as much as possible. so check the METAR first before you setup the ATIS.
Open the runway nr which is closest to the wind direction mentioned in the METAR.
Know the the airports TA and TL. If Tower is online ...follow his ATIS

Common Phraseology

Check the IVAO training department for the latest ICAO documents:

DOC 9432_Manual of Radiotelephony

Doc 4444 - Air traffic Management

General TIPS:

Provide the pilot with the local QNH when you instruct him to descend below the TL

Keep the phraseology short and clear and don't forget some pilots will act slowly. You need to keep that in mind.

In case of a pilot requested a visual approach, vector him in such a way that his arriving runway will be at his 12 o'clock position. Let him report field in sight.

radar CONTACT
radar IDENTIFIED

To be clear when to use these terms:

The words .....radar contact ...are for SSR
The words .....radar Identified....are for PSR
This means in practice that when the Transfer is complete...and there is two-way communication established...the controller will use the word..CONTACT

when communication with the pilot is lost...the controller requests a squawk IDENT...as soon as the pilot appears on radar again...you can uses the word...IDENTIFIED

An approach position covering more than 1 airport in his TMA, for instance HECA approach covering HEAZ, will also use the word....IDENTIFIED

The readback

The readback is a very important part of the communication.
The recipient should *readback* the relevant information from the received message in the same order.

The following instructions always need a full readback:

- runway-in-use,
- altimeter settings,
- squawk codes,
- level instructions,
- heading and speed instructions,
- transition levels
- EAT

In case of a mistake of the readback the recipient should be corrected.

Common mistakes from pilots:

1- They completely readback the ATC instructions and clearance. (parroting)
2- They do not readback or confirm with a “roger” only.

Outbound IFR

Departing traffic is relatively easy to control compared to arriving traffic. Tower cleared the traffic to the initial climb for the vectored departure. Approach must try to clear, if other traffic allows, the plane to the upper limit of the TMA (FL240/FL250).

Never ever clear above the TMA-limit for this creates a so called “airspace violation”
If the plane wants to fly above the TMA limit, try as quickly as possible to transfer him to the radar controller.

HECA waypoint clearance:

MENKU, BLT, ISMLH	FL240
MENLI, RASMI, MENLI, ALPID, FYM	FL250

Transfer the pilot if the waypoint has been reached or the instructed flight level.

If the filed cruise level in the flight plan is lower than the TMA-limit, then you transfer the traffic when they leave the TMA on the side limits of approx 40nm.

Traffic does not depart according to a fixed steppe plan, instructed by the approach controller. Clear the traffic directly to his Cruise level if flying below the TMA limit or you can also let them fly on the initial climb for a moment to avoid collisions.
Arrivals are more in a hurry to descent then departures in the climb.

Controller provides two instructions to a departing IFR-pilot in a normal situations

1. Contact, Climb and DIRECT instruction.
   Ex: MSR961 radar contact continue climb FL240 DIRECT ISMLH
2. Transfer instruction.
   Ex: MSR961 contact Centre on one two five decimal three.

Do NOT use more instructions then absolutely necessary.

Departure (1) (***serves as example only. in R/L Egypt does not use SIDs and STARs***)
Pilot: Cairo Approach, MSR961, MENKU 1S Departure, passing 2000 ft
ATC:MSR961, radar contact passing 2000ft, continue climb FL 130
Pilot: Climb FL 130, MSR961
ATC:MSR961, continue climb FL 240
Pilot: Climb FL 240, MSR961
ATC: MSR961, Contact Cairo Centre on 125.30
Pilot: 125.30, MSR961

Departure (2)
Pilot: Cairo Approach, MSR961, passing 2000 ft, runway heading
ATC:MSR961, radar contact passing 2000ft, continue climb FL 240, direct MENKU
Pilot: Climb FL 240, direct MENKU, MSR961
ATC: MSR961, Contact Cairo Centre on 125.30
Pilot: 125.30, MSR961

Inbound IFR

As an approach controller u need to tell the pilot early which runway to expect so he can prepare himself.

Keep in mind that some pilots act or respond slowly so u need to put yourself on the safe side.

For the descents you can use the APPROACH SCHEDULE: HECA (see Appendix 1)

The speed inside the TMA is 220 but in case of busy times u can make some speed restrictions for some planes so you can create good separation

The optimum separation between planes is 6nm from each other.

the best way to let a plane intercept is on a 30 degree angle so a plane has a smooth and nice interception.

Create separation with altitude and heading.
Maintain separation with speed.

The difference in altitude for “non –separated” traffic must be more than 1000ft. When this is done, the traffic must be “separated” with approx. 6 nm between every aircraft. When this is completed the traffic can be cleared to the same height. To maintain this “train” we must make sure that the traffic is flying all the same speed. Once this is completed the controller has created a good overview on his arriving traffic.
Because the radar of the approach controller is more detailed than the radar of a centre controller, it is allowed to separate to a minimum of 3 nm. Centre controllers are not able to do this. They maintain the standard separation of 6 nm.

Usually the Controller provides 6 instructions to an approaching IFR-pilot in normal situations

Contact, IAF and descend, info about the landing runway and ATIS

1. Contact, IAF and descend, info about the landing runway and ATIS
2. Downwind and TL instruction
3. Intercept altitude instruction + QNH
   When a pilot is instructed to descend below the TL, the QNH must always be provide. Do not accept a readback of the pilot: “copy the QNH”. QNH is a obligatory full readback instruction
4. Base-leg instruction.
5. Intercept instruction.
6. Transfer instruction

Do not use more instructions unless absolutely necessary.
Item 3 and 4 are usually combined to 1 instruction.

Make sure that each and every sentence does not contain more than 3 instructions.
A pilot on approach is already busy so it's a disaster for him to memorize.
The instruction at item 1 already contains a lot of information. A good pilot however already read and mentioned the ATIS so there is no need for the controller to mention this again.

Vectored arrival

Pilot: Cairo Approach, MSR961, information LIMA, inbound MENLI, descending FL 110
ATC: MSR961, YANKEE correct, vectors ILS runway 05C, after MENLI turn left heading 280
Pilot: Vectors ILS runway 05C, after MENLI turn left heading 280, MSR961
ATC: MSR961, descend Transition Level 60
Pilot: Descend transition level 60 MSR961.
ATC: MSR961, descend altitude 2500ft, QNH 1015
Pilot: Descend altitude 2500ft, QNH 1015, MSR961
ATC: MSR961, turn right heading 320
Pilot: Turn right heading 320, MSR961
ATC: MSR961 turn right heading 010, cleared ILS approach runway 05C
Pilot: Turn right heading 010, cleared ILS approach runway 05C, MSR961
Pilot:MSR961, established localizer runway 05C
ATC: MSR961, contact Cairo tower on 118.1
Pilot: 118.1, MSR961

Note:
report established localizer: the pilot will report when his CDI is active...so a course deflection of less than 10 degrees is considered: established !...but he is still waiting for the descend. There is no such thing as "report fully established", pretending that the pilot will report when he is descending on the ILS.
report on the glide: the pilot will report when established on the localizer and descending on the ILS glide path.

Procedural approach

Pilot: Luxor Approach, MSR961, information KILO, inbound LXR, descending FL 060
ATC: MSR961, Information KILO correct, procedural ILS DME approach runway 20, Direct LO NDB, enter the published hold overhead LO, EAT time 55
Pilot: Procedural approach runway 20, Direct LO NDB, enter the hold overhead LO, EAT time 55, MSR961
Pilot: MSR961, in the hold over LO, FL060, speed 220
ATC: MSR961, descend altitude 3500ft, QNH 1019
Pilot: Descend altitude 3500ft, QNH 1019, MSR961
ATC: MSR961, cleared procedural ILS approach runway 20, report inbound LO
Pilot: Cleared procedural ILS approach runway 20, report inbound LO, MSR961
Pilot: MSR961, inbound LO
ATC: MSR961, roger
Pilot: MSR961, established ILS runway 20
ATC: MSR961, contact Luxor tower on 119.9
Pilot: 119.9, MSR961

Traffic info VFR

Most approach controllers have very little to do with VFR-traffic when TWR is online as well.
Information about wind and runway choice can be provided. Nevertheless pilots do report with these controllers because they are flying in his airspace.
ALL HECA TMA's are forbidden for VFR traffic. That's why VFR traffic must always stay below 3500ft.

This is the altitude at which the HECA TMA start. Below the TMA's VFR traffic reports for traffic information to "Cairo Radar / information" .
If "Cairo Radar / information" is not online a VFR pilot can request Approach for traffic info. Approach shall not provide help like vectors if the VFR pilot does not specifically asks for it. .
If the pilot flies above 3500ft he must be corrected immediately.

Approach in practise

runway change

Make new agreements with radar to determine the altitudes at the IAF's and the point at which radar will clear aircrafts before handed over to approach.
Discuss missed approach procedures with tower. Depending on the runway combination you can decide for a standard missed or a agreed missed.

Wake categories

Put aircrafts with wake-category light on runway 05L or 23R. Keep these aircrafts out of the way from departure routes and standard approach routes for the active runway. If a pilot insists on landing on the active runway for HEAVY traffic, it can only be done when it's not too busy. It's extremely difficult to put a LIGHT in between several HEAVY'S and still maintain separation!

On arriving traffic check:
1. Wake-category.
2. Did the pilot mention the correct ATIS

First instruction will contain:
0: Radar contact FL....
1. Active runway for landing
2.Heading or DCT. (leave it out if already given by radar)
3. Descent (leave it out if already given by radar and it's not time yet to start the descent)

Descent below TL
When instruction is given to descent below the TL the QNH must be provided. If the QNH is lower than 1000 the word "Hectopascal" must be mentioned as well.
"*MSR961 descent 2500ft QNH 999 Hectopascal*"

Speed control

- Speed over IAF 250 knots (approx 30NM uit CVO);
- Within a range of 15 nm reduce speed 220 in the TMA.

220 knots is a perfect speed for aircrafts to manoeuvre in busy times to create and maintain a good approach sequence. Heavy aircrafts (like the B747) as well as the lighter turboprops can easily maintain this speed.
It's also very convenient for you as approach and the tower controller that aircrafts maintain the same speeds on the ILS approach. For instance 180 knots at intercept or even 'Maintain 160 knots until 4 DME'
This forces the pilots to maintain speed 160 knots until they reach 4nm from the threshold

Separation

For all sorts of safety reasons it's the task of the approach to maintain separation between arriving aircrafts. The following rules will apply :

L=Light M=Medium H=Heavy

All cases 3 nm (no time limit) except for the following:

H afterH	4 nm	no time limit
M after H	5 nm or	2 min separation
L after M	5 nm or	3 min separation
L after H	6 nm or	3 min separation

These are bare minimum so in practise stay on the safe side ! and try to maintain 6 nm for all situations

Parallel approaches.

If two aircrafts are approaching at the same time 2 different parallel runway then we are talking about a parallel approach no matter the separation. An aircraft established 05C at 10nm final and 05L at 1nm is still considered a parallel approach.
For both aircrafts applies that they need to be established on the localizer at least 2nm from the Glideslope-intercept.

At HECA:
05L and 05C combination requires intercept at 2500ft
23C and 23R combination requires intercept at 2000ft

Parallel approaches are only allowed at airports at which the parallel runways are more than 800 meters apart.

At Cairo the distance of the runways are:
05L and 05C = 2700m
05C and 05R = 1400 m

normal parallel approach:

- allowed on 05L and 05C / 23L and 23C
- no altitude separation
- horizontal separation of minimum 3 nm (in case of go-around procedure)
- no category problems (wake turbulence)

full parallel approach:

- allowed on 05L and 05R / 23L and 23R
- no altitude separation
- no horizontal separation (they can both land at exactly the same time)
- no category problems (wake turbulence)

When parallel approaches are active the ILS-frequency must always be checked for both pilots!

Vectored Parallel approach

Pilot: Cairo Approach, MSR961, information LIMA, inbound MENLI, descending FL 110
ATC: MSR961, YANKEE correct, vectors ILS runway 05C, independent parallel approach in progress, after MENLI turn left heading 280
Pilot: Vectors ILS runway 05C, after MENLI turn left heading 280, MSR961
ATC: MSR961, descend Transition Level 60
Pilot: Descend transition level 60 MSR961.
ATC: MSR961, descend altitude 2500ft, QNH 1015. Check ILS frequency 109.90
Pilot: Descend altitude 2500ft, QNH 1015, frequency 109.90 checked, MSR961
ATC: MSR961, turn right heading 320
Pilot: Turn right heading 320, MSR961
ATC: MSR961 turn right heading 010, cleared ILS approach runway 05C
Pilot: Turn right heading 010, cleared ILS approach runway 05C, MSR961
Pilot:MSR961, established localizer runway 05C
ATC: MSR961, contact Cairo tower on 118.1
Pilot: 118.1, MSR961

Note :
Some major airport have separate " Arrival Approach" which handles the parallel approaches The range of the arrival approach is much smaller and for arriving traffic only.

Y-flights.

The first part of the flight will be handled as normal IFR. The pilot will report prior to his VFR switching point.

1. Instruct the pilot to descend to an appropriate Flight level (Fl085 ...Fl075...Fl065.....etc) or an altitude below the TMA.
2. Provide the pilot with a squawk VFR

example:

SOLAM A727 SEMRU B418 SOKAT VFR DCT

Pilot: *MSR961, cancelling IFR.*
ATC: MSR961, *IFR cancelled at [time], Squawk VFR, descend 3500ft QNH 1015, report 15 DME CVO*
Pilot: *IFR cancelled at [time], Squawk VFR, descend 3500ft QNH 1015, report 15 DME CVO, MSR961*

Z-flights.

The first part of the flight will be handled as normal VFR. The pilot will report prior to his IFR switching point.

1. Instruct the pilot to climb to his filed IFR Flight .
2. Provide the pilot with a squawk IFR

example:

DCT CWA DCT OCT DCT SOLAM/N0180F150 IFR A727 SEMRU B418 HGD

Pilot: Approach,MSR961.
ATC: MSR961, Cairo Approach.
Pilot: MSR961, Piper Cheyenne, 5 miles east of OCT NDB, 3000 ft, request IFR pickup.
ATC: MSR961, Squawk 4405.
Pilot: Squawk 4405, MSR961
ATC: MSR961, identified, cleared to Hurgada, via direct SOLAM, thereafter as filed, climb FL 150. IFR starts when passing 4500ft.
Pilot: MSR961, cleared to Hurgada, direct SOLAM, thereafter as filed, climb FL 150, IFR starts when passing 5000 ft.

Labelling

For the approach controller LABELLING is very important. Other controllers will know what the pilots is going to do before you hand over inbound or outbound traffic.

outbound traffic will be labeled with 2 things

1. the waypoint or SID with the assigned altitude you have given him
2. The assigned altitude.

Inbound traffic will be labeled with 3 things

1. the waypoint or STAR and when you use radar vectors you label him RV and when he is turning to intercept label him ILS05C
2. The assigned altitude.
3. the speed restriction if necessary.

Handover

for u as approach controller your role ends when the pilot is established on the ILS or when he pass the FL that you and the center agreed for handing off the pilot to center.

Approach usually receives aircrafts 2 minutes before the IAF.

Emergency Handling

In case of emergency u must give him the highest priority by clearing the TMA for him also u need to let other controllers (Center and Tower and Ground) that there is an emergency so the airport will be closed till the emergency land safely.

Don't put aircrafts unnecessary in a HOLD. Do this only when there is an emergency on arrival and all other options like rerouting or reducing speed have run out. in real life putting an aircraft in a HOLD costs extra time and therefore extra MONEY ! Airliners are not happy when you do that.

Holding points around HECA:
OCT
MENLI
SOLAM
ALTOX

issues **holding instructions** in the following form:

- *Geographical reference* of the Holding fix: the general location of the holding
- *Inbound leg*: the inbound leg is always the reference
- *Turn direction*: (right turns (standard) or left turns (non-standard)
- *Altitude*
- *Expected further clearance* time (**EFC**)
- *Current time* (optional)

Appendix 1:

Approach schedule: HECA

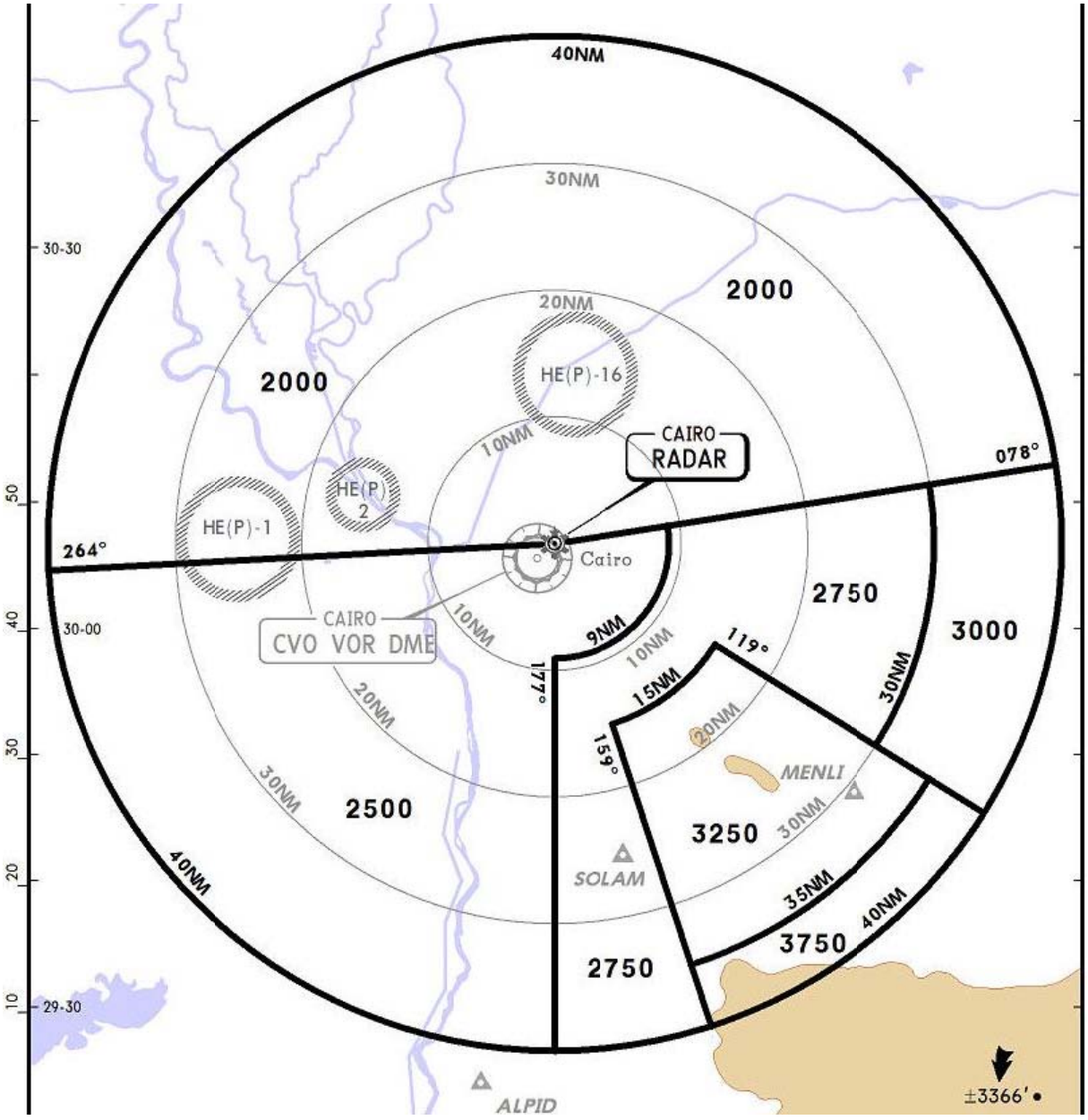
		05L	05C	05R	Alt	Pos	Alt	Pos	Alt	Pos	Alt	Pos	Alt	Pos
North	**MENKU**	1T	1S	-	FL 130	D48 CVO	FL090	D23 CVO	FL060 TL	D12 CVO	4500 ft TA	CVO	2500 ft	ILS
	BLT	1T	1S	-	FL 130	D48 CVO	FL090	D28 CVO ALTOX	FL060 TL	D12 CVO	4500 ft TA	CVO	2500 ft	ILS
	ISMLH	1T	1S	-	FL 130	D48 CVO	Fl090	D25 CVO	FL060 TL	D12 CVO	4500 ft TA	CVO	2500 ft	ILS
South	**ALPID**	1T	1S	-	FL 140	D42 CVO	FL080	D25 CVO	FL060 TL	D19 CVO	3200 ft	D13 CVO	2500 ft	ILS
	FYM	1T	1S	-	FL 220	D66 CVO	FL080	D25 CVO	FL060 TL	D19 CVO	3200 ft	D13 CVO	2500 ft	ILS
	MENLI	1T	1S	-	FL 100	D32 CVO	Fl080	D25 CVO	FL060 TL	D19 CVO	3200 ft	D13 CVO	2500 ft	ILS
	RASMI	1T	1S	-	FL 240	D69 CVO	Fl080	D25 CVO SOLAM	FL060 TL	D19 CVO	3200 ft	D13 CVO	2500 ft	ILS

initially provided by Center

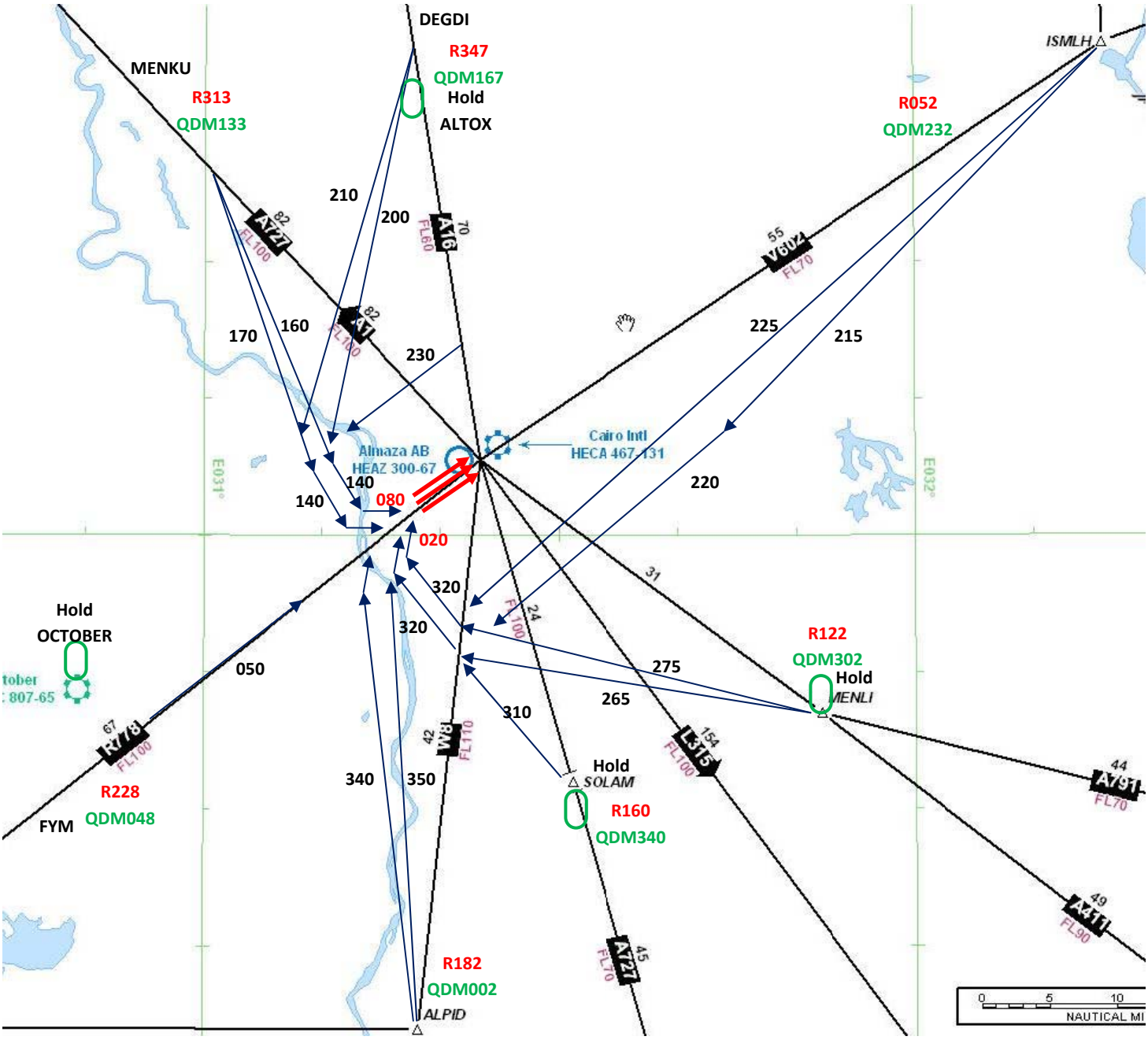
		23L	23C	23R	Alt	Pos	Alt	Pos	Alt	Pos	Alt	Pos	Alt	Pos
North	**MENKU**	-	1V	1U	F130	D48 CVO	FL090	D23 CVO	FL060 TL	D12 CVO	4500 ft	CVO	2000 ft	ILS
	BLT	-	1V	1U	F130	D48 CVO	FL090	D28 CVO ALTOX	FL060 TL	D12 CVO	4500 ft	CVO	2000 ft	ILS
	ISMLH	-	1V	1U	F130	D48 CVO	Fl090	D25 CVO	FL060 TL	D12 CVO	4500 ft	CVO	2000 ft	ILS
South	**ALPID**	-	1V	1U	F140	D42 CVO	FL080	D25 CVO	FL060 TL	D19 CVO	3200 ft	D13 CVO	2000 ft	ILS
	FYM	-	1V	1U	F220	D66 CVO	FL080	D25 CVO	FL060 TL	D19 CVO	3200 ft	D13 CVO	2000 ft	ILS
	MENLI	-	1V	1U	F100	D32 CVO	Fl080	D25 CVO	FL060 TL	D19 CVO	3200 ft	D13 CVO	2000 ft	ILS
	RASMI	-	1V	1U	F240	D69 CVO	Fl080	D25 CVO SOLAM	FL060 TL	D19 CVO	3200 ft	D13 CVO	2000 ft	ILS

initially provided by Center

Minimum Radar Altitudes: HECA



HECA vectoring schedule rwy 05L/C/R



HECA vectoring schedule rwy 23L/C/R