

# SO-HU Quick Reference Sheet



## IVAO Hungary Division SO Department

*effective: 30. January 2020.*  
**MILAIIP AIRAC AMDT 001/2020**

**Strictly for flight simulation purposes**

**/additional valid documents: HU-SO Order 20200124, HU-SO Manual 20190313 v1.3 /  
Created by HU-SOC, 20200417 v1.0**

# LHKE – Kecskemet – Titan Military Base

Callsign	Position	Freq
Kecskemet/Titan Tower	LHKE_TWR	135.75
Kecskemet/Titan Approach	LHKE_APP	120.25
Szikla Radar	LHCC_MIL_CTR	136.00
Magic Radar	LHCC_MIL_CTR	136.2
Budapest Radar	LHCC_CTR	120.375

Levels	
Initially climb	7000'
TA	10000'
TL ≤ 1013	FL120
TL > 1013	FL110
Westbound	even
Eastbound	odd

Squawk codes	
Military	0601 - 0677
IFR	2601 - 2677
	4201 - 4277
VFR	7001 - 7027
	7030 - 7037

Holdings				
HOLD	ALT	Turn	CRS	Leg
KET	5000' - FL140	right	279°	1 min
KE002	4000' - FL130	right	298°	1 min
Air Refueling				
BEKES	FL140-FL170	left	360°	30nm

PROCEDURES									
DEPARTURES				ARRIVALS				VFR POINTS	
PRIORITY: 12				PRIORITY: 12				POINT	COORDINATES
COPx	12	30	XFL	COPx	12	30	XFL		
BINKU	1D	3D	FL110	BUGAC	1A	3A	FL110	LOM 313 NT	46°56'41.5"N 019°41'13.3"E
BABOX	1D	3D	FL110	BOGSI	1A	3A	FL110	LMM 440 N	46°55'42.8"N 019°43'27.0"E
MAVIR	1D	3D	FL110	OSLEN	1A	3A	FL110	LMM 440 T	46°54'22.6"N 019°46'28.8"E
								LOM 313 TN	46°53'32.0"N 019°48'23.6"E

APPROACH			
	IAF	ALT	FREQ
12	KEW	5000'	ILS: 109.95
	NT	2000'	NDB: 313 kHz
	NT	2500'	PAR
	KE007	5000'	RNAV
30	KET	5000'	VOR: 114.15
	KEE	5000'	ILS: 109.95
	NT	2000'	NDB: 313 kHz
	NT	2500'	PAR
	KE001	4000'	RNAV
	KET	4000'	VOR: 114.15

TRAINING FLIGHTS / VISUAL APPROACH PATTERNS				
TYPE	RWY	TURN	ALTITUDE	RULE
RECTANGULAR	12	left	1500' /	VFR
	30	right	Heli 1000'	VFR
OVERHEAD	12	left	2000'	VFR
	30	right		VFR
LOWPASS	12	left	200'	VFR
	30	right		VFR
STRAIGHT IN	12	-	2000'	VFR
	30	-	2000'	VFR

LHKE Military TMA s	
MTMA 1	2000' - FL 145
MTMA 2	2000' - FL 145
Permanently active. Below 2000' is reserved for civil VFR flights.	

Taxi to holding point of RWY	
12	F4-F3-F2-F1-D
30	F1-F2-F3-F4-A

Parkings: L, K, J, M  
Hangars: G

LHKE\_TWR is for both GAT and OAT traffic. LHKE\_TWR minimum rating is ADC. To open LHKE\_TWR No prior approval is required.  
LHKE\_APP and LHCC\_MIL\_CTR is only for OAT. APP and MIL\_CTR minimum rating is APC or special permit. Prior approval from SO-HU dep is required



# LHSN – Szolnok – Opera Military Base

Callsign	Position	Freq	Levels		Squawk codes		Holdings				
Szolnok / Opera Tower	LHSN_TWR	130.25	Initially climb	7000'	Military	0601 – 0677	HOLD	ALT	Turn	CRS	Leg
Szolnok / Opera Approach	LHSN_APP	127.75	TA	10000'	IFR	2601 – 2677	AO	3700' – FL130	right	016°	1 min
Szikla Radar	LHCC_MIL_CTR	136.00	TL ≤ 1013	FL120		4201 – 4277	OA	2500' – FL130	left	196°	1 min
Magic Radar	LHCC_MIL_CTR	136.2	TL > 1013	FL110	VFR	7001 – 7027	SN001	6000' – FL130	left	191°	1 min
Budapest Radar	LHCC_CTR	120.375	Westbound	even		7030 – 7037	SN007	5000' – FL130	right	196°	1 min
			Eastbound	odd							

PROCEDURES				APPROACH			
DO NOT HAVE SID	DO NOT HAVE STAR	VFR POINTS		IAF	ALT	FREQ	
		POINT	COORDINATES	2	AO	3700'	NDB: 282 kHz
		LOM 282 OA	46°09'47.7"N 020°15'31.0"E		AO	2500'	PAR
		LMM 422 O	47°08'15.5"N 020°14'38.5"E		SN001	6000'	RNAV
		LMM 422 A	47°06'19.5"N 020°13'32.4"E		AO	2500'	NDB: 282 kHz
LOM 282 AO	47°04'51.6"N 020°12'43.5"E	AO	2500'	PAR			
				20	SN007	6000'	RNAV

TRAINING FLIGHTS / VISUAL APPROACH PATTERNS				
TYPE	RWY	TURN	ALTITUDE	RULE
RECTANGULAR	2	right	1300'	VFR
	20	left		VFR
OVERHEAD	2	right	2000'	VFR
	20	left		VFR
LOWPASS	2	right	200'	VFR
	20	left		VFR
STRAIGHT IN	2	-	1500' / Heli 500'	VFR
	20	-		VFR

LHSN Military TMAs	
MTMA	2000' – 9500'
Permanently active. Below 2000' is reserved for civil VFR flights.	

Taxi to holding point of RWY	
2	D4-D3-D2-D1-A
20	D1-D2-D3-D4-C

Parkings	
Apron 1: 1-10	
Apron 2	
Apron 3: 1-64	

LHSN\_TWR is for both GAT and OAT traffic. LHSN\_TWR minimum rating is ADC. To open LHSN\_TWR No prior approval is required.  
LHSN\_APP and LHCC\_MIL\_CTR is only for OAT. APP and MIL\_CTR minimum rating is APC or special permit. Prior approval from SO-HU dep is required



# LHPA – Papa – Parduc Military Base

Callsign	Position	Freq
Papa / Parduc Tower	LHPA_TWR	129.5
Papa / Parduc Approach	LHPA_APP	131.25
Szikla Radar	LHCC_MIL_CTR	136.00
Magic Radar	LHCC_MIL_CTR	136.2
Budapest Radar	LHCC_CTR	120.375

Levels	
Initially climb	7000'
TA	10000'
TL ≤ 1013	FL120
TL > 1013	FL110
West bound	even
East bound	odd

Squawk codes	
Military	0601 - 0677
IFR	2601 - 2677
	4201 - 4277
VFR	7001 - 7027
	7030 - 7037

Holdings				
HOLD	ALT	Turn	CRS	Leg
PA8	4000' - FL130	right	336°	1 min
PA2	4500' - FL130	right	156°	1 min

## PROCEDURES

DO NOT HAVE SID

DO NOT HAVE STAR

### VFR POINTS

POINT	COORDINATES
LOM 318 CP	47°24'25.8"N 017°28'40.4"E
LMM 493 C	47°22'55.3"N 017°29'28.0"E
LMM 493 P	47°20'41.3"N 017°30'38.3"E
LOM 318 PC	47°19'07.1"N 017°31'27.6"E

## APPROACH

	IAF	ALT	FREQ
16	PCN	4000'	ILS: 108.55
	CP	2500'	NDB: 318 kHz
	PCT	2500'	PAR
	PA014	2500'	RNAV
	PCT	2500'	SRE
34	PCT	6000'	VOR: 114.75
	PCD	4500'	ILS: 108.55
	PCT	2500'	PAR
	PA006	3300'	RNAV
	PCT	3300'	SRE
	PCT	4500'	VOR: 114.75

## TRAINING FLIGHTS / VISUAL APPROACH PATTERNS

TYPE	RWY	TURN	ALTITUDE	RULE
RECTANGULAR	16	left	1500' /	VFR
	34	right	Heli 500'	VFR
OVERHEAD	16	left	2500'	VFR
	34	right		VFR
LOWPASS	16	left	200'	VFR
	34	right		VFR
STRAIGHT IN	16	-	1500' /	VFR
	34	-	Heli 500'	VFR

## LHSN Military TMAs

MTMA 2000' - FL 145

Permanently active.  
Below 2000' is reserved  
for civil VFR flights.

## Parkings

Apron H, G  
Apron K, L, M, N  
Apron EK1-EK8

## Taxi to holding point of RWY

16	D - C
34	D - A

LHPA\_TWR is for both GAT and OAT traffic. LHPA\_TWR minimum rating is ADC. To open LHPA\_TWR No prior approval is required.

LHPA\_APP and LHCC\_MIL\_CTR is only for OAT. APP and MIL\_CTR minimum rating is APC or special permit. Prior approval from SO-HU dep is required



# LHTA – Taszar – Kaland Military Base

Callsign	Position	Freq
Taszar / Kaland Tower	LHTA_TWR	118.0
Taszar / Kaland Approach	LHTA_APP	127.85
Szikla Radar	LHCC_MIL_CTR	136.00
Magic Radar	LHCC_MIL_CTR	136.2
Budapest Radar	LHCC_CTR	120.375

Levels	
Initially climb	7000'
TA	10000'
TL ≤ 1013	FL120
TL > 1013	FL110
Westbound	even
Eastbound	odd

Squawk codes	
Military	0601 - 0677
IFR	2601 - 2677
	4201 - 4277
VFR	7001 - 7027
	7030 - 7037

PROCEDURES		
<b>DO NOT HAVE SID</b>	<b>DO NOT HAVE STAR</b>	<b>DO NOT HAVE INSTRUMENTAL APPROACH</b>

APPROACH			
	IAF	ALT	FREQ
16	Only visual		
34	Only visual		

TRAINING FLIGHTS / VISUAL APPROACH PATTERNS				
TYPE	RWY	TURN	ALTITUDE	RULE
RECTANGULAR	16	left	1500' / Heli 500'	VFR
	34	right		VFR
OVERHEAD	16	left	2500'	VFR
	34	right		VFR
LOWPASS	16	left	200'	VFR
	34	right		VFR
STRAIGHT IN	16	-	1500' / Heli 500'	VFR
	34	-		VFR

**LHTA Military TMAs**  
 MTMA 2000' - FL 145  
 Permanently active.  
 Below 2000' is reserved for civil VFR flights.

**Parkings**  
 Main Apron-Terminal  
 Rampa E, F

Taxi to holding point of RWY	
16	F - D
34	F - A

LHTA\_TWR is for both GAT and OAT traffic. LHTA\_TWR minimum rating is ADC. To open LHTA\_TWR No prior approval is required.  
 LHTA\_APP and LHCC\_MIL\_CTR is only for OAT. APP and MIL\_CTR minimum rating is APC or special permit. Prior approval from SO-HU dep is required



# Military ATC phrase reference I.

## Speed related requests and approvals

- request high speed
- request supersonic speed

„no speed restriction”: during climbing, it would avoid the restriction about FL100 max. 250 IAS speed limit.

„high speed approved”: same as above but usually in case of descending.

„free speed” or „speed is yours”: you can use any speed even faster or slower.

„normal speed”: you can deviate from the SID, STAR procedure limits, but you should keep the max 250 kts below FL100

„supersonic speed approved”: approval for higher speed than 1 Mach.

Without ATC supersonic speed should be proceed just above FL400.

## Military flightplan / task request and approval

**Pilot:** Szikla, Eagles 001, request VFR (or IFR) military at Kecskemét MTMA

**ATC:** Eagles 001, task approved as filed, report when ready to departure or ready to go

**Pilot:** Task approved, will report when ready to go, Eagles 001

**ATC:** Eagles 001, after airborne, climb FL 200, dclt BUG

**Pilot:** Climb FL 200, dclt BUG, Eagles 001

**ATC:** Eagles 001, correct, after passing BUG, proceed your task, report when ready to leave

**Pilot:** after passing BUG, proceed task, will report when ready to leave

**Pilot:** Eagles 001, task completed, request landing information at LHKE

**ATC:** Eagles 001, rgr, active rwy 30, 5 o'clock and 30 miles, wind 290/12, qnh 1020, report when rwy insight

**Pilot:** wind copy, active rwy 30, qnh 1020, will report when rwy insight

## Landing information request

**Pilot:** Kecskemét\_TWR, good day. Eagles 001, single Mig29, request landing information

**ATC:** Eagles 001, hello, active rwy 30, 5 o'clock and 30 miles, wind 290/12, rt final

**Pilot:** wind copy, active rwy 30, qnh 1020, will report when rwy insight

## Gear check

**ATC:** Eagles 001, wind 330/06, report gear down

**Pilot:** Base gear down, Eagles 001

## Visual approach types

**Overhead app /Join/Turn:** same as the civil rectangular visual pattern usually at 2000'.

**Low approach/ low pass:** similar to the overhead approach, but at 200'.

**Fly by:** low pass above any object, not just rwy

**Pilot:** Szikla, Eagles-Formation (HUE001+HUE002) is requesting Low-Approach RWY 30, closed

**ATC:** Eagles-Formation, wind 280/09, cleared Low-Approach RWY30, left-closed approved, report Downwind

**Pilot:** Szikla, Eagles 001 request Fly by at Kecskemét for gear check

**ATC:** Eagles 001, wind 300/05, cleared Fly by Northside RWY30, report gear down

**Pilot:** Wind copy, clr Fly by rwy 30, will report gear down, Eagles 001

**Pilot:** Eagles 001, reporting gear down

**ATC:** Eagles 001, gear down confirm or negative, gear is upper position

**Pilot:** Gear down confirm vagy negative confirm, request holding or emergency landing, Eagles 001



# Military ATC phrase reference II.

## Interception

Pilot: Szikla, good day, Eagles 001, request IFR interception to EEP-012 \*

ATC: Eagles 001, good day. Task approved, cleared immediate take-off rwy 30, Kecskemét

Pilot: Eagles 001, airborne

ATC: Eagles 001, Radar Contact. Read you 5, Priority ALPHA

Pilot: Eagle 001, on heading 270, reading also 5, Priority ALPHA

ATC: Eagle 001, target on heading 350°, 36nm, FL290, tracking (course) 120

ATC: Eagles 001, fly heading 360. Bogie is coming in 060°, 5nm"

Pilot: rgr, Eagles 001

Pilot: Eagles 001, Radar contact to target

ATC: Eagles 001, rgr, continue interception, report in target

Pilot: Eagles 001, Bogie, single F16, in Target!

or

Pilot: Eagles 001, Friend, single B737 identified.

ATC: Eagles 001, rgr, target confirmed, task completed, advise next task request

Pilot: task completed, request landing information rwy 30, Kecskemét

\* Prior approval from the interception target is mandatory !

## IFR approach types

**SFA – Single Frequency Approach:** approach and landing without ATC frequency changes.

APP will coordinate the full approach and landing without giving the a/c to other ATC positions

**PAR Approach- (Precision Approach Radar) :** approach with full vectoring by APP.

It would be just for approach or even with combination with SFA

**Pilot:** Eagles 001, request Single Frequency Approach

**ATC:** Eagles 001, rgr, SFA approved, stay with me (or contact 135.5 for SFA)

**Pilot:** SFA approved, stay with you (or contact 135.5 for SFA)

Pilot: Kecskemét TWR, good day, Eagles 001, request PAR-Approach rwy 30, Kecskemét

ATC: Eagles 001, cleared PAR-Approach rwy 30 Kecskemét

ATC: Eagles 001, do not acknowledge further instructions until decision height!

....

ATC: Eagles 001, approaching 9 nautical miles, altitude should be 7000ft, heading 029, speed 180kts

....

ATC: Eagles 001, approaching 5nm, altitude should be 4900ft, heading 029, on course, on glidepath.

## Emergency protocol

Pilot: Eagles 001, request Emergency (take off/protocol) for Interception

ATC: Eagles 001, rgr, Emergency (take off/protocol) approved, Sqk 0601, rwy 12, report holding point D

Pilot: Sqk 0601, Rwy 12, holding point D, Eagles001

*/ The Emergency protocol include engine start/pushback, taxi clearance/*

*/During taxi, ATC should check the flight plan, if there is no problem, then he can give the take off clearance before the holding point./*

*before the holding point./*

Pilot: Report holding point D rwy 12, Eagles001

ATC: Eagles 001, Rwy 12, wind calm, clear to take off, initial 7000, report airborne

Pilot: report airborne, Eagles001

ATC: Eagles 001, proceed your task or ATC: Eagles001, report when ready to proceed interception

Pilot: Ready for interception, Eagles001



# Military ATC phrase reference III.

## Formation flight

### Formation clearance on the ground:

Pilot: Titán Tower, sziasztok, Eagles001-Formation request IFR flight to Taszár

ATC: Eagles001-Formation, sziasztok, cleared (Formationflight) IFR to Taszár as flight plan route , ....., squawk is 0601 to 0604. Leader to „Charlie”, wingmen to „STBY”.

### Formation clearance during flight:

Pilot: Szikla Radar, Eagles001 request Formationflight clearance

ATC: Eagles001-Formation ( or Eagles Formation) Formationflight approved, wigmen to „STBY”

Pilot: Eagles-Formation, Formationflight approved, wigmens standingby

### Formation split:

Pilot: Titán Tower, Eagles001-Formation, request Formation split

ATC: Eagles001, Formation-split approved, wigmen to „Charlie”

Pilot: Eagles001 reporting Formation-split

### Unexpexted formation split (winman can not maintain formation):

Pilot: Eagles001 reporting Formation-split

ATC: Eagles001, rgr, wigmen to „Charlie”

### Formation landing:

Pilot: Eagles Formation, (report) downwind leg

ATC: Eagles Formation, rgr, report when ready to base

Pilot: Will report base, Eagles Formation

Pilot: Eagles Formation, ready to base

ATC: Eagles Formation, rgr, report final

Pilot: Will report final, Eagles Formation

Pilot: Eagles Formation, on final

ATC: Eagles Formation, rgr, wind 320/10, rwy 30, clr to land, report when rwy vacated

Pilot: wind copy , rwy 30, clr to land, will report rwy vacated, Eagles Formation

### Formation split and landing:

Pilot1: Eagles Formation, (report) downwind leg, request formation split.

ATC: Eagles Formation, rgr, formation split approved, own separation, report when ready to base

Pilot1: Will report base, Eagles Formation

...

Pilot: Eagles 001, ready to base

ATC: Eagles 001, rgr, report final

Pilot1: Will report final, Eagles 001

...

Pilóta2: Eagles 002, ready to base

ATC: Eagles 002, rgr, report final

Pilóta2: Will report final, Eagles 002

...

Pilóta1: Eagles 001, on final

ATC: Eagles 001, rgr, wind 320/10, rwy 30, clr to land, report when rwy vacated

Pilóta1: wind copy , rwy 30, clr to land, will report rwy vacated, Eagles 001

...

Pilóta2: Eagles 002, on final

ATC: Eagles 002, rgr, wind 320/10, rwy 30, clr to land, report when rwy vacated

Pilóta2: wind copy , rwy 30, clr to land, will report rwy vacated, Eagles 002





# Military ATC phrase reference IV.

## Air refueling

Tanker: Szikla Radar, sziasztok, Eagles Tanker with you FL070 climbing FL120 inbound BUG.

ATC: Eagles Tanker, sziasztok, in Radar contact, climb FL160 and proceed direct BEKES. Cleared to enter the anchor.

Tanker: Climbing FL160 and cleared into the Anchor. Request block altitude, Eagles Tanker.

MCC: Eagles001, block altitude FL140/FL170.

....

Tanker: Szikla Radar, Eagles Tanker steady FL160 within the track.

MCC: Eagles Tanker copied, cleared to leave the frequency. See you later, sziasztok.

....

Receiver: Szikla Radar, sziasztok, Eagles001, FL200.

MCC: eagles001, sziasztok, in Radar contact. Descend FL150 and proceed direct BEKES.

Receiver: Descending FL150 and setting course direct BEKES, Eagles001.

....

MCC: Eagles001, tanker block FL140/170, cleared to enter the track.

Receiver: Cleared to enter the track, Eagles001.

....

MCC: Eagles001, report visual on the tanker.

Receiver: Wilco, Eagles001.

....

Receiver: Szikla Radar, we got a visual on the tanker, Eagles001.

MCC: Eagles001, contact Tanker, sziasztok.

Receiver: Switching over to Tanker, sziasztok, Eagles001.

....

Receiver: Eagles Tanker, sziasztok, Eagles001 at your 6 o'clock position, FL150.

Tanker: Eagles001, sziasztok, climb in the block to FL160, report ready.

Receiver: Climbing FL160 in the block and call you ready, Eagles001.

....

Receiver: (Eagles) Tanker, we are steady locked on behind.

Tanker: eagles001 is cleared to join. Your intentions after refuelling?

Receiver: We are going back to kecskemet via BUGAC.

Tanker: Copied, Eagles001.

.... [Refueling] ....

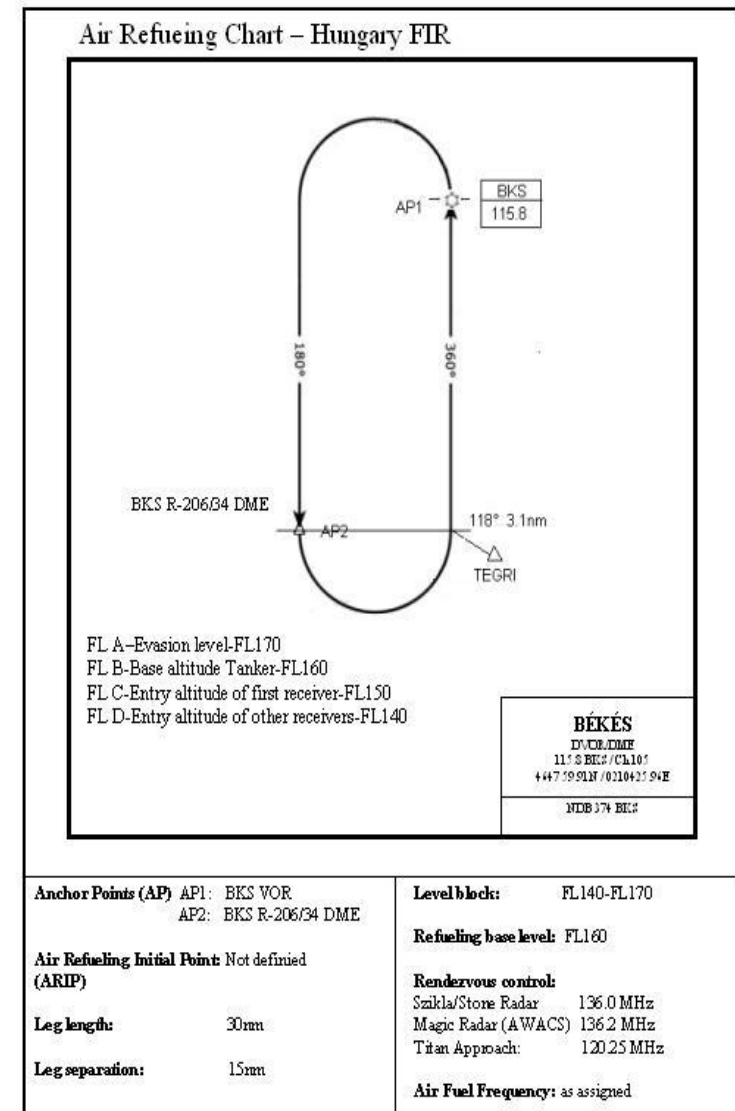
Tanker: Eagles001, we've disconnected the boom, climb FL170 and contact Szikla Radar on 136.0, sziasztok.

Receiver: Szikla on 136.0. Thanks for the gas, sziasztok.

....

Tanker: Szikla Radar, sziasztok, Eagles Tanker back on your frequency. Refueling is done. Request to leave the Anchor.

MCC: Eagles Tanker, sziasztok ujra, Szikla Radar, identified. Set course direct PCT VOR.



BEKES LOW ANCHOR

