

# Förändrade regler

DeI-NCO

Skolchefsmöte 8-9 februari 2023

# Nya regler (som ni redan hanterat)...

16.12.2021

SV

Europeiska unionens officiella tidning

L 450/21

## KOMMISSIONENS GENOMFÖRANDEFÖRORDNING (EU) 2021/2237

av den 15 december 2021

om ändring av förordning (EU) nr 965/2012 vad gäller krav för allvädersverksamhet och för utbildning och kontroll av flygbesättningar

EUROPEISKA KOMMISSIONEN HAR ANTAGIT DENNA FÖRORDNING

med beaktande av fördraget om Europeiska unionens funktionssätt,

med beaktande av Europaparlamentets och rådets förordning (EU) 2018/1139 av den 4 juli 2018 om fastställande av gemensamma bestämmelser på det civila luftfartsområdet och inrättande av Europeiska unionens byrå för luftfartssäkerhet, och om ändring av Europaparlamentets och rådets förordningar (EG) nr 2111/2005, (EG) nr 1008/2008, (EU) nr 996/2010, (EU) nr 376/2014 och direktiv 2014/30/EU och 2014/53/EU, samt om upphävande av Europaparlamentets och rådets förordningar (EG) nr 552/2004 och (EG) nr 216/2008 och rådets förordning (EEG) nr 3922/91 (<sup>1</sup>), särskilt artiklarna 23.1, 27.1 och 31, och

av följande skäl:

Artikel 2

### Datum för ikraftträdande och tillämpning

Denna förordning träder i kraft den tjugonde dagen efter det att den har offentliggjorts i *Europeiska unionens officiella tidning*.

Den ska tillämpas från och med den 30 oktober 2022.

...men som vi repeterar.

# Höjdmätare (NCO.OP.101)

- Ny Regel
- Ska kontrolleras innan avgång
- Ska ha en lämplig inställning under flygning



# Operativa minima (NCO.OP.110)

- Operativa minima ska fastställas för avgångs-, alternativ och destinationsflygplats.
- De ska ta hänsyn till:

# Operativa minima



- Luftfartygets:
  - Typ, prestanda och flygegenskaper
  - Utrustning för navigation, inhämtande av visuella referenser och/eller kontroll av flygbanan under start, inflygning, landning och avbruten inflygning
  - Begränsningar och villkor som står i AFM

# Operativa minima



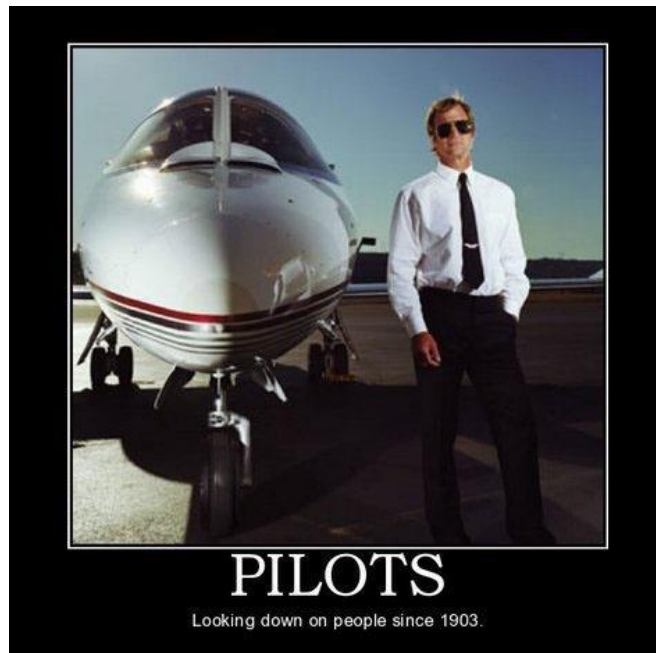
- Storlek och utformning av de banor/start- och landningsområden som kan komma i användning
- Användbarhet och prestanda för tillgängliga visuella och icke-visuella hjälpmedel och infrastruktur
- OCA/H för instrumentinflygningarna
- Hinder i utflygningsriktningen



- Instrumentinflygningsproceduren
- Flygplatsens egenskaper och typen av ANS som är tillgängliga
- Minima som fastställts av staten
- Villkor för godkännande av LVO

# Operativa minima

- Befälhavarens kompetens och relevanta operativa erfarenhet



# Operativa minima

- Detta flyttas till NCO.OP.205/6

- (c) The minima for a specific type of approach and landing procedure shall only be used if:
- (1) the ground equipment required for the intended procedure is operative;
  - (2) the aircraft systems required for the type of approach are operative;
  - (3) the required aircraft performance criteria are met; and
  - (4) the pilot is qualified appropriately.



# Operativa minima (NCO.OP.111) 2D & 3D

- DH för en 3D eller en CDFA 2D inflygning ska inte vara lägre än det högsta av:
  - OCH för luftfartygets kategori
  - Publicerade DH eller MDH
  - Systemminima
  - Den DH som anges i AFM eller motsvarande dokument
  
- MDH för en icke-CDFA 2D inflygning ska inre vara lägre än det högsta av:
  - OCH för luftfartygets kategori
  - Publicerad MDH
  - Systemminima
  - Lägsta MDH som anges i AFM

# Var hittar vi vårt minima?

Från AIP:

Cat of ACFT		A	B	C	D
Straight-in Approach	CAT I	166 (134)	174 (142)	197 (165)	205 (173)
	LOC	470 (438)			
Circling S RWY		560 (520)	620 (580)	860 (820)	880 (840)

Från Jeppesen:

Standard	STRAIGHT-IN
	ILS
DA(H)	230' (198')

Från NCO.OP.111:

Facility	Lowest DH/MDH (ft)
ILS/MLS/ GLS	200
GNSS/SBAS (LPV)	200
Precision approach radar (PAR)	200

# Operativa minima (NCO.OP.112) Circling

- MDH för circling ska inte vara lägre än det högsta av
  - OCH för luftfartygets kategori
  - DH/MDH för inflygningen
  - Lägsta circlinghöjd enligt tabellen nedan

Table 1

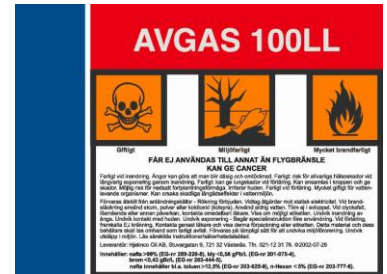
MDH and minimum visibility for circling per aeroplane category aeroplane category

	Aeroplane category			
	A	B	C	D
MDH (ft)	400	500	600	700
Minimum VIS (m)	1 500	1 500	2 400	3 600

- Finns GM1 NCO.OP.112 som är relativt omfattande

# Bränsle/energimängd (och olja) NCO.OP.125

- PIC ska säkerställa att det finns tillräckligt med bränsle/energi och olja med beaktande av:
  - Väder
  - Alla faktorer som påverkar luftfartygets prestanda
  - Förseningar som förväntas
  - Eventuella oförutsedda händelser
- Reserv?



# Bränsle/energimängd (och olja) NCO.OP.125

- (b) The pilot-in-command shall plan a quantity of fuel/energy to be protected as final reserve fuel/energy to ensure a safe landing. The pilot-in-command shall take into account all of the following, and in the following order of priority, to determine the quantity of the final reserve fuel/energy:
  - (1) the severity of the hazard to persons or property that may result from an emergency landing after fuel/energy starvation; and
  - (2) the likelihood of unexpected circumstances that the final reserve fuel/energy may no longer be protected.
- (c) The pilot-in-command shall commence a flight only if the aircraft carries sufficient fuel/energy and oil:
  - (1) when no destination alternate is required, to fly to the aerodrome or operating site of intended landing, plus the final reserve fuel/energy; or
  - (2) when a destination alternate is required, to fly to the aerodrome or operating site of intended landing, and thereafter, to an alternate aerodrome, plus the final reserve fuel/energy.

- Vad är reserv?

# Tidigare NCO.OP.125/126

## Flygplan

- (1) for visual flight rules (VFR) flights:
  - (i) by day, taking-off and landing at the same aerodrome/landing site and always remaining in sight of that aerodrome/landing site, to fly the intended route and thereafter for at least 10 minutes at normal cruising altitude;
  - (ii) by day, to fly to the aerodrome of intended landing and thereafter to fly for at least 30 minutes at normal cruising altitude; or
  - (iii) by night, to fly to the aerodrome of intended landing and thereafter to fly for at least 45 minutes at normal cruising altitude;
- (2) for IFR flights:
  - (i) when no destination alternate is required, to fly to the aerodrome of intended landing and thereafter to fly for at least 45 minutes at normal cruising altitude; or
  - (ii) when a destination alternate is required, to fly to the aerodrome of intended landing, to an alternate aerodrome and thereafter to fly for at least 45 minutes at normal cruising altitude;
- (b) In computing the fuel required including to provide for contingency, the following shall be taken into consideration:
  - (1) forecast meteorological conditions;
  - (2) anticipated ATC routings and traffic delays;
  - (3) procedures for loss of pressurisation or failure of one engine while en-route, where applicable; and
  - (4) any other condition that may delay the landing of the aeroplane or increase fuel and/or oil consumption.

## Helikopter

- (1) for VFR flights, to fly to the aerodrome/operating site of intended landing and thereafter to fly for at least 20 minutes at best-range-speed; and
- (2) for IFR flights:
  - (i) when no alternate is required or no weather-permissible alternate aerodrome is available, to fly to the aerodrome/operating site of intended landing, and thereafter to fly for 30 minutes at holding speed at 450 m (1 500 ft) above the destination aerodrome/operating site under standard temperature conditions and approach and land; or
  - (ii) when an alternate is required, to fly to and execute an approach and a missed approach at the aerodrome/operating site of intended landing, and thereafter:
    - (A) to fly to the specified alternate; and
    - (B) to fly for 30 minutes at holding speed at 450 m (1 500 ft) above the alternate aerodrome/operating site under standard temperature conditions and approach and land.
- (b) In computing the fuel required including to provide for contingency, the following shall be taken into consideration:
  - (1) forecast meteorological conditions;
  - (2) anticipated ATC routings and traffic delays;
  - (3) procedures for loss of pressurisation or failure of one engine while en-route, where applicable; and
  - (4) any other condition that may delay the landing of the aircraft or increase fuel and/or oil consumption.

Bara regler, inga AMC/GM

# Skilnader (dager VFR)?

## Tidigare (regel)

- (1) for visual flight rules (VFR) flights:
  - (i) by day, taking-off and landing at the same aerodrome/landing site and always remaining in sight of that aerodrome/landing site, to fly the intended route and thereafter for at least 10 minutes at normal cruising altitude;
  - (ii) by day, to fly to the aerodrome of intended landing and thereafter to fly for at least 30 minutes at normal cruising altitude; or



Continuous cruise power at 1500 ft istf. normal cruising altitude

## Nuvarande (AMC/GM)

for aeroplanes:

- (1) for 10 minutes at maximum continuous cruise power at 1 500 ft (450 m) above the destination under VFR by day, taking off and landing at the same aerodrome/landing site, and always remaining within sight of that aerodrome/landing site;
- (2) for 30 minutes at holding speed at 1 500 ft (450 m) above the destination under VFR by day; and

The pilot-in-command shall only commence a flight if the helicopter carries sufficient fuel and oil for the following:

- (1) for VFR flights, to fly to the aerodrome/operating site of intended landing and thereafter to fly for at least 20 minutes at best-range-speed; and

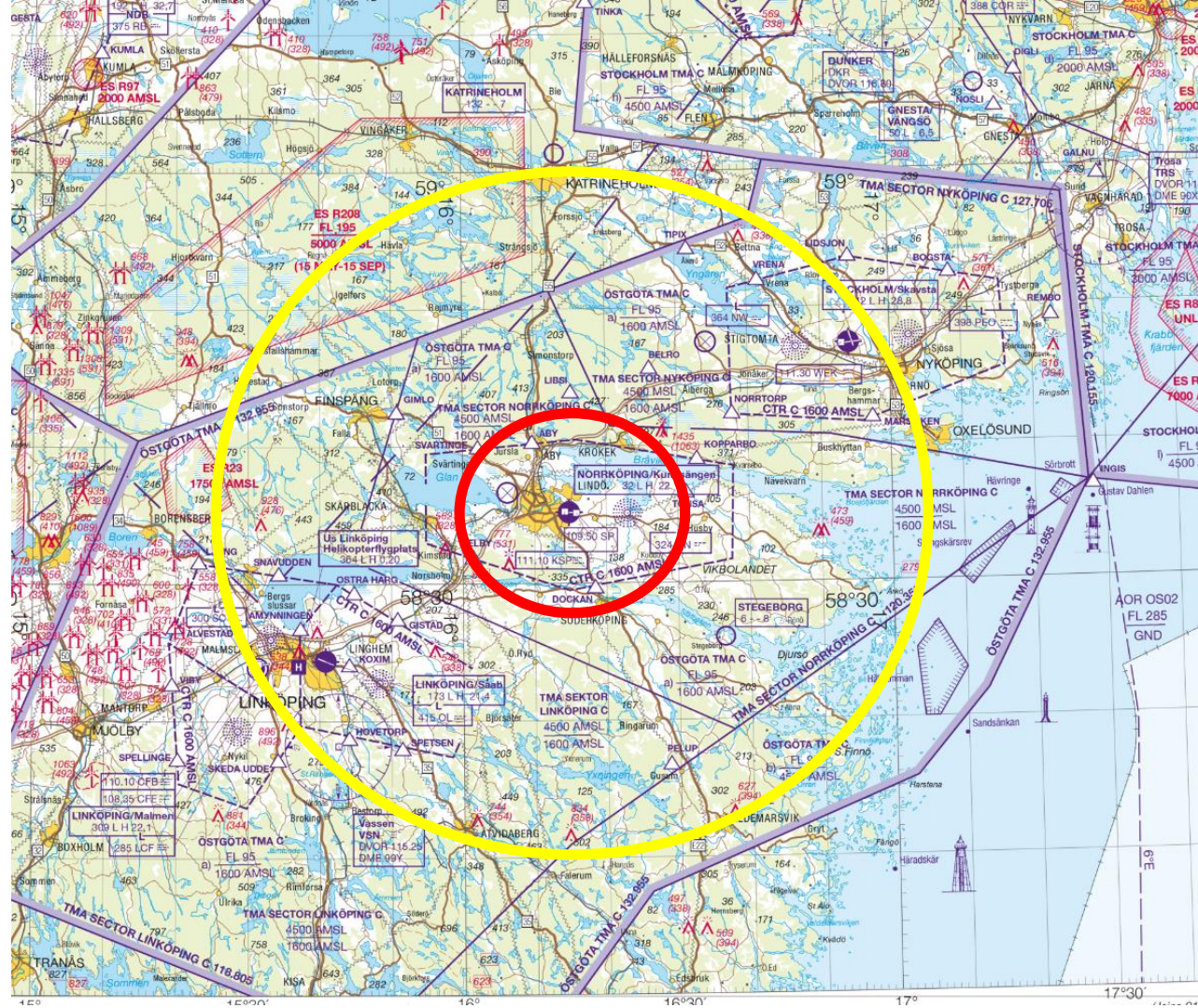


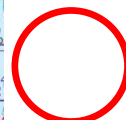
Ny 10 min möjlighet, till samma flygplats inom 25 Nm, mörker VFR fortfarande samma

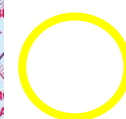
for helicopters:

- (1) for 10 minutes at best-range speed under VFR by day, taking off and landing at the same aerodrome/landing site, and always remaining within 25 NM of that aerodrome/landing site, when needed for the purpose of specialised operations;
- (2) for 20 minutes at best-range speed for other VFR flights; and

**Vad innebär det i praktiken för dager VFR?**



 = Flygplan, inom synhåll

 = Helikopter, inom 25 Nm



# Skillnader (mörker och IFR)?

## Tidigare (regel)

- (iii) by night, to fly to the aerodrome of intended landing and thereafter to fly for at least 45 minutes at normal cruising altitude;
- (2) for IFR flights:
  - (i) when no destination alternate is required, to fly to the aerodrome of intended landing and thereafter to fly for at least 45 minutes at normal cruising altitude; or
  - (ii) when a destination alternate is required, to fly to the aerodrome of intended landing, to an alternate aerodrome and thereafter to fly for at least 45 minutes at normal cruising altitude.



Holding speed at 1500 ft istf. normal cruising altitude

- (2) for IFR flights:
  - (i) when no alternate is required or no weather-permissible alternate aerodrome is available, to fly to the aerodrome/operating site of intended landing, and thereafter to fly for 30 minutes at holding speed at 450 m (1 500 ft) above the destination aerodrome/operating site under standard temperature conditions and approach and land; or
  - (ii) when an alternate is required, to fly to and execute an approach and a missed approach at the aerodrome/operating site of intended landing, and thereafter:
    - (A) to fly to the specified alternate; and
    - (B) to fly for 30 minutes at holding speed at 450 m (1 500 ft) above the alternate aerodrome/operating site under standard temperature conditions and approach and land.



Inte längre ISA-conditions

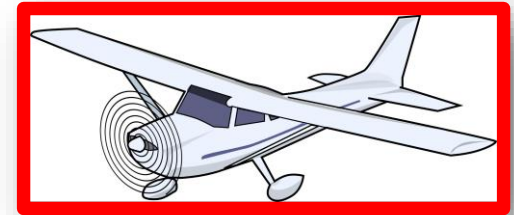
## Nuvarande (AMC/GM)

- (3) for 45 minutes at holding speed at 1 500 ft (450 m) above the destination or destination alternate aerodrome under VFR flights by night and IFR; and

- (3) for 30 minutes at holding speed at 1 500 ft (450 m) above the destination or destination alternate aerodrome under IFR.

# Alternativ krävs IFR, om inte... NCO.OP.140

- (a) the available current meteorological information indicates that, for the period from 1 hour before until 1 hour after the estimated time of arrival, or from the actual time of departure to 1 hour after the estimated time of arrival, whichever is the shorter period, the approach and landing may be made under **visual meteorological conditions (VMC)**; or
- (b) **the place of intended landing is isolated** and:
  - (1) an instrument approach procedure is prescribed for the aerodrome of intended landing; and
  - (2) available current meteorological information indicates that the following meteorological conditions will exist from 2 hours before to 2 hours after the estimated time of arrival:
    - (i) a cloud base of at least 300 m (1 000 ft) above the minimum associated with the instrument approach procedure; and
    - (ii) visibility of at least 5,5 km or of 4 km more than the minimum associated with the procedure.



Äändrade väderkrav samt ingen text om isolerad flygplats

For IFR flights, the pilot-in-command shall specify at least one destination alternate aerodrome in the flight plan, unless the available current meteorological information for the destination indicates, for the period from 1 hour before until 1 hour after the estimated time of arrival, or from the actual time of departure to 1 hour after the estimated time of arrival, whichever is the shorter period, **a ceiling of at least 1 000ft above the DH/MDH for an available instrument approach procedure (IAP) and a visibility of at least 5 000m.**

# Exempel på när alternativ krävs

- **ESNQ**281430Z 2815/2819 21015KT 9999 OVC011 TEMPO  
2815/2819 SCT008 OVC012=
- **ESNN**281430Z 2815/2824 31003KT 4000 -RA OVC015 TEMPO  
2815/2824 1200 BR -DZ OVC004=

**ESNQ**

		OCA (H)			
Cat of ACFT		A	B	C	D
Straight-in Approach	CAT I	1593(161)	1601(169)	1612(180)	1622(190)
	LOC	1750(318)			
Circling		2210(701)	2410(901)	3350(1841)	3350(1841)
Circling SE RWY		2210(701)	2340(831)	2430(921)	2440(931)

**ESNN**

		OCA (H)			
Cat of ACFT		A	B	C	D
Straight-in Approach	Cat I	177(164)	187(174)	199(186)	212(199)
	LOC	380(360)			
Circling		800(790)	1110(1100)	1430(1420)	1480(1470)
Circling W RWY		680(670)	820(810)	1210(1200)	1310(1300)

# Alternativflygplats NCO.OP.142

The pilot-in-command shall ensure that sufficient means are available to navigate and land at the destination aerodrome or at any destination alternate aerodrome in the case of loss of capability for the intended approach and landing operation.

Nya krav gällande GNSS och att man måste planera för GPS-bortfall

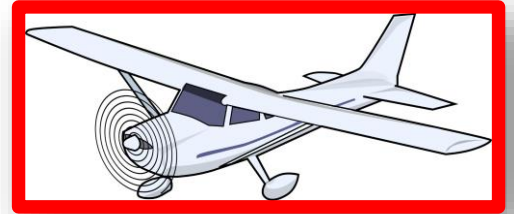
The pilot-in-command shall only select an aerodrome as a destination alternate aerodrome if either:

- (a) an IAP that does not rely on GNSS is available either at the destination aerodrome or at a destination alternate aerodrome, or
- (b) all of the following conditions are met:
  - (1) the onboard GNSS equipment is SBAS-capable;
  - (2) the destination aerodrome, any destination alternate aerodrome, and the route between them are within SBAS service area;
  - (3) ABAS is predicted to be available in the event of the unexpected unavailability of SBAS;
  - (4) an IAP is selected (either at destination or destination alternate aerodrome) that does not rely on the availability of SBAS;
  - (5) an appropriate contingency action allows the flight to be completed safely in the event of unavailability of GNSS.

# Planeringsminima alternativ NCO.OP.143

An aerodrome shall not be specified as a destination alternate aerodrome unless the available current meteorological information indicates, for the period from 1 hour before until 1 hour after the estimated time of arrival, or from the actual time of departure to 1 hour after the estimated time of arrival, whichever is the shorter period:

- (a) for an alternate aerodrome with an available instrument approach operation with DH less than 250 ft,
  - (1) a ceiling of at least 200 ft above the decision height (DH) or minimum descent height (MDH) associated with the instrument approach operation; and
  - (2) a visibility of at least 1 500m; or
- (b) for an alternate aerodrome with an instrument approach operation with DH or MDH 250 ft or more,
  - (1) a ceiling of at least 400 ft above the DH or MDH associated with the instrument approach operation; and
  - (2) a visibility of at least 3 000m; or
- (c) for an alternate aerodrome without an IAP,
  - (1) a ceiling of at least the higher of 2 000ft and the minimum safe IFR height; and
  - (2) a visibility of at least 5 000m.



# Planeringsminima alternativ NCO.OP.143 (flygplan)

Utan IAP:  
Molnbas högsta av 2000 ft eller lägsta IFR-flyghöjd  
Sikt minst 5000 m

DH + 400 ft  
Sikt minst 3000 m

DH + 200 ft  
Sikt minst 1500 m

250 ft

# Planeringsminima alternativ NCO.OP.144 (helikopter)

Utan IAP:

Molnbas högsta av 2000 ft eller lägsta IFR-flyghöjd

Sikt minst 1500 m eller 3000 m vid mörker



Med IAP: DH + 200 ft

Sikt minst 1500 m eller 3000 m vid mörker

# Förutsättningar för start NCO.OP.175

- Before commencing take-off, the pilot-in-command shall be satisfied that:
- (a) according to the information available, the weather at the aerodrome or operating site and the condition of the runway or FATO intended to be used would not prevent a safe take-off and departure; and
- (b) applicable aerodrome operating minima will be complied with.

Before commencing take-off, the pilot-in-command shall be satisfied that:

- (a) according to the information available, the meteorological conditions at the aerodrome or the operating site and the condition of the runway/FATO intended to be used will not prevent a safe take-off and departure; and
- (b) the selected aerodrome operating minima are consistent with all of the following:
  - (1) the operative ground equipment;
  - (2) the operative aircraft systems;
  - (3) the aircraft performance;
  - (4) flight crew qualifications.



# Förutsättningar för landning NCO.OP.205

- Before commencing an approach to land, the pilot-in-command shall be satisfied that, according to the information available, the weather at the aerodrome or the operating site and the condition of the runway intended to be used do not prevent a safe approach, landing or missed approach.

Before commencing an approach to land, the pilot-in-command shall be satisfied that:

- (a) according to the information available, the meteorological conditions at the aerodrome or the operating site, and the condition of the runway intended to be used will not prevent a safe approach, landing, or missed approach; and
- (b) the selected aerodrome operating minima are consistent with all of the following:
  - (1) the operative ground equipment;
  - (2) the operative aircraft systems;
  - (3) the aircraft performance, and
  - (4) flight crew qualifications.

# Fortsätta inflygning NCO.OP.210

- *(b) If the reported RVR/VIS is less than the applicable minimum, the approach shall not be continued:*
  - (1) below 1 000 ft above the aerodrome; or
  - (2) into the final approach segment in the case where the decision altitude/height (DA/H) or minimum descent altitude/height (MDA/H) is more than 1 000 ft above the aerodrome.
- *(d) If, after passing 1 000 ft above the aerodrome, the reported RVR/VIS falls below the applicable minimum, the approach may be continued to DA/H or MDA/H.*



Nytt krav på 550 m och  
ingen text om att fortsätta  
efter 1000 fot

- (a) If the controlling RVR for the runway to be used for landing is less than 550 m (or any lower value established in accordance with an approval under SPA.LVO), then an instrument approach operation shall not be continued:
  - (1) past a point at which the aircraft is 1 000 ft above the aerodrome elevation; or
  - (2) into the final approach segment if the DH or MDH is higher than 1 000 ft.
- (b) If the required visual reference is not established, a missed approach shall be executed at or before the DA/H or the MDA/H.
- (c) If the required visual reference is not maintained after DA/H or MDA/H, a go-around shall be executed promptly.



- ▶ Vi genomför en IFR-flygning från KPSP till KMYF, eventuellt alternativ tänker vi blir KCRQ



- Innan flygning
  - Kontrollera höjdmätare
  - Fastställa operativa minima
  - Bränsleplanering



- Fastställa operativa minima
- Högsta av?
  - OCH
  - Publicerat minima
  - Systemminima
  - AFM begränsning

CATEGORY	A	B
S-ILS 28R	673- $\frac{3}{4}$	250 (300- $\frac{3}{4}$ )
S-LOC 28R	820- $\frac{3}{4}$	397 (400- $\frac{3}{4}$ )
CIRCLING	920-1	493 (500-1)

- Innan flygning

- Behöver vi ett alternativ?

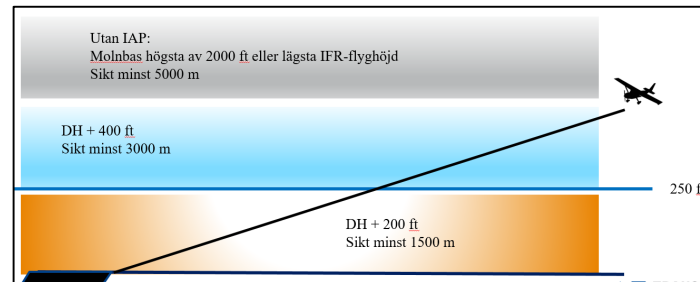
TAF KNKX 2909/3009 16005KT 9999  
OVC010 QNH2988INS

For IFR flights, the pilot-in-command shall specify at least one destination alternate aerodrome in the flight plan, unless the available current meteorological information for the destination indicates, for the period from 1 hour before until 1 hour after the estimated time of arrival, or from the actual time of departure to 1 hour after the estimated time of arrival, whichever is the shorter period, a ceiling of at least 1 000ft above the DH/MDH for an available instrument approach procedure (IAP) and a visibility of at least 5 000m.

- Ja, men vad är kravet för alternativet?



- Alternativ KCRQ
- KCRQ 291129Z**
- 2912/3012 14005KT**
- 9999 BKN010 OVC040**
- Funkar det?



CATEGORY	A	B
S-ILS 24	527/40	201 (200-¾)
S-LOC 24	1000/40	674 (700-¾)
<b>C</b> CIRCLING	1000-1 669 (700-1)	1020-1 689 (700-1)



- Innan flygning
  - Kontrollera höjdmätare
  - Fastställa operativa minima
- Bränsleplanering
  - IFR, vad var kravet?
  - Till destination, till alternativ plus 45 min reserv med holding speed på 1500 fot.





- Under flygning
- Följa upp bränsle
- Vid inflygning?
  - Hur långt fick vi gå?

- (a) If the controlling RVR for the runway to be used for landing is less than 550 m (or any lower value established in accordance with an approval under SPA.LVO), then an instrument approach operation shall not be continued:
  - (1) past a point at which the aircraft is 1 000 ft above the aerodrome elevation; or
  - (2) into the final approach segment if the DH or MDH is higher than 1 000 ft.
- (b) If the required visual reference is not established, a missed approach shall be executed at or before the DA/H or the MDA/H.
- (c) If the required visual reference is not maintained after DA/H or MDA/H, a go-around shall be executed promptly.

**Framme! Både bildligt och bokstavligt...**



# Vad förväntas av er?

## Revision av OM

- Operativa minima, hur tillämpas de?



• Befälhavarens kompetens och



(c) The minima for a specific type of approach and landing procedure shall only be used if:

- (1) the ground equipment required for the intended procedure is operative;
- (2) the aircraft systems required for the type of approach are operative;
- (3) the required aircraft performance criteria are met; and
- (4) the pilot is qualified appropriately.

- Luftfartyget
  - Typ, prestanda
  - Utrustning och/eller kapacitet för landning och
  - Begränsningar

# Vad förväntas av er?

## Revision av OM

- Planeringsminima ska följa Del-NCO

Utan IAP:

Molnbas högsta av 2000 ft eller lägsta IFR-flyghöjd

Sikt minst 5000 m

DH + 400 ft

Sikt minst 3000 m



250 ft

DH + 200 ft

Sikt minst 1500 m

# Vad förväntas av er?

## Revision av OM

- Bränslekrav -justeras
- Generellt: Instruktor och elev ska kunna läsa ut vad som gäller för dem
  - Inte bara referens till Del-NCO

Frågor?