



**Havarikommisjonen**  
Accident Investigation Board Denmark

# **BULLETIN**

**Serious incident**

**1-11-2014**

**involving**

**BEECH 33 E33A**

**G-GMCT**



Certain report data are generated via the EC common aviation database

## **FOREWORD**

This bulletin reflects the opinion of the Danish Accident Investigation Board regarding the circumstances of the occurrence and its causes and consequences.

In accordance with the provisions of the Danish Air Navigation Act and pursuant to Annex 13 of the International Civil Aviation Convention, the investigation is of an exclusively technical and operational nature, and its objective is not the assignment of blame or liability.

The investigation was carried out without having necessarily used legal evidence procedures and with no other basic aim than preventing future accidents and serious incidents.

Consequently, any use of this bulletin for purposes other than preventing future accidents and serious incidents may lead to erroneous or misleading interpretations.

A reprint with source reference may be published without separate permit.

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## BULLETIN

### General

File number: HCLJ510-2014-280  
UTC date: 1-11-2014  
UTC time: 14:01  
Occurrence class: Serious incident  
Location: Copenhagen Roskilde (EKRK)  
Injury level: None

### Aircraft

Aircraft registration: G-GMCT  
Aircraft make/model: BEECH 33 E33A  
Current flight rules: Instrument Flight Rules (IFR)  
Operation type: General Aviation Pleasure Cross-country  
Flight phase: Landing  
Aircraft category: Fixed wing Airplane  
Last departure point: Germany EDAZ : Schonhagen  
Planned destination: Denmark EKRK (RKE): Kobenhavn/Roskilde  
Aircraft damage: None  
Engine make/model: CONTINENTAL (TELEDYNE) USA 520 FAMILY

### Notification

All times in this report are UTC.

The Aviation Unit of the Danish Accident Investigation Board (AIB) was notified of the serious incident by the Area Control Centre at Copenhagen Airport, Kastrup (EKCH) on 1-11-2014 at 14:10 hours.

The Danish Transport Authority (DTA), the European Aviation Safety Agency (EASA), the Directorate-General for Mobility and Transport (DG MOVE), the US National Transportation Safety Board (NTSB) and the UK Air Accidents Investigation Branch (AAIB) were notified on 1-11-2014 at 20:06 hours.

The UK AAIB appointed an accredited non-traveling representative to the investigation.

## FACTUAL INFORMATION

### History of the flight

The serious incident flight was a private IFR flight from Schönhagen (EDAZ) to Copenhagen Roskilde (EKRK).

One pilot and two passengers were on board. The two passengers were going for a meeting in Copenhagen.

The pilot planned the flight from EDAZ to EKRK with the destination alternate aerodrome Copenhagen Kastrup (EKCH). The estimated enroute flight time was 2 hours and 20 minutes.

Inbound to EKRK, the pilot was in radio contact with Roskilde Approach (125.525 MHz) and received radar vectors for an Instrument Landing System (ILS) approach to runway 11.

At 13:42 hours, when the aircraft was on a position approximately 33 nautical miles (nm) southwest of EKRK, the air traffic controller at Roskilde Approach informed the pilot of a Runway Visual Range (RVR) of 600 meters at the touch down zone and 550 meters at the runway end of runway 11.

At 13:48 hours, when the aircraft was on a position of approximately 16.5 nm southwest of EKRK, the air traffic controller at Roskilde Approach informed the pilot of an updated RVR of 550 meters at the touch down zone and 550 meters at the runway end of runway 11. The air traffic controller asked the pilot, whether or not the pilot was able to perform an ILS approach to runway 11 with a RVR of 550 meters. The pilot accepted performing an ILS approach to runway 11.

When the aircraft was established on an 8.5 nm final to runway 11, the pilot requested information on the present RVR. The air traffic controller at Roskilde Approach informed the pilot of a RVR of 550 meters at the touch down zone and 650 meters at the runway end of runway 11.

Shortly after, the air traffic controller at Roskilde Approach informed the pilot of a RVR of 550 meters at the touch down zone and 550 meters at the runway end of runway 11.

On final to runway 11, the pilot configured the aircraft for approach. The landing gear was selected down and the flaps were set to an intermediate 20 degrees position.

The pilot flew the approach to runway 11 at an indicated airspeed (IAS) of approximately 80 knots and flew the ILS approach to runway 11 manually (no use of the autopilot).

When the aircraft was on a 5 nm final to runway 11, the air traffic controller cleared the aircraft to land. The air traffic controller reported the wind conditions to be 140 degrees and 9 knots.

The air traffic controller worked in the tower cap of the control tower. However and due to the low visibility, the air traffic controller had no visual contact with aircraft.

When the aircraft crossed the threshold to runway 11, the air traffic controller observed a radar presentation of the aircraft of 400 feet and a ground speed (GS) of 76 knots. [See appendix 1 - Radar plot.](#)

The air traffic controller expected the aircraft to perform a go-around.

Due to the low visibility, two witnesses standing on the apron in front of the terminal building had no visual contract with the aircraft. However, they both heard the aircraft flying by with the engine power above idle. It was the perception of the witnesses that the aircraft did not touch down until it had passed the crossing of the runways 11/29 and 03/21.

The pilot was not able to stop the aircraft within the remaining available runway length, and the aircraft departed the runway end. The aircraft came to a stop in the grass area 200 meters beyond the runway end.

The pilot reported to the air traffic controller that the aircraft had ended up in the grass area. The pilot made a U-turn and tried to taxi the aircraft back to the runway.

On the way back to the runway, the aircraft sank into the soft ground.

The serious incident occurred in daylight and under instrument meteorological conditions (IMC).

**Injuries to persons**

<i>Injuries</i>	<i>Crew</i>	<i>Passengers</i>	<i>Others</i>
Fatal			
Serious			
None	1	2	

**Damage to aircraft**

There were no damages to the aircraft.

**Other damage**

There were no other damages.

## Personnel information

### General

The pilot (51 years) was the holder of a valid Joint Aviation Requirements Flight Crew Licensing (JAR-FCL) German Commercial Pilot License (CPL (A)). The attached medical certificate (class 1) was valid until 8-6-2015.

The CPL license held one restriction: *Have available corrective spectacles and carry a spare set of spectacles (VNL).*

The CPL license contained the following ratings:

SEP (L) PIC, IR (valid until 30-11-2015).

SEP (L) PIC (valid until 30-11-2016).

### Flying experience

	Last 24 hours	Last 90 days	Total
All types in hours	-	28	2000
This type in hours	-	3	55
Landings this type	-	8	95

## Aircraft information

Aircraft manufacturer:	Beech Aircraft Corporation
Manufacturer's designation:	BEECH 33 E33A
Aircraft serial number:	CE-235
Engine:	Continental IO-520-B
Airworthiness certificate:	Valid until 30-7-2015
Landing flap setting:	30 degrees
Technical status:	There were no remarks
Landing procedures:	<a href="#">See appendix 2</a>

## **Meteorological information**

### Weather information - pilot preflight planning

At 09:25 hours, the pilot updated the preflight planning weather information. The AIB extracted the below presented weather information.

EKRK:

Aviation routine weather report (METAR)

METAR: 010920z ekrk auto 16007kt 0300ndv r11/0700n r29/0600/1000u fg vv001 12/12  
q1019=

Terminal Aerodrome Forecast (TAF)

TAF: 010825z ekrk 0109/0118 15010kt 0200 fg vv001 becmg 0109/0111 4000 br few005  
(9 hours) tempo 0111/0115 7000 nsr becmg 0115/0117 0800 bcf=

EKCH:

METAR: 010920z ekch 16010kt 0400 r221/0750n r041/1000n r12/1400n fg vv002 12/12  
q1020 tempo 0800=

TAF: 010825z ekch amd 0109/0118 16010kt 2000 br bkn003 tempo 0108/0117 0700 bcf=  
(9 hours) bkn001 tempo 0117/0206 1200 sct003=

### Weather information- extracted by the AIB

At 15:09 hours, the AIB extracted the following presented weather information.

EKRK:

METAR: 011350z ekrk auto 14009kt 0200ndv r11/0550n r29/0550v650n fg vv001 12/12  
q1017=

TAF: 011425z ekrk 0115/0124 14010kt 0300 fg vv001 tempo 0115/0124 2000 br sct003=  
(9 hours)



EKCH:

METAR: 011506z 16012kt 1000 r22l/p1500d r04l/1100u r12/1100u bcfg bkn002 12/12 q1018  
tempo 0300=

TAF: 011125z 0112/0212 16010kt 2000 br bkn003 tempo 0112/0117 0500 bcfg bkn001  
becmg 0210/0212 8000 nsw sct005=

#### Automatic Terminal Information Service (ATIS) - EKRK

This is Roskilde information Quebec at 1340. IFR flights expect ILS approach. Runway in use for landing 11. Runway in use for take-off 21. Runway 21 damped. Transition level 50. Wind 150 degrees 8 knots. Visibility 200 meters. RVR runway 11 at runway touch down zone 600 meters at stop end 550 meters. RVR runway 21 550 meters. Fog. Obscured vertical visibility 100 feet. Temperature 12. Dewpoint 12. ONH 1018. This was Roskilde information Quebec.

This is Roskilde information Romeo at 1344. IFR flights expect ILS approach. Runway in use for landing 11. Runway in use for take-off 21. Runway 21 damped. Transition level 50. Wind 140 degrees 9 knots. Visibility 200 meters. RVR runway 11 at runway touch down zone 550 meters at stop end 550 meters. RVR runway 21 550 meters. Fog. Obscured vertical visibility 100 feet. Temperature 12. Dewpoint 12. ONH 1018. This was Roskilde information Romeo.

#### **Aids to navigation**

At the time of the serious incident, there were no reports on unserviceable approach aids to navigation at EKRK.

#### **Communication**

The pilot was in VHF radio contact with Roskilde Approach (125.525 MHz).

The AIB obtained involved ATS voice recording. The recording was of good quality and useful to the investigation.

## Aerodrome information

### EKRRK aerodrome

Aerodrome position (ARP):	55° 35' 08.04N 012° 07' 53.14E
Elevation:	146 feet
Magnetic variation:	2.4°E (July 2010)
Runway (RWY) identifications:	Runway 11/29 and runway 03/21
Direction of runway 11:	116.3° (GEO) and 113.9° (MAG)
Surface	Asphalt
Runway dimensions (runways 11/29):	1799 x 32 meters
Landing distance available (RWY 11):	1799 meters
Distance from the runway crossing (11/29 03/21) to the end of runway 11:	Approximately 690 meters
Threshold crossing height runway 11:	52 feet
Threshold elevation runway 11:	145 feet

[See appendix 3 - Aerodrome chart](#) (extract of the Aeronautical Information Publication (AIP) Denmark).

### ILS/Distance Measuring equipment (DME) approach to runway 11

The pilot made use of the AIP Denmark ILS runway 11 instrument approach chart. The pilot stated the minimum RVR for an ILS approach to runway 11 to be 600 meters.

[See appendix 4 - ILS approach runway 11 instrument approach chart.](#)

## Flight recorders

The AIB retrieved data from an on board handheld GPS.

[See appendix 5 - The landing phase.](#)

## ANALYSIS

### General

The pilot held a valid JAR-FCL German CPL (A) license, which entitled the pilot to fly aircraft registered in any EASA member state. So, the pilot was allowed to exercise the full privileges of the license and its ratings in G-GMCT.

### Weather and preplanning

Generally seen, the actual weather conditions at EKRK and EKCH were equivalent to the forecasted weather conditions.

The pilot planned the flight from EDAZ to EKRK with the destination alternate aerodrome EKCH.

From a preplanning point of view, the forecasted weather conditions (tempo 0108/0117 0700 bcfg bkn001) for EKCH were below the preplanning destination alternate aerodrome minima, which would have required flight plan reflected preplanning with the use of another destination alternate aerodrome.

### The approach to and landing on runway 11

Combined elements had influence on the sequence of events:

- The weather conditions for performing an ILS approach to runway 11 were marginal
- The pilot did not make use of the autopilot, which increased pilot workload
- The aircraft was not fully configured for landing (the before landing checklist was not completed leading to flaps set to an intermediate 20 degrees position)
- The final approach speed was approximately 10 knots higher than the recommended final approach speed
- The aircraft crossed the threshold to runway 11 at a radar presented altitude of approximately 400 feet mean sea level (msl) instead of crossing at an optimum altitude of 197 feet msl
- When crossing the threshold to runway 11, the aircraft was not stabilized (altitude, airspeed, and aircraft configuration)
- The pilot did not abort the approach and landing
- The aircraft touched down in the last third of runway 11

## **CONCLUSIONS**

The AIB finds it conceivable that unintended pressure by the passengers (meeting in Copenhagen) combined with a high pilot workload might inadvertently have led to pilot target fixation and a mental blocking of an appropriate decision on going around.

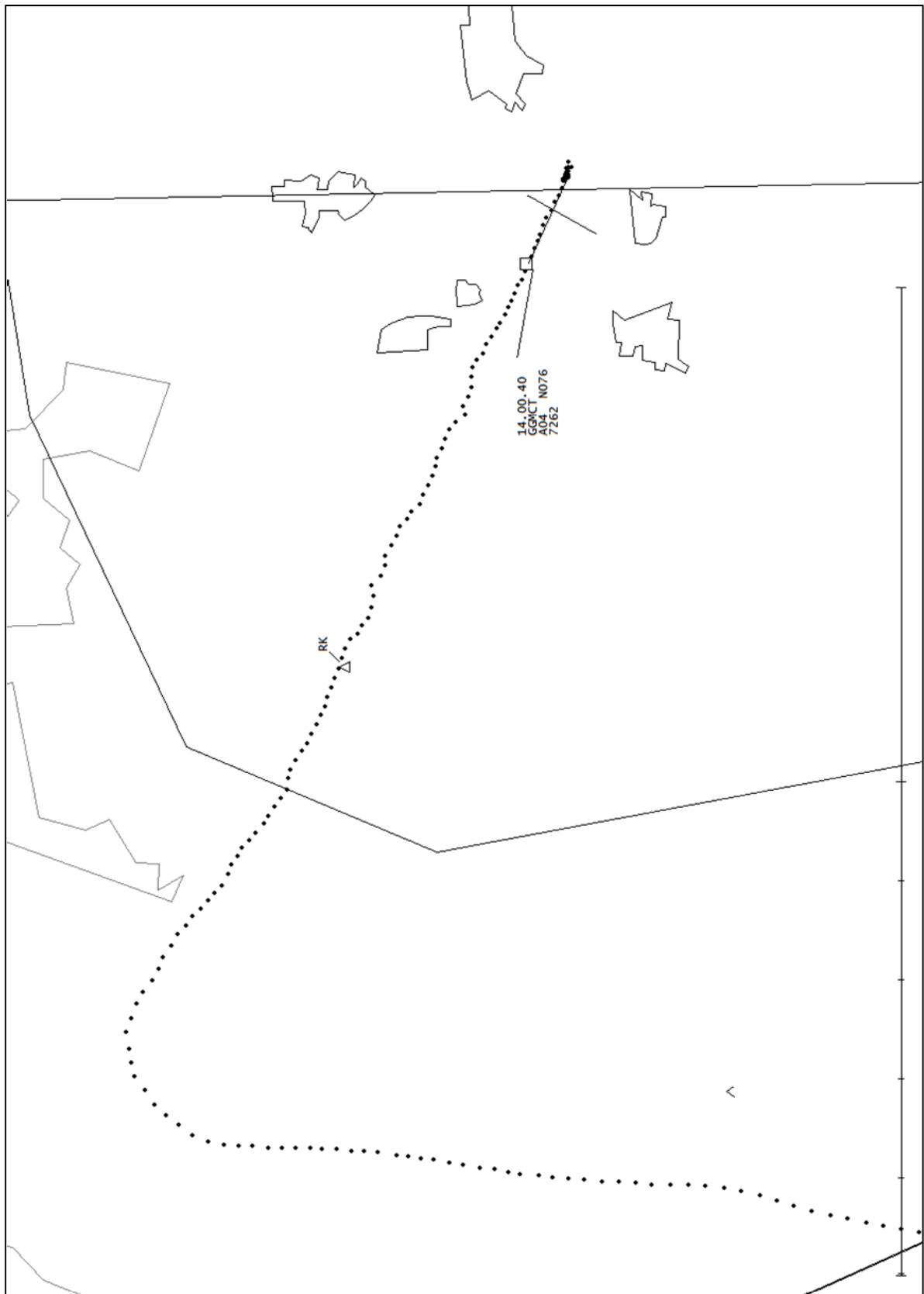
Instead of going around, the pilot's decision on landing resulted in a runway excursion.

## **APPENDICES**

1. Radar plot
2. Landing procedures
3. Aerodrome chart
4. ILS runway 11 instrument approach chart
5. The landing phase

**Appendix 1 - Radar plot**

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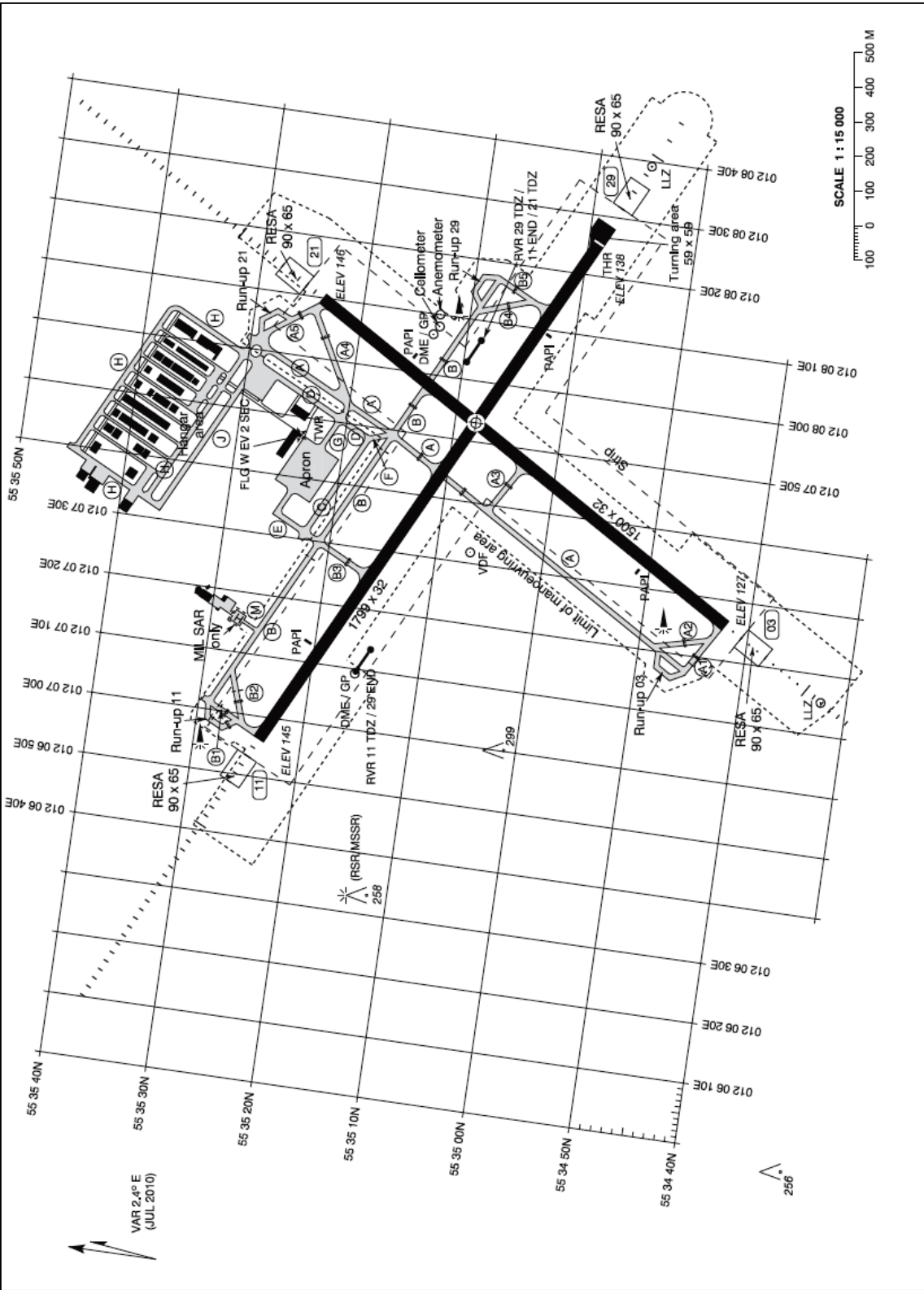
## Appendix 2 - Landing procedures

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<b>THREE</b>	<b>Beechcraft E 33 A Landing Procedures</b>	<b>THREE</b>
<b>Approach Check</b>		
<ol style="list-style-type: none"><li>1. ATIS – received</li><li>2. Altimeters QNH – <b>CROSS CHECKED</b></li><li>3. com &amp; nav for approach – <b>SET</b></li><li>4. Vref – 70 kt / Vtrg ..... – <b>DEFINED</b></li><li>5. approach briefing – <b>COMPLETED</b></li><li>6. Gyro – <b>CHECKED</b></li><li>7. Cowl Flaps – <b>CLOSED</b></li><li>5. Power – <b>AS REQUIRED</b> Avoid Prolong Idle Settings and Low Cylinder Head Temperatures.</li><li>6. Mixture – <b>ENRICH AS REQUIRED</b></li></ol>		
<b>Before Landing - GUMPS</b>		
<b>NOTE:</b>	<i>All Reclining Seats Must be in the Upright Position During Landing.</i>	
<ol style="list-style-type: none"><li>1. Seats, Belts, Harness – <b>ADJUST and LOCK</b></li><li>2. Fuel Selector Valve – <b>SELECT THE TANK WITH THE MOST FUEL</b></li><li>3. Cowl Flaps – <b>AS REQUIRED</b></li><li>4. Mixture – <b>FULL RICH</b> (Or as Required for Field Elevation)</li><li>5. Landing Gear – <b>DOWN &amp; CHECK</b> — <b>3 GREEN</b> (Observe Max. Extension Speed). <b>VLE = 149 kt</b></li><li>6. Landing Lights – <b>ON</b></li><li>7. Flaps – <b>DOWN</b></li><li>8. Propeller – <b>High RPM</b></li></ol>		
<b>Normal Landing - GUMPS</b>		
<ol style="list-style-type: none"><li>1. Airspeed – <b>70 kts</b> ( With Flaps and Gear Down )</li><li>2. Wing Flaps – <b>LOWERED</b></li><li>4. Trim – <b>ADJUST</b></li><li>5. Touchdown – <b>MAIN WHEELS FIRST</b></li><li>6. Landing Roll – <b>LOWER NOSE WHEEL GENTLY</b></li><li>7. Braking – <b>MINIMUM REQUIRED</b></li></ol>		
<b>Balked Landing</b>		
<ol style="list-style-type: none"><li>1. Power – <b>FULL THROTTLE</b> and 2700 RPM</li><li>2. Airspeed – <b>70 kts</b> Until Clear of Objects, Then Trim to Normal Climb Speed</li><li>3. Wing Flaps – <b>UP</b></li><li>4. Landing Gear – <b>UP</b></li><li>5. Cowl Flaps – <b>OPEN</b></li></ol>		
<b>After Landing</b>		
<ol style="list-style-type: none"><li>1. Landing and Taxi Lights – <b>AS REQUIRED</b></li><li>2. Wing Flaps – <b>UP</b></li><li>3. Trim Tab – <b>SET TO "0"</b></li><li>4. Cowl Flaps – <b>OPEN</b></li></ol>		
<b>THREE</b>		<b>THREE</b>

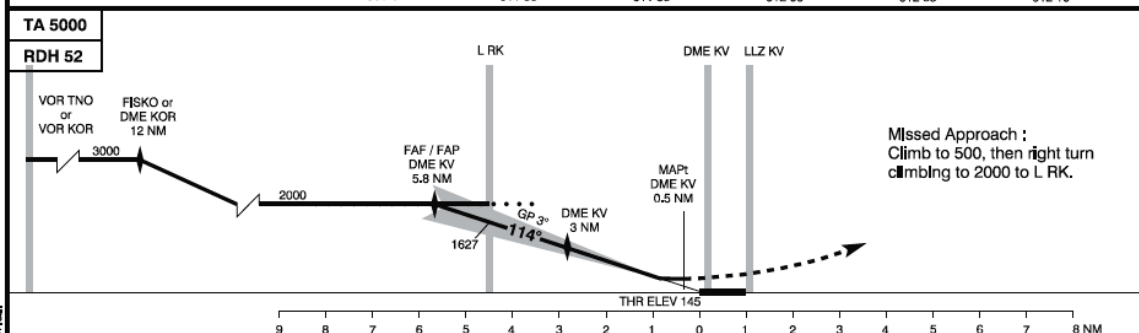
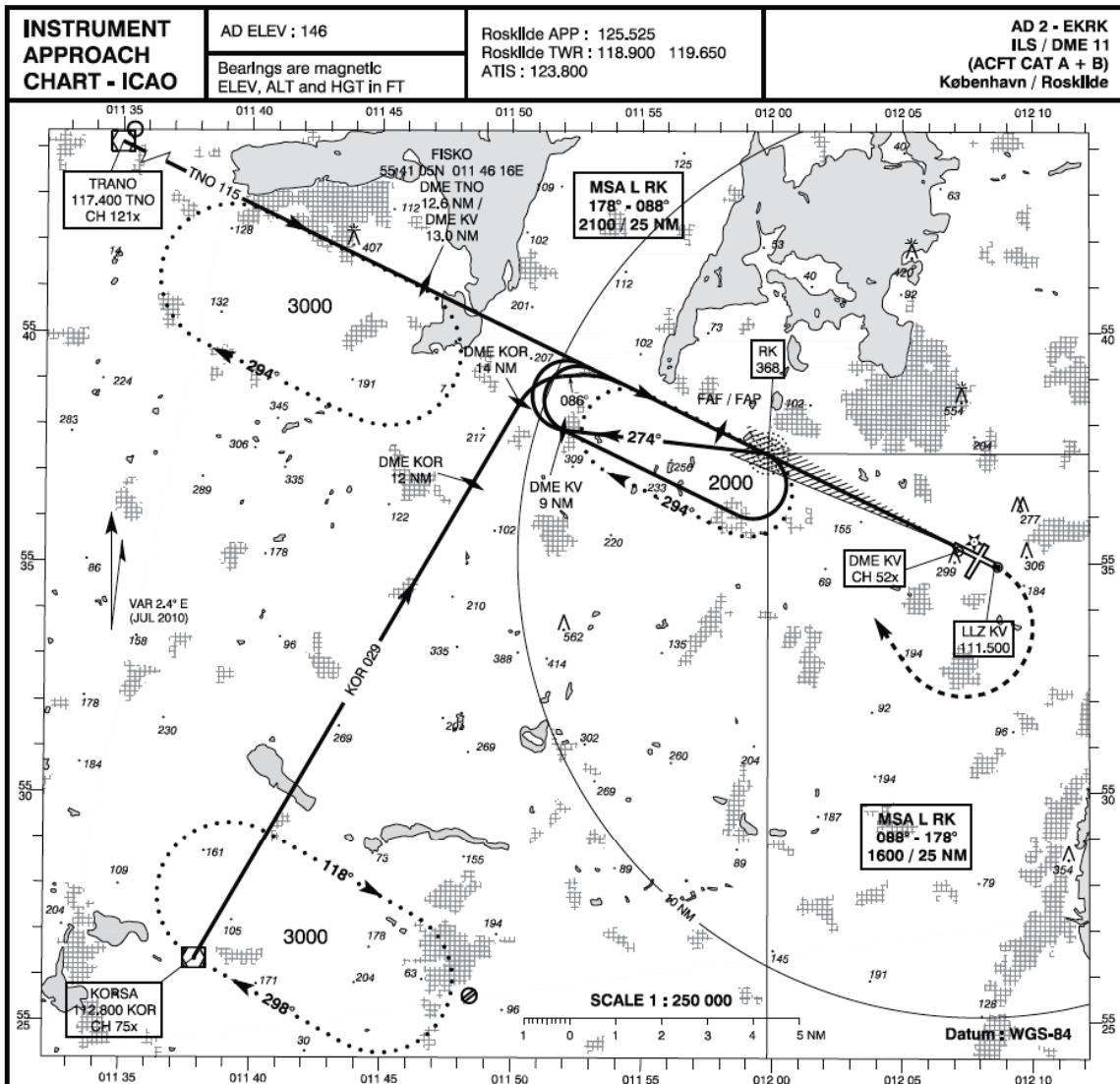
Appendix 3 - Aerodrome chart

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# Appendix 4 - ILS runway 11 instrument approach chart

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TA 5000											
RDH 52											
OCA (H)	A	B	SPECIAL CONDITIONS								
ILS / DME	313 (168)	322 (177)									
GP INOP *	485 (341)	485 (341)	* Pass DME KV 5 NM not below 1500, and DME KV 3 NM not below 740								
Circling	610 (470)	850 (710)									
Time to MAPt from L RK - DIST 4.16 NM			DME KV	1	2	3	4	5			
GS (KT)	60	80	100	120	140	DIST to THR	0.8	1.8	2.8	3.8	4.8
MIN : SEC	4 : 10	3 : 07	2 : 30	2 : 05	1 : 47	ALT	458	777	1095	1414	1732
ROD FT / MIN	318	425	531	637	743	NOTE : Timing not authorized for defining the MAPt.					

Changes : Editorial.



**Appendix 5 - The landing phase**

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