

CHECKLIST FOR NORMAL OPERATION P28T

Parameters, restrictions, procedures and emergency procedures see AFM

BEFORE ENGINE START

1	Aircraft & Cockpit inspection	- COMPLETED	1
2	Parking brake.....	- SET	2
3	Flight time counter.....	- RECORDED	3
4	Ignition key	- OFF	4
5	Passenger briefing.....	- COMPLETED	5
6	Seats.....	- ADJUSTED & LOCKED	6
7	Seat belts / shoulder harnesses	- FASTENED & ADJUSTED	7
8	Propeller	- FULL INCREASE	8
9	Mixture.....	- FULL RICH	9
10	Alternate air	- CLOSED	10
11	Controls	- FREE & CORRECT	11
12	Elevator & Rudder trim	- TAKE OFF	12
13	Flaps (full range)	- CHECKED / UP	13
14	Ground Clearance	- ON	14
15	ATIS	- RECEIVED	15
16	IFR and special VFR: startup	- RECEIVED	16
17	Altimeter	- SET	17
18	Battery & Alternator	- ON	18
19	Fuel quantity	- CHECKED.....	19
20	Fuel selector	- FULLEST TANK	20
21	Gear	- DOWN / 3 GREEN	20
22	Annunciator/Starter warning.....	- TEST	22
23	Avionic Master	- OFF.....	23

READY FOR ENGINE START**ENGINE START**

1	Propeller area.....	- CLEAR	1
2	Engine start.....	- acc AFM (primingtable page 4)	2

ENGINE START COMPLETED**AFTER ENGINE START**

1	Oil pressure.....	- CHECKED.....	1
2	Alternator output.....	- CHECKED.....	2
3	Gyro suction	- CHECKED.....	3
4	Avionic Master	- ON	4
5	Annunciator warnings incl. GPS	- CHECKED / OFF	5
6	Electrical pitch trim / Autopilot	- ON, TEST, DISCONNECT AP	6
7	Transponder.....	- MODE CHECKED	7

READY FOR TAXI

TAXI

- 1 Brakes & steering - CHECKED 1
- 2 Gyro instruments - CHECKED 2

TAXI CHECK COMPLETED

ENGINE TEST

- 1 Warm up time - CHECKED 1
- 2 Run up - according AFM and page 4 2

ENGINE TEST COMPLETED

BEFORE DEPARTURE

- 1 Seats - LOCKED 1
- 2 Seat belts / shoulder harnesses - FASTENED 2
- 3 Emergency Fuel pump - OFF 3
- 4 Fuel quantity - CHECKED 4
- 5 Fuel selector - FULLEST TANK 5
- 6 Mixture - SET 6
- 7 Propeller - FULL INCREASE 7
- 8 Friction - SET 8
- 9 Alternate air - CLOSED 9
- 10 Magnetos - BOTH 10
- 11 Controls - FREE & EASY 11
- 12 Elevator & Rudder trim - TAKE OFF 12
- 13 Flaps - TAKE OFF 13
- 14 Flight instruments - SET 14
- 15 Avionic - SET 15
- 16 Takeoff Briefing - COMPLETED 16
- 17 Transponder - CODE SET 17
- 18 Autopilot - DISCONNECTED 18
- 19 Doors & stormwindow - CLOSED & LOCKED 19

READY FOR DEPARTURE

CLIMB

- 1 Flaps - UP 1
- 2 Gear - UP 2
- 3 Power - CHECKED 3

CLIMB CHECK COMPLETED

CRUISE

- 1 Flight- & Engine instruments - CHECKED 1
- 2 Fuel - CHECKED 2
- 3 Power - SET / CHECKED 3

CRUISE CHECK COMPLETED

APPROACH

1	Approach briefing	- COMPLETED	1
2	Seats	- LOCKED	2
3	Seat belts / shoulder harnesses	- FASTENED	3
4	Flight instruments	- SET	4
5	Avionic	- SET	5
6	Autopilot	- DISCONNECT	6
7	Fuel quantity	- CHECKED	7
8	Fuel selector	- FULLEST TANK	8
9	Mixture	- SET	9

APPROACH CHECK COMPLETED**FINAL**

1	Flaps	- SET	1
2	Gear	- 3 GREEN	2
3	Brakes (pressure)	- CHECKED	3
4	Brakes	- FREE	4

FINAL CHECK COMPLETED**AFTER LANDING**

1	Timecheck for turbo spin down	- START CLOCK	1
2	Propeller	- FULL INCREASE	2
3	Flaps	- UP	3
4	Electrical consumers	- AS REQUIRED	4
5	Transponder	- MODE CHECKED	5

AFTER LANDING CHECK COMPLETED**ENGINE SHUT DOWN & PARKING**

1	Electrical consumers	- OFF except avionic	1
2	Avionic	- 121.500 TEST	2
3	Trim-Master & Autopilot	- OFF	3
4	Avionic Master	- OFF	4
5	Throttle	- IDLE	5
6	Magnetos grounding	- AS REQUIRED	6
7	Turbo spin down	- CHECKED (5' below 1000 RPM)	7
8	Mixture	- CUT OFF	8
9	Magnetos	- OFF	9
10	Battery	- OFF	10
11	Flight data	- RECORDED	11
12	Aircraft	- CHOCKED / SECURED	12

PARKING CHECK COMPLETED

SPEEDS FOR OPERATION AT MAX. TAKE OFF MASS (MTOM)

KIAS

Rotate	FLAPS UP	77
Best angle Vx	FLAPS UP	79
Best rate Vy	FLAPS UP	97
Cruise climb Vcc	FLAPS UP	104
Initial approach	FLAPS 10°	100
Intermediate approach	FLAPS 25° GEAR DOWN	90
Final approach	FLAPS 40° GEAR DOWN	75
Go around	before FLAPS UP	79
Best glide	CLEAN	97
Max. speed for Flaps		108
Max. speed for Gear up		109
Max. speed for Gear down		133
Max. demonstrated crosswind		17 KT

POWER SETTINGS

MP

RPM

Take off.....36“ before Brake release.....2575

MP rise during take off roll 2-4“, do not exceed 41“ MP

Climb.....	33“	2450
Cruise and descent.....	55 - 65 %	2300
Approach / circuit	as required	2200

RUN UP

Engine		2000
Magnetos	max. drop/diff.....	150 / 50
Idle		500 - 700

POSTFLIGHT

Refuel standard.....	4 cm below filler =.....	34 USG/129 lt
Refill Oil.....	if below 5 QTS	max. 8 QTS

PRIMING TABLE

	OAT °C	-20	-10	0	+10	+20	+30
<i>Time to prime in seconds</i>	<i>minimum</i>	22	14	9	5	3	3
	<i>maximum</i>	27	18	12	7	4	4

LOADING

	Empty mass		Moment	[kg] cabine load with fuel:			MTOM	
<i>HB-</i>	<i>[lbs]</i>	<i>[kg]</i>	<i>[in*lbs]</i>	<i>standard</i>	<i>Filler</i>	<i>full</i>	<i>[lbs]</i>	<i>[kg]</i>
PKX	1919	870	168275	353	309	249	2900	1315

REFUELING

Standard	34 USG	129 lt	93 kg	204 lbs
Filler Neck	50 USG	189 lt	136 kg	300 lbs
Full	72 USG	273 lt	196 kg	432 lbs

FIRE ON GROUND

1	Starter	- CRANK ENGINE.....	1
2	Mixture	- IDLE CUT OFF	2
3	Throttle	- FULL OPEN.....	3
4	Emergency Fuel Pump.....	- OFF	4
5	Fuel selector	- OFF	5
6	Battery / Alternator	- OFF	6
7	Pax and Crew	- EVACUATE	7

FIRE IN FLIGHT

1	Source of fire	- IDENTIFY.....	1
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ELECTRICAL FIRE (Smoke in cabin)

1	Battery / Alternator	- OFF	1
2	Vents	- OPEN	2
3	Cabin heat	- OFF	3

LAND AS SOON AS PRACTICABLE

ENGINE FIRE

1	Fuel selector	- OFF	1
2	Throttle.....	- CLOSED	2
3	Mixture	- IDLE CUT OFF	3
4	Emergency Fuel pump.....	- OFF	4
5	Cabin heater and defroster.....	- OFF	5
6	Elevator trim.....	- SET FOR BEST GLIDE 97 KIAS	6

PREPARE FOR POWER OFF EMERGENCY LANDING

ENGINE POWER LOSS IN FLIGHT

1	Attitude	- BEST GLIDE SPEED 97 KIAS	1
2	Fuel selector	- SWITCH	2
3	Emergency Fuel pump	- UNLATCH HIGH	3
4	Mixture	- RICH	4
5	Alternate Air	- ON	5
6	Ignition	- BOTH	6
7	Engine gauges	- CHECK CAUSE OF POWER LOSS.	7

When power is restored

8	Alternate Air	- OFF	8
9	Emergency Fuel pump	- OFF	9

If power is not restored

10	Elevator trim	- SET FOR BEST GLIDE 97 KIAS	10
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PREPARE FOR POWER OFF EMERGENCY LANDING

EMERGENCY LANDING

Trim for best glide speed 97 KIAS

Locate suitable field

When the landing field can easily be reached

1	Seat belts / shoulder harnesses	- TIGHT	1
2	Fuel selector	- OFF	2
3	Mixture	- IDLE CUT OFF	3
4	Throttle	- IDLE	4
5	Ignition	- OFF	5
6	Battery / Alternator	- OFF	6
7	Flaps	- FULL DOWN	7
8	Speed	- REDUCE FOR FINAL APPROACH .	8

ALTERNATOR FAILURE

**No Alternator output or
Alternator-Warning (Annunciatorpanel) illuminates**

- | | | | |
|---|---------------------------------|-----------------------|---|
| 1 | Alternator Switch | - CHECK ON | 1 |
| 2 | Alternator Circuit breaker..... | - CHECK PUSH IN | 2 |

if 1 and 2 are checked on/in and still no output

ALTERNATOR RECYCLING PROCEDURE

- | | | | |
|---|----------------------------|---------------------------|---|
| 3 | Electrical consumers | - OFF as practicable..... | 3 |
| 4 | Alternator Switch | - OFF | 4 |
| 5 | Alternator Switch | - ON aft. 5-10 sec..... | 5 |
| 6 | Alternator output..... | - CHECKED | 6 |

if still no output

- | | | | |
|---|----------------------------|---------------------------|---|
| 7 | Electrical consumers | - OFF as practicable..... | 7 |
|---|----------------------------|---------------------------|---|

Land on the nearest Airport as practicable

RADIO FAILURE

NO RADIOCONTACT WITH TWR / ACC

- | | | | |
|---|----------------------------|-----------------|---|
| 1 | Radio | - ON | 1 |
| 2 | Vol | - TEST..... | 2 |
| 3 | Frequency | - CHECKED | 3 |
| 4 | Headset / Mike Plugs | - CHECKED | 4 |

if still no contact

remain outside of controlled airspace

LOSS OF RADIOCONTACT WITH TWR / ACC

- | | | | |
|---|----------------------------|-----------------|---|
| 1 | Radio | - ON | 1 |
| 2 | Vol | - TEST..... | 2 |
| 3 | Headset / Mike Plugs | - CHECKED | 3 |

if still no contact

- | | | | |
|---|------------------|-----------------------|---|
| 4 | Transponder..... | - 7600 / ALT | 4 |
| 5 | Procedure | - ACCORDING AIP | 5 |

GEAR EMERGENCY

NO GEAR DOWN INDICATION (one or more green lights u/s)

- | | | | |
|---|----------------------------|-------------------------|---|
| 1 | Master..... | - ON | 1 |
| 2 | Circuit breakers..... | - IN..... | 2 |
| 3 | Panel lights | - OFF | 3 |
| 4 | Gear indicator bulbs | - CHECKED, PUSH IN..... | 4 |

If gear does not check down and lock continue with

GEAR EMERGENCY DOWN

- | | | | |
|---|----------------------------|----------------------------|---|
| 1 | Speed | - BELOW 88 KIAS | 1 |
| 2 | Gear selector | - DOWN | 2 |
| 3 | Gear circuit breaker | - PULL OUT | 3 |
| 4 | Emergency gear lever | - PUSH EMERGENCY DOWN..... | 4 |

If main gear has failed to lock down

- | | | | |
|---|------------------------------------|---------------------------------|---|
| 5 | Yaw airplane with the rudder | - ABRUPTLY FROM SIDE TO SIDE .. | 5 |
|---|------------------------------------|---------------------------------|---|

If nose gear will not lock down

- | | | | |
|---|-------------|--------------------------------|---|
| 6 | Speed | - REDUCE TO LOWEST SAFE | 6 |
| 7 | Power..... | - LOWEST FOR SAFE OPERATION .. | 7 |

If nose gear still failed to lock down

- | | | | |
|----|----------------------------|--------------|----|
| 8 | Gear circuit breaker | - IN..... | 8 |
| 9 | Gear selector | - UP | 9 |
| 10 | Gear selector | - DOWN | 10 |

If main or nose gear still does not check down

advise tower for "low passing and visual gear check"

Visual gear check positiv

- NORMAL LANDING

Visual gear check negativ

- PREPARE GEAR UP LDG. acc AFM

Prefer concrete runway when ever possible

GEAR UNSAFE INDICATION IN FLIGHT

- | | | | |
|---|---------------------|------------------------|---|
| 1 | Speed | - BELOW 133 KIAS | 1 |
| 2 | Gear selector | - DOWN | 2 |
| 3 | Speed | - BELOW 111 KIAS | 3 |
| 4 | Gear selector | - UP | 4 |

GROUND PROCEDURES**BEFORE FIRST TAXI**

1	Time (Block off).....	-	TABULATED.....	1
2	Directional Gyro.....	-	SET.....	2
3	Taxi Area.....	-	FREE.....	3

TAXI

1	Taxi Light.....	-	ON.....	1
2	Power.....	-	SET.....	2
3	Parking Brake.....	-	RELEASED.....	3

AFTER FIRST TAXI

1	Brakes.....	-	CHECKED.....	1
2	Attitude Indicator.....	-	ERECTED / STABLE.....	2
3	Turn Coordinator.....	-	L/R TURNING.....	3
4	Directional Gyro.....	-	L/R TURN: DECREASING/INCREASING.....	4

STOP

1	Power.....	-	SET.....	1
2	Parking Brake.....	-	SET.....	2
3	Taxi Light.....	-	OFF.....	3

LINING UP

1	Wind (RTF / Windssock).....	-	DIRECTION / SPEED.....	1
2	Runway.....	-	IDENTIFIED.....	2
3	Approach Sector.....	-	FREE.....	3
4	Lights (Landing / Strobe).....	-	ON.....	4

LINED UP & TAKE OFF

1	Brakes.....	-	PUSH.....	1
2	Runway & Gyro Heading.....	-	COMPARE.....	2
3	Take Off Power.....	-	SET.....	3
4	Power (min. RPM).....	-	CHECKED.....	4
5	Brakes.....	-	RELEASED.....	5
6	Speed.....	-	RISE.....	6

PARKING

1	Time (Block on).....	-	TABULATED.....	1
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TAKEOFF BRIEFING**Departure**

Wind.....	Richtung, Stärke, Einfluss auf Start
Takeoff procedure	Gewicht, Temperatur, Pistenzustand
Speeds.....	Profil & Geschwindigkeit bis 2000 ft AAL
Routing / airspace restrictions	Flugweg zum verlassen Flugplatzzone

Emergency

Malfunction on Ground	Massnahmen vor dem Abheben
Engine failure TO & Climbout.....	erste Massnahmen nach dem Start
Major Malfunction after TO	Massnahmen und Flugweg nach dem Start

APPROACH BRIEFING

Runway in use, routing	Flugweg und Höhengates beim Anflug
Airspace restrictions	Einschränkungen auf dem Flugweg
Missed approach	Flugweg und Höhen nach einem Durchstart

FINAL SPEED CALCULATION

MASS FACTOR

Speed Reduction on Final

1 KT per 30 kg below MTOM

WIND FACTOR

Speed Increments Final

if windspeed or gust is exceeding 10% of v-FINAL

Add 1/2 of headwind component to v-FINAL

EXAMPLE FINAL-SPEED INCREMENT

v-FINAL	66 KIAS		
v-HEADWIND	6 KT		
Windspeed	below 10% v-FINAL	=> increment 0	=> 66 KIAS
v-FINAL	66 KIAS		
v-HEADWIND	20 KT		
Windspeed	above 10% v-FINAL	=> increment +10 KT	=> 76 KIAS
v-FINAL	66 KIAS		
v-HEADWIND	20 up to 36 KT		
Gustspeed above	10% v-FINAL	=> increment +18 KT	=> 84 KIAS

FINAL APPROACH SPEED

=

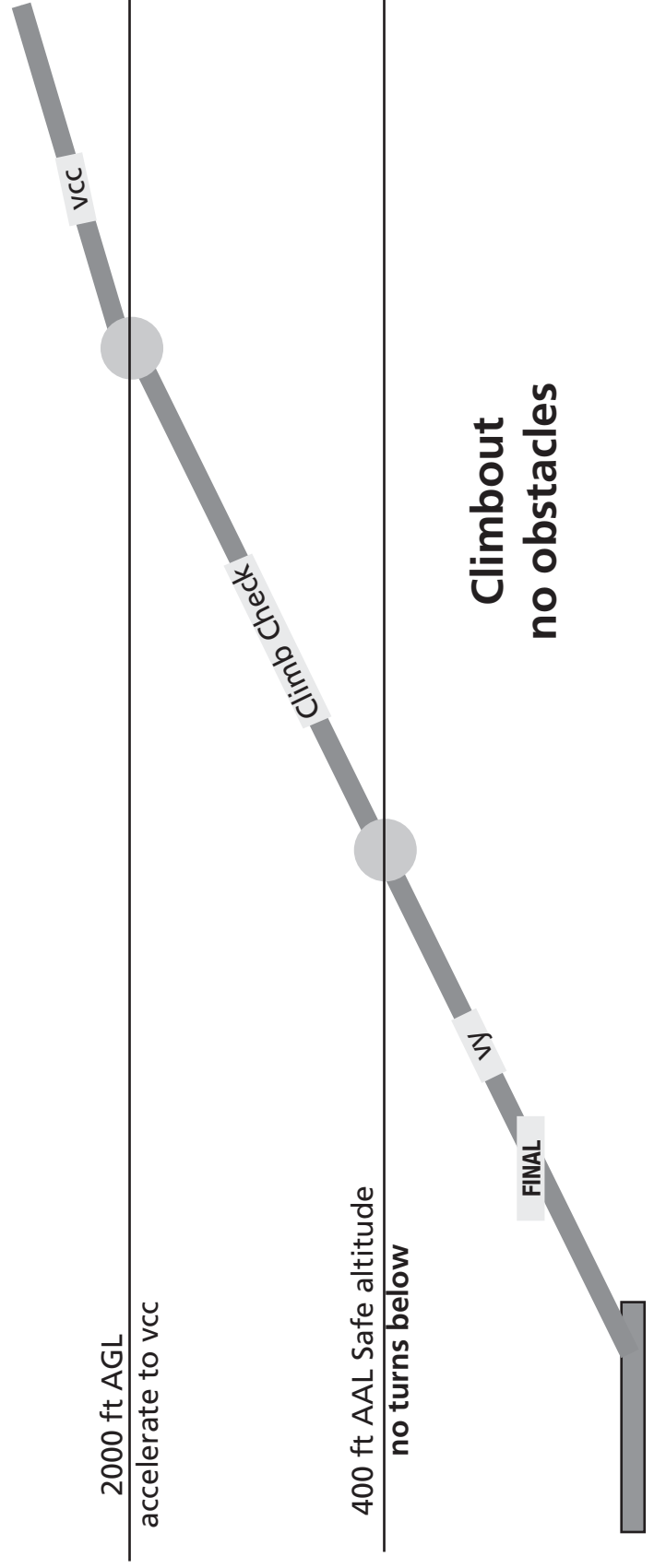
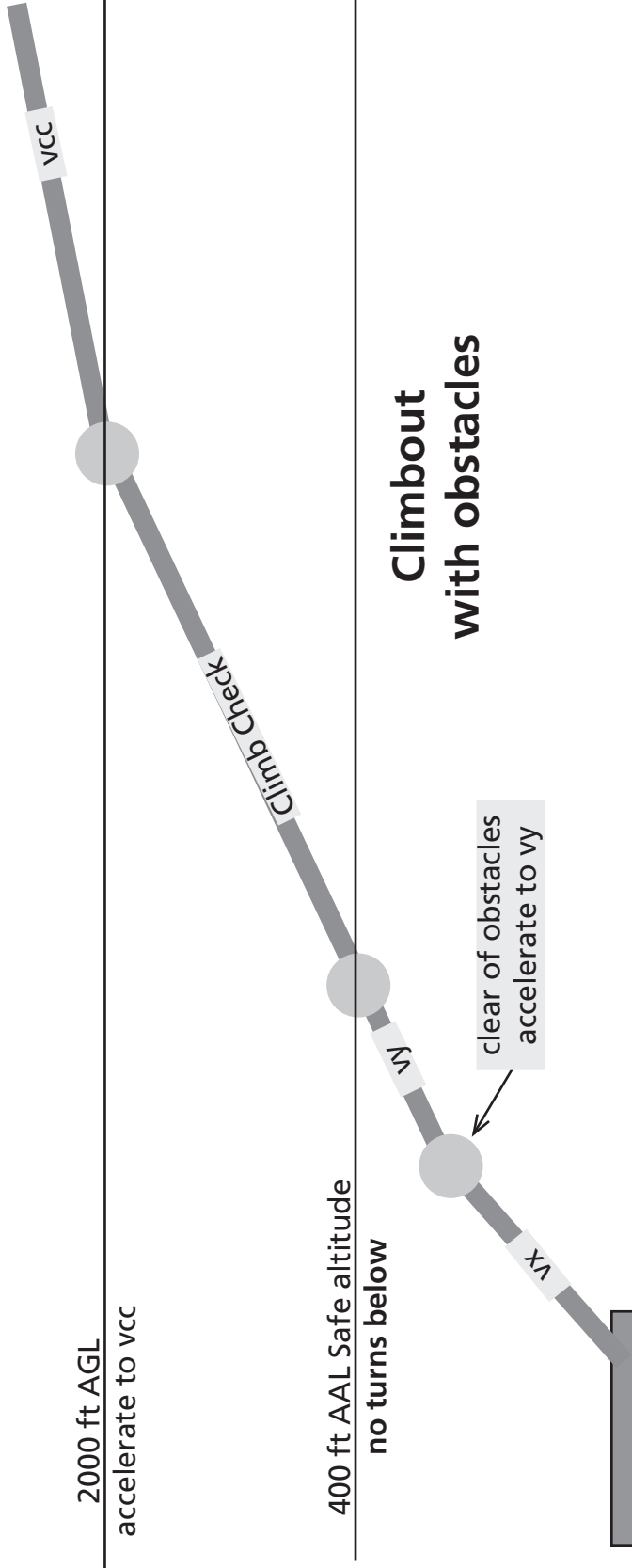
v-FINAL - Mass Factor + Wind Factor

BANK FACTOR

*if bankangle for turning final is more than 25°***Add 5 KT to v-INTERMEDIATE****FLIGHTPATH CALCULATION**

Flight angle	Gradient [ft/nm], [%]	ROD/ROC [ft/min]	ref. RPM (no wind)
3°	300 ft/nm = 5%	GS x 5	1700
4°	400 ft/nm = 7%	GS x 7	1600
5°	500 ft/nm = 9%	GS x 9	1500

ROD/ROC[ft/min] = GS [kts] x Gradient [%]



APPROACHING GLIDE ABM THR APPROACH INITIAL APPROACH

Gear down, v 90, Flaps 25, start descent

Time CHECK v 100 / Flaps 10

DOWNWIND

Flaps 40

INTERMEDIATE APPROACH

v 90 / Flaps 25

BASE

APPROACHING FINAL

FINAL APPROACH

FINAL

reduce to v Final

CHECK

PROPELLER

FINAL

FULL INCREASE

GATE

CLIMB OUT

CLIMB

CHECK

GO AROUND before GATE

- Propeller.....
 - Throttle.....
 - Attitude.....
 - Speed min. for flaps up + positive ROC
 - Speed below max gear retract.....
- CLIMB RPM
 - CLIMB POWER
 - ROTATE according speed
 - FLAPS RETRACT
 - GEAR UP

GO AROUND after GATE

- Propeller.....
 - Throttle.....
 - Attitude.....
 - Speed min. for flaps up + positive ROC
 - Speed below max gear retract.....
- FULL INCREASE
 - TAKE OFF POWER
 - ROTATE according speed
 - FLAPS RETRACT
 - GEAR UP

CROSSWIND



Betriebsgrenzen

Der Autopilot darf nicht angewendet werden bei:

- Airspeed > 140 KIAS
- Flaps > 10° (1. Stellung)
- Go around und missed approach
- Start und Landung

Emergency

Autopilot unterbrechen

- AP DISC-Switch drücken
- AP-Switch OFF
- BATTERY MASTER..... kurz ausschalten
- AP Sicherung ziehen

Trimmung unterbrechen

- TRIM INTR switch drücken und halten
- TRIM switch OFF
- TRIM Sicherung ziehen und TRIM INTR switch loslassen
- Trimmrad von Hand bewegen

Achtung!

Damit der Autopilot in den Betriebsarten ALT oder VS benützt werden kann, muss vorher ein horizontaler Modus gewählt sein (CWS, HDG oder NAV).

Damit der Autopilot in den Betriebsarten CWS, ALT oder VS benützt werden kann, muss die elektrische Trimmung eingeschaltet sein!

Autopilot Selbst-Test

- RADIO MASTER ON
- AP switch ON

**Während 5 Sekunden werden alle Segmente des AP-Displays angezeigt
Nach 5 Sekunden erscheint RDY (ready) oder FAIL (Fehler)
oder**

keine Anzeige, falls Drehzahl des Turn Coordinator zu niedrige

Bei FAIL oder keiner Anzeige kann der Autopilot nicht in Betrieb genommen werden!

Autopilot ausschalten before Take off

- AP disconnect
- CONTROLS free and easy
- TRIMM set for Takeoff

AP-MODI**CWS (control wheel steering)**

Durch drücken des CWS Switch werden die gegenwärtigen Roll und Pitch Lagen durch den AP beibehalten, jedoch wird Roll auf max. 90% eines Standard Turns limitiert. Auf diese Weise können Kreise geflogen werden.

HDG (GNS 430 auf Mode VLOC)

Headingbug Heading einstellen
HDG Taste drücken.

AP dreht Flugzeug auf das gewünschte Heading.

Für ein neues HDG Heading den Bug verstellen (max. $\pm 150^\circ$ vom aktuellen HDG)

VS (vertical speed)

VS Taste drücken
mit Drehknopf ROC/ROD einstellen (max ± 1600 fpm)

ALT (altitude)

ALT Taste drücken

AP hält die momentane Druckhöhe**Höhenkorrekturen mit dem VS-Drehknopf**

Durch drehen in Schritten von ± 20 ft möglich

Höhenkorrekturen grösser als ± 360 ft

ROD/ROC im VS Mode wählen

NAV mode

(Headingbug wird nicht benötigt, HSI liefert li/re und Kurs-Info)

Standard 45° Intercept

VOR Frequenz einstellen
HSI Track am Anzeigegerät einstellen
NAV-Taste drücken

bei Vollausschlag des CDI macht der AP einen 45° Intercept auf den gewünschten Track

Variabler Intercept-Winkel (maximal 45°)

VOR Frequenz einstellen
HSI Track am Anzeigegerät einstellen
Headingbug auf Intercept HDG einstellen ($< 45^\circ$ Abweichung zum Track)
HDG und NAV Tasten gleichzeitig drücken

HDG + NAV wird angezeigt

AP fliegt das Intercept-heading und dreht dann auf den Track ein (HDG erlischt)

GPS Steering (GPSS) Mode

GPSS aktivieren NAV-Taste 2x drücken

NAV und GPSS werden angezeigt

CDI und der HDG-Bug haben keine Funktion! GPS steuert direkt den Autopilot.

Ausschalten des GPSS-Mode

NAV od. HDG od. CWS drücken.

AUTOPILOT NAV-SELECTOR

GPS im V-LOC- & AP NAV-Mode

AP fliegt VOR/LOC gem.HSI-Setting

GPS im GPS- & AP NAV-Mode

AP fliegt GPS-Signal gem.HSI-Setting

GPS im GPS- & AP GPSS-Mod

AP fliegt nur GPS-Signa (HSI / CDI / HDG-Bug ohne Funktion)**Autopilot vollständig testen****Funktion manual electrical trim**

RADIO MASTER-, AP & TRIM SwitchON

Electrical TrimDN

Trimrad muss in Richtung Nose DN drehen

Electrical TrimUP

Trimrad muss in Richtung Nose UP drehen

Electrical TrimUP oder DN

El. Trim muss bei Betätigen der Handtrimmung stoppen

Beide Trim-Knöpfe.....einzelnen drücken

El. Trim darf sich nicht verändern

während der elektrischen Trimmung TRIM INTR Switchdrücken

Elektrische Trimmung darf erst beim Loslassen wieder funktionieren**Funktion auto trim (normale Funktion)**

RADIO MASTER-, AP- & TRIM-switchON

Steuerhorn zentrieren und Tasten HDG und VSkurzzeitig drücken

Display zeigt HDG und VS

Taste CWSdrücken und wieder loslassen

Display zeigt CWS und VS

Taste CWSdrücken und gedrückt halten

Steuer muss frei bewegbar sein

Taste CWSloslassen

Servos des Autopilot greifen wieder

Drehknopf VS.....auf ROD+ drehen

Steuerhorn bewegt sich langsam nach hinten

Drehknopf VS.....auf ROD- drehen

Steuerhorn bewegt sich langsam nach vorne

TRIM INTR switch.....drücken

AP muss ausschalten

HDG Mode.....einschalten

Steuer muss dem Headingbug folgenTaste ALT drücken Steuerhorn leicht nach hinten ziehen
nach ca. 3 Sek muss die Trimmung Richtung Nose DN laufen, TRIM blinkt.Steuerhorn leicht nach vorne drücken
nach ca. 3 Sekunden muss die Trimmung Richtung Nose UP laufen

TRIM-switch ausschalten
Kurs-Pfeil des HSI unter lubber line stellen und Taste NAV drücken
Kurspfeil links und rechts drehen

Steuerhorn muss folgen

Aktive VOR-Station..... einstellen
Kurspfeil einstellen, so dass CDI 1-2 dots ausgeschlagen ist

Steuerhorn muss in Richtung der Nadel drehen

Taste REV drücken

das Steuerhorn muss entgegengesetzt der Bewegung des Kurspfeils und des CDI bewegen

TRIM switch..... einschalten

Trimmung UP oder DN betätigen

AP schaltet aus

