AIRBUS 320F

SYS1

„Welcome to the A320!“

(Toulouse Airbus Ground Instructor, anonym)

„The A320 is a *PFM* machine. An airliner that performs best without any pilots‘ interference.“

„What does *PFM* stand for?“

„**P**ure **F**u..ing **M**agic!“

Administration

- Zielgruppe →ALLE!
    - Teilnahme-Engagement so, wie jeder möchte. Von „berieseln lassen“ bis „ich will am Ende einen Checkflug machen!“. As you like!
- Mittwochs (unregelmäßig) um 19 Uhr [Sonntags bei Bedarf]
- Aufzeichnung -> Youtubekanal *737 adventure Real Pilot*
- www.strassenpiloten.de -> A320 Onlinekurs [Spitzname 1. Vors., nur GROßBUCHSTABEN]

Ablauf

Datum	Uhrzeit	Thema
02.08.23	19:00	**SYS1 Einweisung in den Onlinekurs und Aircraft General**
09.08.23		SYS2 Triebwerke, APU, Pneumatik / Druckkabine
tbd		SYS3 Hydraulik, Elektrik und Flight Controls
tbd		SYS4 Flight Control Laws und Protections
tbd		SYS5 Landing Gear, Cockpit Layout, Flight Director
tbd		FLT1 Preflight
tbd		FLT2 Engine Start, Taxi out und Lineup
tbd		FLT3 Takeoff, Steigflug und Reiseflug
tbd		FLT4 Vorbereitung auf den Anflug und Sinkflug
tbd		FLT5 Anflug (PA, NPA, Special APP)
tbd		FLT6 Landung, Abrollen und Taxi in
tbd		FLT7 Flug von A-Z
tbd		FLT8 Flug von A-Z
tbd		EMG EFTO / SEL

Wichtiges vorab

Kein Type Rating.

Etwas Systemkunde, viel Verfahren.

Single Hand IFR geeignete Verfahren.

I. Vorbereiten / Erklären
II. Vormachen / Erklären
III. Nachmachen
IV. Üben

AIRCRAFT GENERAL

FCOM

AIRBUS

A318/A319/A320/A321

Downloads

FCOM A32F

FCOM_Compl.pdf

Adobe Acrobat Dokument [50.0 MB]

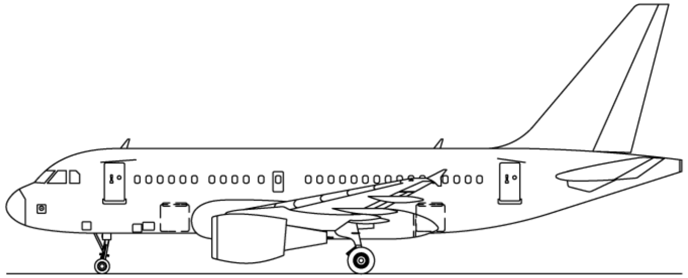
Download

A320 Normal Checklist

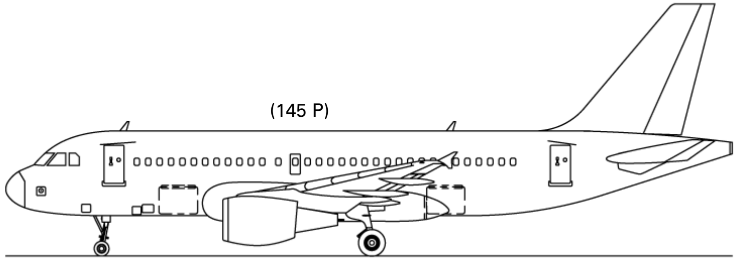
Revision 1.0

DIE A320 FAMILIE

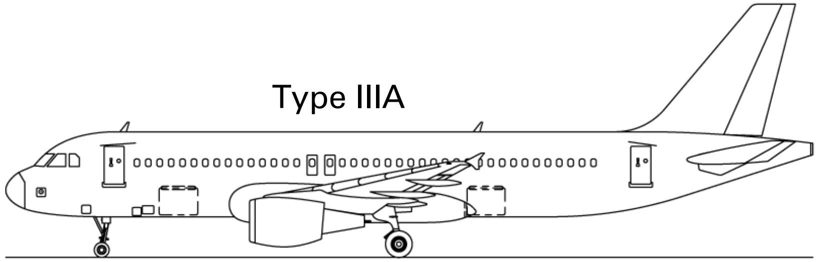
AIRBUS A32X FAMILY



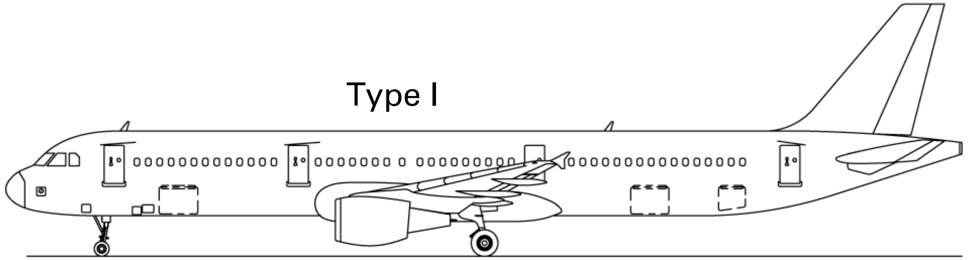
AIRBUS A318 - SIDE



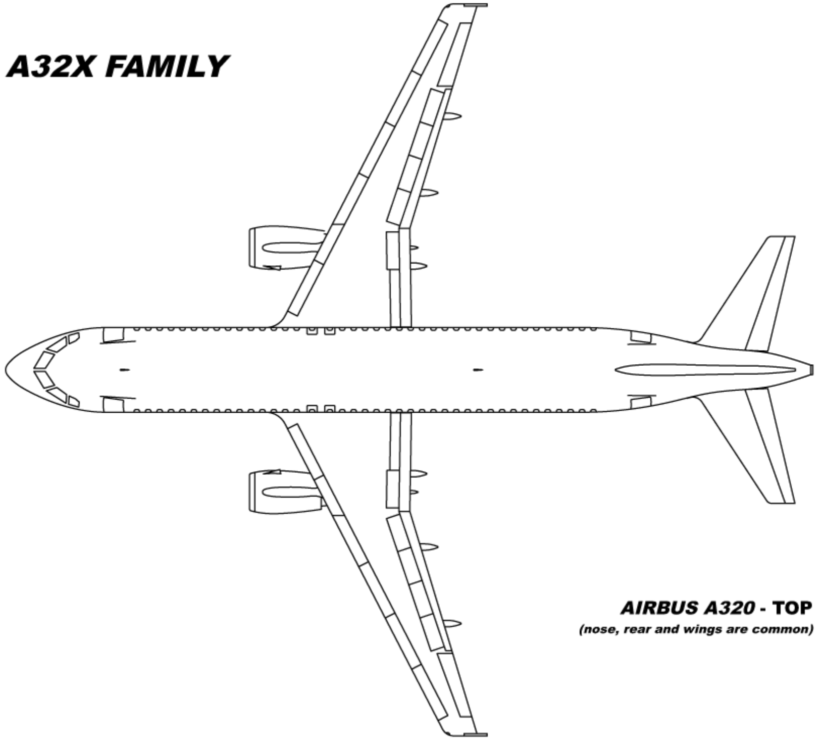
AIRBUS A319 - SIDE



AIRBUS A320 - SIDE

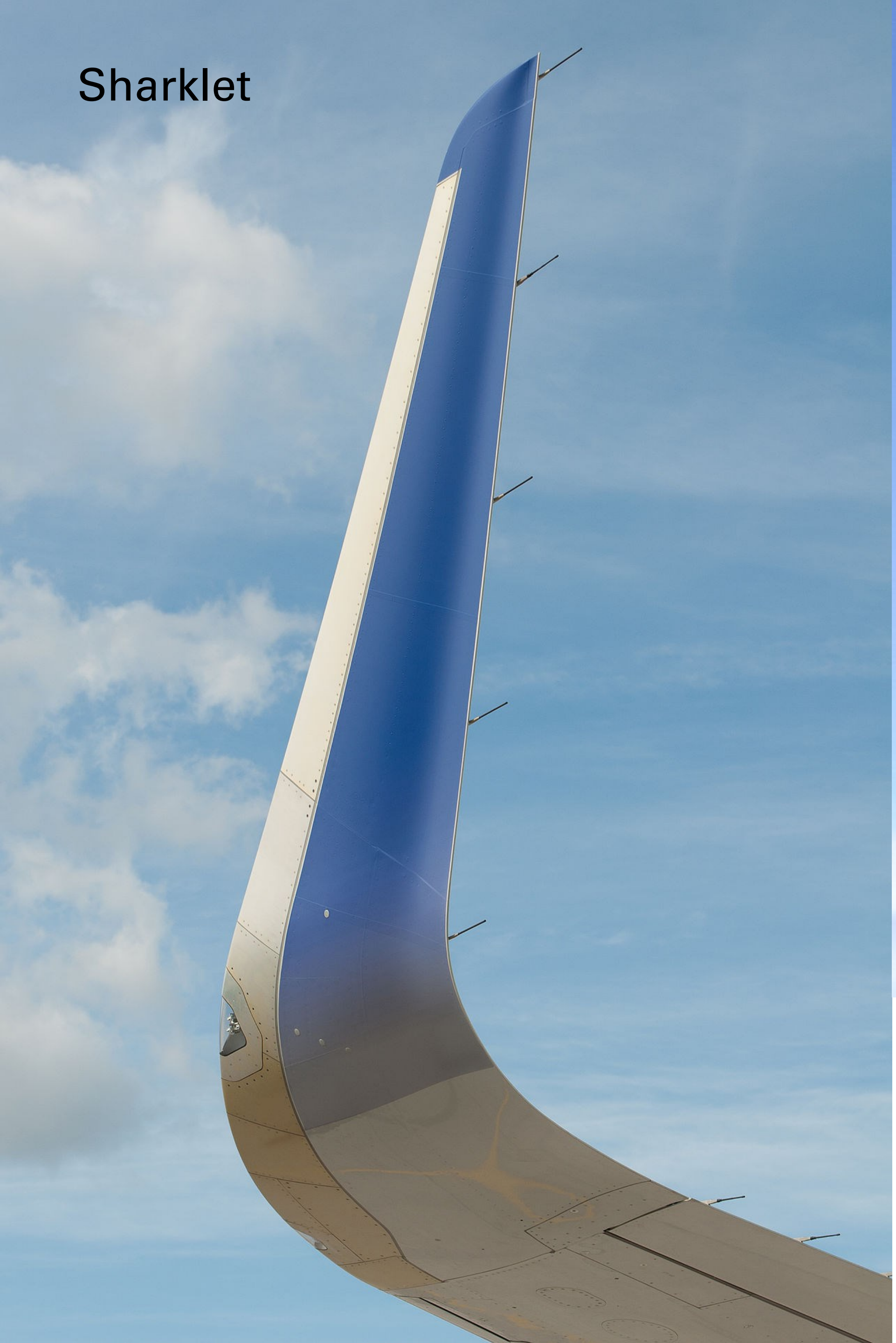


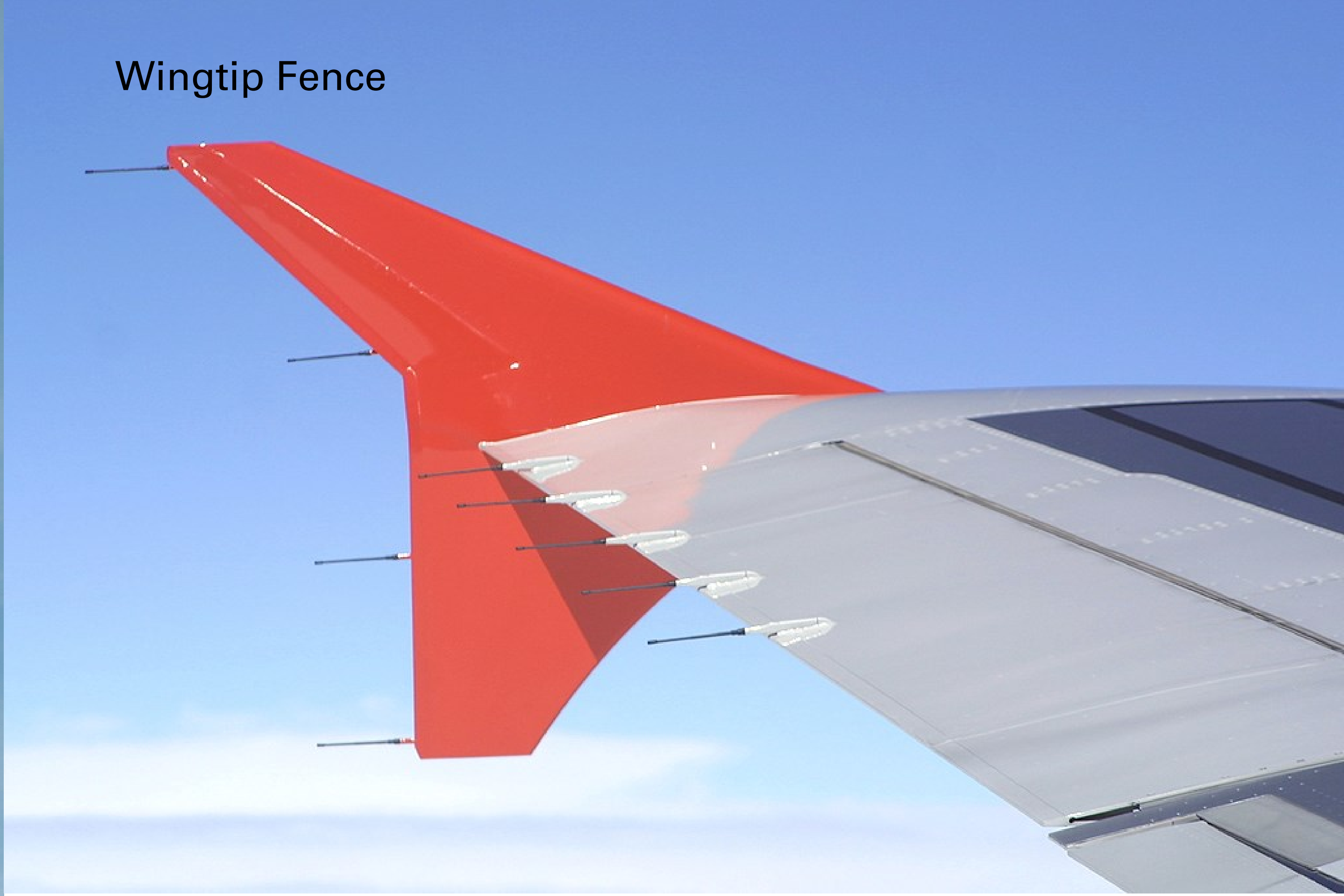
AIRBUS A321 - SIDE



AIRBUS A320 - TOP

(nose, rear and wings are common)





Sharklet [2,5 m Höhe]
+ 200 kg
- 3,5% Treibstoffverbrauch [- 700 t CO_2 / Flugzeug / Jahr]
= +100 NAM
= US$ - 220.000 / Flugzeug / Jahr

Maße

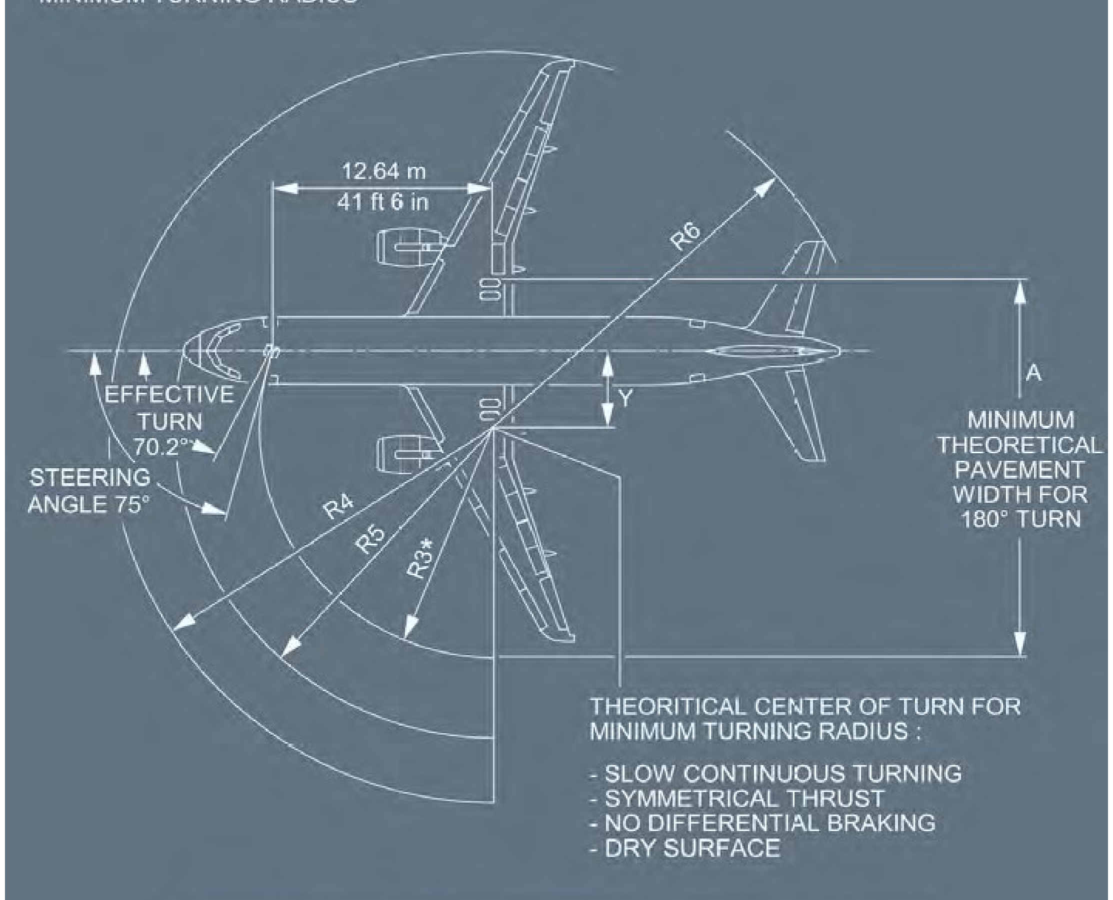
	Spann-weite	Länge	Höhe	PAX	OEW MTOW / MLW	Schub (x2)
	(m)				(t)	(klbs)
A318	34,1 m. Sharklets 35,8	31,44	12,56	136	39,5 68,0 / 57,7	22.000 – 24.000 lbs
A319		33,84	11,76	160	40,8 75,5 / 62,5	22.000 – 27.000 lbs
A320		37,57		195	42,6 78,0 / 66,0	25.000 – 27.000 lbs
A321		44,51		236	48,5 93,5 / 77,8	30.000 – 33.000 lbs

OEW Operating Empty Weight
MTOW Max. Takeoff Weight
MLW Max. Landing Weight

180° Kurve auf der RWY

22,8 m

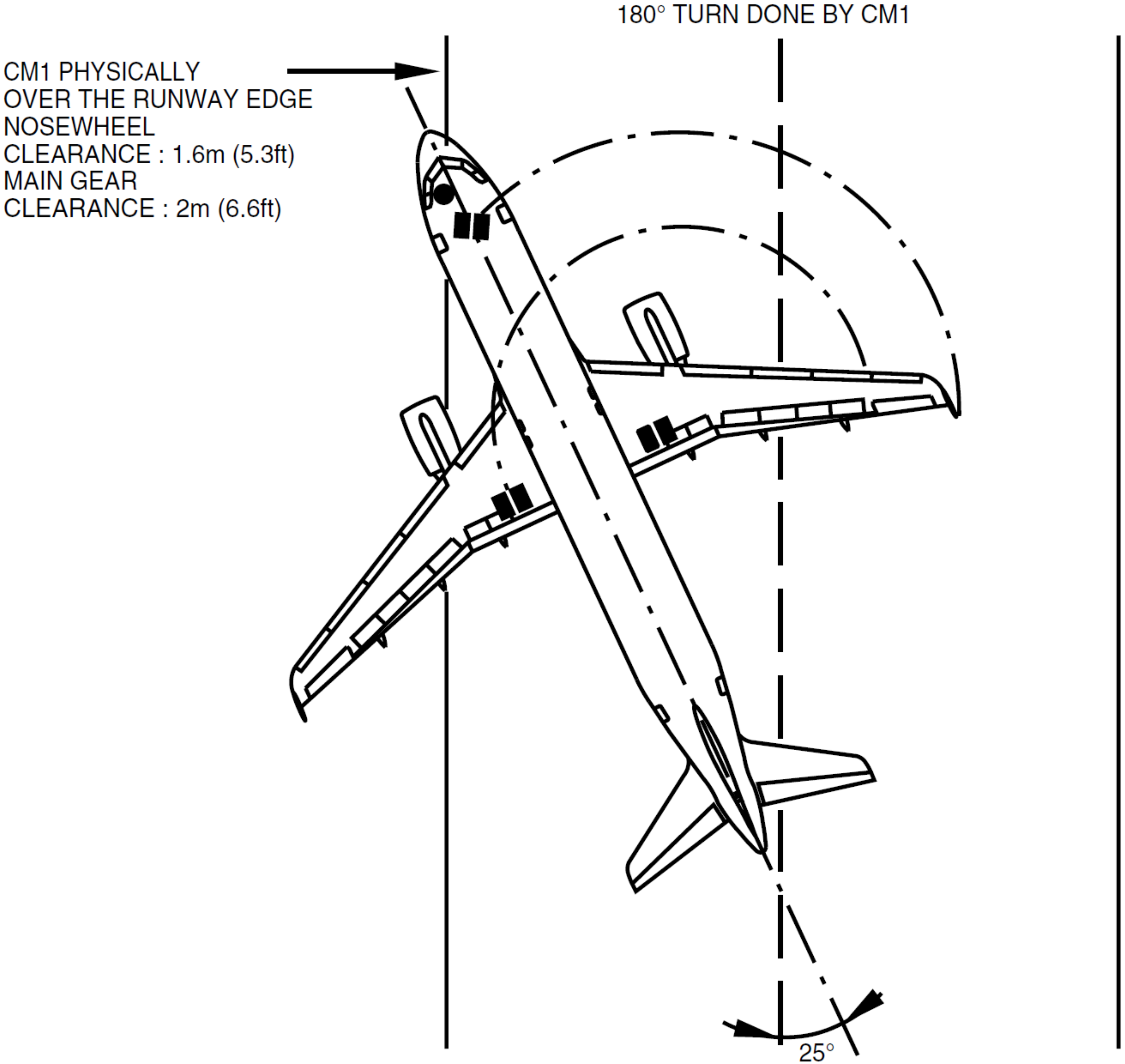
Airbus recommendation
30 m



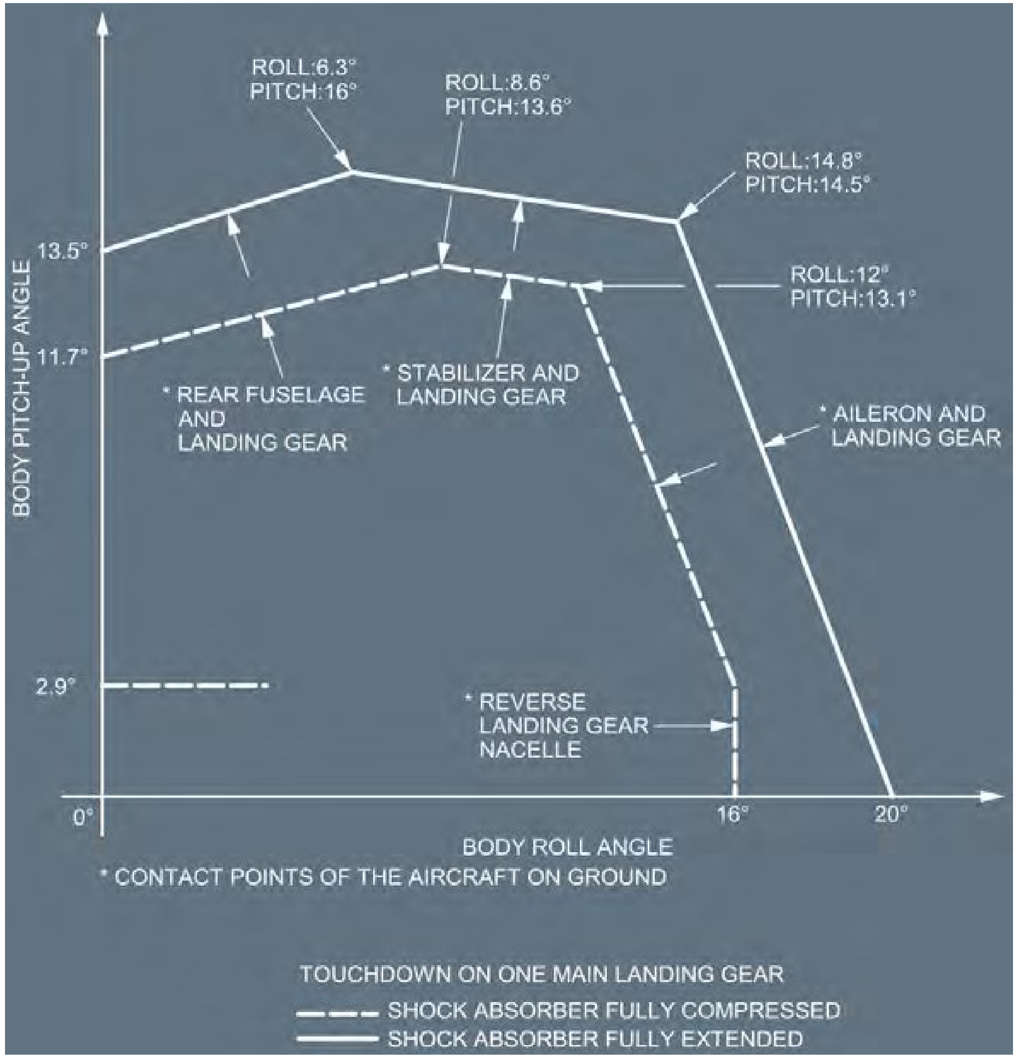
	Y	A	R3	R4	R5	R6
FT	15	75	44	75	60	72
M	4.5	22.8	13.6	22.9	18.3	21.8

*NOSE GEAR RADIUS (R3) MEASURED FROM OUTSIDE FACE OF TIRE

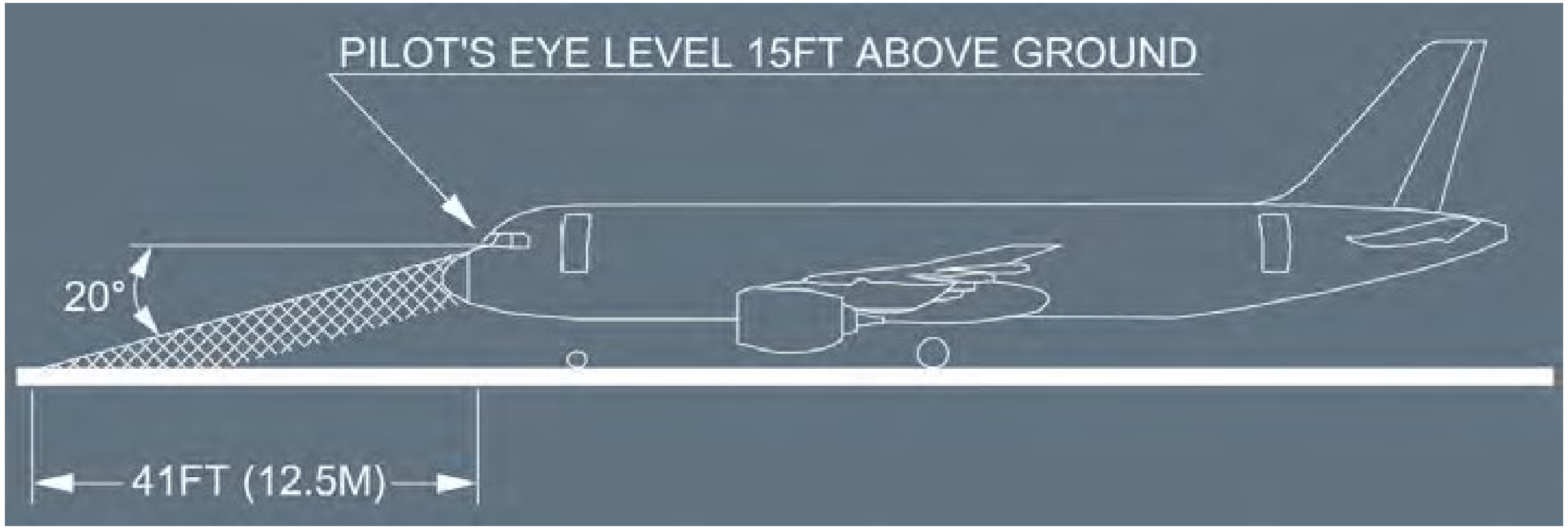
180° Kurve auf der RWY



Tail-/ Flap-/ Enginestrikes



Toter Winkel



Design Konzept

FBW – Fly By Wire

- Side Stick
- Flight Control Laws
- Protections

Design Konzept

AFS. – Auto Flight System

- FMS – Flight Management System, angesteuert durch die MCDU – Multipurpose Control and Display Unit

Design Konzept

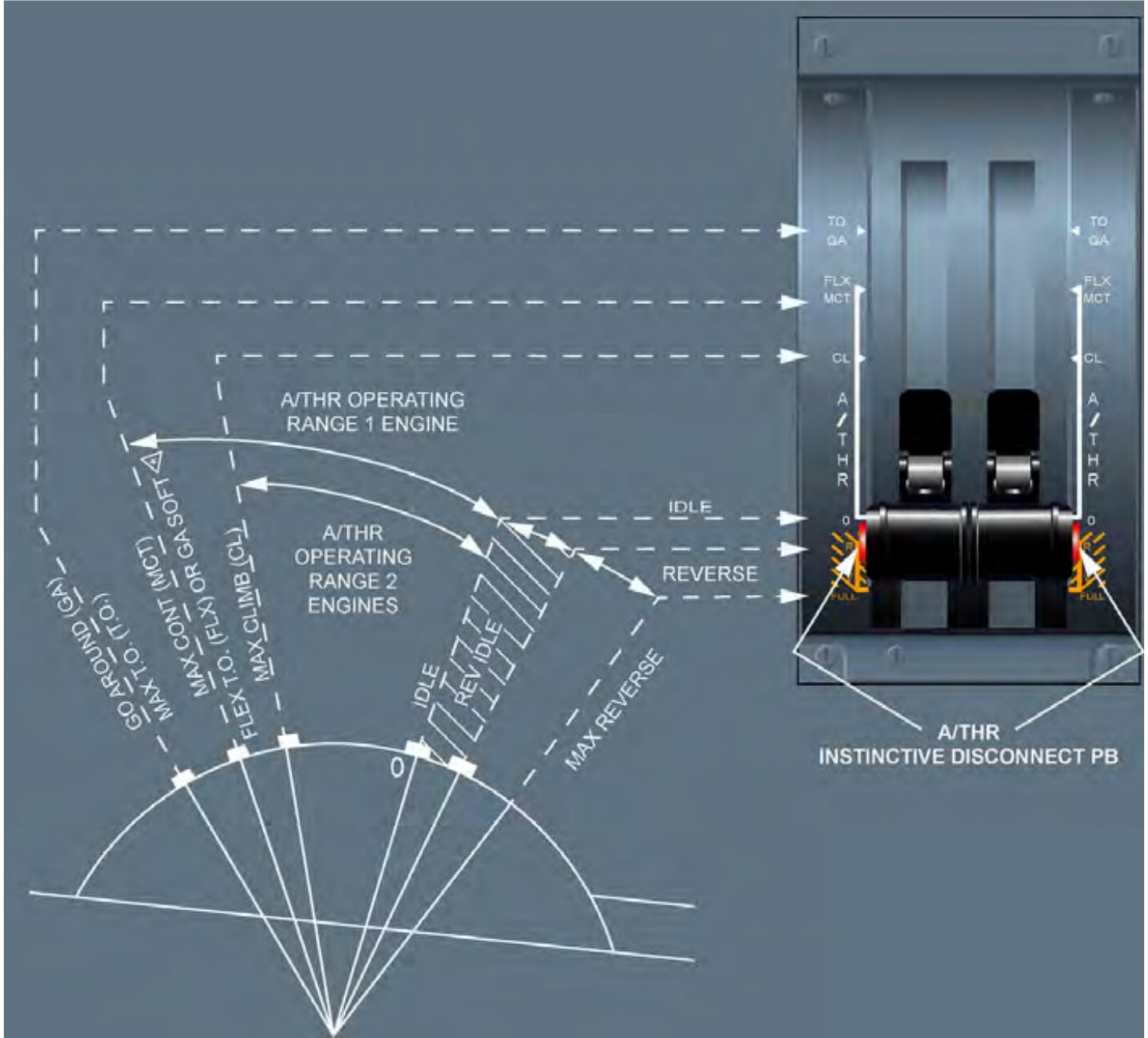
AFS.. – Auto Flight System

- AP/FD – Autopilot / Flight Director, angesteuert durch die FCU – Flight Control Unit

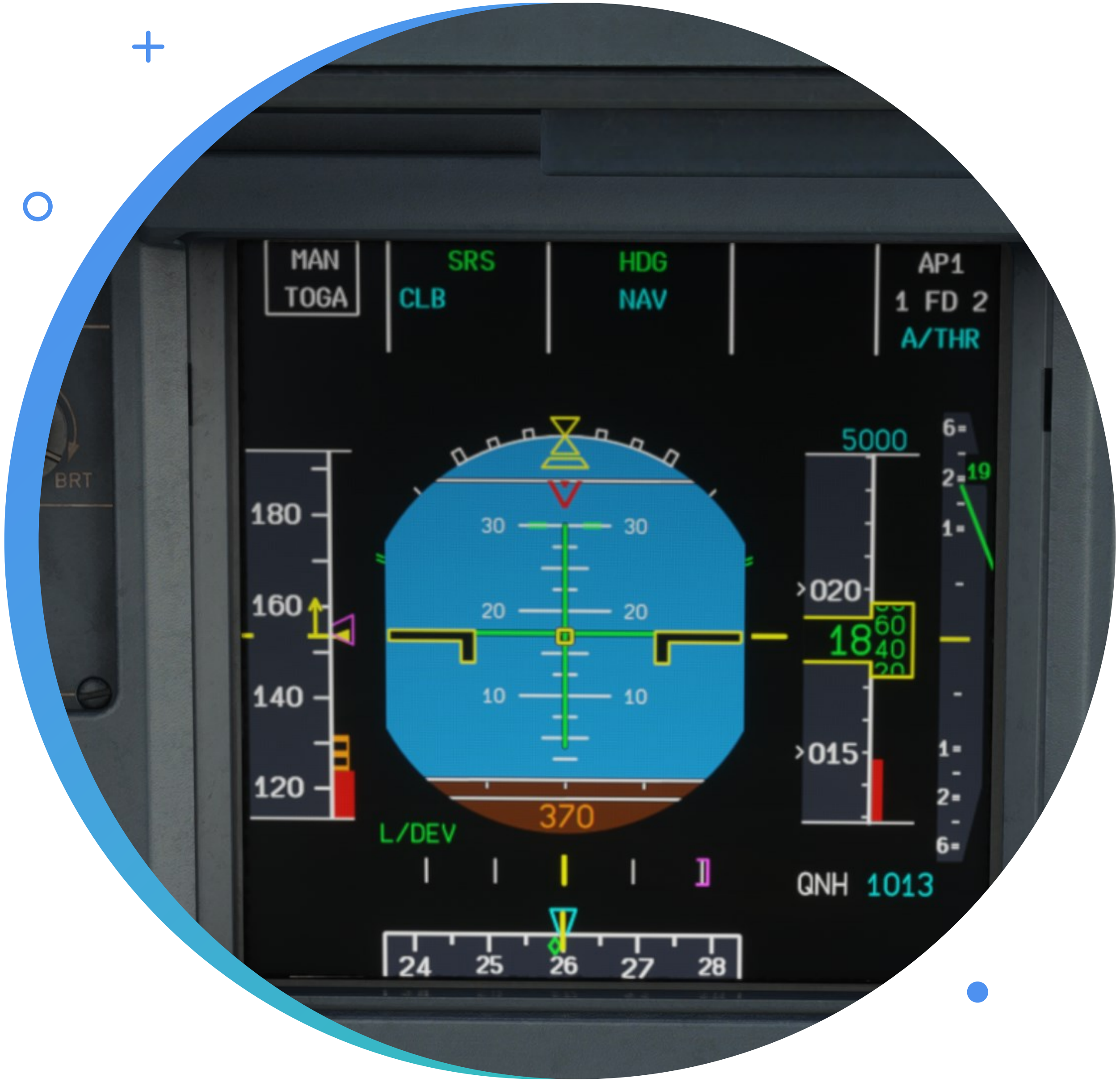
Design Konzept

AFS... – Auto Flight System

- A/THR – Auto Thrust, angesteuert durch nicht angetriebene Thrust Levers



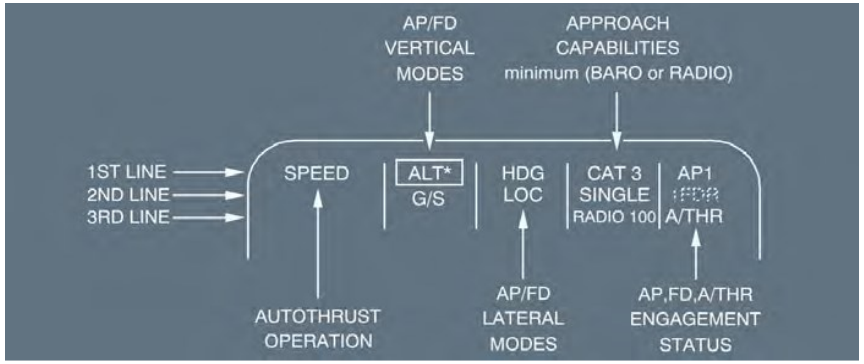
TO GA
FLX MCT
CL
A/THR
IDLE
REVERSE
A/THR OPERATING RANGE 1 ENGINE
A/THR OPERATING RANGE 2 ENGINES
GO AROUND (GA)
MAX T.O. (T.O.)
MAX CONT (MCT)
FLEX T.O. (FLX) OR GA SOFT
MAX CLIMB (CL)
IDLE
REV IDLE
MAX REVERSE
0
A/THR INSTINCTIVE DISCONNECT PB



Design Konzept

AFS.... – Auto Flight System

- FMA – Flight Mode Annunciator, zeigt AP/FD Mode Infos und Guidance-Targets



Design Konzept

DU. – Display Units

- Fliegen / Navigieren -> EFIS – Electronic Flight Instrument System
- DCDU – Datalink Control and Display Unit

Design Konzept

DU.. – Display Units

- ECAM – Electronic Centralized Aircraft Monitoring

Design Konzept

Facing Forward Cockpit Layout

- Dark Cockpit / Lights out

Airbus Golden Rules

1. The aircraft can be flown like any other aircraft.
2. Fly, navigate, communicate – in that order.
3. One head up all the time.
4. Cross check the accuracy of the FMS.
5. Know your FMA at all times.
6. When things don‘t go as expected, take over.
7. Use the proper level of automation for the task.
8. Practise task sharing and back-up each other.

Airbus Wortschatz

„Managed“

Fliegen entlang des F-PLN, wie er in der MCDU eingegeben wurde.

„Selected“

Für ATC-Anweisungen oder andere Situationen, wo die Eingabe in die MCDU aus Zeitgründen oder generell nicht möglich ist.

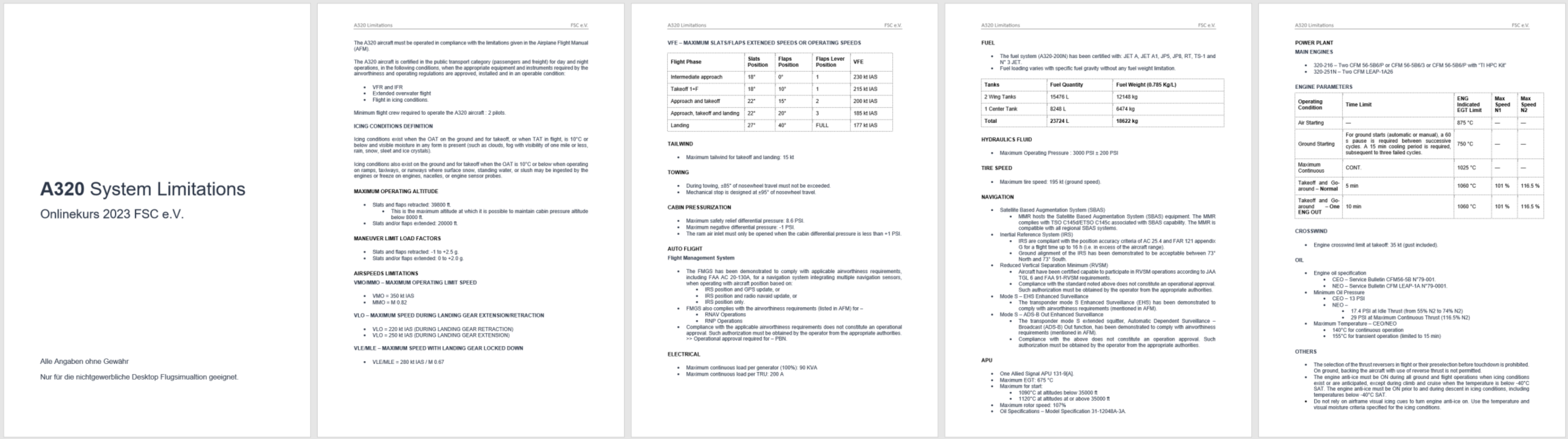
Automations-Level

1. Manuelles Fliegen, ohne Flight Director, mit/ohne A/THR
2. Manuelles Fliegen, mit Flight Director, mit/ohne A/THR
3. Automatisches Fliegen, selected
4. Automatisches Fliegen, managed


CHRONO
SIDE STICK PRIORITY
QNH
1008
in Hg
hPa
FD
LS
D-ABNV
SELCAL CODE
LQ-JK
PFD
PFD/ND
XFR
ND
OFF
BRT
LOUD SPEAKER
CONSOLE/FLOOR
DIM
MAX
SRS
CLB
RWY
NAV
1 FD 2
QNH 1008
DL230Δ 230°
2.3 NM
TA ONLY
LIMIT
SPD(IAS)
VLE 280KT/M67
VLO EXT 250KT
RET 220KT
VFE
1 230KT
1+F 215KT
2 200KT
3 185KT
FULL 177KT
TERR ON ND
DME-1
DME-2

Limitations

-> Handout auf meiner Website



A320 System Limitations

Onlinekurs 2023 FSC e.V.

Alle Angaben ohne Gewähr

Nur für die nichtgewerbliche Desktop Flugsimualtion geeignet.

MAXIMUM OPERATING ALTITUDE

- Slats and flaps retracted: 39800 ft.
    - This is the maximum altitude at which it is possible to maintain cabin pressure altitude below 8000 ft.
- Slats and/or flaps extended: 20000 ft.

MANEUVER LIMIT LOAD FACTORS

- Slats and flaps retracted: -1 to +2.5 g.
- Slats and/or flaps extended: 0 to +2.0 g.

AIRSPEEDS LIMITATIONS

VMO/MMO – MAXIMUM OPERATING LIMIT SPEED

- VMO = 350 kt IAS
- MMO = M 0.82

VLO – MAXIMUM SPEED DURING LANDING GEAR EXTENSION/RETRACTION

- VLO = 220 kt IAS (DURING LANDING GEAR RETRACTION)
- VLO = 250 kt IAS (DURING LANDING GEAR EXTENSION)

VLE/MLE – MAXIMUM SPEED WITH LANDING GEAR LOCKED DOWN

- VLE/MLE = 280 kt IAS / M 0.67