

ANNEXES

ANNEX A: The air traffic growth – situation overview

ANNEX B: Flight safety

ANNEX C: Czech airspace categorization

ANNEX D: Directions for change (ATM 2000+ strategy)

ANNEX E: SID and STAR for LKPR (R-NAV)

ANNEX F: Separation

ANNEX G: How to behave on Prague airport

ANNEX A

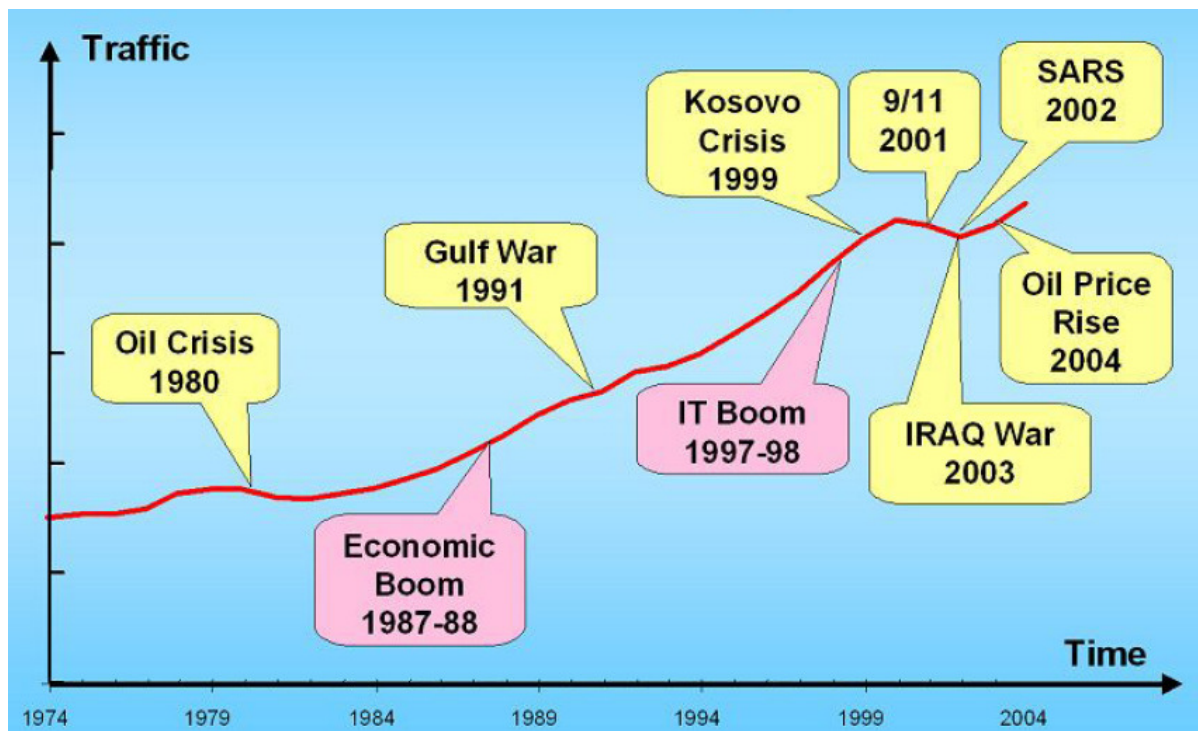


Diagram A-A: Politically-economical situation in civil air traffic

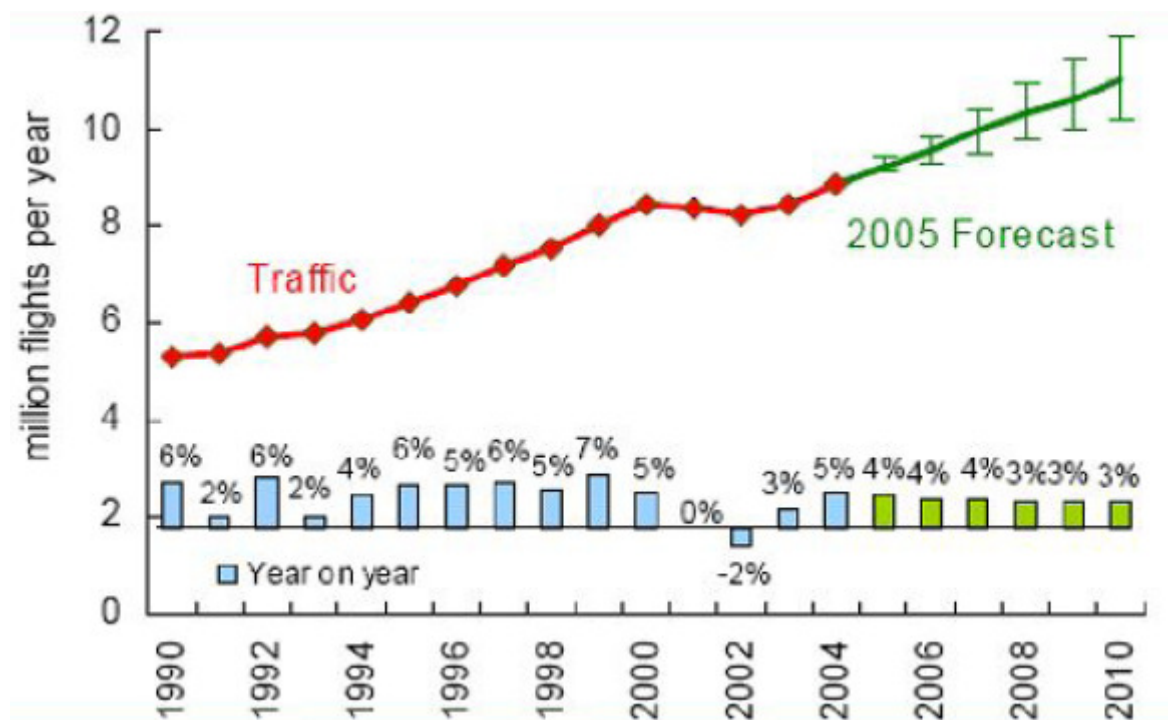


Diagram A-B: Commercial traffic growth

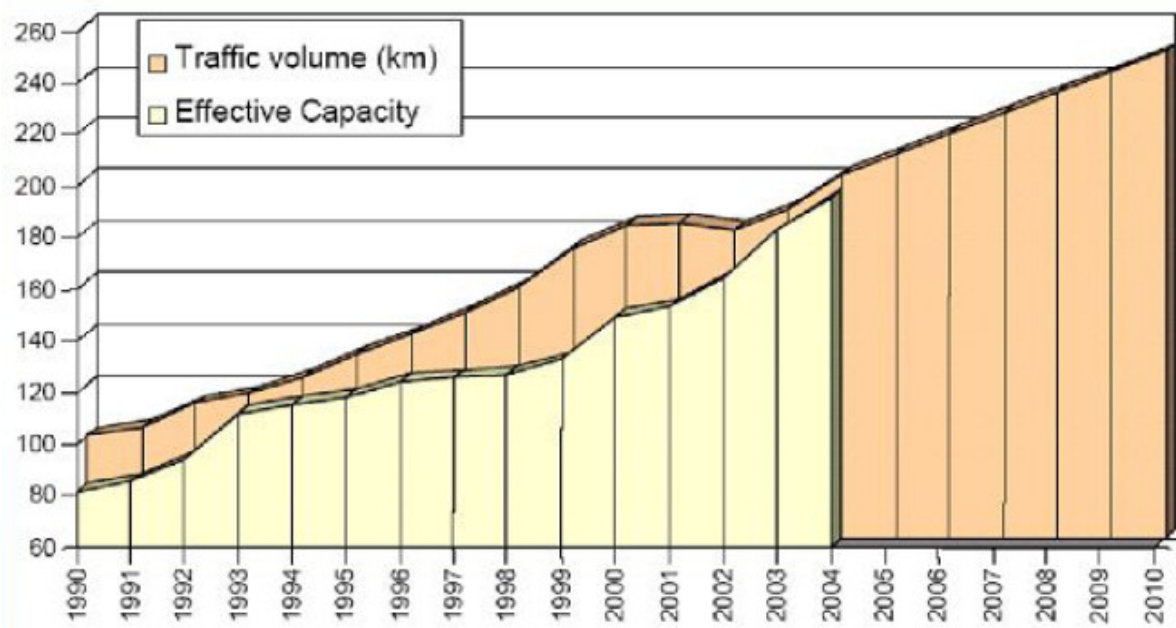


Diagram A-C: Capacity for commercial aviation

ANNEX B

SEVERITY		
4	Catastrophic	- Loss of the aircraft. - Multiple fatalities.
3	Hazardous	- Large reduction in safety margins. - Physical distress or a high workload such that a flight crew cannot be relied upon to perform their tasks accurately or completely. - Serious or fatal injury to a relatively small number of occupants.
2	Major	- Significant reduction in safety margins. - Reduction in the ability of flight crew to cope with adverse operating condition impairing their efficiency.
1	Minor	- Nuisance. - Operating limitations or emergency procedures.

Table B-A: Risk analysis

LIKELIHOOD			
4	Probable	1 to 10 ⁻⁵ per flight hour (<i>see note</i>)	May occur once or several times during operational life.
3	Remote	10 ⁻⁵ to 10 ⁻⁷ per flight hour	Unlikely to occur during total operational life of each system but may occur several times when considering several systems of the same type.
2	Extremely Remote	10 ⁻⁷ to 10 ⁻⁹ per flight hour	Unlikely to occur when considering systems of the same type, but nevertheless, has to be considered as being possible.
1	Extremely improbable	< 10 ⁻⁹ per flight hour	Should virtually never occur in the whole fleet life.

Table B-B: Likelihood

Severity and Likelihood

SEVERITY

Catastrophic	4	4 Review	8 Unacceptable	12 Unacceptable	16 Unacceptable
Hazardous	3	3 Acceptable	6 Review	9 Unacceptable	12 Unacceptable
Major	2	2 Acceptable	4 Acceptable	6 Review	8 Unacceptable
Minor	1	1 Acceptable	2 Acceptable	3 Acceptable	4 Review
		Extremely improbable 1	Extremely Remote 2	Remote 3	Probable 4
LIKELIHOOD OF OCCURRENCE					

Table B-C: Risk tolerability matrix

Severity Class	1 [Most Severe]	2	3	4	5 No safety effect [Least Severe]
Effect on Operations*)	Accidents	Serious incidents	Major incidents	Significant incidents	No immediate effect on safety
Examples of effects on operations Include *):	☐ one or more catastrophic accidents, one or more mid-air collisions ☐ one or more collisions on the ground between two aircraft ☐ one or more Controlled Flight Into Terrain ☐ total loss of flight control. No independent source of recovery mechanism, such as surveillance or ATC and/or flight crew procedures can reasonably be expected to prevent the accident(s).	☐ large reduction in separation (e.g., a separation of less than half the separation minima), without crew or ATC fully controlling the situation or able to recover from the situation. ☐ one or more aircraft deviating from their intended clearance, so that abrupt manoeuvre is required to avoid collision with another aircraft or with terrain (or when an avoidance action would be appropriate).	☐ large reduction (e.g., a separation of less than half the separation minima) in separation with crew or ATC controlling the situation and able to recover from the situation. ☐ minor reduction (e.g., a separation of more than half the separation minima) in separation without crew or ATC fully controlling the situation, hence jeopardising the ability to recover from the situation (without the use of collision or terrain avoidance manoeuvres).	☐ increasing workload of the air traffic controller or aircraft flight crew, or slightly degrading the functional capability of the enabling CNS system. ☐ minor reduction (e.g., a separation of more than half the separation minima) in separation with crew or ATC controlling the situation and fully able to recover from the situation.	No hazardous condition i.e. no immediate direct or indirect impact on the operations.

Table B-D: Severity classification scheme in ATM

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Fatal accidents	25	27	25	37	28	32	23	33	40	44	42	44	46	40
Total fatalities	803	611	811	956	305	1417	499	844	643	1182	619	1076	1490	1002
On-board fatalities	799	609	799	922	256	1411	474	842	637	1144	611	1074	1443	1000
Third parties	4	2	12	34	49	6	25	2	6	38	8	2	47	2
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total		Average	
Fatal accidents	44	48	44	40	38	42	42	37	38	34	893		37	
Total fatalities	1392	1100	2100	1238	1098	712	1249	810	1067	713	23737		989	
On-board fatalities	1378	1094	1752	1236	1069	680	1230	800	996	713	22969		957	
Third parties	14	6	348	2	29	32	19	10	74	0	771		32	

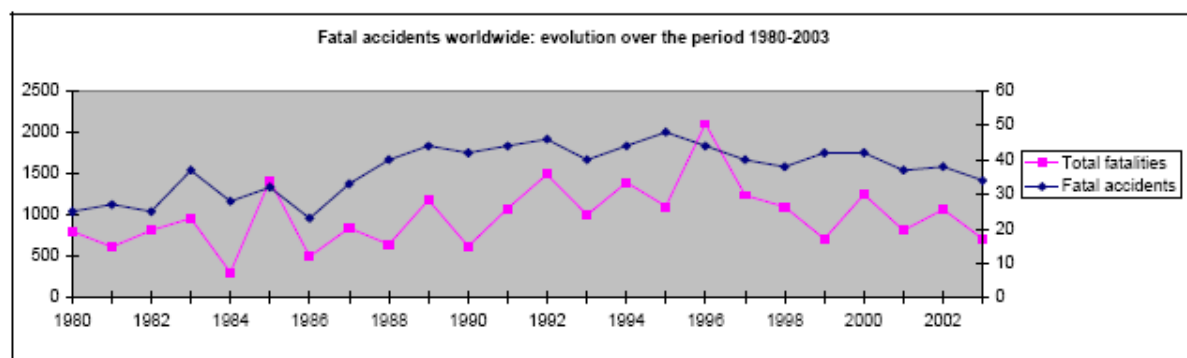


Table B-E: Fatal accidents worldwide

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Fatal accidents	2	3	3	5	1	3	2	3	10	7	2	2	6	9
Total fatalities	150	200	73	331	1	205	3	56	160	309	51	10	207	253
On-board fatalities	150	200	73	331	1	205	3	56	156	309	51	10	164	253
Third parties	0	0	0	0	0	0	0	0	4	0	0	0	43	0
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total	Average		
Fatal accidents	4	5	4	2	6	8	6	9	6	5	113	5		
Total fatalities	66	133	159	71	32	63	129	159	101	155	3077	128		
On-board fatalities	66	133	157	71	27	63	125	155	101	155	3015	126		
Third parties	0	0	2	0	5	0	4	4	0	0	62	3		

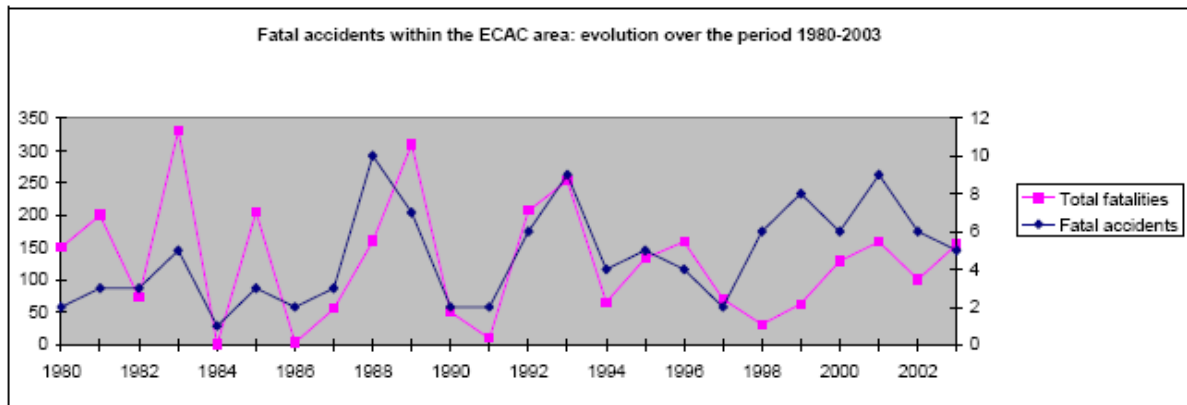
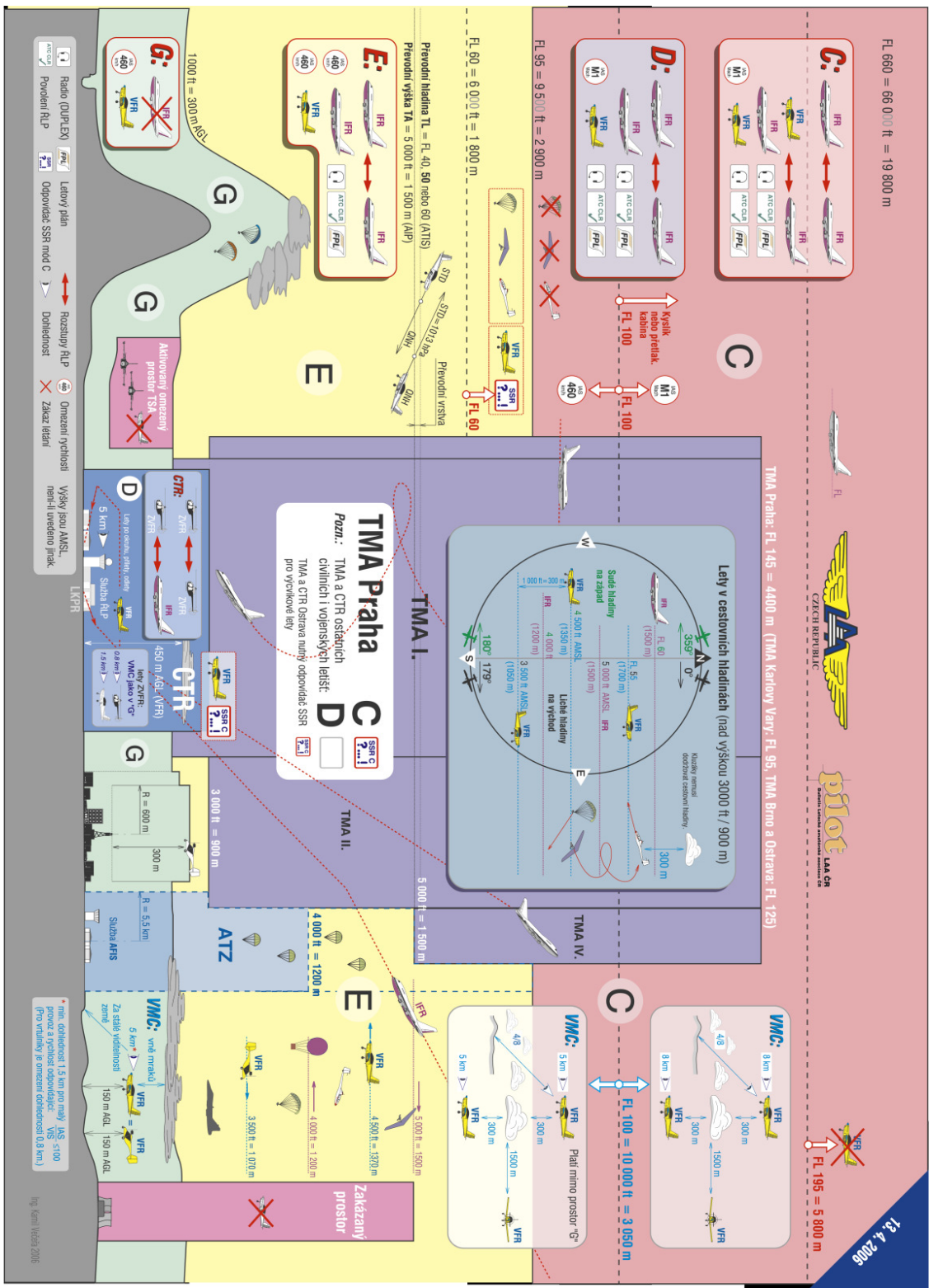


Table B-F: Fatal accidents in ECAC countries

ANNEX C



Picture C-A Czech airspace categorization

ANNEX D

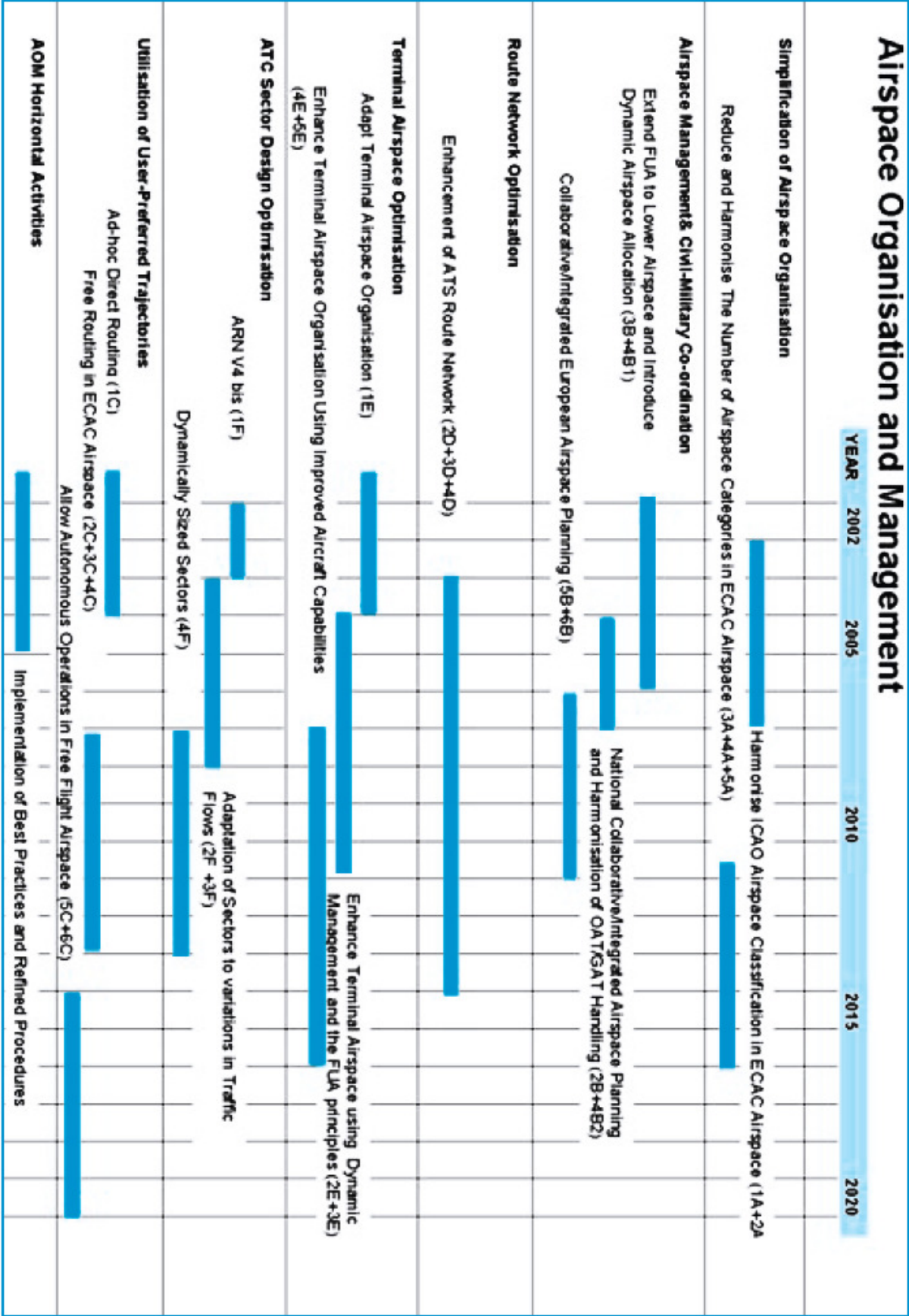


Table: D-A

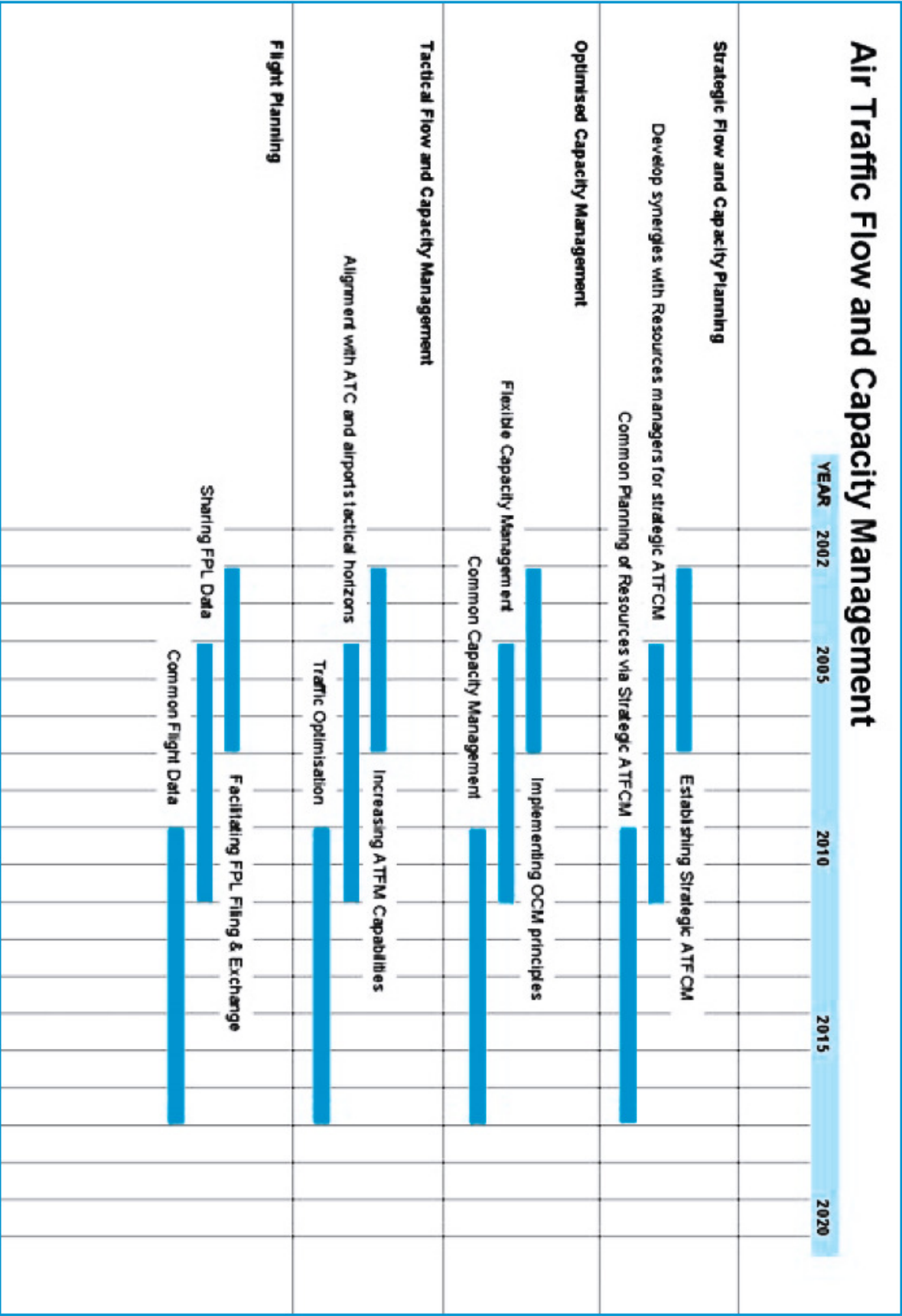


Table: D-B

En-route and Terminal ATC

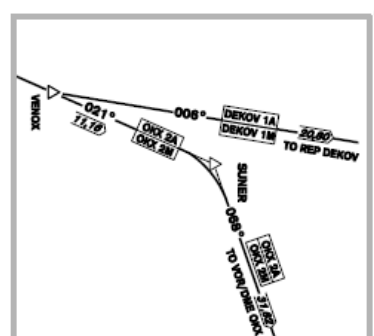
	YEAR	2002	2005	2010	2015	2020
Improve Safety Nets	Use Aircraft Derived Data for Ground Based Safety Nets					
	Improve Ground Based Safety Nets in ATC Units					
Improve ATC Decision Support	Provide Automated Support for Conflict Detection					
	Provide Automated Support for Conflict Resolution					
	Provide Automated Support for Traffic Complexity Reduction					
	Enhance ATC Decision Support by Using Aircraft Derived Data					
Improve Arrival, Departure and Surface Movement Management	Provide Automated Support for Arrival Management					
	Provide Automated Support for Departure Management					
	Provide Automated Support for Integrated Arrival, Departure and Surface Movement Management					
	Use Aircraft Derived Data for Arrival, Departure and Surface Movement Management					
Improve Interoperability, Communications and Surveillance Efficiency	Provide Consistent Flight Data					
	Use Data Link to Improve Efficiency of Communications					
	Automatic Provision of Airborne Data to Enhance Ground Systems Functions Including Surveillance					
	Maintain and Improve the Quality of Surveillance					
Improve Co-operative ATS	Provide Airborne Traffic Situational Awareness					
	Delegate Separation Service					
	Facilitate User-preferred 4D-Trajectory					
	Empower Autonomous Aircraft Operations					

Table: D-C

Airport ATC						
	YEAR	2002	2005	2010	2015	2020
Improved Traffic Management on the Movement Area						
	Improvement of Conflict Detection and Alert for the Movement Area					
	Improvement of Planning and Routing on the Movement Area					
	Improvement of Guidance and Control on the Manoeuvring Area					
Airport Capacity Management						
	Enhancement of Airport Operations through Information Exchange between ATC, ATFM, Airport Operators and Aircraft Operators					
Enhancement of Airport Throughput	Optimisation of Airport Operations in All Weather Conditions					
	Enhancement of Airport Operations through Arrival Management					
	Enhancement of Airport Operations through Departure Management					
	Enhancement of Airport Operations through Fully Integrated Arrival, Departure and Surface Traffic Management					
Airport Airside Capacity Enhancement	Further Enhancement of Aerodrome Operations from Gate to Gate					
	Enhancement of Movement Area Utilization					
Environmental Protection at Airports	Minimisation of Noise and Gaseous Emissions					
	Harmonisation of Environmental Standards and Support For Compliance with Environmental Regulations					
Airport Horizontal Initiatives	Implementation of Best Practices and Refined Procedures					
	Support for Efficient Management of use of Available Environmental Noise Capacity					

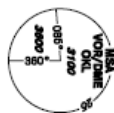
Table: D-D

ANNEX E



75
TMA DE
FRANCA
SOCIETÀ C
7000000

TMA IX PRA-1A - same lateral limits as CTR V000CHODY
TMA IX PRA-1A effective outside of operational hours of AD V000CHODY only

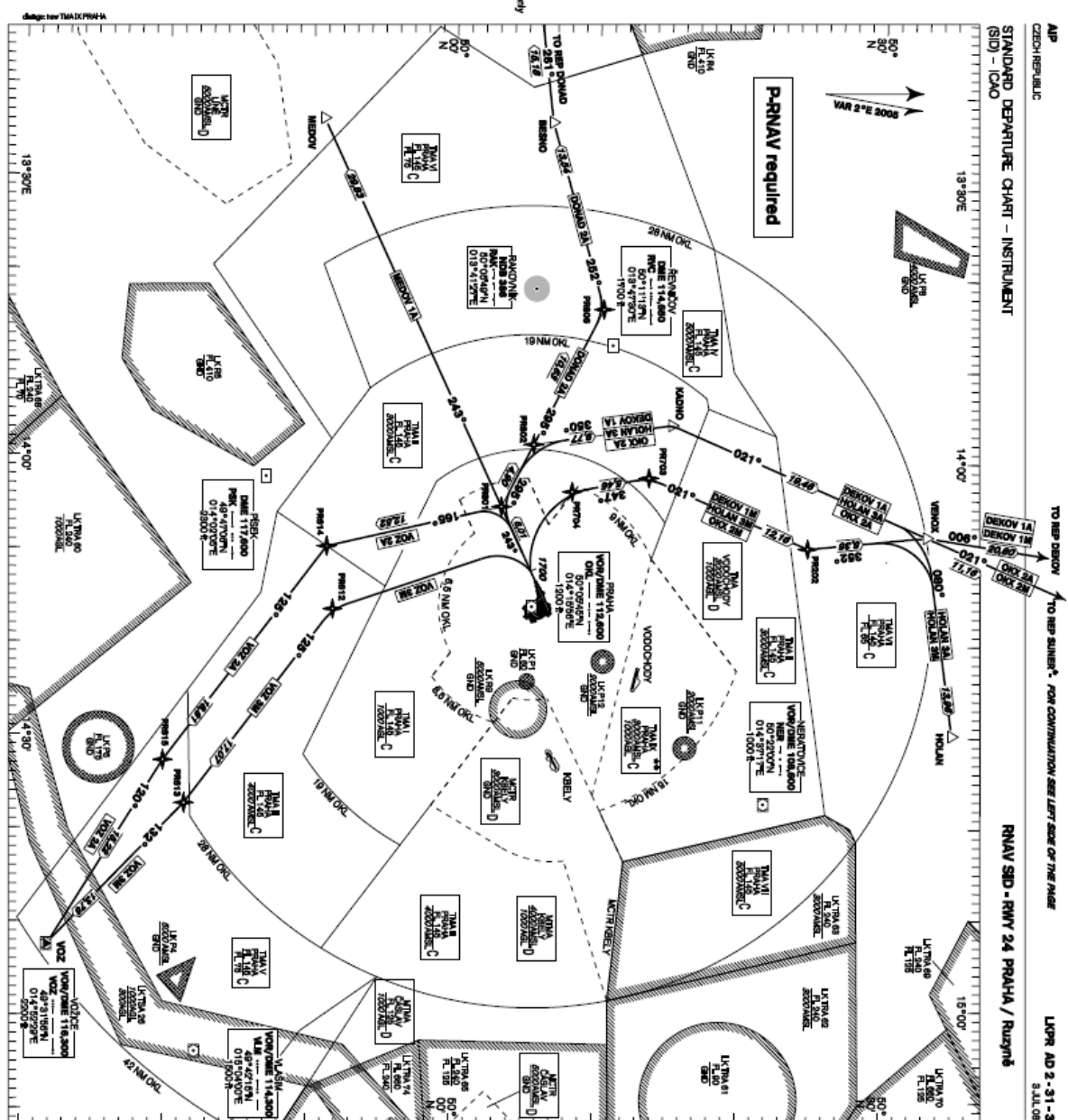


 FLY BY WAYPOINT

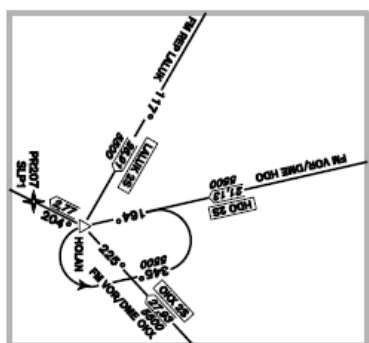
 FLY - OVER WAYPOINT

TRANSITION ALTITUDE
5000ft

BEARINGS, TRACKS AND RADIALS ARE MAGNETIC ALTITUDES AND ELEVATIONS ARE IN FEET



RNVAV STAR - RIVY 24 PRAHA / Ruzyně



TMA IX PRAHA - same lateral limits as CTR VODOCHODY
TMA IX PRAHA - effective outside of operational hours of AD VODOCHODY only

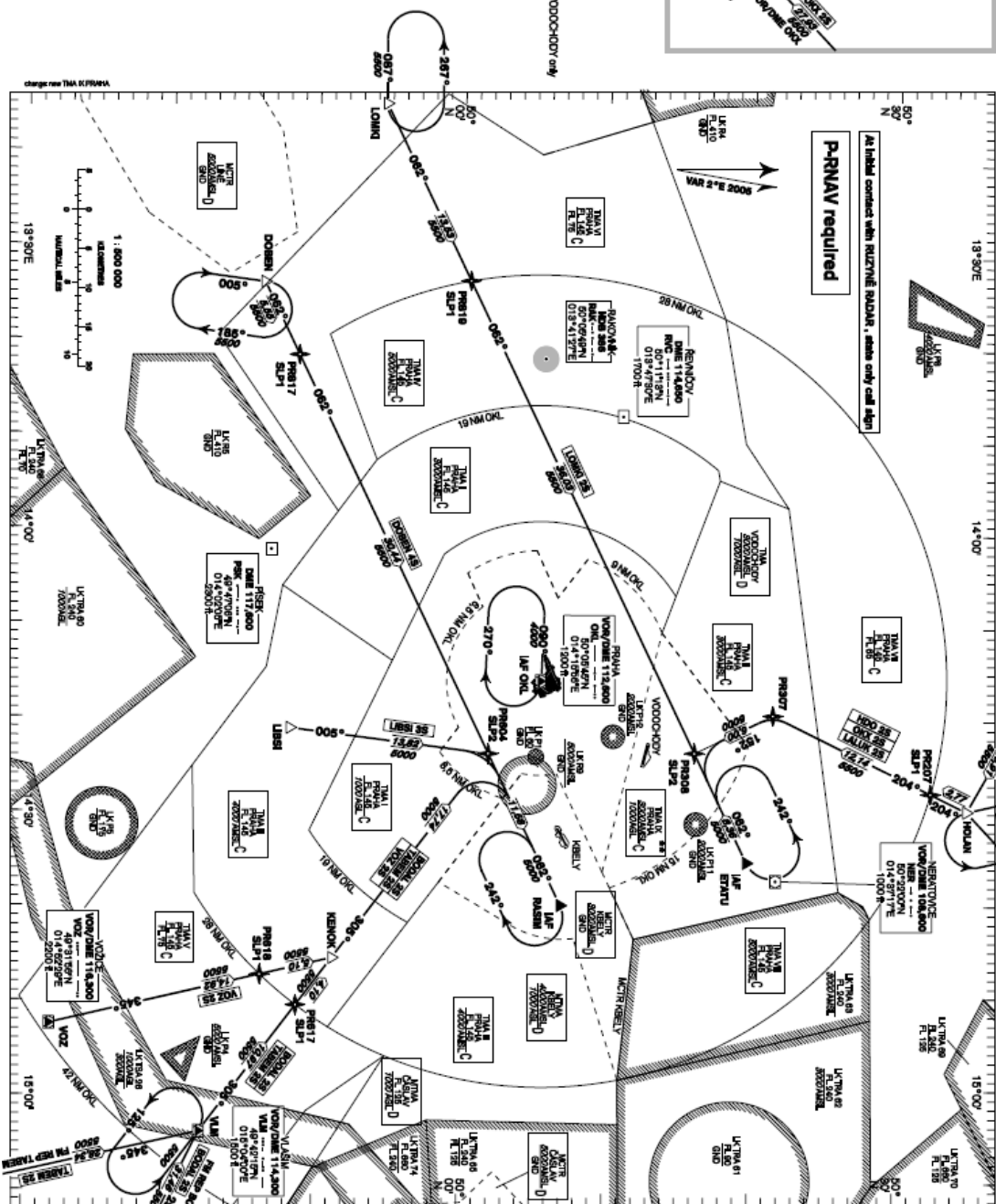


 FLY BY WAYPOINT
 FLY - OVER WAYPOINT

TRANSITION ALTITUDE
5000ft

ALTITUDES AND ELEVATIONS
ARE IN FEET

SPEED LIMITING POINT	
SLP1	MAX IAS 250 KT
SLP2	MAX IAS 220 KT



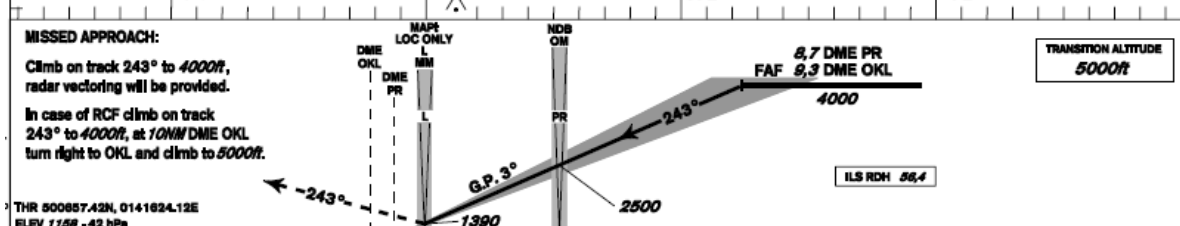
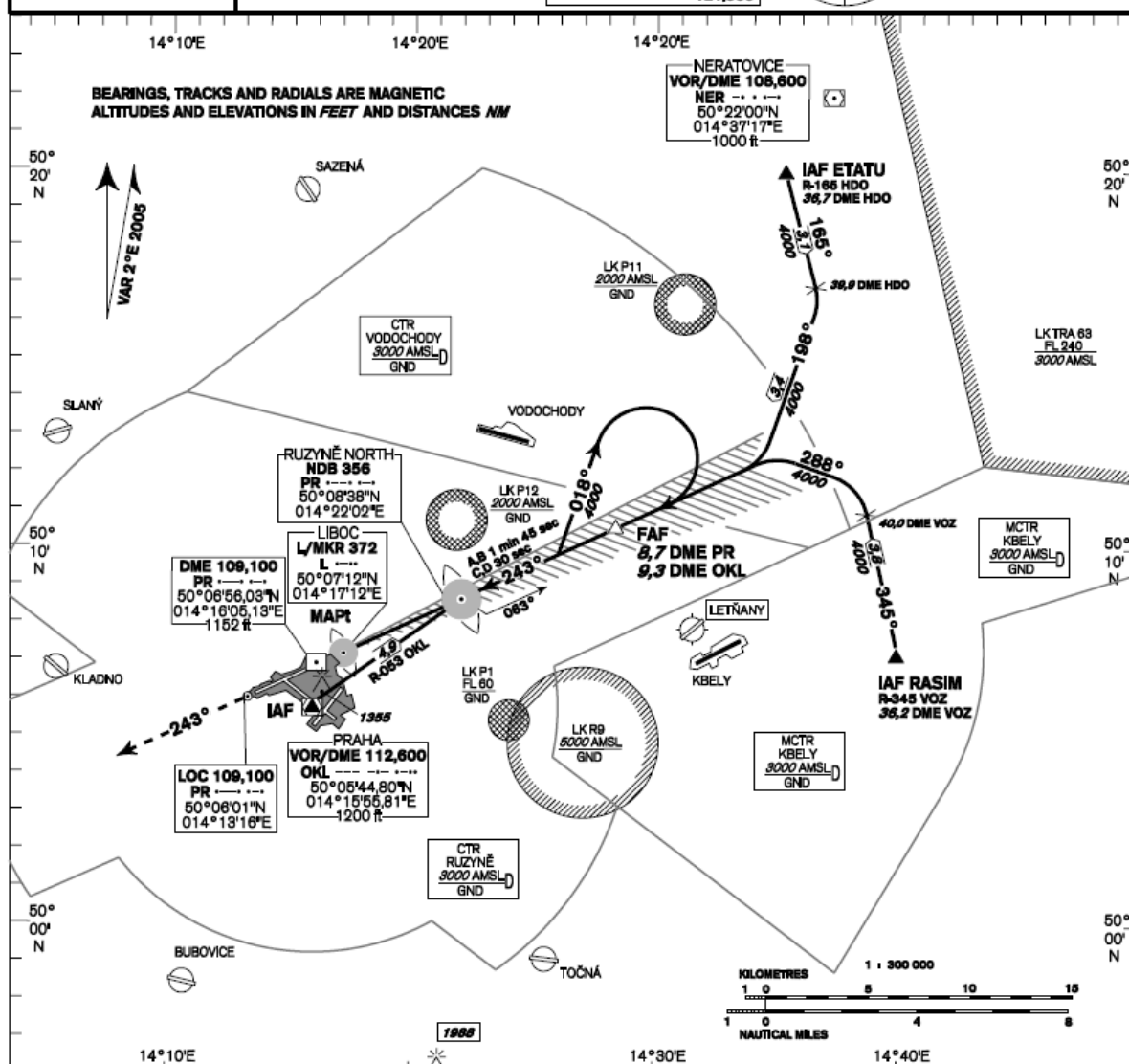
INSTRUMENT APPROACH CHART - ICAO

AERODROME ELEV 1247 - 45 hPa
THR RWY 24 ELEV 1158 - 42 hPa
OCH RELATED TO THR RWY 24

PRAHA RADAR 127,575
RUZYNE RADAR 119,000
SUPPLEMENTARY FREQ. 138,075
121,500
RUZYNE TOWER 119,100
SUPPLEMENTARY FREQ. 119,700
121,500



PRAHA/Ruzyně
ILS
RWY 24



OCA/OCH					DME PR NM									
Straight - In Approach	Cat I	R	1289/131	1289/141	1309/151	1319/161	8	7	6	5	4	3	2	1
		M	393/40	396/43	399/46	402/49	ALTITUDES ft	3750	3420	3090	2760	2440	2110	1790
	Cat II	R	1201/42	1217/59	1230/72	1243/85								
		M	366/13	371/18	375/22	379/26								
	LOC only	R	1417/259											
	M	432/79												
Circling		see the circling approach chart												
CAT IIIa and IIIb approved.														

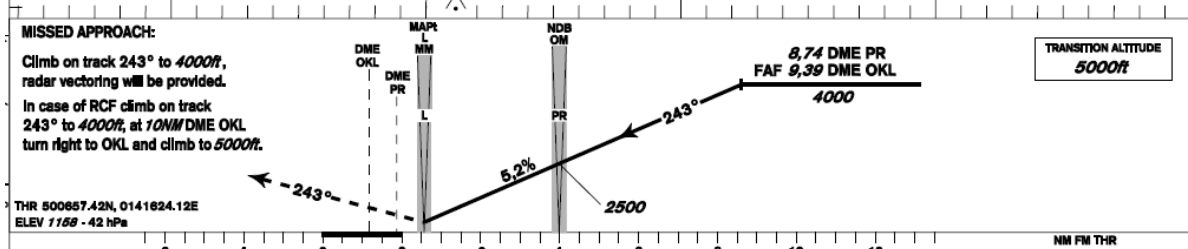
FAF - MAPt 8.0 NM	Kt	80	100	120	140	160	180
Time	min/sec	5:59	4:47	3:59	3:25	2:59	2:39
Rate of descent	ft/min	440	540	650	760	870	980

Timing is not authorized for defining the MAPt.

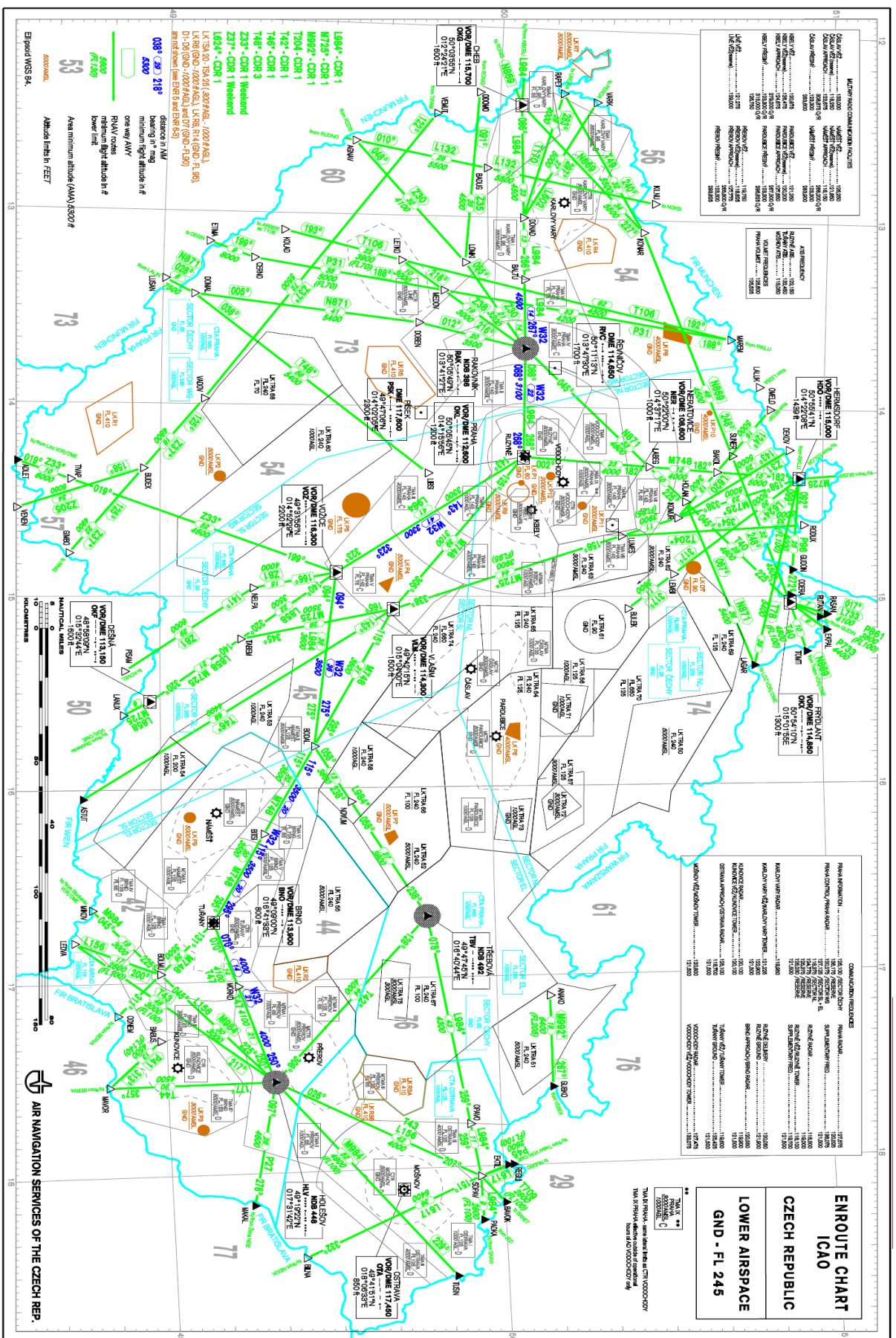
CAT IIIa and IIb approved.

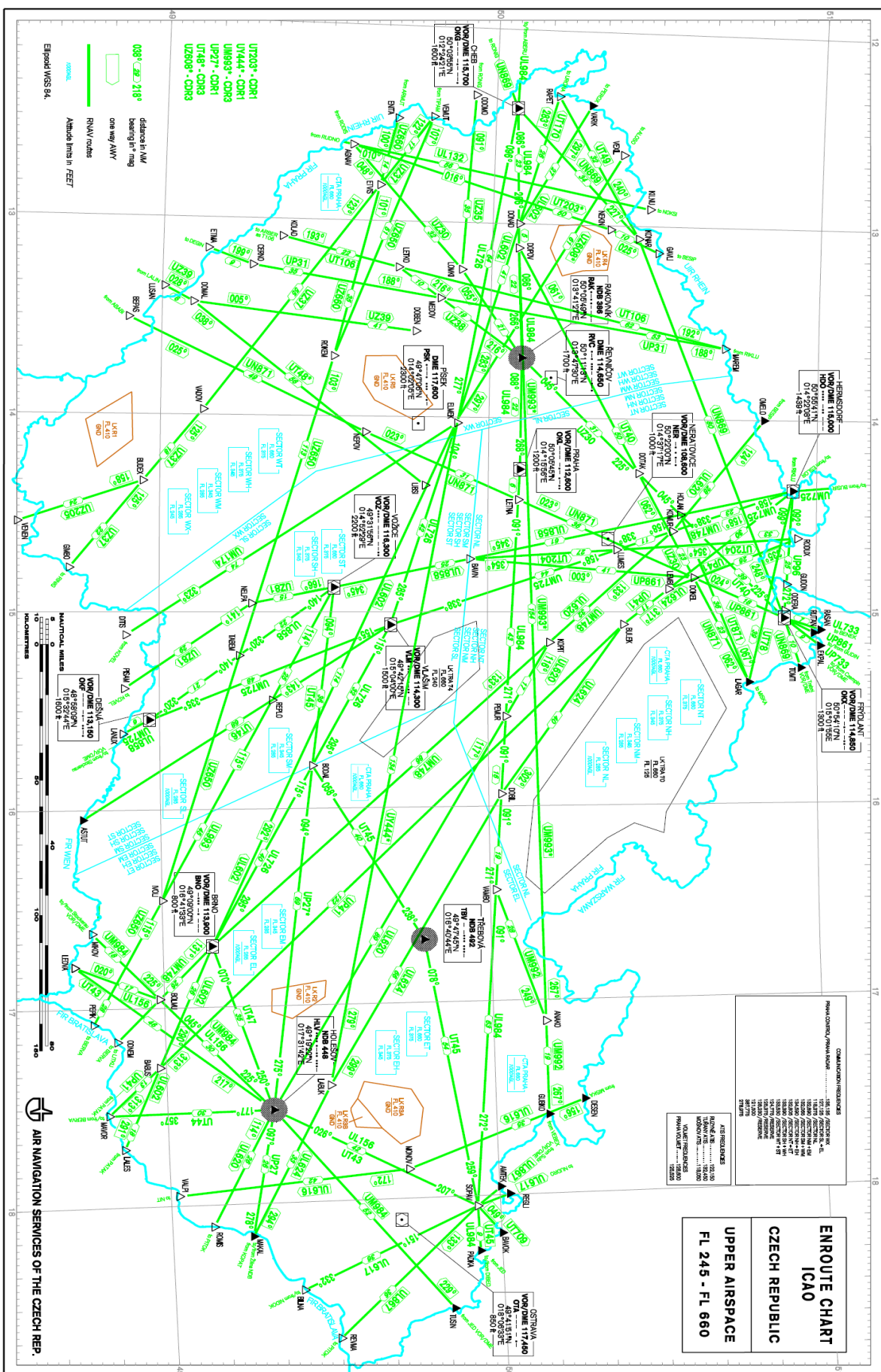
Timing is not authorized for defining the MAPt.

PRAHA/Ruzyně
NDB - DME(GPS)
RWY 24

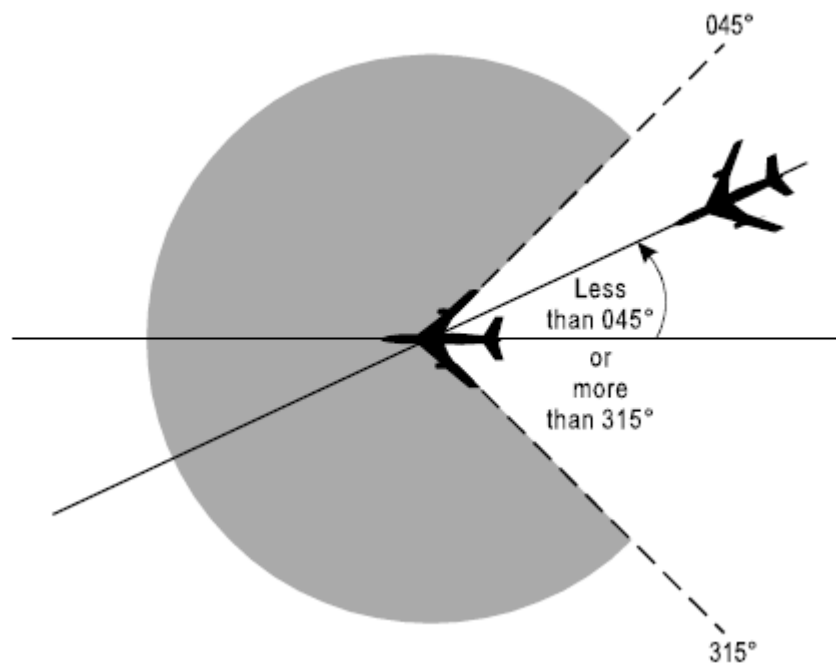


					<table><tr><td>DME PR NM</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>ALTITUDES ft</td><td>3750</td><td>3420</td><td>3090</td><td>2760</td><td>2440</td><td>2110</td><td>1790</td><td>1470</td></tr></table>									DME PR NM	8	7	6	5	4	3	2	1	ALTITUDES ft	3750	3420	3090	2760	2440	2110	1790	1470
DME PR NM	8	7	6	5	4	3	2	1																							
ALTITUDES ft	3750	3420	3090	2760	2440	2110	1790	1470																							
OCA/OCH		A	B	C	D																										
Straight - in Approach	ft	1601/443																													
	m	488/135																													
Circling	see the circling approach chart																														
						<table><tr><td></td><td>kt</td><td>80</td><td>100</td><td>120</td><td>140</td><td>160</td><td>180</td></tr><tr><td>FAF - MAPt 8.0 NM</td><td>min:sec</td><td>5:59</td><td>4:47</td><td>3:59</td><td>3:25</td><td>2:59</td><td>2:39</td></tr><tr><td>Rate of descent</td><td>ft/min</td><td>440</td><td>540</td><td>650</td><td>760</td><td>870</td><td>980</td></tr></table>									kt	80	100	120	140	160	180	FAF - MAPt 8.0 NM	min:sec	5:59	4:47	3:59	3:25	2:59	2:39	Rate of descent	ft/min
	kt	80	100	120	140	160	180																								
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Rate of descent	ft/min	440	540	650	760	870	980																								
						Timing is not authorized for defining the MAPt.																									

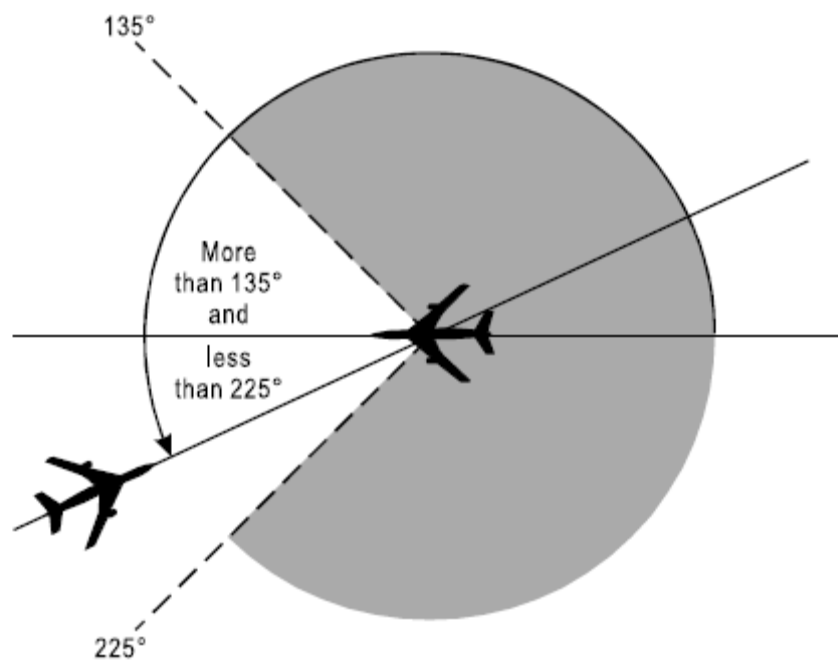




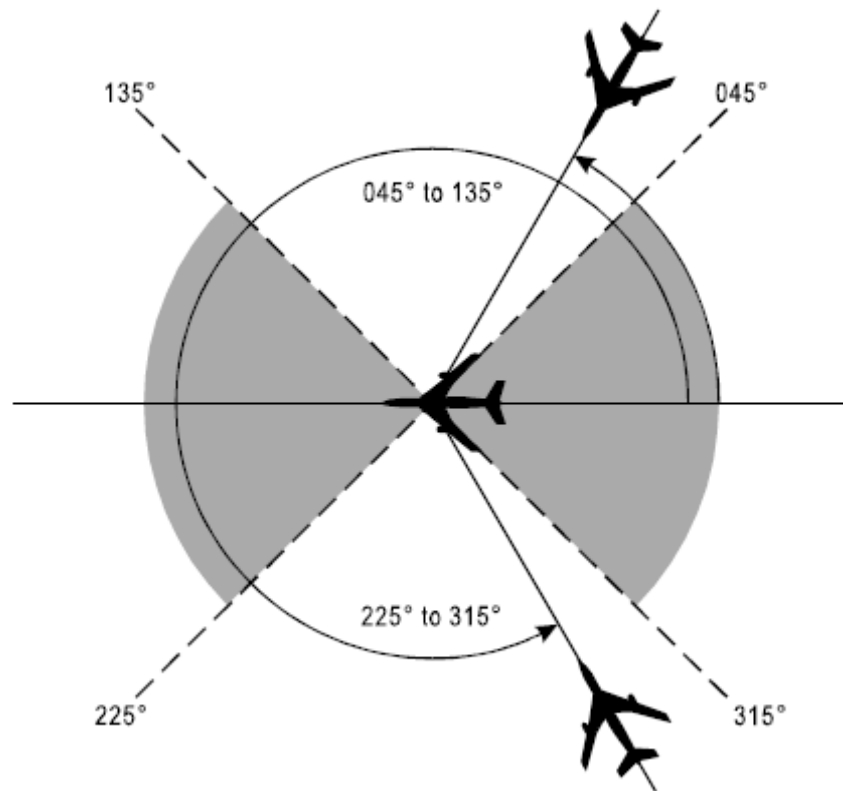
ANNEX F



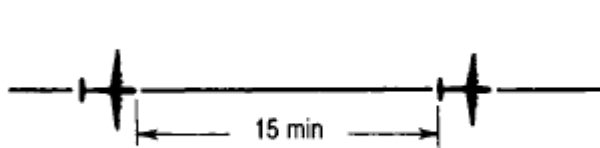
Picture: F-A



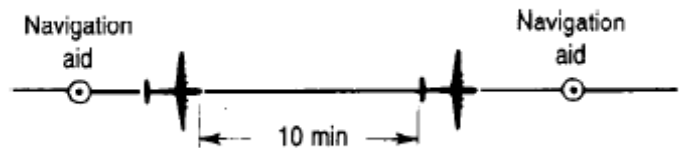
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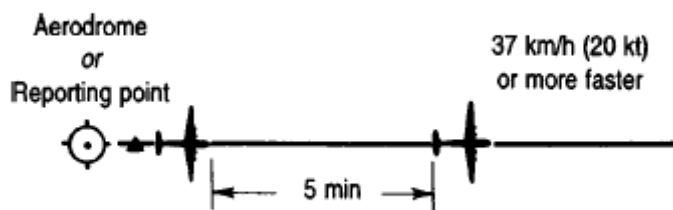
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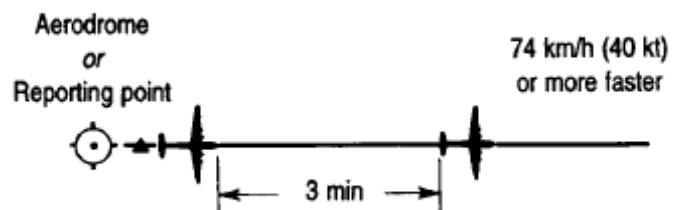
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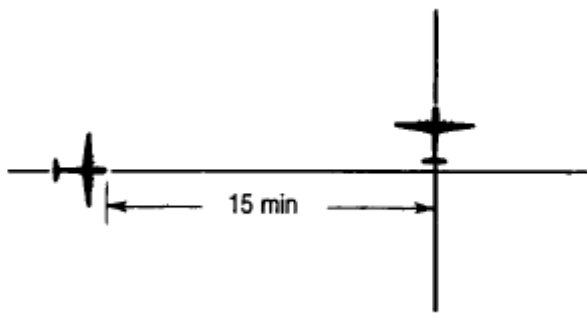
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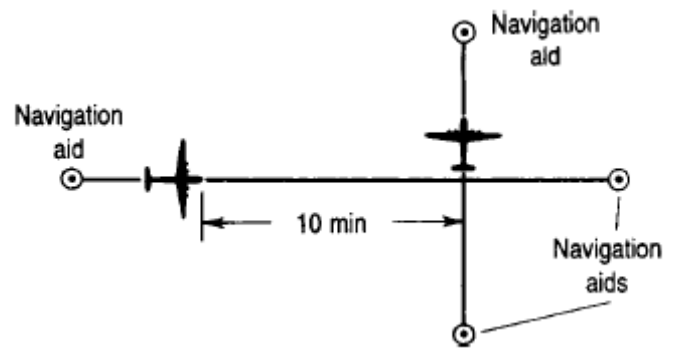
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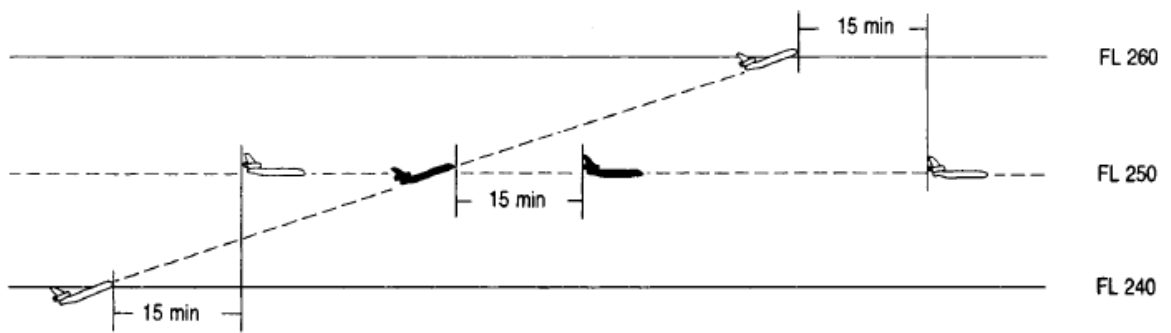
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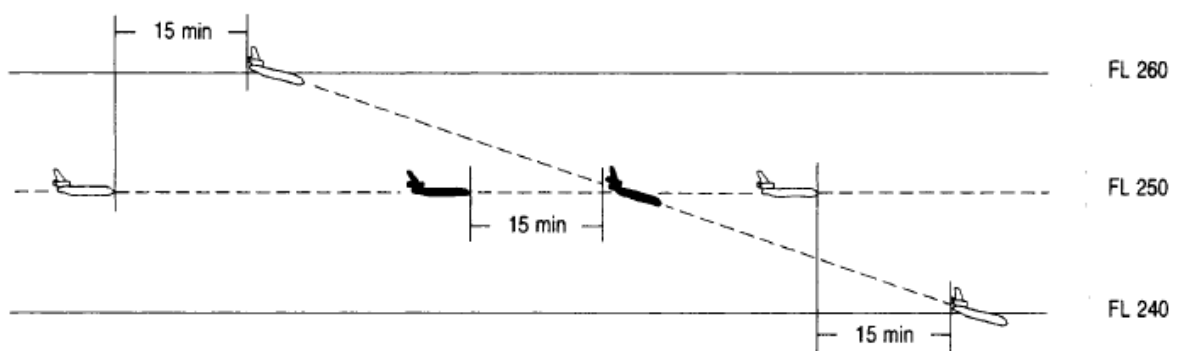
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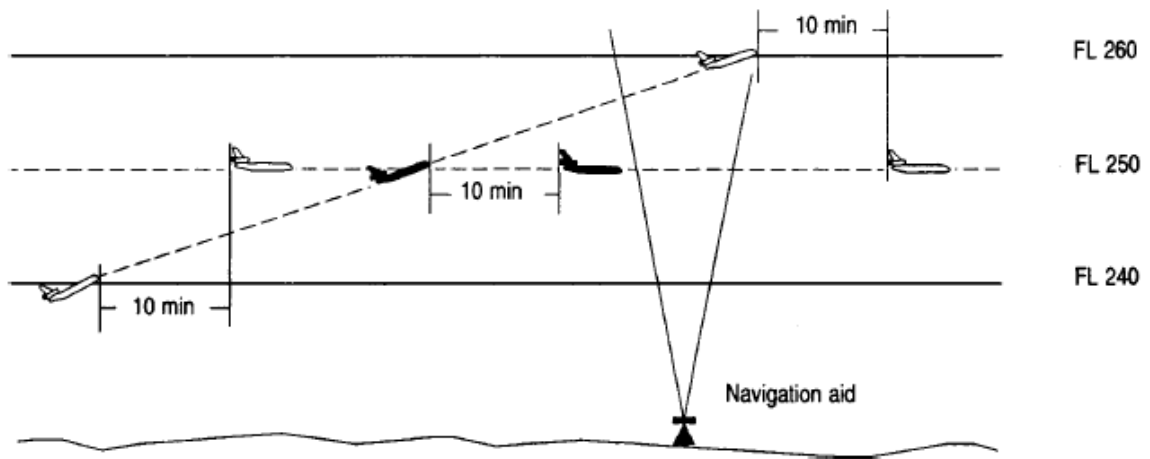
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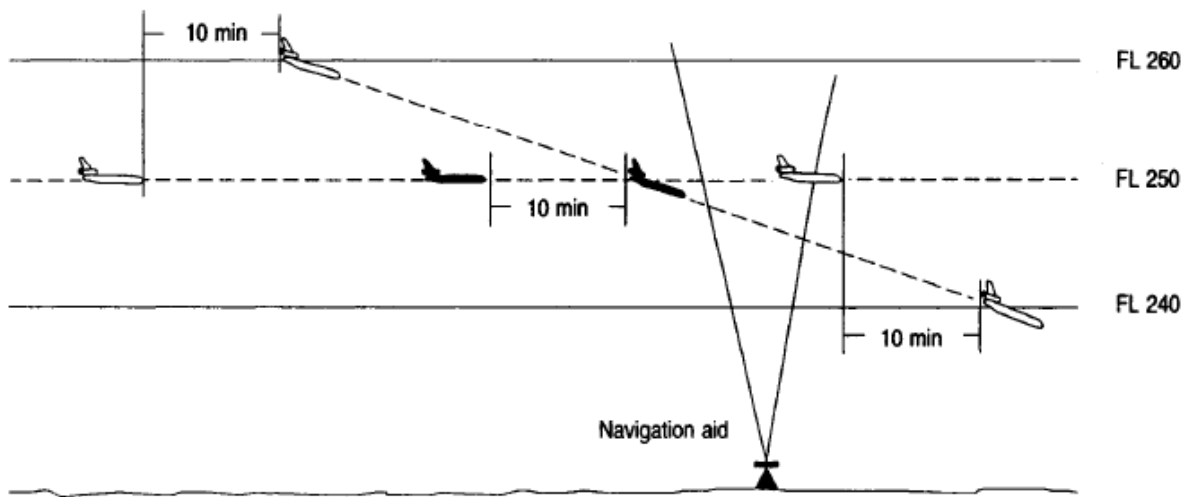
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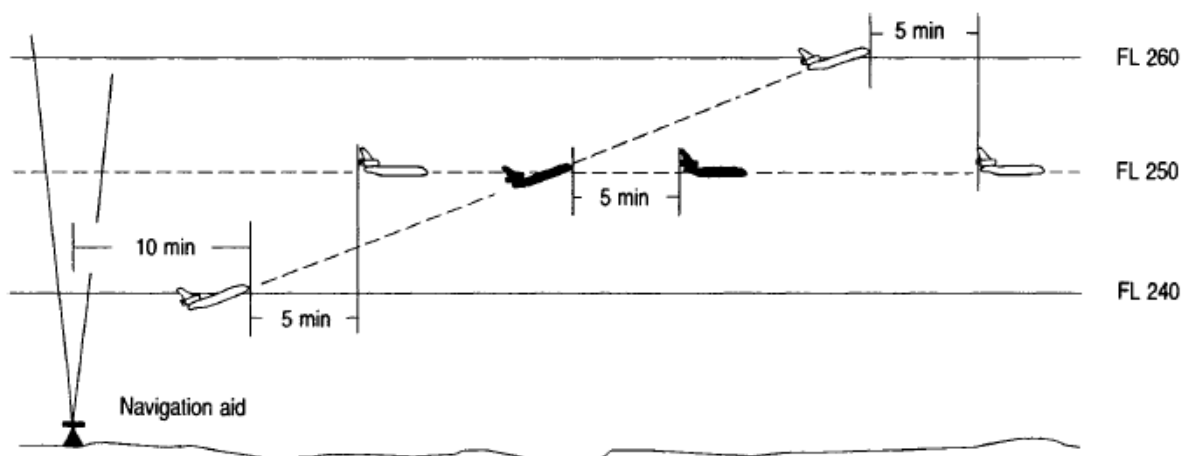
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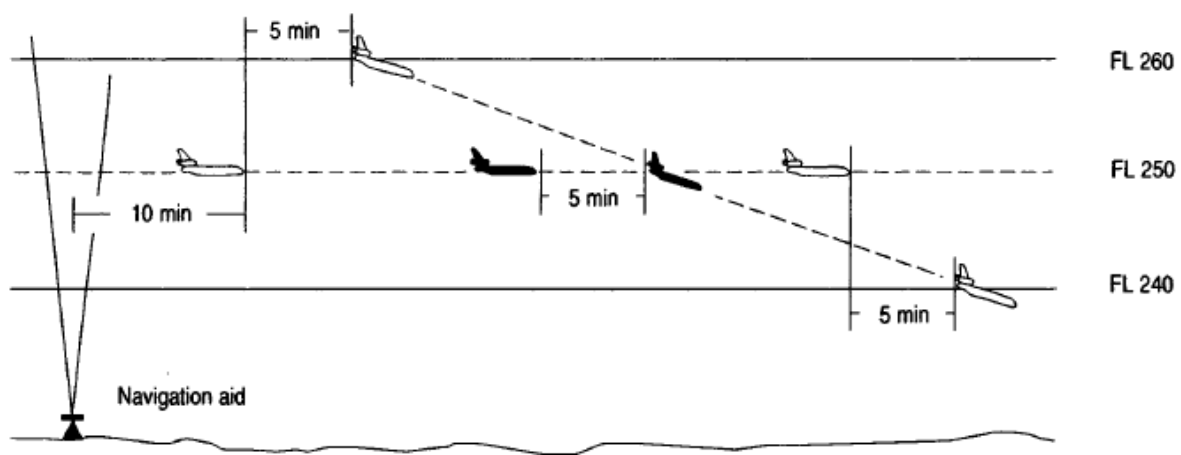
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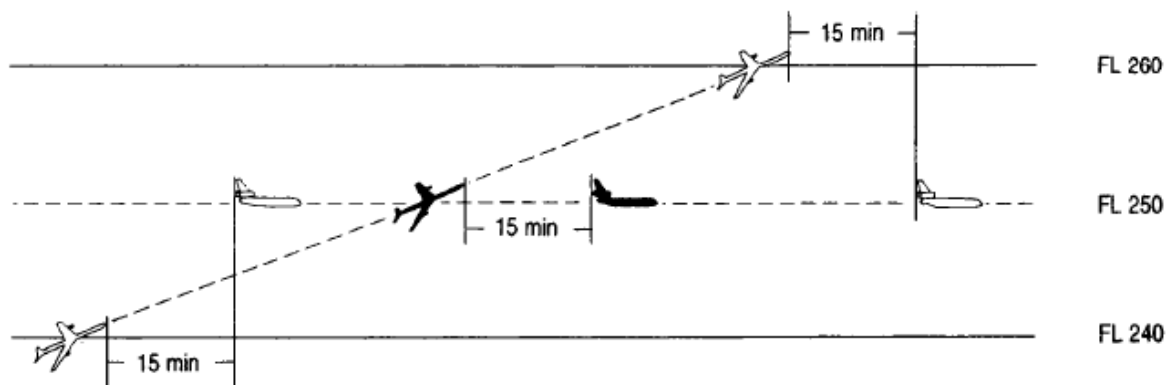
Picture F-M



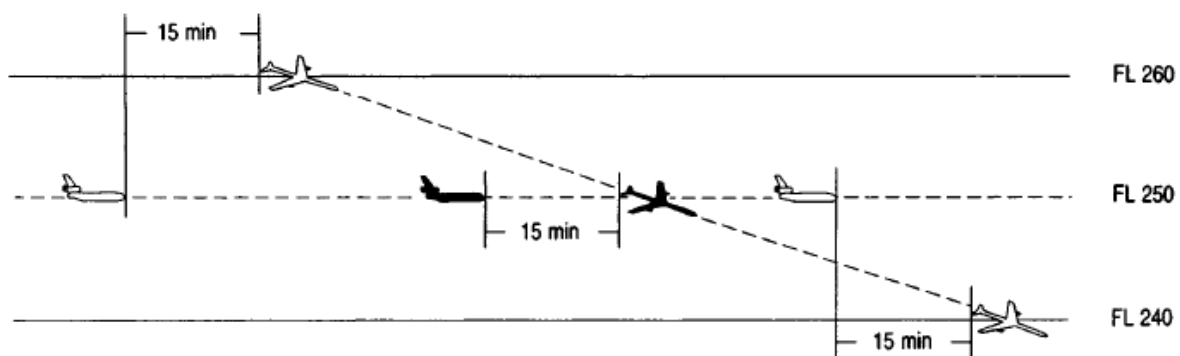
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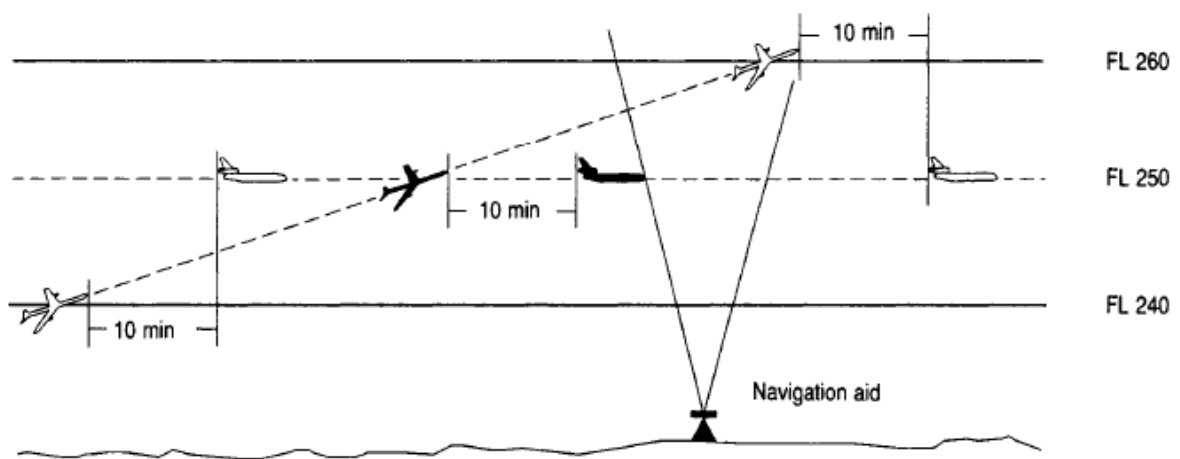
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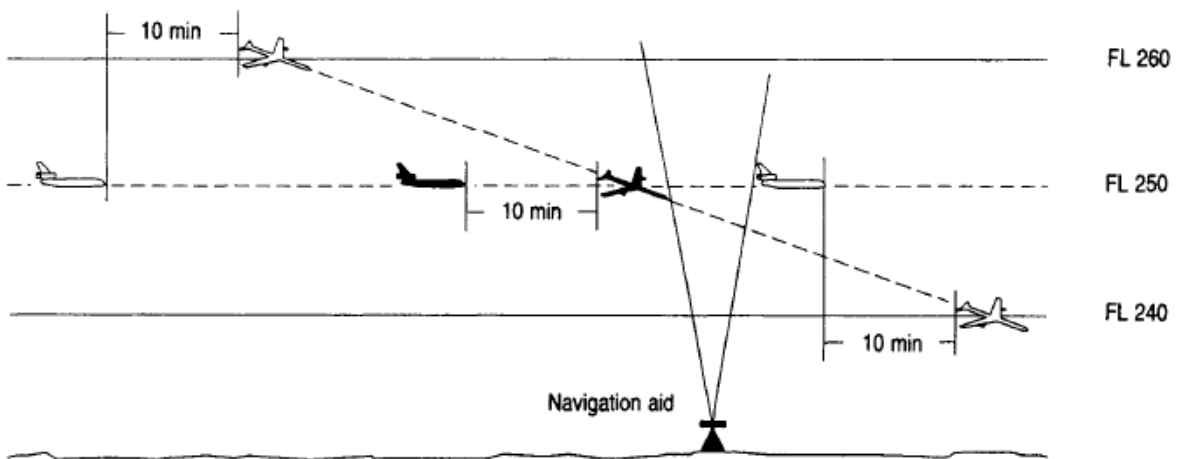
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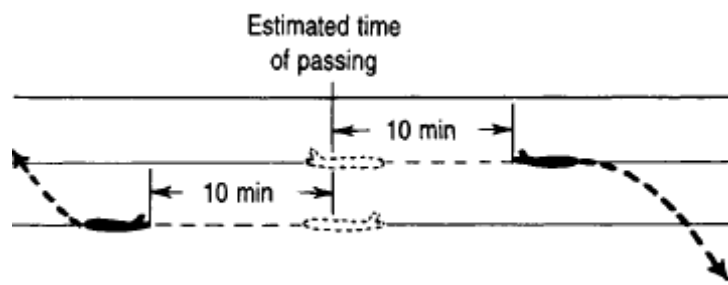
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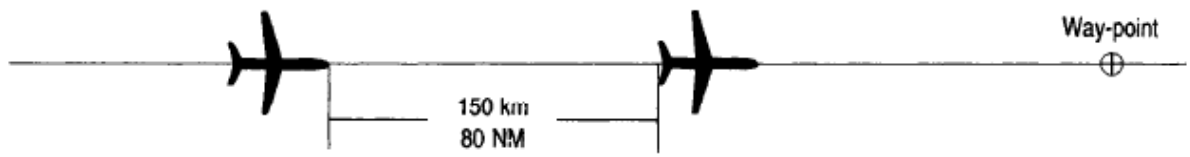
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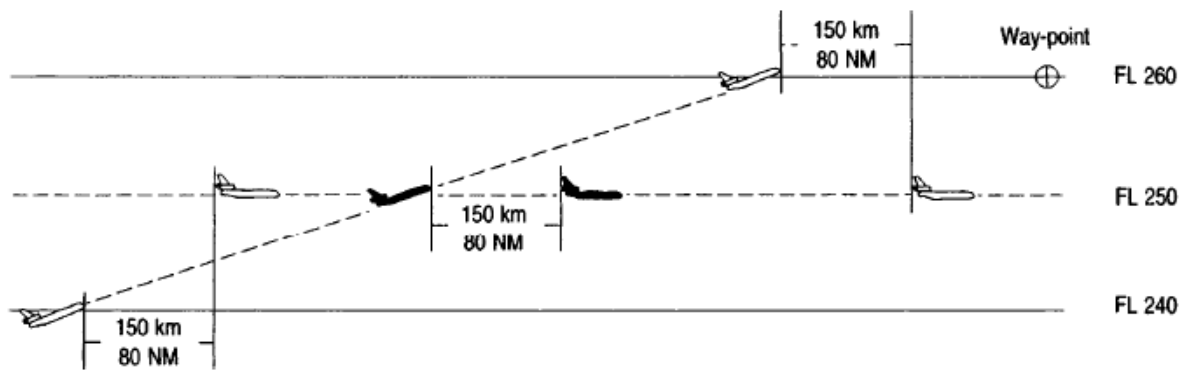
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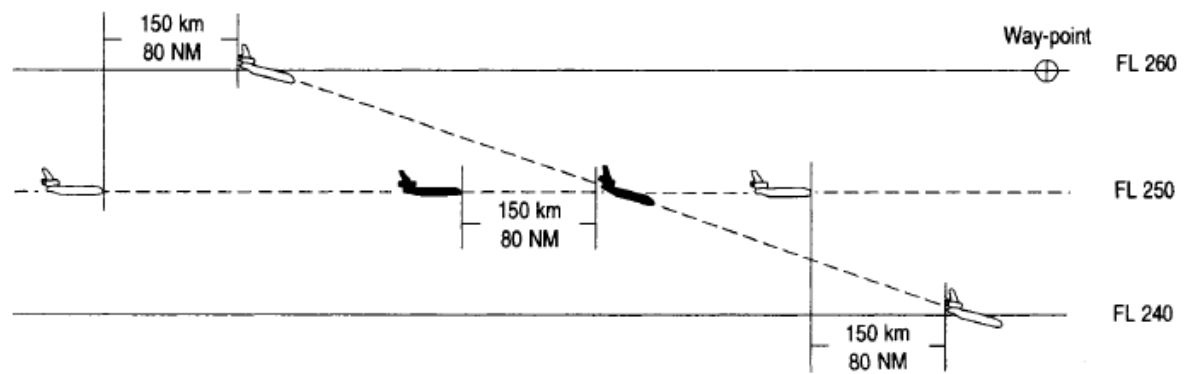
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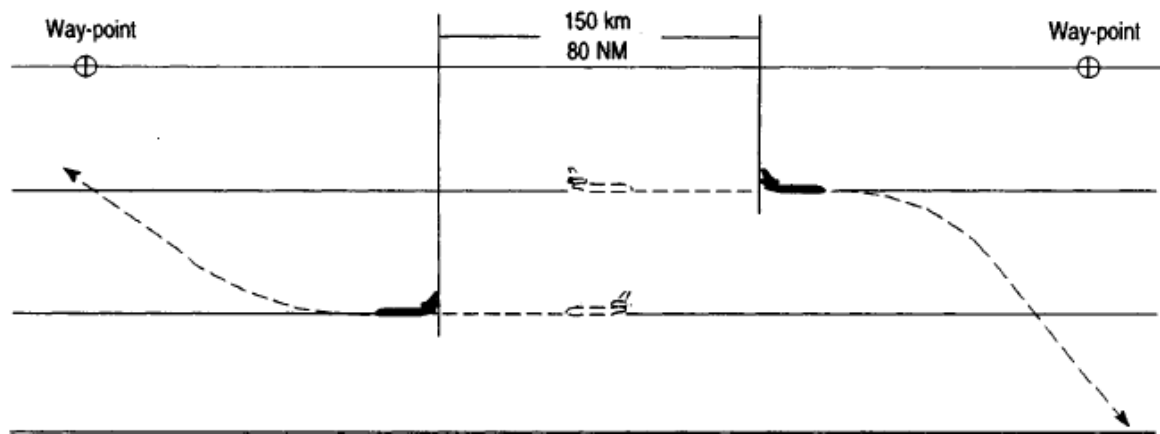
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Picture: F-W



Picture: F-X



Picture: F-Y



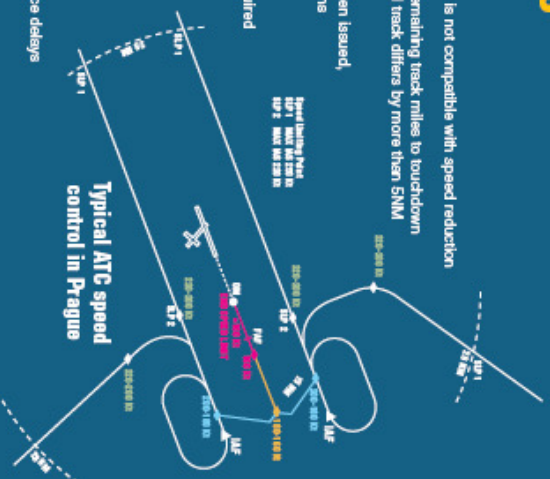
CONTROLLERS

Airborne

- Be aware that high descent rate is not compatible with speed reduction
- In case of radar vectoring, the remaining track miles to touchdown should be given (when expected track differs by more than 5NM from standard arrival route)
- Once a speed restriction has been issued, continue giving speed instructions until either:
 - aircraft reaches OM (4NM) or
 - speed control is no longer required and you advise the crew "no ATC speed restriction"

On the ground

- Give priority to take off over taxi instructions
- Use conditional clearances to expedite line-ups and then reduce delays



HOT SPOTS

Pay special attention when using the following taxiways:

- ① Taxi via **TWY D** when landing on **RWY 24** ➤ **Do not enter RWY 13**
- ② Taxi via **TWY L** when landing on **RWY 06**
- ③ If instructed: "taxi to holding point **RWY 24** via **TWY A** and **TWY Z**", do not turn left via **TWY A** but proceed to **TWY Z**



AIRPORT CAPACITY ENHANCEMENT

Minimum runway occupancy reduces delays,
reduces airline costs and increases capacity

The purpose of this leaflet is to increase
awareness of the importance of minimum
runway occupancy times and to highlight how
improvements can be made

"Peak hour means minimum time on the runway"



DEPARTURES

- Do not request taxi clearance to the holding point unless you are sure that you will be ready to depart without delay
- Notify ATC before reaching the holding area if extra time is needed to ready the aircraft
- Except when low visibility procedure (LVP) are in force always hold at **CA17**
- You will decrease line up times
- Line up without delay when cleared by ATC
- React promptly to take off clearance

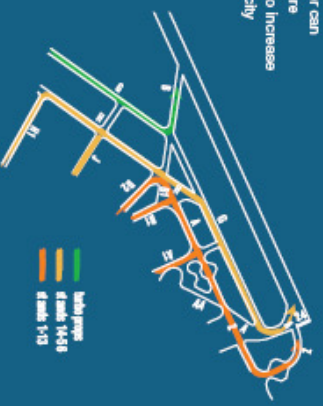
Information

- New SIDs (RWY 24 and RWY 31) for turboprops on south-east and north departure have been created (first turn at 1700 ft) *****
- Turboprops on south-east departure should expect RWY 13 *****

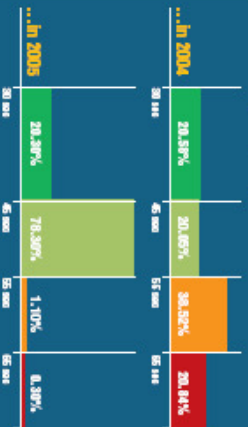


Peak hours taxi routes to RWY 24

- Be aware that Tower can change the departure sequence in order to increase the departure capacity



Runway occupancy time arrives at RWY 24...



In 2004 over 56% of medium jet aircraft had a ROT greater than 50 seconds
In 2005 this figure significantly decreased to 1.45%

To help controllers to achieve maximum RWY utilization

- React promptly to ATC instructions on airspeed changes
- Do not request non-standard approaches during periods of peak traffic, as notified by ATIS
- Expect to receive landing clearance when on short final

High intensity RWY operations - HRO (0500 - 2300 LT)

Whenever RWY conditions permit, pilots shall expect the following intersections for take off turn:

TYPE CLASS	RWY 24	RWY 06	RWY 31	RWY 13
MEDIUM-JET	THR	E	THR	THR
TORA	3715 m	3080 m	3250 m	3250 m
MEDIUM-PROP	B	D	R	F
TORA	2545 m	2250 m	2575 m	2525 m

If unable to comply with the HRO system, pilots shall advise ATC as soon as possible.



ARRIVALS

- Complete briefing and review of airport and runway layout before starting descent
- Nominate expected runway exit during approach briefing
- Consider distance to nominated exit when selecting the autobrake setting
- When an ATC speed control has been given, keep it until OM (4 NM)
- Achieve a normal touchdown with progressive smooth deceleration to exit at a safe speed at the nominated exit

New E240 rule - Reduced RWY separation minima 2400 m

- During day and fair weather only
- Expect landing clearance on short final with a preceding aircraft still on the RWY

How to increase capacity: choose the correct exit



- For RWY 24 arrivals:
 - Turboprops and light aircraft are expected to vacate via C (LDA 1325 m)
 - Medium jet aircraft are expected to vacate via D (LDA 2070 m)

For RWY 06 arrivals:

- Turboprops and light aircraft are expected to vacate via L (LDA 1558 m)
- Medium jet aircraft are expected to vacate via L (LDA 1558 m) or via B (LDA 2545 m)

- Good operating practice is to aim for an exit that can be reached rather than aiming for an earlier exit that you might miss.

Do not plan vacating via RWY 13