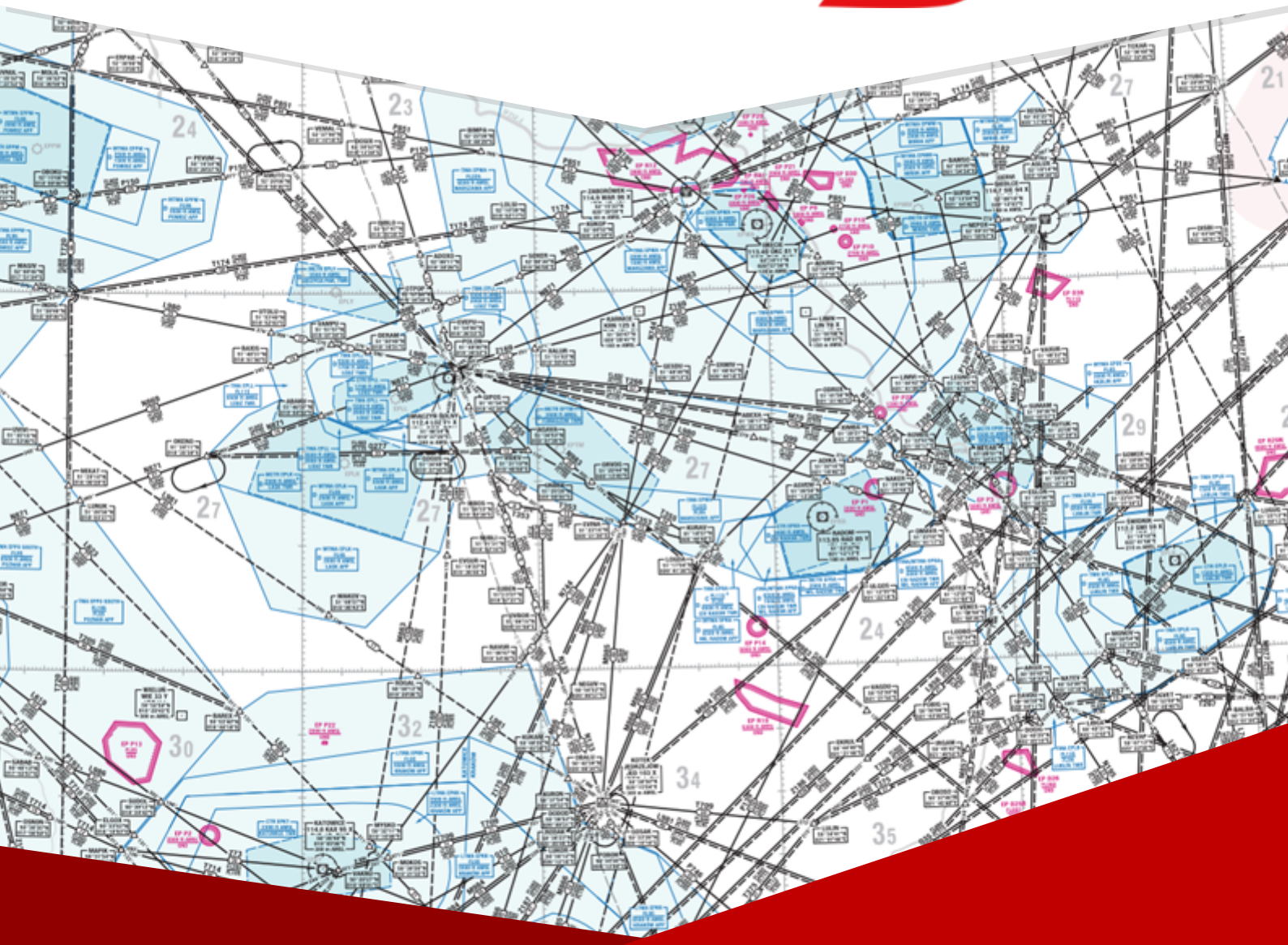
Polish VACC



OPERATIONS MANUAL

vFIR Warszawa

VATSIM
AVIATE EDUCATE COMMUNICATE

VATEUD

Revision 2311.1

Disclaimer

This document is intended for use on VATSIM network only.

Do not use for training purposes or in real life scenarios.

Contents

Record of Amendments

Revision number	Date	Changes	Authors
2311.1	02 NOV 2023	2nd edition release	PL3 Dawid, PL6 Matt

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0 Introduction

0.1 Document's Purpose

The following document was created to establish guidelines and standardize operational procedures for Polish VACC virtual air traffic controllers as part of virtual air traffic control on the VATSIM network.

The document was created solely for the needs of the VATSIM network and cannot be used outside it, in particular it should not be used operationally within real air traffic control services.

0.2 Document's Contents

You should learn from and understand this document as follows:

- **general information** relating to specific types of control (aerodrome traffic control, approach control, radar and procedural control procedures),
- **detailed information** relating to individual TMAs. The included information is structured as follows:
  - **information about airports** within the TMA,
  - **information about the TMA airspace**
- **attachments**, which mainly contain collected information in the form of Quick Reference Cards (QRCs), which are used to quickly view the most important information while exercising control.

0.3 Definitions

Expressions used in this document have the following meanings:

Air Traffic Controller — *(Controller, ATC)* — a person responsible for the air traffic control service on the VATSIM network, issued a controller rating, allowed to control a selected position and logged in in accordance with the VATSIM Global Rating Policy.

Crew/Pilot — a person responsible for controlling the aircraft on the VATSIM network, connected in accordance with the VATSIM network rules.

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119.

0.4 Legal Basis

This document was created on the basis of the following legal bases, used and formatted for the needs of the VATSIM network:

- ICAO Doc 4444 — Procedures for Air Navigation Services, Air Traffic Management [2];
- AIP Poland [1];
- Polish VACC Policy [3];
- VATSIM Code of Conduct [6];
- VATSIM Code of Regulations [7];
- VATSIM Global Ratings Policy [9];
- VATSIM Global Controller Administration Policy [8];
- VATSIM Air Traffic Control Frequency and Information Management Policy [5];
- VATEUD Policy [4].

0.5 Content Liability

The document is edited and updated by the Polish VACC Board. The main responsible for the document is the Member of the PL-VACC Board responsible for operational changes in vFIR Warszawa or — in the absence thereof — the Director of Polish VACC.

0.6 ATC Responsibilities

Pursuant to the provisions of Art. 4 Polish VACC Policy, especially point 2a of this article, person providing control at vFIR Warszawa is obliged to follow the procedures set by the relevant members of the Polish VACC Board, therefore knowledge of this document and its application in practice within the scope of their positions is mandatory.

1 vFIR Warszawa Airspace

1.1 Airspace Structure

Controlled Airspace

a) CTA from FL95 to FL660 — class “C” airspace,
b) TMA, CTR — below FL95 — class “C” or “D” — see ENR 2.1.1 or AD 2,
c) MTMA, MCTR — class “D” — see ENR 2.1.1 or AD2,
d) airspaces delegated to other FIRs — see ENR 2.1.2

Uncontrolled Airspace

Class “G” — includes airspace from GND to FL95 outside of controlled airspace.

Military Airspace

Currently, only MCTR Dęblin, MCTR Krzesiny and MTMA Dęblin are simulated on the VATSIM network.
In the absence of vATC responsible for given military airspace, these airspaces are relegated to class G airspace.
The remaining military spaces are not currently simulated and have been relegated to Class G spaces.

Reduced Vertical Separation Minimum (RVSM) in vFIR Warszawa

vFIR Warszawa between FL290 and FL410 inclusive is an RVSM airspace.
In this airspace, the minimum vertical separation is:
1000 ft between aircraft authorized for RVSM operations.
2000 ft between:

- aircraft authorized for RVSM operations and aircraft without such authorization,
- aircraft not authorized for RVSM operations,
- formation of aircraft and other aircraft.

1.2 Services Provided by ATC

Within vFIR Warszawa the following Air Traffic Services are provided:

Air Traffic Control Service

Aerodrome Control Service — for traffic in the Movement Area of an aerodrome and in the CTR,

Approach Control Service — for departing and arriving controlled flights,

Area Control Service — for controlled flights in CTAs.

ATC may be exercised by:

- surveillance — ATS surveillance system using transmitters/receivers (interrogators) and transponders. Operationally available in all EPWW FIR airspace above FL95 and in selected TMAs where radar coverage is available,
- procedural control — a type of control in which information obtained using the ATS surveillance system is not necessary to provide air traffic control services (using crew position reports).

Flight Information Service (FIS)

- meteorological information, SIGMET and AIRMET,
- information about known air traffic - information given by an air traffic services unit to warn a pilot of other known or observed air traffic that may be in the vicinity of his position or intended flight route and to assist him in avoiding a collision,
- coordinated information regarding access to and clearances to enter controlled airspaced, in consultation with the appropriate ATC controllers.

Alert Service (ALRS)

- Due to the specificity of VATSIM, the alert service in vFIR Warszawa is de facto not conducted, except for the INCERFA phase, where in the event of lack of communication with the aircraft within a specified period of time, the unit responsible for FIS should initiate an attempt to contact the pilot, either via VHF or by text message.

The individual phases of the alert service, as well as the principles of providing the information service, are described in the **??**.

1.3 IFR flights

IFR flights in vFIR Warszawa must be conducted in accordance with the submitted flight plan.

ATC is responsible for validating the flight plan to the FIR boundary. When possible, ATC should explain what the error in the flight plan is.

The transition from VFR to IFR during a flight can only take place at or above the Sector Minimum Altitude (AMA — Area Minimum Altitude).

The transition from IFR to VFR during a flight can only take place in VMC conditions.

It is ATC's responsibility to ensure, whether the above conditions are met.

1.4 VFR flights

In controlled airspace

The obligation to submit a flight plan arises when the flight begins, ends or, in any phase of the flight, crosses or intrudes controlled airspace of any class.

In uncontrolled airspace

There is no obligation to submit flight plans for a VFR flight in uncontrolled airspace, unless such requirement has been imposed by a Flight Plan Mandatory Zone.

1.5 Squawk code assignment rules

Virtual ATC of FIR Warszawa is provided with a pool of transponder codes ranging from 4500 to 4577. This gives a total of 64 different codes.

Sector	Pool	Codes
ACC *(EPWW_CTR)*	4500 — 4577	64
Procedural TMAs	4500 — 4517	16
TMA Poznań	4520 — 4527	8
TMA Gdańsk	4530 — 4537	8
TMA Kraków	4540 — 4547	8
TMA Warszawa	4550 — 4577	24
Reserve pool	4000 — 4077	64

Table 1.1: Squawk codes pool assignment

Transponder codes assigned in this way naturally run out when the most frequently occupied ATC positions are occupied and a standard traffic situation occurs. They should be awarded starting from the lowest number available.

When the controller is logged in at the ACC station, he is responsible for the final decisions regarding the allocation of transponder codes.

If the controller occupies a position in a sector other than those specified, he is obliged to consult the range or squawk codes for specific aircraft with the ACC controller, if logged in, if not, the controller should assign codes starting from the lowest available code from the basic range.

The presented code ranges are implemented in the official published sector and it is recommended to use automatically assigned codes during everyday work.

The controller occupying the procedural approach tower position in the appropriate TMA should assign the appropriate transponder code for departing aircraft only.

In case of heavy traffic, when the code pool is exhausted, a reserve range of 4000 — 4077 is available.

VFR: The default code for VFR flights is 7000. An aircraft flying with this code may be identified by radar by the controller in controlled airspace and provided with FIS/AFIS in Class G airspace using radar imagery, but only if the controller has a reasonable certainty regarding SP identification (no other traffic with the same transponder code within 20 NM). If there is no such certainty, the controller may assign a transponder code from the standard pool 4500 — 4577.

The individually assigned unique transponder code should not be changed regardless of the aircraft's future route.

1.5.1 Mode S transponder

All aircraft flying in the area covered mode S identification (figure 1.1) departing from an airport located in FIR Warszawa should receive squawk code 1000, and at the moment of obtaining radar contact, be identified as an aircraft communicating in mode S. If the aircraft flies outside the indicated space, a transponder discrete code in mode C should be assigned and identification should be made after take-off in accordance with applicable surveillance standards.

When accepting an aircraft currently in the air, identification in S mode occurs automatically. The discrete transponder code set by the pilot should be one of the following: 0000, 1000 (recommended, used in FIR Warszawa), 1200, 2000, 2200. If a different, discrete transponder code was assigned to the flight plan, identification should be made in mode C. If the aircraft shows a difference between the discrete code assigned in the flight plan and the one set on the transponder, identification cannot take place. Other conventional means of identification (described in ICAO Doc 4444, Chapter 8, points 8.6.2 and 8.6.3) are still available to the air traffic controller.

List of FIRs involving allocation of code '1000':

EPWW, ED** (EDWW, EDMM, EDUU, EDGG), LKAA, LZBB, LROP, LHAA, EBBU, LOVV, LI**, LF** (LFFF + LFEE + LFMM + LFRR + LFBB)

List of aircraft equipment codes assigning the code "1000":

H, I, L, E, G, W, P, S, LB1

In vFIR Warszawa, the CCAMS plugin is used to assign transponder codes, which is an extension of the ModeS plugin.

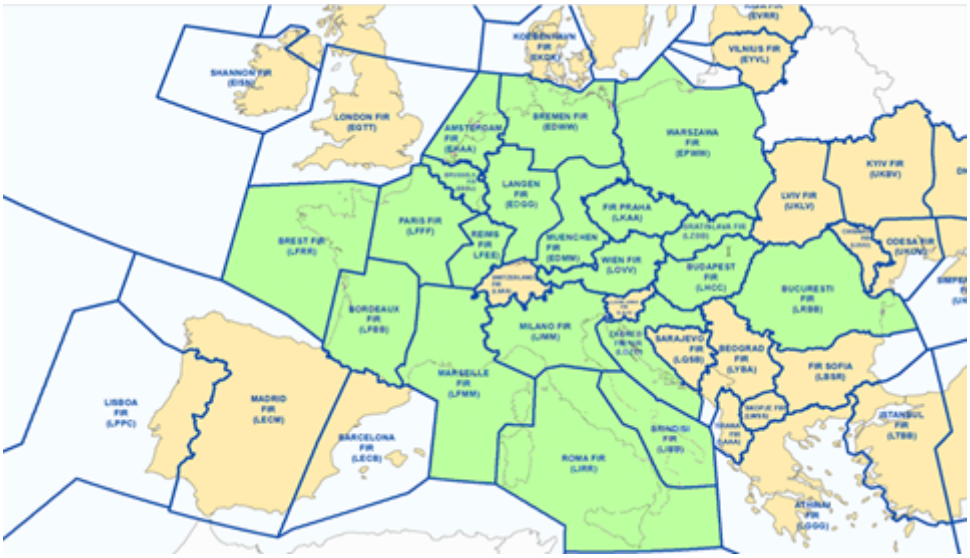

Figure 1.1: Mode S identification area map

AERODROME CONTROL SERVICE

Last revision

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Polish VACC

2 Available ATC positions

2.1 Delivery [DEL]

Clearance delivery position is responsible for delivery of start-up and ATC clearances to departing flights.

Delivery's responsibilities include:

- checking the correctness of the flight plan and clarifying any mistakes contained therein,
- assignment of standard departure instructions (runway, SID),
- coordination of non-standard departure instructions with other controllers, such as:
  - departure from a runway other than the active one,
  - inability to perform SID,
  - VFR flight in CTR,
- transmission of weather information (current ATIS or, if it is not available, reading of the latest METAR),
- if the traffic flow manager orders the introduction of slots, informing the pilots about delays and allocated slots.

Rules for transferring aircraft from Delivery to the next controller:

- Delivery asks the crew after issuing permission to report readiness to push/launch,
- when the crew reports readiness, the Delivery controller, based on coordination and traffic situation:
  - at a remote ("pass-through") stand, after coordination with the GND controller, approves engine start-up,
  - at gate (requiring pushback), transfers communication to the next controller (GND).

If the aircraft has to wait (e.g. due to slot or traffic situation), DEL informs the crew to remain on its frequency and transfers communications only when the aircraft will be able to start the pushback and/or start-up.

2.2 Operation coordinator "Planner" [P_DEL]

Planner position is not a standard position. A planner is appointed in the following cases:

- an event with a large amount of traffic is planned,
- traffic exceeds operational capacity of currently logged in controllers.

Planner's responsibilities include:

- slot assignment,
- coordination with Delivery.

Slots are assigned based on:

- previously set schedule (e.g. during events),
- pilot login times and planned EOBT.

2.3 Ground [GND]

Ground controller's responsibilities include:

- issuing start-up and push back clearances,
- managing ground traffic in manoeuvring area of the aerodrome,
- queuing departures and avoiding delays during heavy traffic,
- informing flight crews of all significant changes in weather information, **including QNH changes**,
- covering Delivery's responsibilities when DEL is offline or no DEL has been set at the aerodrome.

Transfer rules of departing aircraft from Ground to the next controller:

- by default, aircraft are being transferred by *"contact"* when approaching the holding point,
- by next controller's request, aircraft may be transferred usint *"monitor"*,
- transfer shall take place only if there is reasonable certainty that no conflict with other ground traffic will emerge and the crew will not require any further instructions from the GND controller,
- in a long departure queue, aircraft should be transferred to the next controller when it is probable that the next controller will need to issue an instruction to the aircraft.

2.4 Tower [TWR]

Tower's responsibilities include:

- Air Traffic Control within the CTR, including controlling VFR flights,
- control of IFR flights during approaches and of all operations on the runways,
- providing ATIS information (on selected aerodromes) or, on request, weather information, including informing crews of QNH changes,
- covering Ground's responsibilities when GND is offline or no GND has been set at the aerodrome.

Aerodrome traffic control is conducted according to the procedures for aerodrome control service, described in detail in chapters 6 and 7 of ICAO Doc 4444. The most important information and procedures have been described in the following Operations Manual both in general (to be used in all controlled aerodromes) and in detail (including local procedure deviations for aerodromes).

3 Procedures for Aerodrome Control Service

3.1 Clearance

An IFR clearance consists of:

- aircraft identification,
- clearance limit (usually the destination aerodrome),
- designator of the assigned SID, if applicable,
- initial level, except when it is included in the SID description,
- squawk code,
- other necessary instructions or information not contained in the SID description.

Checking flight plan's correctness includes:

- verifying the departure and arrival aerodromes have been filled correctly,
- checking if the cruising level filed is correct according to the semi-circular rule,
- checking the flight planned route up to the FIR boundary,
- analysis of the remarks.

3.2 Start-up and pushback

Start-up and pushback can be conducted, when:

- crew reports ready for start-up/pushback,
- there is no traffic moving behind the aircraft,
- the clearance will not hinder the traffic flow.

Detailed local procedures regarding start-up and pushback are described in the appropriate sections.

3.3 Taxi

Taxi instructions shall be issued in such a way, that:

- taxi routes of aircraft do not cross, unless proper conditional instructions have been issued,
- manouvering area occupancy has been reduced to minimum, i.e. the taxi route should be the shortest available,
- issued instructions do not violate or create a risk of unauthorized incursion onto an active runway,
- maintain appropriate buffers around active runway holding points: used to occupy and vacate the runway so as not to block the movement of aircraft occupying or vacating the runway.

3.4 Runway operations

Selecting runway in use

Runway in use shall be selected using the following Runway Selection Preference System:

1. Wind speed

Wind Speed	Runway in use
0 — 5 kts	Not dependent on wind direction
6 — 15 kts	Closest “into the wind”, unless other meteorological conditions determine otherwise
> 16 kts or gusts > 20 kts	“Into the wind”, disregarding other meteorological conditions

Table 3.1: Runway Selection Preference System

2. Available instrument procedures

   Better equipped runways should be selected first, in sequence:

   - available LVP procedures (ILS CAT II/III, RNP AR APCH),
   - available precision approach procedures (ILS, PAR),
   - available non-precision approach procedures (VOR, TACAN, RNP, NDB),
   - available visual aids (PAPI, runway lights, approach lights).
3. Runway conditions
4. Safety considerations

Lining up and vacating runways

Line up instruction may only be given if no clearance has been given to another aircraft to use the runway for take-off or landing. The exception is a conditional instruction, provided that the aircraft crew confirms that it can be carried out (e.g. reporting traffic in sight). The runway may also be occupied when another aircraft is moving on it and is not performing the above-mentioned operations (e.g. taxiing, crossing the runway, finishing its landing roll, etc.).

Lining up and departing from a shortened take-off distance requires flight crew approval, unless local procedures say otherwise.

The runway is considered vacated when the aircraft has completely passed the stop bar/holding point.

Operations from a runway other than runway in use

Operations from a runway other than the runway in use require coordination with the controller responsible for providing approach control service for the aerodrome.

3.5 Departure

Clearance for take-off may only be issued when no other aircraft is in front of the taking-off aircraft on the runway.

Take-off clearance may be issued to an aircraft when there is reasonable assurance that the required separation will exist when the aircraft commences take-off.

For departures that come under the responsibility of an approach/area controller after departure, take-off clearance can be issued only if the approach/area control unit authorizes the take-off (grants a *"departure release"*), unless local procedures or coordination indicate otherwise.

Final positions that must be reached by arriving aircraft *(A)* or departing aircraft *(B or C)* before an arriving aircraft can be cleared to land of a runway in use or a departing aircraft can be cleared for take-off:

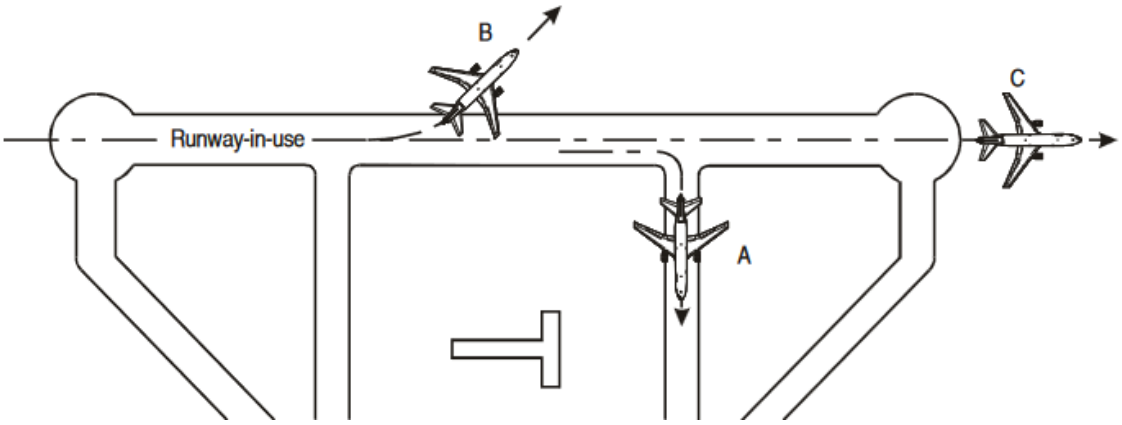

Figure 3.1: Separation between departing and arriving aircraft [2]

Separation of departing aircraft:

- based on a surveillance system:
  - 3 NM — departures in different directions/different SIDs,
  - 5 NM — departures in the same direction/same SIDs,
  - 5 NM — departures in different directions/different SIDs, when the Preceding aircraft is 40 kts or more slower than the succeeding aircraft,
- based on time:
  - 5 minutes — between departing aircraft on the same track, if the following aircraft will be crossing the level of the Preceding aircraft,

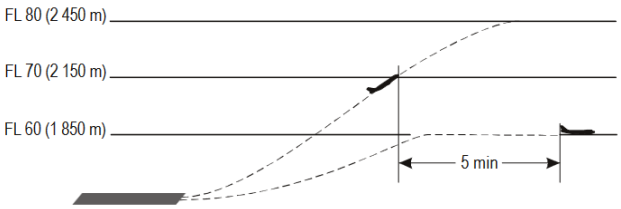

Figure 3.2: Five-minute separation of departing aircraft following the same track [2]

  - 2 minutes — between departing aircraft on the same track, when the Preceding aircraft is at least 40 kts faster,

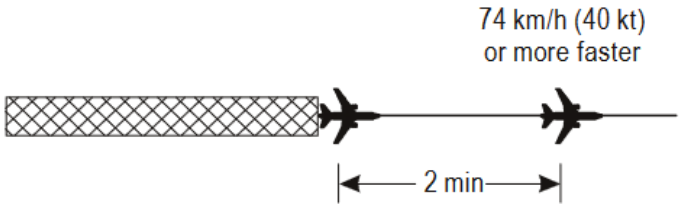

Figure 3.3: Two-minute separation between aircraft following same track [2]

  - 1 minute — between departing aircraft, when their departure tracks differ by no less than 45°,
- based on visual observation *(VFR)*:
  - aircraft has started a turn or passed departure end of the runway.

Departures from intersecting runways are subject to common departure separations (requires usage of same separations as departures from the same runway).

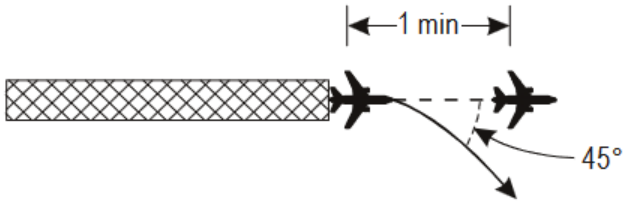

Figure 3.4: One-minute separation between departing aircraft following tracks diverging by at least 45° [2]

Wake turbulence separation — departures

In addition to standard established separations, an important factor is the consideration of wake turbulence of departing aircraft of different categories:

The same starting point of the take-off run:

Preceding	Succeeding	Separation
SUPER (J)	HEAVY (H)	2 min
SUPER (J)	MEDIUM (M)	3 min
HEAVY (H)		2 min
SUPER (J)	LIGHT (L)	3 min
MEDIUM (M)		2 min
LIGHT		

Table 3.2: Wake turbulence separation — departures

Succeeding aircraft commences take-off from an intermediate part of the runway:

Preceding	Succeeding	Separation
SUPER (J)	HEAVY (H)	3 min
SUPER (J)	MEDIUM (M)	4 min
HEAVY (H)		3 min
SUPER (J)	LIGHT (L)	4 min
MEDIUM (M)		3 min
LIGHT		

Table 3.3: Wake turbulence separation — departures, intermediate part of runway

Departure clearances may not be conditional or contain conditional instructions.

3.6 Arrival

Arrival is understood as these runway operations:

- landing,
- landing and immediate takeoff, the so-called "*touch and go*" (pol. "*konwojer*"),
- low overflight over the runway ("*low pass*"),
- long landing,
- all other operations involving crossing the runway threshold from the air, including a "*low approach*".

All operations must receive clearance as soon as possible, but no later than:

- at 4 miles to the runway threshold,
- at 2 miles to the runway threshold after informing the flight crew of the expected delayed clearance for the operation (e.g.: "Expect late landing clearance"),
- in the absence of surveillance data for the tower controller, to a maximum of 5 miles to the runway threshold. The distance must be obtained through the flight crew position report ("Report 5 miles final")
- for VFR flights, no later than around the final turn.

If the above are not feasible, or the traffic situation indicates that it will not be possible to issue a clearance at the time of the above situations, instructions should be given to the crew to go around as soon as possible.

Clearances for arrival operations must not contain conditional instructions.

Wake turbulence separation — arrivals

In addition to standard established separations, an important factor is the consideration of wake turbulence of departing aircraft of different categories:

Preceding	Succeeding	Separation
SUPER (J)	HEAVY (H)	2 min
SUPER (J)	MEDIUM (M)	3 min
HEAVY (H)		2 min
SUPER (J)	LIGHT (L)	4 min
MEDIUM (M)		3 min
LIGHT		

Table 3.4: Wake turbulence separation — arrivals

If the succeeding aircraft is flying VFR, it is possible to order the pilot to maintain his own separation with caution to wake turbulence. It is then mandatory to specify the wake turbulence category of the preceding aircraft.

Missed approach instructions

In the case of a missed approach, unless otherwise coordinated, the aircraft will follow the published missed approach procedure appropriate to the approach being performed. Where the approach being performed does not have a published missed approach procedure (e.g., a visual approach), it is necessary to obtain such instructions from the unit providing the approach control service.

The unit providing the approach control service may, through coordination, establish other instructions after a missed approach than those published. It is the duty of the tower controller to transmit non-standard instructions to the aircraft sufficiently in advance for the aircraft to be able to carry out these instructions, unless the non-standard instructions were transmitted before by the approach controller.

After a missed approach, the tower controller must obtain release for the departure of the next aircraft. This is to make sure that there is no loss of separation in the approach controller's area of responsibility.

3.7 VFR in CTR

Weather conditions in controlled airspace

In order to fly VFR in controlled space, the following weather conditions must be met:

- **Visibility:** 5 km / 8 km (FL100+)
- **Cloud ceiling:** 1500 ft AGL

VFR special flights

VFR special flights may only be conducted:

- in CTR,
- in daytime,
- away from clouds and with terrain visibility,
- when the visibility is not lower than 1500 m (800 m for helicopters),
- not faster than 140 kts IAS,
- when the cloud ceiling is not lower than 600 ft AGL.

Note: The above restrictions apply to civilian controlled airspace. In military airspace, the VFR special restrictions are described in chapter **??**

Aerodrome traffic circuit

Unless otherwise specified, the traffic circuit altitude for VFR flight is 1000 ft AGL.

Note that aircraft performing touch & go or low pass are performing 2 operations: arrival and departure. Proper separations must be maintained with respect both to arriving and departing traffic.

Glider flights

Glider flights in controlled airspace are subject to the normal flight/entry clearance.

Clearance to operate a glider in controlled space should be denied if there is justification in terms of the traffic situation of the airport.

If clearance is granted for a glider to perform a flight, it shall be given priority in the order for landing, keeping in mind that the glider cannot go around. However, the glider may be asked to hold over a VFR point for traffic reasons. If the pilot reports that it is not possible to hold, such aircraft should be instructed to exit the controlled area by the shortest route.

Rescue flights

Flights with HEMS, HOSP, SAR, MEDEVAC status are treated as rescue and/or hospital flights, search flights, life-saving flights.

Simulation of such flights is allowed under the condition that the controller authorizes such a flight, because no one can arbitrarily prioritize themselves over other aircraft on the VATSIM network.

Rescue flights should be prioritized by giving possible “shortcuts”. Rescue flights may also cross restricted and prohibited zones if justified.

When landing and taking off outside of the controlled landing area (airport), but remaining in a controlled airspace (hospital helipad, accident site, etc.), the crew must be advised to maintain their own responsibility when performing the landing/take-off. The landing/take-off must take place after obtaining clearance from the air traffic controller. In case of loss of VHF radio communication, text contact must be maintained (simulated phone call). Detailed conditions for handling HEMS flights are described in section 3.9.

VFR squawk codes

The general squawk code for VFR flights is 7000, and it can be used when the aircraft is only performing overflight circles or leaving the CTR into uncontrolled airspace. When more aircraft performing VFR flight remain in the CTR area, or when the aircraft will be performing the flight in another controlled airspace (e.g., TMA), it is recommended to assign a discrete transponder code.

3.8 Aerodrome control using surveillance

With the modification of air traffic control towers, surveillance systems for TWR controllers have been installed at some airports in Poland. It allows observation of traffic in the CTR of the airport.

TWR with access to surveillance systems, in order to provide radar service, identifies the aircraft by verifying its position, altitude, transponder code (with Mode C enabled) and informs the SP crew using the phrase “*Radar contact*”.

Radar identification (position verification) is done as follows:

- the position of the aircraft presented on the scope coincides with the position reported by the aircraft crew,
- the transponder code agrees with the assigned transponder code,

— there is reasonable certainty that there could not have been a mistake in identification.

The exact regulations governing radar identification are described in ICAO Doc 4444 Air Traffic Management, Part 8, Section 8.10.2.3 [2].

The radar service for TWR includes:

— monitoring the flight path of aircraft on final approach,

— monitoring the flight path of other aircraft in the vicinity of the airport,

— providing traffic information, in accordance with the applicable space class,

— providing navigational assistance for VFR flights.

Note that:

— the TWR controller does not have the ability to vector aircraft,

— in order to better identify VFR aircraft, they should be assigned a discrete transponder code,

— the surveillance system can be used to assist the crew in navigation, in case of loss of orientation in the area, by providing bearings to a waypoint/airport/navigation aid.

TWR with surveillance systems

In FIR Warsaw surveillance systems are avaialble at the following positions:

— TWR Gdańsk

— TWR Katowice

— TWR Kraków

— TWR Modlin

— TWR Okęcie

— TWR Poznań

— TWR Wrocław

3.9 HEMS flights

A flight with HEMS status in vFIR EPWW **can only take place after obtaining clearance** from the currently active vATC unit. The vATC unit, when issuing the clearance, must make sure that it is able to handle an aircraft with HEMS status the airspace it controls without unnecessarily delaying other traffic (in accordance with the Vatsim CoC B6 rule [6] that no aircraft can prioritize itself).

Due to the lack of a working SOA in vFIR Warszawa, it is the vATC who issues the priority of a HEMS flight. If priority is denied, the pilot should be advised to continue flight as normal VFR or to disconnect from the network.

Callsigns

LPR helicopters in rescue flight use the Ratovnik ## (LPR##) call signs where ## is the number assigned to the LPR base (e.g., Ratovnik 12 (LPR12) — HEMS Warsaw).

LPR helicopter training flights and LPR aircraft flights are conducted under the call signs Ratovnik ABC (LPRABC), where ABC is the last three letters of the aircraft registration (e.g., Ratovnik HXB (LPRHXB) — SP-HXB).

Flights of military helicopters of Search and Rescue Groups take place under the call signs Rescue Helicopter #### (RH####), where #### is the tactical number of the aircraft (e.g. Rescue Helicopter 0419 (RH0419) — 2nd GPR Mińsk Mazowiecki).

HEMS in IMC

When conducting a HEMS flight in controlled airspace below VFR special flight conditions, the vATC should inform the pilot of the current atmospheric conditions. It is the pilot's responsibility to know the operator's minima (LPR) and to inform the vATC of the decision to continue the flight. When authorizing HEMS flight below VFR special minima, the type of flight may be omitted or it may be emphasized that rescue flight is authorized.

Example phraseology:

	PL	EN
P	Okęcie Wieża, dzień dobry, Ratownik 12, aktywny. Po starcie z Babic, wykonujemy na Górę Kalwarię, 1500 stóp.	Okęcie Tower, good day, Ratovnik 12, active. After departure from Babice, proceeding to Góra Kalwaria, 1500 ft.
TWR	Ratownik 12, Okęcie Wieża, dzień dobry. Warunki poniżej VMC. Widzialność 3 km, chmury OVC 300 stóp.	Ratovnik 12, Okęcie Tower, good day. Weather below VMC. Visibility 3 km, clouds OVC 300 ft.
P	Wieża, Ratownik 12, przyjąłem. Akceptuję warunki.	Tower, Ratovnik 12, roger. We accept the conditions.
TWR	Ratownik 12, zezwalam na lot w CTR Okęcie nie wyżej niż 1500 stóp. Zgłoś na trawersie punktu Echo.	Ratovnik 12, cleared for flight in CTR Okęcie not higher than altitude 1500 ft. Report abeam Echo.
P	Zezwalasz na lot w CTR nie wyżej niż 1500 stóp. Zgłoszę trawers Echo. Ratownik 12.	Cleared for flight in CTR not higher than 1500 ft. Will report abeam Echo. Ratovnik 12.

APPROACH CONTROL SERVICE

Last revision

02 NOV 2023

Polish VACC

4 Available ATC positions

4.1 Approach [APP]

The Approach Controller has the following responsibilities:

- controlling aircraft within TMA ond delegated airspaces,
- guiding arriving aircraft to their final approach,
- segregation of departing traffic,
- separating traffic according to the airspace class,
- coordination with other ATC: TWR, DIR, ACC,
- provision of Flight Information Service to traffic below the controlled airspace, within the horizontal boundaries of the airspace,
- providing "top-down" coverage of DIR position if it is offline or not provided at the aerodrome.

Arriving aircraft are handed over using silent coordination to the approach controller according to established standard arrival conditions (e.g., at a certain point or altitude) or according to coordination for particular traffic.

4.2 Final Director [F_APP]

If a Director position is established in a given airspace, it is responsible for:

- guiding aircraft to final descent and onto a stabilized final approach track based on published procedures,
- close coordination with "Approach" controller to build appropriate arrival sequence,
- provide "top-down" coverage of TWR position if it is offline.

The default area of responsibility boundary between the Approach controller and the Director in FIR Warszawa is FL90 unless local procedures say otherwise.

4.3 Procedural Tower [TWR]

When procedural control is exercised at the airport in TMA, by default, it is exercised by the Tower controller (TWR).

4.4 Precision [P_APP]

At Poznań-Krzesiny Airport (EPKS), the "Krzesiny Precision / Precision [EPKS_P_APP]" position has been established. It is responsible for controlling aircraft on the precision radar approach (PAR).

The purpose of a precision approach using PAR radar is to enable the crew to make a safe landing by obtaining visual contact with at least one element of the runway environment at or before reaching a decision altitude, in a position enabling crew to continue the approach visually.

Precision approach control can only be conducted against a single aircraft. Due to the need to maintain constant one-way communication between the PAR controller and the aircraft, PAR controller must not cover TWR position "top-down".

After establishing radio communication, PAR controller informs the crew of:

- radar identification,
- type of conducted approach and runway direction,
- present QNH (if changed),
- glidepath angle,
- Obstacle Clearance Altitude (OCA) of the approach

and the necessity to check crew's minima.

Example: *SPABC, Krzesiny Precision, radar contact. This will be Precision Radar Approach, runway 29, [QNH 1014], expect 3 degrees glidepath, OCA 554 ft, check your minima.*

During the approach, the controller gives the crew the following information in regular intervals (not less than once every 5 seconds):

- distance to touchdown,
- aircraft position in regard to the extended runway centerline,
- aircraft position in regard to the glidepath,
- when necessary, information about the trend of changes in reported parameters.

Example: *5 miles from touchdown. Closing slowly from the left, heading is good. Slightly below glidepath.*

In order to relieve the load on the crew and to ensure the continued ability to transmit, the PAR controller issues a *"do not acknowledge further transmissions"* instruction. From this point on, all PAR controller's instructions do not require a readback, except for landing clearance, instructions to go around, requesting a radio check.

The distance to touchdown should be given in 1 NM increments until the aircraft reaches a distance of 4 NM to the touchdown point. From 4 NM onward, distance information should be given more frequently, maintaining priority to information on elevation, direction and guidance.

Aircraft performing a PAR approach should be reminded during the final approach to check landing gear (*"check gear down and locked"*).

When justified, PAR controller may instruct the aircraft to:

- change heading,

- adjust rate of descent,
- maintain level flight,
- go around.

PAR controller issues heading change instructions with 1° resolution. Instructions to adjust rate of descent are given by describing the position of aircraft in regard to the glidepath (e.g. *"well above glidepath"*) and issuing the instruction *"adjust rate of descent"*.

PAR controller relays landing clearance from the TWR controller not later than 2 NM from touchdown. If the clearance has not been issued until 2 NM, PAR controller shall order the aircraft to go around.

Precision approach is completed on crew's request; when the PAR controller considers that continuation of the approach poses a safety rist or when the aircraft reaches the OCA/H. Crew must be informed of approaching OCA/H (*"approaching OCA"*).

Aircraft that have reached OCA/H or report visual contact with the runway environment must be informed that the approach has been completed and to continue visually or go around (*"precision approach completed. Continue visually or go around"*).

Aircraft that have completed the precision approach, after landing roll contact TWR controller (*"after landing roll contact tower"*). Aircraft executing e.g. low approach or touch and go must receive climb-out instructions and be instructed to contact the approach controller after the operation.

5 Methods of control

5.1 Radar service

The radar service is based on the use of surveillance system imaging with identified aircraft in order to ensure:

- aircraft separation,
- air traffic monitoring, in order to inform about route deviations,
- radar vectoring to avoid traffic or shorten the route,
- assistance for aircraft in distress,
- coordination of different types of air traffic,

additionally, in case of radar service in approach control service:

- radar vectoring to a position, from which final instrument approach can be conducted,
- radar vectoring to a position, from which visual approach can be conducted,
- monitoring instrument approach procedures and visual approaches.

In vFIR Warszawa, the following radar separation minima are applied:

Horizontal separation 5.0 NM

Vertical separation below FL280: 1000 ft
above FL280: 2000 ft, except RVSM airspace, as defined in section 1.1

APP with surveillance capabilities

In vFIR Warszawa, radar service is available at the following positions:

- APP Gdańsk,
- APP Kraków,
- APP Poznań.
- APP Warszawa.

Reduced lateral separation

In following TMAs, approach may reduce lateral separation to 3 NM in 30 km (16 NM) radius from the radar antenna:

- TMA Gdańsk,
- TMA Warszawa.

Wake turbulence separation

Preceding	Succeeding	Separation
SUPER (J)	HEAVY (H)	5 NM
HEAVY (H)		4 NM
SUPER (J)	MEDIUM (M)	7 NM
HEAVY (H)		5 NM
SUPER (J)	LIGHT (L)	8 NM
HEAVY (H)		6 NM
MEDIUM (M)		5 NM

Table 5.1: Wake turbulence separation

Beginning and termination of radar service

In order to begin radar service, aircraft must be identified.

Aircraft identification is described in ICAO Doc 4444: PANS-ATM, chapter 8, sections 8.6.2 and 8.6.3 [2].

There are two main types of radar identification, depending on available equipment:

Primary Surveillance Radar identification: [2, sect. 8.6.2.4]

- by correlating a particular radar position indication with an aircraft reporting its position over, or as bearing and distance from, a point displayed on the radar map, and by ascertaining that the track of the particular radar position is consistent with the aircraft path or reported heading;
- by correlating an observed radar position indication with an aircraft which is known to have just departed, provided that the identification is established within 2 km (1 NM) from the end of the runway used. Particular care should be taken to avoid confusion with aircraft holding over or overflying the aerodrome, or with aircraft departing from or making a missed approach over adjacent runways;
- by ascertaining the aircraft heading, if circumstances require, and following a period of track observation:
  - instructing the pilot to execute one or more changes of heading of 30 degrees or more and correlating the movements of one particular radar position indication with the aircraft's acknowledged execution of the instructions given; or
  - correlating the movements of a particular radar position indication with manoeuvres currently executed by an aircraft having so reported.

Secondary Surveillance Radar identification: [2, sect. 8.6.2.3]

- recognition of the aircraft identification in a radar label;
- recognition of an assigned discrete code, the setting of which has been verified, in a radar label;
- direct recognition of the aircraft identification of a Mode S-equipped aircraft in a radar label;
- observation of compliance with an instruction to set a specific code;
- observation of compliance with an instruction to squawk IDENT;

In any case of identification, there must be reasonable assurance that there is no possibility of mistaking the traffic for another aircraft performing under similar flight conditions (e.g., same area, duplicate transponder code etc.)

Crew should be informed about beginning the radar service by using the phrase *"identified"* or *"radar contact"*.

Radar service termination may be conducted when:

- aircraft exit airspace in which radar service is provided or is trasferred to a unit that does not provide radar service;
- aircraft descends below Minimum Vectoring Altitude (MVA);
- identification has been lost or there is reasonable certainty that the identification may be lost soon (e.g. disappearing from scope and reappearing with a different squawk code);
- radar contact is lost;
- aircraft has landed.

The termination of radar service should be immediately communicated to the crew using the phrase *"radar service terminated"*, except when the aircraft has landed.

Transfer of identification

If the aircraft has been identified by the controller/flight information service officer within vFIR Warszawa and is transferred to another ATCO/FISO that conducts radar service, the radar identification is transferred…

Transfer of identification takes place only within vFIR Warszawa, unless local procedures or agreements state otherwise.

Thanks to transfer of identification, there is no need to identify the aircraft again (e.g. requiring squawk code assignment for "SQUAWK DUPE" aircraft).

Prohibited practices

The following practices and techniques should not be used in precision area navigation:

- issuing instructions to fly direct to a waypoint that has been deleted from the aircraft systems by directing the aircraft to a point further down the procedure;
- issuing instructions to fly direct to a waypoint that the aircraft has already passed;
- issuing instruction to fly direct to a waypoint that is not a part of a procedure, unless it is a point over which a holding is published on the procedure chart;

Those rules may not be applied in non-standard situations, if the crew confirms that they are able to proceed to a given waypoint. Such instruction should not include a terminal area navigation waypoint (e.g. WA533).

5.2 Radar control techniques

Separation minima

Minimum radar separation within vFIR Warszawa is **5 NM**.

In TMA Warszawa and TMA Gdańsk, reduced separation of **3 NM** is used within 16 NM from the antenna.

SID/STAR

Departing aircraft that are unable to follow the SID should be vectored, so that their departure routes are as close to the published procedure as possible, or be directed to the last point of the SID.

If the arriving crew can not execute the published STAR (due to lack of required certification, sensor degradation) APP shall begin radar vectoring. Aircraft should be vectored so that it's route is as close to the published procedure as possible.

In the event of any doubt by ATC or the aircraft crew regarding the correctness of the navigation carried out, APP shall immediately switch to radar vectoring.

If radar vectoring of arriving aircraft was started in the APP sector, if possible, when vectoring is completed it should be directed to a point on the STAR (in case of transfer to DIR).

APP issues STAR clearance after estabishing radio communication with the aircraft. If a shortcut is coordinated with another controller, STAR clearance will be issued by the ATC currently controlling the aircraft.

STAR shall not be changed during it's execution. In case of arrival runway change while the STAR is conducted, APP should revert to radar vectoring to final approach.

Continuous Descent Approach

Continuous Descent Approach (CDA) is a technique, in which arriving aircraft descend:

- with lowest thrust possible,
- avoiding leveling off,
- in clean configuration (gear and flaps retracted).

CDA begins at an altitude of 7000 ft or higher (depending on traffic and meteorological situation). In a distance of around **30 track NM** from RWY, at **FL120** or below, APP gives the crew the planned track distance.

- If aircraft executes P-RNAV STAR and APP/DIR plans a "downwind leg", APP/DIR informs the crew about the planned position of the "base leg" turn. This information is equivalent to giving the planned track distance.
- If radar vectoring is used, APP/DIR at aroudn 25 track NM to touchdown, at an altitude of 7000 ft or above, informs the crew of the planned track distance to touchdown.

APP/DIR utilizes speed control as required in such a way, that Minimum Clean Speed (MCS) or higher is maintained until 15 NM to touchdown. Below 15 NM to touchdown, APP/DIR may begin further speed reduction below MCS so that minimum separation between arriving aircraft is maintained.

Vectoring to final approach

Vectoring to a shorter than standard (published) final may be done only on crew's request or when approved by the crew. APP/DIR shall inform the crew of the length of the final the aircraft will be vectored to.

Vectoring to intercept is used for ILS, VOR and TACAN approaches. It should not be used in case of RNP approaches.

Vectoring shall allow interception of final approach track at an angle of around 30 °, not more than 45°. ILS glideslope shall be intercepted "from below".

Aircraft executing RNP approches should be directed to the initial approach fix of the approach and reach prescribed altitude over that fix.

Aircraft executing VOR approaches shall intercept final approach track before reaching Final Approach Fix (FAF), at the procedure-defined altitude.

Minimum Vectoring Altitude

Aircraft shall not be vectored into uncontrolled airspace, except in emergency, during weather avoidance or on pilot's request.

5.3 Procedural approach

Procedural control service is performed in airspaces, in which radar service is not provided. Procedural control is based on crew position reports. An aircraft shall fly in the procedural airspace in accordance with published procedures.

Vectoring is prohibited in procedural airspace.

Vertical separation in procedural airspace is **1000 ft**. Horizontal separations are defined below.

5.3.1 Longitudinal separation

Based on time

There must be a minimum interval of **10 minutes** between two aircraft passing over the same navigation point (fig. 5.1). In the case when the planes are flying on the same route and the first one is faster than the second one by at least **20 kts**, the longitudinal separation is reduced to **5 min** (fig. 5.2). If the velocity difference is more than **40 kts**, the separation is further reduced to **3 min** (fig. 5.3).

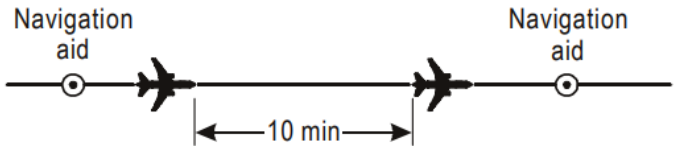

Figure 5.1: 10 min separation between aircraft on same track and level [2]

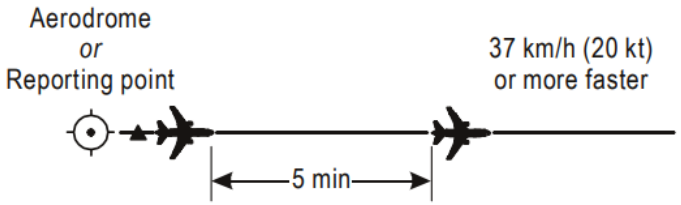

Figure 5.2: 5 min separation between aircraft on same track and level [2]

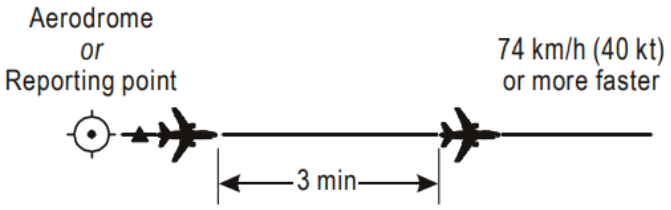

Figure 5.3: 3 min separation between aircraft on same track and level [2]

Based on DME distance

Difference of distances reported by aircraft on same track shall be not lower than **20 NM** (fig. 5.4). The separation can be reduced to **10 NM**, if the preceding aircraft is faster by at least **20 kts** (fig. 5.5).

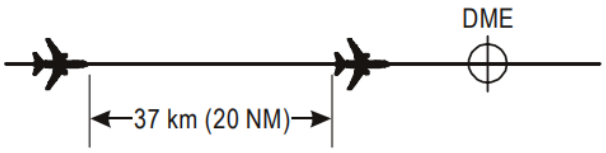

Figure 5.4: 20 NM DME-based separation between aircraft on same track and level [2]

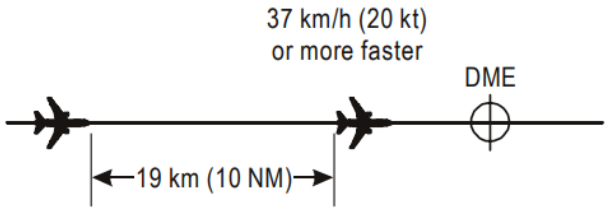

Figure 5.5: 10 NM DME-based separation between aircraft on same track and level [2]

5.3.2 Lateral separation

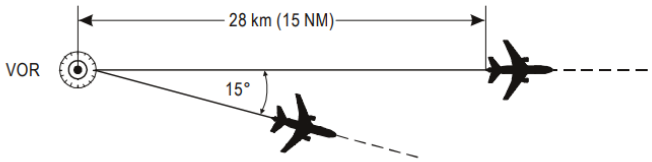

Figure 5.6: Separation using the same VOR [2]

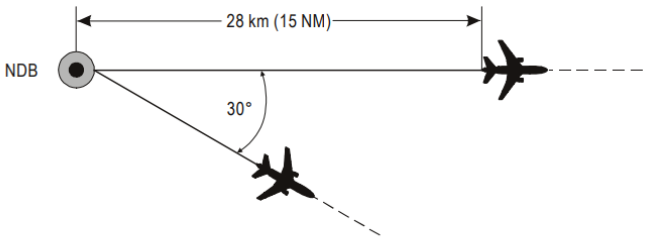

Figure 5.7: Separation using the same NDB [2]

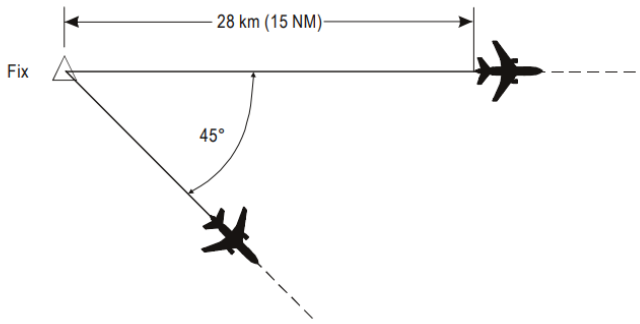

Figure 5.8: Separation using dead reckoning [2]

5.3.3 Approach separation

Succeeding aircraft may be cleared for approach:

- when the preceding aircraft is in communication with and sighted by the aerodrome control tower and reasonable assurance exists that a normal landing can be accomplished, or
- when timed approaches are used, the preceding aircraft has passed the defined point inbound and reasonable assurance exists that a normal landing can be accomplished.

5.3.4 Departure separation

As described in section 3.5.

Other procedural separations described in Chapter 5 of ICAO Doc 4444 [2] may be used to the extent of the controller's knowledge.

5.4 Procedural control methods

Receiving position reports

The basic tool when applying procedural control is the knowledge of aircraft's position based on the crew's position report. The controller shall use the reports as often as necessary in order to use appropriate techniques and methods to maintain separation between aircraft.

Information about delays

The procedural environment is characterized by increased operation times resulting from the need to separate traffic based on position reports. Arrivals more frequent than once every 10 minutes can result in delays and the crews should be informed about these delays as soon as possible.

Separating departures and arrivals

Departure separation is achieved by the use of time-based separations (see section 3.5).

When a departure is planned it is recommended not to descend arriving aircraft below FL110, until other separation minimum is ensured, due to departing aircraft climbing.

If the aircraft is required to fly at FL110 for a longer period, the following difficulties should be taken into account in returning to scheduled descent profile at a later time.

Arriving aircraft descending while departing aircraft climb is possible. Where vertical separation between aircraft cannot be ensured, adequate horizontal separation must be provided. This situation is illustrated in fig. 5.9 in the example for climb, which presents a scenario divided into 3 stages:

1. maintained vertical separation,
2. clearance for climb — loss of vertical separation — horizontal separation must be maintaned,
3. reaching level by the climbing aircraft — vertical separation is maintained again.

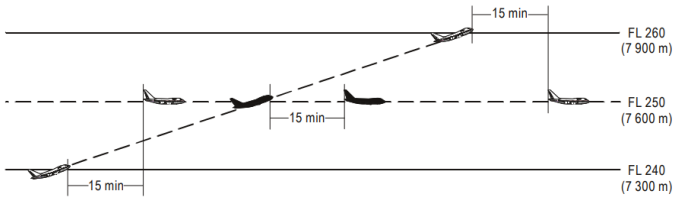

Figure 5.9: 15 min separation between aircraft climbing on the same track [2]

Simultaneous climb/descent of aircraft

When aircraft on the same track are ascending/descending simultaneously, it is recommended to use the minimum/maximum rates of climb/descent.

Obtaining longitudinal time-based separation

If the expected positions of the separated aircraft do not meet the requirements for maintaining longitudinal separation, it is recommended to use one of the following methods to maintain separation:

- utilizing vertical separation,
- ordering the following aircraft to make an orbit to increase the distance from the preceeding aircraft,
- speed control to obtain time separation

Distances between points used in position reports

ATC may use EuroScope's imaging to determine the approximate distance between points reported by pilots during position reports.

Separating opposite traffic

In the event that two aircraft are traveling on opposite tracks, vertical separation should be maintained for at least 10 minutes before and after the expected time of passing (as shown in fig. 5.10).

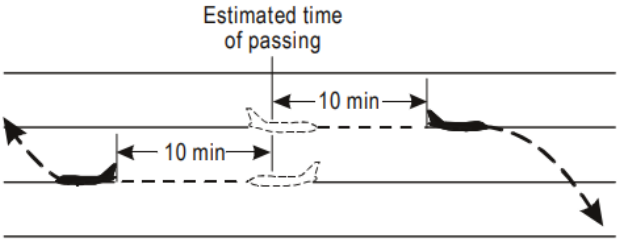

Figure 5.10: 10 min separation between aircraft on reciprocal tracks [2]

Useful phraseology

DESCEND/CLIMB VIA STAR/SID TO (level) clears aircraft to descend/climb to given level while maintaining altitude and speed restrictions defined in the procedure.

CROSS (point) AT (level) requires aircraft to reach certain level over specified position.

CROSS (point) AT (level) OR ABOVE, IF UNABLE MAINTAIN (level) as above, but specifies a level to maintain if reaching a given level is not possible.

CROSS (point) AT (TIME) OR LATER requires the aircraft to adjust speed in order to maintain time-based horizontal separation.

REPORT (time/distance/radial) FROM (point) additional, non-standard, position report in order to establish aircraft's postition in space.

5.5 Silent coordination and transfer

Transfer of control and communication shall take place in a defined standard transfer point and level, set between sectors in this manual or a Letter of Agreement.

If aircraft is to be transferred according to the standard rules no coordination is required.

Coordination of shortcuts (DCT) and transfer levels (XFL) shall be done using built-in EuroScope coordination functions.

Transfer of control

Transfer may take place no sooner than 5 minutes before reaching the Area of Responisbility (AoR) boundary (including vertical boundaries). Transfer shall take place at least 1 minute before the aircraft enters AoR of the next controller.

The following transfer procedure is in use:

1. Issuing frequency change instruction while using the "HAND OFF" function. It is interpreted as:
   - transfer of radar identification,
   - declaration of immediate tranfer of control to the receiving controller,
   - confirmation that the aircraft is released under the conditions set in the ATC release.
2. Aircraft remains "in suspension" until it establishes two-way radio communication with the next controller,
3. After establishing communications the receiving controller accepts the transfer by pressing "ACCEPT". It is interpreted as:
   - confirmation of establishing two-way communication at the designated frequency.

Transfer refusal ("REFUSE") may be used only when an apparent error in next controller selection has been made (e.g. transfer to APP Kraków instead of APP Gdańsk). A transfer shall not be refused if there is suspicion that aircraft may have been already transferred to incorrect frequency, even by mistake (e.g. transfer to APP Warszawa (North) instead of APP Warszawa (South)). If the receiving controller has used the "REFUSE" option, immediate contact between controllers should be established to explain the situation.

During transfer, the transferring controller is responsible for the separation.

Transfer conditions

- Vertical separation of **1000 ft**, or
- Lateral separation of:
  - **5 NM**, when the preceding aircraft is not slower than the succeeding aircraft (distance constant or increasing),
  - **10 NM**, when the preceding aircraft is slower then the succeeding aircraft (distance is decreasing), while ensuring that during the transfer of control the distance between aircraft will not decrease below 10 NM.

ATC release

Release of control is the authority of an air traffic control unit accepting communication to change the current flight plan before the aircraft enters its area of responsibility. This power must be clearly delegated during coordination, unless the local procedures or agreements between the units concerned provides otherwise.

Transferring unit establishes the conditions of the release as a release for:

- climb,
- descent,
- change of direction,
- change of vertical or horizontal speed.

ATC release during transfer from APP to ACC and between ACC sectors

Transfer of control and communication contains releases for:

- level change,
- change of direction of flight,
- change of vertical or horizontal speed.

5.6 Coordination of non-standard traffic

If the aircraft submits a non-standard request, actions should be coordinated with all controllers that may be affected by the traffic.

AREA CONTROL SERVICE

Last revision

02 NOV 2023

Polish VACC

6 Responsibilities

The area controller [EPWW_CTR], in the absence of lower ATC positions [APP, TWR], shall provide aircraft with:

- radar control service:
  - throughout the EPWW FIR above FL95 (the lowest controlled level is FL100),
  - in TMAs with radar approach (TMA Warszawa, Kraków, Gdańsk, Poznań) below FL95, to the lower boundary of class C or D airspace.
- procedural control service:
  - in controlled airspace where radar service is not provided (TMA/CTRs without radar service).
- Flight Information Service (FIS) in G-class airspace below the controlled airspace.

The radar service and the procedural control service, along with a description of the correct techniques for performing each service, are described in detail in chapter 5.

ACC controller tasks

- separation of aircraft in airspace,
- maintaining efficient and orderly air traffic flow,
- providing necessary tips and information for safe and efficient flights,
- coordination of air traffic with APP and TWR controllers and neighboring ACCs,
- whenever possible, providing flight information services below the controlled zone (in G-class airspace) within the horizontal boundaries of the occupied sector.

7 Procedures

Minimum radar separation

Horizontal separation 5.0 NM

Vertical separation below FL280: 1000 ft
above FL280: 2000 ft, except RVSM airspace, as defined in section 1.1.

Silent coordination and transfer

Same rules apply as for approach control. See section 5.5.

Initial contact

On initial contact ACC Warszawa:

- verifies the assigned code is squaked by the aircraft or assigns correct squawk code,
- verifies radar identification or identifies aircraft.

Arrival information

ACC Warszawa issues a STAR clearance when one of the following conditions is met:

- aircraft's arrival routes via TMA Warszawa (destination aerodrome: EPWA, EPMO, EPRA, EPLL),
- next controller requested direct flight to a point on a STAR,
- next controller requested to relay STAR clearance.

Transition level setting procedure

If at one of the controlled airports in FIR Warszawa, the current QNH drops below 995 hPa, the ACC controller sets the transition level in FIR Warszawa to FL 90.

If at all controlled airports in FIR Warszawa the current QNH is equal to or greater than 995 hPa, the ACC controller sets the transition level to FL 80.

8 ACC sectors

8.1 Sector division

Sector division of vFIR Warszawa is shown in table 8.1 and fig. 8.1.

Sector		Frequency [MHz]
T ALLFIR	[EPWW_CTR]	125.450
UPPER	[EPWW_U_CTR]	130.625
B	[EPWW_B_CTR]	127.025
C	[EPWW_C_CTR]	133.475
D	[EPWW_D_CTR]	134.225
E	[EPWW_E_CTR]	120.950
F	[EPWW_F_CTR]	129.075
G	[EPWW_G_CTR]	124.925
J	[EPWW_J_CTR]	124.625
N	[EPWW_N_CTR]	132.700
R	[EPWW_R_CTR]	123.625

Table 8.1: ACC sectors of vFIR Warszawa

Sector are connected into blocks:

Block N	Sectors **N** and **E**.	Master sector: **N**.
Block NW	Sectors **B**, **F** and **G**.	Master sector: **G**.
Block S	Sectors **J** and **R**.	Master sector: **J**.
Block W	Sectors **C**, **D** and **T**.	Master sector: **T (ALLFIR)**.

Blocks are connected into the following groups:

Group North	Blocks **N** and **NW**.	Master sector: **N**.
Group West	Block **W**.	Master sector: **T (ALLFIR)**.
Group South	Block **S**.	Master sector: **J**.

8.2 Sector capacity

Single sectors

10 aircraft in the air at the same time, provided that no more than **8** aircraft operate to a single airport.

Figure 8.1: ACC sectors of vFIR Warszawa

Sector blocks

15 aircraft in the air at the same time, provided that no more than **12** aircraft operate to a single airport.

Sector groups

20 aircraft in the air at the same time, provided that no more than **12** aircraft operate to a single airport.

Sector ALLFIR

20 aircraft in the air at the same time, provided that no more than **8** aircraft operate to a single airport.

8.3 Transfer of control between sectors

Transfer of control between ACC sectors takes place as described in section 5.5.

When ACC **UPPER** is online, LOW sector controllers issue initial climb instructions to FL 360. Transfer of control of an aircraft cleared to climb to FL 360 to **UPPER** controller contains ATC release for further climb.

UPPER controller issues initial descent instructions to FL 370. Transfer of control of an aircraft cleared to descend to FL 370 to appropriate lower controller contains ATC release for further descent.

8.4 CPDLC

ACC controllers may utilise CPDLC at their discretion. The recommended way of using CPDLC is via the TopSky plugin.

CPDLC may be used in the Area Control Service for aircraft above **FL 285**.

Designated LOGON codes for sectors are presented in table 8.2.

Sector		LOGON
T ALLFIR	[EPWW_CTR]	EPWW
UPPER	[EPWW_U_CTR]	EPWU
B	[EPWW_B_CTR]	EPWB
C	[EPWW_C_CTR]	EPWC
D	[EPWW_D_CTR]	EPWD
E	[EPWW_E_CTR]	EPWE
F	[EPWW_F_CTR]	EPWF
G	[EPWW_G_CTR]	EPWG
J	[EPWW_J_CTR]	EPWJ
N	[EPWW_N_CTR]	EPWN
R	[EPWW_R_CTR]	EPWR

Table 8.2: CPDLC LOGON codes

Controllers providing CPDLC put the following information in their controller's text ATIS: "*CPDLC ^F285 logon: [LOGON]*", where *[LOGON]* is replaced by the LOGON code from table 8.2.

8.5 Top-down coverage

ACC controllers provide top-down coverage in the following TMAs:

Sector B

- TMA Szczecin

Sector C

None

Sector D

- TMA Poznań North
- TMA Zielona Góra

Sector E

- TMA Warszawa
- TMA Łódź
- TMA Radom

Sector F

- TMA Gdańsk
- TMA Bydgoszcz

Sector G

None

Sector J

- TMA Kraków

Sector N

- TMA Olsztyn — Mazury

Sector R

- TMA Lublin
- TMA Rzeszów

Sector T

- TMA Poznań South

Top-down coverage is inherited according to sector hierarchy, except TMA Warszawa, TMA Łódź and TMA Radom. The inheritance hierarchy for those TMAs is defined as follows:

- Sector E,
- Sector C,
- Sector N,
- Sector J,
- Sector T (ALLFIR),
- Sector UPPER.

TMA Warszawa, Łódź, Radom

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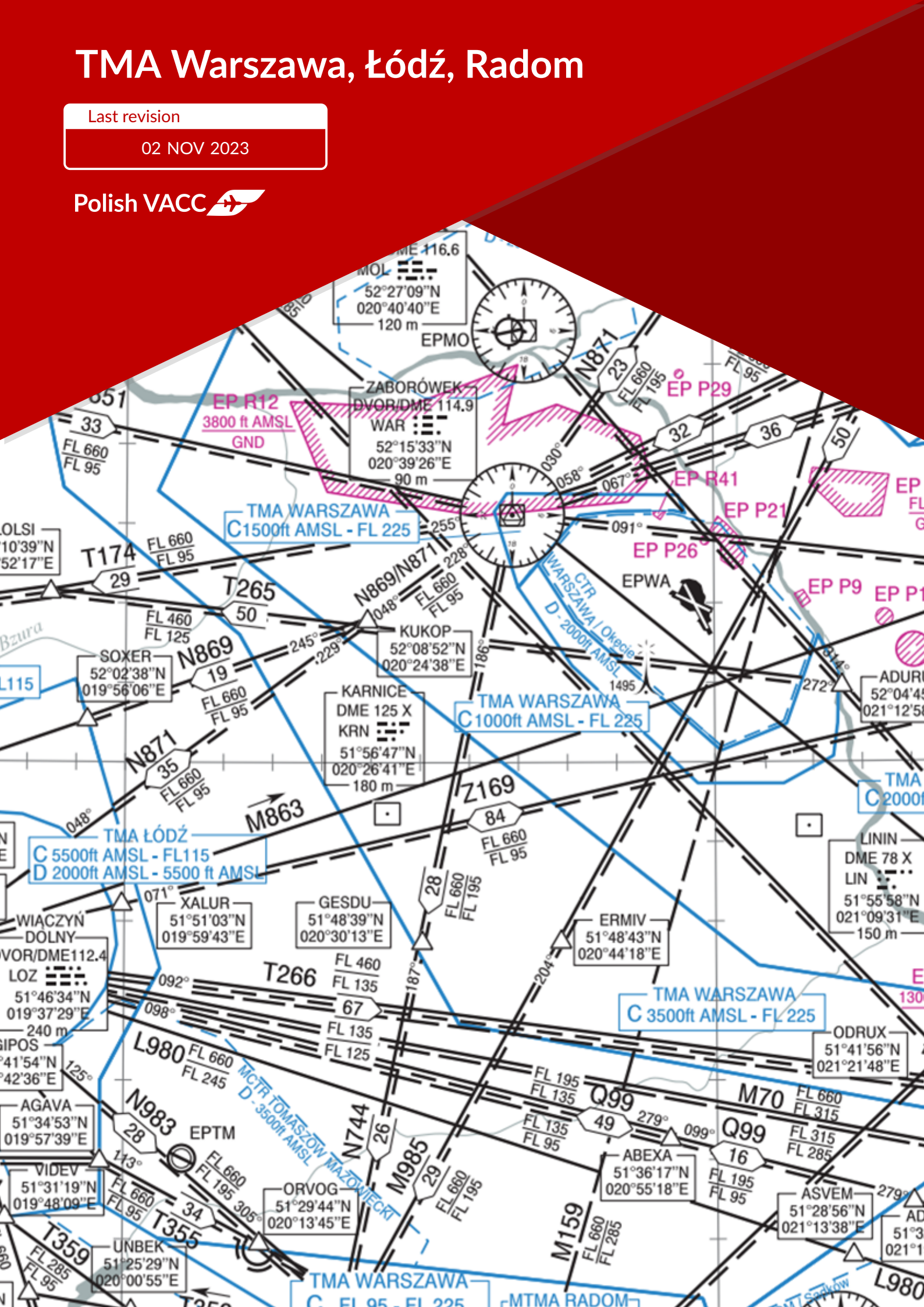
Polish VACC



TMA Kraków

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