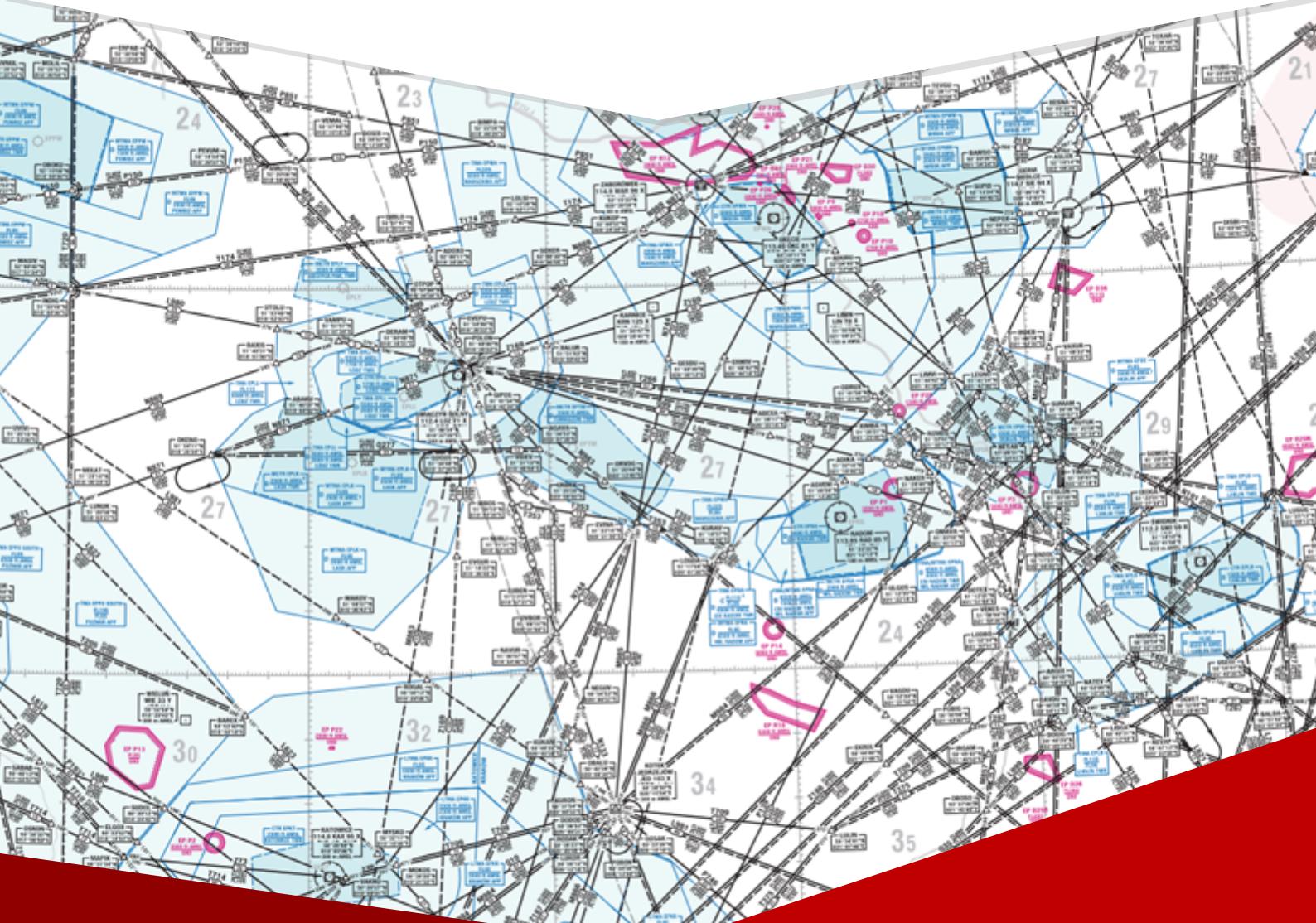


Polish VACC



OPERATIONS MANUAL

vFIR Warszawa



Revision 2309.1

⚠ Disclaimer

This document is intended for use on VATSIM network only.

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

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Record of Amendments

Revision number	Date	Changes	Authors
2309.1	XX.XX.2023	Initial 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 [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 airspaces, 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.

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

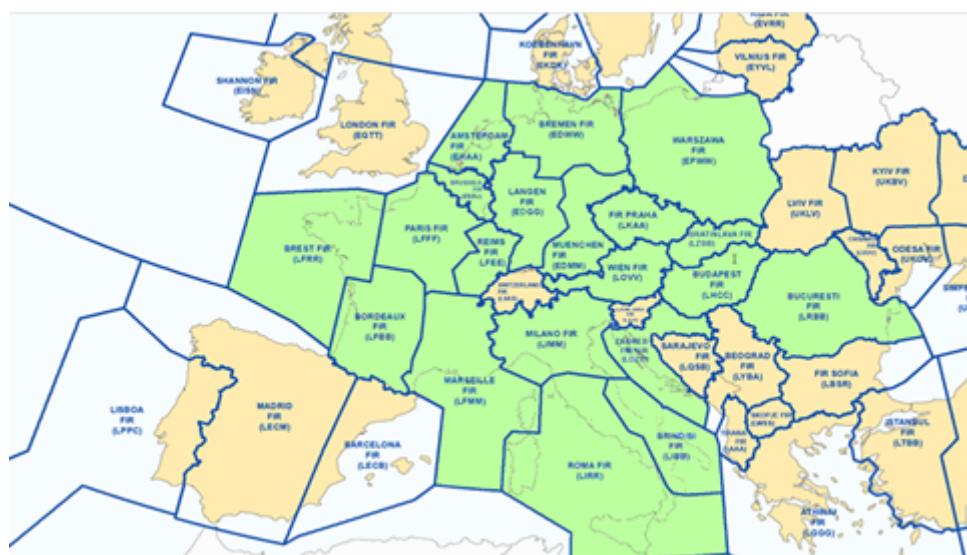


Figure 1.1: Mode S identification area map

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

AERODROME CONTROL SERVICE

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21 APR 2023

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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 using “*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,
- manouevring 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 on a runway in use or a departing aircraft can be cleared for take-off:

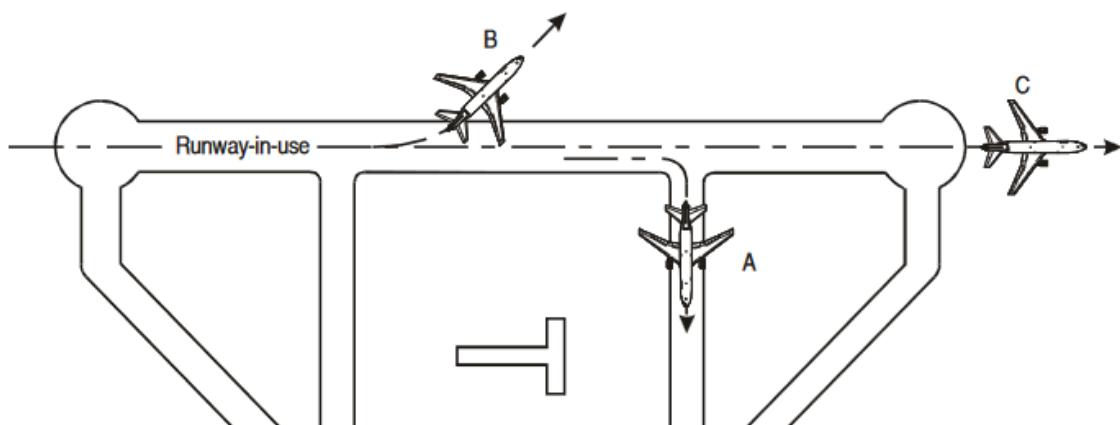


Figure 3.1: Separation between departing and arriving aircraft [2]

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,

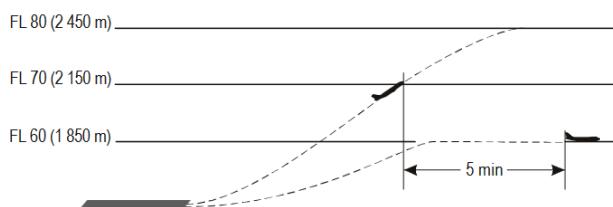


Figure 3.2: Five-minute separation of departing aircraft following the same track [2]

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

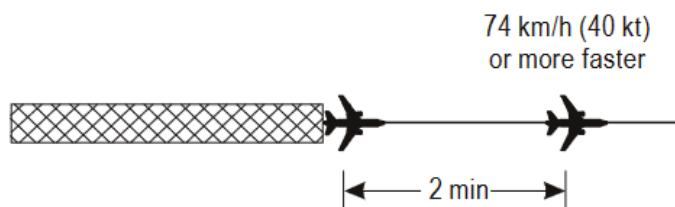


Figure 3.3: Two-minute separation between aircraft following same track [2]

- 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).

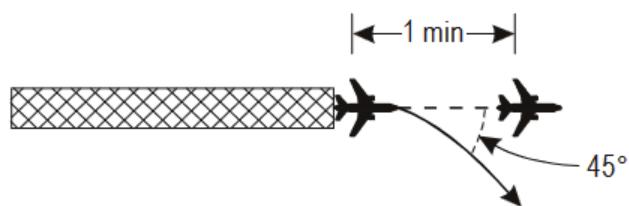


Figure 3.4: One-minute separation between departing aircraft following tracks diverging by at least 45° [2]

APPROACH CONTROL SERVICE

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AREA CONTROL SERVICE

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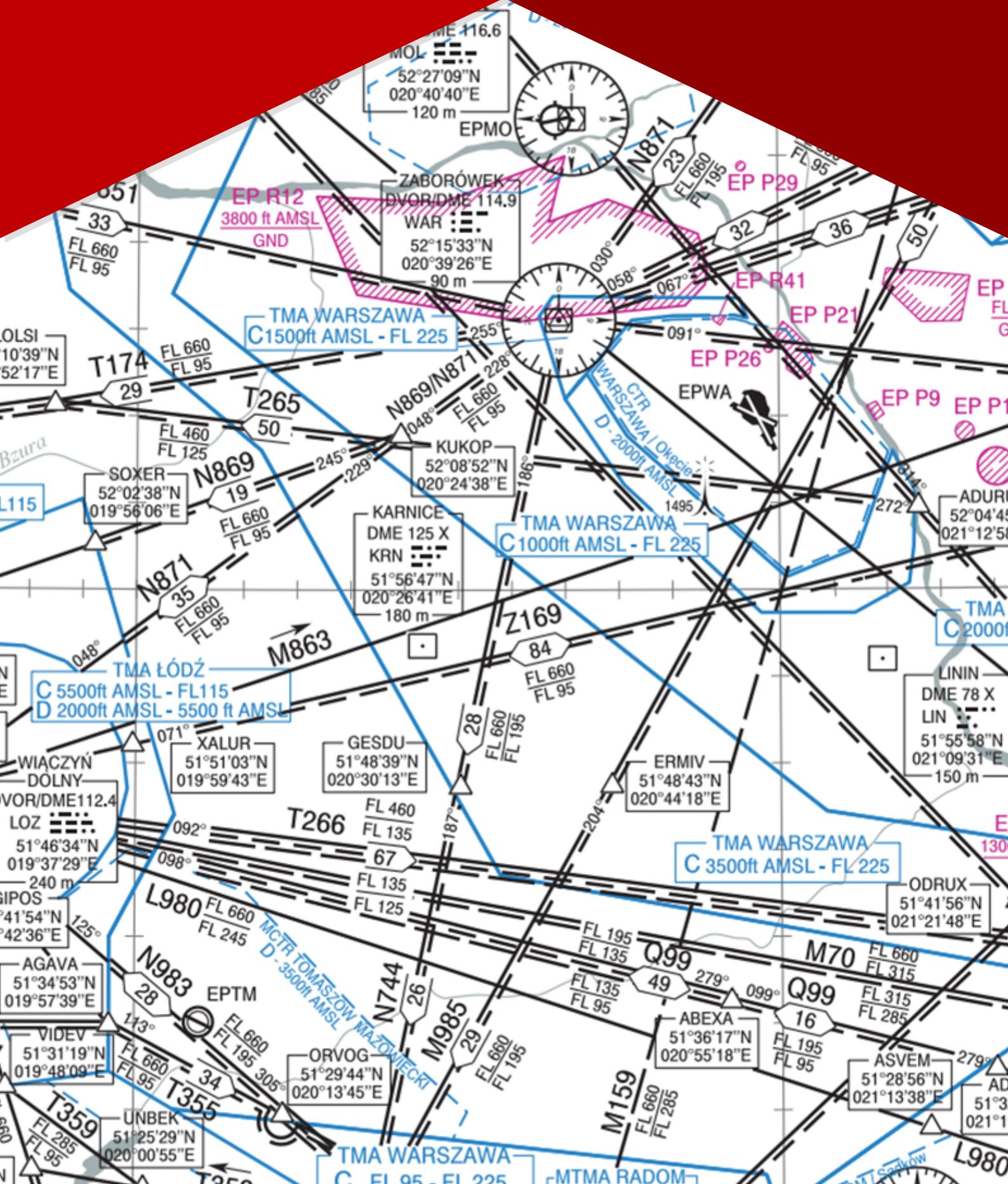


TMA Warszawa, Łódź, Radom

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TMA Kraków

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