

Introduction

Welcome to the Toronto FIR. Like the real Toronto Centre, the virtual Toronto FIR handles more traffic than any other FIR in Canada. The airspace in CZZY has been structured to handle some of the nation's busiest traffic routes. One of the goals of the virtual Toronto FIR on VATSIM is to duplicate to the fullest extent possible the procedures used by the real Toronto FIR with consideration to Nav Canada ATC regulations (MANOPS). Since there is a huge difference in traffic levels on VATSIM versus the real world, some procedures have been simplified in order to keep complexity to a reasonable level for simulation purposes. In addition to the VATSIM training requirements for promotion, each controller in the CZZY FIR is required to exhibit knowledge of local procedures via completion of training units. They are as follows:

- 1- CZZY Airspace
- 2- Toronto Clearance Delivery
- 3- Toronto Ground
- 4- Toronto Tower
- 5- Toronto Departure
- 6- Toronto Approach
- 7- Toronto Satellite Airports
- 8- Low Level Enroute
- 9- High Level Enroute
- 10- VFR Airport Control

In order to advance to a higher unit, the controller must complete an oral and/or written exam, and show they possess the level of practical skill required via simulated and/or live traffic. Instructors when monitoring a controller are required to submit a training report detailing their observations. Problem areas are identified and documented so that the controller can work to improve their performance. A promotion to the next unit will be granted when at least two Instructors agree that the controller has reached the required level of proficiency for that unit.

Good luck and we hope you enjoy controlling with the Toronto group.

Unit I – CZZY Airspace

This unit provides an overview of the CZZY airspace and how it has been structured to accommodate a smooth flow of traffic. Basic material that is contained in the VATCAN/VATSIM training will not be repeated here, since the student is expected to already have this information.

1-Required Knowledge

Definitions:

Airspace Classifications (A,B,C,D,E,F,G)

VOR, NDB

Victor Airway, Jet Route

Terminal Control Unit (TCU)

Control Zone (CZ)

IFR

VFR and weather minima for VFR flight within a CZ

Decoding of a METAR weather sequence

2- Commonly used abbreviations

VORs

ART- Watertown

ASP- Au Sable

BUF- Buffalo

CRL- Carleton

PSB- Phillipsburg

DJB- Dryer

DKK- Dunkirk

ECK- Peck

EWC- Ellwood City

FNT- Flint

GEE- Geneseo

JHW- Jamestown

MSS- Massena

PMM-Pullman

SYR- Syracuse

SSM- Sault Ste Marie

YCF- Campbellford

YEE- Midland

YMS- Mans

YQG- Windsor

YQO- Aylmer

YSB- Sudbury

YSO- Simcoe

YTP- Pearson

YTS- Timmins

YVV- Wiarton

YWT- Waterloo

YXI- Killaloe

YOW-Ottawa

YMX- Mirabel

YUL- Montreal

ROC-Rochester

YXU- London

YXZ- Wawa

YYB- North Bay

YYZ- Toronto

Try to familiarize yourself with each VOR's general location in relation to CYYZ. The ".center (VOR)" command is useful for locating these VORs with VRC.

Be familiar with the location of the following airports in relation to CYYZ:

CYKZ- Buttonville Municipal

CYKF- Kitchener Waterloo

CYTZ- Toronto City Centre

CYZD- Downsview

CNC3- Brampton

CZBA- Burlington Airport

CYOO- Oshawa

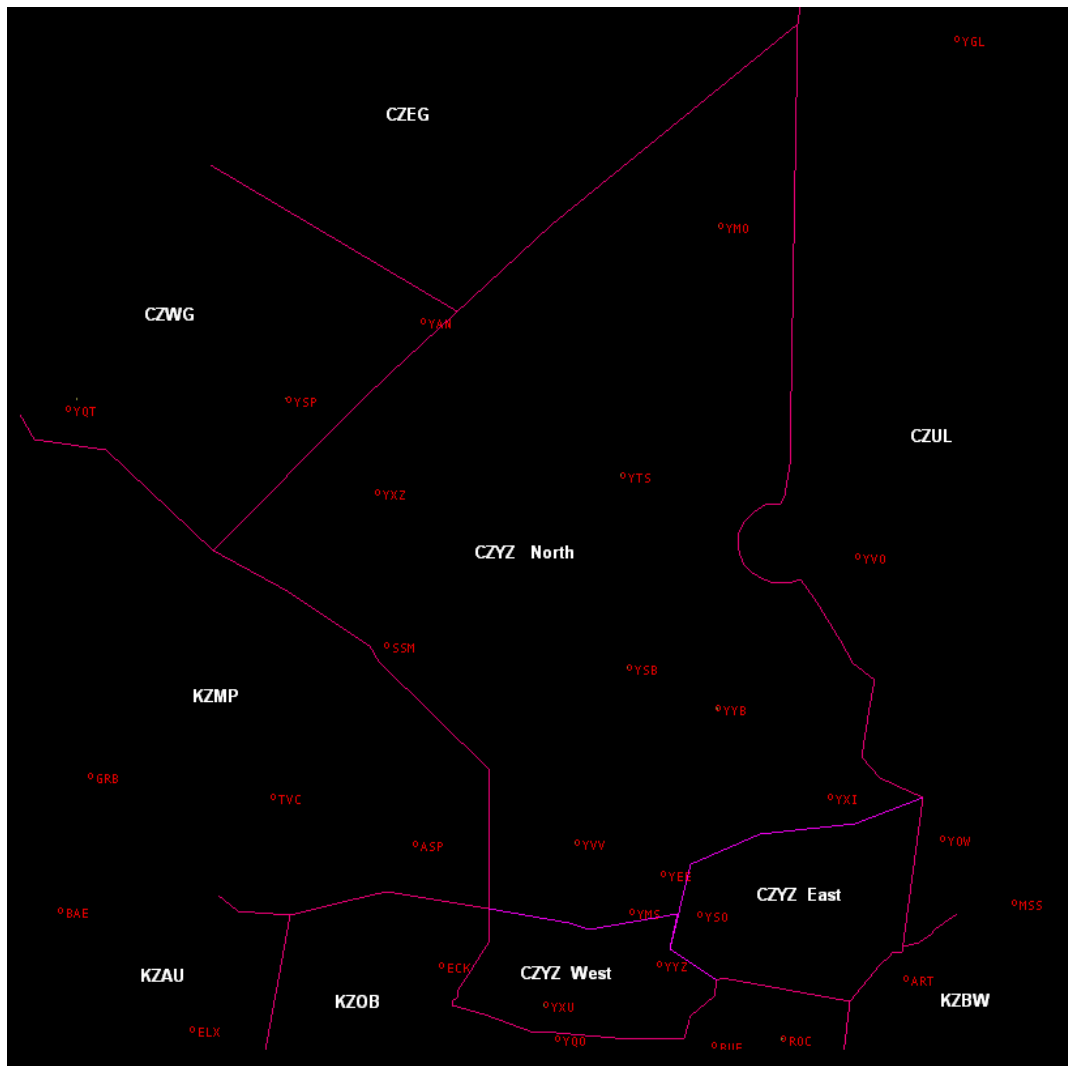
CYXU- London

CNU8- Markham

CYHM- Hamilton

3- CZZY and Adjacent FIRs and ARTCCs

Toronto FIR and surrounding airspace



Toronto Centre is adjacent to the following regions:

Canadian FIRs:

Montreal Centre- CZUL
Winnipeg Centre- CZWG
Edmonton Centre- CZEG

American ARTCCs:

Cleveland Centre- KZOB
Boston Centre- KZBW
Minneapolis Centre- KZMP

4- Predominant Traffic Flows

Overflights

The majority of overflight traffic in the Toronto FIR flows eastbound and westbound rather than northbound and southbound. This is due to CZZY's position between the central United States, Europe, and the eastern seaboard. During the day there is a steady flow of traffic from the New England area westbound to Chicago (J16-J94-J547) and points further west. In the evening, depending where the North Atlantic Tracks (NATs) lie, CZZY will handle a fair bit of Europe bound traffic from Chicago, Detroit and Dallas. Eastbound NAT traffic will generally overfly YXI, YCF or MSS enroute to their coastal fix to join a NAT. Conversely, in the early afternoon, NAT traffic inbound to Chicago, Atlanta, Detroit and Dallas will transit CZZY via routes anywhere from SSM to the north, to overhead YOW and YXU VORs to the south.

Local Traffic

Other than the traffic to and from western Canada that transits the northwestern portion of CZZY, most of the local traffic is found in the southern regions of the FIR. Pearson and Hamilton departures to Ottawa and Montreal travel eastbound (J594) close to the northern shore of Lake Ontario, while the reverse westerly flow follows a path further to the north (J546). The busiest routes for CZZY on VATSIM are between Toronto Pearson and Montreal, Ottawa and Chicago.

5-Toronto Terminal Control Area (TCA)

The Toronto Terminal Control Area (TCA) is that airspace within a 26 mile radius of the Toronto VOR from the ground, up to and including FL230. The architecture of the TCA is based on the 'hub and spoke' concept with 11 of the YYZ radials utilized as either an inbound or an outbound Victor Airway. For VATSIM purposes, the TCA airspace is controlled by either the Toronto Arrival (Approach) controller, Toronto Departure controller or both at the same time. In reality there is a more detailed sectorization within the terminal airspace for control of the traffic into and out of Toronto City Centre (CYTZ), Buttonville (CYKZ) and Kitchener-Waterloo (CYKF) airports. This sectorization will not be simulated on VATSIM in order to keep the airspace as simple as possible.

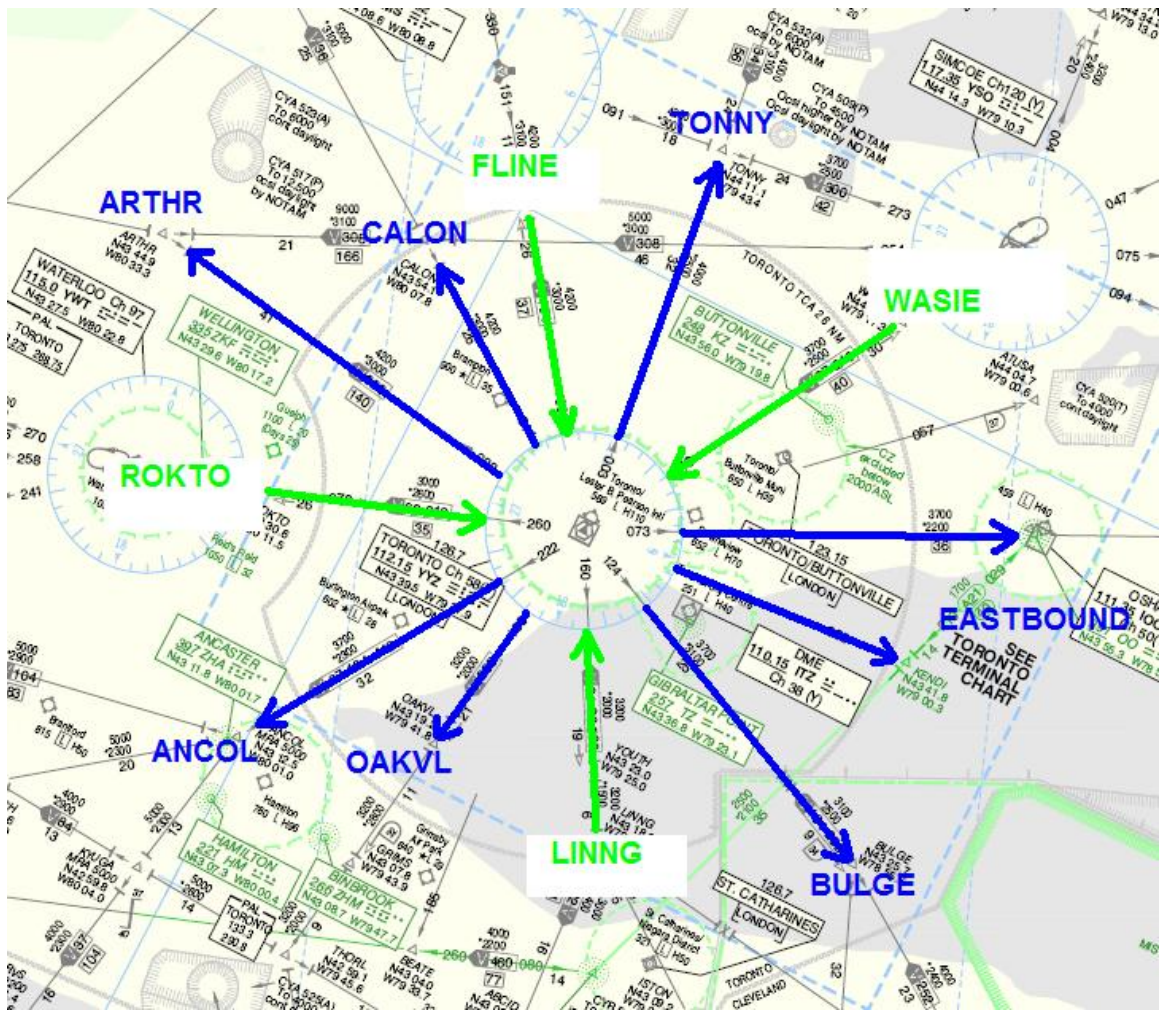
6- CYYZ Arrival Routes

Four Victor airways from YYZ VOR are designated as arrival routes. By having specific arrival routes to Toronto Pearson, inbound traffic can be channeled into the TCA by the Centre controller in an orderly manner to be transferred to the Arrival Controller. Three of the four 'bedposts' have a VOR associated with them. The bedposts, with their associated Victor Airway, VOR/fix and Terminal Entry Fix are:

North - YMS V164	(FLINE)	South – LINNG V36	(LINNG)
West – YWT V98	(ROKTO)	East – YSO V37	(WASIE)

The Arrival controller instructs each arriving aircraft to cross their applicable Terminal Entry fix at a specific altitude and speed. These fixes are located at the boundary of the TCA on one of the four Victor Airways.

Toronto Terminal Airspace Structure



7- CYYZ Departure Routes

Seven Victor airways from YYZ VOR are designated as departure routes. In addition to these seven routes, four other routes are used which are not Victor Airways. This makes a total of eleven standard outbound routes which can be filed to leave the TCA. Aircraft using these departure routes eliminate arrival/departure traffic conflicts and helps to simplify operations around Pearson.

The seven outbound Victor Airways, their associated radial and first fix:

1- V34	YYZ R-003	TONNY
2- V98-V104	YYZ R-073	OO
3- V252-V164	YYZ R-124	BULGE
4- V265	YYZ R-198	OAKVL
5- V443-V37-V104	YYZ R-222	ANCOL
6- V320	YYZ R-288	ARTHUR
7- V36	YYZ R-314	CALON

The four other routes for departing the TCA are categorized as 'Eastbound' and are classified together "V98 OO" making a total of five possible Eastbound routes.

- 1- **J594** via YYZ R-079 to MSS
- 2- **BEJAT** via YYZ R-081 and J595
- 3- **GOPEV** High Level RNAV fix
- 4- **KENDI** via YYZ R-095, on A21

8- Toronto Centre sectors

Enroute sectors

The Toronto Centre airspace when traffic dictates may be subdivided into two or more sectors. The first split of Toronto Centre airspace creates a sector in the southwest region of the FIR which encompasses YXU, YWT and YYZ VORs. This sector is referred to as the West sector. When the airspace is split into two, the remainder of the airspace is delegated to the East Centre controller. When the airspace is further split to create a third sector, the East controller's airspace becomes divided to create a North sector. These splits are in place for times of higher than normal traffic levels on VATSIM, or when there may be significant traffic operating around some of the more northern airports within the FIR such as YSB, YYB, YAM or YTS. In addition to the geographic splits possible the Toronto Centre airspace may also be split vertically into Low and High level sectors. At Toronto, the vertical split between Low and High level centre airspace occurs at FL230/FL240 however at this point in time there are no established HI or LO sectors.

Terminal Sectors

To provide pilots with the opportunity to receive local control at an airport other than Pearson, Terminal sectors have been established based at London and Hamilton. The sector around London is intended primarily for handling traffic into and out of CYXU, while the Hamilton Approach controller will work traffic into and out of both CYHM and CYKF.

