

# AERONAUTICAL INFORMATION CIRCULAR 2/17

## STANDARD INSTRUMENT DEPARTURE AND STANDARD TERMINAL ARRIVAL CHANGES

### About this circular

The International Civil Aviation Organization (ICAO) has developed new standard instrument departure (SID) / standard terminal arrival (STAR) phraseology, which is being implemented in Canada on 27 April 2017.

The intent of the new phraseology is to clarify expectations for air traffic control (ATC) and pilots. Use of the word VIA means that pilots must follow all charted altitude constraints and speed restrictions along the SID/STAR profile. With a VIA SID/STAR clearance, ATC will specify the altitude that a pilot is cleared to climb or descend to. When ATC assigns an altitude, the pilot climbs or descends to the ATC-assigned altitude. The use of a SID/STAR designator without a cleared altitude does not authorize a pilot to climb or descend on the SID/STAR vertical profile. For STARS, if the aircraft is level and cleared to descend VIA STAR, the pilot may start descent at the optimal top of descent.

Watch air traffic controller Mark Leblanc and Air Transat pilot Matthew Jackson discuss these changes in the NAV CANADA [video](#) “[New Phraseology for SIDs and STARS](#)” at the following website:

<<https://vimeo.com/185967957/12a87e0395>>

Read the full text of State Letter 54 Amendment 7 to PANS-ATM on the International Civil Aviation Organization (ICAO) website: [ICAO State Letter AN 13/2.1-16/54](#)

<[www.icao.int/airnavigation/sidstar](http://www.icao.int/airnavigation/sidstar)>  
State Letter 54 Amendment 7 to PANS-ATM

### Background

SIDs and STARS provide a safe and efficient way of prescribing a large amount of information through procedure design. Both depict the lateral profile of an instrument departure or arrival route and the altitude constraints and speed restrictions associated with it.

Over time, the benefits of SIDs and STARS have been eroded through the development of non-harmonized practices and inconsistencies in certain elements of SID/STAR phraseology. Consequently, air traffic services (ATS) and pilot expectations may be out of sync when SID/STAR phraseology is used, and certain terms misinterpreted. This presents a safety risk that requires a renewed effort to adopt harmonized SID/STAR phraseology.

To develop a common understanding, harmonized phraseology that is most likely to be implemented globally was drafted by ICAO. The established solution was designed to provide pilots with explicit direction regarding expected speed and altitude at all times. The new procedures rely on key phraseology (CLIMB VIA/DESCEND VIA) to indicate the altitude constraints and speed restrictions associated with a given procedure. Specific phraseology is introduced to instruct a pilot to cancel an altitude constraint and speed restriction, as well as to leave and rejoin a procedure.

## Benefits

These changes will:

- Provide core phraseology that positively reinforces that the lateral, vertical, and speed requirements embedded in a SID/STAR continue to apply, unless explicitly cancelled or amended by the controller.
- Enhance the understanding and consistency of the procedures, which will enable ATS and pilots to share similar expectations.

## Procedures

Upon implementation of the new SID/STAR procedures, assume the following:

- Unless a pilot is cleared direct to a waypoint, or specifically given a vector, the pilot must always comply with the lateral profile of the SID/STAR.
- When ATC assigns an altitude, the pilot must climb or descend to the ATC-assigned altitude and follow the guidance in this AIC regarding adherence to altitude constraints and speed restrictions.
- Before an aircraft can climb or descend on the SID/STAR vertical profile, ATC must clear it to an altitude.
- When no charted restrictions exist, or when no charted altitude constraints or speed restrictions remain on the SID/STAR, the phrase CLIMB TO (altitude) or DESCEND TO (altitude) will be used.
- When unable to meet a charted restriction, a pilot must inform ATC as soon as possible.

## Use of the Term VIA

Effective 27 April 2017, in Canadian airspace, CLIMB VIA and DESCEND VIA phraseology will indicate that pilots are to follow all charted restrictions on a SID/STAR procedure.

The term VIA will no longer be used when issuing lateral routing clearances.

VIA will still appear in controller-pilot data link communications (CPDLC) messages, but not in direct controller pilot communications (DCPC).

ATS will still use VIA in ground and taxi instructions.

## Core Phraseology

The following are the fundamental changes to current ATC clearances and ensuing pilot actions:

	ATC Clearance	Pilot Action
<b>Core Phraseology</b>	CLIMB VIA SID [TO] (altitude) <i>or</i> DESCEND VIA STAR [TO] (altitude)	<ul style="list-style-type: none"> <li>Follow the lateral profile of the procedure.</li> <li>Climb/descend to the cleared altitude in accordance with charted altitude constraints and speed restrictions.</li> </ul>
<b>Phraseology for removal of speed or altitude restrictions</b>	CLIMB VIA SID [TO] (altitude), CANCEL SPEED RESTRICTION(S) <i>or</i> DESCEND VIA STAR [TO] (altitude), CANCEL ALTITUDE RESTRICTION(s) AT (point(s))	<ul style="list-style-type: none"> <li>The lateral profile of the procedure continues to apply.</li> <li>Altitude constraints or speed restrictions that have not been referred to will continue to apply.</li> </ul>
<b>Phraseology for variations to lateral profile of the SID/STAR</b>	PROCEED DIRECT (waypoint) <i>or</i> VECTORIZING	<ul style="list-style-type: none"> <li>Altitude constraints and speed restrictions associated with the bypassed waypoints are cancelled.</li> </ul>
<b>Phraseology to return to SID/STAR</b>	PROCEED DIRECT (waypoint) ON COURSE <i>or</i> REJOIN SID/STAR	<ul style="list-style-type: none"> <li>Altitude constraints and speed restrictions associated with the waypoint where the rejoin occurs, as well as those associated with all subsequent waypoints, must be complied with.</li> </ul>

### Readbacks

If cleared VIA a SID/STAR, inform ATC on initial contact. CLIMB VIA and DESCEND VIA clearances must be read back.

### Speed

When an ATC speed restriction is assigned to a pilot, followed by DESCEND VIA STAR, the speed restrictions on the STAR are to be disregarded (pilots must still follow Canadian Aviation Regulations with respect to speed).

### Resume normal speed

To cancel an ATC-assigned speed restriction, ATC will inform the pilot to RESUME NORMAL SPEED. This will ensure that upcoming speed restrictions on the SID/STAR will be adhered to. When applicable, normal speed implies "published" speeds.

## **Cancelling Altitude Constraints and Speed Restrictions**

Use of the term VIA includes both speed and altitude. To cancel both altitude constraints and speed restrictions for an aircraft on a SID/STAR, ATC will use either of the following options:

- CLIMB/DESCEND UNRESTRICTED [TO] (altitude)
- CLIMB/DESCEND [TO] (altitude) SPEED AND ALTITUDE RESTRICTIONS CANCELLED

### **Proceed Direct**

If ATC clears a pilot to PROCEED DIRECT to a point further along on the SID/STAR, all altitude constraints and speed restrictions at the bypassed points are cancelled. The pilot is to conform to the altitude constraints and speed restrictions at the cleared waypoint, and at any downstream points.

### **Vectors**

As is the practice today, when ATC initiates vectors, a reason must be provided. All altitude constraints and speed restrictions related to that SID/STAR are cancelled. When initiating vectors, ATC must now restate the cleared altitude, along with any required altitude constraints and speed restrictions. If ATC vectors the pilot off a SID/STAR, they will indicate if they anticipate that the pilot will re-intercept the SID/STAR, and of the point at which the pilot should expect to re-intercept the SID/STAR.

### **Re-intercept**

If ATC has removed an aircraft from a SID/STAR without advising the pilot to plan a re-intercept, ATC will state the name of the SID/STAR in the subsequent clearance. ATC will also restate the cleared altitude, and the position at which the pilot is to re-intercept the procedure.

## **Changes in SID Phraseology**

CLIMB VIA will be used only with SIDs that have charted altitude constraints, speed restrictions, or both. The new phraseology, CLIMB VIA SID, indicates that the pilot must comply with all charted speed and altitude restrictions on the SID.

### **Altitude Assignment**

ATS will always specify an altitude in conjunction with a departure clearance. This is a new part of the new phraseology standard, and affects all SID departures.

### **Initial Clearance**

ATC must now include an altitude with a departure clearance. The word VIA will no longer be used in conjunction with the route portion of the clearance.

### **Cancelled restrictions**

If ATC does not require the pilot to comply with restrictions on the SID, those restrictions will be specifically cancelled.

## Changes in STAR Phraseology

ATC will use this phraseology at all times, starting with the initial descent clearance, provided that subsequent charted altitude constraints or speed restrictions exist along the remaining route of flight, and the pilot is cleared to descend on the STAR. Once the pilot has passed the last charted altitude constraint or speed restriction on the STAR, ATC is no longer required to use the new phraseology. If ATC cancels any STAR restrictions, new phraseology must be used to communicate with the pilot.

### Transition Change

When ATC needs to change the STAR transition, they will restate the STAR and transition name, waypoint, and routing as applicable. ATC will then use the phrase VIA STAR to confirm the descent clearance.

### When Ready

The phrase WHEN READY is implied in a DESCEND VIA clearance. When ATC clears the pilot VIA STAR, they are expected to start descent at the calculated top of descent and follow all charted restrictions on the STAR.

## Canada Air Pilot (CAP) Changes

Beginning in April 2017, the following textbox will be removed (in phases) from the CAP charts. VIA replaces this text:

- When a lower altitude is issued, pilots shall descend on the STAR profile to the ATC assigned altitude. Charted restrictions above the assigned altitude remain mandatory.

## Federal Aviation Administration (FAA) Differences

Canada will be among the first countries to adopt the new SID/STAR procedures. The United States has already adopted similar phraseology, with slight differences from ICAO.

These differences are of particular importance to Canada, due to our proximity to the US, as many of the pilots operating in our airspace also operate in US airspace. In some circumstances, pilots may be accustomed to US phraseology that could be misinterpreted here.

## Conclusion

Discrepancies in the application of existing SID/STAR procedures were identified as posing a threat to flight safety. Implementation of the new SID/STAR phraseology is deemed by the international community to be of the utmost importance for global harmonization and compliance with SID/STAR procedures. Canada's implementation on 27 April 2017 ensures compliance with these important safety changes.

## Expiry

This aeronautical information circular (AIC) will remain in effect until 27 April 2018.

## Further Information

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