

Climb Via/Descend Via Speed Clearances Frequently Asked Questions

Pilot/Controllers Procedures & Systems Integration
Work Group

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Introduction

The following guidance material was developed by the Pilot/Controller Procedures and Systems Integration (PCPSI) Work Group, sponsored by the Performance-Based Aviation Operations Rulemaking Committee (PARC), as a collaborative effort between the following aviation stakeholders:

Federal Aviation Administration

FAA Air Traffic Organization

FAA Flight Standards

National Air Traffic Controllers Association

National Business Aviation Association

MITRE CAASD

NASA

Air Line Pilots Association

US Airlines Pilots Association

Allied Pilots Association

Major and Regional Airline Operators

Aircraft Owners and Pilots Association

The material is intended to provide a quick reference to answer commonly asked questions related to phraseology and procedures for Climb Via, Descend Via and Speed Clearances.

The content in this document reflects the changes and additions to the AIM, Pilot/Controller Glossary and the Controllers Handbook effective April 3, 2014.

Please refer to the appropriate FAA documents and/or your company policy and training materials for further guidance.

REVISIONS

DATE	SECTION	Q#	OLD VERSION	NEW VERSION
28 FEB 14	Speed Clearances	3	<p>A. Maintain 280 KIAS until you are cleared to resume the STAR, or ATC issues a different speed to maintain.</p>	<p>A. The published speed is cancelled. Speed is at pilot's discretion unless ATC has assigned a speed.</p>
28 Feb 14	Speed Clearances	5	<p>A. In this case, you have passed the waypoint with the published speed restriction. You can accelerate up to 250 KIAS below 10,000 feet MSL. If you are re-cleared on the SID, comply with any published speeds, unless the controller advises you to "delete speed restrictions," or assigns you a speed to maintain.</p>	<p>A. The published speed is cancelled and speed is at pilot's discretion unless ATC has assigned a speed. You can accelerate up to 250 KIAS below 10,000 feet MSL. If you are re-cleared on the SID, comply with any published speeds, unless the controller advises you to "delete speed restrictions," or assigns you a speed to maintain.</p>

CLIMB VIA FAQ

1. Q. What does a “CLIMB VIA” clearance mean?

A. Comply with the lateral path of the SID
– Comply with all published speed restrictions
– Comply with all published altitude restrictions

2. Q. When could I receive a climb via clearance?

A. Either with your initial ATC departure clearance or as an airborne clearance.

3. Q. I receive Pre Departure Clearances (PDC). How will I know if I have received a climb via clearance?

A. The phrase “CLIMB VIA SID” will be included in the body of your PDC.

4. Q. I am cleared to climb via a SID with a charted “Top Altitude”. What altitude am I cleared to?

A. The charted “Top Altitude”, unless ATC assigns a different altitude.

5. Q. How do I determine what altitude to climb to if I receive a climb via clearance?

A. The clearance limit altitude, or ““Top Altitude”,” of the procedure will be included in the narrative of the chart, such as “MAINTAIN FL190”. You would climb to maintain that altitude while complying with all published restrictions.

6. Q. What if the SID does not have published restrictions or a published “Top Altitude”; what altitude will I climb to?

A. Your initial ATC clearance will contain “MAINTAIN” followed by the altitude to climb and maintain. (“*MAINTAIN 5000*”).

7. Q. I am cleared to “CLIMB VIA SID”, but the controller (or PDC) states “EXCEPT MAINTAIN” followed by an altitude. What altitude am I cleared to and do I have to comply with published altitude restrictions during my climb?

A. You are cleared to the altitude that ATC assigned and you must comply with all other altitude and speed restrictions unless explicitly cancelled by ATC. (“*CLIMB VIA SID, EXCEPT MAINTAIN NINE THOUSAND*”)

8. Q. I am cleared to “Climb Via SID”. What if there is a published altitude restriction at a fix that is higher than the charted “Top Altitude” ?

A. You are only cleared to the charted “Top Altitude” contained in the narrative of the procedure, unless ATC assigns a different altitude.

9. Q. What if I depart on a climb via clearance and later given a clearance to “Climb and Maintain” an altitude; should I comply with any published altitude restrictions?

A. NO. Unlike a “Climb Via” clearance, when cleared to “Climb and Maintain,” you are expected to vacate your current altitude and commence an unrestricted climb to comply with the clearance. For aircraft already climbing via a SID, published altitude restrictions are deleted unless re- issued by ATC. Speed restrictions remain in effect unless the controller explicitly cancels or amends the speed restrictions.

10. Q. I depart on a climb via clearance with a “Top Altitude” of 15,000 feet and the departure controller says “Climb via the (SID NAME) departure, EXCEPT MAINTAIN one three thousand.” Do I comply with any published altitude restrictions prior to reaching 13,000?

A. YES. All published restrictions, including speed, are mandatory.

11. Q. I’m on a climb via clearance and the controller vectors me off the procedure. Do I continue to “Climb Via?”

A. NO. You are laterally and vertically off of the procedure. The controller will issue an altitude to maintain and provide a further “expect” clearance. **Note: Request an altitude to maintain if the controller does not provide one.**

12. Q. What if I receive a “Cleared” or “Cleared Via” clearance; am I permitted to climb to meet any published altitudes?

A. NO. Only a “Climb Via” clearance gives you the vertical authorization to climb and comply with the published altitude restrictions. The other two examples are a “lateral” clearance. **Note: Compliance with published speed restrictions are required, unless canceled or modified by ATC.**

13. Q. What if there are “EXPECT” altitudes published on the SID?

A. Expect altitudes are for planning purposes only and you are not expected to comply with published “EXPECT” restrictions unless ATC has specifically instructed you to do so.

CLIMB VIA PHRASEOLOGY FAQ

1. Q. What do I say to the departure controller on initial contact if I have received a “CLIMB VIA SID” clearance from the Tower or PDC?

A. As you do today, report your flight number or aircraft identification, followed by your current altitude; then state “Climbing Via the (SID Name) departure.” **Note: You do not state the altitude you are climbing to, if you are climbing via the published “Top Altitude” of the procedure.**

2. Q. I received a “CLIMB VIA SID, EXCEPT MAINTAIN (Altitude)” clearance from the tower (or PDC). What do I say to the departure controller on initial contact?

A. As you do today, report your flight number or aircraft identification, followed by your current altitude; then state the altitude you’re climbing to, followed by “Climbing Via the (SID Name) departure. **Example: “November One, three thousand for one three thousand, climbing via the (SID Name) departure.” Note: The same phraseology applies when handed off to a new frequency, until you reach the assigned altitude, or have been cleared to “Climb and Maintain” a different altitude.**

NOTE: The use of correct phraseology will help reduce confusion and excessive communications.

DESCEND VIA FAQ

1. Q. What does a “DESCEND VIA” clearance mean?

A. Comply with the lateral path of the STAR
– Comply with all published speed restrictions
– Comply with all published altitude restrictions

2. Q. I am cleared to “DESCEND VIA” a STAR. What altitude am I cleared to?

A. The charted “Bottom Altitude” of the procedure, unless ATC assigns a different altitude.

3. Q. How do I determine the “Bottom Altitude” of the STAR?

A. It is the last published altitude on the STAR or STAR Runway Transition that you are assigned.

4. Q. If an instrument approach procedure connects to the STAR, are the instrument approach procedure altitudes part of the STAR?

A. NO. You must receive an appropriate approach clearance from ATC before descending below the bottom altitude of the STAR on a “Descend Via” clearance.

5. Q. Are MEAs/MOCAs considered “altitude restrictions” for “Descend Via” purposes?

A. NO. MEAs and MOCAs are not considered altitude restrictions for the purposes of a “Descend Via” clearance. Only “At,” “At or Above,” and “At or Below” and “Window” restrictions published at a waypoint/fix are considered altitude restrictions for the purposes of a “Descend Via” clearance. A Pilot should not descend to a segment MEA or MOCA when cleared to “Descend Via.”

6. Q. Should I begin an immediate descent when issued a “Descend Via” clearance?

A. You are permitted to descend at your discretion in order to meet the published restrictions. However, a premature descent could impact spacing with other arrivals and can reduce the potential fuel savings of flying the appropriate profile.

7. Q. Can ATC issue a “Descend Via” clearance for a STAR that does not have published crossing restrictions? Some STARS do not have crossing restrictions but only MEAs and or MOCAs.

A. A “Descend Via” clearance will not be used on a STAR that does not have published altitude restrictions.

8. Q. I am cleared to “descend via” a STAR, but the controller adds “EXCEPT MAINTAIN (*Altitude*).” What altitude am I cleared to and do I have to comply with published altitude restrictions during my descent?

A. You must comply with all published altitude and speed constraints until reaching the assigned altitude, unless explicitly cancelled by ATC.

9. Q. I'm on a descend via clearance and the controller vectors me off the procedure. Do I continue to "descend via?"

A. NO. You are laterally and vertically off of the procedure. The controller will issue an altitude to maintain and provide a further "expect" clearance. **Note: Request an altitude to maintain if the controller does not provide one.**

10. Q. What if there are "EXPECT" altitudes published on the STAR?

A. Expect altitudes are for planning purposes only, and you are not expected to comply with published "EXPECT" restrictions unless ATC has specifically instructed you to do so. ATC will not use "Descend Via" on STARs that contain only "EXPECT" restrictions. However, if the STAR contains a mix of "EXPECT" restrictions and published mandatory restrictions, ATC may use "Descend Via" if the aircraft has past the "EXPECT" restrictions or if they specifically assign a restriction for the "EXPECT" waypoint/fix with the "Descend Via" Clearance.

11. Q. What if I am given a clearance to "Descend and Maintain" an altitude?

A. Unlike a "Descend Via" clearance, when cleared to "Descend and Maintain", you are expected to vacate your current altitude and commence an unrestricted descent to comply with the clearance. For aircraft already descending via a STAR, published altitude restrictions are deleted unless re-issued by ATC. Speed restrictions remain in effect unless the controller explicitly cancels or amends the speed restrictions.

12. Q. What if I receive a "Cleared" or "Cleared Via" clearance; am I permitted to descend to meet any published altitudes?

A. NO. Only a "Descend Via" clearance gives you the vertical authorization. The other two examples are a "lateral" clearance. **Note: Compliance with published speed restrictions are required, unless canceled or modified by ATC.**

13. Q. I just received a descend via clearance from En Route ATC (ARTCC) which included "Runway 26 transition." Is that also my landing runway?

A. NO. ARTCC's cannot assign a landing runway. However, many issue the "runway transition" with the "Descend Via" clearance. The approach (TRACON) controller will assign the actual or expected landing runway.

14. Q. Will the assignment of a runway transition always include a runway number?

A. NO. You may receive a directional clearance such as "Landing North." Generally, chart notes would indicate the runway or runways that are associated with the "landing direction" runway transition. Again, the TRACON controller will assign the actual runway.

DESCEND VIA PHRASEOLOGY FAQ

1. Q. When a controller issues a “Descend Via” clearance, am I required to read it back?

A. YES. Reading back the descend via clearance, along with the name and number of the procedure (*BWILL TWO*), assures the controller you will comply with all restrictions and you are navigating on the correct procedure and version. Include the runway transition, if assigned.

2. Q. What phraseology do I use when handed off to the next frequency?

A. As you do today, report your flight number or aircraft identification, followed by your current altitude; then state “Descending Via the (*STAR Name & Number*) .” If you were issued a runway transition, include it as well (“*Landing South*” “*Runway Eight*” etc.) **Example:** “*Flight 222, Flight Level two three zero; descending via the (Star Name/Number) arrival, landing south*” **Note:** *You do not state the altitude you are descending to when descending via to the published “Bottom Altitude” of the procedure. Upon initial call to the approach controller, include the current ATIS designator.*

3.Q. I received a “Descend Via (*Procedure Name/Number*), EXCEPT MAINTAIN (*Altitude*)” clearance and read it back correctly. What do I say when I check in with the next controller?

A. As you do today, report your flight number or aircraft identification, followed by your current altitude; then state the altitude you’re descending to, followed by “Descending Via the (*STAR Name/Number*). **Example:** “*Flight 222, Flight Level two three zero for eight thousand; descending via the (Star Name/Number) arrival*”

NOTE: The use of correct phraseology will help reduce confusion and excessive communications.

SPEED CLEARANCES FAQ

1. Q. What does each of the following ATC instructions require?

“Resume Normal Speed”: Cancels ATC issued speed restrictions and instructs pilot to return to normal aircraft speed where no restrictions are published. This does not relieve the pilot of those speed restrictions which are applicable to 14 CFR Section 91.117.

“Comply With Speed Restrictions”: Requires aircraft joining or resuming a procedure to comply with published speed restrictions.

“Resume Published Speed”: Cancels ATC issued speed restrictions. Pilot is expected to comply with speeds published on the SID/STAR.

“Delete Speed Restrictions”: Cancels published speed restrictions.

2. Q. I am on an ATC assigned vector and have been issued a speed assignment. Subsequently, ATC clears me direct to a waypoint on a SID and instructs me to “Climb Via” SID. What speed do I maintain?

A. If the controller did not provide any additional “qualifying” instructions, such as “maintain two hundred fifty knots until (*WP Name*),” you may adjust speed at your discretion, but are required to comply with any upcoming speed restrictions.

3. Q. Just after crossing a speed restricted fix of 280 KT on a STAR, ATC assigns me a heading and altitude to maintain, what speed should I maintain?

A. The published speed is cancelled. Speed is at pilot’s discretion unless ATC has assigned a speed.

4. Q. What is 91.117?

A. Sec. 91.117 — Aircraft speed.

(a) Unless otherwise authorized by the Administrator, no person may operate an aircraft below 10,000 feet MSL at an indicated airspeed of more than 250 knots.

5. Q. Just after crossing a speed restricted fix of 230 KT on a SID, ATC assigns me a heading and altitude to maintain. However, what speed should I maintain?

A. In this case, you have passed the waypoint with the published speed restriction. You can accelerate up to 250 KIAS below 10,000 feet MSL. If you are re-cleared on the SID, comply with any published speeds, unless the controller advises you to “delete speed restrictions,” or assigns you a speed to maintain.

6. Q. I am established on a STAR. The controller clears me to “descend via” the STAR, followed by “maintain three hundred knots until ZUMBA.” ZUMBA has a published speed of 280 KTS. Do I cross ZUMBA at 300 KTS or the published 280 KTS?

A. In this scenario, the controller specifically wants you to cross ZUMBA at 300 KIAS. After ZUMBA, you are then expected to comply with any subsequent restrictions.

7. Q. I am on an ATC assigned vector and have been issued a heading and altitude to maintain. Subsequently, ATC clears me direct to a fix on a STAR, followed by “descend via” the STAR. The direct to fix has published altitude and speed restrictions. Do I need to comply with the speed restriction in addition to the published altitude at the fix?

A. YES. However, if the controller did not provide any additional “qualifying” instructions, such as “maintain three hundred knots until (*WP Name*),” you may adjust speed at your discretion; but are required to comply with speed restriction published at fix specified in the “direct-to” clearance along with any upcoming published speed restrictions.

8. Q. I am on a STAR in level flight. The controller instructs me to “maintain three zero zero knots.” Later, the controller clears me to “Descend Via” the STAR. I understand that I now have to comply with any published speeds on the STAR, but what speed do I maintain until the first constraint?

A. If the controller did not provide any additional “qualifying” instructions, such as “maintain three zero zero knots until (*WP Name*),” you may adjust speed at your discretion. However, you should not make excessive speed variations without advising ATC.

9. Q. ATC issues me a “descend via” clearance, followed by “maintain two - eight zero knots.” Does this cancel any upcoming speed restrictions?

A. YES. ATC expects you to maintain the assigned speed, until instructed to “resume published speeds” or “delete speed restrictions.” However, you are not relieved from complying with 14 CFR Section 91.117.

10. Q. I am “descending via” a STAR and the controller later instructs me to “maintain two five zero knots.” Subsequently, I am handed off to another frequency. There is a 210 KT speed restriction ahead. Should I plan to comply with it?

A. NO. A controller’s instructions to “maintain” a speed cancels any subsequent speeds. However, on initial contact, you should advise the controller you were assigned 250 KTS.

11. Q. I am currently flying a STAR (or SID) without published altitudes, but it does have a published speed restriction. Am I required to comply with it, even though the controller has not instructed me to do so?

A. YES. You are always required to comply with published speeds if the STAR (or SID) is part of your ATC clearance. As a reminder, published altitudes are not authorized unless you have received a “descend via” or “climb via” clearance.

12. Q. The procedure I am established on has an “EXPECT” speed . Should I comply with it?

A. NO. “EXPECT” speeds (and altitudes) are for planning purposes and are not required unless the ATC issues the speed.

13. Q. How do I comply with published speeds on a departure?

A. Think of each published speed restriction as a “DO NOT EXCEED” speed limit until you have crossed the associated waypoint. You may then accelerate so as not to exceed the next speed restriction (if applicable). After meeting the last published speed, accelerate per 91.117 and/or the appropriate speed profile for your aircraft.

14. Q. How should I comply with published speeds on a STAR?

A. Treat each published speed as a controller issuing you the speed at the waypoint associated with the speed restriction. ATC’s expectation is that you will decelerate at the appropriate distance, commensurate with normal aircraft deceleration characteristics, in order to cross the waypoint at the published speed. Ten knots of speed reduction per nautical mile is a general rule of thumb to use. It is **not expected** that the pilot will maintain speed until the last possible moment and then use all available deceleration devices to rapidly slow to meet the speed restriction.

15. Q. What if I cross a waypoint with a 280 KT restriction, followed by a 250 KT restriction 20 miles ahead. Can I begin slowing to 250 KIAS right after meeting the 280 KT restriction.

A. NO. Published speeds are generally used to provide predictable traffic flows for ATC. It is important for pilots to slow the aircraft a reasonable distance from the next restriction. Excessively early speed reductions can cause spacing compression and a potential loss of separation for controllers.

16. Q. The last published speed on the STAR is 210 KT. After I cross the speed restriction waypoint, can I go ahead and slow at my discretion?

A. NO. On a STAR, the last published speed is the same as a controller assigning you the speed. You should not decelerate until the controller has cleared you for an approach or authorized you to slow. You should always request a slower speed, if operating conditions dictate. **Note: Be cognizant of the 200 KT maximum speed permissible when operating below the floor of Class B Airspace – 14 CFR 91.117.**

17. Q. I’m established on the STAR. The en route controller (ARTCC) assigned me a Mach of .75. Later, I receive a “descend via” the STAR. Can I fly the speed I choose until the first published speed restriction?

A. YES. If the controller did not provide any additional “qualifying” instructions, such as “maintain Mach point seven-five until (WP Name),” you may adjust speed at your discretion; but are required to comply with any upcoming published speed restrictions. However, you should not make extensive speed variations without advising ATC.

18. Q. My company uses a FMS Cost Index as part of our fuel savings program. The descent speed for my aircraft Cost Index is 252 KIAS. I received a “descend via” clearance and the first published speed is 280 KT. Can I fly my Cost Index speed, since it doesn’t exceed the 280 KT published speed?

A. NO. All published speeds are mandatory, unless otherwise cleared by ATC. You must take the necessary actions to meet the published speed. ***Note: If the first published speed on the arrival is higher than your Cost Index descent speed, plan to transition to the published speed out of your Mach descent speed.***

19. Q. My company uses a descent speed of 290 KIAS for the aircraft I fly. The first published speed on the STAR is 270 KT. Can I use my company descent speed?

A. NO. You have to comply with all published speeds, unless otherwise cleared by ATC.

20. Q. My aircraft’s M_{MO}/V_{MO} (e.g. $V_{MO} = 250$ KIAS) is below a speed restriction published on the STAR (e.g. (WP Name) At 280 KT), or because of a MEL/CDL limitation, I am unable to comply with a speed restriction published on a STAR. Am I prohibited from flying the STAR?

A. NO. However, ATC may query you concerning the speed approaching the restriction. Advise the controller of the need to maintain the lower speed.

21. Q. The controller had issued a speed for me to maintain. Later, the controller says “resume normal speed.” Can I fly a speed at my discretion?

A. Yes, but a controller can only issue that clearance if you are **not** on a published portion of a procedure that contains speed restrictions. If there are published speeds, the correct clearance would be “delete speed restrictions” or “resume published speeds.”