



Agenda Item 2: SAM airspace optimisation

- a) PBN en route
- b) PBN in terminal areas
- c) PBN procedures

AMENDMENT TO BILINGUAL ATC PHRASEOLOGY IN DOCUMENT 4444

(Presented by the Secretariat)

SUMMARY	
<p>This working paper reviews the changes made to Doc 4444, PANS-ATM, as part of amendments 7-A and 7-B to the 15th edition, specifically regarding bilingual ATC phraseology. These changes in phraseology will have a major operational impact on air traffic services and aircraft operations. Accordingly, the States shall take the appropriate measures in relation to the changes made to the ICAO document. In such sense, two brochures are presented to be used as an example of instruction guide for the implementation.</p>	
References:	
<ul style="list-style-type: none">- SAM/IG/17 meeting report- Doc 4444, PANS-ATM Procedures for air navigation services – Air traffic management	
ICAO strategic objectives:	<ul style="list-style-type: none"><i>A - Safety</i><i>B – Air navigation capacity and efficiency</i><i>E – Environmental protection</i>

1. Background

1.1 On 1 March 2016, the Air Navigation Commission approved Amendment 7, which includes Amendments 7-A and 7-B to the 15th edition of the Procedures for Air Navigation Services – Air traffic management (PANS-ATM, Doc 4444). This amendment will become effective on 10 November 2016. Amendment 7 includes, *inter alia*, the following elements:

- a) Performance-based longitudinal and lateral separation minima and the climb and descent procedure (CDP) with automatic dependent surveillance-contract (ADS-C);
- b) Separation between departing and arriving aircraft that follow an area navigation (RNAV) or required navigation performance (RNP) route;
- c) Emergency descent procedures;
- d) The autonomous runway incursion warning system (ARIWS);
- e) Modification of the bilingual ATC phraseology;
- f) The enhanced global reporting format to assess and report runway surface conditions (effective in 2020).

2. Discussion

2.1 Regarding bilingual ATC phraseology, the amendment to Doc 4444 incorporates significant changes that must be known to the personnel involved in air-ground communications, whether air traffic controllers or flight crew members.

2.2 Use of a standard bilingual phraseology is one of the elements that States must ensure in all operations in the airspace under their responsibility. Non-standard phraseology is a latent element that could have a negative impact on safety.

2.3 Taking into account the importance of using standard ATC phraseology, the civil aviation authorities of the Region must take the appropriate measures to inform users of the airspace under their responsibility about the changes made to aeronautical phraseology, as part of the amendment to Doc 4444. Among other measures, the States could publish an AIC with the modifications made to ATC phraseology, specifying the date in which they will become effective within the services provided in the airspace under their responsibility. Likewise, a NOTAM could be issued informing of the date of effectiveness of the change in phraseology.

2.4 As part of the measures, the States must make sure that ATS service providers and airspace users, as well as airlines, general aviation and any other party involved in airspace operations, amend the relevant documents to incorporate the changes to bilingual ATC phraseology.

2.5 Among the measures that should be implemented by air traffic service providers and airspace users is getting the appropriate personnel (air traffic controllers and pilots) acquainted with the changes made to bilingual ATC phraseology.

2.6 **Appendices A and B** to this working paper contain brochures to assist in the understanding for the application of the changes made to bilingual ATC phraseology. Amendments 7-A and 7-B to the 15th Edition of Doc. 4444 can be accessed at following link:

http://www2010.icao.int/SAM/Pages/ES/MeetingsDocumentation_ES.aspx?m=2016-SAMIG18

3. Suggested action

3.1 The Meeting is invited to:

- a) analyse this working paper; and
- b) take action as it may deem necessary with respect to the changes made to Doc 4444 and the required ATCOs training.

APPENDIX A

SID/STAR SCENARIO

PHRASEOLOGY EXAMPLES

Summary of phraseologies to be applied when issuing or receiving an ATC clearance on a SID or STAR with charted restrictions.

SID/STAR SCENARIO

Phraseology examples

ICAO – ATMOPS PANEL

Introduction

The amendment to SID and STAR procedures addresses the difficulties reported by a number of States, air navigation services providers and aircraft operators on the application of existing PANS provisions, most notably with the issue of the applicability of published level or speed restrictions.

The established solution was designed to provide aircraft with explicit indications with regard to what is expected in terms of speed and level at all times.

The new procedures rely on the use of key phraseologies (CLIMB VIA / DESCEND VIA) to explicitly indicate to flight crews if they should abide by speed and level restrictions associated to a given procedure.

Specific phraseology is introduced to instruct an aircraft to cancel level and procedure speed restrictions, as well as to instruct an aircraft to leave and rejoin a procedure.

Considerations

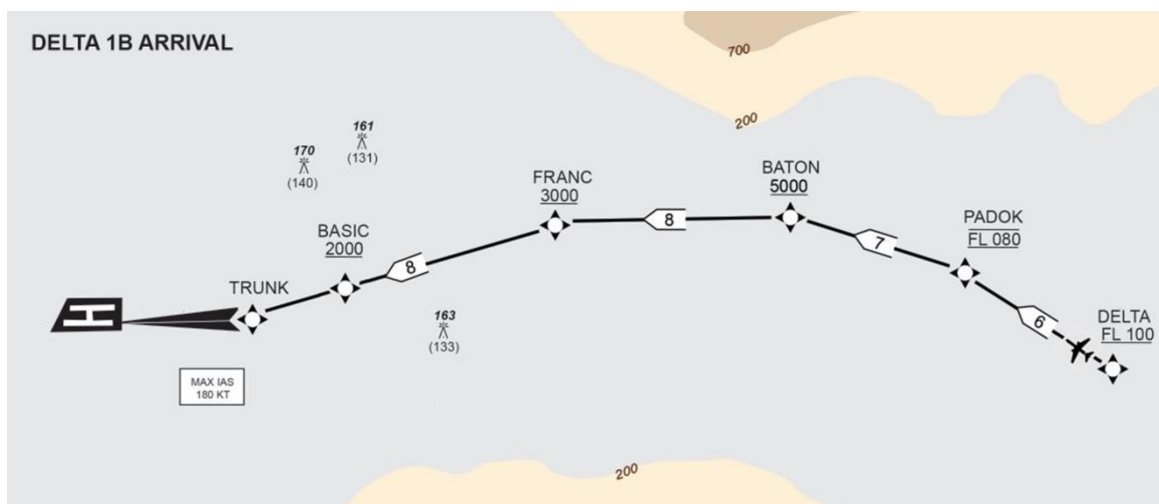
The following information must be considered, and is not expressed in the scenario examples for brevity:

- Unless an aircraft is cleared direct a point, or specifically given a vector, the flight crew must always comply with the lateral profile of the SID/STAR.
- When ATC assigns an altitude the aircraft must always climb or descend to the ATC assigned altitude.
- The use of a SID or STAR designator without a cleared level does not authorize the aircraft to climb or descend on the SID or STAR vertical profile. (PANS-ATM 6.3.2.3 Note 2 and 6.5.2.3 Note 2)
- In the event that a flight crew assesses that a published restriction cannot be met, they must inform ATC as soon as possible.
- The scenarios are designed for SIDs and STARs with charted restrictions. When no charted restrictions exists or when there are no remaining published or remaining level or speed restrictions on the SID or STAR, the phrase CLIMB TO *(level)* or DESCEND TO *(level)* should be used.
- **For terrain clearance responsibilities refer to PANS-ATM, para. 8.6.5.2.**

Clearances via a STAR

SID/STAR SCENARIO

STAR Scenario 1: descent via a STAR with charted restrictions



Context: FASTAIR 345 has previously been cleared to descend via STAR DELTA 1B to FL 080 and complying with the charted restrictions.

ATC clearance and pilot read back

ATC	<i>"FASTAIR 345 DESCEND VIA STAR TO 3 000 FEET"</i>
Pilot	<i>"DESCEND VIA STAR TO 3 000 FEET FASTAIR 345"</i>

Pilot anticipated action

FASTAIR 345 will descend to 3 000 feet and comply with all the speed and level restrictions at or above 3 000 feet.

Doc 4444 - PANS-ATM reference

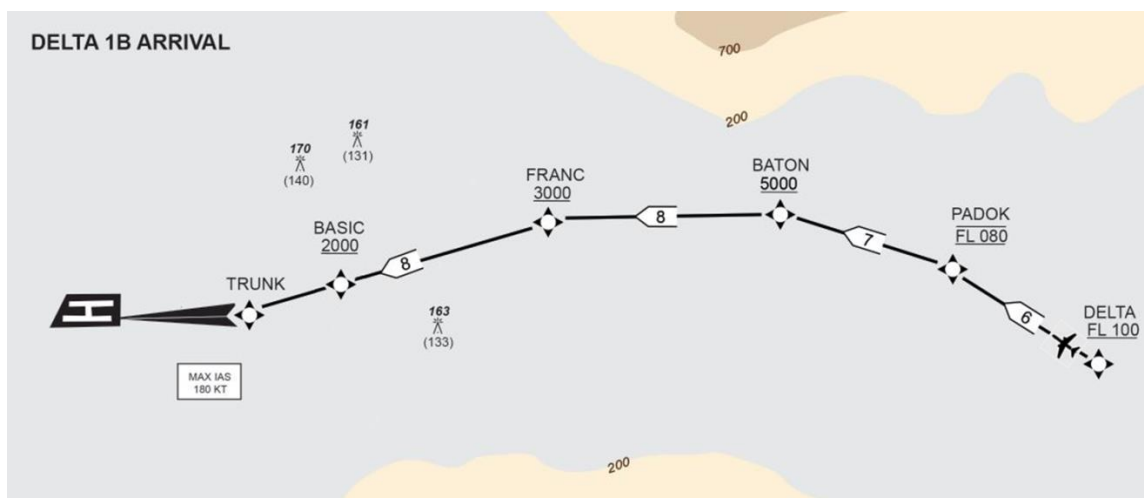
6.5.2.4.1 Clearances to aircraft on a STAR with remaining published, level and/or speed restrictions shall indicate if such restrictions are to be followed or are cancelled. The following phraseologies shall be used with the following meaning:

- a) DESCEND VIA STAR TO (*level*):
 - i) descend to the cleared level and comply with published level restrictions;
 - ii) follow the lateral profile of the STAR; and
 - iii) comply with published speed restrictions or ATC-issued speed control instructions as applicable.

[...]

SID/STAR SCENARIO

STAR Scenario 2: descent when ready via a STAR with charted restrictions



Context: FASTAIR 345 has previously been cleared to descend via STAR DELTA 1B to FL 080 and complying with the charted restrictions.

ATC clearance and pilot read back

ATC	"FASTAIR 345 WHEN READY, DESCEND VIA STAR TO 5 000 FEET"
Pilot	"WHEN READY DESCEND VIA STAR TO 5 000 FEET FASTAIR 345"

Subsequently...

ATC	"FASTAIR 345 DESCEND VIA STAR TO 3 000 FEET"
Pilot	"DESCEND VIA STAR TO 3 000 FEET FASTAIR 345"

Pilot anticipated action

FASTAIR 345 will descend to 5 000 feet when ready while complying with all the speed and level restrictions at 5 000 feet or above. Subsequently, FASTAIR 345 will descend to 3 000 feet and comply with all the speed and level restrictions at or above 3 000 feet.

Doc 4444 - PANS-ATM reference

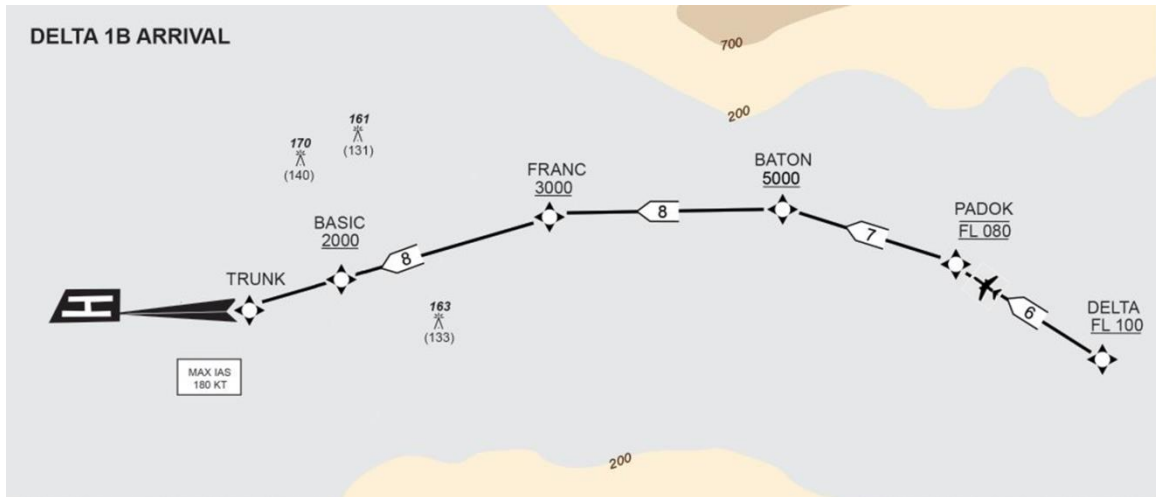
6.5.2.4.1 Clearances to aircraft on a STAR with remaining published, level and/or speed restrictions shall indicate if such restrictions are to be followed or are cancelled. The following phraseologies shall be used with the following meaning:

- a) DESCEND VIA STAR TO (*level*):
 - i) descend to the cleared level and comply with published level restrictions;
 - ii) follow the lateral profile of the STAR; and
 - iii) comply with published speed restrictions or ATC-issued speed control instructions as applicable.

[...]

SID/STAR SCENARIO

STAR Scenario 3: descent via a STAR – tactical cancellation of a speed restriction



Context: FASTAIR 345 has previously been cleared to descend via STAR DELTA 1B to FL 080 and complying with the charted restrictions.

ATC clearance and pilot read back

ATC	"FASTAIR 345 DESCEND VIA STAR TO 2 000 FEET CANCEL SPEED RESTRICTION AT TRUNK"
Pilot	"DESCEND VIA STAR TO 2 000 FEET CANCEL SPEED RESTRICTION AT TRUNK FASTAIR 345"

Pilot anticipated action

FASTAIR 345 will descend to 2 000 feet while complying with all the restrictions on the STAR, with the exception of the SPEED restriction at TRUNK.

Doc 4444 - PANS-ATM reference

6.5.2.4.1 Clearances to aircraft on a STAR with remaining published, level and/or speed restrictions shall indicate if such restrictions are to be followed or are cancelled. The following phraseologies shall be used with the following meaning:

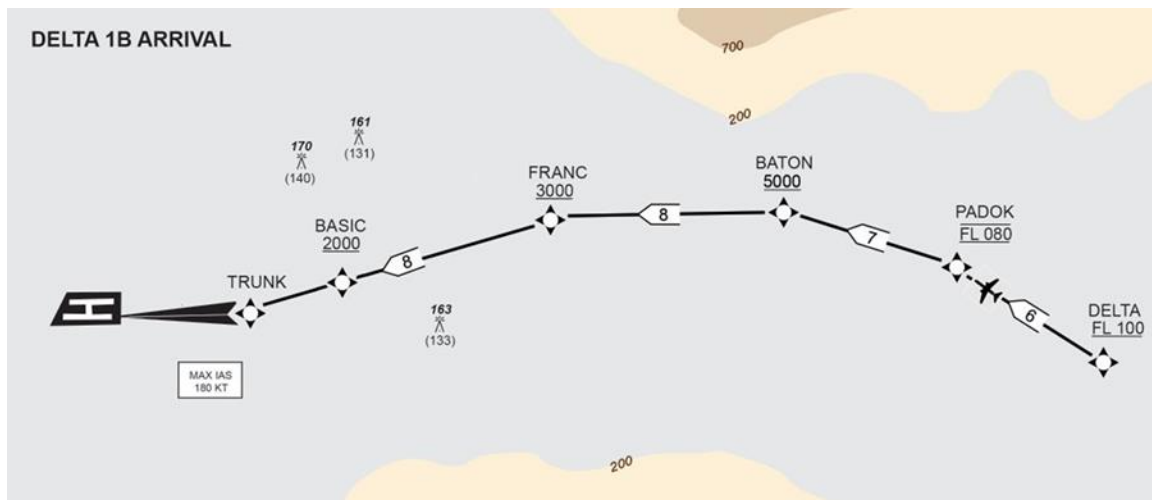
[...]

- e) DESCEND VIA STAR TO (level), CANCEL SPEED RESTRICTION(S) AT (*point(s)*):
 - i) descend to the cleared level and comply with published level restrictions;
 - ii) follow the lateral profile of the STAR; and
 - iii) published speed restrictions are cancelled at the specified point(s).

[...]

SID/STAR SCENARIO

STAR Scenario 4: descent via a STAR – tactical cancellation of a level restriction



Context: FASTAIR 345 has previously been cleared to descend via STAR DELTA 1B to FL 080 and complying with the charted restrictions.

ATC clearance and pilot read back

ATC	"FASTAIR 345 DESCEND VIA STAR TO 2 000 FEET CANCEL LEVEL RESTRICTION AT BATON"
Pilot	"DESCEND VIA STAR TO 2 000 FEET CANCEL LEVEL RESTRICTION AT BATON FASTAIR 345"

Pilot anticipated action

FASTAIR 345 will descend to 2 000 feet while complying with all the restrictions on the STAR, with the exception of the LEVEL restriction at BATON.

Doc 4444 - PANS-ATM reference

6.5.2.4.1 Clearances to aircraft on a STAR with remaining published, level and/or speed restrictions shall indicate if such restrictions are to be followed or are cancelled. The following phraseologies shall be used with the following meaning:

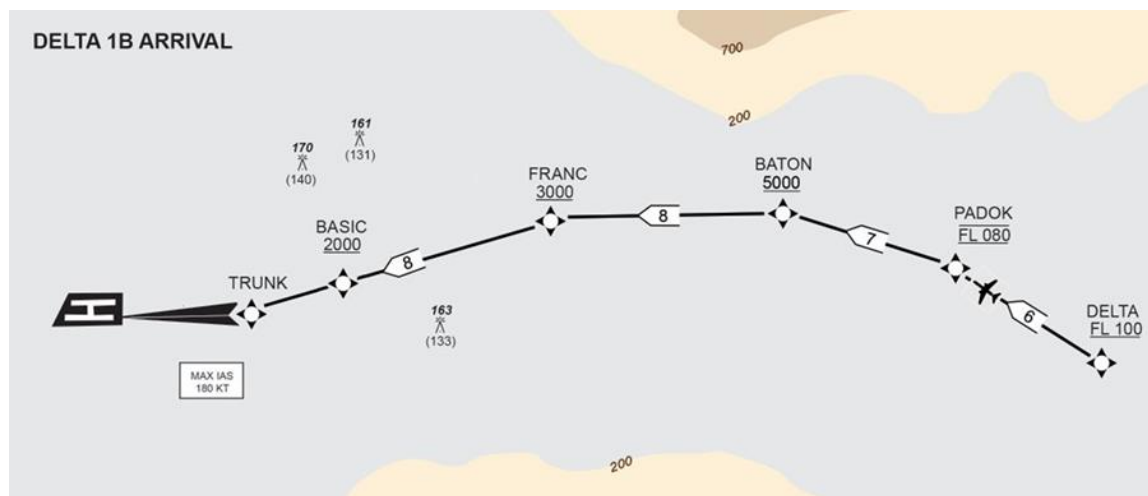
[...]

- c) DESCEND VIA STAR TO *(level)*, CANCEL LEVEL RESTRICTION(S) AT *(point(s))*:
 - i) descend to the cleared level, published level restriction(s) at the specified point(s) are cancelled;
 - ii) follow the lateral profile of the STAR; and
 - iii) comply with published speed restrictions or ATC-issued speed control instructions as applicable.

[...]

SID/STAR SCENARIO

STAR Scenario 5: descent via a STAR – cancellation of all restrictions above the cleared level



Context: FASTAIR 345 has previously been cleared to descend via STAR DELTA 1B to FL 080 and complying with the charted restrictions.

ATC clearance and pilot read back

ATC	"FASTAIR 345 DESCEND UNRESTRICTED TO 4 000 FEET" or "FASTAIR 345 DESCEND TO 4 000 FEET CANCEL LEVEL AND SPEED RESTRICTIONS"
Pilot	"DESCEND UNRESTRICTED TO 4 000 FEET FASTAIR 345" or "DESCEND TO 4 000 FEET CANCEL LEVEL AND SPEED RESTRICTIONS FASTAIR 345"

Subsequently...

ATC	"FASTAIR 345 DESCEND VIA STAR TO 3 000 FEET"
Pilot	"DESCEND VIA STAR TO 3 000 FEET FASTAIR 345"

Pilot anticipated action

FASTAIR 345 will descend unrestricted to 4 000 feet and is not required to meet the level and speed restrictions above 4 000 feet.

Subsequently, FASTAIR 345 will descend to 3 000 feet while complying with all the STAR restrictions at and after FRANC.

Doc 4444 - PANS-ATM reference

6.5.2.4.1 Clearances to aircraft on a STAR with remaining published, level and/or speed restrictions shall indicate if such restrictions are to be followed or are cancelled. The following phraseologies shall be used with the following meaning:

[...]

SID/STAR SCENARIO

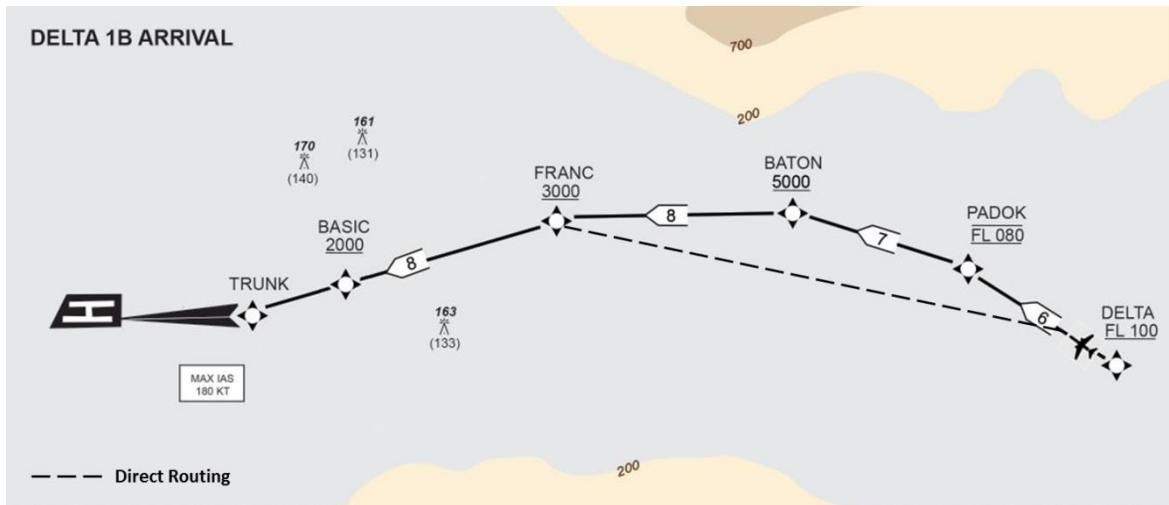
f) DESCEND UNRESTRICTED TO *(level)* or DESCEND TO *(level)*, CANCEL LEVEL AND SPEED RESTRICTION(S):

- i) descend to the cleared level, published level restrictions are cancelled;
- ii) follow the lateral profile of the STAR; and
- iii) published speed restrictions and ATC-issued speed control instructions are cancelled.

[...]

SID/STAR SCENARIO

STAR Scenario 6: proceeding direct to a point on STAR



Context: FASTAIR 345 has previously been cleared to descend via STAR DELTA 1B to FL 080 and complying with the charted restrictions.

ATC clearance and pilot read back

ATC	<i>"FASTAIR 345 PROCEED DIRECT FRANC DESCEND VIA STAR TO 3 000 FEET"</i>
Pilot	<i>"PROCEED DIRECT FRANC DESCEND VIA STAR TO 3 000 FEET FASTAIR 345"</i>

Pilot anticipated action

FASTAIR 345 will proceed direct to FRANC and descend to 3 000 feet. FASTAIR 345 is not required to comply with the published level or speed restrictions at waypoints being bypassed.

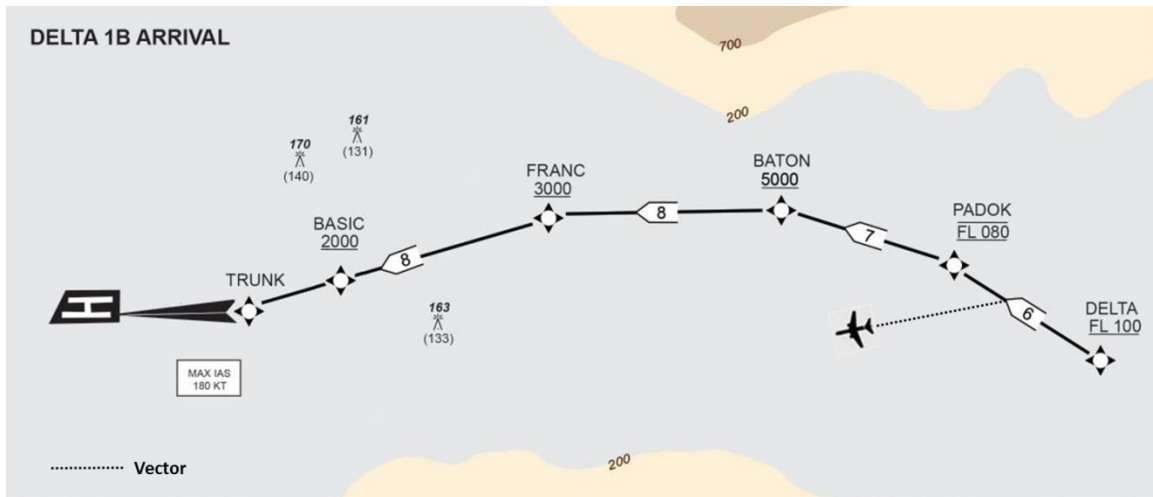
FASTAIR 345 must however comply with all published level and speed restrictions at and after FRANC.

Doc 4444 - PANS-ATM references

6.5.2.4.4 When an arriving aircraft is cleared to proceed direct to a published waypoint on the STAR, the speed and level restrictions associated with the bypassed waypoints are cancelled. All remaining published speed and level restrictions shall remain applicable.

SID/STAR SCENARIO

STAR Scenario 7: vector flight off a STAR



Context: FASTAIR 345 has previously been cleared to descend via STAR DELTA 1B to FL 080 and ATC vectors FASTAIR 345 off the STAR. ATC intends that FASTAIR 345 will rejoin the STAR.

ATC clearance and pilot read back

ATC	<i>"FASTAIR 345 TURN LEFT HEADING 2-6-0 DUE TRAFFIC DESCEND TO 5 000 FEET EXPECT TO REJOIN STAR AT FRANC"</i>
Pilot	<i>"TURN LEFT HEADING 2-6-0 DESCEND TO 5 000 FEET FASTAIR 345"</i>

Pilot anticipated action

FASTAIR 345 will turn left heading 260° and descend to 5 000 feet. All the STAR restrictions are cancelled. The pilot will retain the STAR in the FMS for future rejoin instructions.

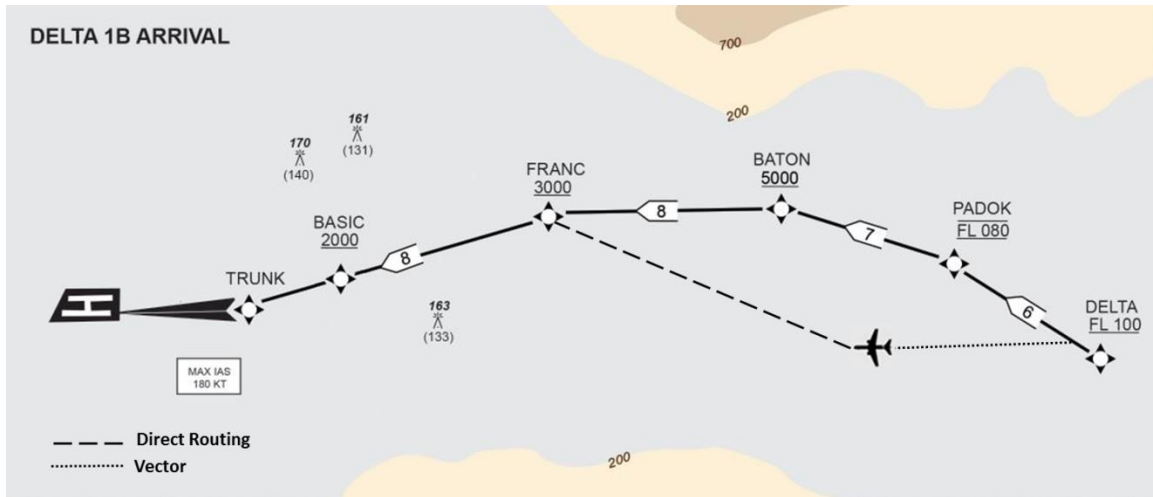
Doc 4444 - PANS-ATM reference

6.5.2.4.5 When an arriving aircraft is vectored or cleared to proceed to a point that is not on the STAR, all the published speed and level restrictions of the STAR are cancelled and the controller shall:

- reiterate the cleared level;
- provide speed and level restrictions as necessary and;
- notify the pilot if it is expected that the aircraft will be instructed to subsequently rejoin the STAR.

SID/STAR SCENARIO

STAR Scenario 8: STAR REJOIN instruction when prior notice has not been issued



Context: FASTAIR 345 has previously been cleared to descend via STAR DELTA 1B to FL 080 and complying with the charted restrictions.

ATC clearance and pilot read back

ATC	"FASTAIR 345 TURN LEFT HEADING 2-7-0 DUE TRAFFIC DESCEND TO 5 000 FEET"
Pilot	"TURN LEFT HEADING 2-7-0 DESCEND TO 5 000 FEET FASTAIR 345"

Pilot anticipated action

FASTAIR 345 will turn left heading 270° and descend to 5 000 feet. All the STAR restrictions are cancelled.

Subsequently...

Context: FASTAIR 345 was vectored off the STAR and was not advised to expect to rejoin DELTA 1B Arrival. FASTAIR 345 is currently flying on heading 270° and descending to 5 000 feet when ATC instructs FASTAIR 345 to rejoin STAR DELTA 1B at FRANC.

ATC clearance and pilot read back

ATC	"FASTAIR 345 PROCEED DIRECT FRANC REJOIN <u>DELTA 1B ARRIVAL</u> DESCEND VIA STAR TO 2 000 FEET"
Pilot	"PROCEED DIRECT FRANC REJOIN <u>DELTA 1B ARRIVAL</u> DESCEND VIA STAR TO 2 000 FEET FASTAIR 345"

SID/STAR SCENARIO

Pilot anticipated action

FASTAIR 345 will descend to 3 000 feet, proceed direct to FRANC to REJOIN DELTA 1B Arrival and comply with the published level and speed restrictions at and after FRANC. Complying with the restrictions, FASTAIR 345 will descend to 2 000 feet **after** FRANC.

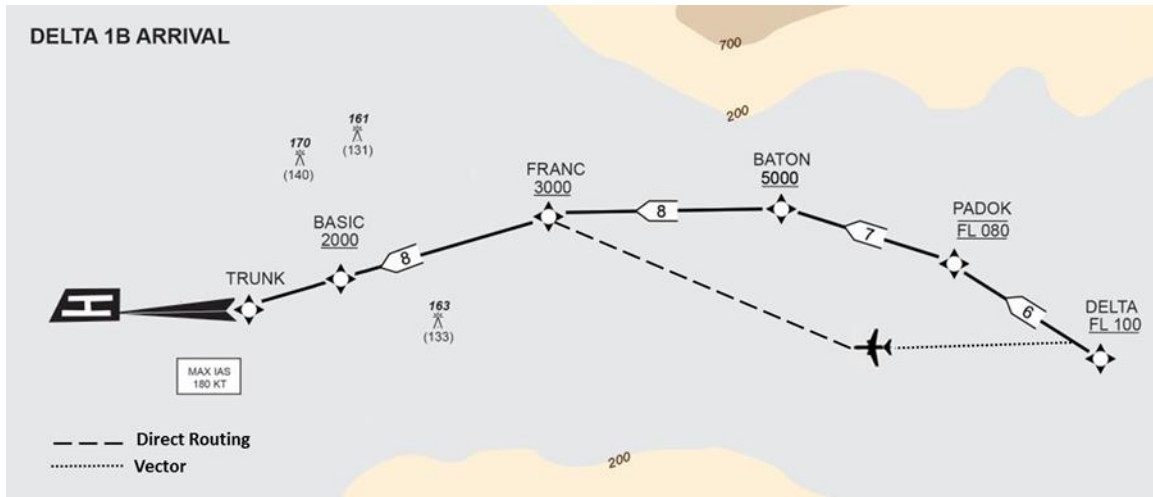
Doc 4444 - PANS-ATM reference

6.5.2.4.6 ATC instructions to an aircraft to rejoin a STAR shall include:

- a) the designator of the STAR to be rejoined, unless advance notification of rejoin has been provided in accordance with 6.5.2.4.5;
- b) the cleared level on rejoining the STAR in accordance with 6.5.2.4.1; and
- c) the position at which it is expected to rejoin the STAR.

SID/STAR SCENARIO

STAR Scenario 9: STAR REJOIN instructions when prior notice has been issued



Context: FASTAIR 345 has previously been cleared to descend via STAR DELTA 1B to FL 080 and complying with the charted restrictions.

ATC clearance and pilot read back

ATC	"FASTAIR 345 DUE TRAFFIC TURN LEFT HEADING 2-7-0 EXPECT TO REJOIN STAR"
Pilot	"TURN LEFT HEADING 2-7-0 FASTAIR 345"

Pilot anticipated action

FASTAIR 345 will turn left heading 270° and descend to 5 000 feet. All the STAR restrictions are cancelled.

Subsequently...

Context: FASTAIR 345 was vectored off the STAR, and was advised to expect to rejoin STAR. FASTAIR 345 is currently flying on heading 270° and descending to 5 000 feet when ATC instructs FASTAIR 345 to rejoin STAR at FRANC.

ATC clearance and pilot read back

ATC	"FASTAIR 345 PROCEED DIRECT FRANC REJOIN STAR DESCEND VIA STAR TO 2 000 FEET"
Pilot	"PROCEED DIRECT FRANC REJOIN STAR DESCEND VIA STAR TO 2 000 FEET FASTAIR 345"

Pilot anticipated action

FASTAIR 345 will descend to 3 000 feet, proceed direct to FRANC to REJOIN STAR and comply with the published level and speed restrictions at and after FRANC. Complying with the restrictions, FASTAIR 345 will descend to 2 000 feet **after** FRANC.

Doc 4444 - PANS-ATM reference

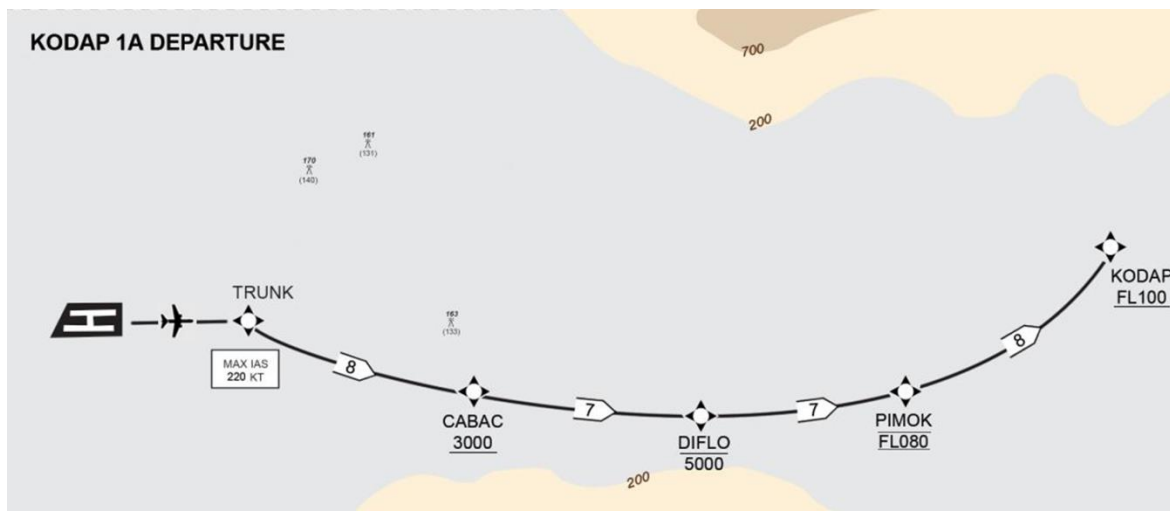
6.5.2.4.6 ATC instructions to an aircraft to rejoin a STAR shall include:

- a) the designator of the STAR to be rejoined, unless advance notification of rejoin has been provided in accordance with 6.5.2.4.5;
- b) the cleared level on rejoining the STAR in accordance with 6.5.2.4.1; and
- c) the position at which it is expected to rejoin the STAR.

Clearances on a SID

SID/STAR SCENARIO

SID Scenario 1: climb on a SID with charted restrictions



Context: FASTAIR 345 has been provided with ATC clearance and assigned SID KODAP 1A. FASTAIR 345 is airborne and climbing via SID to 5 000 feet.

ATC clearance and pilot read back

ATC	"FASTAIR 345 CLIMB VIA SID TO FL 100"
Pilot	"CLIMB VIA SID TO FL 100 FASTAIR 345"

Pilot anticipated action

FASTAIR 345 will climb to FL 100 and comply with all the published speed and level restrictions at or below FL 100.

Doc 4444 - PANS-ATM reference

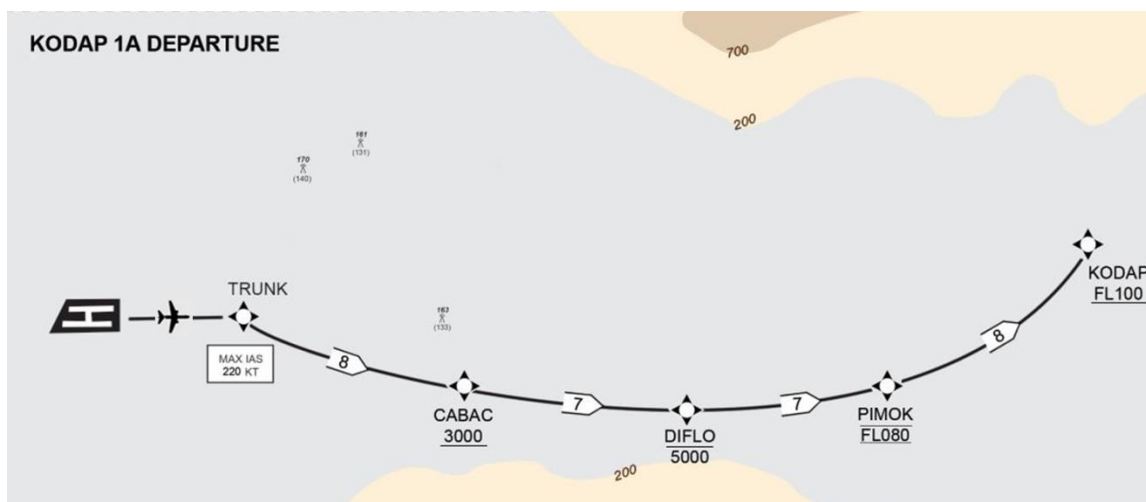
6.3.2.4.1 Clearances to aircraft on a SID with remaining published level and/or speed restrictions shall indicate if such restrictions are to be followed or are cancelled. The following phraseologies shall be used with the following meanings:

- a) CLIMB VIA SID TO (*level*):
 - i) climb to the cleared level and comply with published level restrictions;
 - ii) follow the lateral profile of the SID; and
 - iii) comply with published speed restrictions or ATC-issued speed control instructions as applicable.

[...]

SID/STAR SCENARIO

SID Scenario 2: climb on a SID – tactical cancellation of a speed restriction



Context: FASTAIR 345 has been provided with ATC clearance and assigned SID KODAP 1A. FASTAIR 345 is airborne and climbing via SID to 5 000 feet.

ATC clearance and pilot read back

ATC	<i>"FASTAIR 345 CLIMB VIA SID TO FL 080 CANCEL SPEED RESTRICTION AT TRUNK"</i>
Pilot	<i>"CLIMB VIA SID TO FL 080 CANCEL SPEED RESTRICTION AT TRUNK FASTAIR 345"</i>

Pilot anticipated action

FASTAIR 345 will climb to FL 080 while complying with all the restrictions on the SID at or below FL 080, with the exception of the SPEED restriction at TRUNK.

Doc 4444 - PANS-ATM reference

6.3.2.4.1 Clearances to aircraft on a SID with remaining published level and/or speed restrictions shall indicate if such restrictions are to be followed or are cancelled. The following phraseologies shall be used with the following meanings:

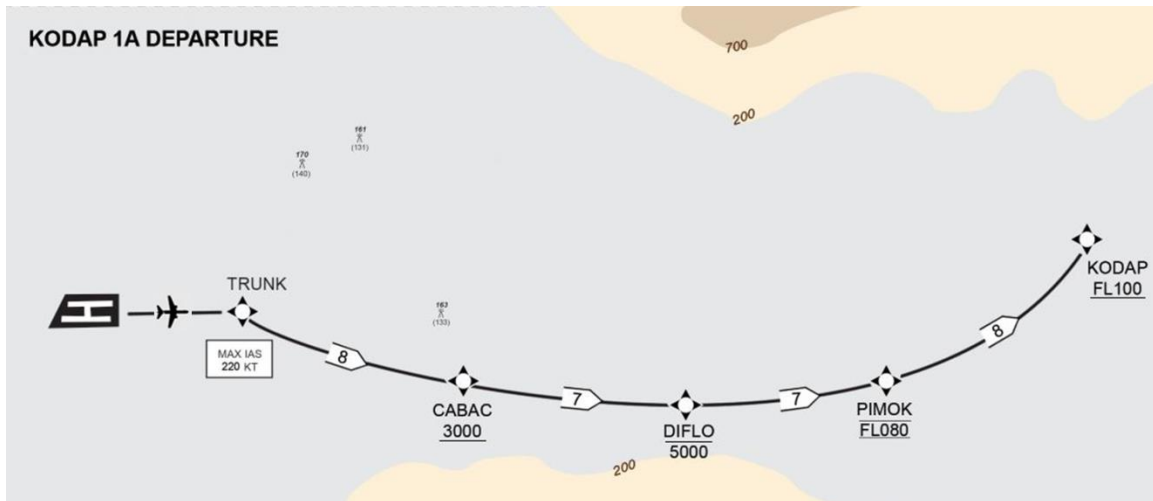
[...]

- e) CLIMB VIA SID TO *(level)*, CANCEL SPEED RESTRICTION(S) AT *(point(s))*;
- i) climb to the cleared level and comply with published level restrictions;
- ii) follow the lateral profile of the SID; and
- iii) published speed restrictions are cancelled at the specified point(s).

[...]

SID/STAR SCENARIO

SID Scenario 3: climb on a SID – tactical cancellation of a level restriction



Context: FASTAIR 345 has been provided with ATC clearance and assigned SID KODAP 1A. FASTAIR 345 is airborne and climbing via SID to 5 000 feet.

ATC clearance and pilot read back

ATC	"FASTAIR 345 CLIMB VIA SID TO FL 070 CANCEL LEVEL RESTRICTION AT DIFLO"
Pilot	"CLIMB VIA SID TO FL 070 CANCEL LEVEL RESTRICTION AT DIFLO FASTAIR 345"

Pilot anticipated action

FASTAIR 345 will climb to FL 070 and comply with all speed and level restrictions on the SID at or below FL 070, with the exception of the LEVEL restriction at DIFLO.

Doc 4444 - PANS-ATM reference

6.3.2.4.1 Clearances to aircraft on a SID with remaining published level and/or speed restrictions shall indicate if such restrictions are to be followed or are cancelled. The following phraseologies shall be used with the following meanings:

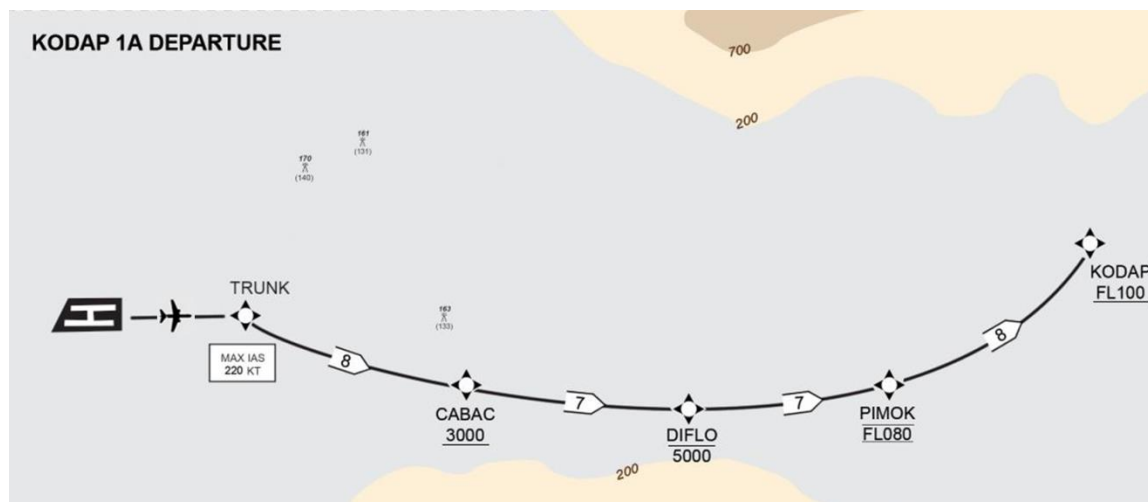
[...]

- c) CLIMB VIA SID TO *(level)*, CANCEL LEVEL RESTRICTION(S) AT *(point(s))*:
 - i) climb to the cleared level, published level restriction(s) at the specified point(s) are cancelled;
 - ii) follow the lateral profile of the SID; and
 - iii) comply with published speed restrictions or ATC-issued speed control instructions as applicable.

[...]

SID/STAR SCENARIO

SID Scenario 4: climb on a SID – cancellation of all restrictions below the cleared level



Context: FASTAIR 345 has been provided with ATC clearance and assigned SID KODAP 1A. FASTAIR 345 is airborne and climbing via SID to 5 000 feet.

ATC clearance and pilot read back

ATC	"FASTAIR 345 CLIMB UNRESTRICTED TO FL 070" or "FASTAIR 345 CLIMB TO FL 070 CANCEL LEVEL AND SPEED RESTRICTIONS"
Pilot	"CLIMB UNRESTRICTED TO FL 070 FASTAIR 345" or "CLIMB TO FL 070 CANCEL LEVEL AND SPEED RESTRICTIONS FASTAIR 345"

Subsequently...

ATC	"FASTAIR 345 CLIMB VIA SID TO FL 120"
Pilot	"CLIMB VIA SID TO FL 120 FASTAIR 345"

Pilot anticipated action

FASTAIR 345 will climb to FL 070 and is not required to meet the restrictions at FL 070 feet or below.

Subsequently, FASTAIR 345 will climb to FL 120 and comply with all the published restrictions above FL 070.

Doc 4444 - PANS-ATM reference

6.3.2.4.1 Clearances to aircraft on a SID with remaining published level and/or speed restrictions shall indicate if such restrictions are to be followed or are cancelled. The following phraseologies shall be used with the following meanings:

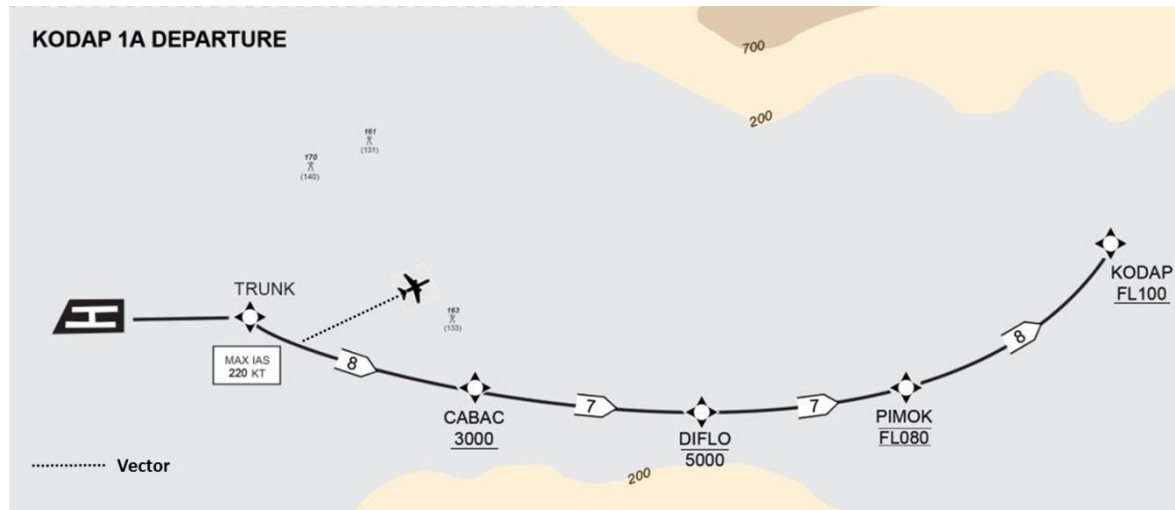
[...]

SID/STAR SCENARIO

- f) CLIMB UNRESTRICTED TO (*level*) or CLIMB TO (*level*), CANCEL LEVEL AND SPEED RESTRICTION(S):
- i) climb to the cleared level, published level restrictions are cancelled;
 - ii) follow the lateral profile of the SID; and
 - iii) published speed restrictions and ATC-issued speed control instructions are cancelled.
- [...]

SID/STAR SCENARIO

SID Scenario 6: vector flight off a SID



Context: FASTAIR 345 has previously been cleared to climb via SID KODAP 1A to 5 000 feet and ATC vectors FASTAIR 345 off the SID. ATC intends that FASTAIR 345 to rejoin the SID.

ATC clearance and pilot read back

ATC	<i>"FASTAIR 345 TURN LEFT HEADING 0-6-0 DUE TRAFFIC CLIMB TO FL 080 EXPECT TO REJOIN SID"</i>
Pilot	<i>"TURN LEFT HEADING 0-6-0 CLIMB TO FL 080 FASTAIR 345"</i>

Pilot anticipated action

FASTAIR 345 will turn left heading 060° and climb to FL 080. All SID restrictions are cancelled. The pilot will retain the SID in the FMS for future rejoin instructions.

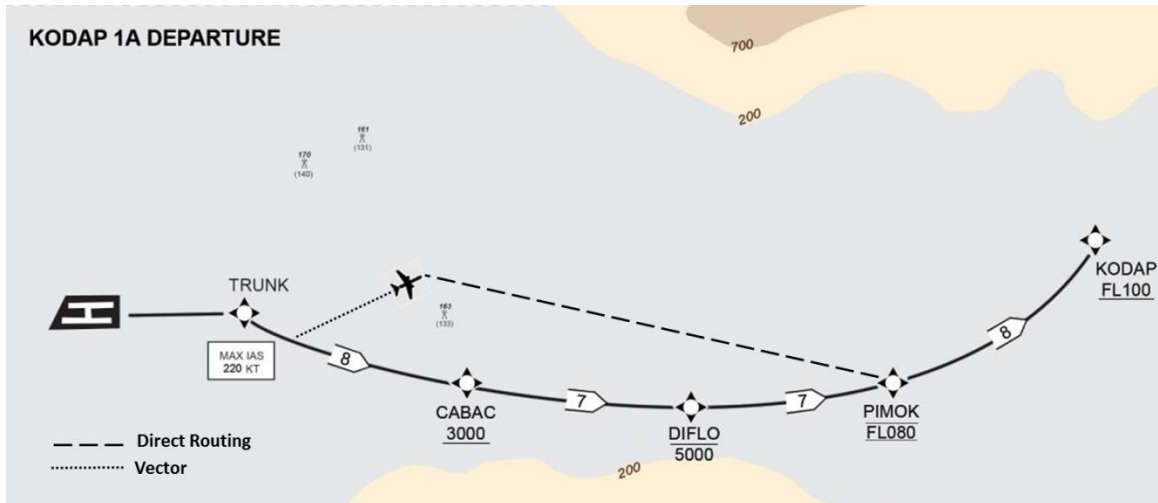
Doc 4444 - PANS-ATM reference

6.3.2.4.5 When a departing aircraft is vectored or cleared to proceed to a point that is not on the SID, all the published speed and level restrictions of the SID are cancelled and the controller shall:

- reiterate the cleared level;
- provide speed and level restrictions as necessary; and
- notify the pilot if it is expected that the aircraft will be instructed to subsequently rejoin the SID.

SID/STAR SCENARIO

SID Scenario 7: SID REJOIN instructions when prior notice has not been issued



Context: FASTAIR 345 has been provided with ATC clearance and assigned SID KODAP 1A. FASTAIR 345 is airborne and climbing via SID to 5 000 feet.

ATC clearance and pilot read back

ATC	"FASTAIR 345 TURN LEFT HEADING 0-6-0 DUE TRAFFIC CLIMB TO FL 080"
Pilot	"TURN LEFT HEADING 0-6-0 CLIMB TO FL 080 FASTAIR 345"

Pilot anticipated action

FASTAIR 345 will turn left heading 060° and climb to FL 080. All SID restrictions are cancelled.

Subsequently...

Context: FASTAIR 345 was vectored off the SID and was not advised to expect to rejoin SID KODAP 1A. FASTAIR 345 is flying on heading 060° and climbing to FL 080 when ATC instructs FASTAIR 345 to rejoin SID KODAP 1A at PIMOK.

ATC clearance and pilot read back

ATC	"FASTAIR 345 PROCEED DIRECT PIMOK REJOIN <u>KODAP 1A DEPARTURE</u> CLIMB VIA SID TO FL 120"
Pilot	"PROCEED DIRECT PIMOK REJOIN <u>KODAP 1A DEPARTURE</u> CLIMB VIA SID TO FL 120, FASTAIR 345"

SID/STAR SCENARIO

Pilot anticipated action

FASTAIR 345 will climb to FL 080, proceed direct to PIMOK to REJOIN KODAP 1A DEPARTURE and comply with all published level and speed restrictions at and after PIMOK. Complying with the restrictions, FASTAIR 345 will climb to FL 120 **after** PIMOK.

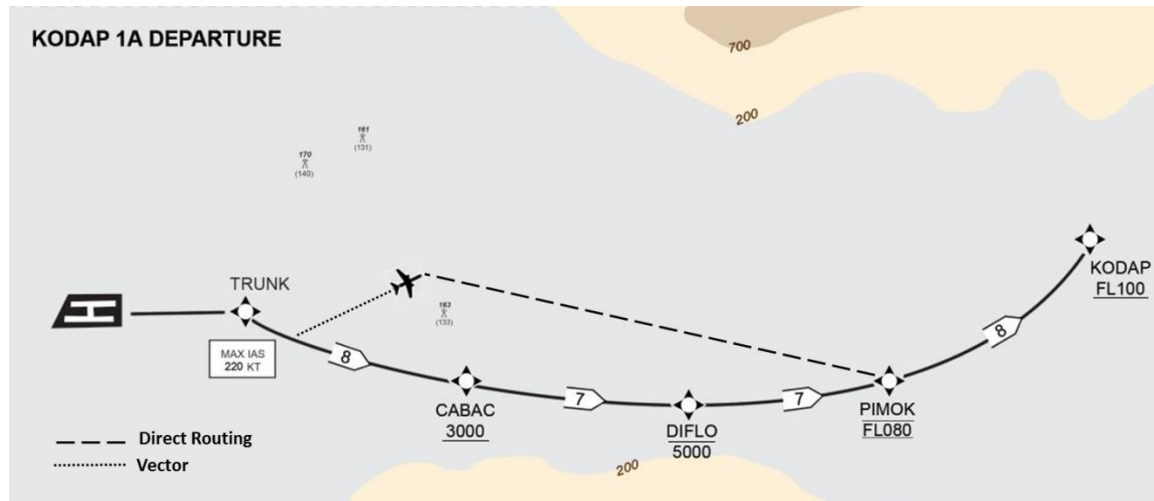
Doc 4444 - PANS-ATM reference

6.3.2.4.6 ATC instructions to an aircraft to rejoin a SID shall include:

- a) the designator of the SID to be rejoined unless advance notification of rejoin has been provided in accordance with 6.3.2.4.5;
- b) the cleared level in accordance with 6.3.2.4.1; and
- c) the position at which it is expected to rejoin the SID.

SID/STAR SCENARIO

SID Scenario 8: SID REJOIN instructions when prior notice has been issued



Context: FASTAIR 345 has been provided with ATC clearance and assigned SID KODAP 1A. FASTAIR 345 is airborne and climbing via SID to 5 000 feet.

ATC clearance and pilot read back

ATC	"FASTAIR 345 TURN LEFT HEADING 0-6-0 DUE TRAFFIC CLIMB TO FL 080 EXPECT REJOIN SID"
Pilot	"TURN LEFT HEADING 0-6-0 CLIMB TO FL 080, FASTAIR 345"

Pilot anticipated action

FASTAIR 345 will turn left heading 060° and climb to FL 080. All SID restrictions are cancelled.

Subsequently...

Context: FASTAIR 345 was vectored off the SID and was advised to expect to rejoin SID. FASTAIR 345 is flying on 060° and climbing to FL 080 when ATC instructs FASTAIR 345 to rejoin SID at PIMOK.

ATC clearance and pilot read back

ATC	"FASTAIR 345 PROCEED DIRECT PIMOK REJOIN SID CLIMB VIA SID TO FL 120"
Pilot	"PROCEED DIRECT PIMOK REJOIN SID CLIMB VIA SID TO FL 120 FASTAIR 345"

Pilot anticipated action

FASTAIR 345 will climb to FL 080, proceed direct to PIMOK to REJOIN SID and comply with all published level and speed restrictions at and after PIMOK. Complying with the restrictions, FASTAIR 345 will climb to FL 120 after PIMOK.

Doc 4444 - PANS-ATM reference

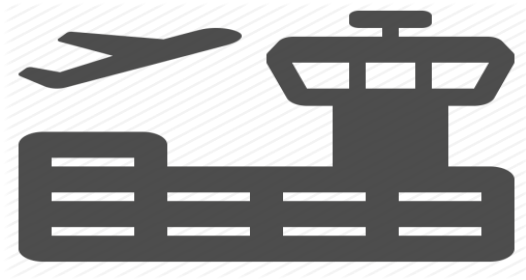
6.3.2.4.6 ATC instructions to an aircraft to rejoin a SID shall include:

- a) the designator of the SID to be rejoined unless advance notification of rejoin has been provided in accordance with 6.3.2.4.5;
- b) the cleared level in accordance with 6.3.2.4.1; and
- c) the position at which it is expected to rejoin the SID.

Ground clearances on a SID

SID/STAR SCENARIO

GROUND SID - Scenario 1



ATC clearance and pilot read back

ATC	<i>"FASTAIR 345 CLEARED TO XXX, FLIGHT PLANNED ROUTE, DEPART RUNWAY 27, CLIMB VIA XXX DEPARTURE TO 5000 FEET, SQUAWK (CODE), WHEN AIRBORNE CONTACT DEPARTURE ON 128.17"</i>
Pilot	<i>"FASTAIR 345 CLEARED TO XXX, FLIGHT PLANNED ROUTE, DEPART RUNWAY 27, CLIMB VIA XXX DEPARTURE TO 5000 FEET, SQUAWK (CODE), WHEN AIRBORNE CONTACT DEPARTURE ON 128.17"</i>

Pilot anticipated action

FASTAIR 345 will plan to depart from Runway 27 and to climb to 5000 FEET while respecting all the charted restrictions at or below 5000 FEET on the XXX SID.

Doc 4444 - PANS-ATM reference

4.5.7.2 Route of flight

4.5.7.2.1 The route of flight shall be detailed in each clearance when deemed necessary. The phrase "cleared flight planned route" may be used to describe any route or portion thereof, provided the route or portion thereof is identical to that filed in the flight plan and sufficient routing details are given to definitely establish the aircraft on its route. The phrases "cleared (designation) departure" or "cleared (designation) arrival" may be used when standard departure or arrival routes have been established by the appropriate ATS authority and published in Aeronautical Information Publications (AIPs).

Note.— See 6.3.2.3 pertaining to standard clearances for departing aircraft and 6.5.2.3 pertaining to standard clearances for arriving aircraft.

6.3.2 Standard clearances for departing aircraft

6.3.2.3 CONTENTS

Standard clearances for departing aircraft shall contain the following items:

- a) aircraft identification;
- b) clearance limit, normally destination aerodrome;
- c) designator of the assigned SID, if applicable;

SID/STAR SCENARIO

- d) cleared level;
- e) allocated SSR code;
- f) any other necessary instructions or information not contained in the SID description, e.g. instructions relating to change of frequency.

Note 1. — See 6.3.2.4.1 for clearances to aircraft on SID.

Note 2.— The use of a SID designator without a cleared level does not authorize the aircraft to climb on the SID vertical profile.

APPENDIX B

CHANGES TO SID/STAR

PHRASEOLOGIES

CHANGES TO SID/STAR PHRASEOLOGIES

Background

Standard Instrument Departures (SIDs) and Standard Instrument Arrivals (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 level and speed restrictions along it.

SID/STAR phraseology allows ATC and aircrew to communicate and understand detailed clearance information that would otherwise require long and potentially complex transmissions.

Over time, these benefits have been eroded through the development of non-harmonised practices and different meanings being attached to certain elements of SID/STAR phraseology. Consequently, there may be a mismatch between ATC and aircrew expectations when SID/STAR phraseology is used, and what certain terms may mean. This presents a safety risk that requires a renewed effort to adopt harmonised SID/STAR phraseology.

The reason for the Changes

The purposes of this change are to:

- provide core phraseology that positively reinforces that the lateral, vertical and speed requirements embedded in a SID or STAR will continue to apply, unless explicitly cancelled or amended by the controller;
- provide supplementary phraseology that enables any level and/or speed restrictions as local circumstances, practice or procedures permit;
- harmonise through appropriate phraseology the means by which aircraft must be cleared where variations to the lateral profile are required, such as where waypoints along the procedure are bypassed.

The core phraseologies are:

- CLIMB VIA SID TO (level)
- DESCEND VIA STAR TO (level)

These require the aircraft to:

1. Climb/descend to the cleared level in accordance with published level restrictions;
2. Follow the lateral profile of the procedure; and
3. Comply with published speed restrictions or ATC-issued speed control instructions as applicable.

Phraseologies for removal of speed or level restrictions:

- CLIMB VIA SID TO (level), CANCEL SPEED RESTRICTION(S)
- DESCEND VIA STAR TO (level), CANCEL LEVEL RESTRICTION(S) AT (point(s))

These phraseologies mean that:

1. The lateral profile of the procedure continue to apply and
2. Speed or level restrictions which have not been referred to will continue to apply.

Phraseologies for variations to lateral profile of the SID/STAR:

- PROCEED DIRECT (waypoint), or
- VECTORIZING

These phraseologies mean that:

Speed and level restrictions associated with the bypassed waypoints are cancelled.

Phraseology to return to SID/STAR:

- REJOIN SID/STAR

This phraseology means that:

Speed and level restrictions associated with the waypoint where the rejoin occurs, as well as those associated with all subsequent waypoints must be complied with.

What doesn't change

- Use of CANCEL SPEED RESTRICTION applies only to the speed restrictions associated with the SID or STAR procedure. It **does not** cancel other speed restrictions such as the speed limits detailed at ICAO Annex 11 Chapter 2 and Appendix 4.
- The requirement for a QNH altimeter setting to be included in the descent clearance when first cleared to an altitude below the transition level, except when it is known that the aircraft has already received the information (PANS-ATM 4.10.4.5 refers), **does not change**.
- The terrain clearance responsibilities prescribed in ICAO Doc 4444 (PANS-ATM) 8.6.5.2 **do not change**.
- The requirement in ICAO Annex 10 for the highest standard of discipline to be applied to all communications at all times **does not change**.
- And finally, while pilots and ATS providers are expected to comply with the revised phraseology, in unusual or unforeseen circumstances it may not be possible to apply the phraseology as intended. Should this happen, pilots and ATS personnel are still expected to use plain language, **which must be as clear and concise as possible**.

Further information may be found in:

www.icao.int/airnavigation/sidstar/Pages/default.aspx

