



RWY 28L/R Arrivals and SSTIK Departures

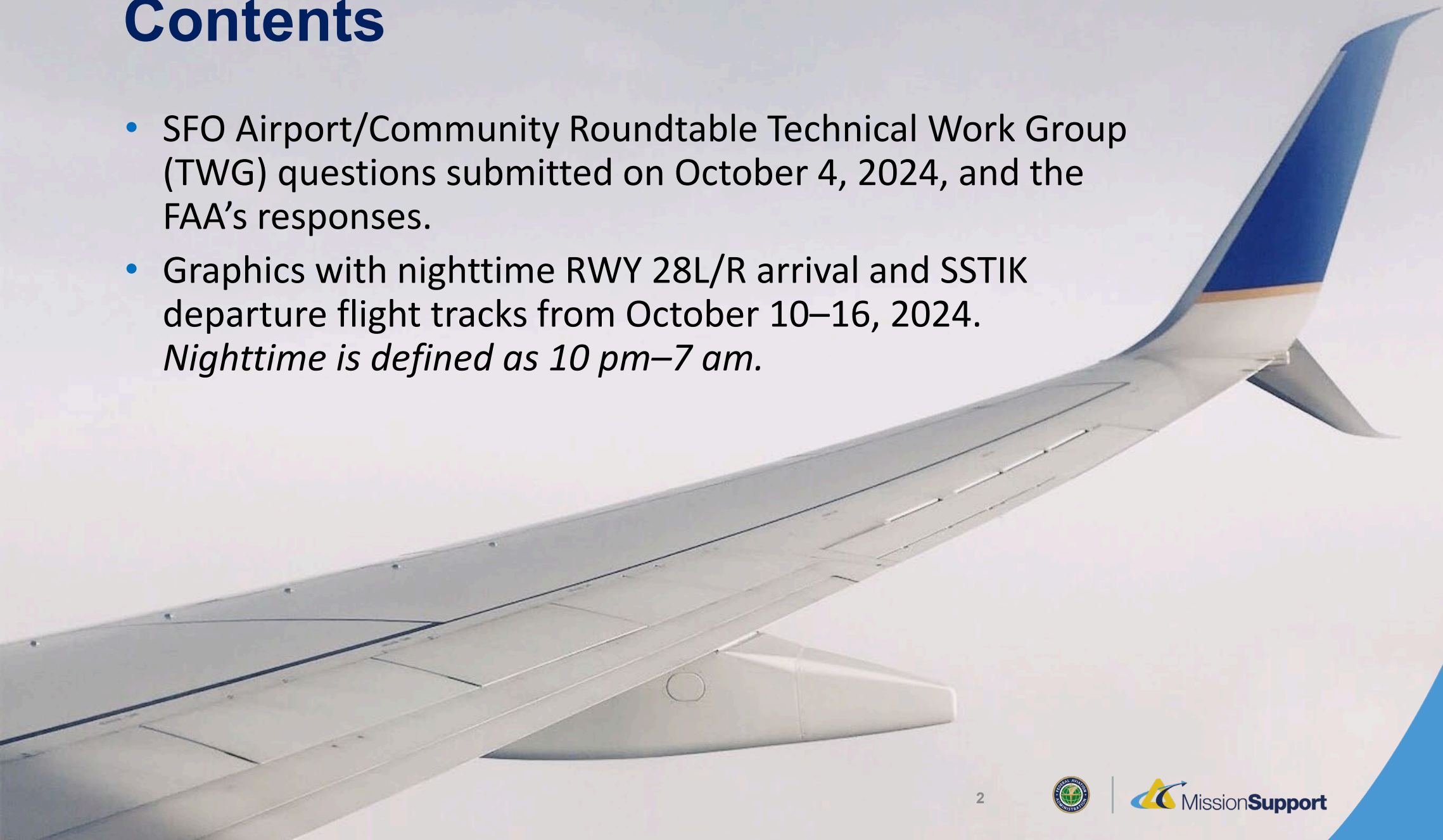
For the SFO Airport/Community Roundtable
Technical Work Group Meeting, November 19, 2024



**Federal Aviation
Administration**

Contents

- SFO Airport/Community Roundtable Technical Work Group (TWG) questions submitted on October 4, 2024, and the FAA's responses.
- Graphics with nighttime RWY 28L/R arrival and SSTIK departure flight tracks from October 10–16, 2024.
Nighttime is defined as 10 pm–7 am.



Questions & Responses

TWG Question: *How nighttime traffic is routed to 28L vs 28R, how DYAMD arrivals are assigned to fly an ILS to 28L/R vs. FMS Bridge Visual to 28R vs. RNAV (RNP) Y 28R vs. Quiet Bridge 28 vs. other paths.*

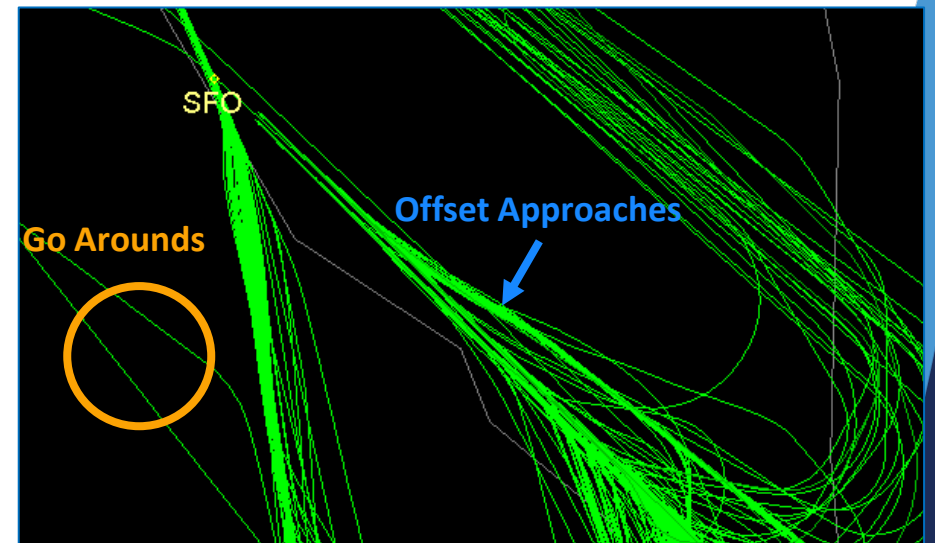
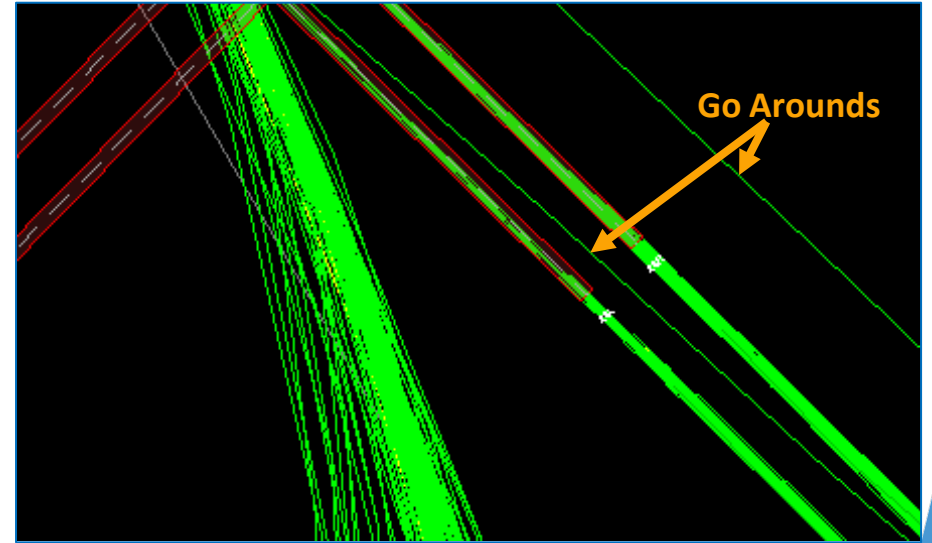
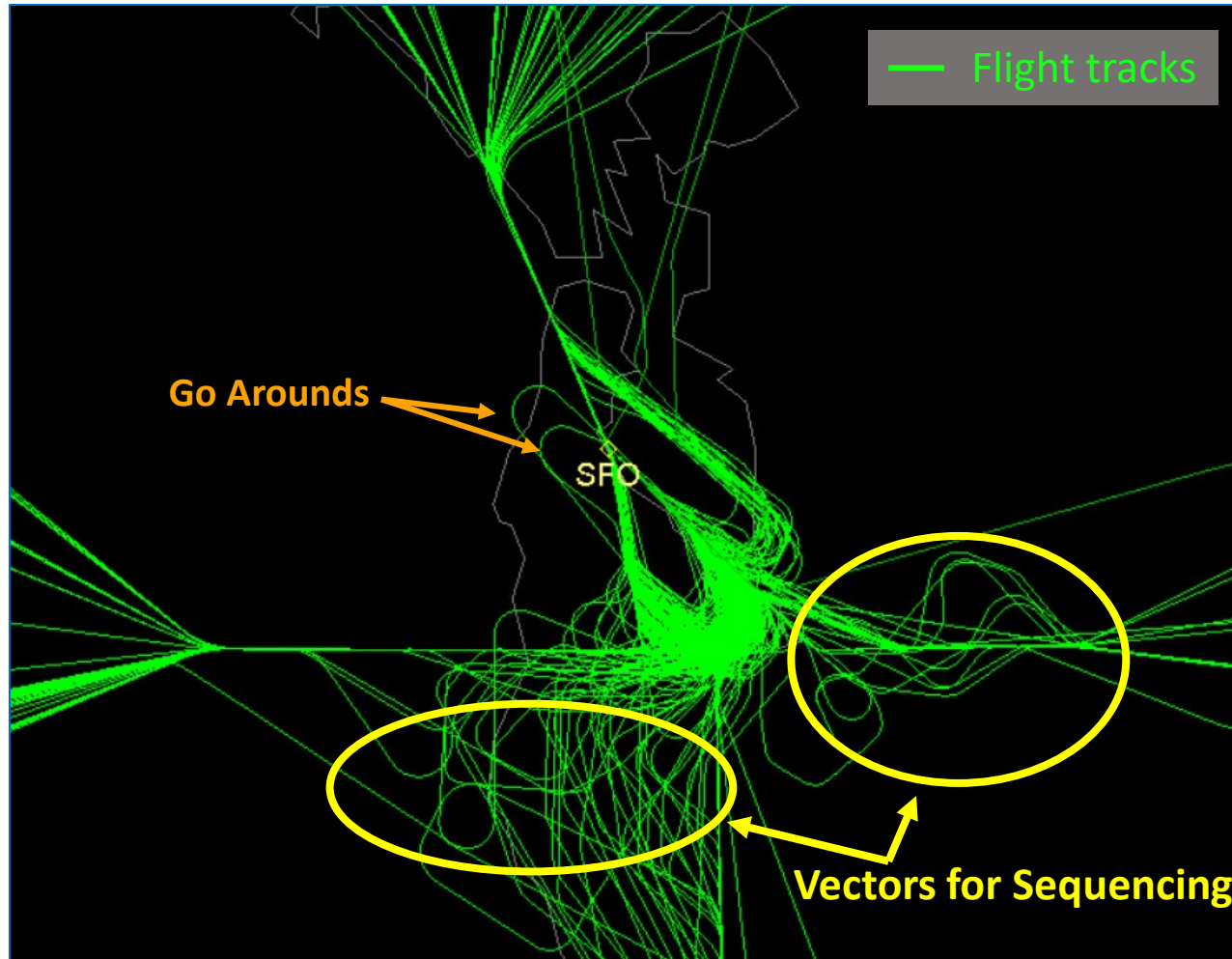
FAA Response: ATC uses the Quiet/FMS Bridge Approach to the maximum extent possible—including arrivals from the south and sequencing jet aircraft in-trail—between the hours of 10 pm and 7 am.

Factors to be considered:

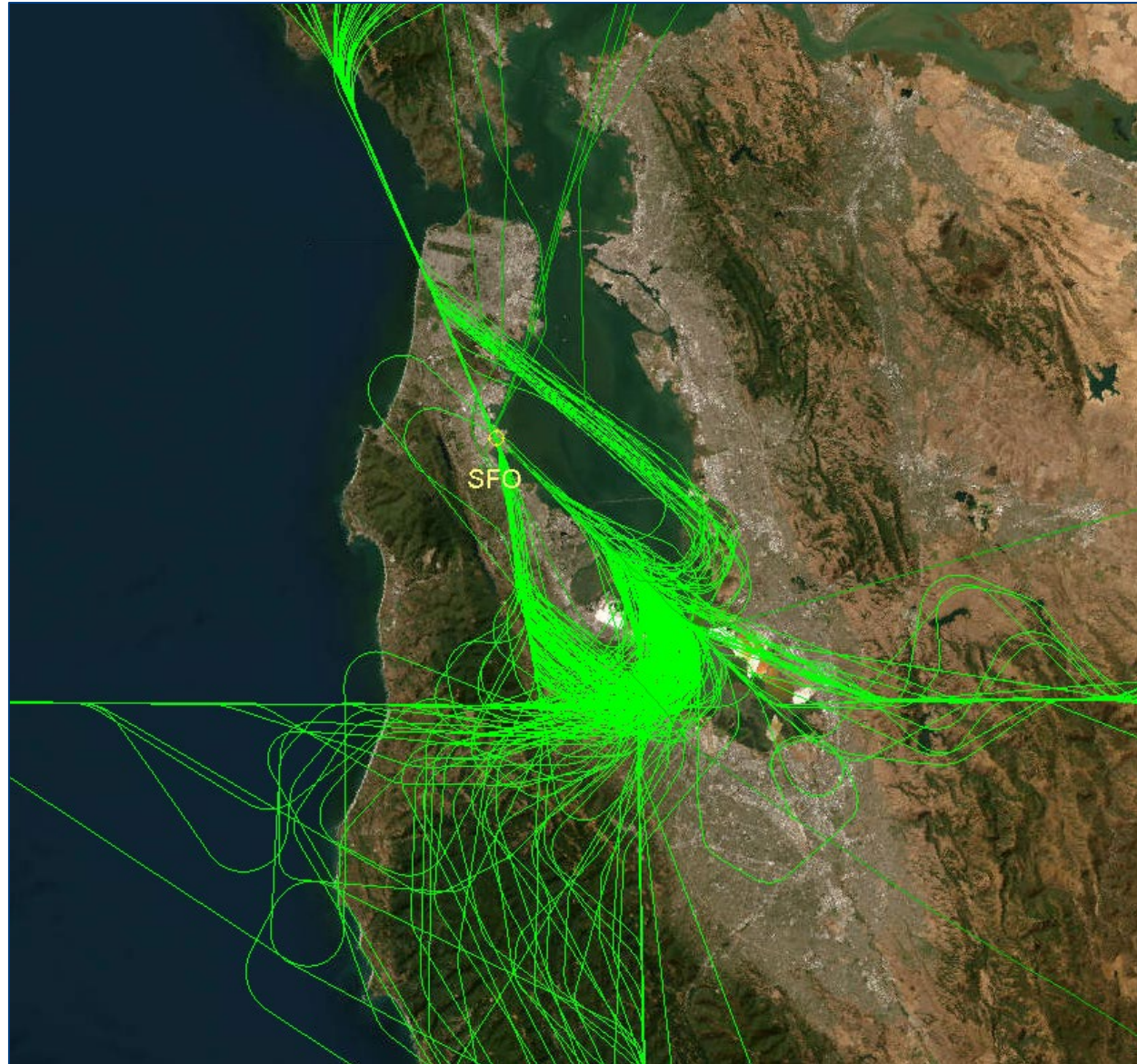
- Pilots **must verbally request** the offset FMS approach procedure ATC is not aware of the aircraft or pilot certifications.
- There are **weather requirements** to assign the Quiet Bridge Visual RWY 28L/R procedure, and pilots must accept the visual approach—pilots refuse and request an instrument approach instead.
- When the use of both runways is necessary—and the weather does not allow visual approaches—**DYAMD arrivals will typically be assigned RWY 28R.**
- When aircraft on the BDEGA are vectored “down the bay,” and **both runways** are in use, aircraft on the **DYAMD may be assigned RWY 28L.**

Flight Tracks for Nighttime RWY 28L/R Arrivals

- 133 arrivals to RWY 28L
- 478 arrivals to RWY 28R with 166 on offset arrival



Flight Tracks for Nighttime RWY 28L/R Arrivals



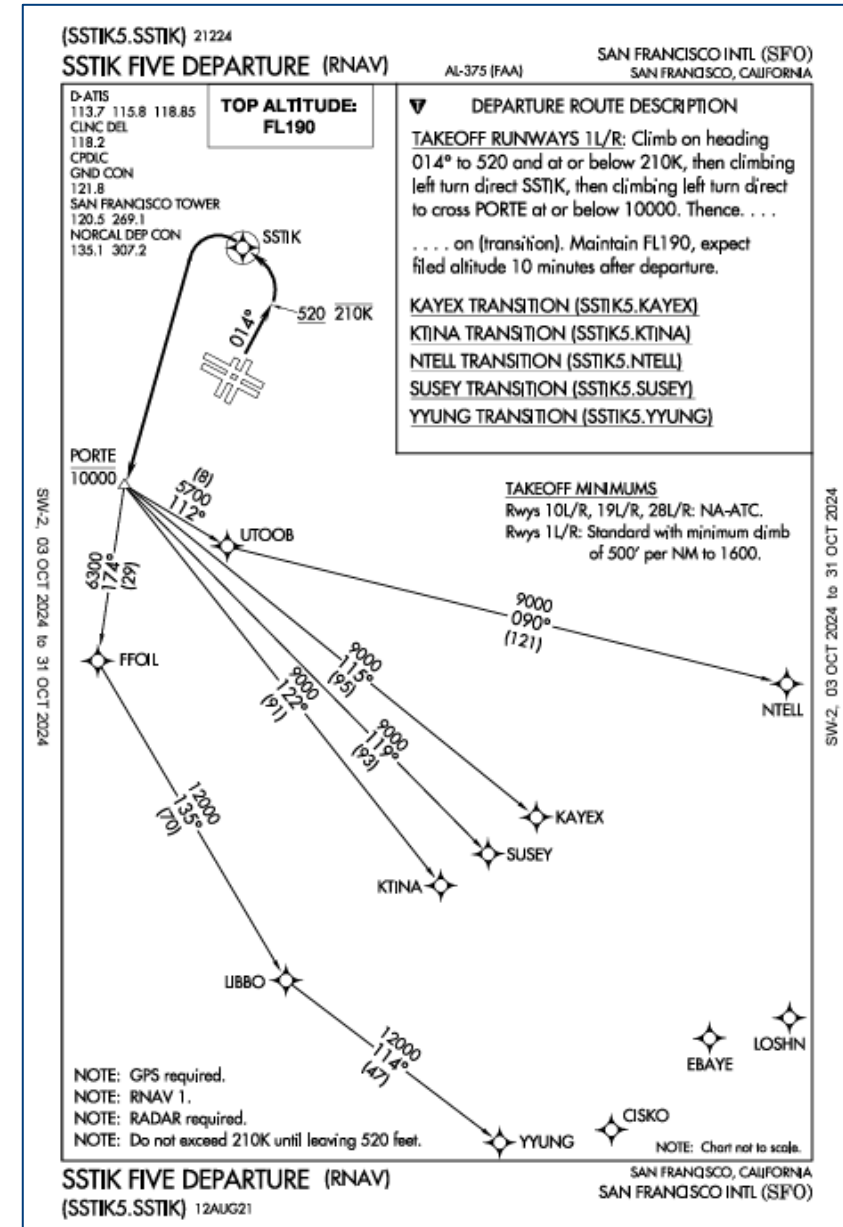
Questions & Responses

TWG Question: We would also have questions about the factors leading to the assignment of these SSTIK non-compliant flight paths.

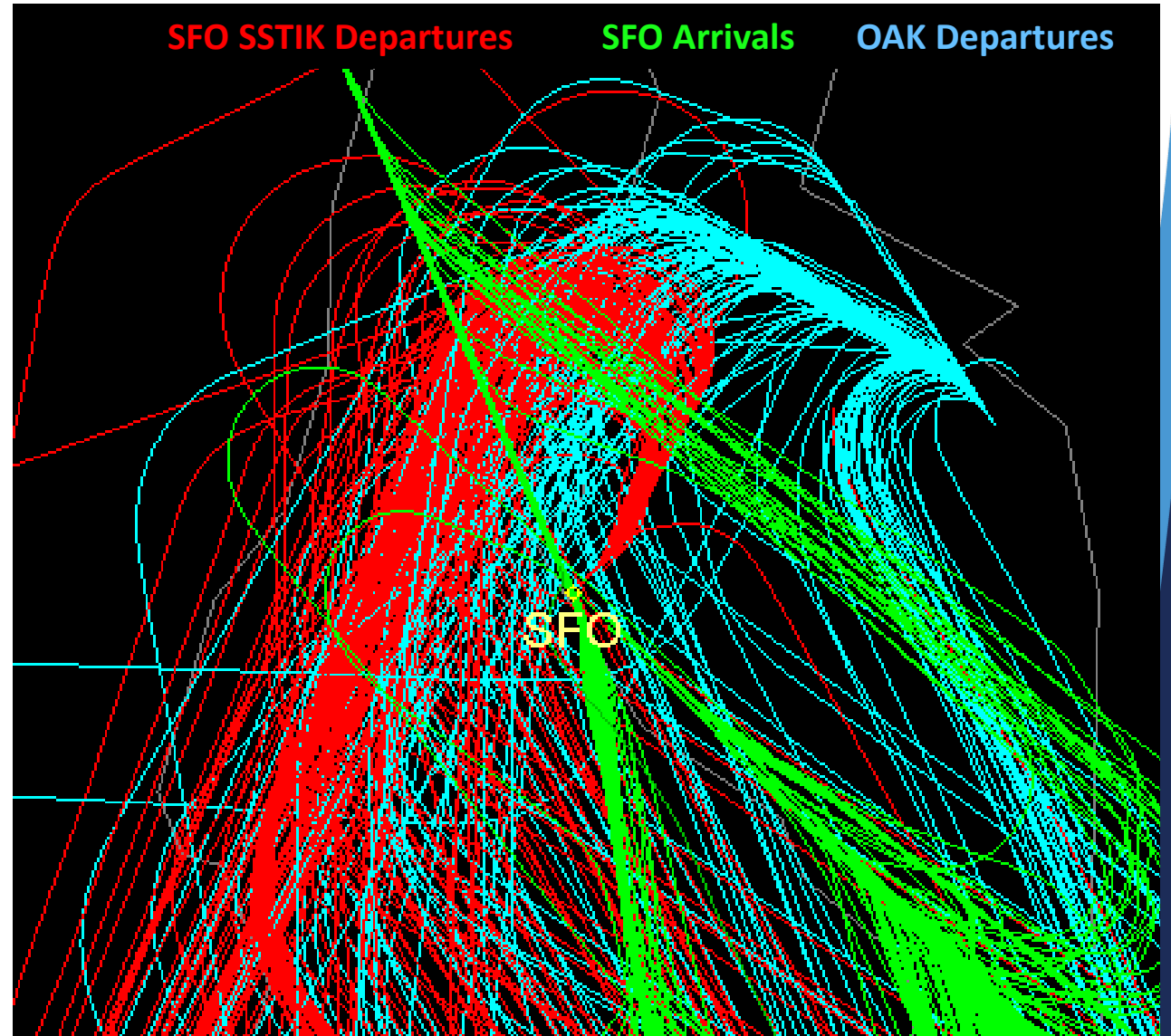
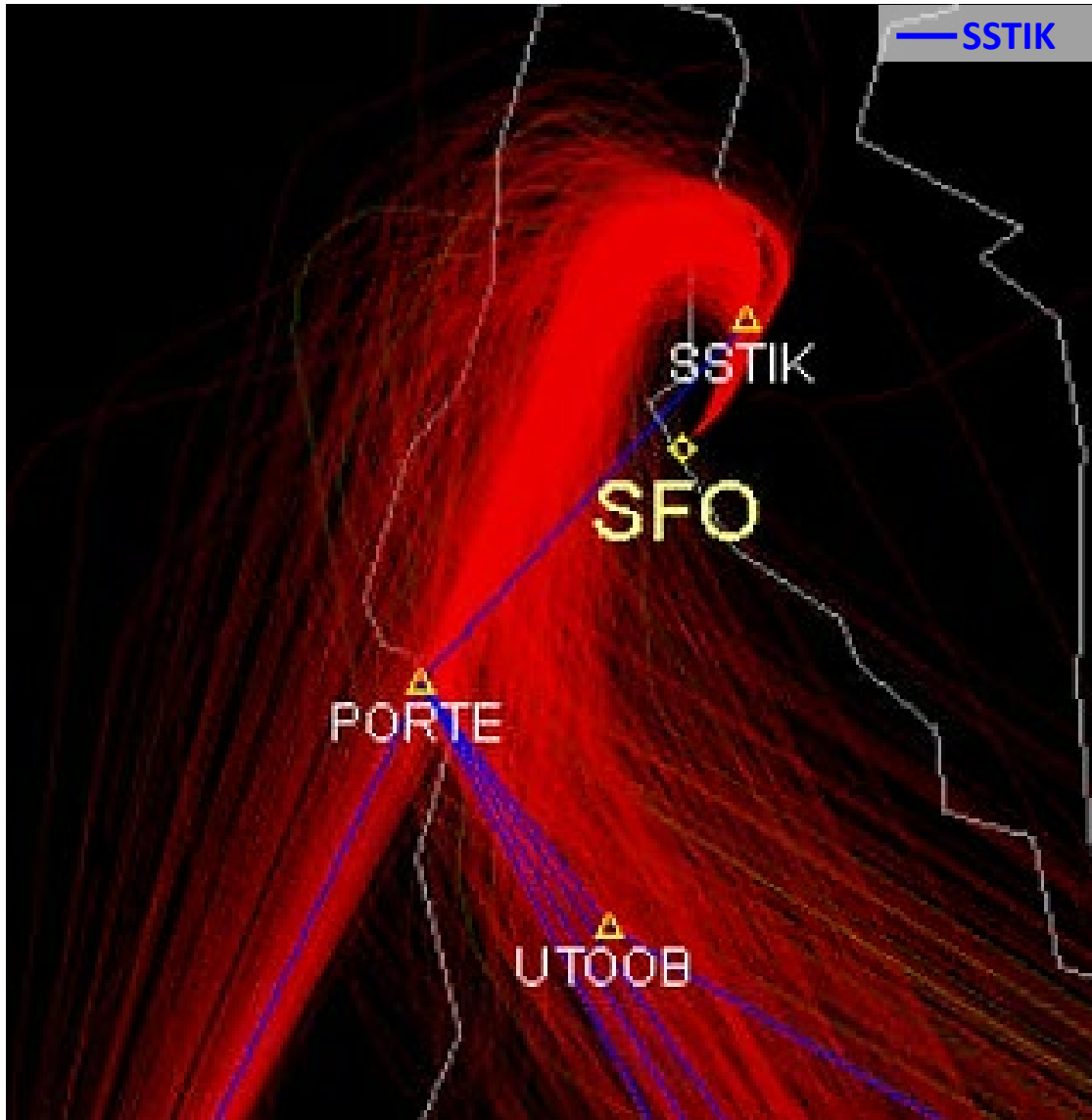
FAA Response: Flight paths outside of the SSTIK departure path are not “non-compliant.” Once an aircraft is vectored or given direct routing to a fix farther along their route, they are **no longer** on the departure procedure.

Vectoring aircraft off procedures is based on various factors, such as aircraft separation, weather conditions, pilot requests, and operational advantage. It is a commonly used tool for ATC across the nation.

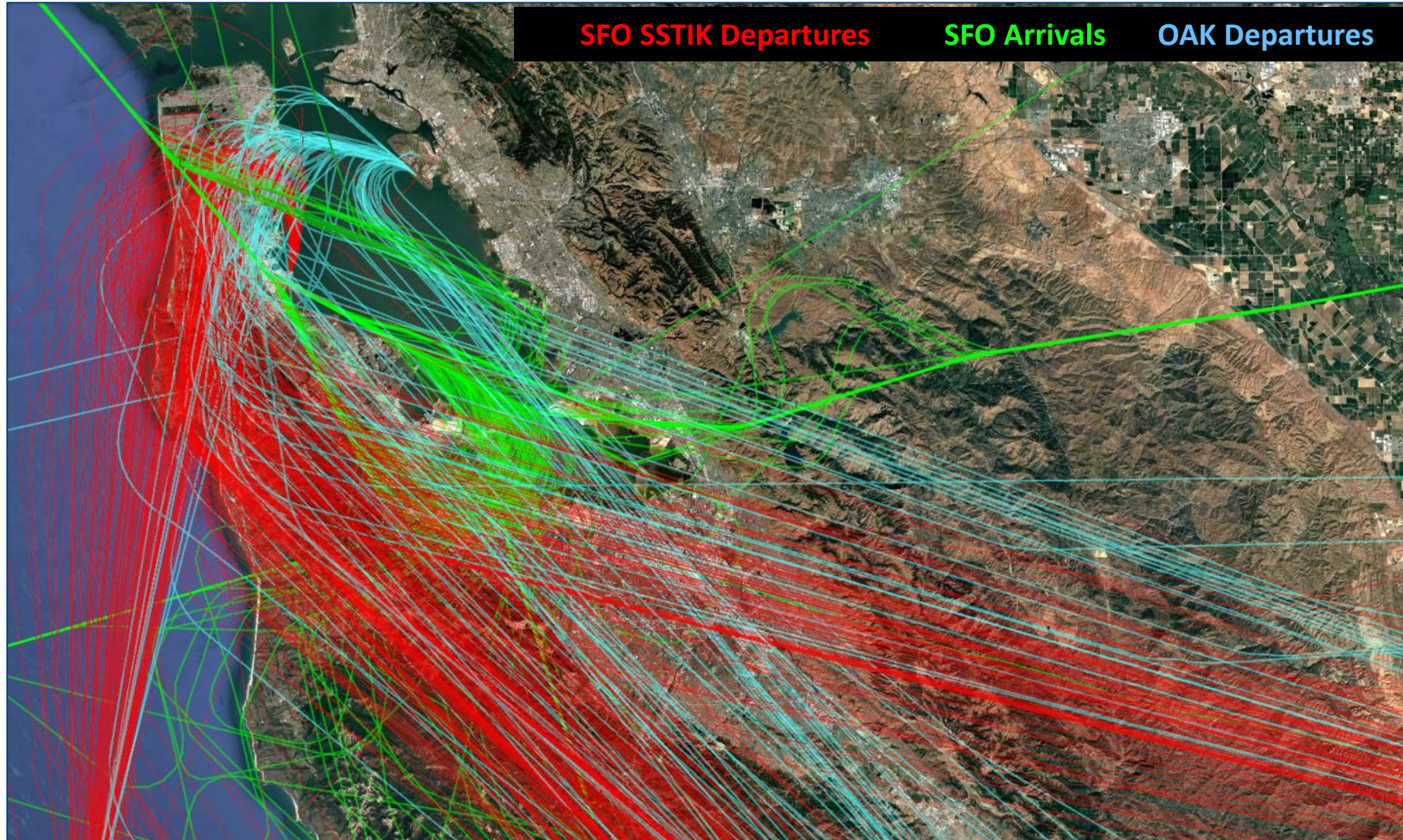
Air traffic that affects SSTIK departures includes OAK departures, faster SFO departures following slower departures, and arrivals landing SFO and other airports in the Bay Area. OAK and SFO departures must be manually separated.



Flight Tracks for SSTIK Departures



Flight Tracks for Nighttime SSTIK and OAK Departures and SFO Arrivals



Questions & Responses

TWG Request: Please provide us with a blank flight plan used by airlines, along with instructions the airlines are given to fill it out. If it is available in paper form, we'd like a copy of that. For the electronic copy, we would request a screen shot of the form as filled in by the Dispatcher or other ways to access the blank flight plan form.

FAA Response: There are several ways that a pilot or company dispatcher can file a flight plan, including via SkyVector, 1-800-WXBRIEF, Leidos Flight Data, Foreflight, JetPlanner, RouteSync, FlightDeck Pro, and others. Typically, airlines use automated methods to file a flight plan. We have provided a copy of the FAA form, with instructions, to the TWG chair.

TWG Question: Can an airline note in their Flight Plan that they do not want to accept a SSTIK non-safety “off-(published procedure) course” vector at night below a certain altitude such as FL180?

FAA Response: Airlines can enter requests in the remarks section of their flight plan, but air traffic will vector or route the aircraft based on the other traffic in the area.

Questions & Responses

TWG Question: Are there other ways that an airline can communicate to the FAA that they do not desire a nighttime SSTIK non-safety “off-(published procedure) course” vector at night below a certain altitude such as FL180?

FAA Response: The best way to make that request would be verbally once on the departure frequency. However, even if the airline requests to remain on the SSTIK procedure, the aircraft would be vectored off the procedure when necessary.

TWG Question: Do most such nighttime non-safety SSTIK “off-(published procedure) course” vectors below FL180 result from a pilot request or from controller initiative?

FAA Response: Unknown, but action is regularly taken by controllers to separate departure traffic from other traffic in the area.

TWG Question: If such nighttime SSTIK non-safety “off-(published procedure) course” vectors below FL180 result from a pilot request, is the ATC controller required to grant such a pilot request?

FAA Response: As per FAA Order JO 7110.65, 2-1-1c, pilot requests are typically approved when workload and other factors such as traffic, weather, and existing letters of agreement allow.

Questions & Responses

TWG Question: Are there any ways that the FAA (through written or electronic publication or other means) could promulgate that nighttime non-safety “off-(published procedure) course” efficiency vectors below a certain altitude—let’s say FL180—will not be issued.

FAA Response: No. At times, other traffic in the area requires departure aircraft to be taken off the published procedure and ATC cannot be restricted from vectoring for separation.

TWG Question: Do you have any suggestions or recommendations of people, entities or other resources which might provide helpful information to understand and potentially reduce the use of off-(published procedure) course non-safety nighttime vectors on the SSTIK?

FAA Response: No. Changing what we do today and leaving aircraft on the SSTIK would potentially have the effect of moving noise from one community to another.

TWG Question: Do you have any other suggestions or recommendations that might be helpful to avoid non-safety off-(published procedure) course nighttime vectors on the SSTIK?

FAA Response: No. FAA Order JO 7110.65 states that “[t]he primary purpose of the ATC system is to prevent a collision involving aircraft operating in the system.” In addition, the ATC system provides a safe, orderly, and expeditious flow of air traffic. Limiting the resources available to controllers is in direct conflict with the additional duties.

Questions & Responses

TWG Question: Can an airline make a request in their Flight Plan to land on 28R (not 28L) at night for noise abatement?

FAA Response: Yes, though the request would still need to be made verbally by the pilot. Additionally, controllers already assign RWY 28R to the extent possible.

TWG Question: If an airline files a flight plan for a nighttime offset arrival to 28L/R, can that airline note in their Flight Plan that (conditions permitting), they prefer to fly the offset arrival for noise abatement?

FAA Response: Flight plans do not have a provision for filing specific approach procedures in the routing field of a flight plan. The airline could include a request in the remarks section of a flight plan, but the pilot must still verbally request the offset RNP approach.

TWG Question: Can the FAA provide the Roundtable with a list of which airlines are able to fly the FMS Bridge Visual approach?

FAA Response: No. We suggest contacting the airlines individually for that information.

Questions & Responses

TWG Question: Can the FAA provide a list the Roundtable with a list of which airlines are able to fly the SFO RNAV (RNP) Y RWY 28R approach?

FAA Response: No. The ability to fly the procedure is based on pilot and aircraft certification.

TWG Question: Do you have any suggestions or recommendations of people, entities or other resources which might provide helpful information to understand and potentially increase the number of nighttime offset arrivals being used for landing on Runways 28?

FAA Response: To fly the offset RNAV procedures, the pilot must request them.

TWG Question: Do you have any other suggestions or recommendations that might be helpful to increase use of nighttime offset approaches to Runways 28L/R?

FAA Response: The pilot must request the offset RNAV approaches, as controllers are not able to discern which aircraft and pilots are certified to fly the procedure. There are also weather requirements that must be met for controllers to assign the Quiet Bridge Visual RWY 28L/R procedure; however, controllers will assign the offset approaches to the extent possible.

Questions?



Appendix B. FAA Form 7233-1, Flight Plan

Section 1. General

1. Where references are made to FAA Form 7233-1, Flight Plan, and FAA Form 7233-4, International Flight Plan, Department of Defense (DoD) use of the equivalent DoD Forms 175 and 1801 respectively, is implied and acceptable.
2. Within U.S. controlled airspace, FAA Form 7233-1, Flight Plan, may be used by filers of DoD/military flight plans and civilian stereo route flight plans.
3. Use of the international flight plan format is mandatory for:
 - a. Any flight plan filed, with the exception of DoD flight plans and civilian stereo route flight plans, which can still be filed using the format prescribed in FAA Form 7233-1.
 - b. Any flight that will depart U.S. domestic airspace. For DoD flight plan purposes, offshore warning areas may use FAA Form 7233-1 or military equivalent.
 - c. Any flight requesting routing that requires Performance Based Navigation.
 - d. Any flight requesting services that require filing of capabilities only supported in the international flight plan.

NOTE-

1. *DoD Form DD-175 and FAA Form 7233-1 are considered to follow the same format and the order of the elements correspond to each other.*
2. *For the international flight plan format, see [Appendix A](#).*

Section 2. Instructions for Flight Plan Items

1. Type of flight plan (Item 1). Check the appropriate box:
 - a. VFR for visual flight rules.
 - b. IFR for instrument flight rules.
 - c. DVFR for defense VFR.
2. Aircraft identification, call sign. (Item 2).
 - a. Enter two-to-seven alphanumeric characters followed by a space character. The first character of the identification must be a letter. For flight processing systems (for example, ERAM or STARS) which do not accept a call sign that begins with a number:
 - (1) If the call sign is six characters or less, add a “Q” at the beginning of the call sign.
 - (2) If the call sign is seven characters, delete the first character and replace it with a “Q.” Put the original call sign in the remarks section of the flight plan.

EXAMPLE-

9HRA becomes Q9HRA
5744233 becomes Q744233

- b. Civilian aircraft including air carrier.
 - (1) For air taxi aircraft, enter the letter/digit registration including the letter “T” prefix.
 - (2) For MEDEVAC aircraft, enter the letter “L” at the beginning of the call sign. The letter “L” must not be entered in Item 2 of the flight plan for air carrier or air taxi MEDEVAC aircraft. Include the word “MEDEVAC” in the remarks section of the flight plan.

(3) For air carriers, enter the three-letter aircraft company designator specified in FAA Order JO 7340.2, Contractions, followed by the trip or flight number.

EXAMPLE-

N12345

TN5552Q

LN751B

AAL192

c. U.S. military aircraft.

(1) Enter the military abbreviation followed by the last five digits of the aircraft's number. TBL B-1 provides a list of aircraft abbreviations based on military service.

TBL B-1

Military Aircraft Abbreviations

Abbreviation	Military Service
A	U.S. Air Force
C	Coast Guard
E	Air Evacuation
G	Air/Army National Guard
CMB	CAMBER (U.S. Air Force contract)
R	Army
RCH	REACH (U.S. Air Force Air Mobility Command)
S	Special Air Mission (SAM)
VM	Marine Corps
VV	Navy

(2) For certain tactical mission aircraft, enter the assigned three-to-six letter code word followed by a one-to-four digit number. Aircraft carrying the president, vice president, and/or their family members will use the identifiers in TBL B-2.

TBL B-2

President, Vice President, and Family Call Sign Abbreviations

Service	President Code	Family Code	Vice President Code	Family Code
Air Force	AF1	EXEC1F	AF2	EXEC2F
Marine	VM1	EXEC1F	VM2	EXEC2F
Navy	VV1	EXEC1F	VV2	EXEC2F
Army	RR1	EXEC1F	RR2	EXEC2F
Coast Guard	C1	EXEC1F	C2	EXEC2F
Guard	G1	EXEC1F	G2	EXEC2F
Commercial	EXEC1	EXEC1F	EXEC2	EXEC2F

d. Canadian military aircraft. The abbreviations must be followed by a number group not to exceed four digits. TBL B-3 provides a list of Canadian aircraft abbreviations based on military service.

TBL B-3

Canadian Military Aircraft Abbreviations

Abbreviation	Military Service
CFC	Canadian Forces
CTG	Canadian Coast Guard

3. Aircraft type (Item 3).
 - a. Enter the standard aircraft type designator, in accordance with FAA Order JO 7360.1, Aircraft Type Designators.
 - b. Prefix to aircraft type (one-to-two alphanumeric characters).
 - (1) For IFR operations, if the aircraft's weight class is heavy, indicate this with the prefix "H."
 - (2) If a formation flight is planned, enter the number and type of aircraft (for example, 2H/B52).
 - c. Suffix to aircraft type (one alpha character). Indicate for IFR operations the aircraft's radar transponder, distance measuring equipment ([DME](#)), or area navigation ([RNAV](#)), including long range navigation ([LORAN](#)), capability by adding the appropriate symbol preceded by a slant (/). TBL B-4 shows the aircraft suffix codes based on navigation and transponder capabilities.

TBL B-4

Aircraft Equipment Suffixes

	Navigation Capability	Transponder Capability	Suffix
RVSM	No GNSS, No RNAV	Transponder with Mode C	/W
	RNAV, No GNSS	Transponder with Mode C	/Z
	GNSS	Transponder with Mode C	/L
No RVSM	No DME	No transponder	/X
		Transponder with no Mode C	/T
		Transponder with Mode C	/U
	DME	No transponder	/D
		Transponder with no Mode C	/B
		Transponder with Mode C	/A
	TACAN	No transponder	/M
		Transponder with no Mode C	/N
		Transponder with Mode C	/P
	RNAV, No GNSS	No transponder	/Y
		Transponder with no Mode C	/C
		Transponder with Mode C	/I
GNSS	No transponder	/V	

	Navigation Capability	Transponder Capability	Suffix
		Transponder with no Mode C	/S
		Transponder with Mode C	/G

NOTE-

The /E and /F suffixes will only be used by aircraft operating to and from airports within the U.S., unless authorized by the controlling authority.

REFERENCE-

FAA Order JO 7110.65, Para 2-3-8 and TBL 2-3-10, Aircraft Equipment Suffixes.

4. True airspeed (Item 4).
 - a. Enter two-to-four digits for true airspeed in knots.
 - b. Enter “M” followed by three digits for Mach number.
 - c. Enter “SC” for speed classified.

5. Departure point (Item 5). Enter two-to-twelve alphanumeric and slant characters for name or identifier of the departure airport or point over which the flight plan is activated.
6. Departure time (Item 6). Enter departure time in coordinated universal time (UTC).
7. Cruising altitude (Item 7).
 - a. Enter two-to-seven characters followed by a space character.
 - b. Altitudes or flight levels, as appropriate, must be expressed in hundreds of feet.
 - c. The letters “OTP” must be entered in this field to indicate a requested altitude of VFR conditions-on-top.

EXAMPLE-

“80”

“080”

“OTP”

“OTP/125”

8. Route of flight (Item 8).
 - a. Enter identifiers for airways or jet routes to indicate the proposed flight path.
 - b. For direct flight, use names or identifiers of navigation aids, Navigation Reference System (NRS) waypoints, and geographical points or coordinates.
 - c. If more than one airway or jet route is to be flown, clearly indicate the transition points.

NOTE-

1. On some direct flights beyond the departure ARTCC's airspace, it may be necessary to include a fix in the adjacent ARTCC's airspace or latitude/longitude coordinates, as appropriate, to facilitate computer acceptance. Local procedures should be applied to these special situations.
2. NRS waypoints consist of five alphanumeric characters, which include the ICAO Flight Information Region (FIR) identifier, followed by the letter corresponding to the FIR subset (ARTCC area for the CONUS), the latitude increment in single digit or group form, and the longitude increment.

EXAMPLE-
“KD34U”

9. Destination (Item 9). Enter two-to-twelve alphanumeric and/or slant characters for name or identifier of the destination airport or point over which the flight plan is to be canceled.
10. Estimated time en route (Item 10). Enter in hours and minutes the total elapsed time between departure and destination in four-digit format.

EXAMPLE-
“0215”

11. Remarks (Item 11).
- Enter information necessary for ATC, search and rescue operations, and any other data pertinent to the flight or provided by the pilot.
 - For the remarks field only, use 1-80 characters beginning with *, #, \$, or %. TBL B-5 provides a description for each special character.

TBL B-5
Remark Codes

Special Character	Description
*	Transmit remarks to all ARTCCs.
#	Transmit remarks to departure ARTCC only.
\$	Transmit remarks only to those addresses in the CP field of the flight notification message.
%	For remarks not to be transmitted.

12. Fuel on board (Item 12). Enter in hours and minutes in four-digit format.

EXAMPLE-
“0330”

13. Alternate airport(s) (Item 13). Enter the location identifier if specified by the pilot.
14. Pilot's name, telephone number, and aircraft's home base (Item 14). The pilot's name is not required if BASEOPS or the aircraft operator's name and contact data are provided.
15. Number of people on board (Item 15). Enter the number of people on board the aircraft.
16. Color of the aircraft (Item 16). Use authorized contractions when available. TBL B-6 provides authorized contractions for aircraft colors.

TBL B-6
Codes for Aircraft Colors

Code	Color
A	Amber
B	Blue
BE	Beige


Code	Color
BK	Black
BR	Brown
G	Green
GD	Gold
GY	Gray
M	Maroon
O	Orange
OD	Olive Drab
P	Purple
PK	Pink
R	Red
S	Silver
T	Tan
TQ	Turquoise
V	Violet
W	White
Y	Yellow

FIG B-1

FAA Form 7233-1, Flight Plan For Military/DoD, Civilian Stereo Route Flight Plan Use Only

PRIVACY ACT STATEMENT: This statement is provided pursuant to the Privacy Act of 1974, 5 USC § 552a. The authority for collecting this information is contained in 49 U.S.C. §§ 40113, 44702, 44703, 44709, and 14 C.F.R. Part 6 - [Part 61, 63, 65, or 67]. The principal purpose for which the information is intended to be used is to allow you to submit your flight plan. Submission of the data is voluntary. Failure to provide all required information may result in you not being able to submit your flight plan. The information collected on this form will be included in a Privacy Act System of Records known as DOT/FAA 847, titled "Aviation Records on Individuals" and will be subject to the routine uses published in the System of Records Notice (SORN) for DOT/FAA 847 (see www.dot.gov/privacy/privacyactnotices).

Paperwork Reduction Act Statement: A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0028. Public reporting for this collection of information is estimated to be approximately 2.5 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory per 14 CFR Part 91. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW, Washington, DC 20591, Attn: Information Collection Clearance Officer, ASP-110.

 FLIGHT PLAN U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION		(FAA USE ONLY) <input type="checkbox"/> PILOT BRIEFING <input type="checkbox"/> VNR			TIME STARTED		SPECIALIST INITIALS	
		<input type="checkbox"/> STOPOVER						
1. TYPE	2. AIRCRAFT IDENTIFICATION	3. AIRCRAFT TYPE / SPECIAL EQUIPMENT	4. TRUE AIRSPEED	5. DEPARTURE POINT		6. DEPARTURE TIME		7. CRUISING ALTITUDE
VFR						PROPOSED (Z)	ACTUAL (Z)	
IFR			KTS					
DVFR								
8. ROUTE OF FLIGHT								
9. DESTINATION (Name of airport and city)			10. EST. TIME ENROUTE		11. REMARKS			
			HOURS MINUTES					
12. FUEL ON BOARD		13. ALTERNATE AIRPORT(S)		14. PILOT'S NAME, ADDRESS & TELEPHONE NUMBER & AIRCRAFT HOME BASE			15. NUMBER ABOARD	
HOURS MINUTES								
				17. DESTINATION CONTACT/TELEPHONE (OPTIONAL)				
16. COLOR OF AIRCRAFT		CIVIL AIRCRAFT PILOTS. FAR Part 91 requires you file an IFR flight plan to operate under instrument flight rules in controlled airspace. Failure to file could result in a civil penalty not to exceed \$1,000 for each violation (Section 901 of the Federal Aviation Act of 1958, as amended). Filing of a VFR flight plan is recommended as a good operating practice. See also Part 99 for requirements concerning DVFR flight plans.						

FAA Form 7233-1 (8-82)
Electronic Version (Adobe)

CLOSE VFR FLIGHT PLAN WITH _____ FSS ON ARRIVAL

MILITARY STOPOVER (FAA USE ONLY)								
TYPE	AIRCRAFT IDENTIFICATION	AIRCRAFT TYPE/SPECIAL EQUIPMENT		REMARKS				
<input type="checkbox"/> IFR								
<input type="checkbox"/> VFR								
DEPARTURE POINT		DESTINATION		ETA				
TAS	DEP. PT	ETD	ALTITUDE	ROUTE OF FLIGHT	DESTINATION	ETE	REMARKS	
KTS								
KTS								
KTS								
KTS								
REMARKS								INITIALS

FAA Form 7233-1 (8-82)

Electronic Version (Adobe)

NOTE-

Current FAA Form 7233-1 is available at <https://www.faa.gov/forms/>.

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FLIGHT PLAN <small>U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION</small>		(FAA USE ONLY) <input type="checkbox"/> PILOT BRIEFING <input type="checkbox"/> VNR <input type="checkbox"/> STOPOVER			TIME STARTED		SPECIALIST INITIALS	
		1. TYPE	2. AIRCRAFT IDENTIFICATION	3. AIRCRAFT TYPE / SPECIAL EQUIPMENT	4. TRUE AIRSPEED	5. DEPARTURE POINT		6. DEPARTURE TIME
VFR						PROPOSED (Z) ACTUAL (Z)		
IFR								
DVFR			KTS					
8. ROUTE OF FLIGHT								
9. DESTINATION (Name of airport and city)			10. EST. TIME ENROUTE		11. REMARKS			
			HOURS	MINUTES				
12. FUEL ON BOARD		13. ALTERNATE AIRPORT(S)			14. PILOT'S NAME, ADDRESS & TELEPHONE NUMBER & AIRCRAFT HOME BASE			15. NUMBER ABOARD
HOURS	MINUTES							
16. COLOR OF AIRCRAFT			CIVIL AIRCRAFT PILOTS. FAR Part 91 requires you file an IFR flight plan to operate under instrument flight rules in controlled airspace. Failure to file could result in a civil penalty not to exceed \$1,000 for each violation (Section 901 of the Federal Aviation Act of 1958, as amended). Filing of a VFR flight plan is recommended as a good operating practice. See also Part 99 for requirements concerning DVFR flight plans.					

CLOSE VFR FLIGHT PLAN WITH _____ FSS ON ARRIVAL

MILITARY STOPOVER (FAA USE ONLY)							
TYPE <input type="checkbox"/> IFR <input type="checkbox"/> VFR	AIRCRAFT IDENTIFICATION	AIRCRAFT TYPE/SPECIAL EQUIPMENT		REMARKS			
DEPARTURE POINT		DESTINATION	ETA				
TAS	DEP. PT	ETD	ALTITUDE	ROUTE OF FLIGHT	DESTINATION	ETE	REMARKS
KTS							
KTS							
KTS							
KTS							
REMARKS							INITIALS