

**FEDERAL AVIATION ADMINISTRATION  
FLIGHT STANDARDS SERVICE  
GLS STANDARD INSTRUMENT APPROACH PROCEDURE  
TITLE 14 CFR PART 97.29**

Bearings, headings, courses, tracks and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT, HAA, TCH, and RA. Altitudes are minimum altitudes unless otherwise indicated.  
Ceilings are in feet above airport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or feet RVR.

<u>AIRPORT ID</u> KSFO	<u>PROCEDURE NAME</u> GLS RWY 19R	<u>ORIGINAL/AMENDMENT</u> ORIG	<u>CITY</u> SAN FRANCISCO	<u>STATE</u> CA		
<u>AIRPORT ELEVATION</u> 13	<u>TDZE</u> 11	<u>SUPERSEDED</u>	<u>ORIGINAL/AMENDMENT</u> NONE	<u>DATED</u>	<u>MAG VAR</u> 14E	<u>EPOCH YEAR</u> 2015
<u>FACILITY</u> GLS	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u>	<u>REQUIRED EFFECTIVE DATE</u> 12/02/2021	<u>CANCEL/SUSPEND</u>		

**TERMINAL ROUTES**

<u>FROM</u>	<u>FIX TYPE</u>	<u>TO</u>	<u>FIX TYPE</u>	<u>LEG TYPE</u>	<u>FO/FB</u>	<u>RNP</u>	<u>COURSE</u>	<u>DISTANCE</u>	<u>ALTITUDE</u>
UPEND	IAF	HITOD		TF	FB	1.00	194.59	11.45	4000
HITOD	IF	ESUME		TF	FB	1.00	193.91	7.93	2800
ESUME	PFAF	RW19R	MAP	TF	FO	0.30	193.86	8.18	
RW19R	MAP	600 MSL		CA			193.86		600
600 MSL		WIYXU		DF	FB	1.00			
WIYXU		DUMBA		TF	FO	1.00	103.90	8.70	3000

**MISSED APPROACH**

**MAP:**  
GLS: DA

**MISSED APPROACH INSTRUCTIONS:**

(DO NOT EXCEED 220 KNOTS UNTIL WIYXU) CLIMB TO 600 THEN CLIMBING LEFT TURN TO 3000 DIRECT WIYXU AND TRACK 103.90 TO DUMBA AND HOLD.

**ALTERNATE MISSED APPROACH INSTRUCTIONS:**



PROFILE:

1. PT

SIDE OF COURSE

OUTBOUND

FT WITHIN

MILES OF

(IAF)

2. PROFILE STARTS AT HITOD

3. FAC: 193.86

PFAF: ESUME

DIST PFAF TO MAP: 8.18

DIST FAF TO THLD:

4. MIN ALT: HITOD 4000, ESUME 2800

5. DIST TO THLD FROM PFAF: 8.18

MM:

IM:

150 HAT:

310 HAT: 0.77

GS ANT:

6. MIN GS INCPT: 2800

GS ALT AT PFAF : ESUME 2800

OM:

MM:

IM:

7. GP ANGLE: 3.15

34:1: IS CLEAR

20:1: IS CLEAR

TCH: 55.0

8. MSA FROM: RW19R 5000

PBN REQUIREMENTS NOTE:

RNP APCH - GPS.

NOTES:

CHART NOTE: SIMULTANEOUS APPROACH AUTHORIZED. SIMULTANEOUS OPERATIONS REQUIRE USE OF VERTICAL GUIDANCE; MAINTAIN LAST ASSIGNED ALTITUDE UNTIL ESTABLISHED ON GLIDEPATH.  
CHART NOTE: USE OF FD OR AP REQUIRED DURING SIMULTANEOUS OPERATIONS.  
CHART NOTE: AUTOPILOT COUPLED APPROACH NA BELOW 321 FEET.

ADDITIONAL FLIGHT DATA:

HOLD W, LT, 104.00 INBOUND.  
GBAS CHANNEL # 21859  
REFERENCE PATH ID: G19B  
LTP HAE: -29.8 M

MINIMUMS:

TAKEOFF: SEE FAA FORM 8260-15A FOR THIS AIRPORT

ALTERNATE: NA ☒

CATEGORY:	A			B			C			D			E		
FINAL TYPE	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA
GLS DA	321	4500	310	321	4500	310	321	4500	310	321	4500	310			

CHANGES - REASONS



AIRPORT ID  
KSFO

PROCEDURE NAME  
GLS RWY 19R

ORIGINAL/AMENDMENT  
ORIG

CITY  
SAN FRANCISCO

STATE  
CA

COORDINATED WITH:

A4A ☒ ALPA ☒ AOPA ☒ APA ☒ HAI ☐ NBAA ☒ OTHER: ZOA, NORCAL APP CON, SFO ATCT, CITY & COUNTY OF SAN FRANCISCO

FLIGHT CHECKED BY  
PENDING

*Digitally signed by*  
**JASON KRETSCHMER**  
Sep 28, 2021

OFFICE

DATE

DEVELOPED BY  
RUSSELL ROSLEWSKI

*Digitally signed by*  
**RUSSELL ROSLEWSKI**  
Sep 01, 2021

OFFICE  
AJV-A421

DATE  
07/19/2021

APPROVED BY  
MARLON ROBINSON

*Digitally signed by*  
**JASON KRETSCHMER**  
Sep 28, 2021

OFFICE  
AJV-A420

DATE

TITLE  
MANAGER



**U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION  
GLS STANDARD INSTRUMENT APPROACH PROCEDURE  
FLIGHT STANDARD SERVICE - FAR PART 97.33**

Bearings, headings courses, and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT, HAA, TCH, and RAltitudes are minimum altitudes unless otherwise indicated. Ceilings are in feet above airport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or in feet RVR.

FAS DATA BLOCK INFORMATION

<u>DATA FIELD</u>	<u>DATA</u>
OPERATION TYPE	0
SBAS SERVICE PROVIDER IDENTIFIER	14
AIRPORT IDENTIFIER	KSFO
RUNWAY	RW19R
APPROACH PERFORMANCE DESIGNATOR	1
ROUTE INDICATOR	
REFERENCE PATH DATA SELECTOR	4
REFERENCE PATH IDENTIFIER (APPROACH ID)	G19B
LTP/FTP LATITUDE	373735.3325N
LTP/FTP LONGITUDE	1222214.1935W
LTP/FTP ELLIPSOIDAL HEIGHT	-00298
FPAP LATITUDE	373616.4260N
FPAP LONGITUDE	1222306.4990W
THRESHOLD CROSSING HEIGHT (TCH)	00055.0
TCH UNITS SELECTOR (METERS OR FEET USED)	F
GLIDEPATH ANGLE (GPA)	03.15
COURSE WIDTH AT THRESHOLD	106.75
LENGTH OFFSET	0416
HORIZONTAL ALERT LIMIT (HAL)	
VERTICAL ALERT LIMIT (VAL)	
 <u>CRC REMAINDER</u>	 00B896FE

ADDITIONAL PATH POINT RECORD INFORMATION

ICAO CODE	K2
LTP ORTHOMETRIC HEIGHT	+00028
FPAP ORTHOMETRIC HEIGHT	+00028

QUALITY  
2  
CHECKED

CITY AND STATE SAN FRANCISCO, CA	ELEVATION: AIRPORT NAME SAN FRANCISCO INTL	TDZE:11	FACILITY IDENTIFIER: GLS	PROCEDURE NO./AMDT NO./ GLS RWY 19R, 0 EFFECTIVE DATE: 12/02/2021	SUP: GLS RWY 19R
					AMDT: 0
					DATED: 12/02/2021

FEDERAL AVIATION ADMINISTRATION  
FLIGHT STANDARDS SERVICE  
STANDARD INSTRUMENT APPROACH PROCEDURE DATA RECORD

<u>AIRPORT ID</u> KSFO	<u>PROCEDURE NAME</u> GLS RWY 19R	<u>AMDT NO.</u> ORIG	<u>CITY</u> SAN FRANCISCO	<u>STATE</u> CA	<u>AIRPORT ELEVATION</u> 13	<u>FACILITY</u> GLS
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PART A: OBSTRUCTION DATA SEGMENTS

INITIAL

FROM  
UPEND

TO  
HITOD

<u>RNP</u>	<u>DISTANCE</u> 11.45	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u>					<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
												AAO	375300.00N/1221321.00W	2107	164	98	4E	1000				AT893	4000
												TERRAIN	375300.00N/1221321.00W	1907 (1900)								AS1500	3400

COMPUTATIONS

<u>ALT</u>	<u>KIAS</u>	<u>KTAS</u>	<u>HAA</u>	<u>VKTW</u>	<u>TR</u>	<u>BA</u>	<u>DTA</u>	<u>COURSE CHANGE</u>	<u>DVEB</u>	<u>VEB OCS</u>	<u>RF CENTER FIX/DISTANCE</u>
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SEGMENT REMARKS:

INTERMEDIATE

FROM  
HITOD

TO  
ESUME

<u>RNP</u>	<u>DISTANCE</u> 7.93	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u>					<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
												AAO	375300.00N/1221321.00W	2107	164	98	4E	500				AC98	2800
												TERRAIN	375100.00N/1221136.00W	1761 (1800)								AS1000	2800

COMPUTATIONS

<u>ALT</u>	<u>KIAS</u>	<u>KTAS</u>	<u>HAA</u>	<u>VKTW</u>	<u>TR</u>	<u>BA</u>	<u>DTA</u>	<u>COURSE CHANGE</u>	<u>DVEB</u>	<u>VEB OCS</u>	<u>RF CENTER FIX/DISTANCE</u>
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SEGMENT REMARKS:



FINAL: GLS

FROM  
ESUME

TO  
RW19R

<u>RNP</u>	<u>DISTANCE</u> 8.18	<u>PAT</u>	<u>MAP</u> DA	<u>HAT</u> 310			<u>HMAS</u>					
<u>OBSTRUCTION</u>	<u>COORDINATES</u>		<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
								ASC			MA71	321

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

CAT C/D MINIMUM HAT 250 DUE TO GLIDEPATH ANGLE OF 3.15 DEGREES.

MISSED APPROACH : GLS

FROM  
DA

TO  
DUMBA

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u> 101					
<u>OBSTRUCTION</u>	<u>COORDINATES</u>		<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
TREE (06-137428)	373437.55N/1222409.92W		764	20	3	1A		ASC				3000
TREE (06-137428)	373437.55N/1222409.92W		764	20	3	1A	1000					1800
TERRAIN	373457.00N/1222421.00W		603 (600)								AS1500	2100

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

CIRCLING

☐ ALL CATS

☐ CAT A

☐ CAT B

☐ CAT C

☐ CAT D

☐ CAT E

☒ NOT AUTHORIZED



MSA

CENTER

RW19R

RADIUS

25

SECTOR	OBSTRUCTION	COORDINATES	BEARING	DISTANCE	ELEV MSL	HORZ	VERT	AC	ROC	OCS	ADJUSTMENTS	MIN ALT
360-360	TOWER (06-000583)	375254.00N/1215454.00W	041	26.5	3902	20	50	1D	1000			5000

MSA REMARKS:

NOTES/EXPLANATIONS FROM PROCEDURE SEGMENTS:



PART B: SUPPLEMENTAL DATA

COMMUNICATIONS WITH

<u>WX SERVICE</u> ASOS	<u>LOCATION</u> KSFO	<u>HRS OPERATION</u> 24	<u>ALTIMETER SOURCE</u> KSFO	<u>DISTANCE</u> 0	<u>SERVICE-A</u> Y	<u>ADJUSTMENTS</u> 0
<u>BACK-UP WX SERVICE</u>	<u>LOCATION</u>	<u>HRS OPERATION</u>	<u>ALTIMETER SOURCE</u>	<u>DISTANCE</u>	<u>SERVICE-A</u>	<u>ADJUSTMENTS</u>

WX REMARKS:  
MULTIPLE REDUNDANT WEATHER SERVICES, NO BACKUP ALTIMETER SOURCE REQUIRED.

<u>PRIMARY NAVAID</u>	<u>MONITOR POINT</u>	<u>HRS OPERATION</u>	<u>CAT</u>
<u>APPROACH AND RUNWAY LIGHTING SYSTEM</u>		<u>RUNWAY MARKINGS</u>	<u>RUNWAY VISUAL RANGE</u>
RW1L - HIRL, REIL, C/LINE		NPI-G	APPROACH, MIDPOINT, ROLL OUT
RW19R - HIRL, C/LINE, PAPI-4L		NPI-G	APPROACH, MIDPOINT, ROLL OUT
RW1R - HIRL, REIL, C/LINE		PIR-G	APPROACH, MIDPOINT, ROLL OUT
RW10L - HIRL, REIL, C/LINE, PAPI-4L		PIR-G	APPROACH, MIDPOINT, ROLL OUT
RW10R - HIRL, C/LINE, PAPI-4L		PIR-G	APPROACH, MIDPOINT, ROLL OUT
RW19L - TDZ, MALSF, HIRL, C/LINE, PAPI-4L		PIR-G	APPROACH, MIDPOINT, ROLL OUT
RW28L - MALSR, HIRL, C/LINE, PAPI-4L		PIR-G	APPROACH, MIDPOINT, ROLL OUT
RW28R - TDZ, ALSF-2, HIRL, C/LINE, PAPI-4L		PIR-G	APPROACH, MIDPOINT, ROLL OUT

<u>GLIDESLOPE ANGLE</u> 3.15	<u>ELEV RWY THRESHOLD</u> 9.2	<u>TCH</u> 55.0	<u>ELEV GS ANTENNA</u>	<u>DISTANCE FROM RWY</u>	<u>VGSI ANGLE</u> 3.00	<u>TCH</u> 55.0
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FINAL APPROACH COURSE AIMING

RUNWAY THRESHOLD	<input checked="" type="checkbox"/>	FT FROM THRESHOLD	DISPLACED THRESHOLD DISTANCE
ON CENTERLINE	<input checked="" type="checkbox"/>	FT FROM CENTERLINE	

CRITICAL TEMPERATURES

<u>CRITICAL LOW</u>	<u>CRITICAL HIGH</u>	<u>ACT</u>	<u>APT ISA</u>
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CRITICAL TEMPERATURE REMARKS:



**"VISUAL PORTION OF FINAL" PENETRATIONS**

**HELICOPTER 'VISUAL PORTION OF FINAL' PENETRATIONS**

and/or

**5280-FT "PROCEED VFR" SEGMENT LEVEL SURFACE AREA PENETRATIONS**

<b>PENETRATIONS REMARKS:</b>

**PART C: GENERAL REMARKS:**

VDP NOT ESTABLISHED - VERTICALLY-GUIDED PROCEDURE.

PRECIPITOUS TERRAIN EVALUATION COMPLETED.

MISSED APPROACH SPEED RESTRICTION TO AVOID HIGH TERRAIN SOUTH OF THE AIRPORT.

AVERAGE TREE HEIGHT 165 PER FPT CHECKLIST.

SHIP HEIGHT 150 BEYOND 3NM PER FPT CHECKLIST.

PROCEDURE DESIGNED TO ALLOW FOR SIMULTANEOUS OPERATIONS IAW 7110.308. FPT INFORMS THAT THE KSFO GLS PROCEDURES WILL BE ADDED TO THIS ORDER.



<div>AIRPORT ID</div> <div>KSFO</div>	<div>PROCEDURE NAME</div> <div>GLS RWY 19R</div>	<div>AMDT NO.</div> <div>ORIG</div>	<div>CITY</div> <div>SAN FRANCISCO</div>	<div>STATE</div> <div>CA</div>	<div>AIRPORT ELEVATION</div> <div>13</div>	<div>FACILITY</div> <div>GLS</div>
PART D: AIRSPACE						
DOCKET #						
ALL DISTANCES TO 1/100NM; ELEVATION TO NEAREST 100 FEET; COORDINATES TO 1/100 SECOND; DEG TO 1/100 DEGREE						
DISTANCE FROM	THLD	TO 1000FT POINT	2.80			
WIDTH OF	FINAL	SEGMENT AT 1000FT POINT	0.83			
TRUE COURSE OF	FINAL	SEGMENT CONTAINING 1000FT POINT	207.86			
HIGH TERRAIN IN	FINAL	SEGMENT CONTAINING 1000FT POINT	0			
DISTANCE FROM	THLD	TO 1500FT POINT	14.71			
WIDTH OF	INTERMEDIATE	SEGMENT AT 1500FT POINT	4.00			
TRUE COURSE OF	INTERMEDIATE	SEGMENT CONTAINING 1500FT POINT	207.91			
HIGH TERRAIN IN	INTERMEDIATE	SEGMENT CONTAINING 1500FT POINT	1800			
THRESHOLD COORDINATES (IF STR-IN)	373735.33N/1222214.19W					
ARP COORDINATES	373707.70N/1222231.50W					
RUNWAY APCH END AND DIST FURTHEST FROM ARP	RUNWAY 10L DISTANCE 1.04 NM					
FAF COORDINATES	374449.92N/1221725.49W					
FIX NAME COORDINATES	IF HITOD: 375150.99N/1221244.63W					
REMARKS						

QUALITY  
2  
CHECKED

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Electronic Version

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PART E: PREPARED BY

<u>NAME</u> RUSSELL ROSLEWSKI	<u>OFFICE</u> AJV-A421	<u>DATE</u> 07/19/2021	<u>TITLE</u> AERONAUTICAL INFORMATION SPECIALIST
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