

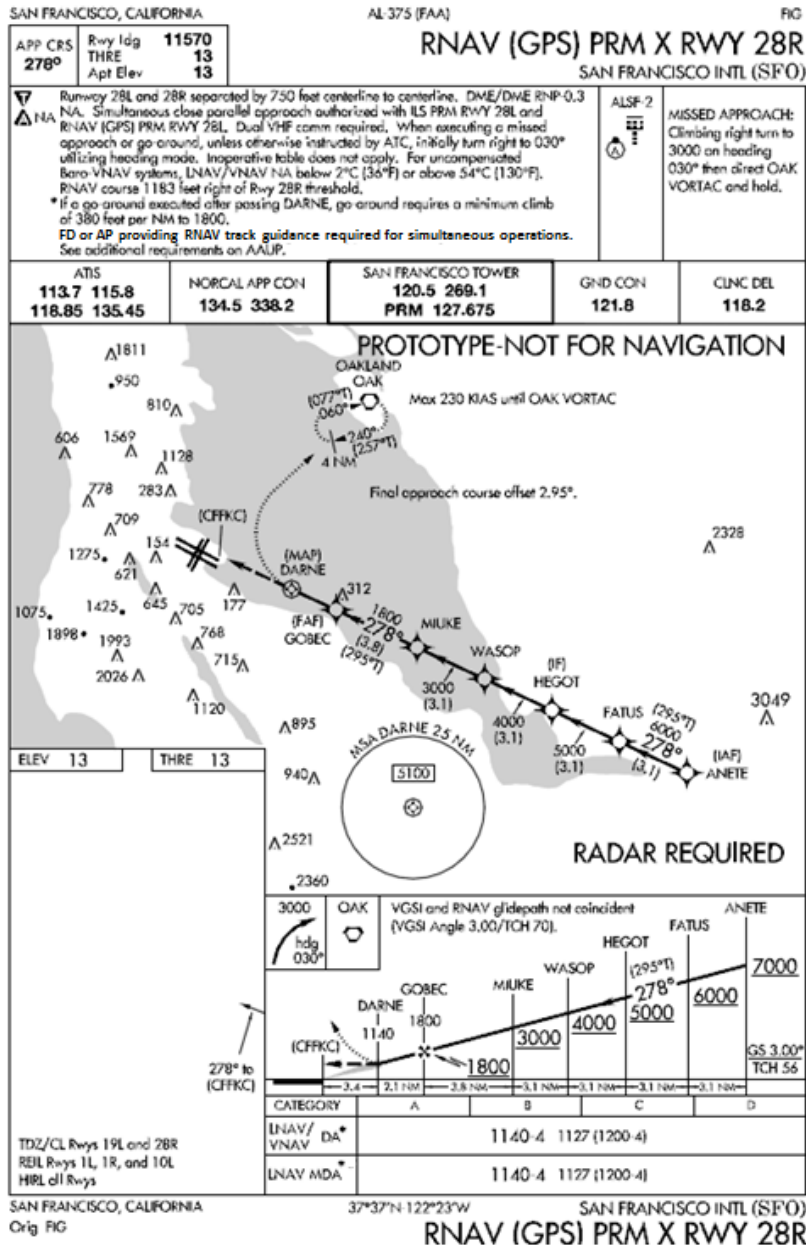
SFO Simultaneous Offset
Instrument Approach
SOIA
RNAV (GPS) PRM

RSA Construction Impact to SFO Simultaneous Offset Instrument Approach



- Runways 28 Glideslopes OTS June 1 thru August 22, 2013.
- AFS / ATO Team Developing RNAV (GPS) PRM Procedures for June 27, 2013 Pub Cycle
- AFS / ATO Team Developing Approval to Utilize RNAV (APV) Procedures In-Lieu of Conventional ILS / LDA PRM

RNAV (GPS) PRM Approaches at SFO



General

- RNAV (GPS) PRM X 28R and RNAV (GPS) PRM 28L.
- Procedures are the same as ILS PRM and LDA PRM procedures.
- RNAV IAPs are overlays of the LDA PRM 28R and ILS PRM 28L.
- **OpSpec authorization required to conduct RNAV (GPS) PRM approaches.**
- During June 27 until August 22, 2013 use of LNAV minima permitted while 28R and 28L g/s OTS.
- **After August 22, 2013, only LNAV/VNAV authorized, LNAV minima will be removed.**

RNAV (GPS) PRM X 28R

- Vertical guidance is provided to the runway threshold.
- Minimums are 1140-4
- Executing a missed approach at DARNE, or a go-around after passing DARNE, initially requires the use of heading mode to turn to 030 heading.
- After being established on 030 heading, LNAV may be engaged to continue the missed approach procedure.

RNAV (GPS) PRM 28L

- Normal RNAV (GPS) design with PRM notes added.

JO 7110.308

1.5nm stagger

JO 7110.308: 1.5-Nautical Mile Dependent Approaches to Parallel Runways Spaced Less Than 2,500 Feet Apart



Infrastructure Required:

- Parallel Runway ILS Glideslope Angle Difference
- Parallel Runway Missed Approach Procedures (MAP) Must Not Conflict

7110.308 Advantages:

- Approved to CAT I Minimums
- No Special Crew Training

Charting Changes Scheduled for August 22, 2013:

- Runway 28L Glideslope Lowered to 2.85°
- Runway 28L & 28R MAP's "De-conflicted"
- Charting and Glideslope Antennae Changes Coincides With Airport RSA Construction

7110.308 Limitations:

- Trailing Aircraft Must Utilize 28R (Higher Glideslope)
- B757 / Heavy Jets Must Trail in Pair or go Single File
- Multiple B757 / Heavy Jet Arrivals or B757 / Heavy Jet Arrivals from the South will Limit Use of Procedure
- Expected to add 2-4 Arrivals an Hour to AAR (May Increase with Operational Experience)

.308 Procedures at SFO

- **ATIS will advertise simultaneous ILS 28R and ILS 28L approaches in progress when the use .308 separation is contemplated.**
- The 28R and 28L IAPS carry the following note

“Simultaneous approaches authorized with ILS [28L or 28R]”

- .308 separation may be applied as the weather and arrival demand require and ATC deems appropriate.
- .308 separation requires that the 28L and 28R aircraft be paired with the 28L aircraft leading.
- .308 separation allows a minimum of 1.5 NM diagonal spacing when the 28L leader is in a large or small wake class.
- **No new aircrew requirements or qualifications are required.**
- To satisfy the wake mitigation requirements, both aircraft must utilize their respective glideslopes through the approach, beginning after the receipt of an approach clearance.
- **Since flight crews will not know if .308 separation is being applied, the ILS 28R and 28L IAPs will carry this note:**

"Maintain last assigned altitude until established on glideslope"

- **Flight crews are expected to comply with this note whenever they are conducting ILS 28R or 28L approaches, since they may not know if ATC is applying .308 procedures or not.**
- .308 separation can be utilized to CAT I weather minimums.
- **Do not confuse these simultaneous dependent ILS approaches with ILS PRM, LDA PRM, and RNAV (GPS) PRM approaches used to conduct Simultaneous Offset Instrument Approach (SOIA) procedures.**

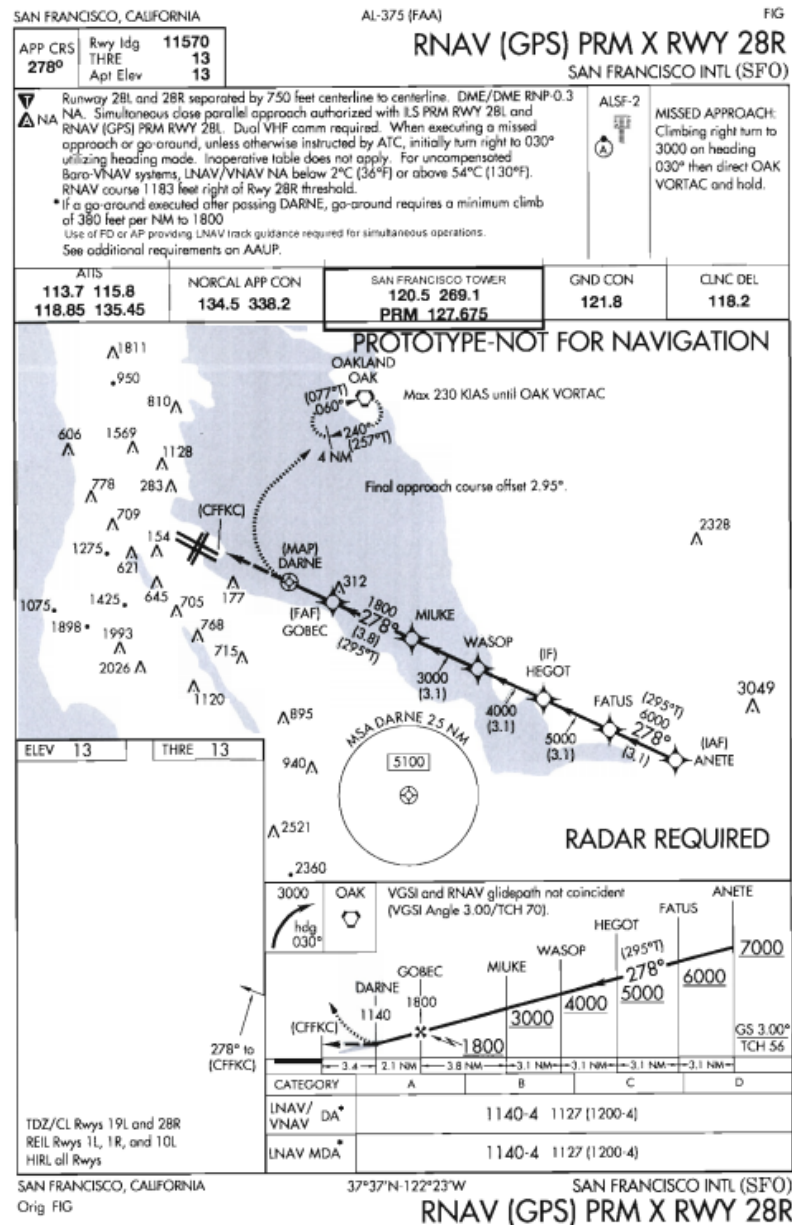
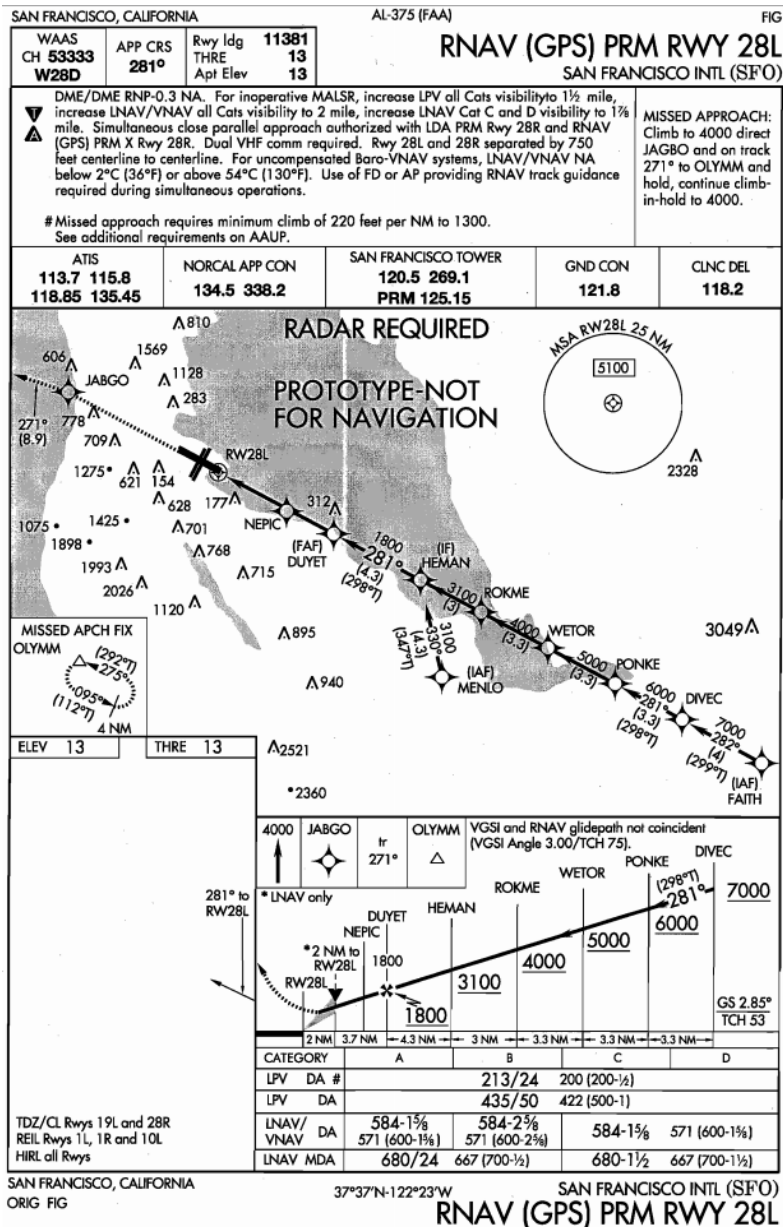
Development of RNAV (GPS) PRM Approaches

and

The Implementation of a New Procedure to

Publish PRM Attention All Users Pages (AAUP

RNAV (GPS) PRM Approaches for SOIA Operations at SFO



NOTE: LNAV minima presently approved only between 6-27-2013 until 8-22-2013

RNAV (GPS) PRM X 28R overlay of LDA PRM 28R SFO

FIG

RNAV (GPS) PRM X RWY 28R
SAN FRANCISCO INTL (SFO)

ALSF-2

MISSED APPROACH:
 Climbing right turn to
 3000 on heading
 030° then direct OAK
 VORTAC and hold.

RADAR REQUIRED

SAN FRANCISCO, CALIFORNIA
Orig FIG

37°37'N-122°23'W

SAN FRANCISCO INTL (SFO)

RNAV (GPS) PRM X RWY 28R

AL-375 (FAA)

FAA) LDA PRM RWY 28R
(SIMULTANEOUS CLOSE PARALLEL)
SAN FRANCISCO INTL (SFO)

	MISSED APPROACH: Climbing right turn to 3000 on heading 030°, then direct OAK VORTAC and hold.
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RADAR AND DME REQUIRED	
LDA/GLIDESLOPE	

[illegible]REIL Rwy 1L, 1R, and 1OL
HIRE all Rwy

GS	
----	--

1.27 (1,200-4)

28R*	140-4 112 (120-4)
ORINJA 37°37'N-122°23'W SAN FRANCISCO INTL (SFO) LDA PRM RWY 28R (SIMULTANEOUS CLOSE PARALLEL)	

ATLANTA, GEORGIA



New PRM AAUP format – SFO Example

ATTENTION ALL USERS PAGE (AAUP)

SIMULTANEOUS CLOSE PARALLEL SAN FRANCISCO INTL (SFO) San Francisco, California

Pilots who are unable to participate will be afforded appropriate arrival services as operational conditions permit and must notify the controlling ARTCC as soon as practical, but at least 100 miles from destination.

Brief the appropriate procedure below based on the expected or assigned IAP.

ILS PRM Rwy 28L

Briefing Points:

- When in range, tune in the PRM monitor frequency (125.15) audio and set the volume on a secondary radio, then deselect the audio.
- Re-select the PRM monitor frequency when communicating with the NORCAL approach control (frequency 135.65).
- Utilize glidepath; do not step down between fixes after passing ROKME.
- Descending on (not above) the glidepath ensures compliance with any charted crossing restrictions and, after passing NEPIC, assists traffic approaching runway 28R to mitigate possible wake turbulence encounters without destabilizing the runway 28R approach and creating a go-around.
- While conducting the PRM approach to runway 28L, other aircraft may be conducting the PRM approach to runway 28R. These aircraft will approach from the right-rear and will re-align with runway 28R after making visual contact with the runway 28L traffic.
- Expect to be switched to SFO tower (120.5) at NEPIC.
- PRM monitor frequency may be de-selected after determining that the aircraft is on the lower frequency.

RNAV (GPS) PRM Rwy 28L

Briefing Points:

- When in range, tune in the PRM monitor frequency (125.15) audio and set the volume on a secondary radio, then deselect the audio.
- Re-select the PRM monitor frequency when communicating with the NORCAL approach control (frequency 135.65).
- If practical, utilize constant descent angle after passing ROKME WP.
- Monitor descent path to ensure that fix crossing requirements are adhered to.
- VDA is 3° between all waypoints on the final approach course.
- After passing NEPIC descending on (not above) the VGSB or VNAV path assists traffic approaching runway 28R to mitigate possible wake turbulence encounters without destabilizing the runway 28R approach and creating a go-around.
- While conducting the PRM approach to runway 28L, other aircraft may be conducting the PRM approach to runway 28R. These aircraft will approach from the right-rear and will re-align with runway 28R after making visual contact with the runway 28L traffic.
- Expect to be switched to SFO tower (120.5) at NEPIC WP.
- PRM monitor frequency may be de-selected after determining that the aircraft is on the lower frequency.

LDA PRM Rwy 28R

Briefing Points:

- If required, develop a wake mitigation strategy as soon as practical. After passing DARNE, pilots will be operating in close proximity to the 28L aircraft and will be responsible for wake turbulence avoidance.
- When in range, tune in the PRM monitor frequency (127.675) audio and set the volume on a secondary radio, then deselect the audio.
- Re-select the PRM monitor frequency when communicating with the NORCAL approach control (frequency 120.35).
- Utilize glidepath; do not step down between fixes after passing HEGOT.
- Descending on the glidepath ensures compliance with any charted crossing restrictions.
- Report the 28L traffic in sight as soon as practical and prior to DARNE. DO NOT PASS.
- Remain on the LDA until passing DARNE so as not to penetrate the NTZ.
- Expect to be switched to SFO tower (120.5) at DARNE.
- PRM monitor frequency may be de-selected after determining that the aircraft is on the lower frequency.
- After passing DARNE, MANUEVER VISUALLY.
- In the visual segment after DARNE, pilots are responsible for collision and wake avoidance. (See Visual Segment under Expanded Procedures for additional information).
- If executing a missed approach or go-around, initially establish a climbing right turn heading 030°. Caution: Missed approach leg from airport to OAK VORTAC, if depicted on a map display, is for reference only. Follow IAP published missed approach procedure unless otherwise instructed by ATC.

RNAV (GPS) PRM X Rwy 28R

Briefing Points:

- If required, develop a wake mitigation strategy as soon as practical. After passing DARNE WP, pilots will be operating in close proximity to the 28L aircraft and will be responsible for wake turbulence avoidance.
- When in range, tune in the PRM monitor frequency (127.675) audio and set the volume on a secondary radio, then deselect the audio.
- Re-select the PRM monitor frequency when communicating with the NORCAL approach control (frequency 120.35).
- If practical, utilize constant descent angle after passing HEGOT WP.
- Monitor descent path to ensure that fix crossing requirements are adhered to.
- VDA is 3° between all waypoints on the final approach course.
- Report the 28L traffic in sight as soon as practical and prior to DARNE. DO NOT PASS.
- Remain on the RNAV track until passing DARNE WP so as not to penetrate the NTZ.
- Expect to be switched to SFO tower (120.5) at DARNE WP.

- After passing DARNE, MANUEVER VISUALLY.
- The VNAV path is valid to the runway threshold.
- PRM monitor frequency may be de-selected after determining that the aircraft is on the lower frequency.
- In the visual segment after DARNE, pilots are responsible for collision and wake avoidance. (See Visual Segment under Expanded Procedures for additional information).
- If executing a missed approach or go-around, initially establish a climbing right turn heading 030°. Caution: Missed approach leg from airport to OAK VORTAC, if depicted on a map display, is for reference only. Follow IAP published missed approach procedure unless otherwise instructed by ATC.

EXPANDED PROCEDURES

1. ATIS. When the ATIS broadcast advises that simultaneous PRM Rwy 28L and PRM Rwy 28R approaches are in progress, pilots should brief to fly the PRM approach. If later advised to expect an ILS, LDA or RNAV (GPS) approach, the PRM chart may be used after noting the following:

- a. Minimums and missed approach procedures are unchanged.
- b. Monitor frequency no longer required.
- c. A different glidepath or VNAV path intercept altitude may be assigned when advised to expect ILS, LDA or RNAV (GPS) approach.

Simultaneous parallel approaches will only be offered/conducted when the weather is at least 1600 feet (ceiling) and 4 miles (visibility).

2. Dual VHF Communication required (Rwy 28R). To avoid blocked transmissions, each runway will have two frequencies, a primary and a PRM monitor frequency. The NORCAL approach controller will transmit on both frequencies. The PRM Monitor controller's transmissions, if needed, will override both frequencies. Pilots will ONLY transmit on the approach controller's frequency, but will listen to both frequencies. When practical, on a second communications radio, select the PRM monitor frequency. Set the audio level to about the same volume as the primary communications radio so that transmissions on the PRM monitor frequency can be heard in the event the approach control frequency is blocked. Then deselect the PRM monitor audio. Re-select the PRM monitor frequency audio only when in contact with the NORCAL approach controller (120.35).

Dual VHF Communication required (Rwy 28L). To avoid blocked transmissions, each runway will have two frequencies, a primary and a PRM monitor frequency. The NORCAL approach controller will transmit on both frequencies. The PRM Monitor controller's transmissions, if needed, will override both frequencies. Pilots will ONLY transmit on the approach controller's frequency, but will listen to both frequencies. When practical, on a second communications radio, select the PRM monitor frequency. Set the audio level to about the same volume as the primary communications radio so that transmissions on the PRM monitor frequency can be heard in the event the approach control frequency is blocked. Then deselect the PRM monitor audio. Re-select the PRM monitor frequency audio only when in contact with the NORCAL approach controller (135.65).

3. All "Breakouts" are to be hand flown to assure that the maneuver is accomplished in the shortest amount of time. Pilots, when directed by ATC to break off an approach, must assume that an aircraft is blundering toward their course and a breakout must be initiated immediately.

- a. ATC Directed "Breakouts": ATC directed breakouts will consist of a turn and a climb or descent. Pilots must always initiate the breakout in response to an air traffic controller instruction. Controllers will give a descending breakout only when there are no other reasonable options available, but in no case will the descent be below minimum vectoring altitude (MVA) which provides at least 1,000 feet required obstruction clearance.
- b. Phraseology - "TRAFFIC ALERT": If an aircraft enters the TRANSGRESSION ZONE (NTZ), the controller will breakout the threatened aircraft on the adjacent approach. The phraseology for the breakout will be:

"TRAFFIC ALERT, (aircraft call sign) TURN (left/right) IMMEDIATELY, HEADING (degrees), CLIMB/DESCEND AND MAINTAIN (altitude)".

4. Visual Segment (Rwy 28R): If ATC advises that there is traffic approaching runway 28L, pilots are authorized to continue past DARNE to align with runway 28R centerline only when:

- a) the runway 28L traffic is in sight and is expected to remain in sight,
- b) ATC has been advised that "traffic is in sight." (ATC is not required to acknowledge this transmission.)
- c) the runway environment is in sight.

Otherwise, a missed approach must be executed at DARNE. Between DARNE and the runway threshold, pilots are responsible for separating themselves visually from traffic approaching runway 28L, which means maneuvering the aircraft as necessary to avoid the runway 28L traffic until landing (do not pass), and providing wake turbulence avoidance, as applicable. If visual contact with the runway 28L traffic is lost, advise ATC as soon as practical and execute the published missed approach unless otherwise instructed by ATC.

New PRM AAUP format

- Effective 6-27-2013 NAS-wide
- No longer regulatory
- AAUP not tied to the approach plate publication
- Can be initiated and amended easily
- One AAUP per airport where PRM approaches are conducted
- Bullet points provide necessary information to conduct the associated approach.

SFO AAUP new format and PRM approaches

ATTENTION ALL USER'S PAGE (AAUP)

SIMULTANEOUS CLOSE PARALLEL
SAN FRANCISCO INTL (SFO)
San Francisco, California

Pilots who are unable to participate will be afforded appropriate arrival services as operational conditions permit and must notify the controlling ATIS as soon as practical, but at least 100 miles from destination.

Brief the appropriate procedure below from the expected or assigned AP.

ILS PRM RWY 28L

Briefing Points:

- When in range, tune in the PRM monitor frequency (125.15) audio and set the volume on a secondary radio, then deselect the audio.
- Re-select the PRM monitor frequency when communicating with the NORCAL approach control (frequency 135.65).
- Utilize glideslope; do not step down between, thus after passing ROKME.
- Descending on (not above) the glideslope ensures compliance with any charted crossing restrictions and, after passing NEPIC, assists traffic approaching runway 28R to mitigate possible wake turbulence encounters without destabilizing the runway 28R approach and creating a go-around.
- While conducting the PRM approach to runway 28L, other aircraft may be conducting the PRM approach to runway 28R. These aircraft will approach from the right-rear and will re-align with runway 28R after making visual contact with the runway 28L traffic.
- Expect to be switched to SFO tower (120.5) at NEPIC.
- PRM monitor frequency may be de-selected after determining that the aircraft is on the tower frequency.

RNAV (GPS) PRM RWY 28L

Briefing Points:

- When in range, tune in the PRM monitor frequency (125.15) audio and set the volume on a secondary radio, then deselect the audio.
- Re-select the PRM monitor frequency when communicating with the NORCAL approach control (frequency 135.65).
- If practical, utilize constant descent angle after passing ROKME WP.
- Monitor descent path to ensure that it crosses requirements are adhered to.
- VCA is between all waypoints on the final approach course.
- After passing NEPIC descending on (not above) the VGS or VNAV path assists traffic approaching runway 28R to mitigate possible wake turbulence encounters without destabilizing the runway 28R approach and creating a go-around.
- While conducting the PRM approach to runway 28L, other aircraft may be conducting the PRM approach to runway 28R. These aircraft will approach from the right-rear and will re-align with runway 28R after making visual contact with the runway 28L traffic.
- Expect to be switched to SFO tower (120.5) at NEPIC WP.
- PRM monitor frequency may be de-selected after determining that the aircraft is on the tower frequency.

LDA PRM RWY 28R

Briefing Points:

- If required, develop a wake mitigation strategy as soon as practical. After passing DARNE, pilots will be operating in close proximity to the 28L aircraft and will be responsible for wake turbulence avoidance.
- When in range, tune in the PRM monitor frequency (125.15) audio and set the volume on a secondary radio, then deselect the audio.
- Re-select the PRM monitor frequency when communicating with the NORCAL approach control (frequency 120.55).
- Utilize glideslope; do not step down between times after passing HEGOT.
- Descending on the glideslope ensures compliance with any charted crossing restrictions.
- Report the 28L traffic in sight as soon as practical and prior to DARNE. DO NOT PASS.
- Remain on the LDA until passing DARNE so as not to penetrate the NTZ.
- Expect to be switched to SFO tower (120.5) at DARNE.
- PRM monitor frequency may be de-selected after determining that the aircraft is on the tower frequency.
- After passing DARNE, MANUEVER VISUALLY.
- In the visual segment after DARNE, pilots are responsible for collision and wake avoidance. (See Visual Segment under Expanded Procedures for additional information).
- If executing a missed approach or go-around, initially establish a climbing right turn heading 030°. Caution: Missed approach leg from runway to OAK VORTAC, if depicted on a map display, is for reference only. Follow AP published missed approach procedure unless otherwise instructed by ATC.

RNAV (GPS) PRM X RWY 28R

Briefing Points:

- If required, develop a wake mitigation strategy as soon as practical. After passing DARNE WP, pilots will be operating in close proximity to the 28L aircraft and will be responsible for wake turbulence avoidance.
- When in range, tune in the PRM monitor frequency (125.15) audio and set the volume on a secondary radio, then deselect the audio.
- Re-select the PRM monitor frequency when communicating with the NORCAL approach control (frequency 120.55).
- If practical, utilize constant descent angle after passing HEGOT WP.
- Monitor descent path to ensure that it crosses requirements are adhered to.
- VCA is between all waypoints on the final approach course.
- Report the 28L traffic in sight as soon as practical and prior to DARNE. DO NOT PASS.
- Remain on the RNAV track until passing DARNE WP so as not to penetrate the NTZ.
- Expect to be switched to SFO tower (120.5) at DARNE WP.

Dual VHF Communication required (RWY 28L). To avoid blocked transmissions, each runway will have its own monitor frequency. The NORCAL approach controller will transmit on both frequencies. The PRM monitor frequency will be used for all transmissions on the approach controller's frequency, but will listen to second communications radio, select the PRM monitor frequency. Set the audio level to about the same volume as the PRM monitor frequency can be heard in the event the approach controller's frequency is blocked. Then deselect the PRM monitor audio. Re-select the PRM monitor frequency audio only when in contact with the NORCAL approach controller (125.65).

- All "breakouts" are to be hand down to assure that the maneuver is accomplished in the shortest amount of time. Pilots, when directed by ATC to break off an approach, must assume that an aircraft is blundering toward their course and a breakout must be initiated immediately.
 - ATC Directed "Breakouts": ATC directed breakouts will consist of a turn and a climb or descent. Pilots must always initiate the breakout in response to an air traffic controller instruction. Controllers will give a descending breakout only when there are no other reasonable options available, but in no case will the descent be below minimum vectoring altitude (MVA) which provides at least 1,000 feet required obstruction clearance.
 - Phraseology - "TRAFFIC ALERT": If an aircraft enters the "NO TRANSGRESSION ZONE (NTZ)", the controller will breakout the threatened aircraft on the adjacent approach. The phraseology for the breakout will be:

"TRAFFIC ALERT, (aircraft call sign) TURN (direction) IMMEDIATELY, HEADING (degrees), CLIMB/DESCEND AND MAINTAIN (altitude)".

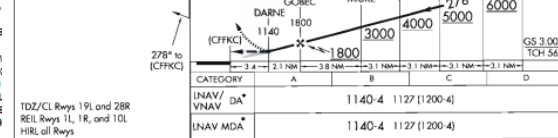
- Visual Segment (RWY 28R): If ATC advises that there is traffic approaching runway 28L, pilots are authorized to continue past DARNE to align with runway 28R centerline, only when:
 - the runway 28L traffic is in sight and is expected to remain in sight,
 - ATC has been advised that "traffic is in sight" (ATC is not required to acknowledge this transmission)
 - the runway environment is in sight.

Otherwise, a missed approach must be executed at DARNE. Between DARNE and the runway threshold, pilots are responsible for separating themselves visually from traffic approaching runway 28L, which means maneuvering the aircraft as necessary to avoid the runway 28L traffic until landing (do not pass), and providing wake turbulence avoidance, as applicable. If visual contact with the runway 28L traffic is lost, advise ATC as soon as practical and execute the published missed approach unless otherwise instructed by ATC.

SAN FRANCISCO, CALIFORNIA
APP CRS 278°
RWY Idg 11570
THRE 13
Agl Elev 13
RNAV (GPS) PRM X RWY 28R
SAN FRANCISCO INTL (SFO)

Runway 28L and 28R separated by 750 feet centerline to centerline. DME/DME RNP 0.3
RNA. Simultaneous close parallel approach authorized with ILS PRM RWY 28L and RNAV (GPS) PRM RWY 28L. Dual VHF comm required. When executing a missed approach or go-around, unless otherwise instructed by ATC, initially turn right to 030° utilizing heading mode. Inoperative table does not apply. For uncompensated RNAV systems, RNAV/VNAV MSA below 2° (3.4°) or above 54° (1.30°). RNAV course 1183 feet right of RWY 28R threshold.
If a go-around executed after passing DARNE, go-around requires a minimum climb of 300 feet per NM up to 1800.
Use of GP or AP for published RNAV track guidance required for simultaneous operations.
See additional requirements on AAUP.

ATIS	NORCAL APP CON	SAN FRANCISCO TOWER	GND CON	CLNC DEL
113.7 115.6 118.65 135.45	134.5 338.2	120.5 269.1 PRM 127.675	121.8	118.2



SAN FRANCISCO, CALIFORNIA
Orig FIG
37°37'N-122°23'W
RNAV (GPS) PRM X RWY 28R
SAN FRANCISCO INTL (SFO)

CATEGORY	A	B	C	D
LPV DA #	213/24	200 (200-1/2)		
LPV DA	435/50	422 (500-1)		
RNAV/VNAV DA	584-1%	584-2%	584-1%	571 (600-1%)
RNAV MDA	571 (600-1%)	571 (600-2%)	584-1%	667 (700-1%)

TDZ/CL Rwy 19L and 28R
REL Rwy 1L, 1R, and 10L
HRL all Rwy
SAN FRANCISCO, CALIFORNIA
Orig FIG
37°37'N-122°23'W
RNAV (GPS) PRM RWY 28L
SAN FRANCISCO INTL (SFO)

CATEGORY	A	B	C	D
LPV DA #	213/24	200 (200-1/2)		
LPV DA	435/50	422 (500-1)		
RNAV/VNAV DA	584-1%	584-2%	584-1%	571 (600-1%)
RNAV MDA	571 (600-1%)	571 (600-2%)	584-1%	667 (700-1%)

TDZ/CL Rwy 19L and 28R
REL Rwy 1L, 1R, and 10L
HRL all Rwy
SAN FRANCISCO, CALIFORNIA
Amnd 1A 12320
37°37'N-122°23'W
RNAV (GPS) PRM RWY 28L
SAN FRANCISCO INTL (SFO)

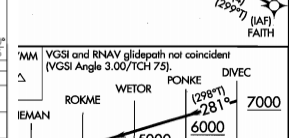
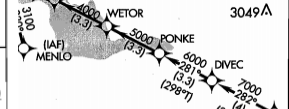
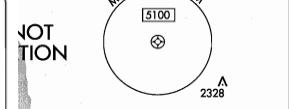
LDA PRM RWY 28R (SIMULTANEOUS CLOSE PARALLEL)
SAN FRANCISCO INTL (SFO)
US CLOSE PARALLEL
ILS PRM RWY 28L

RNAV (GPS) PRM RWY 28L
SAN FRANCISCO INTL (SFO)

7 all Cots visibility 1 1/2 mile, AV Cat C and D visibility to 1/4
3A PRM RWY 28R and RNAV on 28R separated by 750 systems. RNAV/VNAV NA-avoiding RNAV track guidance to 1300.

CO TOWER	GND CON	CLNC DEL
169.1 15.15	121.8	118.2

MISSSED APPROACH: Climbing right turn to 3000 on heading 030°, then direct OAK VORTAC and hold.



SAN FRANCISCO, CALIFORNIA
Orig FIG
37°37'N-122°23'W
RNAV (GPS) PRM RWY 28L
SAN FRANCISCO INTL (SFO)

CATEGORY	A	B	C	D
LPV DA #	213/24	200 (200-1/2)		
LPV DA	435/50	422 (500-1)		
RNAV/VNAV DA	584-1%	584-2%	584-1%	571 (600-1%)
RNAV MDA	571 (600-1%)	571 (600-2%)	584-1%	667 (700-1%)

TDZ/CL Rwy 19L and 28R
REL Rwy 1L, 1R, and 10L
HRL all Rwy
SAN FRANCISCO, CALIFORNIA
Orig FIG
37°37'N-122°23'W
RNAV (GPS) PRM RWY 28L
SAN FRANCISCO INTL (SFO)

CATEGORY	A	B	C	D
LPV DA #	213/24	200 (200-1/2)		
LPV DA	435/50	422 (500-1)		
RNAV/VNAV DA	584-1%	584-2%	584-1%	571 (600-1%)
RNAV MDA	571 (600-1%)	571 (600-2%)	584-1%	667 (700-1%)

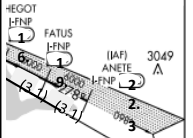
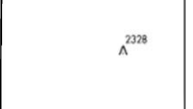
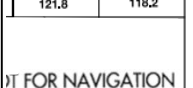
TDZ/CL Rwy 19L and 28R
REL Rwy 1L, 1R, and 10L
HRL all Rwy
SAN FRANCISCO, CALIFORNIA
Amnd 1A 12320
37°37'N-122°23'W
RNAV (GPS) PRM RWY 28L
SAN FRANCISCO INTL (SFO)

LDA PRM RWY 28R (SIMULTANEOUS CLOSE PARALLEL)
SAN FRANCISCO INTL (SFO)
US CLOSE PARALLEL
ILS PRM RWY 28L

LDA PRM RWY 28R
NEOUS CLOSE PARALLEL)
SAN FRANCISCO INTL (SFO)

MISSSED APPROACH: Climbing right turn to 3000 on heading 030°, then direct OAK VORTAC and hold.

GND CON	CLNC DEL
121.8	118.2



SAN FRANCISCO, CALIFORNIA
Orig FIG
37°37'N-122°23'W
RNAV (GPS) PRM RWY 28L
SAN FRANCISCO INTL (SFO)

CATEGORY	A	B	C	D
LPV DA #	213/24	200 (200-1/2)		
LPV DA	435/50	422 (500-1)		
RNAV/VNAV DA	584-1%	584-2%	584-1%	571 (600-1%)
RNAV MDA	571 (600-1%)	571 (600-2%)	584-1%	667 (700-1%)

TDZ/CL Rwy 19L and 28R
REL Rwy 1L, 1R, and 10L
HRL all Rwy
SAN FRANCISCO, CALIFORNIA
Orig FIG
37°37'N-122°23'W
RNAV (GPS) PRM RWY 28L
SAN FRANCISCO INTL (SFO)

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TDZ/CL Rwy 19L and 28R
REL Rwy 1L, 1R, and 10L
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SAN FRANCISCO, CALIFORNIA
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37°37'N-122°23'W
RNAV (GPS) PRM RWY 28L
SAN FRANCISCO INTL (SFO)

LDA PRM RWY 28R (SIMULTANEOUS CLOSE PARALLEL)
SAN FRANCISCO INTL (SFO)
US CLOSE PARALLEL
ILS PRM RWY 28L

New Format AAUP at ATL

ATTENTION ALL USERS PAGE (AAUP)
SIMULTANEOUS CLOSE PARALLEL
ATLANTA/HARTSFIELD-JACKSON ATLANTA INTL (ATL)
Atlanta, Georgia

Pilots who are unable to participate will be afforded appropriate arrival services as operational conditions permit and must notify the controlling ATIS as soon as practical, but at least 100 miles from destination.

ILS PRM Rwy's 8L, 8R, 9L, 9R, 10, 26L, 26R, 27L, 27R, 28

Briefing Points:

- When in range, tune in the PRM monitor frequency on a secondary radio, set the audio volume, then deselect the audio until switched to the lower frequency.
- When instructed, immediately switch to the lower frequency and select the monitor frequency audio.

EXPANDED PROCEDURES

1. **ATIS.** When the ATIS broadcast advises that simultaneous ILS PRM approaches are in progress, pilots should brief to fly the ILS PRM approach. If later advised to expect an ILS approach, the ILS PRM chart may be used after noting the following:

- Minimums and missed approach procedures are unchanged.
- Monitor frequency no longer required.
- A lower glide slope intercept altitude may be assigned when advised to expect an ILS approach.

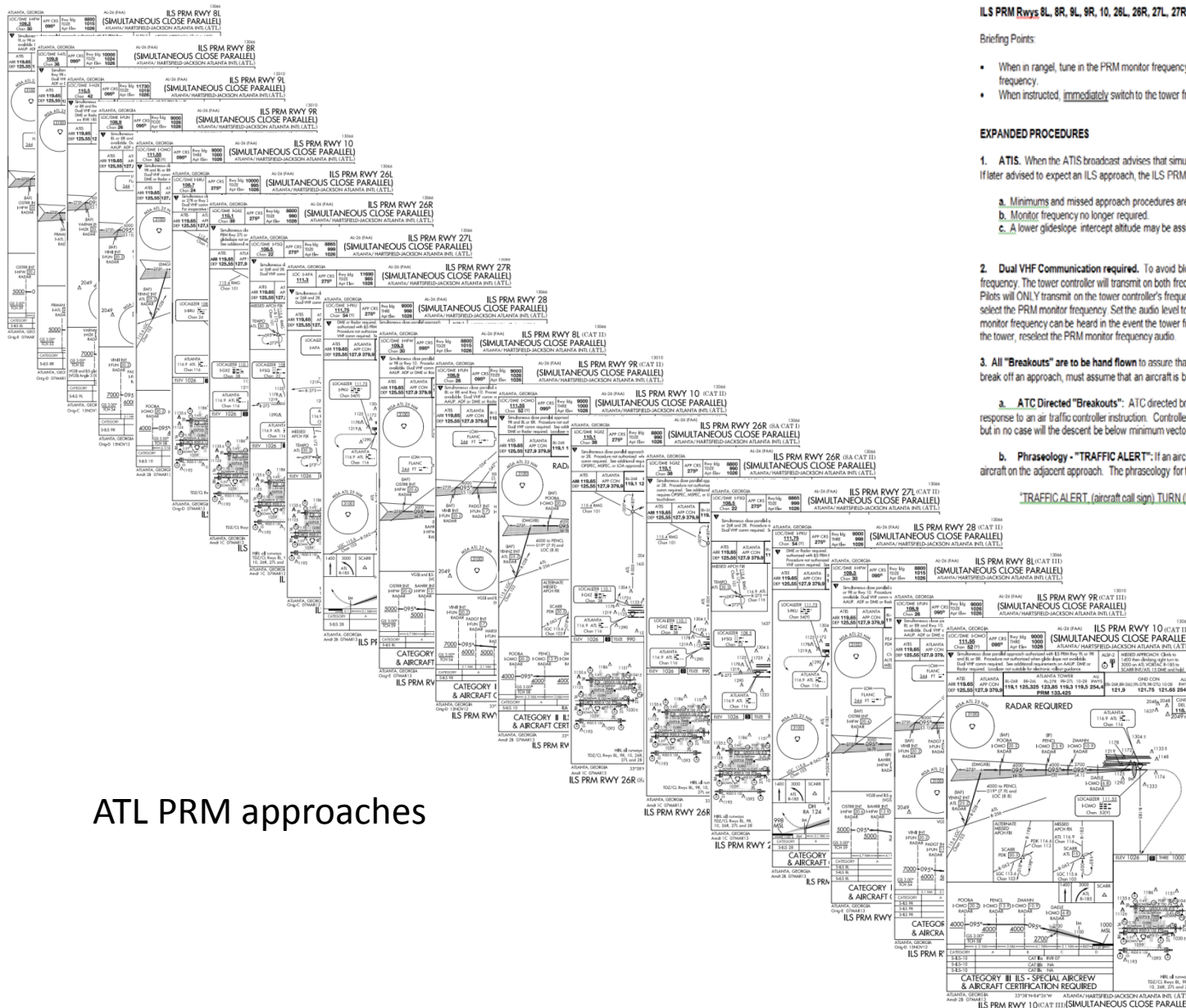
2. **Dual VHF Communication required.** To avoid blocked transmissions, each runway will have two frequencies, a primary and a PRM monitor frequency. The tower controller will transmit on both frequencies. The PRM Monitor controller's transmissions, if needed, will override both frequencies. Pilots will ONLY transmit on the tower controller's frequency, but will listen to both frequencies. When practical, on a second communications radio, select the PRM monitor frequency. Set the audio level to about the same volume as the primary communication radio so that transmissions on the PRM monitor frequency can be heard in the event the tower frequency is blocked. Then, deselect the PRM monitor audio. When instructed by ATC to contact the tower, deselect the PRM monitor frequency audio.

3. All **"Breakouts"** are to be hand flown to assure that the maneuver is accomplished in the shortest amount of time. Pilots, when directed by ATC to break off an approach, must assume that an aircraft is blundering toward their course and a breakout must be initiated immediately.

a. **ATC Directed "Breakouts":** ATC directed breakouts will consist of a turn and a climb or descent. Pilots must always initiate the breakout in response to an air traffic controller instruction. Controllers will give a descending breakout only when there are no other reasonable options available, but in no case will the descent be below minimum vectoring altitude (MVA) which provides at least 1,000 feet required obstruction clearance.

b. **Phraseology - "TRAFFIC ALERT":** If an aircraft enters the "NO TRANSGRESSION ZONE (NTZ)," the controller will breakout the threatened aircraft on the adjacent approach. The phraseology for the breakout will be:

"TRAFFIC ALERT (aircraft call sign) TURN (left/right) IMMEDIATELY HEADING (degrees) CLIMB/DESCEND AND MAINTAIN (altitude)"



ATL PRM approaches