Flight Procedures Cover Page	Task Action:	Task Type:	Estimated Chart Date:	APWS Task ID:	APWS Project ID:				
	FLIGHT CHECK	SID	05/16/2024 A3F16404AD9C4652851F6E3B58467977		DF3B7F66C56B45E89F1E4BF7FD32855D				
Procedure: CCOBB THREE (RNAV) SID	Enroute: YES	Specialist: Mccartney, Michael		Agreement Number:					
Airport ID: KDTW			Airport City: DETROIT		State: MI				
Facility ID:	Facility Type:	Flight Inspection Remain New FC Slot	к Туре:						
Procedure Comments: FULL AMENDMENT.					OVAL 17,				
PENDING AIRPORT DATA FOR KYIP. ACTI	VE DATA FOR ALL OTHE	R AIRPORTS.			20 CHECKER				
WAIVERS (2): 1. TO NOT CHART IF ALTITUDE AT IF FOR RADAR VECTORS. 2. AFS-420 MEMORANDUM "WAIVER TO FAA ORDER 8260.58C PARAGRAPH 1-2-5.C.(3), MAXIMUM BANK ANGLE" DATED 01/31/2023.									
KYIP: RWY 27 CONTROLLING OBSTACLE MINIMUMS DID NOT CHANGE.	903 FT MSL TOWER (26	-002998) LAT/LONG CHA	NGED FROM 421431.78N/083	3411.47W TO 421431.80N/0833411.49W (MOV	ED 2.52 FT NORTHWEST); TAKEOFF				
KVLL: RWY 28 CONTROLLING OBSTACLES CHANGED FROM 940 FT MSL BLDG 423234.20N/0831235.50W (CLIMB GRADIENT), 1749 FT MSL TOWER 422858.00N/0831219.00W (CLIMB-TO ALTITUDE) TO 905 FT MSL BUILDING (26-003210) 423232.54N/0831234.07W; RETAINED CURRENT TAKEOFF MINIMUMS TO MATCH PUBLISHED ODP.									
KMTC: RWY 19 CLIMB GRADIENT INCREASED FROM 234 FT/NM TO 235 FT/NM. CONTROLLING OBSTACLE 1246 FT MSL TOWER (26-001410) LAT/LONG CHANGED FROM 423315.00N/0825315.00W TO 423312.00N/0825315.00W (MOVED 303.71 FT SOUTH). OBSTACLE ACCURACY INCREASED FROM 5D TO 4D.									
CANCELS NOTAMS (3): FDC 2/1544, 2/15	547, 3/2854.								
CONTACT: ERIC SUSKI, AJV-A431, MANA	GER, (405) 954-7331.								
<i>Digitally signed by</i> ERIC N SUSKI Mar 18, 2024									
04/03/2024. THIS IS A CORRECTED COP 1. PROCEDURAL DATA NOTES, CHANGE			POLEAN" TO "NAPOLEON" FIX						
				Digitally signed by					
				ERIC N SUSKI	ALITY 41				
				Apr 03, 2024	41				
					CHECKE				

					F	FIPC D	DME/DM	E F	ORM						
PROCEDURE:	DURE:					AIRPORT NAME: A			AIRPO	AIRPORT ID:		SPECIAL CONTROL NO:			
CCOBB THREE (F	OBB THREE (RNAV) DEPARTURE				DETROIT METRO WAYNE COUNTY KI			KDTW	KDTW		BG-01-220-24				
FAC ID: CCOBB3			CITY: DET	FROIT	•				ST: MI		ORIG CHART DATE: 05/16/2024				
DFL TYPE:	THIRD PAR	RTY:	EST. TIME ON SITE: REIMB. NUMBER: PTS TASK ID:							•					
PROC/D	YF YF	ES	1.0						A3F16404	AD9C4652	851F6E3B5	8467977			
						PREF	FLIGHT	NO	ΓES						
REVIEWER: sco	tt wiebe										DATE:	03/08/2024	3/08/2024		
COMMENTS:											CHECK (ONE:			
											X FLT	CK REQ	NFCR	🗌 REJ	ECT
														YES	NO
											CPV COM	1PLETE?		X	
PROCEDURE RESULTS															
INSPECTION DA	TE:	CREV	CREW #: N #: INSTRUMENT PROCEDURE STATUS: ARINC CODING:						3:						
03/08/2024		VN21	9	N69		X SAT	SAT W	//CHA	NGES] UNSAT		Г	SAT/GOLD		NSAT
FLIGHT INSPECTOR SIGNATURE:					P	PRINTED NAME: NOT					NOTAM	NOTAM INITIATED?			
scott wiebe @ 03/08/2024 14:13					V	WIEBE, GREGORY SCOTTYESXNO						NO			
FLIGHT INSPECTOR REMARKS: Procedure Satisfactory for GNSS operations, DME/DME awaiting approval by the applicable AJV Operations Support Group.															
DME/DME STATUS:SPECIALIST SIGNATURE:PRINTED NAME:															
X SATUNSATsteven s-ctr rager @ 03/20/2024 05:46Steven Rager															
SPECIALIST REN															
Procedure SAT for DME/DME/IRU NAV. All DME ESV's for legs flown recorded by Inspection Aircraft all other ESV's certified by TARGETS.															
IN-FLIGHT OBSTACLE REPORT															
OBSTRUCTION I	TION ID #: COORDINATES OR LOCATION:				GN	SS ALTIT	TUDE (MSL):	BAR	BAROMETRIC ALTITUD			SL): HEIGHT ABOVE GROUND LEVEL:			

					FIPC	BASIC	FOI	RM							
PROCEDURE:					AIRPORT NAME: A			AIRPO	RT ID:	SPECIAL CONTROL NO:					
CCOBB THREE (RNAV) DEPARTURE			E	DETROIT METRO WAYNE COUNTY K			KDTW		BG-01-220-24						
FAC ID: CCOBB3	}		CITY: DETROIT					ST: MI		ORIG CHART DATE: 05/16/2024					
DFL TYPE:	THIRD P	ARTY:	EST. TIME ON SITE: REIMB. NUMBER: PTS TASK ID:						ID:						
PROC/D		YES	1.0		A3F16404AD9C4652					2851F6E3B58467977					
]	PREF	LIGHT	NO	ΓES							
REVIEWER: sco		DATE: 03/08/2024						4							
COMMENTS:										CHECK (ONE:				
										X FLT	🗴 FLT CK REQ 🛛 NFCR 🛛			REJECT	
													YES	NO	
											CPV COMPLETE? X				
				PF	ROCE	DURE I	RES	ULTS							
INSPECTION DA	TE:	CREV	N #: N #:	IN	INSTRUMENT PROCEDURE STATUS:				ARINC CODING:						
03/08/2024		VN21	.9 N69	X	X SAT SAT V/CHANGES UNSAT						SAT SAT/GOLD UNSAT			NSAT	
FLIGHT INSPECTOR SIGNATURE:					PRINTED NAME: NOTAM INITIATED?						ED?				
scott wiebe @ 03/08/2024 14:13					WIEBE, GREGORY SCOTT YES						XI	NO			
FLIGHT INSPEC Procedure Satisfact			tions, DME/DME await	ing appro	val by the	applicable A.	JV Ope	rations Suppo	ort Group.						
IN-FLIGHT OBSTACLE REPORT															
OBSTRUCTION I	D #: CO	COORDINATES OR LOCATION:			NSS ALTITUDE (MSL): BAROMETRIC ALTITUI			DE (MSL):	E (MSL): HEIGHT ABOVE GROUND LEVEL:						

1. FLIGHT PROCEDURE IDENTIFICATION:

Detroit, MI (KDTW) CCOBB (RNAV) SID

2. WAIVER REQUIRED AND APPLICABLE STANDARD:

Waiver required to not chart IF altitude at the IF for radar vectors (RV). Order 8260.46J Appendix E, Section 1, para 2m(3). "Document the minimum crossing altitude at the IF on RNAV Radar departure procedures as follows: CHART: MINIMUM CROSSING ALTITUDE AT (RNAV IF)-(Altitude)."

3. REASON FOR WAIVER (JUSTIFICATION FOR NONSTANDARD TREATMENT):

Adding unnecessary altitudes at the "IF" on procedures when they are not needed creates unnecessary workload based on the type of climb clearance that is issued. If the altitude restriction at the "IF" is to be adhered to for aircraft departing from DETROIT METRO WAYNE COUNTY AIRPORT (DTW), then after the aircraft is airborne ATC must issue "CLIMB VIA SID EXCEPT MAINTAIN (altitude)". With this procedure, it's unnecessary to add an altitude restriction at BROZZ as the aircraft will be issued an initial departure clearance containing an altitude "AS ASSIGNED BY ATC" and will be receiving radar vectors to the waypoint BROZZ to join the procedure. When aircraft depart, ATC must ensure they are at or above the Minimum Vectoring Altitudes (MVA), therefore the aircraft is always operating in airspace at an altitude above any terrain obstacles.

Adding an unnecessary altitude at BROZZ creates workload for pilots as it could create a climb gradient higher than 200 feet per NM depending on where ATC vectors the aircraft before clearing them to BROZZ and it could increase communication between ATC and pilots who will be asking questions about the altitude restriction, which ties up the radios. It also adds pilot workload once airborne when ATC issues a higher altitude by stating "CLIMB AND MAINTAIN (altitude)". The use of "CLIMB AND MAINTAIN (altitude) deletes any published altitude restrictions, therefore pilots will be heads down deleting the restriction from the FMC.

AFS has approved other procedures within the NAS provided an evaluation has been completed. In this case, the evaluation has been accomplished and is contained under number 4 below.

4. EQUIVALENT LEVEL OF SAFETY PROVIDED:

With a standard climb gradient of 200 ft/nm all surfaces are clear to IF (BROZZ) which is 17.99 nm from the closest DER. The departure route description for all runways will provide instruction for the aircraft to conduct an uninterrupted climb to an altitude "AS ASSIGNED BY ATC" which is above the MVA from the airport to the IF.

ATC will ensure aircraft departing will cross the IF at or above 3000 ft MSL. An OCS with a starting elevation of 2000 ft (3000 MVA-1000 ROC) was evaluated for the route starting at BROZZ and the surface was clear.

5. ALTERNATIVE ACTIONS DEEMED NOT FEASIBLE:

Modifying all runway SIDs to replace the radar vectors segment with RNAV OTG would be incompatible with procedure efficiency in a constrained airspace and cause environmental issues and delays.

6. COORDINATION WITH USER ORGANIZATIONS (SPECIFY):

Central Service Area PBN FAA and NATCA Leads ZOB ARTCC D21 TRACON Detroit Metro Tower

7. SUBMITTED BY:

DATE	OFFICE IDENTIFICATION	TITLE
11/28/23	AJV-A431	MANAGER

SIGNATURE

Digitally signed by **BEV L BORDY** Jan 26, 2024

FLIGHT STANDARDS USE ONLY CONTROL NO.

8. FLIGHT STANDARDS ACTIONS:

□ APPROVED □ DISAPPROVED □ NOT REQUIRED

COMMENTS:

DATE ROUTING SYMBOL SIGNATURE



Federal Aviation Administration

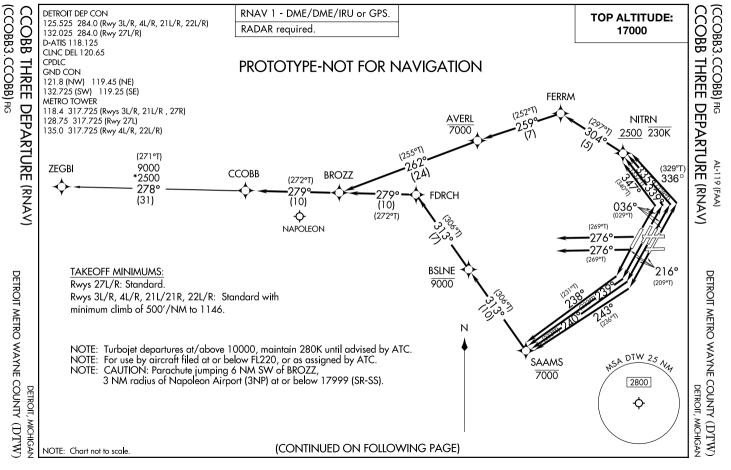
Memorandum

Subject:	Waiver to FAA Order 8260.58C paragraph 1-2-5.c.(3), Maximum bank angle
From:	Wade E.K. Terrell, Manager, Flight Procedures and Airspace Group
То:	Instrument Flight Procedure Service Providers Digitally signed by WADE WADE EK TERRELL Date: 2023.01.31 09:21:16
Date:	January 31, 2023

Background: The Performance Based Navigation (PBN) Aviation Rulemaking Committee (PARC) made a recommendation that the FAA adjust the turn parameters used in PBN instrument flight procedure (IFP) design to reflect modern avionics values. The Flight Procedures and Airspace Group analyzed current avionics specifications with the help of several FAA offices and RTCA SC-227 to identify the new bank angles necessary for current IFP design. The Flight Procedures and Airspace Group then conducted an Operational Safety Review (OSR) for this amendment to bank angle criteria. The outcome of the OSR was that no new hazard is introduced into the National Aerospace System (NAS).

Purpose: This memorandum waives FAA Order 8260.58C, United States Standard for Performance Based Navigation (PBN) Instrument Procedure Design, paragraph 1-2-5.c.(3) and authorizes use of a maximum bank angle of 23 degrees above FL195 up to FL245 and a maximum bank angle of 16 degrees above FL245.

This waiver remains in effect until rescinded. No additional waiver request action is required. Please direct all inquiries to Thomas J. Nichols, Standards Section Manager, Flight Procedures and Airspace Group at 405-954-1171 or <u>thomas.j.nichols@faa.gov</u>



V

DEPARTURE ROUTE DESCRIPTION

NOTE: See additional requirements on AAUP.

TAKEOFF RUNWAY 3L: Climb on heading 036° to intercept course 335° to cross NITRN at or above 2500 and at or below 230K, then on track 304° to FERRM, then on track 259° to cross AVERL at or below 7000, then on track 262° to BROZZ, thence....

TAKEOFF RUNWAY 3R: Climb on heading 036° to intercept course 336° to cross NITRN at or above 2500 and at or below 230K, then on track 304° to FERRM, then on track 259° to cross AVERL at or below 7000, then on track 262° to BROZZ, thence....

TAKEOFF RUNWAY 4L: Climb on heading 036° to intercept course 347° to cross NITRN at or above 2500 and at or below 230K, then on track 304° to FERRM, then on track 259° to cross AVERL at or below 7000, then on track 262° to BROZZ, thence....

TAKEOFF RUNWAY 4R: Climb on heading 036° to intercept course 339° to cross NITRN at or above 2500 and at or below 230K, then on track 304° to FERRM, then on track 259° to cross AVERL at or below 7000, then on track 262° to BROZZ, thence....

TAKEOFF RUNWAY 21L: Climb heading 216° to intercept course 243° to cross SAAMS at or below 7000, then on track 313° to cross BSLNE at or below 9000, then on track 313° to FDRCH, then on track 279° to BROZZ, thence....

TAKEOFF RUNWAY 21R: Climb on heading 216° to intercept course 240° to cross SAAMS at or below 7000, then on track 313° to cross BSLNE at or below 9000, then on track 313° to FDRCH, then on track 279° to BROZZ, thence....

TAKEOFF RUNWAY 22L: Climb on heading 216° to intercept course 239° to cross SAAMS at or below 7000, then on track 313° to cross BSLNE at or below 9000, then on track 313° to FDRCH, then on track 279° to BROZZ, thence....

TAKEOFF RUNWAY 22R: Climb on heading 216° to intercept course 238° to cross SAAMS at or below 7000, then on track 313° to cross BSLNE at or below 9000, then on track 313° to FDRCH, then on track 279° to BROZZ, thence....

TAKEOFF RUNWAYS 27L/27R: Climb on heading 276° or as assigned by ATC, for RADAR vectors to BROZZ, thence....

....on track 279° to CCOBB, then on (transition). Maintain 17000, expect filed altitude 10 minutes after departure.

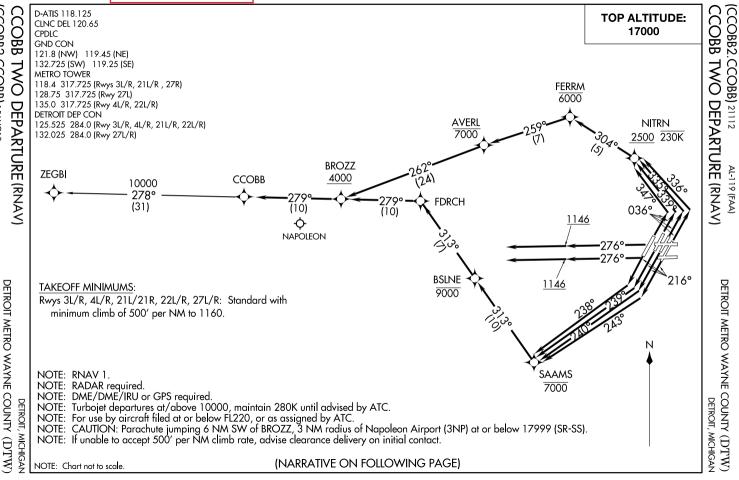
ZEGBI TRANSITION (CCOBB3.ZEGBI):

PROTOTYPE-NOT FOR NAVIGATION

EXISTING

CCOBB2.CCOBB) 15AUG19

EC-1' 02 OCT 2023 to 02 NOV 2023



EC-1, 05 OCT 2023 to 02 NOV 2023

DETROIT METRO WAYNE COUNTY (DTW)

(CCOBB2.CCOBB) 21112 CCOBB TWO DEPARTURE (RNAV)

AL-119 (FAA)

DETROIT, MICHIGAN

V

EC-1, 05 OCT 2023 to 02 NOV 2023

DEPARTURE ROUTE DESCRIPTION

NOTE: See additional requirements in RNAV departure AAUP.

TAKEOFF RUNWAY 3L: Climb on heading 036° to intercept course 335° to cross NITRN at or above 2500 and at or below 230K, then on track 304° to cross FERRM at or below 6000, then on track 259° to cross AVERL at or below 7000, then on track 262° to cross BROZZ at or above 4000, thence....

TAKEOFF RUNWAY 3R: Climb on heading 036° to intercept course 336° to cross NITRN at or above 2500 and at or below 230K, then on track 304° to cross FERRM at or below 6000, then on track 259° to cross AVERL at or below 7000, then on track 262° to cross BROZZ at or above 4000, thence....

TAKEOFF RUNWAY 4L: Climb on heading 036° to intercept course 347° to cross NITRN at or above 2500 and at or below 230K, then on track 304° to cross FERRM at or below 6000, then on track 259° to cross AVERL at or below 7000, then on track 262° to cross BROZZ at or above 4000, thence....

TAKEOFF RUNWAY 4R: Climb on heading 036° to intercept course 339° to cross NITRN at or above 2500 and at or below 230K, then on track 304° to cross FERRM at or below 6000, then on track 259° to cross AVERL at or below 7000, then on track 262° to cross BROZZ at or above 4000, thence....

TAKEOFF RUNWAY 21L: Climb heading 216° to intercept course 243° to cross SAAMS at or below 7000, then on track 313° to cross BSLNE at or below 9000, then on track 313° to FDRCH, then on track 279° to cross BROZZ at or above 4000, thence.... TAKEOFF RUNWAY 21R: Climb on heading 216° to intercept course 240° to cross SAAMS at or below 7000, then on track 313° to cross BSLNE at or below 9000, then on track 313° to FDRCH, then on track 279° to cross BROZZ at or above 4000, thence.... TAKEOFF RUNWAY 22L: Climb on heading 216° to intercept course 239° to cross SAAMS at or below 7000, then on track 313° to cross BSLNE at or below 9000, then on track 313° to FDRCH, then on track 279° to cross BROZZ at or above 4000, thence.... TAKEOFF RUNWAY 22R: Climb on heading 216° to intercept course 238° to cross SAAMS at or below 7000, then on track 313° to cross BSLNE at or below 9000, then on track 313° to FDRCH, then on track 279° to cross BROZZ at or above 4000, thence.... TAKEOFF RUNWAYS 27L/27R: Climb on heading 276° to 1146, then on heading 276° or as assigned for RADAR vectors to cross BROZZ at or above 4000, thence....

....on track 279° to CCOBB, then on (transition). Maintain 17000 or as assigned by ATC, expect filed altitude within 10 minutes after departure.

ZEGBI TRANSITION (CCOBB2.ZEGBI):



21112 RNAV DEPARTURE AAUP

AL-119 (FAA)

DETROIT METRO WAYNE COUNTY (DTW)

DETROIT, MICHIGAN

ATTENTION ALL USERS PAGE (AAUP)

SIMULTANEOUS RNAV DEPARTURES

The purpose of this briefing is to provide guidance, safe operating practices, and phraseology that will help ensure heightened awareness when conducting parallel RNAV departures at the Detroit Metro Wayne County Airport (DTW). Where applicable, pilots should comply with established company procedures for RNAV operations.

1. PREFLIGHT: Expect clearance for RNAV Standard Instrument Departure (SID), if capable of terminal RNAV procedures. If unable to accept the assigned RNAV SID, advise Clearance Delivery on initial contact. Upon assignment of an RNAV SID, crosscheck the charted RNAV SID with the aircraft navigation system against the ATC clearance. Consider the following cross items:

- Ensure correct departure runway is loaded
- Ensure all transitions are loaded correctly
- Ensure sequence of waypoints match the appropriate charts
- Use the LEGS page to verify routing (for navigation systems with ROUTE and LEGS pages)
- Ensure altitude set in the altitude window matches the TOP ALTITUDE of the SID (unless amended by ATC)
- Do not modify or manually construct RNAV procedures
- Advise ATC prior to takeoff if unable verify correct loading or if unable to comply with the SID

2. BEFORE TAKEOFF: Ensure the departure runway assigned on taxi is depicted by the navigation system.

- Verify all modifications, including runway changes, in the navigation system with the RNAV SID
- Verify aircraft symbol relative to the runway symbol, lateral track, and depicted route agree with the ATC clearance (electronic navigation map displays)

3. LINE UP/TAKEOFF: Expect a takeoff clearance that will include "RNAV to" the first waypoint on the SID, or a heading. If issued a heading, do not delete the SID from the navigation system.

- Clearance: "Delta 123, RNAV to SAAMS, Runway 22L, Cleared for Takeoff"
- Response: "Delta 123, RNAV to SAAMS, Runway 22L, Cleared for Takeoff"
- Verify the correct runway and SID are loaded and the correct lateral navigation mode is available and ready for use after takeoff
- If the takeoff clearance does not match the planned/loaded procedure, request an initial heading from tower or refuse the takeoff clearance until the discrepancy is resolved.

4. AFTER TAKEOFF: Unless issued a heading, engage lateral navigation flight guidance as soon as practical and fly the departure precisely.

- Parallel RNAV departures must not encroach on the airspace between parallel runway centerlines without specific ATC clearance
- When possible, track the runway centerline until reaching the departure end of runway
- Strict compliance with the lateral and vertical tracks and charted speed restrictions is imperative
- Once established on the procedure, maintain route centerline, as depicted by onboard lateral navigation indicators and/or flight guidance
- Manually intervene if necessary, to stay on track to avoid transgressing in the direction of a parallel runway, track, or aircraft
- If unable to comply with the SID profile, either laterally or vertically, immediately notify ATC

(CONTINUED ON FOLLOWING PAGE)

RNAV DEPARTURE AAUP 25APR19

ЕС-1,

05 OCT 2023 to 02 NOV 2023



RNAV DEPARTURE AAUP

EC-1,

05 OCT 2023 to 02 NOV 2023

AL-119 (FAA)

DETROIT METRO WAYNE COUNTY (DTW)

DETROIT, MICHIGAN

ATTENTION ALL USERS PAGE (AAUP)

(CONTINUED FROM PREVIOUS PAGE)

5. **SPECIFIC INFORMATION:** Runway assignments will be issued on initial contact with Ground Control and will be based on traffic conditions, runway closures, and other operational requirements.

For planning purposes, pilots can anticipate a runway assignment based upon the information below.

Runway Assignment for Dual Departure Operations

Departing Runways 22L/R, 21L/R SNDRS, CCOBB, KAYLN, MIGGY, TRMML, ZETTR - Expect Runway 22L HHOWE, PAVYL, LIDDS, BARII, CLVIN - Expect Runway 21R

<u>Departing Runways 4L/R, 3L/R</u> SNDRS, CCOBB, KAYLN, MIGGY, TRMML, ZETTR - Expect Runway 04R HHOWE, PAVYL, LIDDS, BARII, CLVIN - Expect Runway 03L

Departing Runways 27L/R (not depicted below) KAYLN, MIGGY, TRMML, ZETTR, HHOWE - Expect Runway 27R CCOBB, SNDRS, BARII, CLVIN, LIDDS, PAVYL - Expect Runway 27L

