STAGE GAS PLANNING - RADIATING

Plan for a team of stage divers with a secondary penetration during the return

Use the gas planning worksheet

	De	pth	Interval					KEY			
	2/	ATA			SP	Start Pres	sure	PI	Pressure In		
	3 /	TA			UP	Usable Pre	essure	PO	Pressure Out		
		та		-	DP	Drop Pres	sure	ТΙ	Time In		
	47				TP	Turn Press	sure	то	Time Out		
* R	teminder: S	tage bot	tle intervals are doub	oled *				MG	Minimum Gas		
	STAGE	BG									
SP:		•									
UP:				Distance:			Distan	ce:			
DP:		x		PI:			DP:		TP:		
TP:	х			TI:			TI:		TI:		
	-									_	
	PO:		PO:	STAGE			PO:		Distanc	e:	
	TO:		TO:	PO:			TO:				
				TO:		Backgass					
vg De	epth:					SP:					
						MG:					
						UP:			TP:	_	
						TP:			TI:		
Avg De	pth:			TO:		Backgass SP: MG: UP: TP:				TP: TI:	
									Distanc	e:	

Populate Intervals chart for reference from where it should be written down in wetnotes

Depth	Interval	Also populate anticipated Average Depth
2 ATA	100	PO:
3 ATA	150	TO:
4 ATA	200	Avg Depth: 30

At an average of 30' an interval of 100psi/5 minutes will be assumed for the rest of the example

Normal Dive

Diver starts with a full set of AL80s and a full stage bottle DP and TP are calculated using "Half Plus"



DP is reached and the drop takes the team takes one minute The line walls-out at minute 58

500psi was used from SP

57 minute swim can be calculated (later, with a phone) to have been 1710 feet penetration



Our divers approach that interesting jump, everyone needs to start to do a bit of mental math

We can expect to hit that jump we wanted to see at about 12 minutes after our drop point So minute 96

We used 500psi out of the stage between our waypoint and the drop, so 500psi back Expect 1200psi remaining in the stage



Critical to the recalculation is Minimum Gas Critical to calculating MG is back-referencing and situational awareness Without being able to be absolutely cortain of MG the recelculation can not b

Without being able to be absolutely certain of MG the recalculation can not be made

It took 20 minutes to reach this spot, so it will take 20 minutes to return to the surface 20 minutes is 4 intervals, on backgas at this depth intervals are 100psi 400 psi is doubled in case of gas sharing MG = 800psi

	STAGE	BG			
SP:	3000	3000			
UP:	1300	700		Distance: 500 Distance	e: 960
DP:	1700	х		PI: 2200 DP: 17	700 TP: 2500
TP:	×	2300		TI: 20 TI:	32 TI: 58
	PO: TO:		PO: TO:	STAGE PO: 20 PO: 1200 TO: TO: 96 Backgass SP: 2000 MG: 800 UP: TP:	Distance: 1710 83 TP: TI:

Distance:

To determine UP we must first subtract MG from SP as a safety reserve SP - MG = 1200

1200psi is our Provisional Starting Pressure We can calculate our thirds from this Provisional Pressure 1200/3 = 400

After all divers have confirmed their own UP they are reported to the team Lowest UP sets UP for the whole team Dive team agrees on a UP of 400psi

UP of 400 can now be subtracted from SP to determine new TP 2000 - 400 = 1600



With a UP of 400psi a secondary penetration of 20 minutes 400psi useable / 100psi intervals = 4 intervals = 20 minutes

Accounting for another 1 minute stage drop that puts turn time at minute 117

A 20 minute swim from our already 20 minute penetration distance 40 minute penetration = 1200' penetration

	STAGE	BG												
SP:	3000	3000					_							
UP:	1300	700		Dista	ance:	500			Dista	ince:	960			
DP:	1700	х		PI:	2200				DP:	1700		TP:	2500	
TP:	х	2300		TI:	20				TI:	32		TI:	58	
						7		ſ			1			_
	PO:		PO:	ST	AGE				PO:	2000		Dista	nce: 171	0
	TO:		TO:	PO:	1200				TO:	83				
				TO:	96		Bac	kgass						
							SP:	2000)					
							MG:	800)					
							UP:	400)			TP:	1600	
							TP:	1600				TI:	117	
				-			_		_			 _		

Distance: 1200

A thumb gets flicked and the team returns to the stages

400psi of backgas in = 400psi of backgas out 1200psi remain in backgas

20 minutes swim in = 20 minutes swim out The stages are reached at minute 137



After a minute for stage pickup a 20 minute swim to the exit remains

1200psi remain in the stage while 800psi are required for exit

Leading our divers to the surface as such



After 2 1/2 hours 400psi (10cf) remain in the stage and 1200psi (60cf) remain in backgas

OOG Emergency

Returning to the maximum point of secondary penetration....

A teammate has a catastrophic gas loss and a gas share is required to return.

Little do they know it, but one of their stages has also been sitting there free flowing to empty



The divers have matched RMVs, they have both breathed 400psi (20cf) when the failure occurs They will require 40cf (800psi) to return to the stages

-																
		STAGE	BG													
s	SP:	3000	3000										\leq			
ι	JP:	1300	700			Di	stance:	500			Dista	nce:	960			_
	DP:	1700	x			PI	2200				DP:	1700		TP:	2500	
Т	TP:	x	2300			TI	20				TI:	32		TI:	58	
		PO: TO:		PO TO:	800	PO TO	STAGE : 1200 : 96		Bac SP: MG:	kgass 2000 800	PO: TO:	2000 83		Distar	nce: 1	7
								l	JP:	400				TP:	1600	
								-	TP:	1600)			TI:	117	
						<u> </u>								Distar	nce: 1	2

After one minute for stage pickup it is discovered the OOG diver's stage is empty The donating diver gas switches as normal The team starts to exit at minute 138

Each diver requires 20cf to exit 20cf = 400psi in backgas = 800psi in a stage

1200psi is remains in the stage 800psi remains in backgas

Which means both divers surface with 400psi to spare at minute 158



Distance: 1200

NOTE

The above accident management plan sharing gas all the way to the exit assumes doubles.

In sidemount configuration the OOG diver should remain on whatever functional stages are available for as long as possible to allow for independence and speed/efficiency of exit.