



2025 EUROPE COMMUNITY MEETING



Lessons From the Pit Lane

PCI SSC European Community Meeting, 16th October 2025

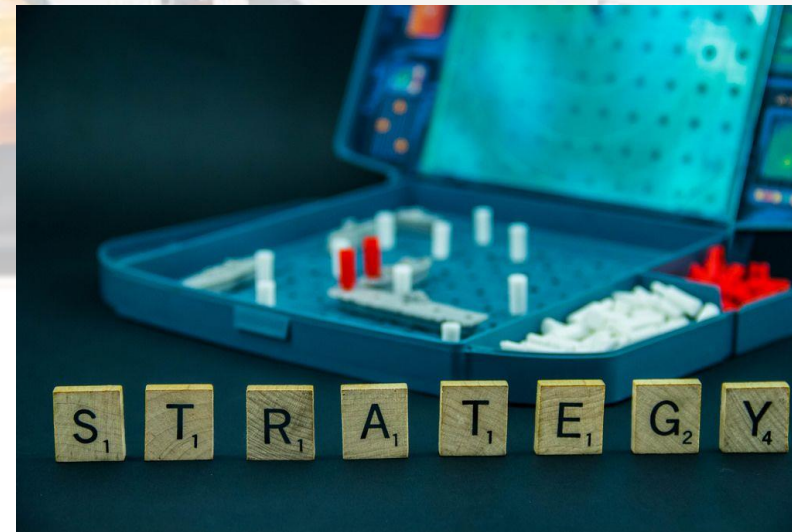
Bernie Collins - Who?

- F1 Analyst - Sky Sports F1
- Head of Race Strategy - Aston Martin F1
- Performance Engineer - McLaren F1
- Design Engineer - McLaren F1



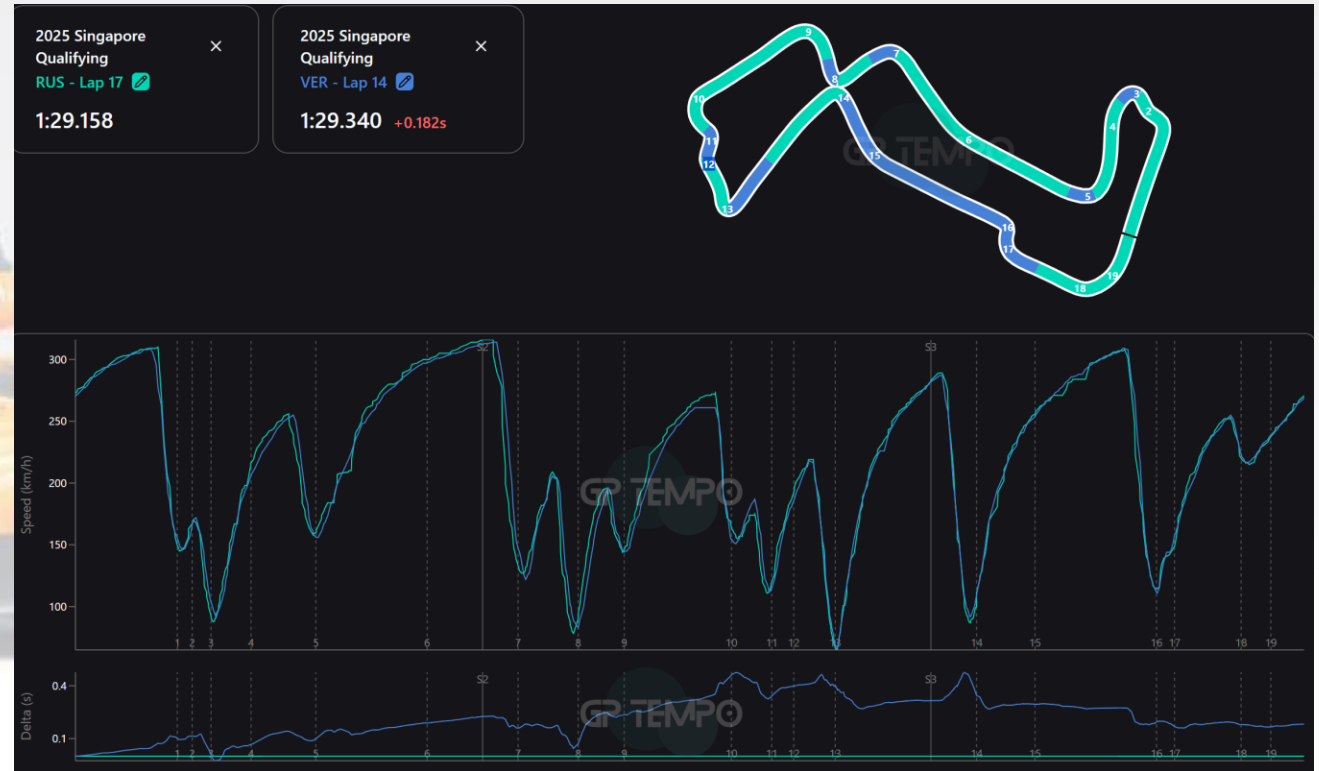
What is Race Strategy?

- a plan of action designed to achieve a long-term or overall aim.
- the art of planning and directing overall military operations and movements in a war or battle.



How Important is Data?

- Singapore qualifying 1:29.2
- P1 and P2 split by 0.182 seconds
- 0.2% total lap time



Collecting data and using it well

- Large number of data inputs
- Seeking further data to improve
- Ask the right Questions?
- Data visualisation



Track: 30°C / Air: 40°C Practice Lap 99/99

STAY POSITIVE

Gear **R** Throttle **S** Front Wing **11**

Position **18** Gap to P1 **+0.00** Warnings **30** **+12.50**

Driver Behind **-00.00** Driver Ahead **+00.00** Penalties **31** **VSC**

ERS REMAINING **100** ERS +/- **36** **0 CHAR**

DRS ACTIVE **+1.25** DIFF **100** **RICH**

ENGINE: 98 BBIAS **60**

61 24 61 61 **BRAKES COLD**

DAMAGE 50% 50% DAMAGE

100 110 110 100

100 110 110 100

MODE: RACE STANDARD

FL Sectors Driver Best Sectors Player Last Lap Player Best Lap Sector Best

00.000 0.000 01:26.564

00.000 0.000 01:26.564

00.000 35.089 01:26.564

01:26.564

Weather: Now 0% Now 0% Now 0% Now 0% Now 0% Now 0%

+10.25

Created by: Javiar

Special thanks to: Gary Swallow

Dashboard 23 +0.00 - - XX PIT 10 01:26.56; 1:26.564 00:000 00:000

Available 0 +0.00 - Text XX PIT +/- 01:26.56; 1:26.564 00:000 00:000

Now 0 +0.00 - Text XX PIT +/- 01:26.56; 1:26.564 00:000 00:000

Available here: 0 +0.00 - Text XX PIT +/- 01:26.56; 1:26.564 00:000 00:000

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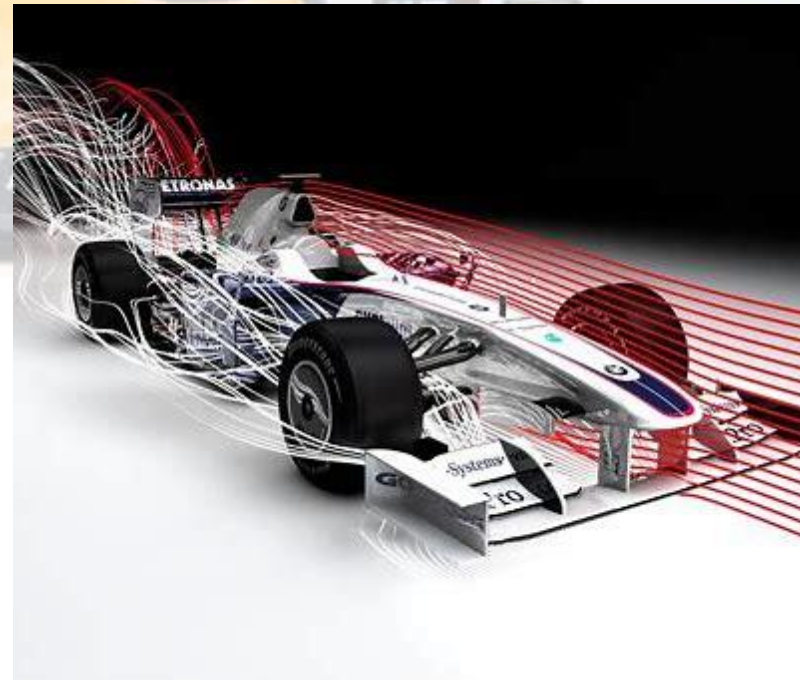
Javiar 0 +0.00 - Text XX PIT +/- 01:26.56; 1:26.564 00:000 00:000

Special thanks to: 0 +0.00 - Text XX PIT +/- 01:26.56; 1:26.564 00:000 00:000

Gary Swallow 0 +0.00 - Text XX PIT +/- 01:26.56; 1:26.564 00:000 00:000

AI and Machine Learning

- Strategy
- Car Set Up
- Car development
- Fan engagement



Arrows Grand Prix - Setup Sheet

Event	Nurburgring R09		Circuit	Nurburgring		Printed	23/06/01		
Driver	Bernoldi, Enrique		Session	Warm Up		Comment	A22-03 Start		
Chassis	Number	A22 03		Front				Rear	
	Ride Height			24				70	
	Anti Roll Bar			050				040	
	Side	Spring	Rate		040				050
			Ratio		Rising				R0
			Preload		0				0
	Bump R.	Type			None				Koni-30
		Gap			60				34
	Damper	Type			Ohlin A02				Ohlin A03
		Setting			S (rebound) 45 / G (comp) 55				Rebound 40
	Mono Bump R.	Type			4mm Celasto				none
		Gap			9				0
	Geom	Camber			-3.00			D	D2-040 D D2-040
			Toe		-3				4
		Anti			Std				Std
Castor				9.00°				N/A	
Steering		Ratio			9 Tooth				N/A
		Stops			Std				N/A
System	Master Cylinder			0.700°				0.750°	
	Caliper			CP 6292-20/21 F				CP 6286-02/03 F	
	Pad			Hitco H44 Standard				Hitco H44 Standard	
	Disc			Hitco F255 H44				Hitco F255 H44	
	Balance							50:42	
Cooling	Duct			Drum		A22-W2-046/047	V4	A22-W0-016/017	
	Entry			V4		A22-W2-048/049		N/A	
	Opening			180				100	
Mainpl.	Front wing				Rear Wing				
	Type	V1				Type	A21-N1-034-06		
	Midplate	Fence V2				Triplane	Hole	H5	
	Endplate	V2					Gurney	L15 - 980	
	Type	V1				Biplane	Type	none	
	Extension	B					Hole	NA	
	Gurney	V1 L10*120				Gurney	none		
	Flap	Angle	13.50°	13.50°		Corner Biplane	none		
			Hole	6	Hole		6	Endplate	22-N3-001/2
	Bodywork								
Deflectors	V1	Water	tha	tha	Beam	Type	V1		
Floor	V2	Oil	25mm	25mm		Flap	V1 twins		
Engine Cover	V2	Closure panel				Gurney	NA		
Gearbox	1st	2nd	3rd	4th	5th	6th	Bevel	F.D.	Maps
	14:34	15:29	19:31	19:27	21:27	22:26	15:23	13:46	5
Weight	Target	604				Fuel hatch - 14kg	Throttle	Torque Manag	
	Driver	72.5				Std reaction platform	Lit Oil	Torque Manag	
Ballast	Fuel Cell Hatch	Densamet				OTT exhausts	Fuel	Pos 2	
	Bout Tail	None				Clutch cooling on	Pit Limit	80	
	Engine Plates	None				Mix 2, Paes 5, Slip 5, TorQ 5	Misc		
	Forward Floor	Steel				Rising rate front rockers	Drink	A22	
Engine	Other	none				Floor with Scrattings off	Plank	Permaglass	
	Spec	A21ev2					Fuel	50	
	Number	21282B0					Issue	1	

Trust the Experts

- Split of resources
- Right information at the right time
- Effective communication



Brief and Debrief

- Get on the same page
- What can we learn from each other. What went right? What went wrong?
- Why?



Honest Analysis

- “The only thing you learn when you are winning is how to smile”
- Data led rather than results led.



Winning Preparation

- Checo Perez won the 2020 Sakhir GP
- Checo was last at end of lap 1
- Plan B?



World Record Pitstop

- McLaren - 1.8s - Qatar

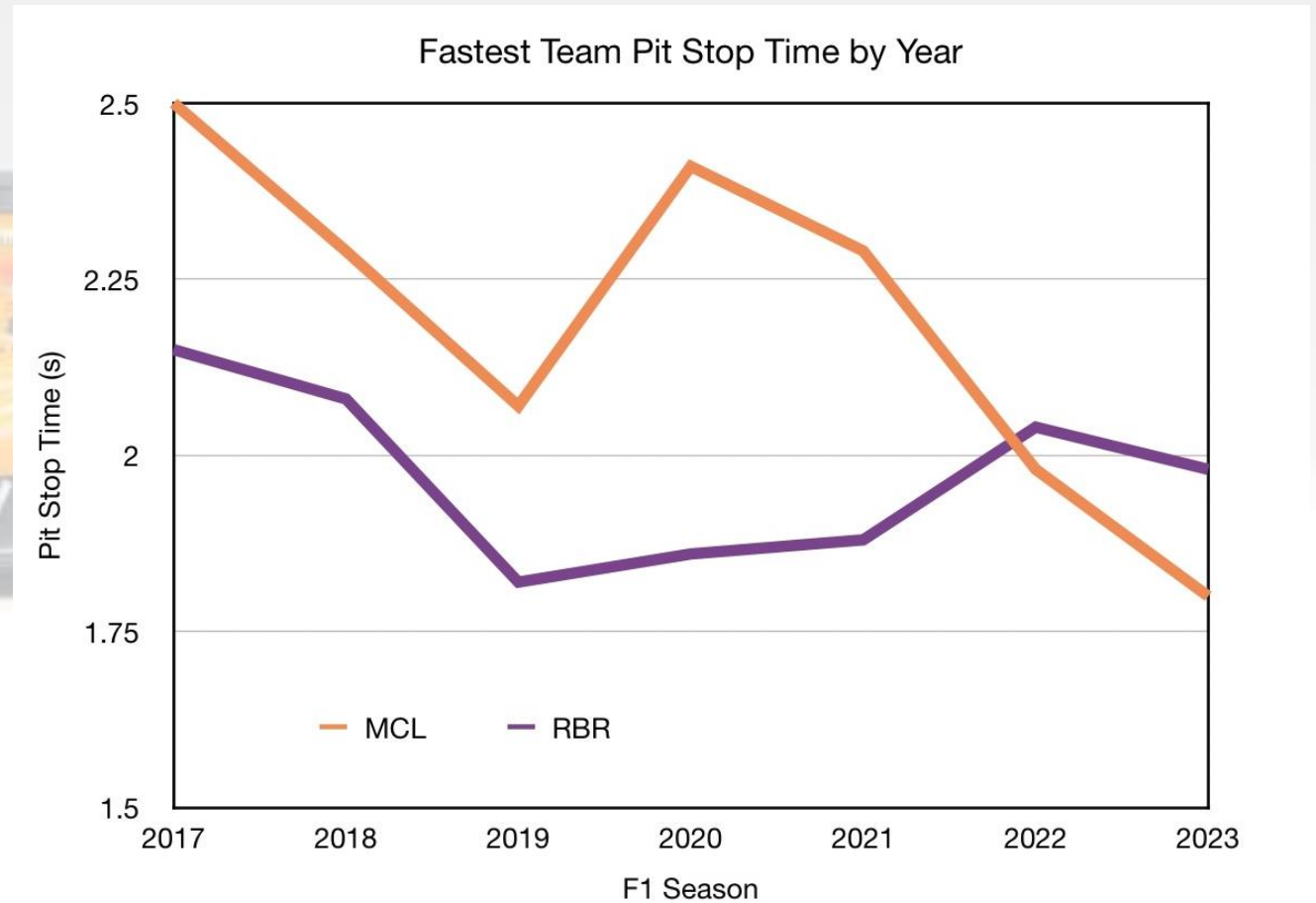
- Tasks

- Jack Up
- Wheel Nut Loosen
- Wheel Off
- Wheel On
- Wheel Nut Tighten
- Drop Jacks
- Green Light
- Launch Car

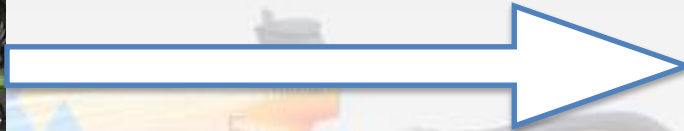


Marginal Gains

- McLaren - 2017 - 2.5s
- McLaren - 2023 - 1.8s
- 28% improvement in 7 years



Constant Analysis



Thank you for listening



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[Bernie.Collins.1](https://www.instagram.com/Bernie.Collins.1)



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