


# Bragan's 1956 Pirates Unconventional Lineups



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Notes provide additional information and were reminders during the presentation. They are not supposed to be anything close to a complete text of the presentation or thorough discussion of the subject.

Use Acrobat Reader's ability to enlarge what appears on the screen if you have trouble reading a graph or table.

## Bragan at SABR 24, 1994



■ Thanks to David Vincent for the photo

He was 76 at the time and as feisty as ever.

## Bragan's "Experiment"

- August 18, 1956 at the Giants
  - Led off with two best power hitters (Thomas, Long)
  - Pitcher batted #7
- 8/29/56 *Sporting News* article:
  - Wanted to get more at bats for best HR hitters
  - Pitcher #7 so men on more likely when #1, #2 hit
- Bragan believed #1, #2 were likely to bat in 9<sup>th</sup>
- Pirates stuck in 6<sup>th</sup> place at time after fast start, so little to lose and wanted to shake things up

The thinking about who is likely to bat in the 9<sup>th</sup> comes from an article in *True Magazine* in 1957 quoted in the *Fireside Book of Baseball* (1958). He thinks close, low scoring games are likely to see the #1 and #2 hitters bat in the 9<sup>th</sup>, and said Allan Roth confirmed that.

Said there were two consecutive 1-run wins over Braves where #2 Johnny Logan made last out. None in 1956, his first year as manager, but may have been in 1955.

Pirates led NL on 6/15 by half a game over the Dodgers in a five team race with 29-21 record , but by 6/30 they had fallen to 32-33 in 5<sup>th</sup> place, 6 games back. Lost 8 in a row in late 7/27 – 8/2

## Analytical Approach

- Compute expected runs per game
  - "Normal" batting order
  - Bragan's unusual lineups
  - Best scoring lineups
- Find probabilities of batting spots leading off ninth
- Markov model can make estimates
- Data source: retrosheet.org

Retrosheet posted detailed 1956 data and boxscores in December 2007, making this study possible

## Markov Process Model

- Based on probabilities of going from one runners/outs situation to another
- Calculates number of runs per 9 innings
- Can compute probabilities of lead-off hitter in each inning
- Also useful for analysis of strategies and batting order optimization

I have used the Markov model extensively for baseball strategy analysis, batting order optimization, and have given several talks on the subject at SABR meetings.

The model version used incorporates ML averages (84-92) for several events on the bases and some other events. None of that is going to have much of an effect on the analysis because we are interested in differences between lineups. Inaccuracies in the model will cancel out when we compare one estimate of scoring to another.

## Pirates "Normal" 1956 Lineup

	POS	BA	OBP	SLG	HR	SB/CS
VIRDON	CF	0.334	0.374	0.462	8	6/6
GROAT	SS	0.273	0.317	0.321	0	0/3
WALLS	LF	0.274	0.345	0.432	11	3/5
LONG	1B	0.263	0.326	0.485	27	1/0
THOMAS	3B	0.282	0.326	0.461	25	0/5
CLEMENTE	RF	0.311	0.330	0.431	7	6/6
SHEPARD	C	0.242	0.309	0.383	7	1/1
MAZEROSKI	2B	0.243	0.293	0.318	3	0/0
PITCHER	P	0.160	0.201	0.196	2	1/0

■ Expected R/9 inn: 4.182

Bragan shuffled his lineup frequently and often either used a different catcher (Hank Foiles) or played Bob Skinner at 1B or in the outfield.

Lineup shown is based on frequency of hitting in each slot for each player. Not sure if Bragan ever used it! Main weakness is Groat hitting second.

Not a great hitting team although Virdon, Clemente finished second and third in BA for NL. (Aaron was #1 at 0.328, Virdon's whole season—24G with Cards, 133 with Pirates—was 0.319) No SLG of 0.500 or better. Not much speed, highlighted SB/CS column, so that likely not a consideration in the lineup and in those days SB used far less than now.

## Front Loaded Lineups

- August 18 at Giants: Thomas, Long, Virdon, Walls, Clemente, Groat, P(Friend), Maz, Shepard
- Only time Thomas and Long were #1, #2
- Typical: Thomas, Walls, Clemente, Long, Virdon, Groat, P, Shepard, Maz

Bragan shuffled his front loaded lineups quite a bit just like he did with standard ones.

## Expected Scoring

	NORMAL	AUGUST 18	TYPICAL EXPERIMENT	BEST	BEST WITH P #9
1	VIRDON	THOMAS	THOMAS	WALLS	VIRDON
2	GROAT	LONG	WALLS	VIRDON	WALLS
3	WALLS	VIRDON	CLEMENTE	CLEMENTE	LONG
4	LONG	WALLS	LONG	LONG	CLEMENTE
5	THOMAS	CLEMENTE	VIRDON	THOMAS	THOMAS
6	CLEMENTE	GROAT	GROAT	SHEPARD	SHEPARD
7	SHEPARD	PITCHER	PITCHER	PITCHER	GROAT
8	MAZEROSKI	MAZEROSKI	SHEPARD	MAZEROSKI	MAZEROSKI
9	PITCHER	SHEPARD	MAZEROSKI	GROAT	PITCHER
R/G:	4.182	4.280	4.262	4.314	4.311
	RUNS/154 GAMES:				
	644	659	656	664.4	663.9

His “normal” lineup is the weakest shown due primarily to Groat hitting #2 (66 of 142 games, so more than half of his games, discounting experimental lineups). Since it takes about 10 runs a season to produce one more win, either of his experimental lineups should do that. The August 18 one, never repeated, was better than the typical ones.

The optimal lineups are a little better than the experimental ones, but may not have produced another win.

Note that the best lineup (found by Joel Sokol, Georgia Tech) has the pitcher hit 7<sup>th</sup>. Sokol’s studies indicate that the best place for the pitcher to bat often is number seven.

Bragan’s ideas had merit.



## Probabilities Leading Off 9<sup>th</sup>

	NORMAL	AUGUST 18	TYPICAL EXPERIMENT	BEST	BEST WITH P #9
1	11.5%	10.4%	10.5%	10.8%	11.6%
2	9.4%	9.9%	10.0%	9.9%	9.3%
3	11.1%	10.2%	10.1%	9.9%	10.5%
4	10.9%	10.4%	10.9%	11.7%	11.3%
5	11.5%	11.6%	11.8%	10.9%	11.2%
6	12.0%	11.7%	11.0%	11.6%	12.0%
7	11.3%	11.9%	12.0%	11.9%	12.1%
8	11.5%	12.9%	13.0%	12.8%	11.0%
9	10.9%	11.0%	10.6%	10.4%	11.0%

- Assumes pitcher always bats
- Differences are small

The highest three consecutive lineup spots are highlighted in red.

Pinch hitters for pitcher might change things, but likely not by very much.

The differences among the lineup spots are quite small, so it is virtually random which one will lead off the ninth.

Bragan's feeling about who would be up in the ninth (in a low scoring, close game) may be justified, but is not meaningful due to almost random nature of who leads off in the ninth.

## How Well Did It Work?

- Beat Giants 9-1 on 8/18 in Polo Grounds
- Used front loaded lineups with P #7 most games through Labor Day (9/3)
  - Won 8, Lost 7; only 3 at home (3-0)
  - 0-4-1 in other games with P #7
- Front loaded with P #9: 0-3, last one 9/13
- Record before 8/18: 50-64-2, for whole season: 66-88-3

8-7 includes 8/18 game. Lost 4 in a row after that game with front loaded, 2 more without, and 2 more with before winning 7 of 8 when front loaded used (and P #7).

Other lineups with pitcher #7 usually had Bob Skinner in the first or second spot. While he developed into a good hitter, in 1955 and 1956 he was a weak hitter, so I did not consider batting him #1 or #2 as front loading.

The 66 wins was the most since 1951 and attendance was the best since that year, so Bragan was a success although quite controversial although the team finished in 7<sup>th</sup>, 27 games behind the Dodgers. They had been expected to finish last as they had in 1950, 1952-55.

## Why Did He Stop?

- Severe criticism in the press
  - He told me that at SABR 24
  - Did not find anything in later *TSN*, 8/29 article did not have anything negative
  - Have not had a chance to search Pittsburgh papers

Only talked to him briefly, and I did not know about the pitchers hitting seventh then, just the power hitters at the top of the order. He was adamant about that saying the extra at bats and homers were a huge advantage. Did not talk to him about on-base percentage. He said he took so much heat from the press that he did not want to continue with the front loaded lineup, and obviously he did not. As best I can tell, he never used it again.

Since he was quite feisty and at times had a contentious relationship with Pirates management, it makes sense that he would be sensitive to too much criticism about his batting orders.

## Notes

- Dale Long
  - Did not bat him #1 or #2 against LHP
  - Retrosheet splits for 1956 much better vs. LHP (.297/.370/.535) than RHP (.223/.277/.430)
  - 1956 was exception to (incomplete) career splits
- TSN article says Casey Stengel might try putting best hitters at top of order, but he never did. With those Yankees, why take a chance on messing things up?

While Bragan was an unconventional thinker, he apparently accepted the platoon advantage concept.

Due to missing play-by-play accounts, Long's splits shown are based on 84% of his plate appearances that season.

Looked at where Yankees batted in 1956 and 1957 and did not see guys like Mantle or Berra hitting at the top.

## Conclusions

- Bragan's ideas had merit:
  - Models show front loaded lineups score more than typical conventional ones he used
  - Academic studies support pitcher batting 7<sup>th</sup> in optimal lineups
- Bragan: unusual manager, but not great
  - Replaced by Murtaugh in August 1957
  - ½ of '58 w/Indians; 1963 – Aug '66 w/Braves

Papers by Joel Sokol

(<http://www2.isye.gatech.edu/~jsokol/boouu.pdf>), and Bruce Bukiet (<http://m.njit.edu/~bukiet/Papers/ball.pdf>).

Pirates did much better under Mutaugh (26-25) than under Bragan (36-67) in 1957. Finished second in 1958 and won it all in 1960 as the younger players improved

Fired by Indians in late June with a 31-36 record, in 6<sup>th</sup> place; team finished 4<sup>th</sup> for year.

Had over .500 record for Braves in 1963-65, but never finished higher than 5<sup>th</sup>. Fired in Aug. 1966 with 52-59 record and team in 7<sup>th</sup> place; team finished 5<sup>th</sup> for year.

## Web sites, e-mail



[www.pankin.com/baseball.htm](http://www.pankin.com/baseball.htm)

has details about Markov model and other  
baseball studies

E-mail: mp --ATsign-- pankin.com

Plan to post slides, notes on my web site