Strategizing to Defend the Power Play Pass

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Context and Research Goals

- Power plays create more open ice for passing and generating offense
- How can shorthanded squads stifle offensive progress?
- Are there coachable differences in defending even-strength and shorthanded passes?

Data Preparation

- Distance between two points = $\sqrt{((x2 - x1)^2 + (y2 - y1)^2)}$
- Categorize passes
  - Zone of ice
  - Play strength
  - Score state
- Other data exploration
  - Play sequence numbering
  - Pass recovery zone

Methods

- Observe how average pass distance varies by game situation
- Seek trends related to differing pass release zones and score states
- Compare to even-strength

Findings

- Changes in completed pass distance were minimal
  - Passes were 2.2 feet shorter on power play
  - 1.6 feet shorter when including unsuccessful attempts

Total Passes and Average Distances

Grouped by strength

Strength	Passes	Avg. Dist.
EV	1763	37.0
PK	56	33.3
PP	514	34.8

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Findings

- Introducing release zone begins to show defensive zone trend
  - Decrease of over 7 feet in team's own end
  - Changes in other zones within 2 feet

Total Passes and Average Distances

Grouped by strength and zone

Zone	Passes	Avg. Dist.
EV		
DEF	891	38.6
NEU	261	31.3
OFF	611	37.2
PP		
DEF	133	31.4
NEU	69	32.7
OFF	312	36.7

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Findings

- Regardless of score state, defensive zone releases are noticeably shorter
  - Nearly 6 feet shorter when advantaged team is tied or winning
  - Over 12 feet shorter when trailing
  - Offensive and neutral zone differences remained under 3 feet

Defensive Zone Pass Distances

Grouped by strength and score state

Score State	Passes	Avg. Dist.
EV		
Even	537	38.4
L	167	41.0
W	187	37.0
PP		
Even	66	32.7
L	26	28.9
W	41	31.1

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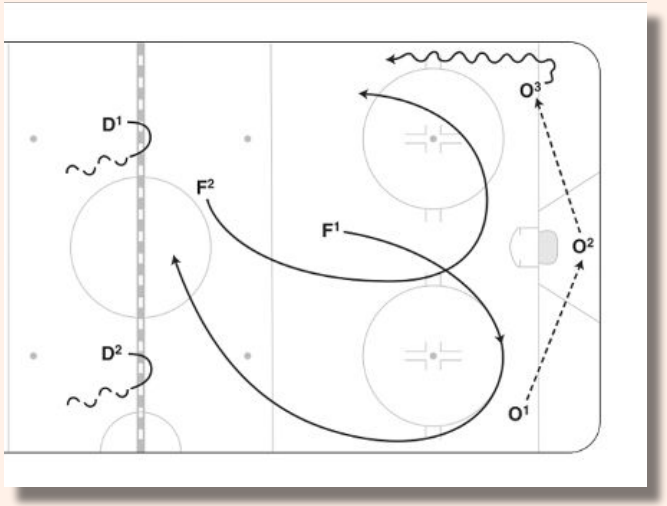
Ties to Previous Analysis

- High-percentage, even-strength passes do not increase scoring chances
- Teams could opt for longer passes when breaking out
- Stretch and breakout passes are valuable for generating offense
- How can we convert this into shorthanded strategy?

Actionable Insights

- Shorthanded strategy focus
  - Restrict longer, high-danger passing lanes that are more plentiful on power play
  - Increase turnover rate by pressuring uncharacteristically long passes
- Tandem pressure from forwards
  - Extend offense's set-up time
  - Keep forwards in motion for defending short passes
  - Increase chance of interception by forcing long-distance passes



Further Study

- Seek similar trends in other leagues
  - Are these trends an anomaly or universal?
  - Could we coach these trends at different levels of play?
- Sample size increase
  - Clarify outliers
  - Better observe other factors like game time remaining or opponent quality

References

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