Battle of the Blueline

2023-05-25

```r
tc <- hockeyR::team_logos_colors

###active player list from Christian Lee
active_team_roster_team_info <- nhl_teams_rosters() %>%
  select(name, abbreviation, teamName, division.name, conference.name)


active_team_rosters_list <- nhl_teams_rosters() %>%
  select(roster.roster) %>%
  as.list() %>%
  do.call(c,.) %>%
  setNames(active_team_roster_team_info$name)

get_active_player_data = function(team_name, list_of_df){
  temp_df = list_of_df[[team_name]]
  temp_df$team_name = team_name
  temp_df = temp_df[,c("person.fullName", "person.id", "position.abbreviation", "position.type
", "team_name")]
  return(temp_df)
}

full_active_player_list = do.call(rbind, lapply(names(active_team_rosters_list), get_active_pl
ayer_data, list_of_df=active_team_rosters_list))

pbp <- load_pbp('2022-23')
```

```r
working_set <- pbp %>%
  dplyr::left_join(full_active_player_list, by = c("event_player_1_id" = "person.id"), keep=TR
UE)
```

Even Strength corsi attempts, ~blueline giveaways/takeaways

```r
ind_install <- working_set %>%
  dplyr::filter(strength_code=='EV') %>%
  dplyr::mutate(corsi_ind=ifelse(event== c('Shot', 'Goal', 'Missed Shot', 'Blocked Shot'),"Y",
"N"),
              bl_area_ind=ifelse(event==c('Giveaway','Takeaway') & ((x_fixed >= 19 & x_fixed
 <= 31) | (x_fixed >= -31 & x_fixed <= -19)),"Y","N"),
              bl_side_ind=ifelse(event_team_type==('home') & bl_area_ind=="Y" & x_fixed>0,"a
ttacking",
                                ifelse(event_team_type==('home') & bl_area_ind=="Y" & x_fix
ed<0,"defending",
                                      ifelse(event_team_type==('away') & bl_area_ind=="Y"
```

```
                       & x_fixed<0,"attacking",
                                                       ifelse(event_team_type==('away') & bl_area_in
d=="Y" & x_fixed>0,"defending","n/a")
                                                     )
                                                   )
                                                 ),
                   bl_event_type=ifelse(bl_area_ind=="Y",paste0(bl_side_ind," bl ",event),"n/a")
                   )
```

```
## Warning in event == c("Shot", "Goal", "Missed Shot", "Blocked Shot"): longer
## object length is not a multiple of shorter object length
```

```
corsi_ta_ga <- ind_install %>%
  dplyr::filter(corsi_ind=="Y" | bl_area_ind=="Y")
```

#ga/ta leading to shots

```
lead_test <- corsi_ta_ga %>%
  mutate(lead_time=lead(period_seconds, n=1L),
         time_bt=lead_time-period_seconds,
         lead_event=lead(corsi_ind, n=1L)
         ) %>%
  filter(time_bt <= 10 & bl_area_ind=="Y" & lead_event== "Y") %>%
  mutate(ga_ta_result=paste0(bl_event_type," leading to shot attempt")
         )
```

```
plot_data <- lead_test %>%
  mutate(attacking_bl_giveaway=ifelse(bl_event_type=="attacking bl Giveaway",1,0),
         attacking_bl_takeaway=ifelse(bl_event_type=="attacking bl Takeaway",1,0),
         defending_bl_giveaway=ifelse(bl_event_type=="defending bl Giveaway",1,0),
         defending_bl_takeaway=ifelse(bl_event_type=="defending bl Takeaway",1,0)
         ) %>%
  group_by(team_name) %>%
  summarise(
    attk_bl_ga=sum(attacking_bl_giveaway,na.rm = TRUE),
    attk_bl_ta=sum(attacking_bl_takeaway,na.rm = TRUE),
    def_bl_ga=sum(defending_bl_giveaway,na.rm = TRUE),
    def_bl_ta=sum(defending_bl_takeaway,na.rm = TRUE)
  )

plot_data$logo= tc$team_logo_espn[match(plot_data$team_name,tc$full_team_name)]
```

```
plot_data %>%
  ggplot(aes(x=attk_bl_ga, y=attk_bl_ta)) +
  geom_image(aes(image=logo), size=.05, position = "jitter", alpha=.01)+
  labs(x= "Giveaways (Shot Against)", y="Takwaways (Shot For)", title="Attacking Blueline Even
ts leading to Shot Attempt", subtitle="Giveaway/Takeaway occuring within 6 ft of the Blueline"
, caption="data scraped from HockeyR package \n NHL definition of giveaway/takeaway")
```

```
## Warning: Removed 2 rows containing missing values (`geom_image()`).
```

Attacking Blueline Events leading to Shot Attempt
Giveaway/Takeaway occuring within 6 ft of the Blueline

data scraped from HockeyR package
NHL definition of giveaway/takeaway
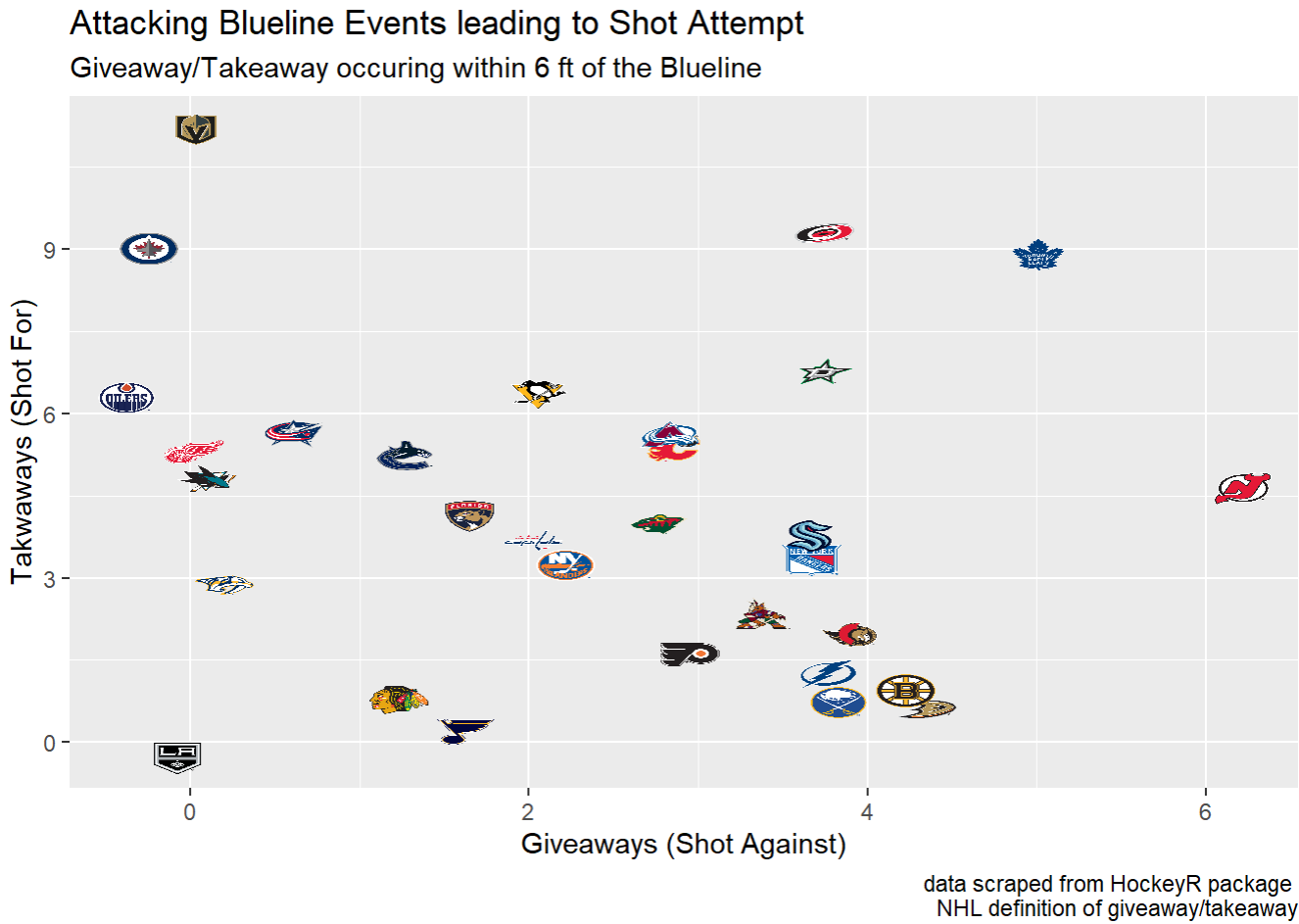
```
plot_data %>%
  ggplot(aes(x=def_bl_ga, y=def_bl_ta)) +
  geom_image(aes(image=logo), size=.05, position = "jitter", alpha=.01)+
  labs(x= "Giveaways (Shot Against)", y="Takwaways (Shot For)", title="Defending Blueline Even
ts leading to Shot Attempt", subtitle="Giveaway/Takeaway occuring within 6 ft of the Blueline"
, caption="data scraped from HockeyR package \n NHL definition of giveaway/takeaway")
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Defending Blueline Events leading to Shot Attempt
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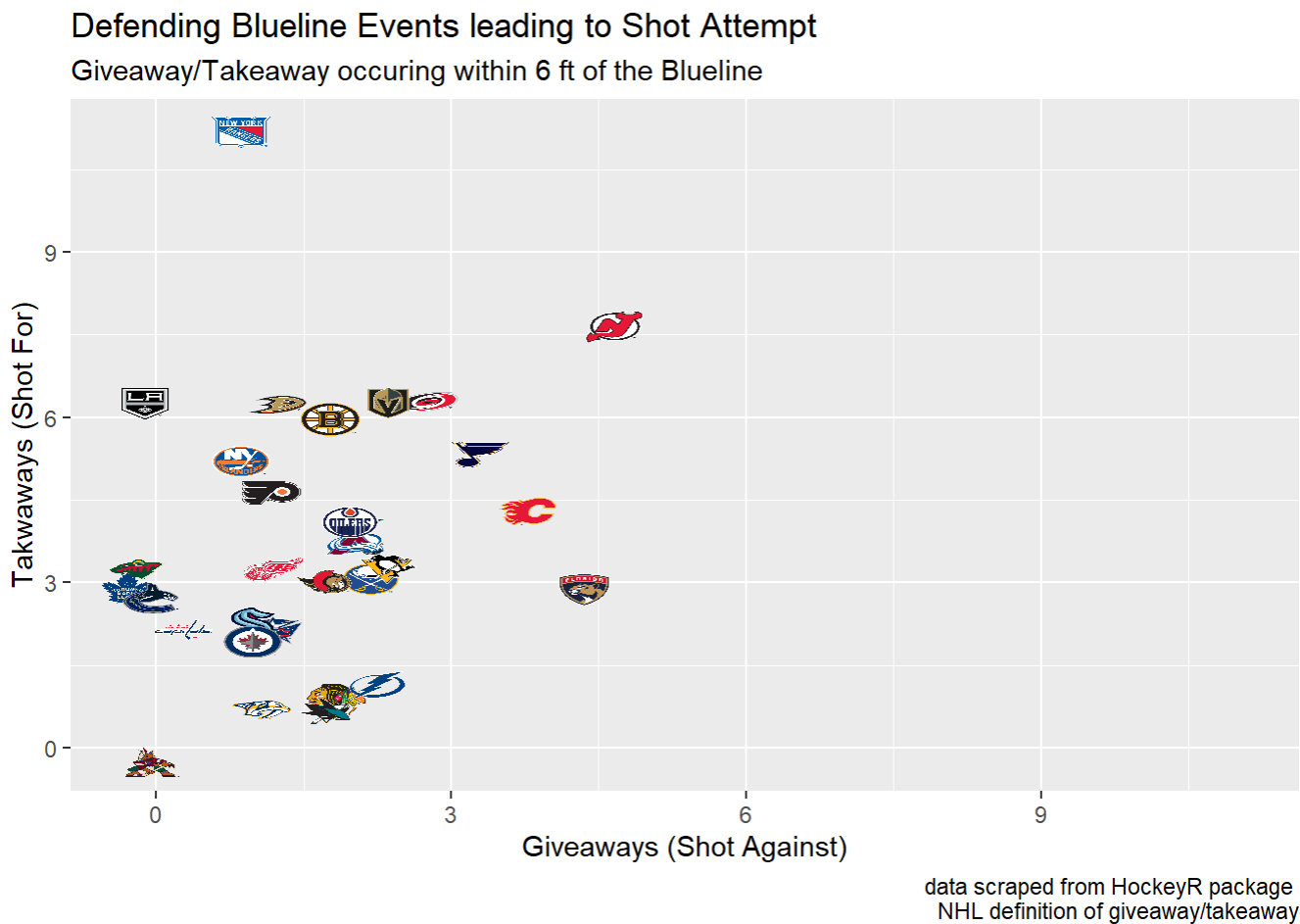
#Summarise/counts by team

```
ga_ta_summary <- corsi_ta_ga %>%
  group_by(team_name,event_player_1_name) %>%
  filter(bl_event_type != "n/a") %>%
  count(bl_event_type)

corsi_summary <-corsi_ta_ga %>%
  filter(corsi_ind=="Y") %>%
  count(event)

bl_summary <-corsi_ta_ga %>%
  filter(bl_area_ind=="Y") %>%
  count(bl_event_type)

result_event_summary <- lead_test %>%
  group_by(team_name) %>%
  count(ga_ta_result)
```