

A Refined Approach to NFL Scheduling with
Mixed Integer Linear Programming

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Introduction:

The task of scheduling professional sports seasons is a daunting task that often has no straightforward solutions. For example, the NFL has 32 teams that must play 17 games each over 18 weeks. That totals 272 games that must be scheduled so each team plays one game per week (except for their week off which must be between weeks 6 and 14) while also fulfilling many other constraints such as teams playing at most 2 away games in a row and each team having 8 to 9 home games. While we can likely make a rudimentary algorithm to fulfill these constraints, the NFL is a business that would like to maximize profit. To maximize profit, we would like to schedule as many “good” games as possible. By “good” games we mean games that will generate the most views possible. Furthermore, we would like to spread these games out as evenly as possible across the season to minimize the number of good games that are played at the same time. In this paper we consider a new approach to generating the NFL’s schedule that achieves these goals.

The NFL’s Scheduling Problem:

The NFL’s current method of deciding who plays who mostly depends on which division any given team is in. There are 2 conferences (NFC & AFC) with 4 divisions in each (North, South, East, & West). Each division plays one other division in both the NFC and AFC and these matchups simply rotate from year to year. Each team also plays every team in their own division twice. Therefore, an NFL team’s division decides 14 of their 17 matchups. The last 3 games are two from their own conference and 1 from the other. These are decided based on what place a team finished in their division. For example, if the Chicago Bears finished last in their division, they play the two other NFC teams that finished last that they are not already playing as well as

one AFC team that finished last. Scheduling these last 3 games by how well a team did the previous year implies that the NFL would like to make it easier for teams who did not do as well the previous year and harder for those who did. However, their format for scheduling does not accomplish this. Before the start of the NFL season there are often teams who did well the year before but have a schedule that is expected to be easy and teams who did poorly with a schedule that is expected to be hard. Therefore, the current NFL scheduling system fails at creating a fair schedule. The current system also restricts the NFL from maximizing the number of good games since the entire schedule is pre-determined as soon as the previous season ends. Since the current system already is not fair as we previously mentioned, we explore altering it to make it more profitable.

The Models Made to Maximize NFL Ratings

Due to the complexity of the NFL schedule, we created multiple models on the way to producing a week-by-week NFL schedule. We cover each of them below and note that in making these models we no longer decide which divisions play which on a rotational basis, nor do we decide the extra 3 games based on where a team finished in their division. The only constraint on the extra 3 games is that 2 are at the same conference and 1 is in the other conference. Similarly, each division still plays one NFC division and one AFC division and each team will play two teams within their own division. Teams do continue to play each team in their division twice as well.

Model I

Since we dropped the constraint that decides which divisions play each other, we start by making a model that decides which divisions play which. For this model and future models, we

found the expected wins of each team by looking at DraftKings' lines on 4/21/23 for season wins to assign each team expected wins. We then sum all the expected wins in each division to find each division's expected wins. Then we set the model to minimize the difference in expected wins between divisions that play each other so good divisions will play good divisions and bad divisions will play bad divisions therefore generating the most, good matchups possible. The model is subject to the following constraints:

- Divisions cannot be matched with themselves.
- There are exactly 8 total matchups between divisions.
- There are two inter-conference matchups per each conference.
- There are four intra-conference matchups.
- Each division is matched with 2 other divisions.
- If division 1 plays division 2 then division 2 also plays division 1.

The results are listed below and the model itself is listed in the appendix.

```

:      AEAST ANORTH ASOUTH AWEST NEAST NNORTH NSOUTH NWEST      :=
AEAST    0      0      0      1      0      0      0      1
ANORTH    0      0      1      0      1      0      0      0
ASOUTH    0      1      0      0      0      0      1      0
AWEST     1      0      0      0      0      1      0      0
NEAST     0      1      0      0      0      0      0      1
NNORTH    0      0      0      1      0      0      1      0
NSOUTH    0      0      1      0      0      1      0      0
NWEST     1      0      0      0      1      0      0      0
;

```

Analysis of Model 1

Division 1	Division 2	Absolute Difference in Expected Wins	Number of Matchups within 1.5 Expected Wins
AFC East	AFC West	0	8

AFC East	NFC West	4	5
AFC North	AFC South	9	4
AFC North	NFC East	3	10
AFC West	NFC North	4	9
AFC South	NFC South	2	7
NFC East	NFC West	3	6
NFC North	NFC South	1	11

The model above gives us 60 matchups with teams that are expected to be within 1.5 wins of each other (within 1.5 expected wins is a subjectively chosen value that seemed like the right value after considering a few matchups). With 60 close matchups we can spread them out so there is about 3 every week. Therefore, model 1 already gives us enough close matchups to fill the 3 primetime time slots every week (Thursday, Sunday, and Monday night). Coincidentally, 6 of the 8 matchups are the same as the actual NFL schedule for 2023. Therefore, the new model is a slight improvement of just one 1 more close game than the actual schedule for 2023. However, there is a lot of potential for the current NFL scheduling system to be much worse on a year to year basis.

Model 2

The second model schedules the remaining three matchups that are not decided by which division a team is in. These games are scheduled similarly to the divisions. We minimize the difference in expected wins between the teams that play each other to force as many close matchups as possible. The second model is subject to the following constraints:

- Each team plays 3 extra games.
- 2 of the 3 extra games are against teams in the same conference.
- If team 1 plays team 2 then team 2 also plays team one.
- We only consider matching teams that do not play already play each other due to the divisional matchups.

The model and its output are large and therefore listed in the appendix.

Analysis of Model 2

Model 2 generates an additional 38 out of 48 close games whereas the actual NFL schedule schedules 31 more close games. Scheduling another 38 close games allows us to schedule about two more close games every week, potentially filling the one 1:00pm and 4:30pm time slots each week. So far, the new model allows us to schedule a close matchup in every time slot of every week in 2023 without even considering inter-divisional matchups.

Model 3

The third model combines the first two and generates the schedule for the entire league. The constraints are a combination of constraints from the first two and its output (the entire NFL schedule) is listed below with the model listed in the appendix.

:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:=
ARI	.	0	0	1	0	1	0	0	1	0	0	0	1	0	0	0	0	2	0	
ATL	0	.	0	0	2	1	0	0	0	1	1	1	1	1	1	0	0	0	0	
BAL	0	0	.	0	0	0	2	2	1	0	1	0	1	1	1	0	1	0	0	
BUF	1	0	0	.	0	0	1	0	0	1	0	0	0	0	1	1	1	1	1	
CAR	0	2	0	0	.	1	0	0	0	0	1	1	1	1	1	0	0	1	0	
CHI	1	1	0	0	1	.	0	0	0	1	2	2	0	1	0	1	1	0	0	
CIN	0	0	2	1	0	0	.	2	1	0	0	0	1	1	1	1	0	0	0	
CLE	0	0	2	0	0	0	2	.	0	0	1	0	1	1	1	0	1	0	0	
DAL	1	0	1	0	0	0	1	0	.	0	0	0	0	0	0	0	1	1	0	
DEN	0	1	0	1	0	1	0	0	0	.	0	1	1	1	0	2	2	0	2	
DET	0	1	1	0	1	2	0	1	0	0	.	2	0	0	0	1	1	0	0	
GB	0	1	0	0	1	2	0	0	0	1	2	.	0	0	0	1	1	1	1	
HOU	1	1	1	0	1	0	1	1	0	1	0	0	.	2	2	0	0	0	1	

IND	0	1	1	0	1	1	1	1	0	1	0	0	2	.	2	0	0	0	0
JAX	0	1	1	1	1	0	1	1	0	0	0	0	2	2	.	1	0	0	0
KC	0	0	0	1	0	1	1	0	0	2	1	1	0	0	1	.	2	0	2
LAC	0	0	1	1	0	1	0	1	1	2	1	1	0	0	0	2	.	0	2
LAR	2	0	0	1	1	0	0	0	1	0	0	1	0	0	0	0	0	.	1
LV	0	0	0	1	0	0	0	0	0	2	0	1	1	0	0	2	2	1	.
MIA	1	0	0	2	0	0	0	1	1	1	0	0	0	0	0	1	1	1	1
MIN	0	1	0	0	1	2	0	0	1	1	2	2	0	0	0	1	1	0	1
NE	1	0	0	2	1	1	0	0	0	1	0	0	0	1	0	1	1	0	1
NO	0	2	1	0	2	1	0	1	1	0	1	1	1	1	1	0	0	0	0
NYG	1	1	1	0	0	0	1	1	2	1	0	1	0	0	0	0	0	1	0
NYJ	1	0	1	2	0	0	0	0	1	1	1	0	0	0	0	1	1	1	1
PHI	1	0	0	1	0	0	1	1	2	0	1	0	0	0	1	0	0	1	0
PIT	0	1	2	0	0	0	2	2	0	0	0	0	1	1	1	0	0	0	0
SEA	2	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0
SF	2	0	0	1	0	0	1	0	1	0	1	0	0	0	0	1	0	2	0
TB	1	2	0	0	2	1	0	0	0	0	1	1	1	1	1	0	0	0	1
TEN	0	0	1	0	1	0	1	1	0	0	0	1	2	2	2	0	0	1	1
WAS	1	0	1	0	1	1	1	1	2	0	0	0	0	0	0	0	0	1	1

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:	=
ARI	1	0	1	0	1	1	1	0	2	2	1	0	1		
ATL	0	1	0	2	1	0	0	1	1	0	2	0	0		
BAL	0	0	0	1	1	1	0	2	0	0	0	1	1		
BUF	2	0	2	0	0	2	1	0	1	1	0	0	0		
CAR	0	1	1	2	0	0	0	0	0	0	2	1	1		
CHI	0	2	1	1	0	0	0	0	0	0	1	0	1		
CIN	0	0	0	0	1	0	1	2	0	1	0	1	1		
CLE	1	0	0	1	1	0	1	2	0	0	0	1	1		
DAL	1	1	0	1	2	1	2	0	1	1	0	0	2		
DEN	1	1	1	0	1	1	0	0	0	0	0	0	0		
DET	0	2	0	1	0	1	1	0	0	1	1	0	0		
GB	0	2	0	1	1	0	0	0	0	0	1	1	0		
HOU	0	0	0	1	0	0	0	1	0	0	1	2	0		
IND	0	0	1	1	0	0	0	1	0	0	1	2	0		
JAX	0	0	0	1	0	0	1	1	0	0	1	2	0		
KC	1	1	1	0	0	1	0	0	0	1	0	0	0		
LAC	1	1	1	0	0	1	0	0	0	0	0	0	0		
LAR	1	0	0	0	1	1	1	0	2	2	0	1	1		
LV	1	1	1	0	0	1	0	0	0	0	1	1	1		
MIA	.	0	2	0	0	2	0	1	1	1	0	0	0		
MIN	0	.	0	1	0	0	1	1	0	0	1	0	0		
NE	2	0	.	0	0	2	0	0	1	1	0	1	0		
NO	0	1	0	.	0	0	0	0	0	1	2	0	0		
NYG	0	0	0	0	.	0	2	1	1	1	0	0	2		
NYJ	2	0	2	0	0	.	0	1	1	0	0	0	0		
PHI	0	1	0	0	2	0	.	1	1	1	0	0	2		
PIT	1	1	0	0	1	1	1	.	1	0	0	1	0		
SEA	1	0	1	0	1	1	1	1	.	2	1	0	1		
SF	1	0	1	1	1	0	1	0	2	.	0	0	1		
TB	0	1	0	2	0	0	0	0	1	0	.	1	0		
TEN	0	0	1	0	0	0	0	1	0	0	1	.	1		
WAS	0	0	0	0	2	0	2	0	1	1	0	1	.		
;															
NYG	0	0	0	0	.	0	2	1	1	1	0	0	2		
NYJ	2	0	2	0	0	.	0	1	1	0	0	0	0		
PHI	0	1	0	0	2	0	.	1	1	1	0	0	2		
PIT	1	1	0	0	1	1	1	.	1	0	0	1	0		
SEA	1	0	1	0	1	1	1	1	.	2	1	0	1		
SF	1	0	1	1	1	0	1	0	2	.	0	0	1		
TB	0	1	0	2	0	0	0	0	1	0	.	1	0		
TEN	0	0	1	0	0	0	0	1	0	0	1	.	1		
WAS	0	0	0	0	2	0	2	0	1	1	0	1	.		

;

Analysis of Model 3

We already know how many close matchups there will be from our analysis of models 1 and 2 but another metric we can analyze now that we have model 3 is fairness. We developed these models with the notion that the NFL already fails at making a fair schedule so why not try maximizing ratings without considering how fair the schedule is at all. Theoretically, the new model should give harder schedules to better teams since we are minimizing the difference in expected wins between teams. We note that the Kansas City Chiefs have the most expected wins (11.5) and the average expected wins of their non-divisional opponents is 9.4 (we exclude their divisional opponents since our model does not decide those matchups). The Arizona Cardinals have the least expected wins (5.5) and the average expected wins of their non-divisional opponents using the new model is 8.4. For reference, 1 point difference across the 11 non-divisional games can be equated to the Chiefs playing two more top 5 teams while the Cardinals play two bottom 5 teams if the other 9 matchups are about the same. Whether or not such a difference is fair, is subjective, but I do not think the difference is large enough to vault bad teams into the playoffs over good ones.

Model 4:

Now that we have every matchup that is to be played, the next model schedules which week every game takes place. Ideally the NFL would like good games every week, so we minimize the difference in expected wins across every matchup with a small weight towards the home team (since being the home team is an advantage). In doing so we created a weekly schedule that

attempts to maximize the number of good games while also evenly spreading them out across all the weeks. Model 4 has the following constraints:

- Every team can play once per week, at most.
- Every matchup from model 3 must be scheduled
- Bye weeks can only occur weeks 6 through 14
- Each team can play at most 2 away games in a row
- Each team plays 8 or 9 home games
- Each team has 6 home games in their own conference.

The model and its output are rather large and left in the appendix.

Analysis of Model 4

Below we consider what our 3 primetime games might be for the first 7 weeks given the output of the 4th model:

Week:	Thursday Night (Home vs Away)	Sunday Night (Home vs Away)	Monday Night (Home vs Away)
1	KC vs CIN	PHI vs SF	ATL vs DET
2	JAX vs BUF	PHI vs DAL	DEN vs NYG
3	LAC vs BAL	MIN vs CAR	GB vs LV
4	SEA vs LAC	BAL vs CLE	MIA vs NYJ
5	NYJ vs BUF	NE VS CAR	RAMS vs DEN
6	KC vs BUF	PHI vs CIN	BAL vs DET
7	NO vs CLE	MIN vs DAL	SEA vs MIA

8	DEN vs ATL	DET vs LAC	TEN vs NE
9	NO vs BAL	CIN vs BUF	PHI vs JAX

All of the games listed above are between teams within 1.5 expected wins of each other and so model 4 is working as intended and spreading close matchups out across the weeks.

Future Work:

- a. Refine the model that decides division matchups to minimize the total difference of expected wins for every individual matchup between teams in the division rather than the difference between expected wins for the entire division. The current model might match a division with two good and two bad teams with a division with four mid-level teams which would not generate any great matchups.
- b. Investigate how accurate DraftKings' season wins lines are and if there is a better way to come up with expected wins. A potential problem with using DraftKings lines is that the upcoming schedules is likely a factor in setting them. Two teams that I would consider similarly talented are the Raiders and Saints, however the Raiders over/under on wins is set at 7.5 and the Saints is set at 9.5. My opinion may be wrong, but another explanation for their difference in expected wins could be that Saints are in a relatively bad division while the Raiders are a relatively good division. Since expected wins is meant to be used as a measure of how good a team is, their division rivals should not be a factor.
- c. Consider adding a "fairness" constraint that limits how difficult a team's schedule can be.

- d. Consider refining how we decide what matchups will be best. Potentially include the strength of the teams involved and the size of their fan bases in addition to how good they are expected to be.
- e. Investigate a data driven method to decide how to determine a “close matchup” (as opposed to using “within 1.5 expected wins of each other”).
- f. Create another model that schedules which days of the weeks and what times every game should be scheduled.

References:

NFL schedule for next year and their rules:

<https://operations.nfl.com/gameday/nfl-schedule/creating-the-nfl-schedule/>

Here you can find how the NFL makes their schedule. They claim that theirs takes, “thousands of computers” to generate. I wonder if they have considered using linear programming for theirs.

Unfortunately, they do not discuss exactly how they make theirs.

Another interesting schedule proposition:

<https://www.bleedinggreennation.com/2019/7/9/20676824/improving-nfl-schedule-brady-rodgers-manning-rivers-brees-roethlisberger-playoffs-parity>

The article also notices that the NFL’s current schedule is inefficient at generating close matchups. They suggest removing the requirement to have cross-conference divisional matchups. Instead, they suggest that if an NFC team ends the previous season as second in their division, then they play the 4 AFC teams that finished second in their divisions. While I see the potential

for this strategy to improve upon the NFL's, it still hinges on the idea that each team is similarly good as they were the year before however, this is often not true.

Appendix:

Model 1 – Deciding divisional matchups:

```
set CONFERENCES;
set DIVISION{CONFERENCES};
set DIVISIONS := union{i in CONFERENCES} DIVISION[i];

param expectedWins{d in DIVISIONS};
param maxWins{d in DIVISIONS};
param minWins{d in DIVISIONS};
param conference{d in DIVISIONS};
param order{d in DIVISIONS};

var matchups{d1 in DIVISIONS, d2 in DIVISIONS} binary;

minimize blowouts: sum{d1 in DIVISIONS, d2 in DIVISIONS}matchups[d1, d2] *
abs(expectedWins[d1] - expectedWins[d2]);

#8 total division matchups, don't allow divisions to play themselves
subject to eightMatchupsConstraints: 16 <= sum{d1 in DIVISIONS, d2 in DIVISIONS:
order[d1] != order[d2]}matchups[d1,d2] <= 16;

#Limit each conference to 2 total inter-conference matchups
subject to 2InConferenceConstraints1{d1 in DIVISION["NFC"]}: 1 <= sum{d2 in
DIVISION["NFC"]}matchups[d1, d2] <= 1;
subject to 2InConferenceConstraints3{d1 in DIVISION["AFC"]}: 1 <= sum{d2 in
DIVISION["AFC"]}matchups[d1, d2] <= 1;
#subject to 2InConferenceConstraints3{d1 in DIVISION[c in CONFERENCES]}: 1 <= sum{d2
in DIVISION[c]}matchups[d1, d2] <= 1;

#Limit each conference to 4 cross conference matchups
subject to 4CrossConferenceConstraints1: 4 <= sum{d1 in DIVISION["NFC"], d2 in
DIVISION["AFC"]}matchups[d1,d2] <= 4;

#Limit each division to 2 matchups
subject to twoEachConstraints1{d2 in DIVISIONS}: 2 <= sum{d1 in
DIVISIONS}matchups[d1,d2] <= 2;

#Force symmetry (if Afc east plays the afc west then the afc west must play the afc
east)
subject to symmetricConstraints{d1 in DIVISIONS, d2 in DIVISIONS}: matchups[d1, d2] =
matchups[d2, d1];

data;
set CONFERENCES := NFC, AFC;
```

```

set DIVISION[NFC] := NNORTH, NSOUTH, NEAST, NWEAST;
set DIVISION[AFC] := ANORTH, ASOUTH, AEAST, AWEST;

param expectedWins :=
NNORTH 34.5
NSOUTH 31.5
NEAST 38
NWEAST 34.5
ANORTH 38.5
ASOUTH 27
AEAST 38
AWEST 29;

```

Model 2 and output – Deciding the remaining 3 games:

```

set CONFERENCES;
set DIVISION{CONFERENCES};
set DIVISIONS := union{i in CONFERENCES} DIVISION[i];

set TEAM{DIVISIONS};
set TEAMS := union{d in DIVISIONS} TEAM[d];

param DivMatchups{DIVISIONS, DIVISIONS};
param TeamDivMatchups{i in TEAMS, j in TEAMS} :=
if (exists {d1 in DIVISIONS, d2 in DIVISIONS} DivMatchups[d1, d2]==1 and i in
TEAM[d1] and j in TEAM[d2])
    or (exists {d in DIVISIONS} i in TEAM[d] and j in TEAM[d] and i != j)
then 1 else 0;
param expectedWins{TEAMS};

var matchups{i in TEAMS, j in TEAMS : i != j and TeamDivMatchups[i,j] = 0} binary;

minimize blowouts: sum{t1 in TEAMS, t2 in TEAMS: t1 != t2 and TeamDivMatchups[t1,t2]
= 0}matchups[t1, t2] * abs(expectedWins[t1] - expectedWins[t2]);

#Force symmetry (if bears plays the packers then the packers must play the bears)
subject to symmetricConstraints{t1 in TEAMS, t2 in TEAMS: t1 != t2 and
TeamDivMatchups[t1,t2] = 0}: matchups[t1, t2] = matchups[t2, t1];

#each team plays 3 games (only scheduling the 3 extra in this model)
subject to 3ExtraGamesConstraints{t1 in TEAMS}: sum{t2 in TEAMS: t1 != t2 and
TeamDivMatchups[t1, t2] = 0}matchups[t1, t2] = 3;

#each team plays 2 extra games against teams in their own conference, forces the last
game to be from the other conference
subject to 2ExtraGamesInNFC{d1 in DIVISION["NFC"], t1 in TEAM[d1]}: sum{d2 in
DIVISION["NFC"], t2 in TEAM[d2]: d2 != d1 and DivMatchups[d1,d2]=0}matchups[t1,t2] =
2;
subject to 2ExtraGamesInAFC{d1 in DIVISION["AFC"], t1 in TEAM[d1]}: sum{d2 in
DIVISION["AFC"], t2 in TEAM[d2]: d2 != d1 and DivMatchups[d1,d2]=0}matchups[t1,t2] =
2;

data;

```

```

set CONFERENCES := NFC, AFC;
set DIVISION[NFC] := NNORTH, NSOUTH, NEAST, NWEAST;
set DIVISION[AFC] := ANORTH, ASOUTH, AEAST, AWEAST;

set TEAM[NNORTH] := CHI, GB, DET, MIN;
set TEAM[NSOUTH] := NO, TB, ATL, CAR;
set TEAM[NEAST] := DAL, PHI, WAS, NYG;
set TEAM[NWEAST] := LAR, SEA, SF, ARI;

set TEAM[ANORTH] := CIN, CLE, BAL, PIT;
set TEAM[ASOUTH] := HOU, TEN, IND, JAX;
set TEAM[AEAST] := BUF, NE, NYJ, MIA;
set TEAM[AWEAST] := KC, LAC, DEN, LV;

param DivMatchups
:      AEAST ANORTH ASOUTH AWEAST NEAST NNORTH NSOUTH NWEAST      :=
AEAST    0      0      0      1      0      0      0      1
ANORTH    0      0      1      0      1      0      0      0
ASOUTH    0      1      0      0      0      0      1      0
AWEAST    1      0      0      0      0      1      0      0
NEAST     0      1      0      0      0      0      0      1
NNORTH    0      0      0      1      0      0      1      0
NSOUTH    0      0      1      0      0      1      0      0
NWEAST    1      0      0      0      1      0      0      0
;

param expectedWins :=
ARI 5.5
ATL 8.5
BAL 9.5
BUF 10.5
CAR 7.5
CHI 7.5
CIN 11.5
CLE 9.5
DAL 9.5
DEN 8.5
DET 9.5
GB 7.5
HOU 5.5
IND 6.5
JAX 10.5
KC 11.5
LAC 9.5
LAR 7.5
LV 7.5
MIA 9.5
MIN 8.5
NE 7.5
NO 9.5
NYG 8.5
NYJ 9.5
PHI 10.5
PIT 8.5
SEA 8.5

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SF 11.5
 TB 6.5
 TEN 7.5
 WAS 7.5

matchups [*,*]																				
:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:=
ARI	.	0	0	.	0	0	0	0	.	0	0	1	1	0	0	0	0	.	0	
ATL	0	.	0	0	.	.	0	0	0	0	.	.	.	.	.	0	1	0	0	
BAL	0	0	.	0	0	0	.	.	.	0	1	0	.	.	.	0	0	0	0	
BUF	.	0	0	.	0	0	1	0	0	.	0	0	0	0	1	.	.	.	.
CAR	0	.	0	0	.	.	0	0	0	0	.	.	.	.	.	0	0	0	1	
CHI	0	.	0	0	.	.	0	1	0	.	.	.	0	0	0	.	.	1	.	
CIN	0	0	.	1	0	0	.	.	.	0	0	0	.	.	.	1	0	0	0	
CLE	0	0	.	0	0	1	.	.	.	0	0	0	.	.	.	0	1	0	0	
DAL	.	0	.	0	0	0	.	.	.	0	1	0	0	0	0	0	0	.	0	
DEN	0	0	0	.	0	.	0	0	0	.	.	.	0	0	0	.	.	0	.	
DET	0	.	1	0	.	.	0	0	1	.	.	.	0	0	0	.	.	0	.	
GB	1	.	0	0	.	.	0	0	0	.	.	.	0	0	0	.	.	1	.	
HOU	1	.	.	0	.	0	.	.	0	0	0	0	.	.	.	0	0	0	1	
IND	0	.	.	0	.	0	.	.	0	0	0	0	.	.	.	0	0	0	1	
JAX	0	.	.	1	.	0	.	.	0	0	0	0	.	.	.	1	0	0	0	
KC	0	0	0	.	0	.	1	0	0	.	.	.	0	0	1	.	.	0	.	
LAC	0	1	0	.	0	.	0	1	0	.	.	.	0	0	0	.	.	0	.	
LAR	.	0	0	.	0	1	0	0	.	0	0	1	0	0	0	0	0	.	0	
LV	0	0	0	.	1	.	0	0	0	.	.	.	1	1	0	.	.	0	.	
MIA	.	0	1	.	0	0	0	0	0	.	0	0	0	0	0	.	.	.	.
MIN	0	.	0	0	.	.	0	0	0	.	.	.	0	0	0	.	.	0	.	
NE	.	0	0	.	0	0	0	0	0	.	0	1	1	1	0	.	.	.	.
NO	0	.	0	0	.	.	0	0	1	0	.	.	0	0	.	0	0	0	0	
NYG	.	0	.	0	1	0	.	.	.	0	0	0	0	0	1	0	0	.	0	
NYJ	.	0	1	.	0	0	0	1	1	.	0	0	0	0	0	.	.	.	.
PHI	.	0	.	1	0	0	.	.	.	0	0	0	0	0	0	0	0	.	0	
PIT	0	0	.	0	0	0	.	.	.	1	0	0	.	.	.	0	1	0	0	
SEA	.	1	0	.	1	0	0	0	.	1	0	0	0	0	0	0	0	.	0	
SF	.	1	0	.	0	0	0	0	.	0	1	0	0	0	0	1	0	.	0	
TB	1	.	0	0	.	.	1	0	0	0	.	.	.	.	.	0	0	0	0	
TEN	0	.	.	0	.	0	.	.	0	1	0	0	.	.	.	0	0	1	0	
WAS	.	0	.	0	0	1	.	.	.	0	0	0	0	1	0	0	0	.	0	

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:=
ARI	.	0	.	0	.	.	.	0	.	.	1	0	.	
ATL	0	.	0	.	0	0	0	0	1	1	.	.	0	
BAL	1	0	0	0	.	1	.	0	0	0	0	.	.	
BUF	.	0	.	0	0	.	1	0	.	.	0	0	0	
CAR	0	.	0	.	1	0	0	0	1	0	.	.	0	
CHI	0	.	0	.	0	0	0	0	0	0	.	0	1	
CIN	0	0	0	0	.	0	.	.	0	0	1	.	.	
CLE	0	0	0	0	.	1	.	.	0	0	0	.	.	
DAL	0	0	0	1	.	1	.	.	.	0	0	0	.	
DEN	.	.	.	0	0	.	0	1	1	0	0	1	0	
DET	0	.	0	.	0	0	0	0	0	1	.	0	0	
GB	0	.	1	.	0	0	0	0	0	0	.	0	0	
HOU	0	0	1	.	0	0	0	.	0	0	.	.	0	
IND	0	0	1	.	0	0	0	.	0	0	.	.	1	
JAX	0	0	0	.	1	0	0	.	0	0	.	.	0	
KC	.	.	.	0	0	.	0	0	0	1	0	0	0	
LAC	.	.	.	0	0	.	0	1	0	0	0	0	0	
LAR	.	0	.	0	.	.	.	0	.	.	0	1	.	
LV	.	.	.	0	0	.	0	0	0	0	0	0	0	
MIA	.	0	.	1	0	.	0	0	.	.	0	1	0	

```

MIN  0  .  0  .  1  0  1  1  0  0  .  0  0
NE   .  0  .  0  0  .  0  0  .  .  0  0  0
NO   1  .  0  .  0  0  1  0  0  0  .  .  0
NYG  0  1  0  0  .  0  .  .  .  .  0  0  .
NYJ  .  0  .  0  0  .  0  0  .  .  0  0  0
PHI  0  1  0  1  .  0  .  .  .  .  0  0  .
PIT  0  1  0  0  .  0  .  .  0  0  0  .  .
SEA  .  0  .  0  .  .  .  0  .  .  0  0  .
SF   .  0  .  0  .  .  .  0  .  .  0  0  .
TB   0  .  0  .  0  0  0  0  0  0  .  .  1
TEN  1  0  0  .  0  0  0  .  0  0  .  .  0
WAS  0  0  0  0  .  0  .  .  .  .  1  0  .
;

```

Model 3

```

set CONFERENCES;
set DIVISION{CONFERENCES};
set DIVISIONS := union{i in CONFERENCES} DIVISION[i];

set TEAM{DIVISIONS};
set TEAMS := union{d in DIVISIONS} TEAM[d];

param DivMatchups{DIVISIONS, DIVISIONS};
param TeamDivMatchups{i in TEAMS, j in TEAMS} :=
if (exists {d1 in DIVISIONS, d2 in DIVISIONS} DivMatchups[d1, d2]==1 and i in
TEAM[d1] and j in TEAM[d2])
or (exists {d in DIVISIONS} i in TEAM[d] and j in TEAM[d] and i != j)
then 1 else 0;
param expectedWins{TEAMS};

var matchups{i in TEAMS, j in TEAMS : i != j /*and TeamDivMatchups[i,j] = 0*/} >= 0,
<=2;

minimize blowouts: sum{t1 in TEAMS, t2 in TEAMS: t1 != t2 and TeamDivMatchups[t1,t2]
= 0}matchups[t1, t2] * abs(expectedWins[t1] - expectedWins[t2]);

#Force symmetry (if bears plays the packers then the packers must play the bears)
subject to symmetricConstraints{t1 in TEAMS, t2 in TEAMS: t1 != t2 /*and
TeamDivMatchups[t1,t2] = 0*/}: matchups[t1, t2] = matchups[t2, t1];

#each team plays 17 games
subject to 17GamesConstraints{t1 in TEAMS}: sum{t2 in TEAMS: t1 != t2 /*and
TeamDivMatchups[t1, t2] = 0*/}matchups[t1, t2] = 17;

#schedule the extra additional 2 inter conference matchups
subject to 2ExtraGamesInNFC{d1 in DIVISION["NFC"], t1 in TEAM[d1]}: sum{d2 in
DIVISION["NFC"], t2 in TEAM[d2]: d2 != d1 and DivMatchups[d1,d2]=0}matchups[t1,t2] =
2;
subject to 2ExtraGamesInAFC{d1 in DIVISION["AFC"], t1 in TEAM[d1]}: sum{d2 in
DIVISION["AFC"], t2 in TEAM[d2]: d2 != d1 and DivMatchups[d1,d2]=0}matchups[t1,t2] =
2;

#schedule the 4 matchups between divisions that are playing each other
subject to NFCDivMatches{d1 in DIVISION["NFC"], t1 in TEAM[d1]}: sum{d2 in
DIVISION["NFC"], t2 in TEAM[d2]: d2 != d1 and DivMatchups[d1, d2]=1}matchups[t1,t2] =
4;

```



```

subject to AFCDivMatches{d1 in DIVISION["AFC"], t1 in TEAM[d1]}: sum{d2 in
DIVISION["AFC"], t2 in TEAM[d2]: d2 != d1 and DivMatchups[d1, d2]=1}matchups[t1,t2] =
4;

```

```

#schedule the intra division matchups

```

```

subject to intraDivisionMatches{d in DIVISIONS, t1 in TEAM[d], t2 in TEAM[d]: t1 !=
t2}: matchups[t1, t2] = 2;

```

```

#only allow intra division matchups to have 2

```

```

subject to 2GamesVsEachDivMate{d1 in DIVISIONS, d2 in DIVISIONS, t1 in TEAM[d1], t2
in TEAM[d2]: DivMatchups[d1,d2] = 1}: matchups[t1, t2]<= 1;

```

```

s.t. noOtherDoubleMatchups{d1 in DIVISIONS, d2 in DIVISIONS, t1 in TEAM[d1], t2 in
TEAM[d2]: d1 != d2}: matchups[t1, t2] <=1;

```

```

#base on the expected wins in the new year or base on the previous wins?

```

```

#subject to fairnessConstraint{d1 in DIVISIONS, t1 in TEAM[d1]}: sum{d2 in DIVISION,
t2 in TEAM[d2]}matchups[t1, t2]*expectedWins[t2] <=

```

```

data;

```

```

set CONFERENCES := NFC, AFC;

```

```

set DIVISION[NFC] := NNORTH, NSOUTH, NEAST, NWEST;

```

```

set DIVISION[AFC] := ANORTH, ASOUTH, AEAST, AWEST;

```

```

set TEAM[NNORTH] := CHI, GB, DET, MIN;

```

```

set TEAM[NSOUTH] := NO, TB, ATL, CAR;

```

```

set TEAM[NEAST] := DAL, PHI, WAS, NYG;

```

```

set TEAM[NWEST] := LAR, SEA, SF, ARI;

```

```

set TEAM[ANORTH] := CIN, CLE, BAL, PIT;

```

```

set TEAM[ASOUTH] := HOU, TEN, IND, JAX;

```

```

set TEAM[AEAST] := BUF, NE, NYJ, MIA;

```

```

set TEAM[AWEST] := KC, LAC, DEN, LV;

```

```

param DivMatchups

```

```

:      AEAST ANORTH ASOUTH AWEST NEAST NNORTH NSOUTH NWEST      :=
AEAST      0      0      0      1      0      0      0      1
ANORTH      0      0      1      0      1      0      0      0
ASOUTH      0      1      0      0      0      0      1      0
AWEST      1      0      0      0      0      1      0      0
NEAST      0      1      0      0      0      0      0      1
NNORTH      0      0      0      1      0      0      1      0
NSOUTH      0      0      1      0      0      1      0      0
NWEST      1      0      0      0      1      0      0      0
;

```

```

param expectedWins :=

```

```

ARI 5.5

```

```

ATL 8.5

```

```

BAL 9.5

```

```

BUF 10.5

```

```

CAR 7.5

```

```

CHI 7.5

```

```

CIN 11.5

```

```

CLE 9.5
DAL 9.5
DEN 8.5
DET 9.5
GB 7.5
HOU 5.5
IND 6.5
JAX 10.5
KC 11.5
LAC 9.5
LAR 7.5
LV 7.5
MIA 9.5
MIN 8.5
NE 7.5
NO 9.5
NYG 8.5
NYJ 9.5
PHI 10.5
PIT 8.5
SEA 8.5
SF 11.5
TB 6.5
TEN 7.5
WAS 7.5
;

```

Model 4 and Output

```

set CONFERENCES;
set DIVISION{CONFERENCES};
set DIVISIONS := union{i in CONFERENCES} DIVISION[i];
set TEAM{DIVISIONS};
set TEAMS := union{d in DIVISIONS} TEAM[d];

set WEEKS ordered;

param matchups{TEAMS, TEAMS};
param expectedWins{TEAMS};

var wMatchups{ht in TEAMS, at in TEAMS, WEEKS: ht != at and matchups[ht, at] > 0}
binary;

#we want good matchups every week so we would like to minimize the difference in
total expected wins across every week (add one to the home team since playing at home
offers slight advantage)
minimize parity{w in WEEKS}: sum{ht in TEAMS, at in TEAMS: ht != at and matchups[ht,
at] > 0}wMatchups[ht, at, w]*abs(expectedWins[ht]+1-expectedWins[at]);

#every team can only play 1 week
s.t. weeklyConstraints{ht in TEAMS, w in WEEKS}: 0 <= sum{at in TEAMS: ht != at and
matchups[ht, at] > 0}(wMatchups[ht, at, w] + wMatchups[at, ht, w]) <= 1;

#schedule every matchup

```

```
s.t. fulfillMatchupsConstraint{ht in TEAMS, at in TEAMS: ht != at and matchups[ht,at]
> 0}: sum{w in WEEKS}(wMatchups[ht, at, w] + wMatchups[at, ht, w]) = matchups[ht,
at];
```

```
#Only allow bye weeks on weeks 6 through 14
```

```
#s.t. byeWeekConstraint{ht in TEAMS, w in WEEKS}: 6<= sum{at in TEAMS: ht != at and
matchups[ht, at] > 0} (abs(wMatchups[ht, at, w]/(*wMatchups[at, ht, w]* - 1)*w +
abs(wMatchups[ht, at,w] /* wMatchups[at,ht,w]*/*8) <= 14 ;
```

```
s.t. byeWeekConstraint{ht in TEAMS, w in WEEKS: w < 6 or w > 14}: sum{at in TEAMS: ht
!= at and matchups[ht, at] >0}(wMatchups[ht, at, w] + wMatchups[at, ht, w]) = 1;
```

```
#Prevent two concurrent away games
```

```
s.t. no_three_away_games_in_a_row{at in TEAMS, w in WEEKS: w <= 16}:sum{ht in TEAMS:
ht != at and matchups[ht, at] > 0}(wMatchups[ht, at, w] + wMatchups[ht, at, w+1] +
wMatchups[ht, at, w+2] ) <= 2;
```

```
#Restrict each team to at most 9 home/away games
```

```
s.t. homeGameConstraint{ht in TEAMS}: 8 <= sum{at in TEAMS, w in WEEKS: ht != at and
matchups[ht, at] > 0}wMatchups[ht, at, w] <= 9;
```

```
#Force one home and one away within the division
```

```
s.t. divisionalHomeAndAway{d in DIVISIONS, ht in TEAM[d], at in TEAM[d]: ht != at}:
sum{w in WEEKS} wMatchups[ht,at,w] <=1;
```

```
#Force 6 home games within the conference
```

```
s.t. sixHomeConfGames{c in CONFERENCES, d1 in DIVISION[c], ht in TEAM[d1]}: sum{d2 in
DIVISION[c], at in TEAM[d2], w in WEEKS:ht != at and d1 != d2 and matchups[ht, at] >
0} wMatchups[ht, at, w] = 3;
```

```
#s.t. 2DivisionalMatchupHomeGames{d1 in DIVISION['NFC'], d2 in DIVISION['NFC'], ht in
TEAM[d1], at in TEAM[d2]}
```

```
data;
```

```
set CONFERENCES := NFC, AFC;
```

```
set DIVISION[NFC] := NNORTH, NSOUTH, NEAST, NWEST;
```

```
set DIVISION[AFC] := ANORTH, ASOUTH, AEAST, AWEST;
```

```
set TEAM[NNORTH] := CHI, GB, DET, MIN;
```

```
set TEAM[NSOUTH] := NO, TB, ATL, CAR;
```

```
set TEAM[NEAST] := DAL, PHI, WAS, NYG;
```

```
set TEAM[NWEST] := LAR, SEA, SF, ARI;
```

```
set TEAM[ANORTH] := CIN, CLE, BAL, PIT;
```

```
set TEAM[ASOUTH] := HOU, TEN, IND, JAX;
```

```
set TEAM[AEAST] := BUF, NE, NYJ, MIA;
```

```
set TEAM[AWEST] := KC, LAC, DEN, LV;
```

```
set WEEKS := 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18;
```

```
param expectedWins :=
```

```
ARI 5.5
```

```
ATL 8.5
```

```
BAL 9.5
```

```
BUF 10.5
```

CAR 7.5
 CHI 7.5
 CIN 11.5
 CLE 9.5
 DAL 9.5
 DEN 8.5
 DET 9.5
 GB 7.5
 HOU 5.5
 IND 6.5
 JAX 10.5
 KC 11.5
 LAC 9.5
 LAR 7.5
 LV 7.5
 MIA 9.5
 MIN 8.5
 NE 7.5
 NO 9.5
 NYG 8.5
 NYJ 9.5
 PHI 10.5
 PIT 8.5
 SEA 8.5
 SF 11.5
 TB 6.5
 TEN 7.5
 WAS 7.5
 ;

param matchups

:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:=
ARI	.	0	0	1	0	1	0	0	1	0	0	0	1	0	0	0	0	2	0	
ATL	0	.	0	0	2	1	0	0	0	1	1	1	1	1	1	0	0	0	0	
BAL	0	0	.	0	0	0	2	2	1	0	1	0	1	1	1	0	1	0	0	
BUF	1	0	0	.	0	0	1	0	0	1	0	0	0	0	1	1	1	1	1	
CAR	0	2	0	0	.	1	0	0	0	0	1	1	1	1	1	0	0	1	0	
CHI	1	1	0	0	1	.	0	0	0	1	2	2	0	1	0	1	1	0	0	
CIN	0	0	2	1	0	0	.	2	1	0	0	0	1	1	1	1	0	0	0	
CLE	0	0	2	0	0	0	2	.	0	0	1	0	1	1	1	0	1	0	0	
DAL	1	0	1	0	0	0	1	0	.	0	0	0	0	0	0	0	1	1	0	
DEN	0	1	0	1	0	1	0	0	0	.	0	1	1	1	0	2	2	0	2	
DET	0	1	1	0	1	2	0	1	0	0	.	2	0	0	0	1	1	0	0	
GB	0	1	0	0	1	2	0	0	0	1	2	.	0	0	0	1	1	1	1	
HOU	1	1	1	0	1	0	1	1	0	1	0	0	.	2	2	0	0	0	1	
IND	0	1	1	0	1	1	1	1	0	1	0	0	2	.	2	0	0	0	0	
JAX	0	1	1	1	1	0	1	1	0	0	0	0	2	2	.	1	0	0	0	
KC	0	0	0	1	0	1	1	0	0	2	1	1	0	0	1	.	2	0	2	
LAC	0	0	1	1	0	1	0	1	1	2	1	1	0	0	0	2	.	0	2	
LAR	2	0	0	1	1	0	0	0	1	0	0	1	0	0	0	0	0	.	1	
LV	0	0	0	1	0	0	0	0	0	2	0	1	1	0	0	2	2	1	.	
MIA	1	0	0	2	0	0	0	1	1	1	0	0	0	0	0	1	1	1	1	
MIN	0	1	0	0	1	2	0	0	1	1	2	2	0	0	0	1	1	0	1	
NE	1	0	0	2	1	1	0	0	0	1	0	0	0	1	0	1	1	0	1	
NO	0	2	1	0	2	1	0	1	1	0	1	1	1	1	1	0	0	0	0	

NYG	1	1	1	0	0	0	1	1	2	1	0	1	0	0	0	0	1	0
NYJ	1	0	1	2	0	0	0	0	1	1	1	0	0	0	0	1	1	1
PHI	1	0	0	1	0	0	1	1	2	0	1	0	0	0	1	0	0	1
PIT	0	1	2	0	0	0	2	2	0	0	0	0	1	1	1	0	0	0
SEA	2	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	2	0
SF	2	0	0	1	0	0	1	0	1	0	1	0	0	0	0	1	0	2
TB	1	2	0	0	2	1	0	0	0	0	1	1	1	1	1	0	0	1
TEN	0	0	1	0	1	0	1	1	0	0	0	1	2	2	2	0	0	1
WAS	1	0	1	0	1	1	1	1	2	0	0	0	0	0	0	0	0	1

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:	=
ARI	1	0	1	0	1	1	1	0	2	2	1	0	1		
ATL	0	1	0	2	1	0	0	1	1	0	2	0	0		
BAL	0	0	0	1	1	1	0	2	0	0	0	1	1		
BUF	2	0	2	0	0	2	1	0	1	1	0	0	0		
CAR	0	1	1	2	0	0	0	0	0	0	2	1	1		
CHI	0	2	1	1	0	0	0	0	0	0	1	0	1		
CIN	0	0	0	0	1	0	1	2	0	1	0	1	1		
CLE	1	0	0	1	1	0	1	2	0	0	0	1	1		
DAL	1	1	0	1	2	1	2	0	1	1	0	0	2		
DEN	1	1	1	0	1	1	0	0	0	0	0	0	0		
DET	0	2	0	1	0	1	1	0	0	1	1	0	0		
GB	0	2	0	1	1	0	0	0	0	0	1	1	0		
HOU	0	0	0	1	0	0	0	1	0	0	1	2	0		
IND	0	0	1	1	0	0	0	1	0	0	1	2	0		
JAX	0	0	0	1	0	0	1	1	0	0	1	2	0		
KC	1	1	1	0	0	1	0	0	0	1	0	0	0		
LAC	1	1	1	0	0	1	0	0	0	0	0	0	0		
LAR	1	0	0	0	1	1	1	0	2	2	0	1	1		
LV	1	1	1	0	0	1	0	0	0	0	1	1	1		
MIA	.	0	2	0	0	2	0	1	1	1	0	0	0		
MIN	0	.	0	1	0	0	1	1	0	0	1	0	0		
NE	2	0	.	0	0	2	0	0	1	1	0	1	0		
NO	0	1	0	.	0	0	0	0	0	1	2	0	0		
NYG	0	0	0	0	.	0	2	1	1	1	0	0	2		
NYJ	2	0	2	0	0	.	0	1	1	0	0	0	0		
PHI	0	1	0	0	2	0	.	1	1	1	0	0	2		
PIT	1	1	0	0	1	1	1	.	1	0	0	1	0		
SEA	1	0	1	0	1	1	1	1	.	2	1	0	1		
SF	1	0	1	1	1	0	1	0	2	.	0	0	1		
TB	0	1	0	2	0	0	0	0	1	0	.	1	0		
TEN	0	0	1	0	0	0	0	1	0	0	1	.	1		
WAS	0	0	0	0	2	0	2	0	1	1	0	1	.		

;

:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:	=
ARI	.	.	.	0	.	0	.	.	0	.	.	.	0	.	.	.	.	0	.		
ATL	.	.	.	.	0	0	.	.	.	0	1	0	0	0	0	.	.	.	.
BAL	.	.	.	.	.	.	0	0	0	.	0	.	0	0	0	.	0	.	.		
BUF	0	.	.	.	.	.	0	.	.	0	.	.	.	.	0	0	0	0	0		
CAR	.	0	.	.	.	0	.	.	.	.	0	0	0	0	0	.	.	0	.		
CHI	0	0	.	.	0	.	.	.	.	0	0	0	0	.	0	0	0	.	.		
CIN	.	.	0	0	.	.	.	0	0	.	.	.	0	0	0	0	.	.	.		
CLE	.	.	0	.	.	.	0	.	.	.	0	.	0	0	0	.	0	.	.		
DAL	0	.	0	.	.	.	0	.	.	.	.	.	.	.	.	.	0	0	.		

DEN	.	0	.	0	.	0	.	.	.	.	0	0	0	.	0	1	.	0
DET	.	0	0	.	0	0	.	0	.	.	.	0	.	.	0	0	.	.
GB	.	0	.	.	0	0	.	.	.	0	0	.	.	.	0	0	0	0
HOU	1	0	0	.	0	.	0	0	.	0	.	.	.	0	0	.	.	0
IND	.	0	0	.	0	1	0	0	.	0	.	.	0	.	0	.	.	.
JAX	.	0	0	0	0	.	0	0	.	.	.	.	0	0	.	0	.	.
KC	.	.	.	0	.	0	1	.	.	0	0	0	.	.	0	.	0	.
LAC	.	.	0	0	.	0	.	0	0	0	0	0	.	.	.	0	.	0
LAR	0	.	.	0	0	.	.	.	1	.	.	0	.	.	.	.	.	0
LV	.	.	.	0	.	.	.	.	.	0	.	0	0	.	.	0	0	0
MIA	0	.	.	1	.	.	.	0	0	0	.	.	.	.	0	0	0	0
MIN	.	0	.	.	0	0	.	.	0	0	0	0	.	.	.	0	0	0
NE	0	.	.	0	0	0	.	.	.	0	.	.	.	0	.	0	0	.
NO	.	0	0	.	0	0	.	0	0	.	0	0	0	0	1	.	.	.
NYG	0	0	0	.	.	.	0	0	0	0	.	0	.	.	.	.	0	.
NYJ	0	.	0	0	.	.	.	.	0	0	0	.	.	.	.	0	0	0
PHI	0	.	.	0	.	.	0	0	0	.	0	.	.	0	.	.	0	.
PIT	.	0	1	.	.	.	0	0	.	.	.	.	0	0	0	.	.	.
SEA	0	0	.	0	.	.	.	.	0	.	.	.	.	.	.	.	0	.
SF	0	.	.	0	.	.	0	.	0	.	0	.	.	.	.	0	.	0
TB	0	0	.	.	1	0	.	.	.	0	0	0	0	0	0	.	.	0
TEN	.	.	0	.	0	.	0	1	.	.	.	0	0	0	0	.	.	0
WAS	0	.	0	.	0	0	0	0	0	.	.	.	.	.	.	.	0	0

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:	=
ARI	0	.	0	.	0	0	0	.	0	0	0	.	0		
ATL	.	0	.	0	0	.	.	0	0	.	0	.	.		
BAL	.	.	.	0	0	0	.	0	.	.	.	0	0		
BUF	0	.	0	.	.	0	0	.	0	0	.	.	.		
CAR	.	0	0	0	.	.	.	.	.	.	0	0	0		
CHI	.	0	0	0	.	.	.	.	.	.	0	.	0		
CIN	.	.	.	.	0	.	0	0	.	0	.	0	0		
CLE	0	.	.	0	0	.	0	0	.	.	.	0	0		
DAL	0	0	.	0	0	0	0	.	0	0	.	.	0		
DEN	0	0	0	.	0	0	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	0	.	.	0	0	.	.		
GB	.	0	.	0	1	.	.	.	.	.	0	0	.		
HOU	.	.	.	0	.	.	.	0	.	.	0	0	.		
IND	.	.	0	0	.	.	.	0	.	.	0	0	.		
JAX	.	.	.	0	.	.	0	0	.	.	0	0	.		
KC	0	0	0	.	.	0	.	.	.	0	.	.	.		
LAC	0	0	0	.	.	0	.	.	.	.	.	.	.
LAR	0	.	.	.	0	0	0	.	0	0	.	0	0		
LV	0	1	0	.	.	0	.	.	.	0	0	0	0		
MIA	.	.	0	.	.	0	.	0	0	0	.	.	.		
MIN	.	.	.	0	.	.	0	0	.	.	0	.	.		
NE	0	.	.	.	.	1	.	.	0	0	.	0	.		
NO	.	0	.	.	.	.	.	.	.	0	0	.	.		
NYG	.	.	.	.	.	.	0	0	0	0	.	.	0		
NYJ	0	.	0	.	.	.	0	0	0	.	.	.	.
PHI	.	0	.	.	0	.	.	0	0	1	.	.	0		
PIT	0	0	.	.	0	0	0	.	0	.	.	0	.		
SEA	0	.	0	.	0	0	0	0	.	0	0	.	0		
SF	0	.	0	0	0	.	0	.	0	.	.	.	0		
TB	.	0	.	0	.	.	.	.	0	.	.	0	.		
TEN	.	.	0	.	.	.	.	0	.	.	0	.	0		
WAS	.	.	.	.	0	.	0	.	1	0	.	0	.		

[*,*,2]

:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:	=
ARI	.	.	.	0	.	0	.	.	0	.	.	.	0	.	.	.	.	0	.		
ATL	.	.	.	.	0	0	.	.	.	0	0	1	0	0	0	.	.	.	.
BAL	.	.	.	.	.	.	0	0	0	.	0	.	0	1	0	.	0	.	.		

BUF	0	.	.	.	.	.	0	.	.	0	.	.	.	.	0	0	0	0	0
CAR	.	0	.	.	.	0	.	.	.	.	0	0	0	0	0	.	.	0	.
CHI	0	0	.	.	0	.	.	.	0	0	0	0	0	0	0	0	0	.	.
CIN	.	.	0	0	.	.	.	0	0	.	.	.	0	0	0	0	.	.	.
CLE	.	.	0	.	.	.	0	.	.	.	0	.	0	0	0	.	0	.	.
DAL	0	.	0	.	.	.	0	.	.	.	.	.	.	.	.	.	0	0	.
DEN	.	0	.	0	.	0	.	.	.	.	.	0	0	0	.	0	0	.	0
DET	.	0	0	.	0	0	.	0	.	.	.	0	.	.	.	0	0	.	.
GB	.	0	.	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	0
HOU	0	0	0	.	0	.	0	0	.	0	.	.	.	0	0	.	.	.	0
IND	.	0	0	.	0	0	0	0	.	0	.	.	0	.	0	.	.	.	.
JAX	.	0	0	1	0	.	0	0	.	.	.	.	0	0	.	0	.	.	.
KC	.	.	.	0	.	0	0	.	.	0	0	0	.	.	0	.	0	.	0
LAC	.	.	0	0	.	0	.	0	0	0	0	0	.	.	.	0	.	.	0
LAR	0	.	.	0	0	.	.	.	0	.	.	0	.	.	.	.	.	.	0
LV	.	.	.	0	.	.	.	.	.	0	.	0	0	.	.	0	1	0	.
MIA	0	.	.	0	.	.	.	0	0	0	.	.	.	.	.	0	0	0	0
MIN	.	0	.	.	0	0	.	.	0	0	0	0	.	.	.	0	0	.	0
NE	0	.	.	0	0	0	.	.	.	0	.	.	.	0	.	0	0	.	0
NO	.	0	0	.	0	0	.	0	0	.	0	0	0	0	0	.	.	.	.
NYG	0	0	0	.	.	.	0	0	0	1	.	0	.	.	.	.	.	0	.
NYJ	0	.	0	0	.	.	.	.	0	0	0	.	.	.	.	1	0	0	0
PHI	0	.	.	0	.	.	0	0	0	.	0	.	.	.	0	.	.	0	.
PIT	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	.	.	.	.
SEA	0	0	.	0	.	.	.	.	0	.	.	.	.	.	.	.	.	0	.
SF	0	.	.	0	.	.	0	.	0	.	0	.	.	.	.	0	.	0	.
TB	1	0	.	.	0	0	.	.	.	.	0	0	0	0	0	.	.	.	0
TEN	.	.	0	.	0	.	0	0	.	.	.	0	1	0	0	.	.	0	0
WAS	0	.	0	.	0	0	0	1	0	.	.	.	.	.	.	.	.	0	0

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:=
ARI	0	.	0	.	0	0	0	.	0	0	0	.	0	
ATL	.	0	.	0	0	.	.	0	0	.	0	.	.	
BAL	.	.	.	0	0	0	.	0	.	.	.	0	0	
BUF	0	.	0	.	.	0	0	.	0	0	.	.	.	
CAR	.	0	0	1	.	.	.	.	.	.	0	0	0	
CHI	.	1	0	0	.	.	.	.	.	.	0	.	0	
CIN	.	.	.	.	0	.	0	1	.	0	.	0	0	
CLE	0	.	.	0	0	.	0	0	.	.	.	0	0	
DAL	0	0	.	0	0	0	1	.	0	0	.	.	0	
DEN	0	0	0	.	0	0	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	0	.	.	1	0	.	.	
GB	.	0	.	0	0	.	.	.	.	.	0	0	.	
HOU	.	.	.	0	.	.	.	0	.	.	0	0	.	
IND	.	.	0	0	.	.	.	0	.	.	0	0	.	
JAX	.	.	.	0	.	.	0	0	.	.	0	0	.	
KC	0	0	0	.	.	0	.	.	.	0	.	.	.	
LAC	0	0	0	.	.	0	.	.	.	.	.	.	.
LAR	0	.	.	.	0	0	0	.	1	0	.	0	0	
LV	0	0	0	.	.	0	.	.	.	.	0	0	0	
MIA	.	.	0	.	.	0	.	0	0	0	.	.	.	
MIN	.	.	.	0	.	.	0	0	.	.	0	.	.	
NE	1	.	.	.	.	0	.	.	0	0	.	0	.	
NO	.	0	.	.	.	.	.	.	.	0	0	.	.	
NYG	.	.	.	.	.	.	0	0	0	0	.	.	0	
NYJ	0	.	0	.	.	.	.	0	0	.	.	.	.
PHI	.	0	.	.	0	.	0	0	0	0	.	.	0	
PIT	0	0	.	.	0	0	0	.	0	.	.	0	.	
SEA	0	.	0	.	0	0	0	0	.	0	0	.	0	
SF	0	.	0	0	0	.	0	.	0	.	.	.	0	
TB	.	0	.	0	.	.	.	.	0	.	.	0	.	
TEN	.	.	0	.	.	.	.	0	.	.	0	.	0	
WAS	.	.	.	.	0	.	0	.	0	0	.	0	.	

[*,*,3]

:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:=
ARI	.	.	.	0	.	0	.	.	0	.	.	.	0	.	.	.	.	0	.	.
ATL	.	.	.	.	0	0	.	.	.	0	0	.	0	0	0	.	.	.	.	.
BAL	.	.	.	.	.	.	0	0	0	.	0	.	0	0	0	.	0	.	.	.
BUF	0	.	.	.	.	.	0	.	.	0	.	.	.	.	0	0	0	0	0	0
CAR	.	0	.	.	.	0	.	.	.	.	0	0	0	0	0	.	.	0	.	.
CHI	0	0	.	.	0	.	.	.	.	0	1	0	.	0	.	0	0	.	.	.
CIN	.	.	0	0	.	.	.	0	0	.	.	.	0	0	0	0	.	.	.	.
CLE	.	.	0	.	.	.	0	.	.	.	0	.	0	0	0	.	0	.	.	.
DAL	0	.	0	.	.	.	1	.	.	.	.	.	.	.	.	.	0	0	.	.
DEN	.	0	.	0	.	0	.	.	.	.	.	0	0	0	.	0	0	.	0	.
DET	.	0	0	.	0	0	.	0	.	.	.	0	.	.	.	0	0	.	.	.
GB	.	0	.	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	1	.
HOU	0	0	0	.	0	.	0	0	.	0	.	.	.	0	0	.	.	.	.	0
IND	.	0	0	.	0	0	0	0	.	0	.	.	0	.	1	.	.	.	.	.
JAX	.	0	0	0	0	.	0	0	.	.	.	.	0	0	.	0	.	.	.	.
KC	.	.	.	0	.	0	0	.	.	1	0	0	.	.	0	.	0	.	0	.
LAC	.	.	1	0	.	0	.	0	0	0	0	0	.	.	.	0	.	.	0	.
LAR	0	.	.	0	0	.	.	.	0	.	.	0	.	.	.	.	.	.	0	.
LV	.	.	.	0	.	.	.	.	.	0	.	0	0	.	.	0	0	0	.	.
MIA	0	.	.	0	.	.	.	0	0	0	.	.	.	.	.	0	0	0	0	0
MIN	.	0	.	.	1	0	.	.	0	0	0	0	.	.	.	0	0	.	0	0
NE	0	.	.	0	0	0	.	.	.	0	.	.	.	0	.	0	0	.	0	0
NO	.	0	0	.	0	0	.	0	0	.	0	0	0	0	0	.	.	.	.	.
NYG	0	0	0	.	.	.	0	0	0	0	.	0	.	.	.	.	.	0	.	.
NYJ	0	.	0	0	.	.	.	.	0	0	0	.	.	.	.	0	0	0	0	0
PHI	0	.	.	0	.	.	0	0	0	.	0	.	.	.	0	.	.	0	.	.
PIT	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	.	.	.	.	.
SEA	0	1	.	0	.	.	.	.	0	.	.	.	.	.	.	.	.	0	.	.
SF	0	.	.	0	.	.	0	.	0	.	0	.	.	.	.	0	.	1	.	.
TB	0	0	.	.	0	0	.	.	.	.	0	0	0	0	0	.	.	.	0	0
TEN	.	.	0	.	0	.	0	0	.	.	.	0	0	0	0	.	.	0	0	0
WAS	0	.	0	.	0	0	0	0	0	.	.	.	.	.	.	.	.	0	0	0

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:=
ARI	0	.	0	.	0	0	1	.	0	0	0	.	0	.
ATL	.	0	.	0	0	.	.	0	0	.	0	.	.	.
BAL	.	.	.	0	0	0	.	0	.	.	.	0	0	.
BUF	0	.	0	.	.	1	0	.	0	0	.	.	.	.
CAR	.	0	0	0	.	.	.	.	.	.	0	0	0	.
CHI	.	0	0	0	.	.	.	.	.	.	0	.	0	.
CIN	.	.	.	.	0	.	0	0	.	0	.	0	0	.
CLE	0	.	.	0	0	.	0	1	.	.	.	0	0	.
DAL	0	0	.	0	0	0	0	.	0	0	.	.	0	.
DEN	0	0	0	.	0	0	.	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	0	.	.	0	0	.	.	.
GB	.	0	.	0	0	.	.	.	.	.	0	0	.	.
HOU	.	.	.	0	.	.	.	0	.	.	0	1	.	.
IND	.	.	.	0	.	.	.	0	.	.	0	0	.	.
JAX	.	.	.	0	.	.	0	0	.	.	0	0	.	.
KC	0	0	0	.	.	0	.	.	.	0	.	.	.	.
LAC	0	0	0	.	.	0	.	.	.	.	.	.	.	.
LAR	0	.	.	.	0	0	0	.	0	0	.	0	0	.
LV	0	0	0	.	.	0	.	.	.	.	0	0	0	.
MIA	.	.	1	.	.	0	.	0	0	0	.	.	.	.
MIN	.	.	.	0	.	.	0	0	.	.	0	.	.	.
NE	0	.	.	.	.	0	.	.	0	0	.	0	.	.
NO	.	0	.	.	.	.	.	.	0	0	.	.	.	.
NYG	.	.	.	.	.	.	0	0	0	0	.	.	1	.
NYJ	0	.	0	.	.	.	.	0	0	.	.	.	.	.
PHI	.	0	.	.	0	.	.	0	0	0	.	.	0	.

PIT	0	0	.	.	0	0	0	.	0	.	.	0	.
SEA	0	.	0	.	0	0	0	0	.	0	0	.	0
SF	0	.	0	0	0	.	0	.	0	.	.	.	0
TB	.	0	.	1	.	.	.	.	0	.	.	0	.
TEN	.	.	0	.	.	.	0	.	.	0	.	.	0
WAS	.	.	.	.	0	.	0	.	0	0	.	0	.

[*,*,4]

:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:=
ARI	.	.	.	0	.	0	.	.	0	.	.	.	0	.	.	.	.	0	.	
ATL	.	.	.	.	0	0	.	.	.	0	0	0	0	0	0	.	.	.	.
BAL	.	.	.	.	.	.	0	1	0	.	0	.	0	0	0	.	0	.	.	
BUF	0	.	.	.	.	.	0	.	.	0	.	.	.	.	0	0	0	0	0	
CAR	.	0	.	.	.	0	.	.	.	.	0	0	0	0	0	.	.	0	.	
CHI	0	0	.	.	0	.	.	.	.	0	0	0	.	0	.	0	0	.	.	
CIN	.	.	0	0	.	.	.	0	0	.	.	.	0	0	0	0	.	.	.	
CLE	.	.	0	.	.	.	0	.	.	.	0	.	0	0	0	.	0	.	.	
DAL	0	.	0	.	.	.	0	.	.	.	.	.	.	.	.	.	0	0	.	
DEN	.	0	.	0	.	0	.	.	.	.	.	0	0	0	.	0	0	.	1	
DET	.	0	0	.	0	0	.	0	.	.	.	0	.	.	.	0	0	.	.	
GB	.	0	.	.	0	1	.	.	.	0	0	.	.	.	.	0	0	0	0	
HOU	0	0	0	.	0	.	1	0	.	0	.	.	.	0	0	.	.	.	0	
IND	.	0	0	.	0	0	0	0	.	0	.	.	0	.	0	.	.	.	.
JAX	.	0	0	0	0	.	0	0	.	.	.	.	0	0	.	0	.	.	.	
KC	.	.	.	0	.	0	0	.	.	0	0	0	.	.	0	.	0	.	0	
LAC	.	.	0	0	.	0	.	0	0	0	0	0	.	.	.	1	.	.	0	
LAR	0	.	.	0	0	.	.	.	0	.	.	0	.	.	.	.	.	.	0	
LV	.	.	.	0	.	.	.	.	.	0	.	0	0	.	.	0	0	0	.	
MIA	0	.	.	0	.	.	.	0	0	0	.	.	.	.	.	0	0	0	0	
MIN	.	0	.	.	0	0	.	.	0	0	1	0	.	.	.	0	0	.	0	
NE	0	.	.	0	0	0	.	.	.	0	.	.	.	0	.	0	0	.	0	
NO	.	0	0	.	0	0	.	0	0	.	0	0	0	0	0	.	.	.	.
NYG	0	1	0	.	.	.	0	0	0	0	.	0	.	.	.	.	.	0	.	
NYJ	0	.	0	0	.	.	.	.	0	0	0	.	.	.	.	0	0	0	0	
PHI	0	.	.	0	.	.	0	0	1	.	0	.	.	.	0	.	.	0	.	
PIT	.	0	0	.	.	.	0	0	.	.	.	.	0	0	1	.	.	.	.
SEA	0	0	.	0	.	.	.	.	0	.	.	.	.	.	.	.	.	1	.	
SF	0	.	.	0	.	.	0	.	0	.	0	.	.	.	.	0	.	0	.	
TB	0	0	.	.	0	0	.	.	.	.	0	0	0	0	0	.	.	.	0	
TEN	.	.	0	.	0	.	0	0	.	.	.	0	0	1	0	.	.	0	0	
WAS	0	.	0	.	0	0	0	0	0	.	.	.	.	.	.	.	.	0	0	

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:=
ARI	0	.	0	.	0	0	0	.	0	1	0	.	0	
ATL	.	0	.	0	0	.	.	0	0	.	0	.	.	
BAL	.	.	.	0	0	0	.	0	.	.	.	0	0	
BUF	0	.	1	.	.	0	0	.	0	0	.	.	.	
CAR	.	0	0	0	.	.	.	.	.	.	0	0	1	
CHI	.	0	0	0	.	.	.	.	.	.	0	.	0	
CIN	.	.	.	.	0	.	0	0	.	0	.	0	0	
CLE	0	.	.	0	0	.	0	0	.	.	.	0	0	
DAL	0	0	.	0	0	0	0	.	0	0	.	.	0	
DEN	0	0	0	.	0	0	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	0	.	.	0	0	.	.	
GB	.	0	.	0	0	.	.	.	.	.	0	0	.	
HOU	.	.	.	0	.	.	.	0	.	.	0	0	.	
IND	.	.	0	0	.	.	.	0	.	.	0	0	.	
JAX	.	.	.	0	.	.	0	0	.	.	0	0	.	
KC	0	0	0	.	.	0	.	.	.	0	.	.	.	
LAC	0	0	0	.	.	0	.	.	.	.	.	.	.
LAR	0	.	.	.	0	0	0	.	0	0	.	0	0	
LV	0	0	0	.	.	0	.	.	.	.	0	0	0	
MIA	.	.	0	.	.	1	.	0	0	0	.	.	.	

MIN	.	.	.	0	.	.	0	0	.	.	0	.	.
NE	0	.	.	.	.	0	.	.	0	0	.	0	.
NO	.	0	.	.	.	.	.	.	.	0	1	.	.
NYG	.	.	.	.	.	.	0	0	0	0	.	.	0
NYJ	0	.	0	.	.	.	.	0	0	.	.	.	.
PHI	.	0	.	.	0	.	.	0	0	0	.	.	0
PIT	0	0	.	.	0	0	0	.	0	.	.	0	.
SEA	0	.	0	.	0	0	0	0	.	0	0	.	0
SF	0	.	0	0	0	.	0	.	0	.	.	.	0
TB	.	0	.	0	.	.	.	.	0	.	.	0	.
TEN	.	.	0	.	.	.	.	0	.	.	0	.	0
WAS	.	.	.	.	0	.	0	.	0	0	.	0	.

[*,*,5]

:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:=
ARI	.	.	.	0	.	0	.	.	0	.	.	.	0	.	.	.	.	0	.	
ATL	.	.	.	.	0	0	.	.	.	0	0	0	0	1	0	.	.	.	.
BAL	.	.	.	.	.	.	0	0	0	.	0	.	0	0	0	.	0	.	.	
BUF	0	.	.	.	.	.	0	.	.	0	.	.	.	.	0	0	0	0	0	
CAR	.	0	.	.	.	0	.	.	.	.	0	0	0	0	0	.	.	0	.	
CHI	0	0	.	.	0	.	.	.	.	0	0	0	.	0	.	0	0	.	.	
CIN	.	.	0	0	.	.	.	1	0	.	.	.	0	0	0	0	.	.	.	
CLE	.	.	0	.	.	.	0	.	.	.	0	.	0	0	0	.	0	.	.	
DAL	0	.	0	.	.	.	0	.	.	.	.	.	.	.	.	.	0	0	.	
DEN	.	0	.	0	.	0	.	.	.	.	.	0	0	0	.	0	0	.	0	
DET	.	0	0	.	0	1	.	0	.	.	.	0	.	.	.	0	0	.	.	
GB	.	0	.	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	0	
HOU	0	0	0	.	0	.	0	0	.	0	.	.	.	0	0	.	.	.	0	
IND	.	0	0	.	0	0	0	0	.	0	.	.	0	.	0	.	.	.	.
JAX	.	0	0	0	0	.	0	0	.	.	.	.	1	0	.	0	.	.	.	
KC	.	.	.	0	.	0	0	.	.	0	0	0	.	.	0	.	0	.	0	
LAC	.	.	0	0	.	0	.	0	0	1	0	0	.	.	.	0	.	.	0	
LAR	0	.	.	0	0	.	.	.	0	.	.	1	.	.	.	.	.	.	0	
LV	.	.	.	0	.	.	.	.	.	0	.	0	0	.	.	1	0	0	.	
MIA	0	.	.	0	.	.	.	0	0	0	.	.	.	.	.	0	0	0	0	
MIN	.	0	.	.	0	0	.	.	0	0	0	0	.	.	.	0	0	.	0	
NE	0	.	.	0	1	0	.	.	.	0	.	.	.	0	.	0	0	.	0	
NO	.	0	0	.	0	0	.	0	0	.	0	0	0	0	0	.	.	.	.
NYG	0	0	0	.	.	.	0	0	0	0	.	0	.	.	.	.	.	0	.	
NYJ	0	.	0	1	.	.	.	.	0	0	0	.	.	.	.	0	0	0	0	
PHI	0	.	.	0	.	.	0	0	0	.	0	.	.	.	0	.	.	0	.	
PIT	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	.	.	.	.
SEA	0	0	.	0	.	.	.	.	0	.	.	.	.	.	.	.	.	0	.	
SF	0	.	.	0	.	.	0	.	0	.	0	.	.	.	.	0	.	0	.	
TB	0	0	.	.	0	0	.	.	.	0	0	0	0	0	0	.	.	.	0	
TEN	.	.	0	.	0	.	0	0	.	.	.	0	0	0	0	.	.	0	0	
WAS	0	.	0	.	0	0	0	0	1	.	.	.	.	.	.	.	.	0	0	

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:=
ARI	0	.	0	.	0	0	0	.	1	0	0	.	0	
ATL	.	0	.	0	0	.	.	0	0	.	0	.	.	
BAL	.	.	.	0	0	0	.	0	.	.	.	1	0	
BUF	0	.	0	.	.	0	0	.	0	0	.	.	.	
CAR	.	0	0	0	.	.	.	.	.	.	0	0	0	
CHI	.	0	0	0	.	.	.	.	.	.	0	.	0	
CIN	.	.	.	.	0	.	0	0	.	0	.	0	0	
CLE	0	.	.	0	0	.	0	0	.	.	.	0	0	
DAL	0	0	.	0	0	0	0	.	0	.	.	.	0	
DEN	0	0	0	.	0	0	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	0	.	.	0	0	.	.	
GB	.	0	.	0	0	.	.	.	.	.	0	0	.	
HOU	.	.	.	0	.	.	.	0	.	.	0	0	.	
IND	.	.	0	0	.	.	.	0	.	.	0	0	.	

JAX	.	.	.	0	.	.	0	0	.	.	0	0	.
KC	0	0	0	.	.	0	.	.	.	0	.	.	.
LAC	0	0	0	.	.	0	.	.	.	.	.	.	.
LAR	0	.	.	.	0	0	0	.	0	0	.	0	0
LV	0	0	0	.	.	0	.	.	.	0	0	0	0
MIA	.	.	0	.	.	0	.	1	0	0	.	.	.
MIN	.	.	.	0	.	.	0	0	.	.	1	.	.
NE	0	.	.	.	.	0	.	.	0	0	.	0	.
NO	.	0	.	.	.	.	.	.	.	0	0	.	.
NYG	.	.	.	.	.	.	0	0	0	0	.	.	0
NYJ	0	.	0	.	.	.	.	0	0	0	.	.	.
PHI	.	0	.	.	1	.	.	0	0	0	.	.	0
PIT	0	0	.	.	0	0	0	.	0	.	.	0	.
SEA	0	.	0	.	0	0	0	0	.	0	0	.	0
SF	0	.	0	1	0	.	0	.	0	.	.	.	0
TB	.	0	.	0	.	.	.	.	0	.	.	0	.
TEN	.	.	0	.	.	.	0	.	.	0	.	0	0
WAS	.	.	.	.	0	.	0	.	0	0	.	0	.

[*,*,6]

:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:=
ARI	.	.	.	0	.	0	.	.	0	.	.	.	0	.	.	.	.	0	.	
ATL	.	.	.	.	1	0	.	.	.	0	0	0	0	0	0	.	.	.	.
BAL	.	.	.	.	.	.	0	0	0	.	1	.	0	0	0	.	0	.	.	
BUF	0	.	.	.	.	.	0	.	.	0	.	.	.	.	0	0	0	0	0	
CAR	.	0	.	.	.	0	.	.	.	0	0	0	0	0	0	.	.	0	.	
CHI	0	0	.	.	0	.	.	.	.	0	0	0	.	0	.	0	0	.	.	
CIN	.	.	0	0	.	.	.	0	0	.	.	.	0	0	0	0	.	.	.	
CLE	.	.	0	.	.	.	0	.	.	.	0	.	1	0	0	.	0	.	.	
DAL	0	.	0	.	.	0	.	.	.	.	.	.	.	.	.	.	0	0	.	
DEN	.	0	.	0	.	0	.	.	.	.	.	0	0	0	.	0	0	.	0	
DET	.	0	0	.	0	0	.	0	.	.	.	0	.	.	.	0	0	.	.	
GB	.	0	.	.	0	0	.	.	.	1	0	.	.	.	.	0	0	0	0	
HOU	0	0	0	.	0	.	0	0	.	0	.	.	.	0	0	.	.	.	0	
IND	.	0	0	.	0	0	0	0	.	0	.	.	0	.	0	.	.	.	.
JAX	.	0	0	0	0	.	0	0	.	.	.	.	0	0	.	0	.	.	.	
KC	.	.	.	1	.	0	0	.	0	0	0	.	.	.	0	.	0	.	0	
LAC	.	.	0	0	.	0	.	0	0	0	0	.	.	.	.	0	.	.	0	
LAR	0	.	.	0	0	.	.	.	0	.	.	0	.	.	.	.	.	.	0	
LV	.	.	.	0	.	.	.	.	.	0	.	0	0	.	.	0	0	0	.	
MIA	0	.	.	0	.	.	.	0	0	0	.	.	.	.	.	0	0	0	0	
MIN	.	0	.	.	0	0	.	.	0	0	0	0	.	.	.	0	0	.	0	
NE	0	.	.	0	0	0	.	.	.	0	.	.	.	0	.	0	0	.	0	
NO	.	0	0	.	0	0	.	0	0	.	0	0	0	0	0	.	.	.	.
NYG	0	0	0	.	.	.	0	0	0	0	.	0	.	.	.	.	.	0	.	
NYJ	0	.	0	0	.	.	.	.	0	0	0	.	.	.	.	0	0	0	0	
PHI	0	.	.	0	.	.	1	0	0	.	0	.	.	.	0	.	.	0	.	
PIT	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	.	.	.	.
SEA	0	0	.	0	.	.	.	.	0	.	.	.	.	.	.	.	.	0	.	
SF	0	.	.	0	.	0	.	.	0	.	0	.	.	.	.	0	.	0	.	
TB	0	0	.	.	0	0	.	.	.	0	0	0	0	0	1	.	.	.	0	
TEN	.	.	0	.	0	.	0	0	.	.	.	0	0	0	0	.	.	0	0	
WAS	0	.	0	.	0	0	0	0	0	.	.	.	.	.	.	.	.	1	0	

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:=
ARI	0	.	0	.	0	1	0	.	0	0	0	.	0	
ATL	.	0	.	0	0	.	.	0	0	.	0	.	.	
BAL	.	.	.	0	0	0	.	0	.	.	.	0	0	
BUF	0	.	0	.	.	0	0	.	0	0	.	.	.	
CAR	.	0	0	0	.	.	.	.	.	.	0	0	0	
CHI	.	0	1	0	.	.	.	.	.	.	0	.	0	
CIN	.	.	.	.	0	.	0	0	.	0	.	0	0	
CLE	0	.	.	0	0	.	0	0	.	.	.	0	0	

DAL	0	0	.	0	0	0	0	.	0	0	.	.	0
DEN	0	0	0	.	0	0	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	0	.	.	0	0	.	.
GB	.	0	.	0	0	.	.	.	.	0	0	.	.
HOU	.	.	.	0	.	.	.	0	.	.	0	0	.
IND	.	.	0	1	.	.	.	0	.	.	0	0	.
JAX	.	.	.	0	.	.	0	0	.	.	0	0	.
KC	0	0	0	.	.	0	.	.	.	0	.	.	.
LAC	0	1	0	.	.	0	.	.	.	.	.	.	.
LAR	0	.	.	.	0	0	0	.	0	0	.	0	0
LV	0	0	0	.	.	0	.	.	.	0	0	0	0
MIA	.	.	0	.	.	0	.	0	0	1	.	.	.
MIN	.	.	.	0	.	.	0	0	.	.	0	.	.
NE	0	.	.	.	.	0	.	.	0	0	.	0	.
NO	.	0	.	.	.	.	.	.	.	0	0	.	.
NYG	.	.	.	.	.	.	0	0	0	0	.	.	0
NYJ	0	.	0	.	.	.	0	0	.	.	.	.	.
PHI	.	0	.	.	0	.	.	0	0	0	.	.	0
PIT	0	0	.	.	0	0	0	.	0	.	.	0	.
SEA	0	.	0	.	1	0	0	0	.	0	0	.	0
SF	0	.	0	0	0	.	0	.	0	.	.	.	0
TB	.	0	.	0	.	.	.	.	0	.	.	0	.
TEN	.	.	0	.	.	.	.	1	.	.	0	.	0
WAS	.	.	.	.	0	.	0	.	0	0	.	0	.

[*,*,7]

:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:=
ARI	.	.	.	0	.	0	.	.	0	.	.	.	0	.	.	.	.	0	.	
ATL	.	.	.	.	0	0	.	.	.	0	0	0	0	0	0	.	.	.	.
BAL	.	.	.	.	.	.	0	0	0	.	0	.	0	0	0	.	0	.	.	
BUF	1	.	.	.	.	.	0	.	.	0	.	.	.	.	0	0	0	0	0	
CAR	.	0	.	.	.	0	.	.	.	.	0	0	0	1	0	.	.	0	.	
CHI	0	0	.	.	0	.	.	.	.	0	0	0	.	0	.	0	0	.	.	
CIN	.	.	0	0	.	.	.	0	0	.	.	.	0	0	0	0	.	.	.	
CLE	.	.	0	.	.	.	0	.	.	.	0	.	0	0	0	.	0	.	.	
DAL	0	.	0	.	.	0	.	.	.	.	.	.	.	.	.	.	0	0	.	
DEN	.	0	.	0	.	1	.	.	.	.	.	0	0	0	.	0	0	.	0	
DET	.	0	0	.	0	0	.	0	.	.	.	0	.	.	.	0	0	.	.	
GB	.	0	.	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	0	
HOU	0	0	1	.	0	.	0	0	.	0	.	.	.	0	0	.	.	.	0	
IND	.	0	0	.	0	0	0	0	.	0	.	.	0	.	0	.	.	.	.
JAX	.	1	0	0	0	.	0	0	.	.	.	.	0	0	.	0	.	.	.	
KC	.	.	.	0	.	0	0	.	0	0	0	0	.	.	0	.	0	.	0	
LAC	.	.	0	0	.	0	.	0	0	0	0	0	.	.	.	0	.	.	1	
LAR	0	.	.	0	0	.	.	.	0	.	.	0	.	.	.	.	.	.	0	
LV	.	.	.	0	.	.	.	.	.	0	.	0	0	.	.	0	0	0	.	
MIA	0	.	.	0	.	.	.	0	0	0	.	.	.	.	.	0	0	0	0	
MIN	.	0	.	.	0	0	.	.	1	0	0	0	.	.	.	0	0	.	0	
NE	0	.	.	0	0	0	.	.	.	0	.	.	.	0	.	1	0	.	0	
NO	.	0	0	.	0	0	.	1	0	.	0	0	0	0	0	.	.	.	.
NYG	0	0	0	.	.	.	0	0	0	0	.	0	.	.	.	.	.	0	.	
NYJ	0	.	0	0	.	.	.	.	0	0	0	.	.	.	.	0	0	0	0	
PHI	0	.	.	0	.	.	0	0	0	.	0	.	.	.	0	.	.	0	.	
PIT	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	.	.	.	.
SEA	0	0	.	0	.	.	.	.	0	.	.	.	.	.	.	.	.	0	.	
SF	0	.	.	0	.	.	0	.	0	.	0	.	.	.	.	0	.	0	.	
TB	0	0	.	.	0	0	.	.	.	0	1	0	0	0	0	.	.	.	0	
TEN	.	.	0	.	0	.	0	0	.	.	.	0	0	0	0	.	.	0	0	
WAS	0	.	0	.	0	0	0	0	0	.	.	.	.	.	.	.	.	0	0	

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:=
ARI	0	.	0	.	0	0	0	.	0	0	0	.	0	
ATL	.	0	.	0	0	.	.	0	0	.	0	.	.	

BAL	.	.	.	0	0	0	.	0	.	.	.	0	0
BUF	0	.	0	.	.	0	0	.	0	0	.	.	.
CAR	.	0	0	0	.	.	.	.	.	.	0	0	0
CHI	.	0	0	0	.	.	.	.	.	0	.	.	0
CIN	.	.	.	.	0	.	0	0	.	0	.	1	0
CLE	0	.	.	0	0	.	0	0	.	.	.	0	0
DAL	0	0	.	0	0	0	0	.	0	0	.	.	0
DEN	0	0	0	.	0	0	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	0	.	.	0	0	.	.
GB	.	0	.	0	0	.	.	.	.	.	0	0	.
HOU	.	.	.	0	.	.	.	0	.	.	0	0	.
IND	.	.	0	0	.	.	.	0	.	.	0	0	.
JAX	.	.	.	0	.	.	0	0	.	.	0	0	.
KC	0	0	0	.	.	0	.	.	.	0	.	.	.
LAC	0	0	0	.	.	0	.	.	.	.	.	.	.
LAR	0	.	.	.	0	1	0	.	0	0	.	0	0
LV	0	0	0	.	.	0	.	.	.	0	0	0	0
MIA	.	.	0	.	.	0	.	0	0	0	.	.	.
MIN	.	.	.	0	.	.	0	0	.	.	0	.	.
NE	0	.	.	.	.	0	.	.	0	0	.	0	.
NO	.	0	.	.	.	.	.	.	.	0	0	.	.
NYG	.	.	.	.	.	.	0	0	0	1	.	.	0
NYJ	0	.	0	.	.	.	0	0	0	.	.	.	.
PHI	.	0	.	.	0	.	.	0	0	0	.	.	1
PIT	0	0	.	.	0	0	0	.	0	.	.	0	.
SEA	1	.	0	.	0	0	0	0	.	0	0	.	0
SF	0	.	0	0	0	.	0	.	0	.	.	.	0
TB	.	0	.	0	.	.	.	.	0	.	.	0	.
TEN	.	.	0	.	.	.	.	0	.	.	0	.	0
WAS	.	.	.	.	0	.	0	.	0	0	.	0	.

[*,*,8]

:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:=
ARI	.	.	.	0	.	0	.	.	0	.	.	.	0	.	.	.	.	0	.	.
ATL	.	.	.	.	0	0	.	.	.	0	0	0	0	0	0	.	.	.	.	.
BAL	.	.	.	.	.	.	0	0	0	.	0	.	0	0	0	.	0	.	.	.
BUF	0	.	.	.	.	.	0	.	.	0	.	.	.	.	0	0	0	0	0	.
CAR	.	0	.	.	.	0	.	.	.	.	0	0	0	0	0	.	.	0	.	.
CHI	0	0	.	.	0	.	.	.	.	0	0	0	.	0	.	0	0	.	.	.
CIN	.	.	0	0	.	.	.	0	0	.	.	.	0	0	0	0	.	.	.	.
CLE	.	.	0	.	.	.	0	.	.	.	0	.	0	0	0	.	0	.	.	.
DAL	1	.	0	.	.	.	0	.	.	.	.	.	.	.	.	.	0	0	.	.
DEN	.	1	.	0	.	0	.	.	.	.	.	0	0	0	.	0	0	.	0	.
DET	.	0	0	.	0	0	.	0	.	.	.	0	.	.	.	0	1	.	.	.
GB	.	0	.	.	0	0	.	.	.	0	0	.	.	.	.	1	0	0	0	.
HOU	0	0	0	.	0	.	0	0	.	0	.	.	.	0	1	.	.	.	.	0
IND	.	0	0	.	0	0	1	0	.	0	.	.	0	.	0	.	.	.	.	.
JAX	.	0	0	0	0	.	0	0	.	.	.	.	0	0	.	0	.	.	.	.
KC	.	.	.	0	.	0	0	.	.	0	0	0	.	.	0	.	0	.	0	.
LAC	.	.	0	0	.	0	.	0	0	0	0	0	.	.	.	0	.	.	0	.
LAR	0	.	.	0	0	.	.	.	0	.	.	0	.	.	.	.	.	.	0	.
LV	.	.	.	0	.	.	.	.	.	0	.	0	0	.	.	0	0	1	.	.
MIA	0	.	.	0	.	.	.	0	0	0	.	.	.	.	.	0	0	0	0	.
MIN	.	0	.	.	0	0	.	.	0	0	0	0	.	.	.	0	0	.	0	.
NE	0	.	.	0	0	0	.	.	.	0	.	.	.	0	.	0	0	.	0	.
NO	.	0	0	.	0	0	.	0	0	.	0	0	0	0	0	.	.	.	.	.
NYG	0	0	0	.	.	.	0	0	0	0	.	0	.	.	.	.	.	0	.	.
NYJ	0	.	0	0	.	.	.	.	0	0	0	.	.	.	.	0	0	0	0	.
PHI	0	.	.	0	.	.	0	0	0	.	0	.	.	.	0	.	.	0	.	.
PIT	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	.	.	.	.	.
SEA	0	0	.	0	.	.	.	.	0	.	.	.	.	.	.	.	.	0	.	.
SF	0	.	.	0	.	.	0	.	0	.	0	.	.	.	.	0	.	0	.	.
TB	0	0	.	.	0	0	.	.	.	.	0	0	0	0	0	.	.	.	.	0

TEN	.	.	0	.	0	.	0	0	.	.	.	0	0	0	0	.	.	0	0
WAS	0	.	0	.	0	0	0	0	0	.	.	.	.	.	.	.	.	0	0

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:	=
ARI	0	.	0	.	0	0	0	.	0	0	0	.	0		
ATL	.	0	.	0	0	.	.	0	0	.	0	.	.		
BAL	.	.	.	0	1	0	.	0	.	.	.	0	0		
BUF	0	.	0	.	.	0	0	.	1	0	.	.	.		
CAR	.	0	0	0	.	.	.	.	.	.	0	0	0		
CHI	.	0	0	0	.	.	.	.	.	.	0	.	0		
CIN	.	.	.	.	0	.	0	0	.	0	.	0	0		
CLE	0	.	.	0	0	.	0	0	.	.	.	0	0		
DAL	0	0	.	0	0	0	0	.	0	0	.	.	0		
DEN	0	0	0	.	0	0	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	0	.	.	0	0	.	.		
GB	.	0	.	0	0	.	.	.	.	.	0	0	.		
HOU	.	.	.	0	.	.	.	0	.	.	0	0	.		
IND	.	.	0	0	.	.	.	0	.	.	0	0	.		
JAX	.	.	.	0	.	.	0	0	.	.	0	0	.		
KC	0	0	0	.	.	0	.	.	.	0	.	.	.		
LAC	0	0	0	.	.	0	.	.	.	.	.	.	.
LAR	0	.	.	.	0	0	0	.	0	0	.	0	0		
LV	0	0	0	.	.	0	.	.	.	.	0	0	0		
MIA	.	.	0	.	.	0	.	0	0	0	.	.	.		
MIN	.	.	.	0	.	.	0	0	.	.	0	.	.		
NE	0	.	.	.	.	0	.	.	0	0	.	0	.		
NO	.	1	.	.	.	.	.	.	.	0	0	.	.		
NYG	.	.	.	.	.	.	0	0	0	0	.	.	0		
NYJ	1	.	0	.	.	.	.	0	0	.	.	.	.
PHI	.	0	.	.	0	.	.	0	0	0	.	.	0		
PIT	0	0	.	.	0	0	1	.	0	.	.	0	.		
SEA	0	.	0	.	0	0	0	0	.	0	0	.	0		
SF	0	.	0	0	0	.	0	.	0	.	.	.	1		
TB	.	0	.	0	.	.	.	.	0	.	.	0	.		
TEN	.	.	1	.	.	.	.	0	.	.	0	.	0		
WAS	.	.	.	.	0	.	0	.	0	0	.	0	.		

[*,*,9]

:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:	=
ARI	.	.	.	0	.	0	.	.	0	.	.	.	0	.	.	.	.	0	.		
ATL	.	.	.	.	0	0	.	.	.	0	0	0	1	0	0	.	.	.	.
BAL	.	.	.	.	.	.	0	0	0	.	0	.	0	0	0	.	0	.	.		
BUF	0	.	.	.	.	.	0	.	.	0	.	.	.	0	0	0	0	0	0		
CAR	.	0	.	.	.	0	.	.	.	.	0	0	0	0	0	.	.	1	.		
CHI	0	0	.	.	0	.	.	.	.	0	0	0	.	0	.	0	1	.	.		
CIN	.	.	0	1	.	.	.	0	0	.	.	.	0	0	0	0	.	.	.		
CLE	.	.	0	.	.	.	0	.	.	.	0	.	0	0	0	.	0	.	.		
DAL	0	.	0	.	.	.	0	.	.	.	.	.	.	.	.	.	0	0	.		
DEN	.	0	.	0	.	0	.	.	.	.	.	0	0	0	.	0	0	.	0		
DET	.	0	0	.	0	0	.	0	.	.	.	0	.	.	.	0	0	.	.		
GB	.	0	.	.	0	0	.	.	.	0	1	.	.	.	.	0	0	0	0		
HOU	0	0	0	.	0	.	0	0	.	0	.	.	.	0	0	.	.	.	0		
IND	.	0	0	.	0	0	0	0	.	0	.	.	0	.	0	.	.	.	.
JAX	.	0	0	0	0	.	0	0	.	.	.	.	0	0	.	0	.	.	.		
KC	.	.	.	0	.	0	0	.	.	0	0	0	.	.	0	.	0	.	0		
LAC	.	.	0	0	.	0	.	0	0	0	0	0	.	.	.	0	.	.	0		
LAR	0	.	.	0	0	.	.	.	0	.	0	.	.	.	.	.	.	.	0		
LV	.	.	.	0	.	.	.	.	.	0	.	0	0	.	.	0	0	0	.		
MIA	0	.	.	0	.	.	.	0	0	0	.	.	.	.	.	0	0	0	1		
MIN	.	0	.	.	0	0	.	.	0	0	0	0	.	.	.	0	0	.	0		
NE	0	.	.	0	0	0	.	.	.	0	.	.	.	1	.	0	0	.	0		
NO	.	0	1	.	0	0	.	0	0	.	0	0	0	0	0	.	.	.	.
NYG	0	0	0	.	.	.	0	0	0	0	.	0	.	.	.	.	.	0	.		

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:=
ARI	0	.	0	.	0	0	0	.	0	0	0	.	0	
ATL	.	0	.	0	0	.	.	0	0	.	0	.	.	
BAL	.	.	.	0	0	0	.	0	.	.	.	0	0	
BUF	0	.	0	.	.	0	0	.	0	0	.	.	.	
CAR	.	0	0	0	.	.	.	.	.	.	0	0	0	
CHI	.	0	0	0	.	.	.	.	.	.	0	.	0	
CIN	.	.	.	.	0	.	0	0	.	0	.	0	0	
CLE	0	.	.	0	1	.	0	0	.	.	.	0	0	
DAL	0	0	.	0	0	0	0	.	0	0	.	.	0	
DEN	0	0	0	.	0	0	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	0	.	.	0	0	.	.	
GB	.	0	.	0	0	.	.	.	.	.	0	0	.	
HOU	.	.	.	0	.	.	.	0	.	.	0	0	.	
IND	.	.	0	0	.	.	.	0	.	.	0	0	.	
JAX	.	.	.	0	.	.	0	0	.	.	0	0	.	
KC	0	0	0	.	.	0	.	.	.	0	.	.	.	
LAC	0	0	0	.	.	0	.	.	.	.	.	.	.
LAR	0	.	.	.	0	0	0	.	0	0	.	0	0	
LV	0	0	0	.	.	0	.	.	.	.	0	0	0	
MIA	.	.	0	.	.	0	.	0	0	0	.	.	.	
MIN	.	.	.	0	.	.	0	1	.	.	0	.	.	
NE	0	.	.	.	.	0	.	.	0	0	.	0	.	
NO	.	0	.	.	.	.	.	.	.	0	0	.	.	
NYG	.	.	.	.	.	.	0	0	0	0	.	.	0	
NYJ	0	.	0	.	.	.	.	0	0	.	.	.	.
PHI	.	0	.	.	0	.	.	0	0	0	.	.	0	
PIT	0	0	.	.	0	0	0	.	0	.	.	0	.	
SEA	0	.	0	.	0	0	0	0	.	0	1	.	0	
SF	0	.	0	0	0	.	0	.	0	.	.	.	0	
TB	.	0	.	0	.	.	.	.	0	.	.	0	.	
TEN	.	.	0	.	.	.	.	0	.	.	0	.	0	
WAS	.	.	.	.	0	.	0	.	0	0	.	0	.	

	[*,* ,10]																			
:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:=
ARI	.	.	.	0	.	0	.	.	0	.	.	.	0	.	.	.	.	0	.	
ATL	.	.	.	.	0	0	.	.	.	0	0	0	0	0	0	.	.	.	.
BAL	.	.	.	.	.	.	0	0	0	.	0	.	0	0	0	.	0	.	.	
BUF	0	.	.	.	.	.	0	.	.	0	.	.	.	.	0	0	0	0	0	
CAR	.	0	.	.	.	0	.	.	.	.	0	0	0	0	0	.	.	0	.	
CHI	0	0	.	.	0	.	.	.	.	0	0	0	.	0	.	0	0	.	.	
CIN	.	.	0	0	.	.	.	0	0	.	.	.	0	0	0	0	.	.	.	
CLE	.	.	0	.	.	.	0	.	.	.	0	.	0	0	0	.	0	.	.	
DAL	0	.	0	.	.	.	0	.	.	.	.	.	.	.	.	.	0	0	.	
DEN	.	0	.	0	.	0	.	.	.	.	.	0	0	0	.	0	0	.	0	
DET	.	0	0	.	0	0	.	0	.	.	.	0	.	.	.	0	0	.	.	
GB	.	0	.	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	0	
HOU	0	0	0	.	0	.	0	0	.	0	.	.	.	0	0	.	.	.	0	
IND	.	0	0	.	0	0	0	1	.	0	.	.	0	.	0	.	.	.	.
JAX	.	0	0	0	1	.	0	0	.	.	.	.	0	0	.	0	.	.	.	
KC	.	.	.	0	.	0	0	.	.	0	0	0	.	.	0	.	0	.	0	
LAC	.	.	0	0	.	0	.	0	1	0	0	0	.	.	.	0	.	.	0	
LAR	0	.	.	1	0	.	.	.	0	.	.	0	.	.	.	.	.	.	0	

LV	.	.	.	0	.	.	.	.	.	0	.	0	0	.	.	0	0	0	.
MIA	0	.	.	0	.	.	.	0	0	0	.	.	.	.	.	0	0	0	0
MIN	.	0	.	.	0	0	.	.	0	1	0	0	.	.	.	0	0	.	0
NE	0	.	.	0	0	0	.	.	.	0	.	.	.	0	.	0	0	.	0
NO	.	0	0	.	0	0	.	0	0	.	0	0	0	0	0	.	.	.	.
NYG	0	0	0	.	.	.	1	0	0	0	.	0	.	.	.	.	.	0	.
NYJ	0	.	0	0	.	.	.	.	0	0	0	.	.	.	.	0	0	0	0
PHI	0	.	.	0	.	.	0	0	0	.	0	.	.	.	0	.	.	0	.
PIT	.	1	0	.	.	.	0	0	.	.	.	.	0	0	0	.	.	.	.
SEA	0	0	.	0	.	.	.	.	0	.	.	.	.	.	.	.	.	0	.
SF	0	.	.	0	.	.	0	.	0	.	0	.	.	.	.	0	.	0	.
TB	0	0	.	.	0	0	.	.	.	.	0	0	0	0	0	.	.	.	0
TEN	.	.	0	.	0	.	0	0	.	.	.	0	0	0	0	.	.	0	0
WAS	0	.	0	.	0	1	0	0	0	.	.	.	.	.	.	.	.	0	0

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:	:=
ARI	1	.	0	.	0	0	0	.	0	0	0	.	0		
ATL	.	0	.	0	0	.	.	0	0	.	0	.	.		
BAL	.	.	.	0	0	1	.	0	.	.	.	0	0		
BUF	0	.	0	.	.	0	0	.	0	0	.	.	.		
CAR	.	0	0	0	.	.	.	.	.	.	0	0	0		
CHI	.	0	0	0	.	.	.	.	.	.	0	.	0		
CIN	.	.	.	.	0	.	0	0	.	0	.	0	0		
CLE	0	.	.	0	0	.	0	0	.	.	.	0	0		
DAL	0	0	.	0	0	0	0	.	0	0	.	.	0		
DEN	0	0	0	.	0	0	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	1	.	.	0	0	.	.		
GB	.	0	.	0	0	.	.	.	.	.	0	0	.		
HOU	.	.	.	1	.	.	.	0	.	.	0	0	.		
IND	.	.	0	0	.	.	.	0	.	.	0	0	.		
JAX	.	.	.	0	.	.	0	0	.	.	0	0	.		
KC	0	0	0	.	.	0	.	.	.	1	.	.	.		
LAC	0	0	0	.	.	0	.	.	.	.	.	.	.
LAR	0	.	.	.	0	0	0	.	0	0	.	0	0		
LV	0	0	1	.	.	0	.	.	.	.	0	0	0		
MIA	.	.	0	.	.	0	.	0	0	0	.	.	.		
MIN	.	.	.	0	.	.	0	0	.	.	0	.	.		
NE	0	.	.	.	.	0	.	.	0	0	.	0	.		
NO	.	0	.	.	.	.	.	.	.	0	0	.	.		
NYG	.	.	.	.	.	.	0	0	0	0	.	.	0		
NYJ	0	.	0	.	.	.	.	0	0	.	.	.	.
PHI	.	0	.	.	0	.	.	0	0	0	.	.	0		
PIT	0	0	.	.	0	0	0	.	0	.	.	0	.		
SEA	0	.	0	.	0	0	0	0	.	0	0	.	0		
SF	0	.	0	0	0	.	0	.	0	.	.	.	0		
TB	.	0	.	0	.	.	.	.	0	.	.	1	.		
TEN	.	.	0	.	.	.	.	0	.	.	0	.	0		
WAS	.	.	.	.	0	.	0	.	0	0	.	0	.		

[*,*,11]

:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:	:=
ARI	.	.	.	0	.	0	.	.	0	.	.	.	0	.	.	.	.	0	.		
ATL	.	.	.	.	0	0	.	.	.	0	0	0	0	0	0	.	.	.	.
BAL	.	.	.	.	.	.	0	0	0	.	0	.	0	0	0	.	0	.	.		
BUF	0	.	.	.	.	.	0	.	.	0	.	.	.	.	0	0	1	0	0		
CAR	.	0	.	.	.	0	.	.	.	.	0	0	0	0	0	.	.	0	.		
CHI	0	0	.	.	0	.	.	.	.	0	0	0	.	0	.	0	0	.	.		
CIN	.	.	0	0	.	.	.	0	0	.	.	.	0	0	0	0	.	.	.		
CLE	.	.	0	.	.	.	1	.	.	.	0	.	0	0	0	.	0	.	.		
DAL	0	.	0	.	.	.	0	.	.	.	.	.	.	.	.	.	0	0	.		
DEN	.	0	.	0	.	0	.	.	.	.	.	0	1	0	.	0	0	.	0		
DET	.	0	0	.	0	0	.	0	.	.	.	0	.	.	.	0	0	.	.		
GB	.	0	.	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	0		

HOU	0	0	0	.	0	.	0	0	.	0	.	.	.	0	0	.	.	.	0
IND	.	0	0	.	0	0	0	0	.	0	.	.	0	.	0	.	.	.	.
JAX	.	0	1	0	0	.	0	0	.	.	.	.	0	0	.	0	.	.	.
KC	.	.	.	0	.	0	0	.	.	0	0	0	.	.	0	.	0	.	0
LAC	.	.	0	0	.	0	.	0	0	0	0	0	.	.	.	0	.	.	0
LAR	0	.	.	0	0	.	.	.	0	.	.	0	.	.	.	.	.	.	0
LV	.	.	.	0	.	.	.	.	.	0	.	0	0	.	.	0	0	0	.
MIA	0	.	.	0	.	.	.	0	0	0	.	.	.	.	.	0	0	0	0
MIN	.	0	.	.	0	0	.	.	0	0	0	0	.	.	.	1	0	.	0
NE	0	.	.	0	0	0	.	.	.	0	.	.	.	0	.	0	0	.	0
NO	.	0	0	.	0	0	.	0	0	.	0	0	0	0	0	.	.	.	.
NYG	0	0	0	.	.	.	0	0	0	0	.	0	.	.	.	.	.	1	.
NYJ	0	.	0	0	.	.	.	.	0	0	1	.	.	.	.	0	0	0	0
PHI	0	.	.	0	.	.	0	0	0	.	0	.	.	.	0	.	.	0	.
PIT	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	.	.	.	.
SEA	0	0	.	0	.	.	.	.	0	.	.	.	.	.	.	.	.	0	.
SF	1	.	.	0	.	.	0	.	0	.	0	.	.	.	.	0	.	0	.
TB	0	0	.	.	0	1	.	.	.	0	0	0	0	0	0	.	.	.	0
TEN	.	.	0	.	0	.	0	0	.	.	.	0	0	0	0	.	.	0	0
WAS	0	.	0	.	0	0	0	0	0	.	.	.	.	.	.	.	.	0	1

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:=
ARI	0	.	0	.	0	0	0	.	0	0	0	.	0	
ATL	.	0	.	0	0	.	.	0	0	.	0	.	.	
BAL	.	.	.	0	0	0	.	0	.	.	.	0	0	
BUF	0	.	0	.	.	0	0	.	0	0	.	.	.	
CAR	.	0	0	0	.	.	.	.	.	.	0	1	0	
CHI	.	0	0	0	.	.	.	.	.	.	0	.	0	
CIN	.	.	.	.	0	.	0	0	.	0	.	0	0	
CLE	0	.	.	0	0	.	0	0	.	.	.	0	0	
DAL	0	0	.	0	0	0	0	.	1	0	.	.	0	
DEN	0	0	0	.	0	0	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	0	.	.	0	0	.	.	
GB	.	0	.	1	0	.	.	.	.	.	0	0	.	
HOU	.	.	.	0	.	.	.	0	.	.	0	0	.	
IND	.	.	0	0	.	.	.	1	.	.	0	0	.	
JAX	.	.	.	0	.	.	0	0	.	.	0	0	.	
KC	0	0	0	.	.	0	.	.	.	0	.	.	.	
LAC	0	0	0	.	.	0	.	.	.	.	.	.	.
LAR	0	.	.	.	0	0	0	.	0	0	.	0	0	
LV	0	0	0	.	.	0	.	.	.	.	0	0	0	
MIA	.	.	0	.	.	0	.	0	0	0	.	.	.	
MIN	.	.	.	0	.	.	0	0	.	.	0	.	.	
NE	0	.	.	.	.	0	.	.	0	0	.	0	.	
NO	.	0	.	.	.	.	.	.	.	0	0	.	.	
NYG	.	.	.	.	.	.	0	0	0	0	.	.	0	
NYJ	0	.	0	.	.	.	.	0	0	.	.	.	.
PHI	.	0	.	.	0	.	.	0	0	0	.	.	0	
PIT	0	0	.	.	0	0	0	.	0	.	.	0	.	
SEA	0	.	0	.	0	0	0	0	.	0	0	.	0	
SF	0	.	0	0	0	.	0	.	0	.	.	.	0	
TB	.	0	.	0	.	.	.	.	0	.	.	0	.	
TEN	.	.	0	.	.	.	.	0	.	.	0	.	0	
WAS	.	.	.	.	0	.	0	.	0	0	.	0	.	

[*,*,12]																				
:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:=
ARI	.	.	.	0	.	0	.	.	0	.	.	0	0	.	.	.	.	0	.	
ATL	.	.	.	.	0	0	.	.	.	0	0	0	0	0	0	.	.	.	.
BAL	.	.	.	.	.	.	0	0	0	.	0	.	0	0	0	.	0	.	.	
BUF	0	.	.	.	.	.	0	.	.	0	.	.	.	.	0	0	0	0	1	
CAR	.	0	.	.	.	0	.	.	.	.	0	0	0	0	0	.	.	0	.	
CHI	1	0	.	.	0	.	.	.	.	0	0	0	.	0	.	0	0	.	.	

CIN	.	.	0	0	.	.	.	0	0	.	.	.	0	0	0	0	.	.	.
CLE	.	.	0	.	.	.	0	.	.	.	0	.	0	0	1	.	0	.	.
DAL	0	.	0	.	.	.	0	.	.	.	.	.	.	.	.	.	0	0	.
DEN	.	0	.	0	.	0	.	.	.	.	.	0	0	1	.	0	0	.	0
DET	.	0	0	.	0	0	.	0	.	.	.	0	.	.	.	0	0	.	.
GB	.	0	.	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	0
HOU	0	0	0	.	1	.	0	0	.	0	.	.	.	0	0	.	.	.	0
IND	.	0	0	.	0	0	0	0	.	0	.	.	0	.	0	.	.	.	.
JAX	.	0	0	0	0	.	0	0	.	.	.	.	0	0	.	0	.	.	.
KC	.	.	.	0	.	0	0	.	.	0	0	0	0	.	.	0	0	.	0
LAC	.	.	0	0	.	0	.	0	0	0	0	0	0	.	.	.	0	.	0
LAR	0	.	.	0	0	.	.	.	0	.	.	0	.	.	.	.	.	.	0
LV	.	.	.	0	.	.	.	.	.	0	.	0	0	.	.	0	0	0	.
MIA	0	.	.	0	.	.	.	0	0	0	.	.	.	.	.	0	0	0	0
MIN	.	0	.	.	0	0	.	.	0	0	0	0	.	.	.	0	0	.	0
NE	0	.	.	0	0	0	.	.	.	0	.	.	.	0	.	0	1	.	0
NO	.	1	0	.	0	0	.	0	0	.	0	0	0	0	0	.	.	.	.
NYG	0	0	0	.	.	.	0	0	1	0	.	0	.	.	.	.	.	0	.
NYJ	0	.	0	0	.	.	.	.	0	0	0	.	.	.	.	0	0	0	0
PHI	0	.	.	0	.	.	0	0	0	.	0	.	.	.	0	.	.	0	.
PIT	.	0	0	.	.	.	0	0	.	.	.	.	.	0	0	0	.	.	.
SEA	0	0	.	0	.	.	.	.	0	.	.	.	.	.	.	.	.	0	.
SF	0	.	.	0	.	.	0	.	0	.	0	.	.	.	.	0	.	0	.
TB	0	0	.	.	0	0	.	.	.	0	0	0	0	0	0	.	.	.	0
TEN	.	.	0	.	0	.	0	0	.	.	.	1	0	0	0	.	.	0	0
WAS	0	.	0	.	0	0	0	0	0	.	.	.	.	.	.	.	.	0	0

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:=
ARI	0	.	0	.	0	0	0	.	0	0	0	.	0	
ATL	.	0	.	0	0	.	.	0	0	.	0	.	.	
BAL	.	.	.	0	0	0	.	0	.	.	.	0	0	
BUF	0	.	0	.	.	0	0	.	0	0	.	.	.	
CAR	.	0	0	0	.	.	.	.	.	.	0	0	0	
CHI	.	0	0	0	.	.	.	.	.	.	0	.	0	
CIN	.	.	.	.	0	.	0	0	.	0	.	0	1	
CLE	0	.	.	0	0	.	0	0	.	.	.	0	0	
DAL	0	0	.	0	0	0	0	.	0	0	.	.	0	
DEN	0	0	0	.	0	0	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	0	.	.	0	1	.	.	
GB	.	0	.	0	0	.	.	.	.	.	0	0	.	
HOU	.	.	.	0	.	.	.	0	.	.	0	0	.	
IND	.	.	0	0	.	.	.	0	.	.	0	0	.	
JAX	.	.	.	0	.	.	0	0	.	.	0	0	.	
KC	1	0	0	.	.	0	.	.	.	0	.	.	.	
LAC	0	0	0	.	.	0	.	.	.	.	.	.	.
LAR	0	.	.	.	0	0	0	.	0	0	.	0	0	
LV	0	0	0	.	.	0	.	.	.	.	0	0	0	
MIA	.	.	0	.	.	0	.	0	0	0	.	.	.	
MIN	.	.	.	0	.	.	0	0	.	.	0	.	.	
NE	0	.	.	.	.	0	.	.	0	0	.	0	.	
NO	.	0	.	.	.	.	.	.	0	0	.	.	.	
NYG	.	.	.	.	.	.	0	0	0	0	.	.	0	
NYJ	0	.	0	.	.	.	.	0	0	.	.	.	.
PHI	.	1	.	.	0	.	.	0	0	0	.	.	0	
PIT	0	0	.	.	0	1	0	.	0	.	.	0	.	
SEA	0	.	0	.	0	0	0	0	.	0	0	.	0	
SF	0	.	0	0	0	.	0	.	1	.	.	.	0	
TB	.	0	.	0	.	.	.	0	.	.	.	0	.	
TEN	.	.	0	.	.	.	.	0	.	.	0	.	0	
WAS	.	.	.	.	0	.	0	.	0	0	.	0	.	

[*,*,13]

: ARI ATL BAL BUF CAR CHI CIN CLE DAL DEN DET GB HOU IND JAX KC LAC LAR LV :=

ARI	.	.	.	0	.	0	.	.	0	.	.	.	0	.	.	.	.	0	.
ATL	.	.	.	.	0	0	.	.	.	0	0	0	0	0	0	.	.	.	.
BAL	.	.	.	.	.	.	0	0	0	.	0	.	0	0	0	.	0	.	.
BUF	0	.	.	.	.	.	0	.	.	1	.	.	.	0	0	0	0	0	0
CAR	.	0	.	.	.	0	.	.	.	.	1	0	0	0	0	.	.	0	.
CHI	0	0	.	.	0	.	.	.	0	0	0	.	0	.	.	1	0	.	.
CIN	.	.	0	0	.	.	.	0	0	.	.	.	0	0	0	0	.	.	.
CLE	.	.	0	.	.	.	0	.	.	.	0	.	0	0	0	.	0	.	.
DAL	0	.	1	.	.	.	0	.	.	.	.	.	.	.	.	.	0	0	.
DEN	.	0	.	0	.	0	.	.	.	.	.	0	0	0	.	.	0	0	.
DET	.	0	0	.	0	0	.	0	.	.	.	0	.	.	.	.	0	0	.
GB	.	0	.	.	0	0	.	.	.	0	0	.	.	.	.	.	0	0	0
HOU	0	0	0	.	0	.	0	0	.	0	.	.	.	0	0	.	.	.	0
IND	.	0	0	.	0	0	0	0	.	0	.	.	0	.	0	.	.	.	.
JAX	.	0	0	0	0	.	0	0	.	.	.	.	0	0	.	0	.	.	.
KC	.	.	.	0	.	0	0	.	.	0	0	0	.	.	0	.	0	.	0
LAC	.	.	0	0	.	0	.	0	0	0	0	1	.	.	.	0	.	.	0
LAR	0	.	.	0	0	.	.	.	0	.	.	0	.	.	.	.	.	.	0
LV	.	.	.	0	.	.	.	.	.	0	.	0	0	.	.	0	0	0	.
MIA	0	.	.	0	.	.	.	0	0	0	.	.	.	.	.	0	0	1	0
MIN	.	0	.	.	0	0	.	.	0	0	0	0	.	.	.	0	0	.	0
NE	0	.	.	0	0	0	.	.	.	0	.	.	.	0	.	0	0	.	0
NO	.	0	0	.	0	0	.	0	0	.	0	0	0	0	0	.	.	.	.
NYG	0	0	0	.	.	.	0	0	0	0	.	0	.	.	.	.	.	0	.
NYJ	0	.	0	0	.	.	.	.	0	0	0	.	.	.	.	0	0	0	0
PHI	0	.	.	0	.	.	0	0	0	.	0	.	.	.	0	.	.	0	.
PIT	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	.	.	.	.
SEA	0	0	.	0	.	.	.	.	0	.	.	.	.	.	.	.	.	0	.
SF	0	.	.	0	.	.	0	.	0	.	0	.	.	.	.	0	.	0	.
TB	0	0	.	.	0	0	.	.	.	0	0	0	0	0	0	.	.	.	0
TEN	.	.	0	.	0	.	0	0	.	.	.	0	0	0	0	.	.	0	0
WAS	0	.	0	.	0	0	0	0	0	.	.	.	.	.	.	.	.	0	0

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:	=
ARI	0	.	1	.	0	0	0	.	0	0	0	.	0		
ATL	.	1	.	0	0	.	.	0	0	.	0	.	.		
BAL	.	.	.	0	0	0	.	0	.	.	.	0	0		
BUF	0	.	0	.	.	0	0	.	0	0	.	.	.		
CAR	.	0	0	0	.	.	.	.	.	.	0	0	0		
CHI	.	0	0	0	.	.	.	.	.	.	0	.	0		
CIN	.	.	.	.	0	.	0	0	.	1	.	0	0		
CLE	0	.	.	0	0	.	1	0	.	.	.	0	0		
DAL	0	0	.	0	0	0	0	.	0	0	.	.	0		
DEN	0	0	0	.	0	0	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	0	.	.	0	0	.	.		
GB	.	0	.	0	0	.	.	.	.	.	0	0	.		
HOU	.	.	.	0	.	.	.	0	.	.	0	0	.		
IND	.	.	0	0	.	.	.	0	.	.	1	0	.		
JAX	.	.	.	0	.	.	0	0	.	.	0	0	.		
KC	0	0	0	.	.	0	.	.	.	0	.	.	.		
LAC	0	0	0	.	.	0	.	.	.	.	.	.	.
LAR	0	.	.	.	0	0	0	.	0	0	.	0	0		
LV	0	0	0	.	.	0	.	.	.	.	0	1	0		
MIA	.	.	0	.	.	0	.	0	0	0	.	.	.		
MIN	.	.	.	0	.	.	0	0	.	.	0	.	.		
NE	0	.	.	.	.	0	.	.	0	0	.	0	.		
NO	.	0	.	.	.	.	.	.	.	0	0	.	.		
NYG	.	.	.	.	.	.	0	0	0	0	.	.	0		
NYJ	0	.	0	.	.	.	.	0	0	.	.	.	.
PHI	.	0	.	.	0	.	.	0	0	0	.	.	0		
PIT	0	0	.	.	0	0	0	.	0	.	.	0	.		
SEA	0	.	0	.	0	0	0	1	.	0	0	.	0		
SF	0	.	0	0	0	.	0	.	0	.	.	.	0		

TB	.	0	.	0	.	.	.	.	0	.	.	0	.
TEN	.	.	0	.	.	.	.	0	.	.	0	.	0
WAS	.	.	.	.	1	.	0	.	0	0	.	0	.

[*,*,14]

:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:=
ARI	.	.	.	0	.	0	.	.	0	.	.	.	0	.	.	.	.	0	.	
ATL	.	.	.	.	0	0	.	.	.	0	0	0	0	0	0	.	.	.	.
BAL	.	.	.	.	.	.	0	0	0	.	0	.	0	0	0	.	0	.	.	
BUF	0	.	.	.	.	.	0	.	.	0	.	.	.	.	0	0	0	0	0	
CAR	.	0	.	.	.	0	.	.	.	.	0	0	0	0	0	.	.	0	.	
CHI	0	1	.	.	0	.	.	.	.	0	0	0	.	0	.	0	0	.	.	
CIN	.	.	0	0	.	.	.	0	0	.	.	.	0	0	0	0	.	.	.	
CLE	.	.	0	.	.	.	0	.	.	.	0	.	0	0	0	.	0	.	.	
DAL	0	.	0	.	.	.	0	.	.	.	.	.	.	.	.	.	0	0	.	
DEN	.	0	.	0	.	0	.	.	.	.	.	0	0	0	.	0	0	.	0	
DET	.	0	0	.	0	0	.	0	.	.	.	0	.	.	.	0	0	.	.	
GB	.	0	.	.	1	0	.	.	.	0	0	.	.	.	.	0	0	0	0	
HOU	0	0	0	.	0	.	0	0	.	0	.	.	.	0	0	.	.	.	.
IND	.	0	0	.	0	0	0	0	.	0	.	.	0	.	0	.	.	.	.
JAX	.	0	0	0	0	.	0	0	.	.	.	.	0	0	.	0	.	.	.	
KC	.	.	.	0	.	0	0	.	.	0	1	0	.	.	0	.	0	.	0	
LAC	.	.	0	0	.	0	.	0	0	0	0	0	.	.	.	0	.	.	0	
LAR	0	.	.	0	0	.	.	.	0	.	.	0	.	.	.	.	.	.	0	
LV	.	.	.	0	.	.	.	.	.	0	.	0	0	.	.	0	0	0	.	
MIA	0	.	.	0	.	.	.	0	0	0	.	.	.	.	.	0	0	0	0	
MIN	.	0	.	.	0	0	.	.	0	0	0	0	.	.	.	0	0	.	0	
NE	0	.	.	0	0	0	.	.	.	0	.	.	.	0	.	0	0	.	0	
NO	.	0	0	.	0	0	.	0	0	.	0	0	0	0	0	.	.	.	.
NYG	0	0	0	.	.	.	0	0	0	0	.	0	.	.	.	.	.	0	.	
NYJ	0	.	0	0	.	.	.	.	0	0	0	.	.	.	.	0	0	0	0	
PHI	0	.	.	0	.	.	0	0	0	.	0	.	.	.	0	.	.	0	.	
PIT	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	.	.	.	.
SEA	0	0	.	0	.	.	.	.	0	.	.	.	.	.	.	.	.	0	.	
SF	0	.	.	0	.	.	0	.	0	.	0	.	.	.	.	0	.	0	.	
TB	0	0	.	.	0	0	.	.	.	.	0	0	1	0	0	.	.	.	0	
TEN	.	.	0	.	0	.	0	0	.	.	.	0	0	0	1	.	.	0	0	
WAS	0	.	0	.	0	0	0	0	0	.	.	.	.	.	.	.	.	0	0	

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:=
ARI	0	.	0	.	0	0	0	.	0	0	0	.	1	
ATL	.	0	.	0	0	.	.	0	0	.	0	.	.	
BAL	.	.	.	0	0	0	.	1	.	.	.	0	0	
BUF	0	.	0	.	.	0	0	.	0	0	.	.	.	
CAR	.	0	0	0	.	.	.	.	.	.	0	0	0	
CHI	.	0	0	0	.	.	.	.	.	.	0	.	0	
CIN	.	.	.	.	0	.	0	0	.	0	.	0	0	
CLE	1	.	.	0	0	.	0	0	.	.	.	0	0	
DAL	0	0	.	1	0	0	0	.	0	0	.	.	0	
DEN	0	0	0	.	0	0	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	0	.	.	0	0	.	.	
GB	.	0	.	0	0	.	.	.	.	.	0	0	.	
HOU	.	.	.	0	.	.	.	0	.	.	0	0	.	
IND	.	.	0	0	.	.	.	0	.	.	0	0	.	
JAX	.	.	.	0	.	.	0	0	.	.	0	0	.	
KC	0	0	0	.	.	0	.	.	.	0	.	.	.	
LAC	0	0	0	.	.	0	.	.	.	.	.	.	.
LAR	0	.	.	.	0	0	1	.	0	0	.	0	0	
LV	0	0	0	.	.	1	.	.	.	.	0	0	0	
MIA	.	.	0	.	.	0	.	0	0	0	.	.	.	
MIN	.	.	.	0	.	.	0	0	.	.	0	.	.	
NE	0	.	.	.	.	0	.	.	1	0	.	0	.	
NO	.	0	.	.	.	.	.	.	.	0	0	.	.	

NYG	.	.	.	.	.	.	0	0	0	0	.	.	0
NYJ	0	.	0	.	.	.	.	0	0	.	.	.	.
PHI	.	0	.	.	0	.	.	0	0	0	.	.	0
PIT	0	0	.	.	0	0	0	.	0	.	0	.	.
SEA	0	.	0	.	0	0	0	0	0	0	.	.	0
SF	0	.	0	0	0	.	0	.	0	.	.	.	0
TB	.	0	.	0	.	.	.	.	0	.	.	0	.
TEN	.	.	0	.	.	.	.	0	.	.	0	.	0
WAS	.	.	.	.	0	.	0	.	0	0	.	0	.

[*,*,15]

:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:=
ARI	.	.	.	0	.	0	.	.	0	.	.	.	0	.	.	.	.	0	.	.
ATL	.	.	.	.	0	0	.	.	.	0	0	0	0	0	0	.	.	.	.	.
BAL	.	.	.	.	.	.	0	0	0	.	0	.	0	0	0	.	0	.	.	.
BUF	0	.	.	.	.	.	0	.	.	0	.	.	.	.	0	0	0	0	0	0
CAR	.	0	.	.	.	0	.	.	.	.	0	0	0	0	0	.	.	0	.	.
CHI	0	0	.	.	0	.	.	.	.	0	0	0	.	0	.	0	0	.	.	.
CIN	.	.	0	0	.	.	.	0	0	.	.	.	0	0	0	0	.	.	.	.
CLE	.	.	0	.	.	.	0	.	.	.	0	.	0	0	0	.	0	.	.	.
DAL	0	.	0	.	.	.	0	.	.	.	.	.	.	.	.	.	0	0	.	.
DEN	.	0	.	0	.	0	.	.	.	.	.	0	0	0	.	0	0	.	0	.
DET	.	0	0	.	0	0	.	0	.	.	.	1	.	.	.	0	0	.	.	.
GB	.	0	.	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	0	0
HOU	0	0	0	.	0	.	0	0	.	0	.	.	.	1	0	.	.	.	.	0
IND	.	0	0	.	0	0	0	0	.	0	.	.	0	.	0	.	.	.	.	.
JAX	.	0	0	0	0	.	0	0	.	.	.	.	0	0	.	1	.	.	.	.
KC	.	.	.	0	.	0	0	.	.	0	0	0	.	.	0	.	0	.	0	0
LAC	.	.	0	0	.	0	.	1	0	0	0	0	.	.	.	0	.	.	0	0
LAR	0	.	.	0	0	.	.	.	0	.	.	0	.	.	.	.	.	.	0	0
LV	.	.	.	0	.	.	.	.	.	1	.	0	0	.	.	.	0	0	0	.
MIA	0	.	.	0	.	.	.	0	0	0	.	.	.	.	.	0	0	0	0	0
MIN	.	0	.	.	0	1	.	.	0	0	0	0	.	.	.	0	0	.	0	0
NE	0	.	.	0	0	0	.	.	.	0	.	.	.	0	.	0	0	.	0	0
NO	.	0	0	.	0	0	.	0	0	.	0	0	0	0	0	.	.	.	.	.
NYG	0	0	0	.	.	.	0	0	0	0	.	0	.	.	.	.	.	0	.	.
NYJ	0	.	0	0	.	.	.	.	0	0	0	.	.	.	.	0	0	0	0	0
PHI	0	.	.	1	.	.	0	0	0	.	0	.	.	.	0	.	.	0	.	.
PIT	.	0	0	.	.	.	1	0	.	.	.	.	0	0	0	.	.	.	.	.
SEA	0	0	.	0	.	.	.	.	0	.	.	.	.	.	.	.	.	0	.	.
SF	0	.	.	0	.	.	0	.	0	.	0	.	.	.	.	0	.	0	.	.
TB	0	0	.	.	0	0	.	.	.	.	0	0	0	0	0	.	.	.	0	0
TEN	.	.	0	.	0	.	0	0	.	.	.	0	0	0	0	.	.	1	0	0
WAS	0	.	1	.	0	0	0	0	0	.	.	.	.	.	.	.	.	0	0	0

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:=
ARI	0	.	0	.	1	0	0	.	0	0	0	.	0	.
ATL	.	0	.	1	0	.	.	0	0	.	0	.	.	.
BAL	.	.	.	0	0	0	.	0	.	.	.	0	0	.
BUF	0	.	0	.	.	0	0	.	0	0	.	.	.	.
CAR	.	0	0	0	.	.	.	.	.	.	1	0	0	.
CHI	.	0	0	0	.	.	.	.	.	.	0	.	0	.
CIN	.	.	.	.	0	.	0	0	.	0	.	0	0	.
CLE	0	.	.	0	0	.	0	0	.	.	.	0	0	.
DAL	1	0	.	0	0	0	0	.	0	0	.	.	0	.
DEN	0	0	0	.	0	0	.	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	0	.	.	0	0	.	.	.
GB	.	0	.	0	0	.	.	.	.	.	0	0	.	.
HOU	.	.	.	0	.	.	.	0	.	.	0	0	.	.
IND	.	.	0	0	.	.	.	0	.	.	0	0	.	.
JAX	.	.	.	0	.	.	0	0	.	.	0	0	.	.
KC	0	0	0	.	.	0	.	.	.	0	.	.	.	.
LAC	0	0	0	.	.	0	.	.	.	.	.	.	.	.

LAR	0	.	.	.	0	0	0	.	0	0	.	0	0
LV	0	0	0	.	.	0	.	.	.	0	0	0	0
MIA	.	.	0	.	.	0	.	0	0	0	.	.	.
MIN	.	.	.	0	.	.	0	0	.	0	.	.	.
NE	0	.	.	.	.	0	.	.	0	0	.	0	.
NO	.	0	.	.	.	.	.	.	.	0	0	.	.
NYG	.	.	.	.	.	.	0	0	0	0	.	.	0
NYJ	0	.	1	.	.	.	.	0	0	.	.	.	.
PHI	.	0	.	.	0	.	.	0	0	0	.	.	0
PIT	0	0	.	.	0	0	0	.	0	.	0	.	.
SEA	0	.	0	.	0	0	0	0	.	1	0	.	0
SF	0	.	0	0	0	.	0	.	0	.	.	.	0
TB	.	0	.	0	.	.	.	.	0	.	.	0	.
TEN	.	.	0	.	.	.	.	0	.	.	0	.	0
WAS	.	.	.	.	0	.	0	.	0	0	.	0	.

[*,*,16]

:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:=
ARI	.	.	.	0	.	0	.	.	0	.	.	.	0	.	.	.	.	0	.	.
ATL	.	.	.	.	0	0	.	.	.	0	0	0	0	0	0	.	.	.	.	.
BAL	.	.	.	.	.	.	1	0	0	.	0	.	0	0	0	.	0	.	.	.
BUF	0	.	.	.	.	.	0	.	.	0	.	.	.	.	0	0	0	0	0	0
CAR	.	1	.	.	.	0	.	.	.	.	0	0	0	0	0	.	.	0	.	.
CHI	0	0	.	.	0	.	.	.	.	0	0	0	0	.	0	0	0	.	.	.
CIN	.	.	0	0	.	.	.	0	0	.	.	.	0	0	0	0	.	.	.	.
CLE	.	.	0	.	.	.	0	.	.	.	0	.	0	0	0	.	0	.	.	.
DAL	0	.	0	.	.	.	0	.	.	.	.	.	.	.	.	.	0	0	.	.
DEN	.	0	.	0	.	0	.	.	.	.	.	0	0	0	.	0	0	.	0	.
DET	.	0	0	.	0	0	.	1	.	.	.	0	.	.	.	0	0	.	.	.
GB	.	0	.	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	0	0
HOU	0	0	0	.	0	.	0	0	.	0	.	.	.	0	0	.	.	.	.	0
IND	.	0	0	.	0	0	0	0	.	0	.	.	0	.	0	.	.	.	.	.
JAX	.	0	0	0	0	.	0	0	.	.	.	.	0	1	.	0	.	.	.	.
KC	.	.	.	0	.	0	0	.	.	0	0	0	.	.	0	.	1	.	0	.
LAC	.	.	0	0	.	0	.	0	0	0	0	0	.	.	.	0	.	.	0	.
LAR	0	.	.	0	0	.	.	.	0	.	.	0	.	.	.	.	.	.	0	.
LV	.	.	.	0	.	.	.	.	0	.	0	0	.	.	.	0	0	0	.	.
MIA	0	.	.	0	.	.	.	0	0	1	.	.	.	.	.	0	0	0	0	0
MIN	.	0	.	.	0	0	.	.	0	0	0	0	.	.	.	0	0	.	0	.
NE	0	.	.	1	0	0	.	.	.	0	.	.	.	0	.	0	0	.	0	.
NO	.	0	0	.	0	1	.	0	0	.	0	0	0	0	0	.	.	.	.	.
NYG	0	0	0	.	.	.	0	0	0	0	.	0	.	.	.	.	.	0	.	.
NYJ	0	.	0	0	.	.	.	0	0	0	.	.	.	.	.	0	0	0	0	0
PHI	0	.	.	0	.	.	0	0	0	.	0	.	.	.	.	0	.	0	.	.
PIT	.	0	0	.	.	.	0	0	.	.	.	.	1	0	0	.	.	.	.	.
SEA	1	0	.	0	.	.	.	.	0	.	.	.	.	.	.	.	.	0	.	.
SF	0	.	.	0	.	.	0	.	0	.	0	.	.	.	.	0	.	0	.	.
TB	0	0	.	.	0	0	.	.	.	0	0	0	0	0	0	.	.	.	0	.
TEN	.	.	0	.	0	.	0	0	.	.	.	0	0	0	0	.	.	0	0	.
WAS	0	.	0	.	0	0	0	0	0	.	.	.	.	.	.	.	.	0	.	.

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:=
ARI	0	.	0	.	0	0	0	.	0	0	0	.	0	.
ATL	.	0	.	0	0	.	.	0	0	.	0	.	.	.
BAL	.	.	.	0	0	0	.	0	.	.	.	0	0	.
BUF	0	.	0	.	.	0	0	.	0	0	.	.	.	.
CAR	.	0	0	0	.	.	.	.	.	0	0	0	0	.
CHI	.	0	0	0	.	.	.	.	.	0	.	.	0	.
CIN	.	.	.	.	0	.	0	0	.	0	.	0	0	.
CLE	0	.	.	0	0	.	0	0	.	.	.	0	0	.
DAL	0	0	.	0	0	0	0	.	0	0	.	.	0	.
DEN	0	0	0	.	0	0	.	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	0	.	.	0	0	.	.	.

GB	.	1	.	0	0	.	.	.	.	.	0	0	.
HOU	.	.	.	0	.	.	.	0	.	.	0	0	.
IND	.	.	0	0	.	.	.	0	.	.	0	0	.
JAX	.	.	.	0	.	.	0	0	.	.	0	0	.
KC	0	0	0	.	.	0	.	.	.	0	.	.	.
LAC	0	0	0	.	.	0	.	.	.	.	.	.	.
LAR	0	.	.	.	0	0	0	.	0	1	.	0	0
LV	0	0	0	.	.	0	.	.	.	.	1	0	0
MIA	.	.	0	.	.	0	.	0	0	0	.	.	.
MIN	.	.	.	0	.	.	0	0	.	.	0	.	.
NE	0	.	.	.	.	0	.	.	0	0	.	0	.
NO	.	0	.	.	.	.	.	.	.	0	0	.	.
NYG	.	.	.	.	.	.	1	0	0	0	.	.	0
NYJ	0	.	0	.	.	.	.	0	0	.	.	.	.
PHI	.	0	.	.	0	.	.	0	0	0	.	.	0
PIT	0	0	.	.	0	0	0	.	0	.	.	0	.
SEA	0	.	0	.	0	0	0	0	.	0	0	.	0
SF	0	.	0	0	0	.	0	.	0	.	.	.	0
TB	.	0	.	0	.	.	.	.	0	.	.	0	.
TEN	.	.	0	.	.	.	.	0	.	.	0	.	1
WAS	.	.	.	.	0	.	0	.	0	0	.	0	.

[*,*,17]

:	ARI	ATL	BAL	BUF	CAR	CHI	CIN	CLE	DAL	DEN	DET	GB	HOU	IND	JAX	KC	LAC	LAR	LV	:=
ARI	.	.	.	0	.	0	.	.	0	.	.	.	0	.	.	.	.	0	.	.
ATL	.	.	.	.	0	0	.	.	.	0	0	0	0	0	0	.	.	.	.	.
BAL	.	.	.	.	.	.	0	0	0	.	0	.	0	0	0	.	0	.	.	.
BUF	0	.	.	.	.	.	0	.	.	0	.	.	.	.	0	0	0	0	0	.
CAR	.	0	.	.	.	0	.	.	.	.	0	0	0	0	0	.	.	0	.	.
CHI	0	0	.	.	0	.	.	.	.	0	0	1	.	0	.	0	0	.	.	.
CIN	.	.	0	0	.	.	.	0	0	.	.	.	0	0	1	0	.	.	.	.
CLE	.	.	1	.	.	.	0	.	.	.	0	.	0	0	0	.	0	.	.	.
DAL	0	.	0	.	.	.	0	.	.	.	.	.	.	.	.	.	0	0	.	.
DEN	.	0	.	0	.	0	.	.	.	.	.	0	0	0	.	1	0	.	0	.
DET	.	0	0	.	0	0	.	0	.	.	.	0	.	.	.	0	0	.	.	.
GB	.	0	.	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	0	.
HOU	0	0	0	.	0	.	0	0	.	0	.	.	.	0	0	.	.	.	1	.
IND	.	0	0	.	0	0	0	0	.	0	.	.	0	.	0	.	.	.	.	.
JAX	.	0	0	0	0	.	0	0	.	.	.	0	0	0	.	0	.	.	.	.
KC	.	.	.	0	.	0	0	.	.	0	0	0	.	.	0	.	0	.	0	.
LAC	.	.	0	0	.	0	.	0	0	0	0	0	.	.	.	0	.	.	0	.
LAR	1	.	.	0	0	.	.	.	0	.	.	0	.	.	.	.	.	.	0	.
LV	.	.	.	0	.	.	.	.	.	0	.	0	0	.	.	0	0	0	.	.
MIA	0	.	.	0	.	.	.	0	0	.	.	.	.	.	.	0	0	0	0	.
MIN	.	0	.	.	0	0	.	.	0	0	0	0	.	.	.	0	0	.	0	.
NE	0	.	.	0	0	0	.	.	.	0	.	.	.	0	.	0	0	.	0	.
NO	.	0	0	.	1	0	.	0	0	.	0	0	0	0	0	.	.	.	.	.
NYG	0	0	0	.	.	.	0	0	0	0	.	0	.	.	.	.	.	0	.	.
NYJ	0	.	0	0	.	.	.	.	0	0	0	.	.	.	.	0	1	0	0	.
PHI	0	.	.	0	.	.	0	0	0	.	0	.	.	.	0	.	.	0	.	.
PIT	.	0	0	.	.	.	0	0	.	.	.	.	0	0	0	.	.	.	.	.
SEA	0	0	.	0	.	.	.	.	0	.	.	.	.	.	.	.	.	0	.	.
SF	0	.	.	0	.	.	0	.	0	.	0	.	.	.	.	0	.	0	.	.
TB	0	1	.	.	0	0	.	.	.	.	0	0	0	0	0	.	.	.	0	.
TEN	.	.	0	.	0	.	0	0	.	.	.	0	0	0	0	.	.	0	0	.
WAS	0	.	0	.	0	0	0	0	0	.	.	.	.	.	.	.	.	0	0	.

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:=
ARI	0	.	0	.	0	0	0	.	0	0	0	.	0	.
ATL	.	0	.	0	0	.	.	0	0	.	0	.	.	.
BAL	.	.	.	0	0	0	.	0	.	.	.	0	0	.
BUF	1	.	0	.	.	0	0	.	0	0	.	.	.	.
CAR	.	0	0	0	.	.	.	.	.	.	0	0	0	.

CHI	.	0	0	0	.	.	.	.	.	0	.	0
CIN	.	.	.	.	0	.	0	0	.	0	.	0
CLE	0	.	.	0	0	.	0	0	.	.	.	0
DAL	0	0	.	0	0	0	0	.	0	0	.	1
DEN	0	0	0	.	0	0	.	.	.	.	.	.
DET	.	1	.	0	.	0	0	.	.	0	0	.
GB	.	0	.	0	0	.	.	.	.	.	0	0
HOU	.	.	.	0	.	.	.	0	.	.	0	0
IND	.	.	0	0	.	.	.	0	.	.	0	1
JAX	.	.	.	0	.	.	0	0	.	.	0	0
KC	0	0	0	.	.	0	.	.	.	0	.	.
LAC	0	0	0	.	.	0	.	.	.	.	.	.
LAR	0	.	.	.	0	0	0	.	0	0	.	0
LV	0	0	0	.	.	0	.	.	.	.	0	0
MIA	.	.	0	.	.	0	.	0	0	0	.	.
MIN	.	.	.	0	.	.	0	0	.	.	0	.
NE	0	.	.	.	.	0	.	.	0	0	.	0
NO	.	0	.	.	.	.	.	.	.	0	0	.
NYG	.	.	.	.	.	.	0	0	0	0	.	0
NYJ	0	.	0	.	.	.	.	0	0	.	.	.
PHI	.	0	.	.	0	.	.	0	1	0	.	0
PIT	0	0	.	.	1	0	0	.	0	.	.	0
SEA	0	.	0	.	0	0	0	0	.	0	0	.
SF	0	.	1	0	0	.	0	.	0	.	.	0
TB	.	0	.	0	.	.	.	.	0	.	.	0
TEN	.	.	0	.	.	.	.	0	.	.	0	0
WAS	.	.	.	.	0	.	0	.	0	0	.	0

 $[*, *, 18]$ [illegible]

:	MIA	MIN	NE	NO	NYG	NYJ	PHI	PIT	SEA	SF	TB	TEN	WAS	:	=
ARI	0	.	0	.	0	0	0	.	0	0	0	.	0		
ATL	.	0	.	0	0	.	.	0	0	.	1	.	.		
BAL	.	.	.	0	0	0	.	0	.	.	.	0	0		
BUF	0	.	0	.	.	0	0	.	0	0	.	.	.		
CAR	.	0	0	0	.	.	.	.	.	.	0	0	0		
CHI	.	0	0	0	.	.	.	.	.	.	0	.	0		
CIN	.	.	.	.	0	.	0	0	.	0	.	0	0		
CLE	0	.	.	0	0	.	0	0	.	.	.	0	0		
DAL	0	0	.	0	1	0	0	.	0	0	.	.	0		
DEN	0	0	1	.	0	0	.	.	.	.	.	.	.
DET	.	0	.	0	.	0	0	.	.	0	0	.	.		
GB	.	0	.	0	0	.	.	.	.	.	0	0	.		
HOU	.	.	.	0	.	.	.	0	.	.	0	0	.		
IND	.	.	0	0	.	.	.	0	.	.	0	0	.		
JAX	.	.	.	0	.	.	0	0	.	.	0	1	.		
KC	0	0	0	.	.	0	.	.	.	0	.	.	.		
LAC	1	0	0	.	.	0	.	.	.	.	.	.	.
LAR	0	.	.	.	0	0	0	.	0	0	.	0	0		
LV	0	0	0	.	.	0	.	.	.	.	0	0	0		
MIA	.	.	0	.	.	0	.	0	0	0	.	.	.		
MIN	.	.	.	0	.	.	0	0	.	.	0	.	.		
NE	0	.	.	.	.	0	.	.	0	0	.	0	.		
NO	.	0	.	.	.	.	.	.	.	0	0	.	.		
NYG	.	.	.	.	.	.	0	0	0	0	.	.	0		
NYJ	0	.	0	.	.	.	.	0	0	.	.	.	.
PHI	.	0	.	.	0	.	.	0	0	0	.	.	0		
PIT	0	0	.	.	0	0	0	.	0	.	.	0	.		
SEA	0	.	0	.	0	1	0	0	.	0	0	.	0		
SF	0	.	0	0	0	.	0	.	0	.	.	.	0		
TB	.	0	.	0	0	.	.	0	.		
TEN	.	.	0	0	.	.	0	.	0		
WAS	0	.	1	.	0	0	.	0	.		

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