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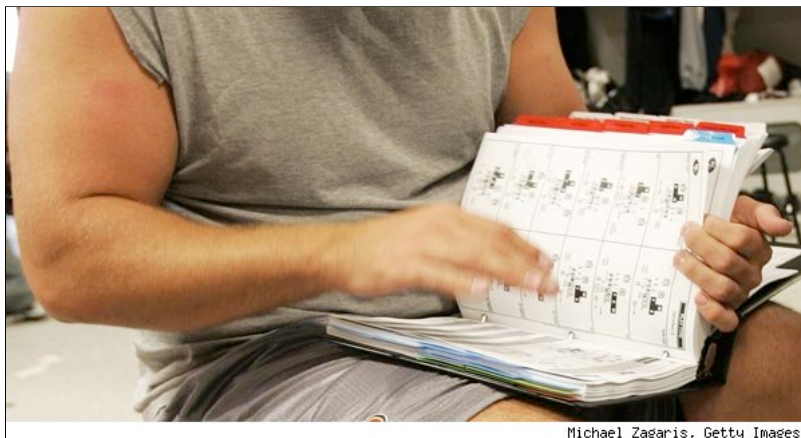
Method Men: How NFL Players Memorize Dizzying Playbooks

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NFL players are often cited as impressive physical specimens, but it's not their tree trunk-like legs or bulging biceps that are most impressive. It's their brains. That much is made clear by learning about the most mundane of tasks required of every NFL player: memorizing the playbook. It's an act which often goes unrecognized because it is so fundamental. Players are given plays, they memorize them and they execute them on the field. Yet as a variety of current and former NFL players explained to FanHouse, it's not as easy as it sounds.

[Trent Dilfer](#), a 13-year NFL quarterback for five teams who's now an NFL analyst for ESPN, recalled exactly how he memorized his plays. "Visualization," Dilfer said. "You must highlight, draw (the play), put the playbook down and find a quiet place in your mind and visualize every aspect of the play. A lot of time is dedicated to that. The basic principle is repetition is the mother of all learning."

Dilfer noted that when he was in [Mike Holmgren's](#) offense in Seattle, which he considers the most complicated offensive system in which he played, the quarterbacks would watch film after practice and quiz each other for an hour about plays. After Dilfer tucked his kids into bed at night, he'd sit with his playbook and write plays in red ink. (His quarterbacks coach at Fresno State University, Andy Ludwig, read that red ink stimulates memorization.) He'd then spend an hour closing his eyes and running through each play before going to sleep.

That's another memorization trick Dilfer used. A Harvard Medical School study published in the scientific journal *Biology* in 2006 showed study participants tested better when memorizing information at night, sleeping and taking an exam the following morning rather than memorizing in the morning and testing at night, without sleep in between.

None of the 12 active NFL players who were interviewed for this story cited using sleep or a particular color as a way to spur memorization. Some did employ Dilfer's strategy of writing down plays. [New England Patriots](#) guard [Stephen Neal](#) looks at each play a few times after he puts it on paper. "Some guys can look at something and have it," the ninth-year pro said. "For me, I like to look at it again."

[Eric Wood](#), a guard for the [Buffalo Bills](#), used an old-school memorization drill during his rookie season in 2009. "Cover one side of the plays, run down the list and memorize it just like anything else in school," Wood said.

[Atlanta Falcons](#) wide receiver [Brian Finneran](#) picks the 10-15 plays he has to know for each week's game and tries to memorize them by formation. "I categorize it and try to get a feel for the concept of each play," said Finneran, who's entering his 11th year in the NFL.

Other players try more unusual methods. [Houston Texans](#) quarterback [Matt Leinart](#) runs through plays over the phone with his half-brother, who lives in

California. "He'll give me the play, I'll repeat it and go through my reads," Leinart said, who added he benefits most from drawing plays on a whiteboard. The 2004 Heisman Trophy winner had to digest the [Texans](#) playbook on the fly when he signed with them in early September, following his four-year tenure with the [Arizona Cardinals](#).

The transition to a new offensive system, specifically with its new terminology for how plays are called, can be as challenging as any weight room workout. "It's ingrained in your head that if you say a certain word or play it means this guy is doing this, this and this," Leinart explained. "It's just trying to erase your memory (of the previous team's system)."

Player	Memorization preference	Game preparation tip
Brian Finneran, WR, Falcons	Categorizes offensive formations	Studies 4 or 5 special teams kick returns
Derrick Ward, RB, Texans	Photographic memory	Spends 12 hours/week studying at home
Dhani Jones, LB, Bengals	Word association	Compares/contrasts current and past tendencies of upcoming opponent
Eric Wood, G, Bills	Memorizes, covers play with hand, recites	Spends extra time on third-down pass protection, watches film with O-line
Josh Johnson, QB, Buccaneers	Visualizes, writes same notes repeatedly	Spends 8-plus hours/week studying at home, looks for play philosophy
Keith Bulluck, LB, Giants	Finds correlation to prior playbooks	Watches film at home, studies with defensive teammates
Kelly Gregg, DT, Ravens	Word association	Studies third-down package on Thursdays, 65 total calls to know for game
Matt Birk, C, Ravens	Groups similar play concepts	Looks for where QB is setting up to know how long to hold a block
Matt Leinart, QB, Texans	Draws plays on whiteboard, studies with brother	Gets to team facility early to study with QB coach
Nathan Vasher, CB, Lions	Prefers game tape, study groups with DBs	Studies 1st, 2nd-down packages Wed., 3rd down Thur., short yardage Fri.
Stephen Neal, G, Patriots	Writes plays down, stares at them	Studies with teammates to talk about prioritized protection schemes
Trai Essex, G, Steelers	Scans playbook thoroughly	Studies up to 5 variations for each of 20 run plays, depending on the defense

Adjusting to a New Playbook

Dilfer said it's a three-year process to own a particular playbook. Owning a play is different from memorizing it, Dilfer explained. "Owning it to me goes from knowing it to understanding it to it becoming instinctive," Dilfer said.

How does one own the plays? "If you're not spending an hour every day in your playbook, you're cheating your teammates," Dilfer said. He stated quarterbacks should study three hours per day, given their extra responsibilities in commanding an offense.

It can take a while just to lock down a playbook's language. "A lot of coaches use numbering systems," Dilfer added. He said odd numbers are typically used for plays to the right, even numbers for plays to the left. Many offenses use T and D words for formations: T for Trips, where three receivers are lined up on one side, and D for double sets, such as double tight ends.

Dilfer cited an example of one play with a different meaning in two systems. "Red Right 22 Texas is a West Coast play," Dilfer explained. "In another system, it's Split Right Scat Right 639 F Angle. What some players will do when they go to a new team, is when it's Split Right Scat Right, they go, 'Oh, that's 22 Texas.' They hear one thing and they put old language on it; you have to learn the new language." Leinart admitted as much in his transition from the Cardinals to the Texans.

Running back [Derrick Ward](#), who also joined the Texans in early September after he was released by the Tampa Bay Buccaneers, said his learning curve was much shorter. "It took me a week to understand everything in Houston's offense," Ward said. That was partly a byproduct of the language similarities shared by the Buccaneers and Texans.

Ward claimed to have a photographic memory, which lets him immediately remember plays he goes over in meetings. "This is my seventh year. Once you get the hang of what the offense does, you can differentiate one play from another and it becomes repetitive," he said. The ability to differentiate is pivotal in a playbook that he noted has up to 300 plays. And many of the plays contain pass routes which can have numerous variations depending on what the defense shows, creating a subset of plays within a play.

[Dhani Jones](#), a middle linebacker for the Cincinnati Bengals, said memorizing plays isn't as difficult as understanding their philosophy. "I don't drop the language (from previous systems)," said Jones, who's also been on the Giants and Philadelphia Eagles during his 10-year career. "It's just different words that are used. Quarters coverage is the same as Cloud coverage is the same as strong-side rotated coverage. They're just named differently."

He practices word association to memorize his playbook. Jones will think of 'snake' for plays when he's called to stay inside. He connotes 'pirate' for plays which have him move to the outside since pirates are on a ship (i.e. they're outside).

"If you're not spending an hour every day in your playbook, you're cheating your teammates."

-- TRENT DILFER

Baltimore Ravens defensive tackle [Kelly Gregg](#) also practices word association. "If we have a call, like Underbear, I just try to bear across somebody," said Gregg, who has spent 10 of his 11 seasons with the Ravens.

There's a different position where word association doesn't cut the bill, where having a detailed understanding of every player's responsibility on each play is critical to performing the job well.

System Familiarity Is Vital

It's no secret that quarterbacks carry the most responsibility to know a playbook inside and out. That's why moving frequently from one offensive system to another can doom the career of so many young quarterbacks.

"It's not that they can't learn the playbook," Dilfer emphasized. "It's not an intellectual capacity issue. It's the ability to learn it and play without thinking. A cluttered mind slows an athletic body."

No two players serve as better examples of that than quarterbacks [Jason Campbell](#) and [Alex Smith](#). Campbell, the Oakland Raiders signal caller who was a 2005 first-round pick of the Washington Redskins, just played for his ninth offensive coordinator in 10 seasons, dating back to his college days at Auburn. He passed for 3,000-plus yards from 2008-09 with the Redskins; his 63-percent completion percentage through those two seasons seemed to put him on a path to success. Yet once [Mike Shanahan](#) was installed as head coach, he decided to trade Campbell in order to find an "established" quarterback.

Alex Smith, who the San Francisco 49ers chose first overall in the '05 draft, played for his sixth offensive coordinator in his last six seasons. Smith had moderate success in his lone full season in 2006 when he threw for 2,890 yards and 16 touchdowns -- not to mention 16 interceptions. That campaign, with [Norv Turner](#) serving as the 49ers' offensive coordinator, remains the finest full season of his career.

"[Campbell] and Alex Smith have no chance," Dilfer said of their ability to reach their potential. While each player's talent isn't in question, it's the lack of opportunities to keep even one playbook for more than two consecutive seasons that has harmed their careers. Dilfer was on the 49ers in 2007 and recalled that Smith's competency to digest a playbook shouldn't be questioned.

"Alex is smarter than anybody I've ever been around," Dilfer said. "He'll learn, he'll be able to spit it out and act as if it's second nature to him. But deep down, his brain is so cluttered with so many different coaching points, plays, words and concepts there's no way he can play fast."

Dilfer admitted his inability to play fast prevented him from having a more successful career. A sixth overall pick of the Buccaneers in the 1994 Draft, Dilfer managed just one Pro Bowl appearance during a career in which he surpassed 2,500 yards in a season four times and 20 touchdowns only twice. His role as the conservative starting quarterback on the 2000 Super Bowl champion Ravens has left him as the oft-cited example of a QB who can "manage" the game, rather than take over a game.

"I was so anal-retentive and so paranoid with learning, that many times, even though I owned the plays, I would still think about it in the game," Dilfer said. "It really, really hurt my career."

Creating a Digital Playbook

Bruce Williams has a way to help players shorten their playbook learning curve. And it starts with their coaches. He's been providing digital playbook software to college and professional football coaches since 1990 through his company [BW Software](#), located in Ann Arbor, Mich. His software program, [Playmaker Pro](#), is a play-drawing tool which has been used in the past decade by 27 NFL teams, the NFL's front office and nearly every major college football program.

Purchased over the past year by the Bills, Redskins, Lions and Saints, the program enables coaches to digitally create plays from scratch. Coaches start with a to-scale football field on the computer program. Icons can be laid over the field to represent players. From there, coaches can draw routes, blocking assignments and blitz schemes using any number of tools, just like in a Photoshop or PowerPoint program. Coaches can even drag plays around the field and then run the play so that the icons move across the screen as the players should on the field.

"Compared to using a general purpose drawing program, where you have to fiddle with layering, Playmaker Pro knows the field goes in the back and the players go on top of the field," Williams said. "Their routes go over the players."

Based on an Apple drawing program and the popular PowerPoint program, Playmaker Pro can be drawn using Windows or Macintosh operating systems and can show videos through Apple's Quicktime movies. It gives coaches a way to connect with players, most of whom have grown up in concert with the proliferation of personal computers. That connection is vital. "The best coaches in this league are still teachers," Dilfer said. "They know how to communicate and conceptualize."

Another company has taken digital playbook creation to another level. [XOS Technologies](#), which provides video software to 23 NFL teams, enables coaches to create plays in 2D through its PlayTools diagramming program, and then export them into [its 3D PlayAction Simulator](#). Through a partnership with EA Sports, PlayAction uses the same graphics and renderings found in EA Sports' Madden and NCAA Football franchises. This way, players can



literally play a video game as they learn the schemes envisioned by their coaches. If a quarterback is using it to learn plays, he can import a defense and tweak its tendencies to replicate that of the opponent he'll face in the upcoming game.

XOS, which is co-headquartered in Boston and Orlando, has worked with NFL teams since the mid-'90s by providing software for video filming and analysis. The relationship progressed toward playbook creation. Eventually, a partnership with EA Sports made sense in order to make a coach's diagrammed plays as clear as possible.

Matt Bairos, Vice President of Products and Services at XOS, stated the program gives coaches an immeasurable sense of communication, no matter what their emphasis at the time may be. "Some coaches are heavy duty on reports, some rely on video and what they see, and others spend a lot of time diagramming and teaching," Bairos said. The time of year might dictate what facet of their coaching responsibilities carries more weight, but PlayTools, PlayAction and other playbook tools save time. The EA Sports partnership is early in its development, although several of the 23 NFL teams XOS works with have begun using the PlayAction Simulator.



As convenient as PlayAction and other digital playbook programs make it for players to adjust to a coach's system, players still have to put forth the effort. Former six-time All-Pro cornerback [Deion Sanders](#) stated more effort should be applied on the field than in meeting rooms.

"The playbook isn't that hard," Sanders said at a recent EA Sports event in New York City. "That's the thing kids don't understand about the professional ranks. You're in a classroom on the field."

What a player sees in the playbook or on film might not always translate to what's happening in front of him during practice or a game. Yet it's a good bet that preparation off the field -- studying the playbook, searching for opponent's tendencies -- will help a player succeed on the field. As Brian Finneran made clear, the physical challenges of the NFL are no contest for the mental preparation needed to persevere in the league.

"As big and fast as this game is, if you're not smart you won't last long."

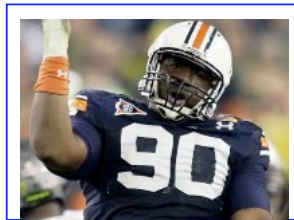
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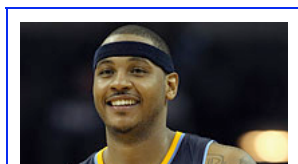
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