

"Wham Bam" Sam's math men sniffing paydirt

On its first football drive of the season, Indiana faced fourth-and-5 at the Duke 20. When the Hoosiers came out of the huddle still on the attack, no field-goal kicker in sight, the crowd roared.

Most of the crowd roared. A tiny segment of it sat stunned. "He believed us," Wayne Winston and Jeff Sagarin shouted at each other in the glee Columbus's crew must have exuded in screaming. "There is land out there."

THE CAUSE OF FOOTBALL computerization took a minor setback when Indiana's fourth-down play was aborted and the ball went over to Duke. No points went on the scoreboard, and that's a violation of the Paul Brown Rule of Football Thinking: Never come away from a scoring threat without points.

That, to mathematicians Winston and Sagarin, is the football equivalent of the counsel Columbus got to watch out for the edge of the earth.

The Brown theory is in football's "book." It spread into gospel in the National Football League, and when widened goalposts made kicking specialists more frequent in the college game, the word spread. Fourth down: Kick a field goal. Make sure you get something.

It's a bad "book," Winston says. Like baseball's bunt, it is much too conservative. "Conventional wisdom" is all wrong," Winston said.

Bob Hammel

H-T sports editor



WINSTON AND VIC CABOT, professors of quantitative business analysis at IU, and Sagarin, the M.I.T. graduate whose computer-based formula has ranked sports teams for *The Herald-Telephone* for several years now, are the mathematicians Wyche mentioned after the game in explaining why he went for a touchdown rather than a field goal, and why he will henceforth in similar situations. The advice he is getting goes much deeper than whether to kick or not. Its application involves an entire game plan.

Wyche didn't overplay his hand. When he mentioned, "There are a couple of guys on campus who are putting together a computer program for me that literally tells me what should be the best call next," he didn't add that he was tapping a special resource — darned near a unique one.

PUT IT THIS WAY, as Winston did:

• Only about 100 mathematicians in the world know the complicated

theory ("the stochastics games theory") that is the basis for the word Wyche is getting;

• 50 of those are foreign — hence, disinterested in all of this;

• Only about half of the rest are skilled computer programmers;

• Only half of those could write the linear programming code that is the formula's mathematical key;

• At best half of the remainder could have built up a familiarity with computerized football by playing table games since age 15, as Sagarin has.

That is the "nerd" quotient. Quips, puns and deflating needles fly in conversation among the three. They — all of them, including Sagarin — presume that in Sagarin they have the one man in the world who could handle all of the above criteria and redirect his social life to allow 70 hours of work a week, for 10 weeks, unpaid, to come up with the computer programming that permits practical application of all the math.

WEEKLY, WYCHE or the computer specialist on his staff, Bill Wentworth, will fill out a data sheet. Plays to be used that week are identified only by number. They are designated as run or pass, and the five defenses most likely to be encountered are identified as 1 through 5.

Sagarin runs the data through a computer and gets a printout that ranks the best choices in any situation: third-and-8, your own 28; first-

and-10, opponent's 35; fourth-and-5, opponent's 20.

The computer run takes about an hour. Filling out the data sheet takes less. Incorporation into a game plan is simple.

WINSTON, SAGARIN and Cabot are convinced they have taken football through a barrier.

It all began last March when Wyche met Sagarin and Winston at a reception, the two casually suggested they'd be happy to help if Wyche were so inclined. Wyche said indeed that might be a possibility and took their names so he could get back to them . . . and for two months nothing happened.

The theorizing all was vague at that point. "We had done zero work," Sagarin said. But they had retained the hope that something would be worked out. Sagarin made one tentative phone call to Wyche's office to see if the possibility still was alive. Wyche was out. The message joined dozens of other messages on a busy desk.

"IT WAS THURSDAY, April 28," Sagarin said with the clarity monumental events burn into memories. "I was in my apartment chomping on a carrot watching 'The Little Rascals.' The phone rang, I said, 'Hullo,' and a voice said, 'This is Sam Wyche.'

"I swallowed my carrot and turned off the set — I couldn't believe it. He returned the call."

Commissioned to try, Sagarin was caught without a method. "It's the most complicated problem I've ever dealt with," Sagarin said. Winston said, "If you tried to draw all of this on a blackboard, it would go around the world several times."

Sagarin's moment of eureka came in the night on May 2. Winston was involved from the beginning; Winston taught Sagarin in the stochastic games theory. Cabot is Sagarin's adviser. A key to solving the

mathematical riddles came from Cabot. "All of a sudden I realized it involved something I had been working on for 10 years," Cabot said. "I thought, 'Holy bleep!' " "This is world class."

SAGARIN'S PROGRAMMING work is what required the 700 computer hours. Amid all the complicated work, the necessity was simplicity: a working form that could be understood by something less than a world-class computerist. Wyche gets it, weekly, in football terms: down-and-distance.

There still is considerable room for human judgment. The data fed in requires football staff expertise: what can logically be expected from an off-tackle run into Kentucky's standard defense? . . . its goal-line defense? . . . blitz?

The computer and the fan are surprisingly close. On fourth-and-1 almost anywhere, the computer says go for it. It's not a matter of saying this play averages 3.2 yards so it's a mathematical cinch. It gives a point value to the precise situation and a value to what turning the football over via a punt gives to the opposition. It's the computer's job to say whether many, many past games have indicated it is more valuable to Indiana to go for and get first-and-10 at its 22, accepting the risk of giving up the ball there, or punting and giving Kentucky possession the UK 42. The computer knows all about field-position football, and that's where it rails against the Paul Brown idea of making sure of some points on each opportunity.

THE COMPUTER KNOWS the "sure" field goal isn't any more of a cinch than was the high-percentage pass that Wyche went down with on fourth-and-5 at the Duke 20. Films show the play should have worked, but penetration by one tall Blue Devil got a hand on Steve Bradley's pass and deflected the ball. So a chance for

seven points vanished. So maybe the kick would have been wide. So failing completely and turning the ball over somewhere inside the 20 still has the opponent at a disadvantage and should lead to getting the ball back at a prime spot.

Football is perfect for computerization because in each situation there is a finite goal. Getting there, step by step, is a matter of playing odds: risks vs. rewards.

"We expect Tex Schramm to make us rich," Winston said.

THEIR CONTENTION is that football too long has operated with seat-of-the-pants judgment that a computer can improve on. Johnny Unitas was football's genius of his age. Johnny's classic game was the 1958 overtime victory over the Giants. Johnny and Hall of Famer Weeb Ewbank made the calls that gave Baltimore a 23-17 victory. Winston and Sagarin have played that game the computer's way. The Colts win, 44-7. "Coaches are too conservative," Winston said.

The three are serious about marketing their discovery. "Wouldn't you think this would be of more value to a team than a first-round draft choice?" Sagarin teased. ". . . than a young Walter Payton?" He's not teasing at all, and his beloved rating system definitely is in mind, when Sagarin says, "Of all the things I've ever done in math, I'm proudest of this."

Meanwhile, Wyche is their hero. He was bright enough to listen. That's what made the moment Saturday special. That's why Cabot code-named the solving step he contributed "Sam," why the whole process is code-named "Wyche." And Wyche's willingness to listen to something unorthodox is why, at the end of all the data compiling and computing, the computer is disciplined to type out politely: "Wham, bam, thank you, Sam."



UPI/Telephoto

Topsy turvy race

PHILADELPHIA — Greg Gross of the Philadelphia Phillies is upset at home plate while being tagged out by Montreal Expos catcher Gary Carter Wednesday night. However, it was Philadelphia who turned things upside down in

the wild National League East race. The Phillies swept a double-header from the Expos, 4-5 and 5-0, to take over first place, one game in front of Pittsburgh, 1½ in front of Montreal and 2½ ahead of St. Louis. Story, page 19.

South hopes to rebound?

REX KIRTS

H-T Sports Writer

If ever a team rebounded from a 43-6 win, Dave Earlight is hoping it's this week.

South (4-0) travels to Seymour (3-1) Friday night in the opening South Central Conference football game for both teams. South remained unbeaten last week with a 43-6 win over Southport, but Earlight wasn't satisfied with the Panthers' performance.

"This game is very important for us for improvement," Earlight said. "I feel very strongly that a team gets better — or it gets worse. Last week we took a step backwards offensively, and if we take another step backwards we're in trouble. Defensively we might have moved up a little."

THE GAME is important for the Panthers' SCC hopes, too. "It's a big game because of the way the conference is set up. I think that one loss will eliminate you from the conference (title chase)," Enright said.

The SCC champion is determined on a point system. Each SCC win is worth two points, and all other wins one point. Columbus, North is the current points leader with five, one ahead of both South and Rushville and two ahead of Martinsville.

Columbus has the best shot of any team at winning the title since it plays six league opponents, one more than any other team. Martinsville has five and South just four league foes. Martinsville could give South a big lift in the race this Friday by beating Columbus (8-0).

ENRIGHT WILL MAKE at least one change in his starting lineup and possibly two for Seymour. Junior Mike Apple will start at outside linebacker in place of Mark Brauner, which will free Brauner for on-way duty at guard, and junior Harvey Phillips may start at free safety with

OFFENSE

SEYMOUR (3-1)
QB Steve Tate (140)
RB Dan Brown (136)
RB Mark Brauner (176)
RB Dan Shirley (189)
RB Andy Campbell (174)
RB Jon Steele (207)
RB Bill Peterson (156)
RB Todd Easton (165)
RB Lin Churchill (175)
RB Randy Yarnie (144)
RB Jeff Teague (190)

DEFENSE

SOUTH
LB Kevin Willsey (109)
LB Jack Cornell (227)
LB Dave Hillen (225)
LB Scott Schulz (194)
LB Brad Bowler (168)
LB Joe Stebbins (175)
LB Mike Apple (148)
LB Jody Lu (141)
LB Brad Jackson (152)
LB Tom Worne (155)
LB Harvey Phillips (139)
LB Jeff Teague (190)

OFFENSE

SEYMOUR (3-1)
QB Steve Tate (140)
RB Dan Brown (136)
RB Mark Brauner (176)
RB Dan Shirley (189)
RB Andy Campbell (174)
RB Jon Steele (207)
RB Bill Peterson (156)
RB Todd Easton (165)
RB Lin Churchill (175)
RB Randy Yarnie (144)
RB Jeff Teague (190)

DEFENSE

SEYMOUR
LB Chris Neumann (179)
LB Jack Robinson (194)
LB John Dykes (183)
LB Jeff Smith (178)
LB L.R. Lobb (168)
LB W.L. Lobb (168)
LB R.L. Lobb (168)
LB L.C. Lobb (168)
LB S.S. Lobb (168)
LB J.P. Lobb (168)
LB M.K. Lobb (168)

ble because they don't practice against it," he added. You've got to recognize it and practice against it, and maybe that was our problem last week. Maybe we didn't bring (blitz) them enough. But we did last night (Tuesday) in practice and will do it again tonight. We'll do it till we get it right.

"Seymour has a tendency to blitz even more than Southport, and they bring both their inside linebackers. That gives them four or our three. Try blocking that."

THERE ARE WAYS to counter that situation. Of course, Enright isn't saying how to do it.

He's positive Seymour coach Joe Goodman's defensive scheme won't be the same as last year, when the Panthers stomped to a 56-0 victory in a Saturday afternoon contest. One thing Goodman tried, unsuccessfully, was covering the Panther "twins," two wide receivers on the same side of the field with one cornerback.

"He won't do that this year. Columbus East uses twins, and we didn't try to cover them with one man," Enright said.

SEYMOUR OPENED the season with a 21-6 loss to East but followed that with a 14-7 win over Jennings County, 50-6 win over Scottsburg, and 13-12 overtime win over South Dearborn.

Seymour's lead offensively by running back Dave Umer, who has 312 yards in 64 carries. Quarterback George Reynolds has completed 23-of-58 passes for 340 yards, split end Doug Prather leading the receivers with seven catches for 32 yards.

Churchill is the Panther rushing leader with his 497 yards and eight touchdowns, and sophomore tailback Randy Terine has run well, breaking a 22-yard run in 39 carries for a 5.7 average while scoring four touchdowns. Senior slotback Jeff Teague has started only 1-4 times, but he's gained 106 yards for a 7.5 average and scored one TD.

DEFENSE

NORTH (0-4)
DB David Webb (148)
LB Joe Van Deyn (200)
LB Doug Dalton (200)
LB Ron Crohn (180)
LB Benjamin Smith (167)
LB Eric Baxley (163)
LB David Powell (190)
LB Eric Nichols (180)
LB Richard English (168)
LB Dean Bushey (185)
LB Clinton Decker (147)

DEFENSE

NORTH
LB Ron Arthur (180)
LB Brian Stroud (203)
LB Joe Van Deyn (200)
LB David Webb (148)
LB Eric Baxley (163)
LB David Powell (190)
LB Eric Nichols (180)
LB Richard English (168)
LB Dean Bushey (185)
LB Clinton Decker (147)

Never have more words flowed from the mouth of North football coach Ker Webb.

"The kids are very much aware that we have been improving and are in good shape now as a team," Webb said today. "But they need a win to convince themselves. And I think if we perform as we have the last three games we will win."

HOPEFULLY FOR NORTH the convincing will occur Friday night at Bedford North Lawrence. Like North (0-4), the Stars (0-3) are struggling, and it doesn't take a computer major to figure out that BNL represents the weakest of North's six remaining opponents.

"I expect a good ball game," said BNL coach Terry Willoughby. "I scored them Saturday night against Martinsville and came away very impressed. Their offense is very versatile. Their quarterback (Eric Nichols) is both a good runner and passer and the (Dean) Bushey kid is a good running back. They represent a challenge for our defensive team."

DEFENSE

RED RIVER (1-3)
QB Steve Woodard (153)
LB Scott McCar (225)
LB Scott Galtner (150)
LB Brian Blackwell (180)
LB Bobby Smith (207)
LB Bryan Morris (225)
LB Ryan Mearns (165)
LB Jim Lee (170)
LB Mike Wykoff (185)
LB Tony Hobbs (190)
LB Bill Kaiser (150)

DEFENSE

RED RIVER (1-3)
QB Steve Woodard (153)
LB Scott McCar (225)
LB Scott Galtner (150)
LB Brian Blackwell (180)
LB Bobby Smith (207)
LB Bryan Morris (225)
LB Ryan Mearns (165)
LB Jim Lee (170)
LB Mike Wykoff (185)
LB Tony Hobbs (190)
LB Bill Kaiser (150)

tries and Fitzgerald has toted the ball eight times for 49 yards (a 6.1-yard average).

North's offense will face a stern test, however, against the Stars' defense, which has allowed just 14 points in its last two games and yielded only 28 to Martinsville, 17 fewer than the Cougars allowed.

"They are fired up and they will be at home," coach Webb said. "They are always tough at home. But we are improving every game and we should continue to improve."

Scott's lineup will remain intact, 165-pound Ed Baxley filling in for the injured Steve Martin at offensive tackle. "That's a big loss for us," Webb said. "But Ed is filling in nicely."

DEFENSE

RED RIVER (1-3)
QB Steve Woodard (153)
LB Scott McCar (225)
LB Scott Galtner (150)
LB Brian Blackwell (180)
LB Bobby Smith (207)
LB Bryan Morris (225)
LB Ryan Mearns (165)
LB Jim Lee (170)
LB Mike Wykoff (185)
LB Tony Hobbs (190)
LB Bill Kaiser (150)

DEFENSE

RED RIVER (1-3)
QB Steve Woodard (153)
LB Scott McCar (225)
LB Scott Galtner (150)
LB Brian Blackwell (180)
LB Bobby Smith (207)
LB Bryan Morris (225)
LB Ryan Mearns (165)
LB Jim Lee (170)
LB Mike Wykoff (185)
LB Tony Hobbs (190)
LB Bill Kaiser (150)

"We haven't been making a lot of mistakes," Willoughby said. "We haven't been beating ourselves with mistakes. We just have not been executing."

The Cougars would prefer the Stars not start executing now. North would like to do the executing — at sundown at 40 paces.

The Herald-Telephone

Sports

Page 13

Thursday, September 15, 1983

Kentucky also trying for wide-open offense

By BOB HAMMEL

H-T Sports Editor

The CBS cameras may be kept busy Saturday when Indiana and Kentucky play football (11:38 a.m., Chs. 8, 10).

Indiana coach Sam Wyche said from his moment of arrival that the Hoosiers would strive for a wide-open game, with a variety of formations and personnel combinations.

Kentucky, coming back from a 0-10-1 season in Jerry Claiborne's second year as coach at his alma mater, is trying to be just about as wide-open.

"WE SHIFT AND GO in motion a lot — it keeps the defense off balance." Without quarterback Randy Jenkins said after Kentucky shocked Big Eight representative Kansas State with a 24-0 first-half blitz and won Saturday, 33-12.

"Any defense has to be well-prepared and ready to adjust to all our motions."

Asked what he would do if suddenly put in the role of defensive coordinator opposing Kentucky, Jenkins said: "Pull my hair out, I guess."

RON CORRADINI is the man in that role for IU, but Wyche is the one wondering about hair. Asked Monday what changes he plans to make from first game to second, Wyche — after a weekend of scanning films and noticing all sorts of things, including

maybe exposure by TV cameras of his slightly thinning locks — said, "I'm going to wear a cap."

Claiborne says he wasn't as pleased with Kentucky's play against Kansas State as he was in the Wildcats' 31-14 opening victory over Central Michigan, but after the game Saturday he was happy with the offense.

"Defenses are having a hard time locating us and homing in on what we are trying to run," Claiborne said. "That is helping us get receivers open. Randy is throwing the ball well (30-for-40 in two games, for 355 yards and four touchdowns, with no interceptions), our receivers are catching it, and we are trying to make teams play the entire field."

CLAIBORNE SAID the open offense puts a strain on his fifth-year quarterback.

"He threw the ball well and made good decisions (against Kansas State)," Claiborne said.

"With our shifting around all the time, it is hard to call an automatic once you've shifted. We ran some bad plays . . . I think if we had been lined up, Randy would have checked off some of those plays. But we were shifting and he could not."

KENTUCKY'S OFFENSIVE direction accounted for one surprising statistic in the game. Reggie Singletary, Kansas State's all-Big Eight defensive tackle and an All-

It could be North's chance

By DANN DENNY

H-T Sports Writer

Never have more words flowed from the mouth of North football coach Ker Webb.

"The kids are very much aware that we have been improving and are in good shape now as a team," Webb said today. "But they need a win to convince themselves. And I think if we perform as we have the last three games we will win."

HOPEFULLY FOR NORTH the convincing will occur Friday night at Bedford North Lawrence. Like North (0-4), the Stars (0-3) are struggling, and it doesn't take a computer major to figure out that BNL represents the weakest of North's six remaining opponents.

"I expect a good ball game," said BNL coach Terry Willoughby. "I scored them Saturday night against Martinsville and came away very impressed. Their offense is very versatile. Their quarterback (Eric Nichols) is both a good runner and passer and the (Dean) Bushey kid is a good running back. They represent a challenge for our defensive team."

CHALLENGE INDEED. Against Martinsville the Cougars produced 233 yards of offense, 15 yards more than the Stars, who mustered last week during a 10-4 win over Boyd Central. Nichols' aerial darts accounted for 128 of those yards, and Clinton Decker caught four passes for 39

DEFENSE

NORTH (0-4)
DB David Webb (148)
LB Joe Van Deyn (200)
LB Doug Dalton (200)
LB Ron Crohn (180)
LB Benjamin Smith (167)
LB Eric Baxley (163)
LB David Powell (190)
LB Eric Nichols (180)
LB Richard English (168)
LB Dean Bushey (185)
LB Clinton Decker (147)

DEFENSE

NORTH
LB Ron Arthur (180)
LB Brian Stroud (203)
LB Joe Van Deyn (200)
LB David Webb (148)
LB Eric Baxley (163)
LB David Powell (190)
LB Eric Nichols (180)
LB Richard English (168)
LB Dean Bushey (185)
LB Clinton Decker (147)

yards and threw a 26-yard TD pass to David Webb — his second such pass in two games.

"We call it our double-decker," said offensive coordinator Al Gallo, describing the play that begins with a quick pass from Nichols to Decker and the line and ends with Decker launching a pass to Webb. Last week the play worked to such perfection that Webb's only problem was one extra meal on his schedule waited for the ball some 10 yards behind the Artisan secondary.

WITH THE EMERGENCE of John Fitzgerald as an effective tailback, the Cougars now have three strong runners. Bushey leads the pack with 191 yards on 43 carries, Richard English is next with 108 yards on 22