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Procedure for analysis of efficiency in football practice

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The University of Montana

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PROCEDURE FOR ANALYSIS

of

EFFICIENCY IN FOOTBALL PRACTICE

by

[Signature]

B.S., University of Illinois, 1927

Presented in partial fulfillment of the requirement for the degree of Master of Arts.

State University of Montana

1946

Approved:

[Signature]

Chairman of Board of Examiners

[Signature]

Chairman of Committee on Graduate Study
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STATEMENT OF PROBLEM

Practice field organization and evaluation of work done are major problems for the football coach. If properly solved his chance for professional longevity will be considerably enhanced. His team must take an examination at the end of each week. If the results are not satisfactory, if the team flunks the exam, losing the game, the coach must ask himself "why?". The results of the examination must serve as basis for judging the efficiency of the teaching job. He must, if he is to progress, evaluate those results. How then to make a valid evaluation?

Three factors are immediately apparent:

1. character of competition
2. individual performance
3. team performance

With respect to the first of these three factors the coach can only rely on his previous knowledge of the opponent and his experience, to tell him whether or not his team has met with failure because in size, speed and experience his men have been outmatched. But with respect to the second and third factors he should have something more than mere judgment to guide him.

There are approximately fifty individual, group, squad, and team activities which should engage the football coach's attention during any week of practice. Neglect of any one of the fifty could easily result in the failure of the team to perform properly in the game at the
end of the week's practice. Moreover each of the fifty activities are of varying importance, and not only differ in intrinsic value but change from week to week in being essential to the practice routine.

It should be apparent therefore that a football coach in planning his season's practice schedule should make a very careful analysis of activities upon which he will place the greater emphasis, and upon those which he feels can be passed over lightly.

Moreover as preparing a football team for the first game is something of a race against time he must sift through a somewhat bewildering list of practice "set-ups" in view of selecting just those which will contribute most to the training of his team, and sending it on the field properly prepared.

Having made the selection of activities, designed the "set-ups" by which they will be practiced, and worked out a time schedule which will place proper emphasis on those various activities, the coach still cannot reliably trust his judgment of their efficiency unless some objective standard for judgment is devised. Game results, even when the team wins, are not adequate criteria. The team may win its lesser games and still be functioning at seventy-five percent of its potential, and the coach needs to have a ready means of evaluating his week's work if game results are lower than his judgment leads him to believe should obtain.

In view of pointing a way toward the solution of these problems the following steps will be presented:

1. listing of activities
   a. individual
   b. group
2. A sample week's work schedule for midseason.

3. An analysis of schedule as listed in #2.

4. An evaluating chart for checking results.

In employing the practice evaluation chart the coach must bear in mind that conclusions drawn can never be wholly objective. Weather conditions, character of competition, inconsistency of individual performance will always be a factor in results. However overall improvement should be immediate whenever systematic approach is made to the practice field problem.

The first step to be taken is the listing of all possible practice field activities. This is accomplished by the simple procedure of making a breakdown of the various things done by a football team during a game and listing the parts by category. An off-tackle play, for example, involves quite a number of activities; center passing; combination end and wing-back blocking; one on one blocking for the quarterback; pulling out and angle blocking for the guards; slide or check blocking for men in the line who are not in the direct line of the play; down field blocking for the fullback and short side linemen; starting, angle running, cutting and broken field running for the ball carrier. When the defensive aspect of the play is considered a host of other fundamental activities appear.

Tables I through IV are lists of activities derived by this procedure. As has been indicated the activities, or play portions, fall rather naturally into four major categories: Individual, Table I; Group, Table II; Team, Table III; Squad, Table IV. No truly objective
means can be found for cataloguing the later category. Such functions as squad meeting, technical movies, rule quizzes, etc., will not appear in the breakdown of game activities, and still they have a vital bearing on the preparation of a team for the game. Therefore they are listed arbitrarily.

For sake of convenience each item to be practiced has an identifying or "Key" number in the extreme left hand corner opposite listing. Later, in making practice evaluations in the light of game results the activity can be tagged by the key number and readily identified on a compact chart. Description of the practice activity is in the second column and the personnel who are normally expected to develop skill in the specific item is indicated in the third column. Activities thus listed represent a part or the whole of every significant movement made by a football team from the time it appears on the field for a game until the final shot ends the contest.
Table I

INDIVIDUAL ACTIVITIES

Individual activities as listed below are those which players can practice without much supervision and in which the development of skill is not dependent upon the presence of other team mates.

<table>
<thead>
<tr>
<th>KEY</th>
<th>ACTIVITY</th>
<th>PERSONNEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Place kicking or drop kicking.</td>
<td>Place kickers, centers and ball holders.</td>
</tr>
<tr>
<td>4.</td>
<td>Running under punts.</td>
<td>Ends, guards, tackles and centers.</td>
</tr>
<tr>
<td>6.</td>
<td>Open field stunts:</td>
<td>All ball carriers, backs and ends.</td>
</tr>
<tr>
<td></td>
<td>a. cross over</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. pivots</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. side step</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. change of pace</td>
<td></td>
</tr>
<tr>
<td></td>
<td>e. open field reverses</td>
<td></td>
</tr>
<tr>
<td></td>
<td>f. stiff arm</td>
<td></td>
</tr>
</tbody>
</table>
Table II

GROUP WORK

Activities wherein two or more players are involved. These activities must be practiced in combinations. They are basic to team work and when as units are put together they make up the "whole" play.

<table>
<thead>
<tr>
<th>KEY</th>
<th>ACTIVITY</th>
<th>PERSONNEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.</td>
<td>Covering punts.</td>
<td>Ends, defensive halfbacks, centers, punt receivers and punters.</td>
</tr>
<tr>
<td>13.</td>
<td>Line blocking-Live and Dummy. a. two on one b. one on one c. pull out and block secondary</td>
<td>Ends, tackles, guards and centers.</td>
</tr>
<tr>
<td>14.</td>
<td>Backfield blocking-Live and Dummy. a. two on one 1. blocking-back and fullback b. one on one 1. wing-back or blocking-back on end 2. blocking-back on fullback 3. blocking-back on half-back 4. blocking-back on tackle or guard</td>
<td>All backs.</td>
</tr>
<tr>
<td>15.</td>
<td>Combination blocking, linemen with backs - Live and Dummy. a. two on one 1. wing-back and end on tackle 2. guard and blocking-back on tackle or end b. one on one 1. protect passer 2. protect kicker</td>
<td>Ends, wing-backs, blocking-backs and guards.</td>
</tr>
<tr>
<td>KEY</td>
<td>ACTIVITY</td>
<td>PERSONNEL</td>
</tr>
<tr>
<td>-----</td>
<td>----------</td>
<td>-----------</td>
</tr>
</tbody>
</table>
| 17. | Line defense.  
   a. guard stunts  
     1. shoulder charge  
     2. hit and sag  
     3. submarine  
   b. tackle stunts  
     1. shoulder charge  
     2. fade  
     3. in-charge  
   c. end stunts  
     1. smash  
     2. pivot and fade  
     3. hand fight | Ends, tackles and guards. |
| 18. | Backfield defense.  
   a. eluding blocker  
   b. defensive backfield shifting | All backs and centers. |
| 19. | Dummy line plays. | Center, guards, ends and tackles. |
| 20. | Dummy backfield plays. | Center and backs. |
| 21. | Dummy plays, combination of backs and line.  
   a. plays | Backs and line. |
| 22. | Line defense.  
   a. pass rushing  
   b. punt rushing  
   c. rushing of running plays | Guards, tackles and ends. |
| 23. | Downfield blocking. | All lineman. |
| 24. | Ball handling. | All backs. |
| 25. | Punt blocking. | All line and line blockers. |
Group Work  Table II cont.

<table>
<thead>
<tr>
<th>KEY</th>
<th>ACTIVITY</th>
<th>PERSONNEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.</td>
<td>Protecting kicker.</td>
<td>Backs and linemen used in protection.</td>
</tr>
</tbody>
</table>
Table III

TEAM ACTIVITY

These activities can be practiced only with a full eleven men.

This work is for practice of the finished product after individual and group skills have been mastered.

<table>
<thead>
<tr>
<th>KEY</th>
<th>ACTIVITY</th>
<th>PERSONNEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.</td>
<td>Receiving and returning punts.</td>
<td>Full team.</td>
</tr>
<tr>
<td>30.</td>
<td>Defending against place kick.</td>
<td>Full team.</td>
</tr>
<tr>
<td>32.</td>
<td>Receiving kick off.</td>
<td>Full team.</td>
</tr>
<tr>
<td>33.</td>
<td>Play after fair catch.</td>
<td>Full team.</td>
</tr>
<tr>
<td>34.</td>
<td>Play after safety.</td>
<td>Full team.</td>
</tr>
<tr>
<td>35.</td>
<td>Running signals.</td>
<td>Full team.</td>
</tr>
<tr>
<td>36.</td>
<td>Offensive dummy scrimmage.</td>
<td>Full team.</td>
</tr>
<tr>
<td>37.</td>
<td>Defensive dummy scrimmage.</td>
<td>Full team.</td>
</tr>
<tr>
<td></td>
<td>a. regular defenses and signals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. goal line defense</td>
<td></td>
</tr>
<tr>
<td>38.</td>
<td>Special defenses.</td>
<td>Full team.</td>
</tr>
<tr>
<td></td>
<td>a. for current game</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. against occasional offense</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. flanker, spread, man in motion etc.</td>
<td></td>
</tr>
<tr>
<td>40.</td>
<td>Live defensive scrimmage.</td>
<td>Full team.</td>
</tr>
</tbody>
</table>
Table IV

SQUAD ACTIVITY

Activities in which the squad as a whole participate. They are similar to individual activities in that they do not involve the element of teamwork. They rarely involve a high degree of skill training.

<table>
<thead>
<tr>
<th>KEY</th>
<th>ACTIVITIES</th>
<th>PERSONNEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Calisthenics</td>
<td>Full squad.</td>
</tr>
<tr>
<td>42</td>
<td>Wind sprints</td>
<td>Full squad.</td>
</tr>
<tr>
<td>43</td>
<td>Charging sled</td>
<td>Full squad.</td>
</tr>
<tr>
<td>44</td>
<td>Tackling dummy</td>
<td>Full squad.</td>
</tr>
<tr>
<td>45</td>
<td>Live tackling</td>
<td>Full squad.</td>
</tr>
<tr>
<td>46</td>
<td>Falling on ball</td>
<td>Full squad.</td>
</tr>
<tr>
<td>47</td>
<td>Blackboard drills</td>
<td>Full squad.</td>
</tr>
<tr>
<td>48</td>
<td>Squad meetings</td>
<td>Full squad.</td>
</tr>
<tr>
<td>49</td>
<td>Movies</td>
<td>Full squad.</td>
</tr>
<tr>
<td>50</td>
<td>Rules quiz</td>
<td>Full squad.</td>
</tr>
</tbody>
</table>
Having accomplished the listing of pertinent practice activities through the procedure of analyzing and breaking down the basic game movements, the second step in the evaluation of practice efficiency is the exact recording of what was done on the field during the week immediately preceding the game. In order to assure accuracy a double check should be made. The daily and weekly schedule which the coach customarily prepares beforehand should not be considered sufficient. A manager should be assigned the task of timing and making exact note both with respect to time spent and item practiced.

At the end of each practice week the coach will then have a corrected record of precisely what activities his players and his team have practiced and of the time spent on each.

The following practice record is an example of this procedure. It is the practice schedule for Montana State University during the week of October 30 to November 3rd, 1939. Statistics for that game, which was won by Washington, 9 to 0, will later serve to illustrate the use of the practice evaluation charts.
SAMPLE WEEK'S WORK SCHEDULE FOR MIDSEASON

MONDAY

3:00 Calisthenics
   1. Whole squad

3:10 Wind sprints
   1. Whole squad

3:20 Punting, place kicking, quick kicking, kick-off, and punt receiving.
   1. Kickers, holders, centers and receivers.

3:20 Running down under punts.
   1. Guards, tackles, ends and centers.

3:40 Open field stunts.
   1. Backs and ends.

3:40 Dummy defensive charging.
   1. Guards and tackles.

3:55 Pulling out and angle running.
   1. Guards and tackles.

3:55 Passing and pass receiving.
   1. Backs, centers and ends.

4:10 Offensive dummy scrimmage.
   1. New plays

4:25 Defensive dummy scrimmage.
   1. Special defensives.

4:40 Signal drill.

5:00 Movies and blackboard. Squad will go indoors for this.

5:30 Dismissed.
TUESDAY

3:00 Calisthenics.
   1. Whole squad.

3:10 Wind sprints.
   1. Whole squad.

3:20 Punting, place kicking, kicking off, quick kicking, and
   receiving.
   1. Kickers, holders, centers, and receivers.

3:20 Covering punts.
   1. Guards, tackles, ends, and defensive halfbacks.

3:35 Defensive line charging.
   1. Guards, tackles, ends.

3:40 Rushing passer and kicker.
   1. Guards, tackles, ends and free backs.

3:55 Tackling dummy.
   1. Whole squad.

4:10 Live tackling.
   1. Whole squad.

4:30 Line defensive stunts.
   1. Guards, tackles and ends.

4:30 Backfield defense, (eluding blockers, pass defense, defensive
   shifting).
   1. All backs and centers.

4:40 Dummy defensive scrimmage, (special defense for current game).
   1. Team.

5:10 Live defensive scrimmage.
   1. Team.

5:40 Dismissed.

Tuesday evening 7:30—Squad meeting.
WEDNESDAY

3:00 Calisthenics.
   1. Whole squad.

3:10 Wind sprints.
   1. Whole squad.

3:20 Punting, place kicking, quick kicking, kick-off, and receiving.
   1. Kickers, holders, centers, and receivers.

3:20 Covering punts.
   1. Guards, tackles, ends.

3:40 Open field stunts.
   1. Backs and ends, and centers.

3:40 Pull out and open field blocking.
   1. Guards and tackles.

3:55 Passing and pass receiving.
   1. Backs, ends and centers.

3:55 Passer protection.
   1. Guards, tackles, wing-backs and fullbacks and blocking-backs.

4:10 Dummy tackling.
   1. Whole squad.

4:20 Live tackling.
   1. Whole squad.

4:40 Line blocking—live and dummy.
   1. Ends, guards, tackles and centers.

4:40 Backfield blocking.
   1. Backs.

5:10 Signal drill.

5:20 Live offensive scrimmage.

5:50 Dismissed.
THURSDAY

3:00 Calisthenics.
   1. Whole squad.

3:10 Wind sprints
   1. Whole squad.

3:20 Punting, place kicking, quick kicking, receiving, and kicking off.
   1. Centers, holders, kickers, and receivers.

3:20 Covering punts.
   1. Guards, ends, tackles and free halfbacks.

3:35 Combination blocking—line and backs.
   1. Ends, tackles, guards, and free backs.

3:55 Pass defense.
   1. Backs and centers.

4:10 Pass and punt rushing.
   1. Guards, tackles and ends.

4:25 Punt offense.
   1. Team.

4:40 Punt defense (blocking and returning).
   1. Team.

4:55 Kick-off receiving.
   1. Team.

5:05 Kick-off kicking.
   1. Team.

5:25 Place-kick kicking.
   1. Team.

5:30 Place-kick receiving.
   1. Team.

5:35 Dismissed.
FRIDAY

3:00 Calisthenics.
   1. Whole squad.

3:10 Passing and receiving.
   1. Center, backs, and ends.

3:10 Defensive line charging.
   1. Guards and tackles.

   1. Guards and tackles

3:30 Kick-off offense.
   1. Team.

3:35 Kick-off defense.
   1. Team.

3:40 Pass-defense.
   1. Backs and centers

3:40 Defensive line shifting.
   1. Ends, tackles, and guards.

4:00 Signal drill.

4:10 Dismissed for showers.

4:30 Movies.
A recapitulation of the week's practice should then be made by computing the number of times each activity has appeared on the schedule, together with the total number of minutes spent on each practice item. Reference should then be made to the Activity Tables and the appropriate Key Number written in the lefthand column opposite the practice item.

Table V, which follows, has been compiled from the record of the practice week October 30 to November 3rd for Montana's football team.
<table>
<thead>
<tr>
<th><strong>KEY</strong></th>
<th><strong>INDIVIDUAL ACTIVITIES</strong></th>
<th><strong>TIMES PRACTICED</strong></th>
<th><strong>NUMBER OF MINUTES SPENT</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Funiting, etc.</td>
<td>4</td>
<td>120</td>
</tr>
<tr>
<td>5</td>
<td>Pulling out and angle running</td>
<td>4</td>
<td>40</td>
</tr>
<tr>
<td>6</td>
<td>Open field stunts</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>8</td>
<td>Dummy defensive line charging</td>
<td>3</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>GROUP ACTIVITIES</strong></th>
<th><strong>TIMES PRACTICED</strong></th>
<th><strong>NUMBER OF MINUTES SPENT</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>9 &amp; 10</td>
<td>Passing and receiving</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>Covering punts</td>
<td>4</td>
</tr>
<tr>
<td>13</td>
<td>Line blocking</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>Backfield blocking</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>Combination blocking</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Defensive line shifting</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>Line defensive stunts</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>Pass defensive etc.</td>
<td>3</td>
</tr>
<tr>
<td>19</td>
<td>Dummy line offensive</td>
<td>0</td>
</tr>
<tr>
<td>20</td>
<td>Dummy plays, backfield</td>
<td>0</td>
</tr>
<tr>
<td>22</td>
<td>Line defense, pass and punt rushing</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>SQUAD ACTIVITIES</strong></th>
<th><strong>TIMES PRACTICED</strong></th>
<th><strong>NUMBER OF MINUTES SPENT</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Calisthenics</td>
<td>5</td>
</tr>
<tr>
<td>42</td>
<td>Wind sprints</td>
<td>4</td>
</tr>
<tr>
<td>46</td>
<td>Falling on ball</td>
<td>0</td>
</tr>
<tr>
<td>47</td>
<td>Blackboard</td>
<td>1</td>
</tr>
</tbody>
</table>
### SQUAD ACTIVITIES CONT'D

<table>
<thead>
<tr>
<th>KEY</th>
<th>TIMES PRACTICED</th>
<th>NUMBER OF MINUTES SPENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>Tackling dummy</td>
<td>2</td>
</tr>
<tr>
<td>45</td>
<td>Live tackling</td>
<td>3</td>
</tr>
<tr>
<td>49</td>
<td>Movies</td>
<td>2</td>
</tr>
<tr>
<td>48</td>
<td>Squad meetings</td>
<td>1</td>
</tr>
<tr>
<td>43</td>
<td>Charging sled</td>
<td>0</td>
</tr>
</tbody>
</table>

### TEAM ACTIVITIES

<table>
<thead>
<tr>
<th>KEY</th>
<th>TIMES PRACTICED</th>
<th>NUMBER OF MINUTES SPENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>Kicking and protecting</td>
<td>1</td>
</tr>
<tr>
<td>29</td>
<td>Receiving and returning</td>
<td>1</td>
</tr>
<tr>
<td>25</td>
<td>Punt blocking</td>
<td>1</td>
</tr>
<tr>
<td>2 &amp; 27</td>
<td>Place kicking</td>
<td>1</td>
</tr>
<tr>
<td>30</td>
<td>Defense against place kick</td>
<td>2</td>
</tr>
<tr>
<td>7 &amp; 31</td>
<td>Kicking off</td>
<td>2</td>
</tr>
<tr>
<td>32</td>
<td>Receiving kick-off</td>
<td>2</td>
</tr>
<tr>
<td>33</td>
<td>Play after fair catch</td>
<td>0</td>
</tr>
<tr>
<td>34</td>
<td>Play after safety</td>
<td>0</td>
</tr>
<tr>
<td>35</td>
<td>Signals</td>
<td>5</td>
</tr>
<tr>
<td>36</td>
<td>Offensive dummy</td>
<td>1</td>
</tr>
<tr>
<td>39 &amp; 40</td>
<td>Offensive and defensive scrimmage</td>
<td>2</td>
</tr>
<tr>
<td>38</td>
<td>Special defense</td>
<td>1</td>
</tr>
</tbody>
</table>
PROCEDURE

Game statistics, which are essential to the utilization of the practice evaluation charts, Chart I, II and III, can generally be obtained from the newspaper account of the game. If however such statistics are not available from this source, it will be necessary to assign a manager to the job of keeping game records. Activities on which statistics must be kept are listed on the three Charts. Individual activities, such as point after touchdown, punting, and place kicking are relatively easy to keep. They are computed on either a percentage or yardage basis. If on a percentage basis successful and unsuccessful attempts are figured, 100 per cent the perfect score. If distance is the criteria, as in punting, quick kicking and kick-offs, the average yardage tells the story.

However with respect to the Offensive and Defensive statistics, the job is a bit more difficult. All figures are based on either per cent of attempts successful, such as completed passes, blocked punts, passes stopped by opponent's linemen (which indicated good or bad passer protection), or by the average of yards gained, such as returned punts and returned kick-offs.

Reference to any of the three Charts will show that there are five columns for computation. In the first column "Optimum Expected Results\(^1\) are figures indicating results which were obtained in twenty-five football games in which Montana State University has participated and won. They are obviously results necessary to the winning of College level games. When the figures are employed in the evaluating of results in

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\(^1\) Figures adjusted to show maximum expected results to insure the winning of games. See Table VI for minimum results in successful competition.
high school games the "Optimum Expected Results" in punting should be
dropped to thirty yards, quick-kicks to fifty yards and kick-offs to
forty yards. However all other figures in the first column should
remain the same. Expected performance is based on relative competition
and inasmuch as the opponent for the high school team may be presumed to
offer opposition comparable on that level to that encountered by the
University, similar results should be secured.

In the matter of yards on penalties, only total yards can be con-
sidered. Excessive penalties indicate a poor job of teaching the rules.
Fifty yards per game is average.

Figures in the second column, "Actual Results" are taken from game
statistics. It should be filled in as soon after the game as possible,
certainly before the next week's practice schedule is made up.

Figures for the third column, "Differential" can be obtained im-
mediately by the simple process of subtracting the lesser of the first
two figures from the greater, and marking it plus or minus.

Minus figures will generally tell the story of lost games.

Reference will then be made to the next column indicating actual
time spent on the subject practice item in past work-outs. Data for
this will have been obtained from the time analysis of the past week's
practice schedule, Table V. Where definite minus findings are shown
it is evident that the time allotment must be increased in the next
week's practice. When plus findings are made thought should be given
to sacrificing practice in such items to activities obviously needing
greater emphasis.

Finally the Coach, by use of the "Key" in the last column, should
list all numbers in which it has been indicated that his work has
failed to bring about desired results. He should then turn to the
Activity Tables and with this material to guide him prepare the new
week's practice schedule.

An example in this procedure for evaluating practice results
follows. Statistics from the Montana - Washington game in 1939 are
used.
# PRACTICE EVALUATION

## CHART I SAMPLE

### INDIVIDUAL ACTIVITIES

Washington - Montana Game 1939

<table>
<thead>
<tr>
<th>Activity</th>
<th>Optimum Result</th>
<th>Actual Result</th>
<th>Differential Plus or Minus</th>
<th>Time Short During Practice (Write)</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punting</td>
<td>36 yds</td>
<td>36 yds</td>
<td></td>
<td>120</td>
<td>1</td>
</tr>
<tr>
<td>Point after Touchdown</td>
<td>80%</td>
<td>0%</td>
<td>none</td>
<td>7½</td>
<td>2</td>
</tr>
<tr>
<td>Quick Kicking</td>
<td>60 yds</td>
<td>0%</td>
<td>none</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Kick-Off</td>
<td>60 yds</td>
<td>0%</td>
<td>none</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Passing</td>
<td>40%</td>
<td>40%</td>
<td></td>
<td>50</td>
<td>9</td>
</tr>
<tr>
<td>Pass Receiving</td>
<td>90%</td>
<td>80%</td>
<td>-10%</td>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>Punt Catching</td>
<td>100%</td>
<td>100%</td>
<td></td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>Place-Kick</td>
<td>75%</td>
<td>0%</td>
<td>none</td>
<td>7½</td>
<td>2</td>
</tr>
</tbody>
</table>

### Recapitulation

1. Activities showing negative results
   
   A. Pass Receiving - 10%

   B. 

   C. 

2. Activities showing positive results
   
   A. None

   B. 

   C. 
# PRACTICE EVALUATION

## CHART V

### OFFENSE

<table>
<thead>
<tr>
<th></th>
<th>Optimum Results</th>
<th>Actual Result</th>
<th>Differential Plus or Minus</th>
<th>Time Spent During Practice (week)</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passes Completed</td>
<td>50%</td>
<td></td>
<td></td>
<td>6, 10, 15, 26</td>
<td></td>
</tr>
<tr>
<td>Running Plays Going</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over Ten Yards</td>
<td>10%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Running Plays Going</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than Ten Yards</td>
<td>90%</td>
<td></td>
<td></td>
<td>5, 13, 14, 15, 19, 20, 21, 35, 36, 39</td>
<td></td>
</tr>
<tr>
<td>Punts Blocked by</td>
<td>0%</td>
<td></td>
<td></td>
<td>1, 27</td>
<td></td>
</tr>
<tr>
<td>Opponent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passes Stopped by</td>
<td>0%</td>
<td></td>
<td></td>
<td>15, 26, 39</td>
<td></td>
</tr>
<tr>
<td>Opponent Linemen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fumbles</td>
<td>0%</td>
<td></td>
<td></td>
<td>24, 46</td>
<td></td>
</tr>
<tr>
<td>Own Fumbles Recovered</td>
<td>75%</td>
<td></td>
<td></td>
<td>24, 46</td>
<td></td>
</tr>
<tr>
<td>Returned Punts</td>
<td>10 yds</td>
<td></td>
<td></td>
<td>11, 23, 29, 33</td>
<td></td>
</tr>
<tr>
<td>Returned Kick-Offs</td>
<td>30 yds</td>
<td></td>
<td></td>
<td>23, 32</td>
<td></td>
</tr>
<tr>
<td>Penalties</td>
<td>50 yds</td>
<td></td>
<td></td>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

### Recapitulation

1. Activities showing negative results
   A. 
   B. 
   C. 

2. Activities showing positive results
   A. 
   B. 
   C. 


# PRACTICE EVALUATION

## CHART VI

### DEPARTMENT

<table>
<thead>
<tr>
<th></th>
<th>Optimum Expected Result</th>
<th>Actual Result</th>
<th>Differential Plus or Minus</th>
<th>Time Spent During Practice (Week)</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passes Completed</td>
<td>40%</td>
<td></td>
<td></td>
<td></td>
<td>8, 22, 28, 40</td>
</tr>
<tr>
<td>Running Plays Going Over Ten Yards</td>
<td>5%</td>
<td></td>
<td></td>
<td></td>
<td>16, 18, 38, 40, 44, 45</td>
</tr>
<tr>
<td>Running Plays Going Less than Ten Yards</td>
<td>75%</td>
<td></td>
<td></td>
<td></td>
<td>16, 17, 37, 40, 45</td>
</tr>
<tr>
<td>Punts and Place-Kicks Blocked</td>
<td>5%</td>
<td></td>
<td></td>
<td></td>
<td>22, 25, 30</td>
</tr>
<tr>
<td>Opponents Fumbles Recovered</td>
<td>50%</td>
<td></td>
<td></td>
<td></td>
<td>46</td>
</tr>
<tr>
<td>Returned Punts</td>
<td>10 yds</td>
<td></td>
<td></td>
<td></td>
<td>4, 12, 44, 45</td>
</tr>
<tr>
<td>Returned Kick-Offs</td>
<td>20 yds</td>
<td></td>
<td></td>
<td></td>
<td>31, 34, 44, 45</td>
</tr>
<tr>
<td>Penalties</td>
<td>25 yds</td>
<td></td>
<td></td>
<td></td>
<td>50</td>
</tr>
</tbody>
</table>

### Recapitulation

1. **Activities showing negative results**
   
   A.

   B.

   C.

2. **Activities showing positive results**
   
   A.

   B.

   C.
In that a higher per cent should obtain.

Including short gains at well as plays which lost yardage, the
problems.

However, there is a minus figure for break every play, or

It is indicated that the team was doing a good job on preparing

Any the pass count of the running plays was for gain and the

Practice for these sake should be doubled.

Part and kick-off returns show the result of too little work.

to the pass offense.

The game there can be no doubt that much more time should be devoted
your four minutes was spent during the past week on the phase of
enough to lose a statistically played game. Although the chart shows that an

These expected results and actual results in the matter of passing

Kick-offers are the most serious. The difference per cent difference be-

Story of a lost game. Free competition, returned punts and returned

With respect to the offense, chart 17, seven minute shows tell the

These should be spent on individual endeavors.

For the team, this is contrary to cause some concern and probably more

For two of the accused party power were dropped for a minute or per cent

Minutes need be spent on teaching the technique of passing. However

For a forty per cent average, it would appear that no more than fifty

For these skills, twenty-five passes were thrown, ten of them successful.

There be considered as approximately correct. There was no emphasis on

The one hundred and twenty minutes allotted to that activity can therefore

Average of thirty-six yards per attempt with only eighteen the expected result.

For this game, figures on completed chart I, punting was for an
plays going over ten yards. Down field blocking must be improved.

On the defensive side of the picture, Chart III, figures for three items suggest cause for concern. That the defense against the Washington ground game was not adequate is definitely indicated by the figures obtained. Over against this the plus seventeen for pass defense shows to an advantage. The two hours spent on pass defense should probably be reduced by half.

The minus fifty shown for recovered fumbles would normally be alarming. However the fact that the ball was fumbled twice during the game, both times by the Washington backs, reduces this item to one of negligible importance.

Summary of the three Practice Evaluation Charts shows that practice items 6, 9, 10, 11, 15, 16, 18, 20, 21, 23, 25, 26, 29, 32, 33, 34, 37, 38, 39, 40, 44, 45 need greater emphasis. Of this group 9, 10, 15, and 26 should receive special attention.

Satisfactory results are shown in items 1, 5, 8, 13, 14, 19, 22, 28, 35 and 50. Items 8, 22, 28 and 40 show positive enough to reduce the practice time allotment considerably. Time allotted to other items can be correspondingly cut in favor of activities showing negative results.

Despite the fact that it would appear that an excessive amount of statistical work is entailed in the maintenance of such Practice Evaluation Charts as suggested herein, results obtained by the game practice analysis of a single isolated game should be sufficient to

3 Subject to variation based on coach's judgment.
demonstrate its worth. In this game practice weaknesses in twenty-two separate activities are clearly indicated. Adequate correction by accurate information which is thus provided eliminates to a large degree the necessity for guessing. The coach should know by reference to his charts exactly how to proceed for making a schedule for his next week's work.
## PRAGUE EVALUATION

### CHART II SAMPLE

**OFFENSE**

**Washington - Montana Game 1939**

<table>
<thead>
<tr>
<th>Optimum Expected</th>
<th>Actual Result</th>
<th>Differential Plus or minus</th>
<th>Time Spent During Practice (Week)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Validation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Passes Completed</th>
<th>50%</th>
<th>32%</th>
<th>-18%</th>
<th>100</th>
<th>9,10,15,26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Running Plays Going Over Ten Yards</td>
<td>10%</td>
<td>8%</td>
<td>-2%</td>
<td>150</td>
<td>6,20,21,23</td>
</tr>
<tr>
<td>Running Plays Going Less than Ten Yards</td>
<td>90%</td>
<td>92%</td>
<td>4%</td>
<td>150</td>
<td>5,13,14,15,19,20,21,25,35,36,39</td>
</tr>
<tr>
<td>Punts Blocked by Opponent</td>
<td>0%</td>
<td>8%</td>
<td>-3%</td>
<td>135</td>
<td>1,27</td>
</tr>
<tr>
<td>Passes Stopped by Opponent Linemen</td>
<td>0%</td>
<td>4%</td>
<td>-4%</td>
<td>65</td>
<td>15,26,39</td>
</tr>
<tr>
<td>Fumbles</td>
<td>0%</td>
<td>0%</td>
<td>0</td>
<td>24,46</td>
<td></td>
</tr>
<tr>
<td>Own Fumbles Recovered</td>
<td>75%</td>
<td>0%</td>
<td>none</td>
<td>0</td>
<td>24,46</td>
</tr>
<tr>
<td>Returned Punts</td>
<td>10 yds</td>
<td>3 yd.</td>
<td>-7 yd.</td>
<td>15</td>
<td>11,23,29,33</td>
</tr>
<tr>
<td>Returned Kick-Offs</td>
<td>30 yds</td>
<td>11.5 yd</td>
<td>-19 yd.</td>
<td>20</td>
<td>23,32</td>
</tr>
<tr>
<td>Foulalities</td>
<td>50 yds</td>
<td>10 yd</td>
<td>40 yd</td>
<td>0</td>
<td>50</td>
</tr>
</tbody>
</table>

**Recapitulation**

1. Activities showing negative results
   A. Passes completed -18; plays going over 10 yds -2.
   B. Punts blocked -2; passes stopped by linemen -4.
   C. Returned punts -7 yds; returned kick-offs -19 yds.

2. Activities showing positive results
   A. Foulalities + 40 yds.

B. 

C. 

---
Results of an analysis of statistics from fifteen games are shown in Table VI.\(^4\) In order to determine the part played by certain keyed items, a study was made of results obtained in the winning or losing of games against six opponents. Scores of games were all relatively close and extended over a period of six years. The figures shown are averages taken from the sum total of all games.

As would be expected in close games, performances are comparatively even. Had the games been particularly one sided, it could be assumed that the figures in the win column would be considerably higher than those shown in the lose column. Punting, returned kick-offs, fumbling, returned punts and pass completions, appear to have little to do with the winning or losing of the games. While it is not safe to assume that these items are not of great importance, it nevertheless can be assumed that if the standard set in the "Optimum Expected Results" (see Charts 1, II, III) the coach may feel safe in his assumption that his game will not be lost on that account. Conversely plus performances could easily be the deciding factor in close games.

Most significant point in the study is the disparity in the figures shown for "Running plays going over ten yards". In the games studied nearly fifteen per cent of all running plays initiated by the winning teams went over ten yards, while less than one per cent of the plays started by the losing teams went that far. Remembering that other performances were fairly even and that all games were won or lost by a close

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\(^4\) Game statistics used for Table VI taken from the following Montana games. Year, school and scores are given.
Gonzaga, 1936, 6-0; Idaho, 1936, 16-0; Texas Tech., 1937, 13-6; Idaho, 1937, 6-0; North Dakota, 1937, 14-3; Gonzaga, 1938, 9-0; Arizona, 1938, 7-0; Idaho, 1939, 13-0; Gonzaga, 1939, 23-0; Arizona, 1939, 6-0; Texas Tech., 1940, 32-19; Gonzaga, 1940, 13-10; Idaho, 1940, 28-18; Gonzaga, 1941, 13-6; North Dakota, 1941, 13-6.
In the Game

When a point is scored by the home team at the end of a game, and the game is then over, it is scored in the home team's favor. The home team scores the most points.

If the game is tied at the end of regulation time, the teams will have to play overtime. In overtime, the team that scores first wins. If the game is still tied after overtime, the teams will continue to play additional overtime periods until one team scores.

In the event of a tie, the game will be replayed. If the home team wins the replay, the home team wins the game. If the away team wins the replay, the away team wins the game. If the game is still tied after the replay, the teams will continue to play additional overtime periods until one team scores.

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SUMMARY

It has been the purpose in the foregoing study to show how through the collection and evaluation of a mass of objective data taken from game statistics, the element of guess work in practice field organization can be largely reduced. Game activities have been broken into fifty separate items and keyed for easy reference. By following the procedure suggested the coach may evaluate his practice work in terms of game results and be guided accordingly in his planning.

However certain limitations to this procedure must be recognized, and the coach must be careful to avoid making too sweeping interpretations of what his charts show him. While the desirability of making the selection of practice items on a basis of actual need as shown by results is obvious, it is impossible to wholly eliminate the coaches "good judgment" as a factor in planning. There are too many variables which affect the results to do otherwise. Any of the following may distort the figures shown on the chart;

1. Relative strength of the opponent
2. Weather
3. Individual physical condition
4. Judgment of the quarterback
5. Condition of the playing field
6. Playing edge, or morale of the squad

If in the judgment of the coach any of these factors have so affected single or multiple items in game results as to bring them above or below "Optimum Expected Results", he should interpret his statistics accordingly.
Many items such as fumbles, recovery of fumbles, dropped passes and penalties are significant only when they appear in the negative column. Excellent performance in these and similar activities may not win games, but poor performances will often lose them. However it is never safe to assume that because performance in such items has been uniformly good that practicing them can be dropped altogether.

Care should be exercised in weighing the importance of single items. While a complete break-down in one particular activity, such as punting, may have resulted in a loss, more often a combination of failures fall into related groups; pass offense, pass defense, passer protection or punting, punt return, kick-off return, punter protection. Unless such variables as weather, strength of opponent, etc., have not been responsible for adverse results, neglect of that entire phase of the game is indicated or at least strongly suggested.

However some results cannot be interpreted in the light of variable game conditions. Strength of the opponent cannot be used as justification for poor punting, kick-offs, passing, pass receiving, fumbling, or excessive penalties. Rule infringements less than any other thing are subject to extraneous causes, and when the average is shown above fifty yards per game, the coach must assume that his job has not been well done.

Definite limitations with respect to individual ability may also appear to complicate the picture. For example, the coach may find himself without a kicker who is physically capable of obtaining a game average of 36 yards. The coach will naturally strive to bring the boy up to that standard, but failing, he must have recourse in strengthening
concomitant portions of the game. Proper interpretations of game
data should give him guidance. If the punting is falling short, he
should compensate by improving punt coverage, punter protection and
punt return. Similarly, weak passing can only be balanced by a
relatively stronger running game.

Regardless of circumstances, guessing should be eliminated. In
every case the coach should have a definite reason for including practice
items in his week's program. Whether the decision to include, drop,
intensify or reduce time for a practice activity is justified by an
accumulation of objective data, or subjective interpretation of this
data, there must be a sound reason for the decision. A little time
spent in checking results and intelligently evaluating them in terms
of practice procedure will pay dividends.
Blank charts, such as the three which follow, can be readily re-
produced by a coach having access to a mimeograph machine.
**PRACTICE EVALUATION**

**CHART III SAMPLE**

**DEFENSE**

Washington - Montana Game 1939

<table>
<thead>
<tr>
<th></th>
<th>Optimum Expected</th>
<th>Actual Result</th>
<th>Difference Plus or Minus</th>
<th>Time Spent During Practice (weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passes Completed</td>
<td>40%</td>
<td>23%</td>
<td>17%</td>
<td>120</td>
</tr>
<tr>
<td>Running Plays Going Over Ten Yards</td>
<td>5%</td>
<td>9%</td>
<td>-4%</td>
<td>16, 18, 38, 40, 44, 45</td>
</tr>
<tr>
<td>Running Plays Going Less Than Ten Yards</td>
<td>75%</td>
<td>61%</td>
<td>-16%</td>
<td>16, 17, 37, 40, 45</td>
</tr>
<tr>
<td>Punts and Place-kicks Blocked</td>
<td>5%</td>
<td>12%</td>
<td>-7%</td>
<td>22, 25, 30</td>
</tr>
<tr>
<td>Opponents Fumbles Recovered</td>
<td>50%</td>
<td>0%</td>
<td>-50%</td>
<td>46</td>
</tr>
<tr>
<td>Returned Punts</td>
<td>10 yds</td>
<td>10 yd</td>
<td>185</td>
<td>4, 12, 44, 45</td>
</tr>
<tr>
<td>Returned Kick-offs</td>
<td>20 yds</td>
<td>0 yd</td>
<td>none</td>
<td>115</td>
</tr>
<tr>
<td>Penalties</td>
<td>25 yds</td>
<td>15 yd</td>
<td>410 yd</td>
<td>0</td>
</tr>
</tbody>
</table>

**Recapitulation**

1. Activities showing negative results
   A. Plays going over 10 yds -4; plays going less than 10 yds -16; punts blocked -7;
   B. Opponents Fumbles recovered -50.

2. Activities showing positive results
   A. Passes completed +17;
   B. Penalties +10
   C. 
# ANALYSIS OF CLOSE GAME DATA

## TABLE VI

<table>
<thead>
<tr>
<th>Won</th>
<th>Lost</th>
</tr>
</thead>
<tbody>
<tr>
<td>35.4 yds</td>
<td>34.3 yds</td>
</tr>
<tr>
<td>67.5%</td>
<td>30.3%</td>
</tr>
<tr>
<td>55 yds</td>
<td>41 yds</td>
</tr>
<tr>
<td>33%</td>
<td>50%</td>
</tr>
<tr>
<td>37.2%</td>
<td>33.3%</td>
</tr>
<tr>
<td>14.9%</td>
<td>.6%</td>
</tr>
<tr>
<td>86.1%</td>
<td>99.4%</td>
</tr>
<tr>
<td>.12 per game</td>
<td>1 per game</td>
</tr>
<tr>
<td>2.2 per game</td>
<td>2.3 per game</td>
</tr>
<tr>
<td>1.01 per game</td>
<td>1.01 per game</td>
</tr>
<tr>
<td>5.4 yds</td>
<td>4.9 yds</td>
</tr>
<tr>
<td>19.8 yds</td>
<td>20.5 yds</td>
</tr>
<tr>
<td>45 yds</td>
<td>32 yds</td>
</tr>
</tbody>
</table>

Note: The data in this table includes various statistics for games considered close, as determined by specific yardage and points scored. Each row represents a different category of game data, such as punting, point after touchdown, quick kicking, and so on. The 'Won' column shows the average statistics for the winning teams, while the 'Lost' column shows the same for the losing teams. The table is structured to provide a clear comparison between the performance of winning and losing teams in close games.
## PRACTICE EVALUATION

### CHART IV

**INDIVIDUAL ACTIVITIES**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Optimum Expected Results</th>
<th>Actual Result</th>
<th>Differential Plus or Minus</th>
<th>Time Spent During Practice (Week)</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punting</td>
<td>36 yd</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Point after Touchdown</td>
<td>90%</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Quick Kicking</td>
<td>60 yd</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Kick-Off</td>
<td>60 yd</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Passing</td>
<td>40%</td>
<td></td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Pass Receiving</td>
<td>90%</td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Punt Catching</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>Place-Kick</td>
<td>75%</td>
<td></td>
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<td>2</td>
</tr>
</tbody>
</table>

### Recapitulation

1. Activities showing negative results
   
   A. 
   B. 
   C. 

2. Activities showing positive results
   
   A. 
   B. 
   C.
BIBLIOGRAPHY


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