## 3. GIVING THE SSW

Accurate details for giving the SSW are important, because as the old saying goes, "Garbage in - Garbage out."

### Ages, Hearing, Speech-Language and IQ Requirements for SSW Test

**Ages:** Norms start at 5 years and end at 69 years [1]. We were not able to develop norms for those in their 70s or above, because the results were not consistent in any way [2]. Likely we age in different ways, in different peripheral and central regions, on one or both sides. The resulting combination is extremely complex. Mike Webb wonders, if our longer and healthier lifespans will produce healthier auditory systems. If so we may be able to obtain norms for older individuals.

Please note that children, 5-years or under are given only 20 test items [3]. So the norms, for 5-year-olds, unlike for the other ages, are based on 20 items. Sometimes, because of fatigue, attention or other reasons we can give just 20 items to people of any age. Hopefully, the remaining items can be completed at another time, soon after. Aim for a total of no fewer than 20 items. You can get a good approximation from the first 20 items. If all items are not given, we can prorate the results to compare to the national norms (e.g., doubling for 20 items) most scores. The exceptions are Ear and Order Effects as well as Type-A patterns[4]. In those cases it is best to use the numbers that you have instead of prorating.

**Hearing:** For those with normal hearing we generally present the test at 50dB SL. However, the SSW-Max (range of maximum scores) can go as low as 30dB SL. For this reason the maximum level for either ear is 80dB HL. Because of the use of spondees in the SSW test, the influence of hearing loss is reduced. A conductive hearing loss is complicated primarily by what appears to be a confounding crossover-effect to the other side. We found that ears with air-bone gaps of 20dB or more need to have a reduced presentation level. In such cases a presentation level of 30dB SL was most effective in improving the SSW score[5]. A person with a cochlear hearing loss of 25-40dB (based on Arnst, 1982) should be assessed using the Traditional Analysis (TA) instead of Number of Errors (NOE) Analysis when assessing APD. TA corrects for WRSs and it is more lenient in its scoring; however, if the score is significant one can then study NOE Qualifiers and norms.

### Equipment and Instructions

**Equipment:** A two-channel audiometer is used to present the SSW test. Inserts or earphones can be used and a sound booth or quiet room should provide an adequate ambient noise level to administer the test. Sitting close-by and facing the patient is advantageous to monitor the person's lips, sounds and facial expressions. A 2-channel CD player provides the Central Test Battery – CD. Set the equipment so the first item goes to the right-ear-first (REF). The front sheet of the test form suggests that you have a choice of REF or LEF. Always set it REF, but if you see that you did it backwards, circle the LEF. Initially, we thought that it would not make any difference if it was REF or LEF. But that is not true. At least one reason, I think, may be that one ear (usually left) may be slower than the other (e.g., crossing the corpus callosum from the right hemisphere).

**Instructions:** Prior to starting the recording it is best to give brief instructions. This is especially important for younger children and those with poor word recognition. You might say something like, "In this test you will hear a man speaking in one or both of your ears. Before each group the man will say, 'Are you ready'. That just means, get ready. Don't repeat that and just tell me the words that come after it." Then play the recording

including the instructions. At this point, you can stop the CD and tell the person, "When you hear the words, you won't know when to answer, because-, you don't know how many words he will say. So for the first two groups I will keep my hand up as long as the words are coming out. Just as soon as he is finished, I will put my hand down and you can tell me what he said." Show the gestures when giving those instructions.

The first two items are pretty easy (two spondees, one after the other, to one ear: practice item #1 to the right and #2) to gradually teach the task. The next 2 items are to both ears, but the spondees are not overlapped. If the person is unsure or you suspect more training is needed, the best time to do it is on these practice items. If the person repeats an item too quickly you should remind them to wait until the item is completed and make the notation '(I-Q)', usually at the end of the item. The (I-Q), means (Instructed-Quick response). The 'Instructed' notation can also be used for AYR, Y etc. so you can know that they were notified and this makes any additional repetitions of that Qualifier more significant.

During testing it is good to monitor the person to see how and what they are doing. Watch their lips to see what they are saying and if they are changing their responses. When you notice fatigue, or if you get a really strange response, it might be time for a break, to be sure that you are getting a good representation of the person's auditory ability (it's true that the teacher just keeps on teaching, so classroom performance may not be as good as your test results, but we can be more confident that our auditory results are not heavily weighted by fatigue or inattention). I like Jumping-Jacks to keep children alert. A good place to stop is after 20 items, because the two halves are essentially equal in errors, so you can judge if there is a big change.

**SSW Form**

Before we go into further detail, familiarize yourself with the features of the SSW form, if you have not used it before or it is a newer form. Figure 3-1 shows the front sheet, that is used for identification, including importantly, age and handedness. It is also where we make calculations and display the results.

This form (2013) is the newest of 6 SSW test forms over the past 5 decades. Although the focus of this manual is the NOE Analysis for CAP, the form provides space to calculate the other two analyses (Traditional for CAP with hearing loss and Original for site of lesion). The red labels, in Figure 3-1, indicate what goes where.

Start with the section labeled #1 R-SSW (upper left). It is where we enter the 4 Condition scores, from page 3. For NOE we also sum those scores in the Total column for the Total NOE score. For the Traditional and Original Analyses those scores are multiplied by a number to provide the Raw SSW (R-SSW) percent error scores.

Please note, the AUDIOMETRIC SUMMARY section, on the lower left side of the page is a place to enter 3-frequency speech averages (i.e., .5, 1 and 2K Hz.), SRTs and word recognition scores, if desired. If WRSs were for recorded W-22s and those will be used for Correcting the SSW(C-SSW) you can add the norms.

In the middle, on the right side is a section for COMMENTS and in that section is where we also show the significant Qualifiers. The age norm is placed in the left column, the abbreviation for the Qualifier in the middle column and the quantity of that Qualifier in the right column. Right below this is the RESPONSE BIAS SUMMARY for calculating and those scores. The only Response Bias that is not shown on the form is the newest one, the Standard Integration Ratio (SIR)[6]. It can be entered in the space below the Response Bias box.

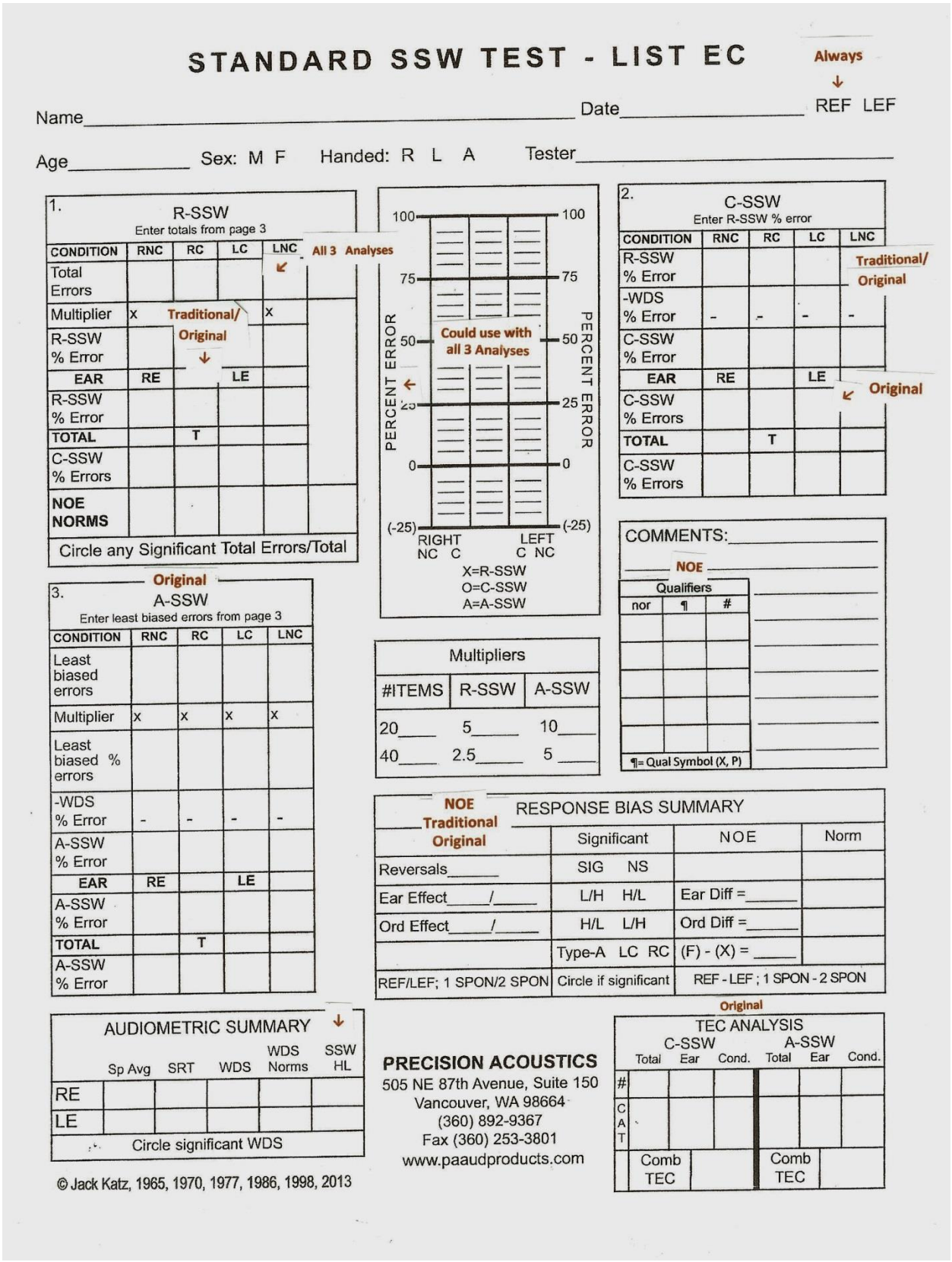



Figure 3-1. Most recent SSW form. Red notes indicate the use for various test findings.

**Scoring Responses**

Figure 3-2 shows page 2 of the SSW form. Score each word of the item as correct or incorrect. If the word is said, leave it alone (ignore if s/z is added as a plural/possessive). If a word is not said (omitted or substituted) draw a horizontal line through the word. An omission is shown by a dash above the word. If it's a substitution, write in the response above the word. If there are 2 or more errors, enter the more obvious word substitution, above the appropriate word, if possible. Always score the errors first. Now consider if the item was repeated in the correct order, or if it was reversed in some way. Put '1' under the first word said and then '2' etc. However, if there was an omission it does not get a number. By the way, a missing word does not produce a reversal. A reversal is counted if the item is out of order, but has no more than one error (either an omission or substitution). (We spent 10 years trying to figure out what constitutes a reversal and how to show it). If there are no errors for an item, enter a dot in the 'Wrong' column. If there were errors, then enter how many in the Wrong box. Next indicate if there was a reversal, by circling the R in the next column. If you gave an additional 'instruction', put (I-??) circled to the right of the item. Also, indicate where the person was given a 'break' (e.g., some people need several breaks to maintain their performance level). It might be necessary/desirable to repeat an item. For example, a person might be coughing or talking, or you just might want to repeat an item for your own information. Use an R circled to the left of the item to indicate that it was given again. Not to be confused with a Reversal on the other side of the item.

'Qualifiers': If you are alert to the various Qualifiers you are much more likely to spot them. For the same dime you get, not only 5 major Quantitative scores (Total NOE and 4 Conditions), and also Response Biases (like Ear and Order Effect), and now we can add SIR, to make 6. They tell us so much about the person and strengthen our confidence regarding the significant Categories[7].

But when the person displays Qualifiers they often give you insights, how they deal with their auditory processing challenges. This person has Delays so she/he can work extra hard to figure out what was heard, and then got the correct answer (we do not show delays if there was an error on the item). What do we learn from a SM-2[8] in which the person hears a spondee in one ear (e.g., meat sauce) and 'smushes' the two words together in some way (e.g., 'moss' or 'seat'). Just imagine if a person was speaking quickly to them and not leaving pauses between the words, they would hear jumbles. What about a perseveration[5] or quiet rehearsal? How might they affect the person's **c**ommunication ability?

Some Qualifiers are shown at the point of occurrence. The X-circled is shown where the delay occurred before/between any of the 4 words. During the practice items if the person has delays between spondees, it might be because of an attempt to emphasize the separate spondees or monosyllables, or needing more time to decode. So you can mention that it is better if they just say the words without pauses (be sure to show (I-X) at the end of the item). Then if/when they do it again during the test, you'll be more confident they are real delays. Quick responses (Q) are shown before the first word of the item. Intrusive words are shown above the spot, with a caret below and (IW) in the number box (see Table 3-1). As you know, if there is an error on an item, we don't score a delay. The error already shows the problem with that item.

Table 3-1. Thirteen SSW Qualifiers, including abbreviations to be circled and where to put them.

| SSW Qualifiers, abbreviation and where to put them | | | |
|---|---|---|---|
| ***Qualifier*** | ***Where*** | ***Qualifier*** | ***Where*** |
| Are you ready (AYR) | *Number box* | Perseveration (P) | *Number box* |
| Back-to-Back (BTB) | *Number box* | Smush (SM) | *Number box* |
| Delay (X) | *Point of infraction* | Smush-2 (SM-2) | *Number box* |
| Extreme Delay (XX) | *Point of infraction* | Tongue Twister (TTW) | *Number box* |
| Integration Delay (IX) | *Point of infraction* | Quick (Q) | *Number box* |
| Intrusive Word (IW) | *Pt. of infraction & # box* | Quiet Rehearsal (QR) | *Number box* |
| Yes (Y) | *Number box* | | |

**This is a Test, Only a Test**

Please score this (mean, nasty) item. If you mess it up you will learn a lot for the next 20 years.

The response was “pup stairs up town”. Don’t look for the response, just yet, if you want to benefit.

| Item | RNC | RC | LC | LNC | Wrong | Rev |
|---|---|---|---|---|---|---|
| 1. | up | stairs | down | town | | |

**Scoring the Results**

For the first 20 items (on page 2 of SSW form), add up each column for the 4 REF item errors and enter them at the bottom of the column. Now do the same for the 4 LEF columns (see Figure 3-2). Then do the same for the last 20 test items on page 3 (see Figure 3-3). On page 3 of the form (Figure 3-4) enter the 8 Cardinal Numbers (8 CN) from page 2 on the second line of page 3. Then add the numbers on both lines to get the total 8 CN. While you are at it on page 3, total the REF errors and enter them in the ‘Wrong’ column. Do the same for the LEF scores.

Now you are ready to summarize the results on page 3. Take the 4 REF total errors and enter them in the table at the bottom-right of the page (columns A through D). If you have not given up yet, take the 4 LEF scores, <u>but enter them in the reversed order</u> (so they start with RNC and end with the LNC (columns H to E)). Then sum the errors for the 4 Conditions. These 4 very important numbers are transferred to the top-left of the front page (see Figure 3-4). Finally, sum the 4 numbers in the Total box on the right. You now have the number of errors for the 4 Conditions and Total errors (and the makings of other important scores).

Back on the last page you can obtain the values to determine if there are Ear/Order Effects. The Ear Effects are easy to calculate. Take each of the total scores for REF and LEF and put them in the small table on the left side. The Order Effect takes a little more work. This is because you will be summing the first 2 REF and the first 2 LEF column of errors together and comparing that sum with the sum for the last 2 columns for REF and LEF. It is done for the first word REF and LEF (columns A and E) and put it into the first box. The do the same for columns B and F. That gives you the total errors for the first spondee. Then do the same for the second spondee. Those totals will tell you how did the first spondee errors compare with the second spondee errors? Ear and Order Effect values are transferred to the RESPONSE BIAS SUMMARY, on the front page, toward the bottom right. Enter the numbers and subtract LEF from REF and second spondee from the first spondee for Ear Effect. It is important to show the minus sign, if the result is negative, because positive and negative scores indicate opposite characteristics. Compare the 2 values for Order Effect in the same way. It is interesting that positive differences tell you completely different information than negative.

Now sum all the reversals, from pages 2 and 3, and enter the total in the lower left REVERSAL box on page 3. Later on this number will be transferred to the RESPONSE BIAS SUMMARY table on page one.

The next peek is at page 3 to assess the results to see if there is a Type-A (LC) pattern. For this Type-A, see if column-F has the most errors of the 8 columns (F is a LC column for LEF items). So if there is an 'F' you have half of the needed scores. Next we check to see which column has the next highest number of errors. This number is call 'X". Circle them so you will know which numbers you compared. Bring these numbers directly to page-1 and enter them at the bottom of the RESPONSE BIAS SUMMARY in the blank space. If F exceed X by a certain amount (based on age norms), it is a Type-A (LC) pattern (by far the most common Type-A pattern). Some left-handers or people who are ambidextrous (or from left-handed families) may have the reverse, a RC peak for column B (REF items). Type-A is the classical INT sign on the SSW test. Unfortunately, there are no other strong INT signs on the other two B-M tests.

Another powerful INT sign has been recently added and therefore there is no place for it on the SSW Test form. The Standard Integration Ratio (SIR) is not calculated on page 3 so this will be discussed in the scoring chapter.

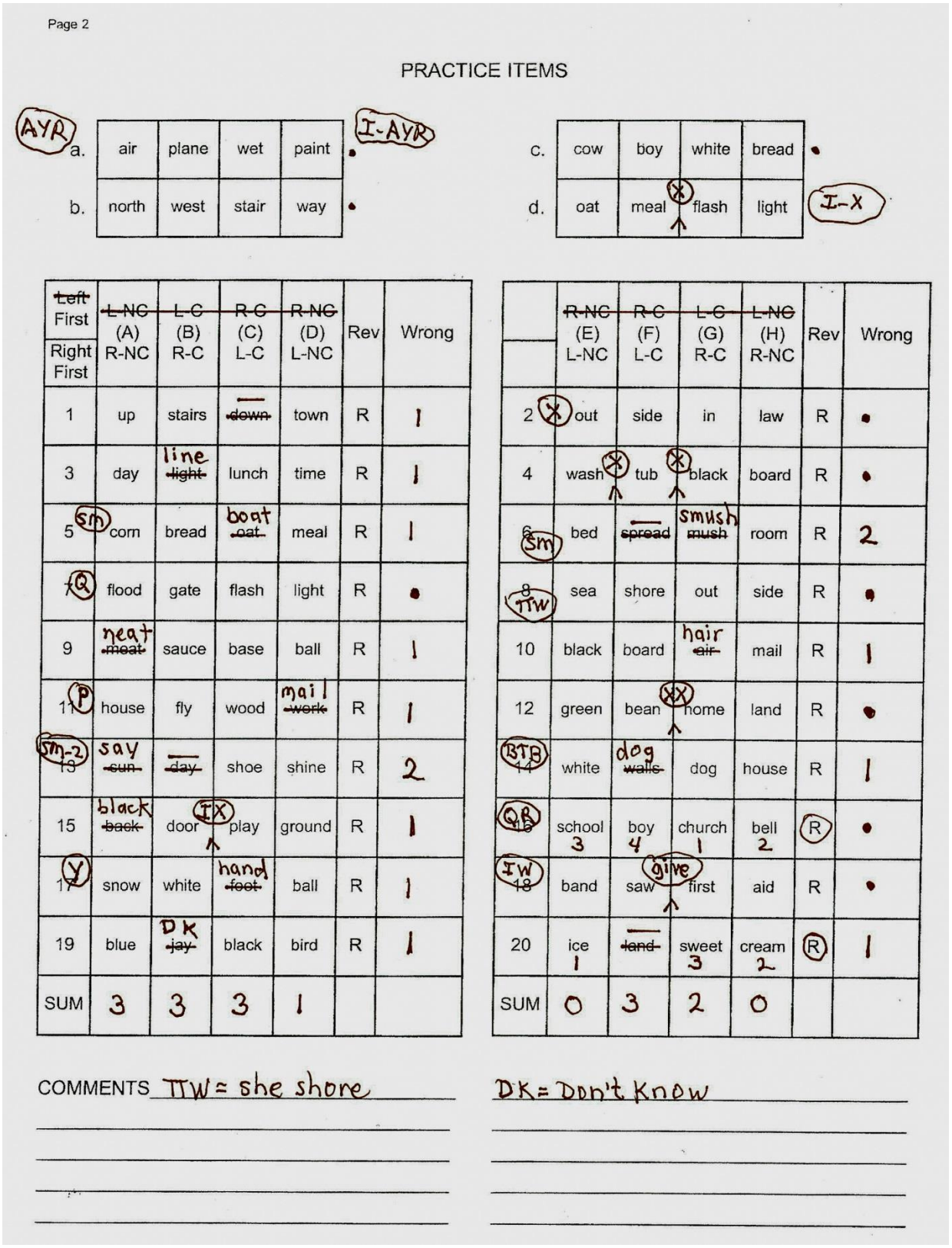
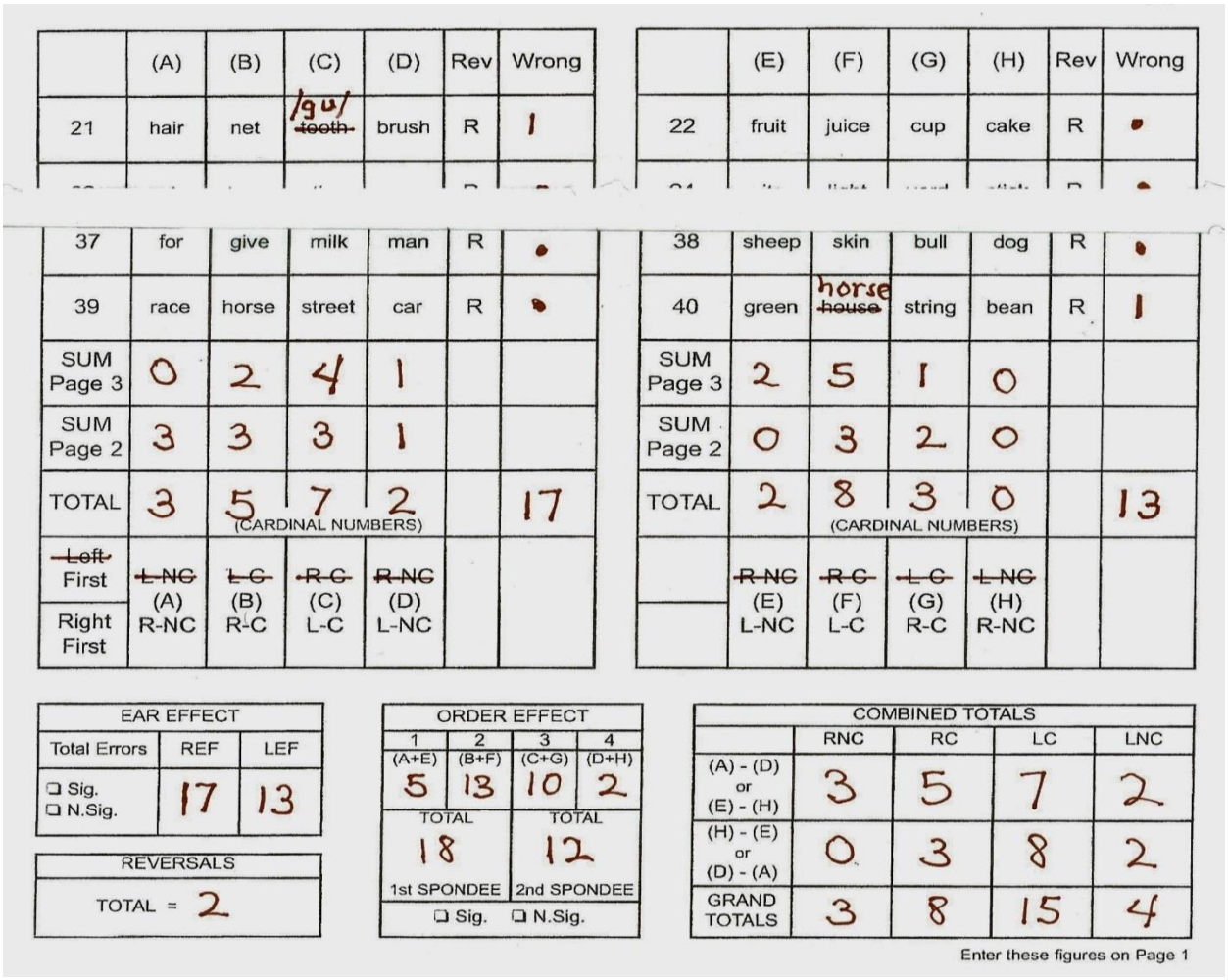



Figure 3-2. Page 2 of the SSW test form. See explanation above.



| | (A) | (B) | (C) | (D) | Rev | Wrong |
|---|---|---|---|---|---|---|
| 21 | hair | net | ~~tooth~~ /g u/ | brush | R | 1 |

| | (E) | (F) | (G) | (H) | Rev | Wrong |
|---|---|---|---|---|---|---|
| 22 | fruit | juice | cup | cake | R | • |

| | | | | | | |
|---|---|---|---|---|---|---|
| 37 | for | give | milk | man | R | • |
| 39 | race | horse | street | car | R | • |
| SUM Page 3 | 0 | 2 | 4 | 1 | | |
| SUM Page 2 | 3 | 3 | 3 | 1 | | |
| TOTAL | 3 | 5 | 7 | 2 | | 17 |
| | | (CARDINAL NUMBERS) | | | | |
| ~~Left~~ First | ~~L-NC~~ (A) R-NC | ~~L-C~~ (B) R-C | ~~R-C~~ (C) L-C | ~~R-NC~~ (D) L-NC | | |
| Right First | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 38 | sheep | skin | bull | dog | R | • |
| 40 | green | ~~house~~ horse | string | bean | R | 1 |
| SUM Page 3 | 2 | 5 | 1 | 0 | | |
| SUM Page 2 | 0 | 3 | 2 | 0 | | |
| TOTAL | 2 | 8 | 3 | 0 | | 13 |
| | | (CARDINAL NUMBERS) | | | | |
| | ~~R-NC~~ (E) L-NC | ~~R-C~~ (F) L-C | ~~L-C~~ (G) R-C | ~~L-NC~~ (H) R-NC | | |

| EAR EFFECT | | |
|---|---|---|
| Total Errors | REF | LEF |
| ❑ Sig. ❑ N.Sig. | 17 | 13 |

| REVERSALS |
|---|
| TOTAL = 2 |

| ORDER EFFECT | | | |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| (A+E) | (B+F) | (C+G) | (D+H) |
| 5 | 13 | 10 | 2 |
| TOTAL | | TOTAL | |
| 18 | | 12 | |
| 1st SPONDEE | | 2nd SPONDEE | |
| ❑ Sig. ❑ N.Sig. | | | |

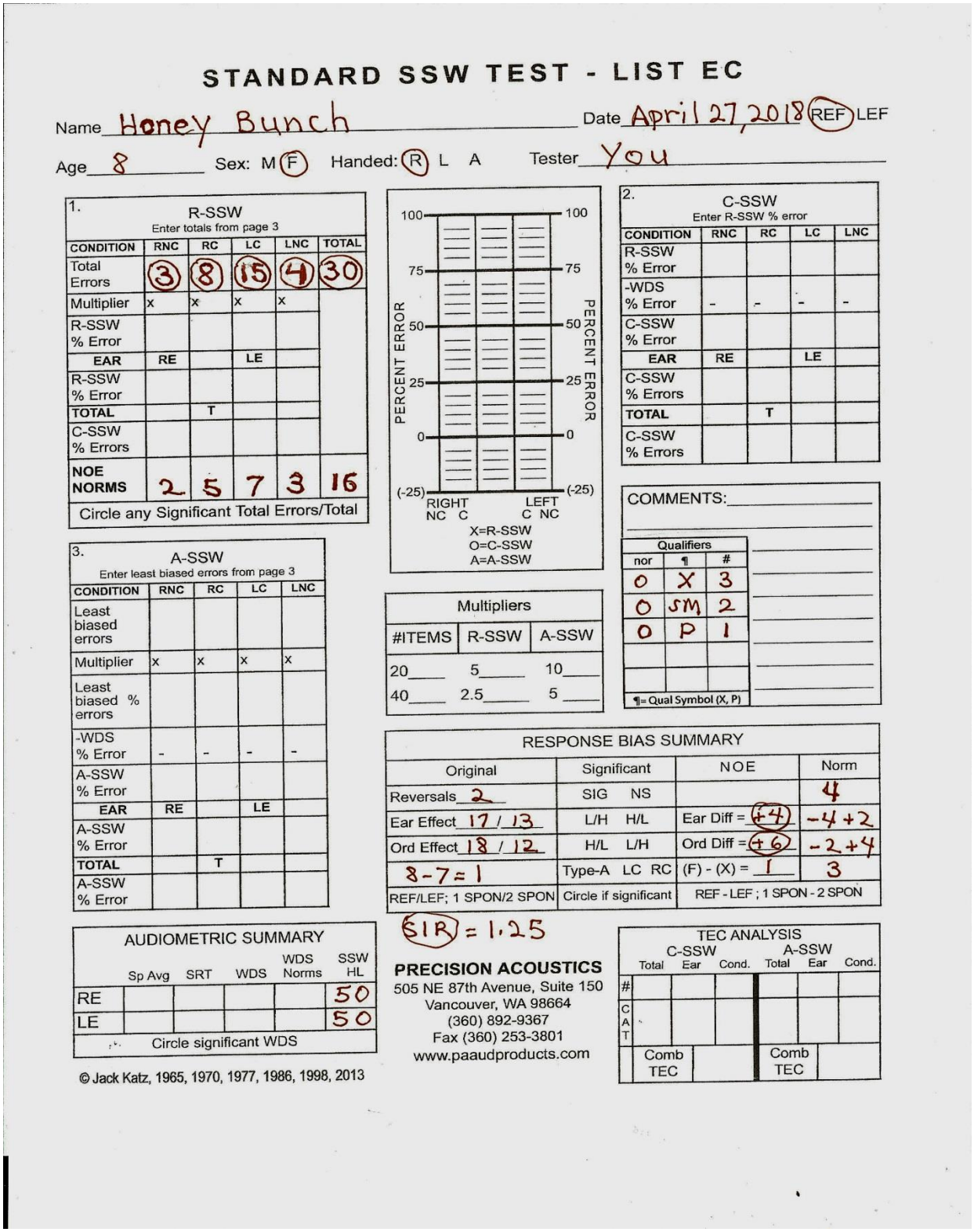
| COMBINED TOTALS | | | | |
|---|---|---|---|---|
| | RNC | RC | LC | LNC |
| (A) - (D) or (E) - (H) | 3 | 5 | 7 | 2 |
| (H) - (E) or (D) - (A) | 0 | 3 | 8 | 2 |
| GRAND TOTALS | 3 | 8 | 15 | 4 |

Enter these figures on Page 1

Figure 3-3. Combining information from the last two pages of the SSW test form. This summary information is then transferred to page one (see Figure 3-4).

The scoring explanation, in this section, makes more sense the way it was presented, but one does not need to go back and forth so much, from one page to another, when you know what to do with the numbers. For example, it will be more economical of your time to do all the work on page 3, before you copy over the information onto page one. As you gain experience you will get quicker and quicker in scoring the test. One thing that is difficult for me is to remember if a word was a Perseveration or not. For this purpose I use the "EAA Perseveration Finder". At an EAA convention an audiologist came over and gave me this finder, so you can quickly check on any word. I wanted to put her name on it but she said it was nothing. I insisted and she insisted and she won out. So, I call it the EAA Preservation Finder (see Figure 3-5).

| Item | RNC | RC | LC | LNC | Wrong | Rev |
|---|---|---|---|---|---|---|
| 1. | up<br>3 | stairs<br>2 | pup<br>~~down~~<br>1 | town<br>4 | 1 | (R) |



# STANDARD SSW TEST - LIST EC

Name Honey Bunch Date April 27, 2018 (REF) LEF

Age 8 Sex: M (F) Handed: (R) L A Tester You

**1. R-SSW** Enter totals from page 3

| CONDITION | RNC | RC | LC | LNC | TOTAL |
|---|---|---|---|---|---|
| Total Errors | (3) | (8) | (15) | (4) | (30) |
| Multiplier | x | x | x | x | |
| R-SSW % Error | | | | | |
| EAR | RE | | LE | | |
| R-SSW % Error | | | | | |
| TOTAL | | T | | | |
| C-SSW % Errors | | | | | |
| NOE NORMS | 2 | 5 | 7 | 3 | 16 |

Circle any Significant Total Errors/Total

**2. C-SSW** Enter R-SSW % error

| CONDITION | RNC | RC | LC | LNC |
|---|---|---|---|---|
| R-SSW % Error | | | | |
| -WDS % Error | - | - | - | - |
| C-SSW % Error | | | | |
| EAR | RE | | LE | |
| C-SSW % Errors | | | | |
| TOTAL | | T | | |
| C-SSW % Errors | | | | |




COMMENTS:

| Qualifiers | | |
|---|---|---|
| nor | ¶ | # |
| 0 | X | 3 |
| 0 | SM | 2 |
| 0 | P | 1 |
| | | |
| | | |

¶= Qual Symbol (X, P)

**3. A-SSW** Enter least biased errors from page 3

| CONDITION | RNC | RC | LC | LNC |
|---|---|---|---|---|
| Least biased errors | | | | |
| Multiplier | x | x | x | x |
| Least biased % errors | | | | |
| -WDS % Error | - | - | - | - |
| A-SSW % Error | | | | |
| EAR | RE | | LE | |
| A-SSW % Error | | | | |
| TOTAL | | T | | |
| A-SSW % Error | | | | |

| Multipliers | | |
|---|---|---|
| #ITEMS | R-SSW | A-SSW |
| 20 | 5 | 10 |
| 40 | 2.5 | 5 |

**RESPONSE BIAS SUMMARY**

| Original | Significant | NOE | Norm |
|---|---|---|---|
| Reversals 2 | SIG NS | | 4 |
| Ear Effect 17 / 13 | L/H H/L | Ear Diff = (+4) | -4 +2 |
| Ord Effect 18 / 12 | H/L L/H | Ord Diff = (+6) | -2 +4 |
| 8-7=1 | Type-A LC RC | (F) - (X) = 1 | 3 |
| REF/LEF; 1 SPON/2 SPON | Circle if significant | REF - LEF ; 1 SPON - 2 SPON | |

**AUDIOMETRIC SUMMARY**

| | Sp Avg | SRT | WDS | WDS Norms | SSW HL |
|---|---|---|---|---|---|
| RE | | | | | 50 |
| LE | | | | | 50 |

Circle significant WDS

SIR = 1.25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**TEC ANALYSIS**

| | C-SSW Total | C-SSW Ear | C-SSW Cond. | A-SSW Total | A-SSW Ear | A-SSW Cond. |
|---|---|---|---|---|---|---|
| # | | | | | | |
| CAT | | | | | | |
| Comb TEC | | | | Comb TEC | | |



Figure 3-4. This cover sheet summarizes the SSW test results. Just the sections that deal with NOE are shown.

## The EAA Perseveration Finder

| SSW Word and Item Number | | | | | |
|---|---|---|---|---|---|
| **Aid**-18 | **Cage**-31 | flood-7 | **Lamp**-29 | **Race**-39 | string-40 |
| air-a,10 | cake-22 | fly-11 | land-12,20 | room-6 | suit-25 |
| ash-23 | can-23 | foot-17 | law-2 | | sun-13 |
| | car-39 | for-37 | light-d,3,7,24,29 | **Sauce**-9 | sweet-20 |
| **Back**-15 | case-25 | fruit-22 | line-36 | saw-18 | |
| ball-9,17,35 | chain-25 | | lunch-3 | school-16 | **Time**-3 |
| band-18 | church-16 | **Gate**-7 | | sea-8 | tin-23 |
| base-9 | corn-5,27 | give-37 | **Mail**-10 | shake-35 | tooth-21 |
| bat-26 | cow-b,30 | green-12,40 | man-37 | sheep-38 | town-1 |
| beach-34 | craft-34 | ground-15,26 | meal-d,5 | shelf-33 | tray-23 |
| bean-12,40 | cream-20 | | meat-9 | shine-13 | tub-4 |
| bed-6 | crow's-31 | **Hair**-21 | milk-35,37 | shoe-13 | |
| bell-16,30 | cup-22 | hand-35 | mush-6 | shore-8 | **Up**-1 |
| bird-19,31 | | home-12 | | side-2,8 | |
| birth-28 | **Day**-3,13,28,29,32 | horse-39 | **Nest**-31 | skin-38 | **Walls**-14 |
| black-4,10,19 | dog-14,38 | house-11,14,40 | net-21,36 | sky-36 | wash-4 |
| blue-19 | door-15,30 | | night-24 | snow-17 | way-c |
| board-4,10 | down-1 | **Ice**-20 | north-c | soap-27 | week-32 |
| book-33 | drug-33 | in-2 | **Oat**-d,5 | spread-6 | west-c |
| boy-b,16,26 | **End**-32 | | out-2,8 | stair-c | wet-a |
| bread-b,5 | | **Jay**-19 | | stairs-1 | white-b,14,17 |
| break-29 | **First**-18,28 | juice-22 | **Paint**-a | starch-27 | wood-11,34 |
| brush-21 | fish-36 | | place-28 | stick-24 | work-11,32,34 |
| bull-38 | flakes-27 | **Key**-25 | plane-a | store-33 | |
| | flash-d,7 | knob-30 | play-15,26 | street-39 | **Yard**-24 |

Figure 3-5. To determine if an error was also a Perseveration (P), check the alphabetical listing for the word. If it is in this list, then it appears on the test. The numbers are the item-numbers, and the lower-cased letters are from the initial practice items. Items one to as many as 20 items before the repeated word are considered Ps. Nonsense words can be on any item prior to it. Repetition of the word in the same item is not a (P). It may be the available word (AV) or a back-to-back (BTB), but not considered a (P).

Scoring gets easier with practice. Some people like to calculate by hand, while others are more confident or want to save time by using a scoring program. The **SSW-Plus** program calculates the SSW test (as well as the PS and S-in-N tests) and provides the categories and other aspects of interpretation. For SSW-Plus you can contact Upstate Advanced Technologies (<gsbusat@frontiernet.net>). For newer features such as SIR and Two-by-Three (2B3), you can check with people in the IGAPS web group or Jack for a computer program.

**References** (for references with no journals or authors listed it is SSW Reports by J. Katz)


1. Age/Norms
    a. SSW Results for Normal and LD Children - With and Without Conductive Heating Loss - N.A. Stecker & J. Katz - vol 5, 1983
    b. Hit Rate Using the C-NS-85 Norms with LD and CAP Referrals - J. Katz – vol 7, 1985
    c. Auditory Maturation: One Child - T. Tedeschi & J. Katz - vol 5, 1983
    d. Hit Rate Using the C-NS-85 Norms with LD and CAP Referrals - J. Katz – vol 7, 1985

2. >60
    a. Influence of Hearing/Discrimination Ability on SSW Performance in the Elderly (60-69 Yrs) J. Katz – 12 1990
    b. Too Old - Too Young - J. Katz – vol 1, 1979
    c. The National Sample Strikes Again: No Blood, Just Type A - J. Katz - vol 4, 1982
    d. SSW Results in the Elderly - D.J. Arnst – vol 8, 1986
    e. Response Bias in Elderly Subjects Assumed to have Normal Central Auditory Functions J. Katz – vol 12, 1990
    f. Tentative Criteria for Significance of Condition and Response Bias Scores: Ages 60-69 Years – vol 12, 1990
    g. Influence of Hearing/Discrimination Ability on SSW Performance in the Elderly (60-69 Years) – vol 12, 1990

3. E/O not predictable
    a. Type A vs. E/O Effects - J. Katz – vol 1, 1979

4. Hearing Loss & Presentation Level
    a. Arnst, D. (1982). SSW Results with Peripheral Hearing Loss, In D. Arnst & J. Katz (Eds.) The SSW Test: Development and Clinical Use, College-Hill Press.
    b. SSW Results for Normal and LD Children - With and Without Conductive Heating Loss - N.A. Stecker & J. Katz - vol 5, 1983

5. Qualifiers
    a. The Available Word – vol 6, 1984
    b. S-M-U-S-H - Blending Errors – vol 1, 1979
    c. Is it Perseveration or the Available Word – vol, 17 1995
    d. Perseverations – 11, 1995