DEVELOPMENT OF A SAMPLING SCHEME FOR PECAN WEEVIL DAMAGE: CAUSES OF NUT LOSS AND DAMAGE

By

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CHAPTER I

INTRODUCTION

The pecan tree, *Carya illinoensis* (Wang.) Koch, is said to be the largest of the native hickories. This tree, which provides an edible nut, is found throughout the southeastern United States, and also in Texas, Oklahoma, New Mexico, Arizona, and California. Each year a barrage of insects and diseases, capable of inflicting severe damage, attack both the pecan nut and the pecan tree. One of the most damaging pests that the pecan grower must cope with is the pecan weevil.

Today, the use of insecticides still provide the best method a pecan grower has for controlling the pecan weevil, *Curculio caryae* (Horn). However, with the potential for environmental contamination and tremendous increases in the costs of insecticides it has become quite important that toxicants be applied only when absolutely necessary. The judicious use of insecticides combined with proper orchard management practices, will not only save the pecan grower time and money, but will also result in less environmental contamination, and will aid in maintaining populations of beneficial insects.

Before applying any toxicant to a crop, it is essential that some means of sampling the pest in question be conducted. This is necessary if one is to determine whether an insecticide application is required.

For the pecan weevil a number of sampling techniques have been developed to determine when insecticide applications should be made. However, none of these methods have come into widespread use (Boethel et al., 1976b). These sampling schemes include jarring or shaking the lower limbs of pecan trees to dislodge weevils onto a canvas or plastic sheet (Moznette et al., 1931; Dupree and Beckham, 1953; Osburn et al., 1963; and Boethel et al., 1976b), tanglefoot spread in bands at different heights around the tree trunk to capture adult weevils as they crawl up the trunk of the tree (Beckham and Dupree, 1954; Hinrichs and Thomson, 1955; Nash and Thomas, 1972; and Boethel et al., 1976b), the use of a quick knockdown insecticide such as Pyrenone (Polles and Payne, 1973; West and Shepard, 1975; and Boethel et al., 1976b), cloth or burlap bags wrapped around the tree trunks (Tedders, 1974; and West and Shepard, 1974, 1975), tygon tubing wrapped around the tree trunks (West and Shepard, 1975), and various types of ground cover traps such as tents and cone emergence traps (Raney and Eikenbary, 1969; Raney et al., 1970; West and Shepard, 1974, 1975; and Boethel et al., 1976b).

In comparing several of these sampling techniques, Boethel et al., (1976b), noted that cone emergence traps (Raney and Eikenbary, 1969) provided the best means for monitoring the activity of adult pecan weevils. Boethel et al., (1976b), stated that the emergence traps are capable of holding weevils, thus enabling the observer to detect the onset of weevil emergence. These traps are also effective for detecting seasonal fluctuations in the pecan weevil population, and for detecting peak emergence dates. West and Shepard (1974) modified the trap with the addition of a Legget trap top (Legget and Cross, 1971) to the apex of the cone. This modification allowed for weevils emerging from the outside of the traps to be captured, thus increasing trap efficiency.

Boethel et al., (1976a) developed equations in which the number of weevils captured within the cone emergence traps and the number of weevils captured on the outside of the traps could be used to estimate the number of weevils in the trees. One of these equations was modified to include weevil mortality, evaluated, and a tentative economic threshold of 40 weevils per tree established (Eikenbary et al., 1977).

Despite the apparent advantages of the above sampling method, several disadvantages exist. These include costs involved in constructing traps ($8-9 per trap), time involved in constructing traps, time involved in transporting traps to and from the orchard, and time involved in setting up and taking down the traps. If an orchard floor is grazed or cultivated, use of cone emergence traps may prove to be incompatible, because the traps need to be fenced or removed to prevent them from being damaged (Neel and Shepard, 1976).

Pecan growers, especially small scale growers, need a sampling method that is inexpensive, reliable, and practical, because in most instances a grower will not spend the time and money necessary to properly utilize the cone emergence trap method to sample for the pecan weevil.

One sampling method which has received very little attention is to sample pecans for damage caused by the pecan weevil.

By conducting regular observations on a pecan crop, one not only monitors the degree of pecan weevil damage, but also damage caused by other insects such as the hickory shuckworm and the pecan nut casebearer, and diseases such as scab and powdery mildew. Also, by observing nuts, no investments are made in purchasing and constructing expensive sampling apparatus.

Before a sampling scheme based on damage could be initiated, it was felt that certain factors that influence nut damage and loss should be better understood. With an understanding of these factors one can obtain a better idea of how many nuts need to be sampled for an adequate sample size, and also a better understanding of the distribution of nut damage and loss between the trees. For this reason, a study was conducted to determine the degree of nut damage and loss resulting from these factors. The factors investigated include nut damage and loss due to feeding and oviposition by the pecan weevil, nut damage and loss due to other insects, nut damage and loss due to diseases, and nut loss due to "unknown reasons" (other physical and biological factors).

CHAPTER II

METHODS AND MATERIALS

The study was conducted at the Noble Foundation's Red River Demonstration and Research Farm, located southeast of Burneyville, Oklahoma in Love County. In 1975, ten trees were selected for use in the study. The cultivar selected for use was "Squirrel" (formerly "Squirrels Delight"), due to its past history of having heavy infestations of pecan weevil.

For each of the ten trees the ratio of one, two, three, and four nut clusters was determined. The ratios were determined as follows:

100 nut clusters per tree were sampled and it was found that there were:

45 "one nut clusters" = 45% one nut clusters

35 "two nut clusters" = 35% two nut clusters

15 "three nut clusters" = 15% three nut clusters

5 "four nut clusters" = 5% four nut clusters

Therefore, the following number of one nut clusters were tagged to yield 100 tagged nuts;

45 "one nut clusters"

18 "two nut clusters"

5 "three nut clusters"

1 " four nut cluster"

An additional 20-30 nuts per tree were tagged as reserve nuts in order to try and maintain a sample size of at least 100 nuts per tree.

Because the female pecan weevil requires approximately 10-30 nuts for oviposition (Swingle, 1935; and Chau, 1949), it was felt that there was a greater chance for all of the nuts in a multi-nut cluster to be punctured rather than the female weevil selecting a single nut in the cluster and then moving to another cluster. Therefore, tagging the nuts in proportion to the number of one, two, three, and four nut clusters on the trees was done to try and reduce the effects, if any, of nut cluster size on the selection of nuts for feeding and oviposition.

Boethel et al., (1974), stated that no significant differences in infestation occurred among different height levels and sectors within individual pecan trees. Therefore, all tagged nuts were located at a distance of ca. six to ten feet above the ground.

Nuts to be tagged were selected by moving from the trunk of the tree outward and around the tree so that there were nuts tagged in all four quadrants of the tree and at various distances outward from the trunk.

Nuts were tagged using one inch circular metal rimmed cardboard tags on which was listed the tree number and the nut number(s). Along with the tag, strips of orange plastic flagging were fastened to the branches containing tagged nuts to aid in relocation of the nuts.

Observations of all pecans began on 4 August, 1975 and continued until 28 October, 1975. Observations of pecan nuts were conducted at weekly intervals, except during the first week of August when observations were conducted twice. Observations involved inspecting each of the nuts and determining if there was any damage done to the nut by either insects or diseases.

The various types of damage that occurred were indicated by the use of capital letters, and if a nut was lost it was indicated as being "lost". If errors in recording the data were found, for instance, if a nut was indicated as having scab one week and then is found to be good the following week, then that nut was removed from the sample.

Prior to normal fall, all remaining tagged nuts were removed from the tree, numbered, and taken to the laboratory for dissection to determine the amount and type of damage done to the nut.

Insecticide applications were scheduled for pecan weevil control utilizing the method described by Eikenbary et al., (1977).

The study was repeated in 1976 with five additional trees being used, bringing the total number of trees used to 15. Also, 150 nuts per tree were tagged. The procedures used in 1976 to determine the nut cluster ratios and to tag the nuts were identical to those used in 1975.

Beginning on 5 August, 1976 observations of pecan nuts were made at weekly intervals. Beginning 23 September, 1976 observations were conducted twice weekly so that tagged nuts could be harvested prior to dropping from the tree.

Again, capital letters were used to indicate the various types of damage which were associated with the pecans. It was assumed that many of the nuts lost due to "unknown reasons" in 1975 may have been lost due to scab; therefore the degree of scab infection was taken into account to try and determine more accurately how much nut droppage was due to scab.

All remaining tagged nuts were removed from the trees and dissected to determine the presence of pecan weevil larvae. Data was also recorded on nuts that contained shriveled or dried kernels, and stained and spotted kernels.

The method for timing insecticide applications was the same as the method described above for 1975.

All data was placed onto IBM computer cards for analysis and future reference. Data analysis consisted of breaking down the data into the various categories listed earlier and determining the number of nuts which fell into each of the categories. A chi-square analysis was also run on the data to determine whether or not damage and loss was uniformly distributed between the study trees.

CHAPTER III

NUT DAMAGE AND LOSS DUE TO THE PECAN WEEVIL

The initial nut punctures (Fig. 1) occurred on 4 August, 1975 in which two nuts were punctured. Two periods of heavy weevil activity occurred, the first between 13 August, 1975 and 20 August, 1975 during which 41 nuts were punctured by the pecan weevil, and the second period between 28 August, 1975 and 4 September, 1975 during which 35 nuts were punctured. Both of these periods followed large increases in the number of pecan weevil trapped from underneath the trees. After 11 September, 1975 no nuts were punctured by the pecan weevil.

The number of pecan weevils trapped under each of ten trees and the corresponding number of nuts that were punctured in 1975 is represented in Fig. 2.

The highest number of punctured nuts occurred on tree five in which 32 nuts were punctured. Tree four had the second highest number of punctured nuts with 14, followed by trees one and seven with 10 nuts punctured, tree 10 with nine nuts punctured, tree three with seven nuts punctured, tree eight with six nuts punctured, and trees two, six, and nine with five nuts punctured.

Only one nut out of the 1271 nuts sampled had pecan weevil larvae, and this nut was punctured between 28 August, 1975 and 4 September, 1975.

Figure 1. Number of pecan weevil trapped daily under 10 trees and weekly and accumulated number of nuts punctured by pecan weevil.

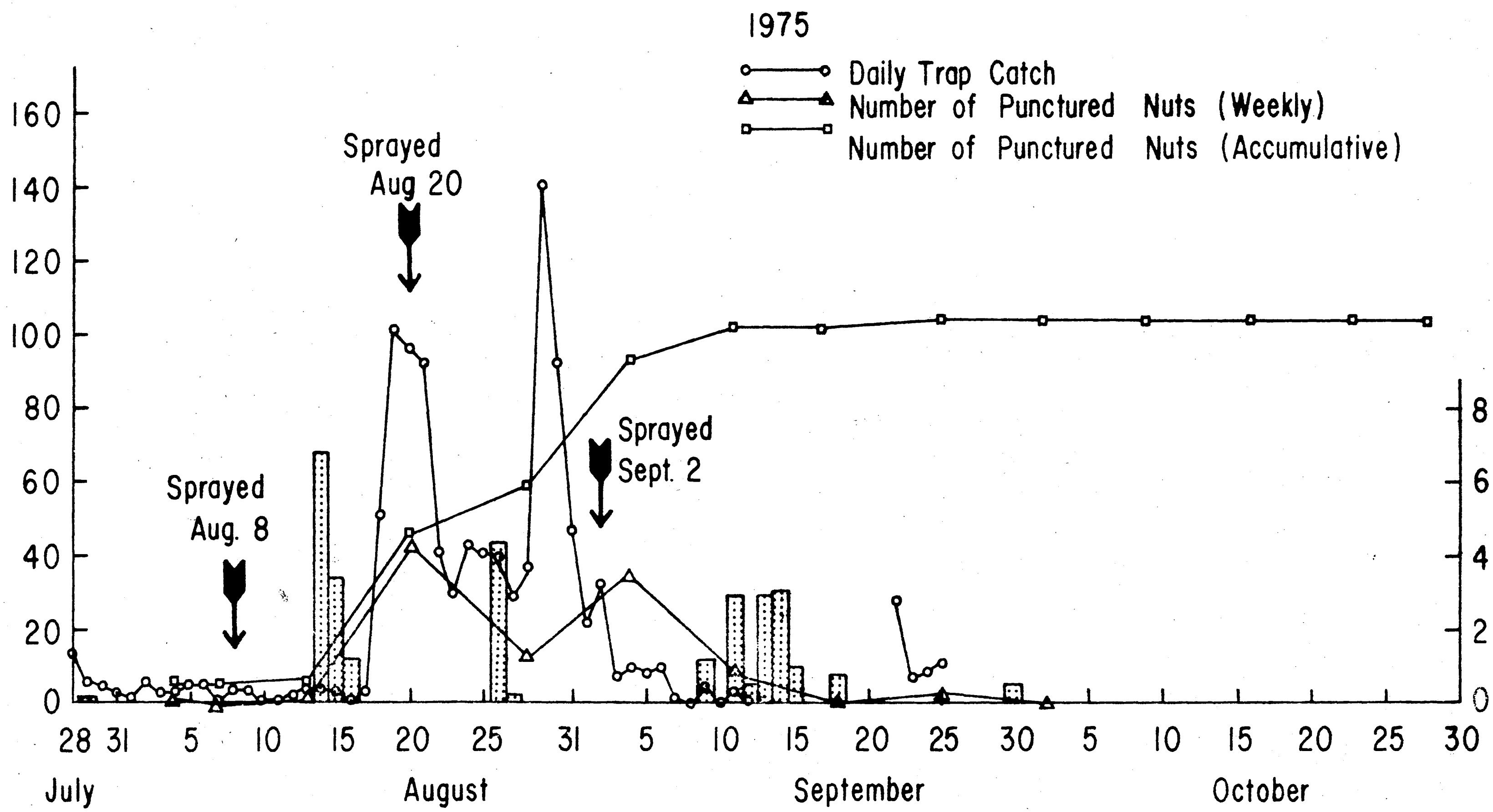
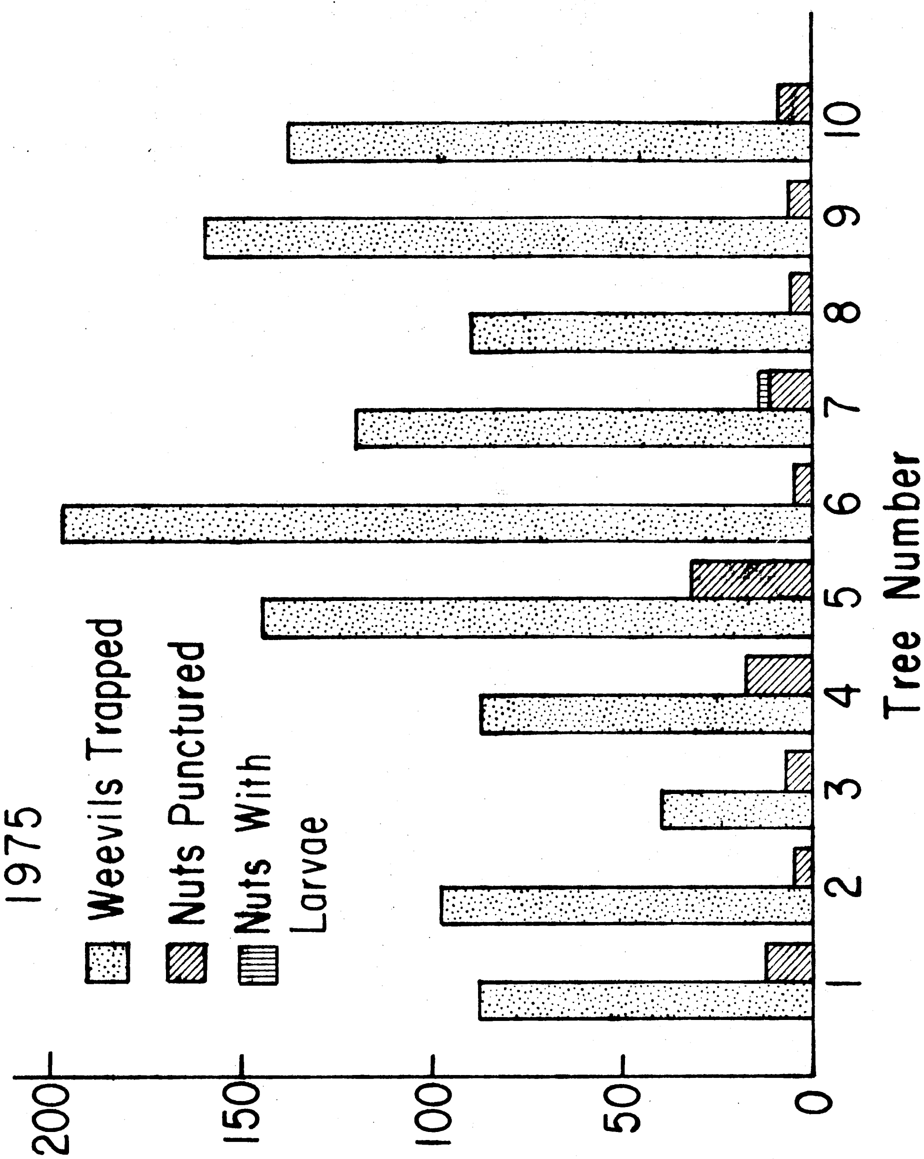

1975
Daily Trap Catch
Number of Punctured Nuts (Weekly)
Number of Punctured Nuts (Accumulative)
Sprayed Aug 20
Sprayed Aug. 8
Sprayed Sept. 2
160
140
120
100
80
60
40
20
0
8
6
4
2
0
Rainfall, cm
28 31 5 10 15 20 25 31 5 10 15 20 25 30 5 10 15 20 25 30
July
August
September
October

Figure 2. Relationship between number of pecan weevil trapped under 10 trees, number of nuts punctured, and number of nuts containing pecan weevil larvae.


1975
Weevils Trapped
Nuts Punctured
Nuts With Larvae
0
50
100
150
200
1
2
3
4
5
6
7
8
9
10
Tree Number

1975.

Tree six had the highest number of weevil trapped with 196, followed by tree nine with 160, tree five with 145, tree 10 with 137, tree seven with 120, tree two with 97, tree eight with 90, tree one with 88, tree four with 87, and tree three with 40.

During 1976 the initial nut puncture occurred between 5 August, 1976 and 12 August, 1976 (Fig. 3). Following this period, the number of nuts punctured increased gradually until 1 September, 1976. Between 1 September, 1976 and 9 September, 1976, 23 nuts were detected as having been punctured by the pecan weevil. Rain on 9 September, 1976 hampered observations by making punctures difficult to detect due to depressions on the nut surface becoming filled with water. As a result of this it is possible that many of the 108 nuts found to be punctured on 16 September, 1976 were actually punctured sometime between 1 September, 1976 and 9 September, 1976. A weevil spray was suggested for application on 31 August, 1976; however, due to mechanical difficulties the trees were not sprayed until about 10 days later. This delay in spraying, coupled with the rainy weather occurring during this time, probably accounted for the substantial increase in the number of nuts punctured during the early part of September. After 16 September, 1976 the number of nuts punctured decreased sharply and after 30 September, 1976 no nuts were punctured.

The number of pecan weevil trapped under each of 15 trees and the corresponding number of nuts that were punctured by the pecan weevil in 1976 is represented in Fig. 4.

Tree nine had the highest number of punctured nuts with 29 nuts punctured, followed by tree 10 with 21 nuts punctured, tree 13 with 19

Figure 3. Number of pecan weevil trapped daily under 15 trees and weekly and accumulated number of nuts punctured by pecan weevil.

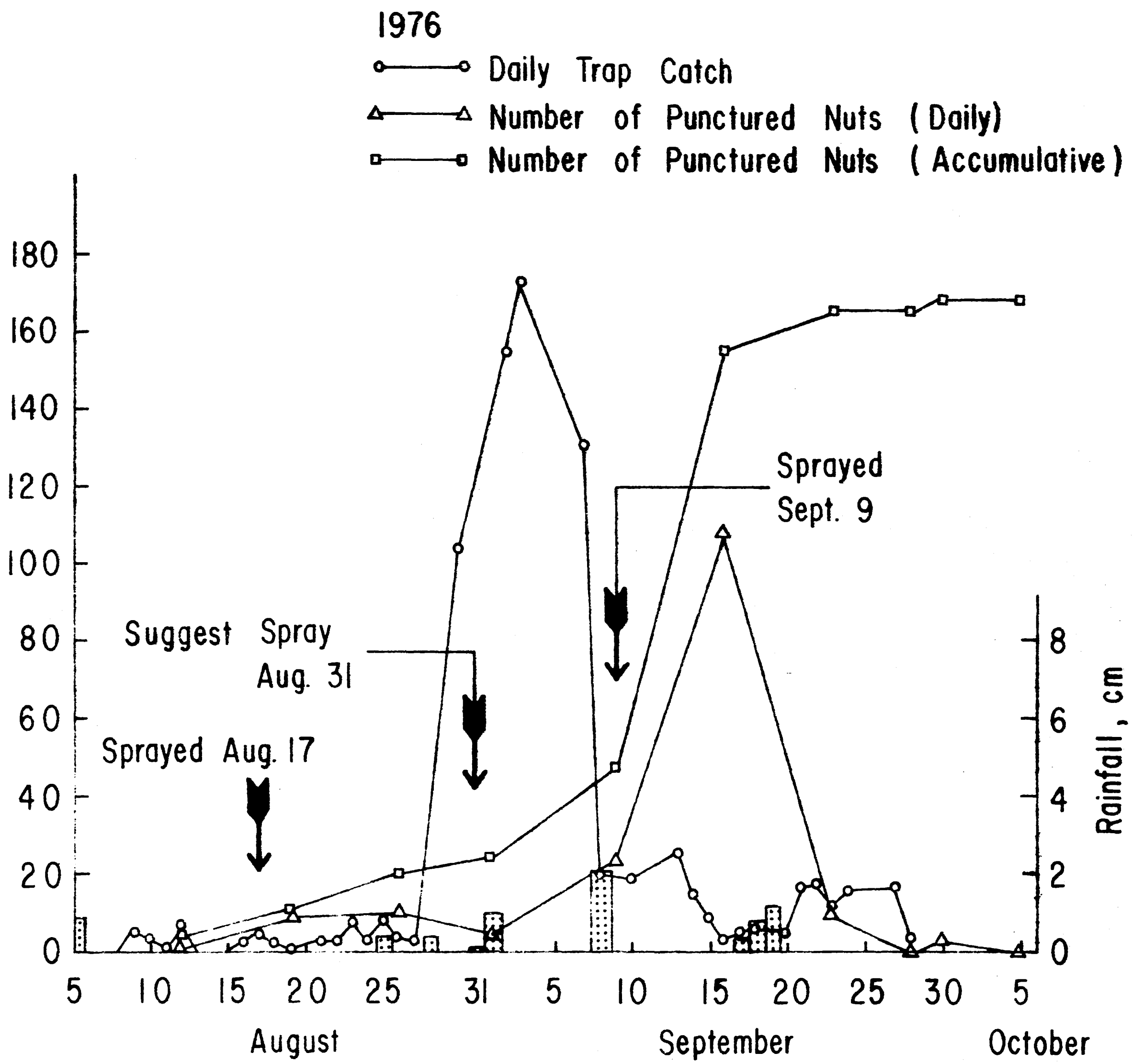
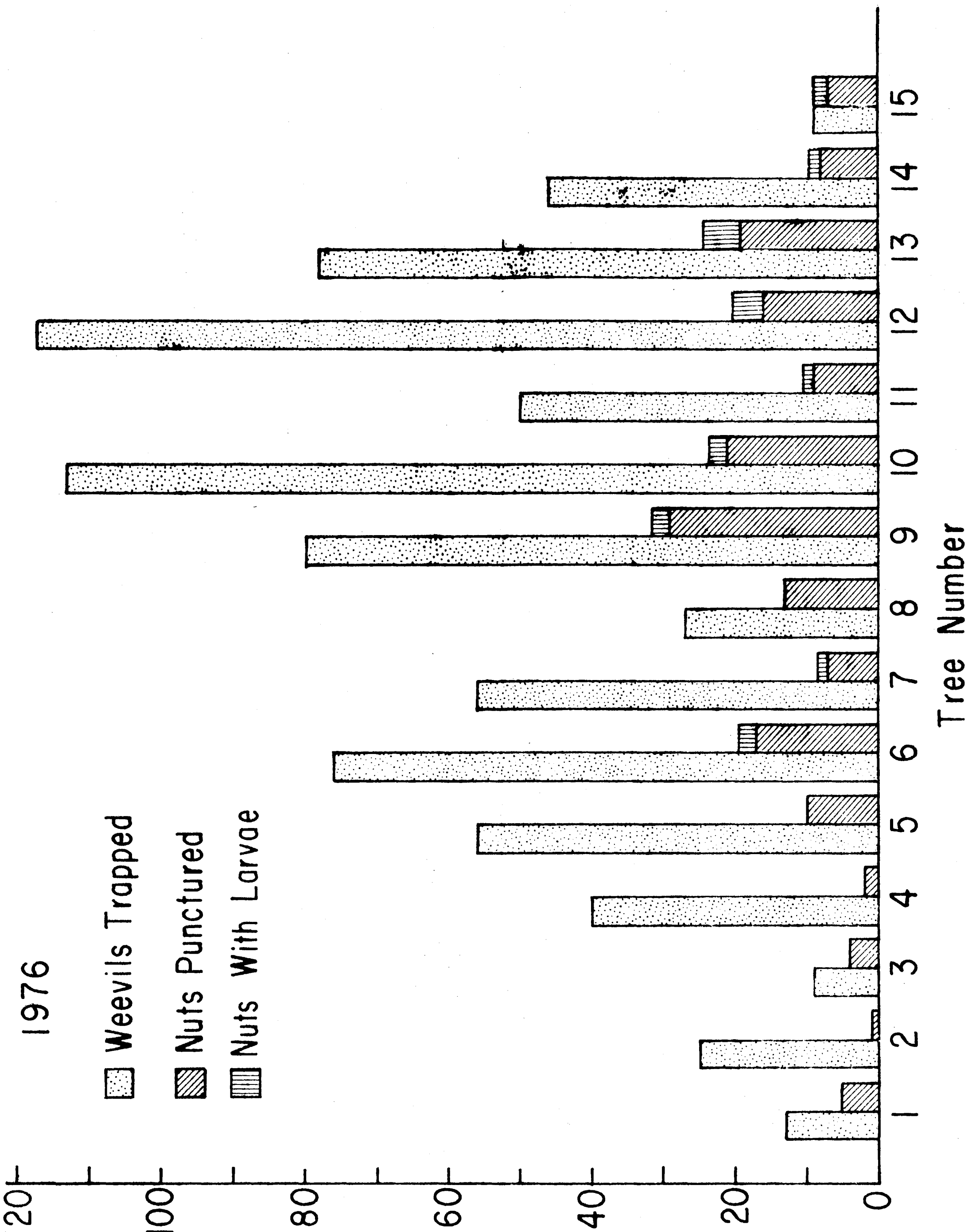

1976
Daily Trap Catch
Number of Punctured Nuts (Daily)
Number of Punctured Nuts (Accumulative)
180
160
140
120
100
80
60
40
20
0
Sprayed Sept. 9
Suggest Spray Aug. 31
Sprayed Aug. 17
8
6
4
2
0
Rainfall, cm
5 10 15 20 25 31 5 10 15 20 25 30 5
August
September
October

Figure 4. Relationship between number of pecan weevil trapped under 15 trees, number of nuts punctured, and number of nuts containing pecan weevil larvae.


1976
Weevils Trapped
Nuts Punctured
Nuts With Larvae
120
100
80
60
40
20
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Tree Number

nuts punctured, tree six with 17 nuts punctured, tree 12 with 16 nuts punctured, tree eight with 13 nuts punctured, tree five with 10 nuts punctured, tree 11 with nine nuts punctured, tree 14 with eight nuts punctured, trees seven and 15 with seven nuts punctured, tree four with two nuts punctured, and tree two with one nut punctured.

Upon dissection of the nuts, it was discovered that 20 nuts contained pecan weevil larvae. Tree 13 had the highest number of nuts containing weevil larvae with five, followed by tree 12 with four, trees six, nine, 10, and 15 with two, and trees seven, 11, and 14 with one (Fig. 4).

All of the nuts containing pecan weevil larvae were punctured between 26 August, 1976 and 23 September, 1976.

Further breakdown of the nuts punctured by the pecan weevil yielded 11 nuts with shriveled or dried kernels, eight nuts with black spots or stained kernels, and 96 undamaged kernels. A total of 42 nuts were lost either to premature nut drop or to "unknown reasons" (other physical and biological factors, or failure to recover the nut at harvest).

Further investigations also indicated that nine of the 20 nuts containing pecan weevil larvae were not previously recorded as being punctured by the pecan weevil. These additional nuts bring the total number of nuts punctured by the pecan weevil to 177.

Tree 12 had the highest number of weevil trapped with 117, followed by tree 10 with 114, tree nine with 80, tree 13 with 77, tree six with 76, trees five and seven with 56, tree 11 with 51, tree 14 with 47, tree four with 40, tree eight with 27, tree two with 25, tree one with 13, tree 15 with 10, and tree three with nine (Fig. 4).

In 1975 a total of 104 nuts (8.18%) were punctured by the pecan weevil out of the 1,271 nuts sampled. Thirty-six (34.62%) or the 104 nuts punctured by the pecan weevil dropped prematurely from the tree. Three nuts dropped from the tree one week after puncturing, 28 nuts dropped two weeks after puncturing, three nuts dropped three weeks after puncturing, and two nuts dropped four weeks after puncturing.

In 1976 a total of 177 nuts (7.86%) out of the 2,250 nuts sampled were punctured by the pecan weevil. Out of the 177 nuts punctured, only nine nuts (5.08%) punctured by the pecan weevil dropped prematurely from the tree, and all of the nuts that dropped prematurely dropped within one week after being punctured.

In 1975 none of the nuts punctured later than 28 August, 1975 dropped from the tree. Thirty-two of the 36 nuts punctured that dropped prematurely were punctured on 20 August, 1975, while the remaining four nuts were punctured on 28 August, 1975. In 1976, seven of the nine nuts punctured which dropped prematurely were punctured on 19 August, 1976, while one nut was punctured on 12 August, 1976, and another nut was punctured on 26 August, 1976.

Even though nut development occurred earlier in 1976 than in 1975 as indicated by shuck split and opening occurring approximately three weeks earlier, it is doubtful that this rapid development was the reason that fewer nuts punctured by the pecan weevil dropped prematurely in 1976 than in 1975.

The probable cause for less premature nut drop in 1976 due to weevil punctures could be attributed to differences in the times when maximum weevil activity occurred. This would tend to support in part the findings of Calcote (1975), in which he noted that the amount and type of damage caused by adult pecan weevils has a direct relationship to population density, time of emergence, longevity of the weevils, and development of the nut.

In 1975 maximum weevil activity occurred between 17 August, 1975 and 31 August, 1975 apparently while the nut kernels were still in the water stage. Between 28 July, 1975 and 31 August, 1975 a total of 957 pecan weevils were trapped from underneath the 10 study trees. In 1976 the period of maximum weevil activity occurred between 26 August, 1976 and 7 September, 1976 during which time the nut kernel and shell was in the firming stage. A total of 134 pecan weevil were trapped from underneath the 15 study trees between 19 August, 1976 and 30 August, 1976, while between 30 August, 1976 and 7 September, 1976 563 pecan weevil were trapped.

Summary

Damage and loss due to the pecan weevil can be classified into three categories; 1) premature nut drop due to adult feeding, 2) kernel damage due to adult feeding, and 3) kernel damage due to oviposition and larval feeding.

Premature nut drop due to adult feeding was apparently due, in part, to the period of time when maximum weevil activity occurred and the stage of development the nut was in at that time. This was exemplified in 1975 when maximum pecan weevil activity occurred, apparently, while the nut was in the water stage. This resulted in large numbers of punctured nuts dropping prematurely. In 1976 maximum weevil activity occurred at a time when nut development was more advanced (nut was in a firming or gel stage), which resulted in fewer nuts dropping prematurely.

Damage to the nut kernel was studied in 1976, and it was found that 19 nuts punctured by the pecan weevil exhibited some type of kernel damage. This damage ranged from a black spot on the kernel to complete destruction of the kernel. Currently, it is not known whether this damage could be attributed solely to the pecan weevil. It is possible that other factors along with the pecan weevil are responsible for the damage to the nut kernels.

In two years only 21 nuts (0.59%) out of 3521 nuts were found to have pecan weevil larvae in them. In 1975 only one nut (0.078%) had pecan weevil larvae, while in 1976 20 nuts (0.88%) had pecan weevil larvae in them. A possible reason for the difference in the number of nuts containing pecan weevil larvae between the two years could again be due to the time when maximum pecan weevil activity occurred. In 1976 maximum pecan weevil activity appeared to occur at a time when the pecan nut was in a stage that was suitable for oviposition. Also, it was during this time that mechanical problems in the spray equipment and rain caused a lengthy delay in spraying, thus allowing the pecan weevil to successfully oviposit.

CHAPTER IV

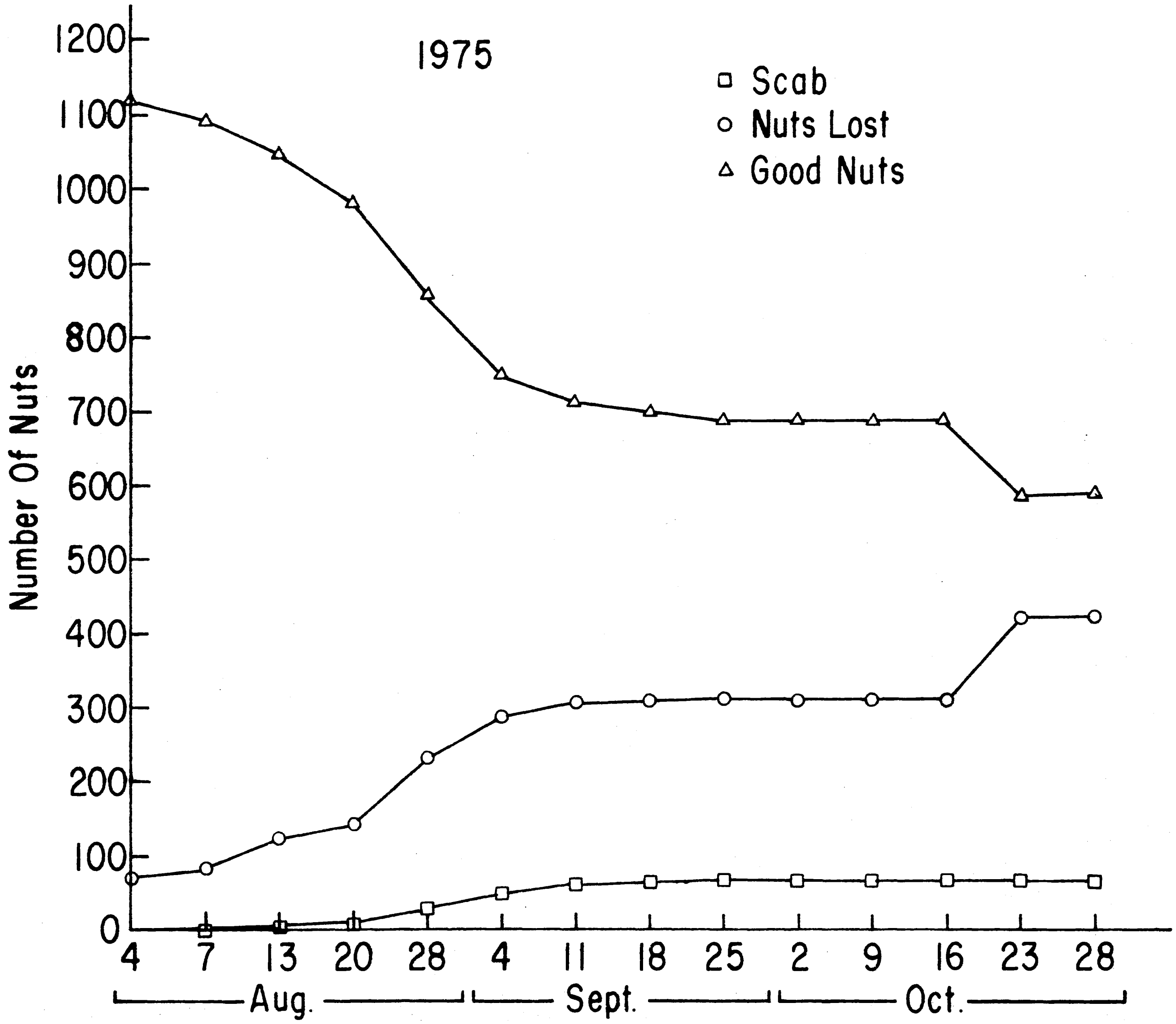
NUT DAMAGE AND LOSS DUE TO DISEASE, OTHER INSECTS, AND "UNKNOWN REASONS"

Disease

"Squirrel" (formerly "Squirrels Delight") is a pecan cultivar that is highly susceptible to pecan scab. Pecan scab is caused by a fungus, Fusicladium effusum Wint., that infects young developing leaves and shoots and also infects developing nuts (Osburn et al., 1963; and Johnson, 1976). The nut surface of severely-infected nuts may be entirely blackened as a result of the coalesence of scab lesions. Severe infection by pecan scab also results in failure of the kernel to develop and premature nut drop (Osburn et al., 1963; and Johnson, 1976).

In 1975, 74 nuts were classified as having scab, and only 12 of the 74 nuts classified as having scab dropped prematurely (Fig. 5). A nut was classified as having scab only if two-thirds or more of the nut surface was covered with scab lesions. In other words, only severely infected nuts were classified as having scab. In 1975 a large number of nuts were lost due to unknown reasons and it is possible that many of these nuts were lost as a result of being infected with scab (Fig. 5). Therefore, in 1976, the degree of scab infection was taken into account to try and determine more accurately how much

Figure 5. Nut survival curve illustrating the relationship between the number of good nuts, scab infected nuts, and lost nuts for 1975.


1975
Scab
Nuts Lost
Good Nuts
Number Of Nuts
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
4
7
13
20
28
4
11
18
25
2
9
16
23
28
Aug.
Sept.
Oct.

damage and nut drop could be attributed to scab.

The degree of scab infection was divided into three categories; light scab (one lesion up to 1/3 of the nut surface covered); medium scab (1/3 to 2/3 of the nut surface covered), and heavy scab (2/3 or more of the nut surface covered).

A total of 1,292 nuts (57.4%) out of the 2,250 nuts sampled were classified as having scab. A total of 576 nuts (25.6%) had light scab, 458 nuts (20.4%) had medium scab, and 258 nuts (11.5%) had heavy scab (Fig. 6).

Out of the 1,292 nuts which were indicated as having scab, 451 nuts dropped prematurely. Of these nuts, 144 nuts dropped with a heavy scab rating, 137 nuts dropped with a medium scab rating, and 170 nuts dropped with a light scab rating.

It is doubtful whether the nuts that had light scab or even some of the nuts that had medium scab could have dropped from the tree as a result of scab alone. Man, animals, and other physical or biological factors may have also had some effect on the number of nuts with light and medium scab that dropped prematurely from the trees.

The final evaluation indicated that 293 nuts contained shriveled or dried kernels. Eleven of these nuts were punctured by the pecan weevil, possibly causing the kernel to shrivel. However, 282 of the nuts classified as having shriveled or dried kernels were not punctured by the pecan weevil, and these nuts were classified as having scab to some degree.

The nuts which were categorized as having heavy scab were very small in size and severely deformed (Fig. 7a), and the kernels were always shriveled or dried up, and in many instances, the nuts with

Figure 6. Nut survival curve illustrating the relationship between the number of good nuts, scab infected nuts, and lost nuts for 1976.

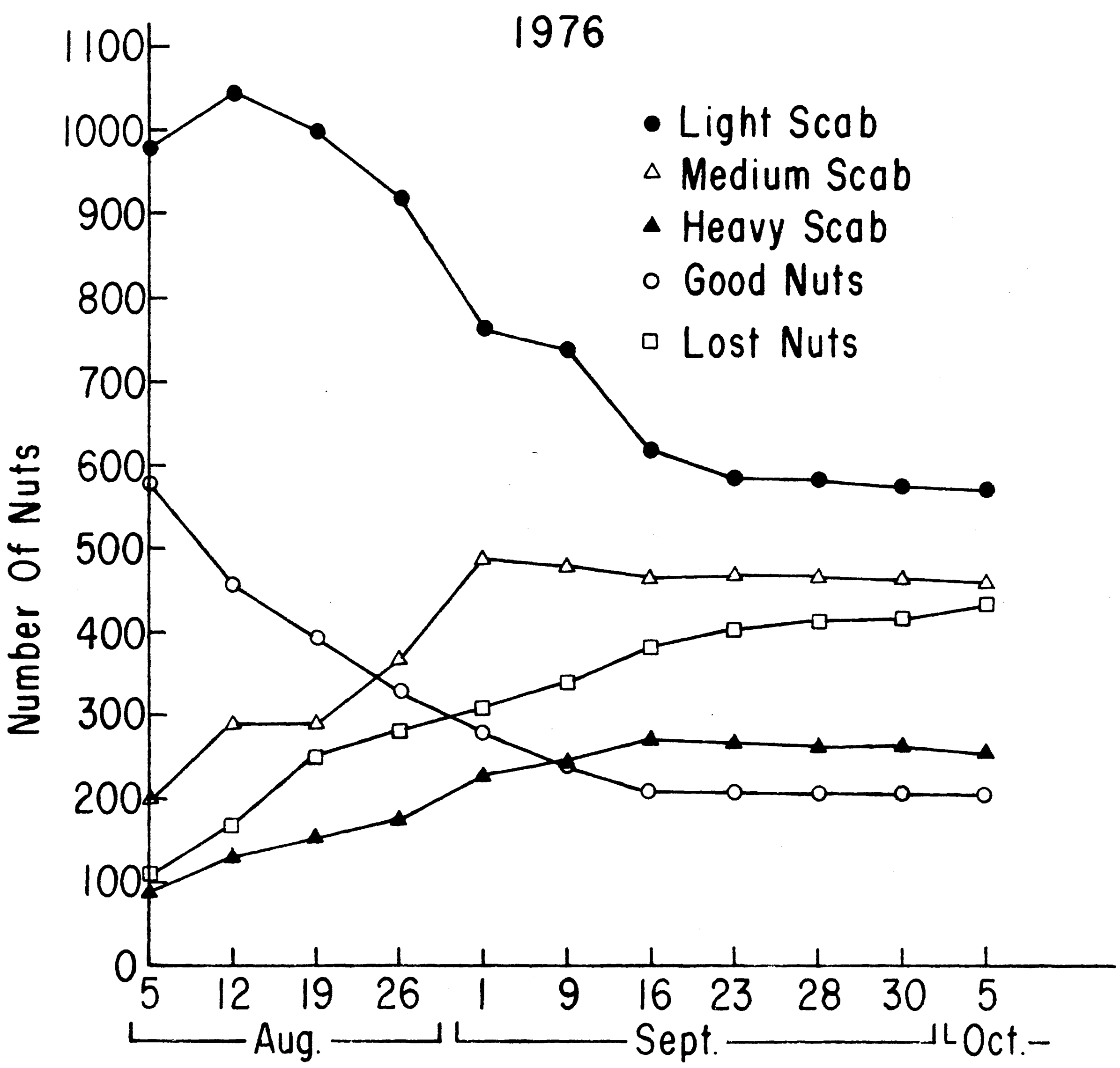
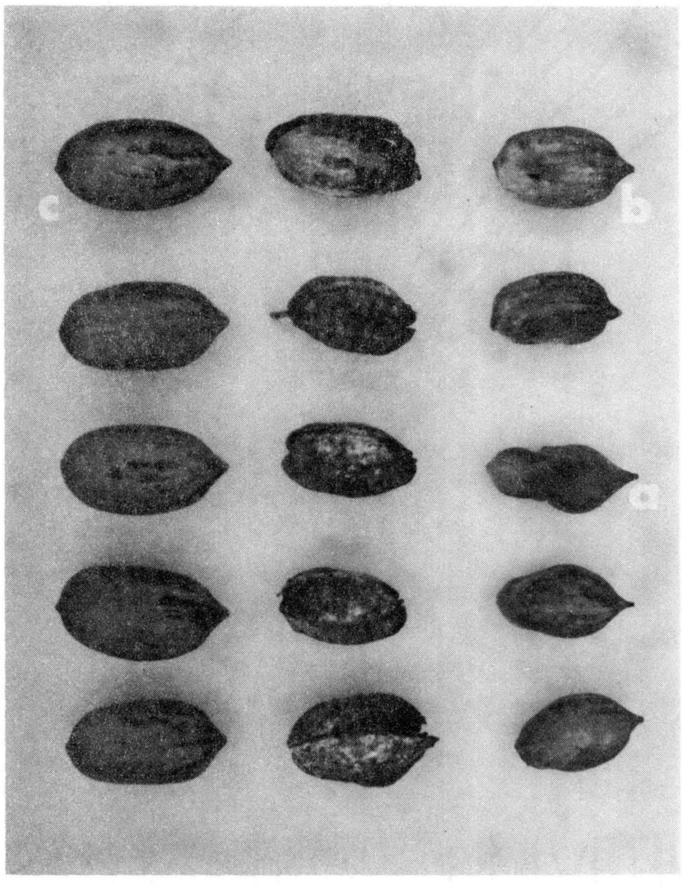

1976
Light Scab
Medium Scab
Heavy Scab
Good Nuts
Lost Nuts
Number Of Nuts
0
100
200
300
400
500
600
700
800
900
1000
1100
5
12
19
26
1
9
16
23
28
30
5
Aug.
Sept.
Oct.

Figure 7. Effects of light scab, medium scab, and heavy scab on external appearance of pecan nuts.


c
b
a

medium scab also had shriveled or dried kernels, with the nut being smaller and dirtier in appearance than a good nut (Fig. 7b). The nuts which were categorized as having light scab generally yielded good kernels, with no visible damage to the nut (Fig. 7c).

Other Insects

Damage caused by two other important pecan pests, the pecan nut casebearer and the hickory shuckworm were also investigated.

In 1975 and 1976 no pecan nut casebearer damage was found. A possible explanation for this is that the most destructive generation, the first generation, appears in Oklahoma in late May and early June. Heavy nut drop as a result of larval feeding generally occurs through June and into early July. As a result, most of the pecan nut casebearer damage had already occurred prior to the initiation of the study.

Earlier, Noble Foundation personnel indicated that the hickory shuckworm was not a problem in their orchard. Data collected in 1975 and 1976 tend to support this statement. During both years, only two nuts were noted as having shuckworms, with both nuts showing no signs of damage. However, a check of three trees in an adjacent unmanaged plot yielded entirely different results. Samples (100 nuts/tree) taken from the trees indicated that approximately 40-50% of the nuts showed signs of heavy shuckworm infestation.

The differences in the shuckworm populations apparently are due to the orchard management practices that have been implemented, such as discing of the orchard floor and the spray schedule that is utilized for control of the other insect pests. These practices appear to have kept the number of hickory shuckworms at very low levels within the managed portion of the orchard.

"Unknown Reasons"

During the two years that this study was conducted nut loss due to "unknown reasons" accounted for fairly large numbers of lost pecan nuts.

In 1975, 422 nuts (33.2%) were lost prematurely and of these nuts 374 nuts (29.4%) were lost due to "unknown reasons". Due to the classification system that was used it is possible that many of these nuts may have been lost either directly or indirectly to pecan scab.

In 1976 a total of 698 nuts (31.2%) were lost, and of these nuts 115 nuts (5.1%) were lost for "unknown reasons". These particular nuts were either categorized as good nuts or they dropped before the observations were conducted.

Although it is not known what the actual cause of nut loss was, it is possible that many physical and biological factors could have contributed to nut loss. Some of the physical factors that might have contributed to nut loss include spraying, high winds, and maybe heavy rains; while some of the biological factors possibly contributing to nut loss include man, animals, and possibly the physiological characteristics of the tree.

Summary

Only 74 nuts (5.8%) were classified as having scab in 1975, and only 12 of these nuts dropped prematurely. The reason for such low numbers is that only the severely infected nuts were categorized as having scab. In 1976 scab was categorized into three groups 1) light scab, 2) medium scab, and 3) heavy scab. With this system of classification more nuts were found to be scab infected. In 1976 a total of 1,292 nuts (57.4%) were found to be infected with scab, and a total of 451 of these nuts dropped prematurely. The only nuts that were considered as dropping as a result of scab alone were those nuts that were categorized as having heavy scab. Besides premature nut drop, 282 nuts that were classified as having scab had shriveled or dried up kernels. The nuts with heavy scab were always shriveled up and severely deformed, while those that were categorized as having medium scab also had shriveled or dried up kernels. Nuts with light scab generally yielded undamaged kernels.

During the time this study was conducted damage and loss due to other insects was almost nonexistent. No pecan nut casebearer damage was noted and hickory shuckworm damage occurred on only two nuts.

Damage due to "unknown reasons" accounted for fairly large numbers of lost nuts. In 1975, 394 nuts (29.4%) were lost due to "unknown reasons", while in 1976, 115 nuts (5.1%) were lost for "unknown reasons". It is not known what the actual reason is for this loss. Nut loss could be the result of many physical and biological factors such as man, animals, high winds, and orchard management practices such as spraying.

CHAPTER V

CONCLUSIONS

The three major causes of nut damage and nut loss were caused by the pecan weevil, pecan scab, and "unknown reasons". These three factors accounted for ca. one-half of the nut damage and nut loss during this study. Other insects such as the pecan nut casebearer and the hickory shuckworm were apparently of no importance at the time this study was conducted, although the pecan nut casebearer has the potential to become a problem early in the season.

Chi-square tests were conducted to determine if the distribution of nut damage and nut loss between the trees was uniform. The results from this test indicated that nut damage and nut loss apparently was not uniformly distributed between the trees. Further research in this area needs to be conducted to determine what type of distribution exists.

From the results of this study it can be seen that emphasis should be placed on all types of damage caused by the pecan weevil. Most growers are only concerned with weevil larvae in the nut since their presence is readily detectable. However, premature nut drop and damage kernels as a result of pecan weevil feeding are equally capable of resulting in serious nut loss.

Emphasis should also be placed on disease control, especially if a cultivar of pecan is susceptible to a particular disease. Here, early detection and control are of the utmost importance.

Nut loss as a result of "unknown reasons" is also very important. However, further research needs to be conducted to determine what actually causes this type of nut loss and how much occurs.

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APPENDIX A

NUT DAMAGE AND NUT LOSS

DATA FOR 1975

1975 Appendix A Code

MO = Month

DA = Day

TR = Tree Number

CD = Card Number

Card Number 1 = Nuts 1 -11

2 = Nuts 12-22

3 = Nuts 23-33

4 = Nuts 34-44

5 = Nuts 45-55

6 = Nuts 56-66

7 = Nuts 67-77

8 = Nuts 78-88

9 = Nuts 89-99

10 = Nuts 100-110

11 = Nuts 111-121

12 = Nuts 122-132

13 = Nuts 133-136

0 = Good Nuts

L = Lost Nuts

A = Nuts Punctured by the Pecan Weevil

D = Scab Infected Nuts

R = Nuts Rejected from the Sample

MO DA YR	TR	CD										TR	CD										TR	CD										TR	CD									
080475	01	01	0	0	0	0	0	0	0	0	0	01	04	L	R	0	0	0	0	R	0	0	01	07	0	0	0	0	0	0	R	0	0	01	10	0	0	0	0	0	0	0	0	0
080775	01	01	0	0	0	0	0	0	0	0	0	01	04	L	R	0	0	0	0	R	0	0	01	07	0	0	0	0	0	0	R	0	0	01	10	0	0	0	0	0	0	0	0	0
081375	01	01	0	0	0	0	0	L	0	0	0	01	04	L	R	0	0	0	0	R	0	0	01	07	0	0	0	0	0	0	R	0	0	01	10	0	0	0	0	0	0	0	0	L
082075	01	01	0	0	0	0	0	L	A	0	0	01	04	L	R	0	0	0	0	R	0	0	01	07	0	A	0	0	0	0	R	0	0	01	10	L	0	0	0	0	0	0	0	L
082875	01	01	0	0	0	0	0	L	A	0	0	01	04	L	R	L	0	0	L	R	0	0	01	07	0	A	0	0	0	L	R	0	0	01	10	L	0	0	0	0	0	0	D	L
090475	01	01	0	0	A	L	L	L	A	0	0	01	04	L	R	L	L	0	L	R	0	0	01	07	0	A	L	0	0	L	R	0	0	01	10	L	0	0	0	0	0	0	D	L
091175	01	01	0	0	A	L	L	L	A	0	0	01	04	L	R	L	L	0	L	R	0	0	01	07	0	A	L	0	0	L	R	0	0	01	10	L	0	0	0	D	0	0	D	L
091875	01	01	0	0	A	L	L	L	A	0	0	01	04	L	R	L	L	0	L	R	0	0	01	07	0	A	L	0	0	L	R	0	0	01	10	L	0	0	0	D	0	0	D	L
092575	01	01	0	0	A	L	L	L	A	0	0	01	04	L	R	L	L	0	L	R	0	0	01	07	0	A	L	0	0	L	R	0	0	01	10	L	0	0	0	D	0	0	D	L
100275	01	01	0	0	A	L	L	L	A	0	0	01	04	L	R	L	L	0	L	R	0	0	01	07	0	A	L	0	0	L	R	0	0	01	10	L	0	0	0	D	0	0	D	L
100975	01	01	0	0	A	L	L	L	A	0	0	01	04	L	R	L	L	0	L	R	0	0	01	07	0	A	L	0	0	L	R	0	0	01	10	L	0	0	0	D	0	0	D	L
101675	01	01	0	0	A	L	L	L	A	0	0	01	04	L	R	L	L	0	L	R	0	0	01	07	0	A	L	0	0	L	R	0	0	01	10	L	0	0	0	D	0	0	D	L
102375	01	01	0	0	A	L	L	L	A	0	0	01	04	L	R	L	L	0	L	R	0	0	01	07	0	A	L	0	0	L	R	0	0	01	10	L	0	0	0	D	0	0	D	L
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080475	01	02	0	0	0	0	0	0	0	0	0	01	05	0	0	0	0	0	0	0	0	0	01	08	0	0	0	L	0	R	0	0	0	01	11	0	0	0	0	0	R	R	0	0
080775	01	02	0	0	0	0	0	0	0	0	L	01	05	0	0	0	0	0	0	0	0	0	01	08	0	0	0	0	0	R	0	0	0	01	11	0	0	0	0	L	R	R	0	0
081375	01	02	0	0	0	0	0	0	0	0	L	01	05	0	0	0	0	0	0	0	0	0	01	08	0	0	0	0	0	R	0	0	0	01	11	0	0	0	0	L	R	R	0	0
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100975	01	02	A	A	L	L	L	0	A	0	L	01	05	0	L	0	0	0	0	0	0	0	01	08	L	L	0	0	0	R	0	0	0	01	11	0	L	0	0	L	R	R	L	0
101675	01	02	A	A	L	L	L	0	A	0	L	01	05	0	L	0	0	0	0	0	0	0	01	08	L	L	0	0	0	R	0	0	0	01	11	0	L	0	0	L	R	R	L	0
102375	01	02	A	A	L	L	L	0	A	0	L	01	05	0	L	0	0	0	0	0	0	0	01	08	L	L	0	0	0	R	0	0	0	01	11	0	L	0	0	L	R	R	L	0
102875	01	02	A	A	L	L	L	0	A	0	L	01	05	0	L	0	0	0	0	0	0	0	01	08	L	L	0	0	0	R	0	0	0	01	11	0	L	0	0	L	R	R	L	0
080475	01	03	0	0	0	0	0	0	0	0	R	01	06	0	0	0	0	0	0	0	R	0	01	09	0	0	0	0	0	L	0	0	0	01	12	0	0	R	0	0	0			
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101675	01	03	0	L	0	D	0	A	0	0	R	01	06	L	D	0	0	0	0	A	R	D	01	09	A	0	L	L	D	L	L	A	L	01	12	L	D	R	L	L	L			
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102875	01	03	L	L	0	D	0	A	0	0	R	01	06	L	D	0	L	0	0	A	R	D	01	09	A	0	L	L	D	L	L	A	L	01	12	L	D	R	L	L	L			

MO DA YR	TR	CD										TR	CD										TR	CD										TR	CD									
080475	02	01	0	0	0	0	0	0	0	0	R	02	04	0	0	0	0	0	0	0	0	0	02	07	0	0	0	0	0	0	0	0	0	02	10	0	0	R	0	0	0	R	0	0
080775	02	01	0	0	0	0	0	0	0	0	R	02	04	0	0	0	0	0	0	0	0	0	02	07	0	0	0	0	0	0	0	0	0	02	10	0	0	R	0	0	0	R	0	0
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090475	02	01	0	0	0	L	0	0	0	0	R	02	04	0	0	0	0	0	0	L	0	0	02	07	0	L	D	0	0	0	0	0	0	02	10	0	0	R	0	L	0	R	0	0
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101675	02	01	0	0	0	L	0	0	0	0	R	02	04	0	D	0	0	0	0	L	0	0	02	07	0	L	D	L	0	0	0	0	0	02	10	0	0	R	0	L	0	R	0	0
102375	02	01	0	0	L	L	0	0	0	0	R	02	04	0	D	0	0	0	L	L	0	0	02	07	0	L	D	L	0	0	0	L	0	02	10	0	0	R	0	L	0	R	0	0
102875	02	01	0	0	L	L	0	0	0	0	R	02	04	0	D	0	0	0	L	L	0	0	02	07	0	L	D	L	0	0	0	L	0	02	10	0	0	R	0	L	0	R	0	0
080475	02	02	0	0	0	0	0	0	0	0	L	02	05	0	0	R	0	0	0	0	0	0	02	08	0	0	0	0	0	0	0	0	0	02	11	0	0	0	0	0	0	0	0	L
080775	02	02	0	0	0	0	0	0	0	0	L	02	05	0	0	R	0	0	0	0	0	0	02	08	0	0	0	0	0	0	0	0	0	02	11	0	0	0	0	0	0	0	0	L
081375	02	02	0	0	0	0	0	0	0	0	L	02	05	0	0	R	0	0	0	0	0	0	02	08	0	0	0	0	0	0	0	0	0	02	11	0	0	0	0	0	0	0	0	L
082075	02	02	L	0	0	0	0	0	0	0	L	02	05	0	0	R	0	0	0	0	0	0	02	08	0	0	0	0	0	0	0	0	0	02	11	0	L	0	0	0	0	0	0	L
082875	02	02	L	0	0	0	0	0	0	0	L	02	05	0	0	R	0	0	0	0	0	0	02	08	0	0	0	0	0	0	0	0	0	02	11	0	L	0	0	0	0	0	0	L
090475	02	02	L	0	0	0	0	L	0	A	L	02	05	0	0	R	0	0	0	0	0	0	02	08	0	0	A	A	0	0	0	0	0	02	11	L	L	0	0	0	0	0	0	L
091175	02	02	L	0	0	0	0	L	0	A	L	02	05	0	0	R	0	0	0	0	0	0	02	08	0	0	A	A	0	0	0	0	0	02	11	L	L	0	0	0	0	0	0	L
091875	02	02	L	0	0	0	0	L	0	A	L	02	05	0	D	R	0	0	0	0	0	0	02	08	0	0	A	A	0	0	0	0	0	02	11	L	L	0	0	0	0	0	0	L
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080475	02	03	0	0	0	0	0	0	0	0	0	02	06	0	0	0	0	0	0	0	0	0	02	09	0	0	0	R	0	0	0	0	0	02	12	0	R	0	0	0	0	0	R	
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MO DA YR	TR	CD										TR	CD										TR	CD										TR	CD									
080475	03	01	L	0	0	0	0	0	0	0	0	03	04	0	0	0	0	0	0	0	0	0	03	07	0	0	L	0	0	0	0	0	0	03	10	0	0	L	R	L	0	0	0	L
080775	03	01	L	0	0	0	0	0	0	0	0	03	04	0	0	0	0	0	0	0	0	0	03	07	0	0	L	0	0	0	0	0	0	03	10	0	0	L	R	L	0	0	0	L
081375	03	01	L	0	0	0	0	0	0	0	0	03	04	0	0	0	0	0	0	0	0	L	03	07	0	0	L	0	0	0	0	0	0	03	10	0	0	L	R	L	0	0	0	L
082075	03	01	L	0	0	0	0	0	0	0	0	03	04	0	0	0	0	0	0	0	0	L	03	07	0	0	L	0	0	0	0	0	0	03	10	0	L	L	R	L	0	0	0	L
082875	03	01	L	0	0	0	0	0	0	0	0	03	04	0	0	D	0	0	0	0	0	L	03	07	0	0	L	0	A	0	0	L	0	03	10	0	L	L	R	L	0	0	0	L
090475	03	01	L	0	0	0	0	0	0	0	0	03	04	0	0	D	0	0	0	0	0	L	03	07	0	0	L	0	A	0	0	L	D	03	10	L	L	L	R	L	0	0	0	L
091175	03	01	L	0	0	0	0	0	0	0	0	03	04	0	0	D	0	0	0	0	0	L	03	07	0	0	L	0	A	0	0	L	D	03	10	L	L	L	R	L	0	0	D	L
091875	03	01	L	0	0	0	0	0	0	0	0	03	04	0	0	D	0	0	0	0	0	L	03	07	0	0	L	0	A	0	0	L	D	03	10	L	L	L	R	L	0	0	D	L
092575	03	01	L	0	0	0	0	0	0	0	0	03	04	0	0	D	0	0	0	0	0	L	03	07	0	0	L	0	A	0	0	L	D	03	10	L	L	L	R	L	0	0	D	L
100275	03	01	L	0	0	0	0	0	0	0	0	03	04	0	0	D	0	0	0	0	0	L	03	07	0	0	L	0	A	0	0	L	D	03	10	L	L	L	R	L	0	0	D	L
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101675	03	01	L	0	0	0	0	0	0	0	0	03	04	0	0	D	0	0	0	0	0	L	03	07	0	0	L	0	A	0	0	L	D	03	10	L	L	L	R	L	0	0	D	L
102375	03	01	L	0	0	L	0	0	0	0	0	03	04	0	0	D	0	L	0	0	L	L	03	07	0	0	L	0	A	0	0	L	D	03	10	L	L	L	R	L	0	L	D	L
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080475	03	02	0	0	L	0	0	0	0	0	0	03	05	0	0	0	0	R	0	0	0	0	03	08	0	0	0	0	0	0	0	0	0	03	11	0	0	0	0	0	0	0	0	0
080775	03	02	0	0	L	0	0	0	0	0	0	03	05	0	0	0	0	R	0	0	0	0	03	08	0	0	0	0	0	0	0	0	0	03	11	0	0	0	0	0	0	0	0	0
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102375	03	02	0	L	L	0	0	0	0	A	L	03	05	0	A	A	L	R	0	0	0	0	03	08	L	0	0	0	0	0	0	L	L	03	11	A	0	0	L	0	0	0	L	L
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MO DA YR	TR	CD										TR	CD										TR	CD										TR	CD									
080475	04	01	0	0	R	0	0	0	0	0	L	04	04	L	0	0	0	0	0	0	0	0	04	07	0	0	0	0	0	0	0	0	0	04	10	L	0	0	0	0	0	0	0	0
080775	04	01	0	0	R	0	0	0	0	0	L	04	04	L	0	0	0	0	0	0	0	0	04	07	0	0	0	0	0	0	0	0	0	04	10	L	0	0	0	0	0	0	0	0
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080475	04	02	0	0	0	0	0	0	0	0	0	04	05	0	0	0	0	0	0	0	0	0	04	08	0	0	0	0	0	0	0	0	0	04	11	0	0	0	0	0	0	0	0	0
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082075	04	02	0	0	0	0	0	L	0	0	0	04	05	0	0	0	A	L	0	0	0	0	04	08	L	0	0	0	0	0	0	0	0	04	11	0	0	0	0	A	L	0	0	0
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091175	04	02	0	0	0	0	0	L	0	0	0	04	05	L	L	0	A	L	0	0	L	L	04	08	L	0	0	0	0	0	0	0	D	04	11	0	0	0	0	A	L	0	0	0
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092575	04	02	0	0	0	0	0	L	0	0	0	04	05	L	L	0	A	L	0	0	L	L	04	08	L	0	0	0	0	0	L	L	D	04	11	0	0	0	0	A	L	0	0	0
100275	04	02	0	0	0	0	0	L	0	0	0	04	05	L	L	0	A	L	0	0	L	L	04	08	L	0	0	0	0	0	L	L	D	04	11	0	0	0	0	A	L	0	0	0
100975	04	02	0	0	0	0	0	L	0	0	0	04	05	L	L	0	A	L	0	0	L	L	04	08	L	0	0	0	0	0	L	L	D	04	11	0	0	0	0	A	L	0	0	0
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102375	04	02	L	L	0	0	L	L	0	0	0	04	05	L	L	0	A	L	L	0	L	L	04	08	L	0	L	0	0	0	L	L	D	04	11	0	0	0	0	A	L	0	0	0
102875	04	02	L	L	0	0	L	L	0	0	0	04	05	L	L	0	A	L	L	0	L	L	04	08	L	0	L	0	0	0	L	L	D	04	11	0	0	0	0	A	L	0	0	0
080475	04	03	0	0	0	0	0	0	L	0	0	04	06	0	0	0	0	L	0	0	0	0	04	09	0	0	0	0	0	0	0	0	0	04	12	0	0	0	0	0	0	R	0	
080775	04	03	0	0	0	0	0	0	L	0	0	04	06	0	0	0	0	L	0	0	0	0	04	09	0	0	0	0	0	0	0	0	0	04	12	0	0	0	0	0	0	R	[illegible]	
081375	04	03	0	0	0	0	0	0	L	0	0	04	06	0	0	0	0	L	0	0	0	0	04	09	0	0	0	L	L	L	0	0	0	04	12	0	0	0	0	0	0	R	0	
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092575	04	03	0	0	0	L	0	0	L	0	L	04	06	0	L	D	0	L	0	0	0	L	04	09	L	D	D	L	L	L	L	L	D	04	12	L	A	0	0	0	D	R	A	
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100975	04	03	0	0	0	L	0	0	L	0	L	04	06	0	L	D	0	L	0	0	0	L	04	09	L	D	D	L	L	L	L	L	D	04	12	L	A	0	0	0	D	R	A	
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102375	04	03	0	0	0	L	0	L	L	0	L	04	06	0	L	D	0	L	0	0	0	L	04	09	L	D	D	L	L	L	L	L	D	04	12	L	A	0	0	0	D	R	A	
102875	04	03	0	0	0	L	0	L	L	0	L	04	06	0	L	D	0	L	0	0	0	L	04	09	L	D	D	L	L	L	L	L	D	04	12	L	A	0	0	0	D	R	A	

MO DA YR	TR	CD										TR	CD										TR	CD										TR	CD									
080475	05	01	L	0	0	0	0	0	0	R	R	05	04	0	0	0	0	0	0	0	0	0	05	07	0	0	0	0	0	0	0	0	0	05	10	0	0	0	0	0	0	0	0	0
080775	05	01	L	0	0	0	0	0	0	R	R	05	04	0	0	0	0	0	0	0	0	0	05	07	0	0	0	0	0	0	0	0	0	05	10	0	0	0	0	0	0	0	0	0
081375	05	01	L	0	0	0	0	0	0	R	R	05	04	0	0	0	0	0	0	0	0	0	05	07	0	0	0	0	0	0	0	0	0	05	10	0	0	0	0	0	0	0	0	0
082075	05	01	L	0	A	0	0	A	0	R	R	05	04	0	0	0	A	0	A	A	0	0	05	07	A	0	0	0	0	0	0	0	0	05	10	0	0	0	0	0	0	0	0	0
082875	05	01	L	0	A	0	L	A	0	R	R	05	04	0	L	0	A	0	A	A	0	0	05	07	A	0	0	0	0	0	0	0	0	05	10	0	0	0	0	0	0	0	0	0
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080475	05	02	0	0	0	0	0	A	0	A	0	05	05	0	0	0	0	0	0	0	R	0	05	08	0	0	0	0	0	0	0	0	0	05	11	0	0	0	0	0	0	0	0	0
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081375	05	02	0	0	0	0	0	A	0	A	0	05	05	0	0	0	0	0	0	0	R	0	05	08	0	0	0	0	0	0	0	0	0	05	11	0	0	0	0	0	0	0	0	0
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091175	05	02	0	A	0	A	0	A	A	A	0	05	05	A	A	A	0	0	0	A	R	0	05	08	0	A	0	A	0	0	L	A	0	05	11	0	0	A	A	0	0	0	0	0
091875	05	02	0	A	0	A	0	A	A	A	0	05	05	A	A	A	0	0	0	A	R	0	05	08	0	A	0	A	0	0	L	A	0	05	11	0	0	A	A	0	0	0	0	0
092575	05	02	0	A	0	A	0	A	A	A	0	05	05	A	A	A	0	0	0	A	R	0	05	08	0	A	0	A	0	0	L	A	0	05	11	0	L	A	A	0	0	0	0	0
100275	05	02	0	A	0	A	0	A	A	A	0	05	05	A	A	A	0	0	0	A	R	0	05	08	0	A	0	A	0	0	L	A	0	05	11	0	L	A	A	0	0	0	0	0
100975	05	02	0	A	0	A	0	A	A	A	0	05	05	A	A	A	0	0	0	A	R	0	05	08	0	A	0	A	0	0	L	A	0	05	11	0	L	A	A	0	0	0	0	0
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080475	05	03	0	0	0	0	0	0	0	0	0	05	06	0	0	L	0	0	0	0	0	0	05	09	0	0	0	0	0	0	0	0	0	05	12	0	0							
080775	05	03	0	0	0	0	0	0	0	0	0	05	06	0	0	L	0	0	0	0	0	0	05	09	0	0	0	0	0	0	0	0	0	05	12	0	0							
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082875	05	03	0	0	0	L	0	0	0	0	0	05	06	0	0	L	0	0	0	0	0	0	05	09	0	0	0	0	0	0	0	0	0	05	12	0	0							
090475	05	03	A	0	A	L	0	A	0	A	0	05	06	0	A	L	0	0	0	0	0	0	05	09	0	0	0	0	0	0	0	A	0	05	12	0	0							
091175	05	03	A	0	A	L	0	A	0	A	0	05	06	0	A	L	0	0	0	0	0	0	05	09	0	0	0	0	0	0	0	A	0	05	12	0	0							
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092575	05	03	A	0	A	L	0	A	0	A	0	05	06	0	A	L	0	L	0	0	A	A	05	09	0	0	0	0	0	0	0	A	0	05	12	D	D							
100275	05	03	A	0	A	L	0	A	0	A	0	05	06	0	A	L	0	L	0	0	A	A	05	09	0	0	0	0	0	0	0	A	0	05	12	D	D							
100975	05	03	A	0	A	L	0	A	0	A	0	05	06	0	A	L	0	L	0	0	A	A	05	09	0	0	0	0	0	0	0	A	0	05	12	D	D							
101675	05	03	A	0	A	L	0	A	0	A	0	05	06	0	A	L	0	L	0	0	A	A	05	09	0	0	0	0	0	0	0	A	0	05	12	D	D							
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102875	05	03	A	0	A	L	0	A	0	A	0	05	06	0	A	L	0	L	0	0	A	A	05	09	0	0	0	0	0	0	0	A	0	05	12	D	D							

MO DA YR	TR	CD										TR	CD										TR	CD										TR	CD									
080475	06	01	0	0	0	0	0	0	0	0	0	06	04	0	L	0	L	0	0	0	0	0	06	07	L	0	0	0	0	R	R	0	0	06	10	L	L	0	0	0	0	0	0	0
080775	06	01	0	0	0	0	0	0	0	0	0	06	04	0	L	0	L	0	0	0	0	0	06	07	L	0	0	0	0	R	R	0	0	06	10	L	L	0	0	0	0	0	0	0
081375	06	01	0	0	0	0	0	0	0	0	0	06	04	0	L	0	L	0	0	0	0	0	06	07	L	0	0	0	0	R	R	0	0	06	10	L	L	0	0	0	0	0	0	0
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092575	06	01	0	0	0	0	0	0	L	0	0	06	04	D	L	0	L	0	0	0	0	0	06	07	L	L	L	0	L	R	R	0	0	06	10	L	L	A	0	0	0	0	0	0
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101675	06	01	0	0	0	0	0	0	L	0	0	06	04	D	L	0	L	0	0	0	0	0	06	07	L	L	L	0	L	R	R	0	0	06	10	L	L	A	0	0	0	0	0	0
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080475	06	02	0	0	0	0	0	0	0	0	0	06	05	0	0	0	0	0	0	0	0	0	06	08	0	0	0	0	0	0	0	0	0	06	11	0	0	L	L	L	L	0	0	0
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102375	06	02	0	0	L	D	0	0	A	L	0	06	05	0	D	D	A	0	L	0	0	0	06	08	D	D	0	L	D	L	L	L	L	06	11	0	0	L	L	L	L	L	L	L
102875	06	02	0	0	L	D	0	0	A	L	0	06	05	0	D	D	A	0	L	0	0	0	06	08	D	D	0	L	D	L	L	L	L	06	11	0	0	L	L	L	L	L	L	L
080475	06	03	0	0	0	0	0	R	R	0	0	06	06	0	R	0	0	0	0	0	0	0	06	09	L	L	0	0	0	R	R	R	0	06	12	0	0							
080775	06	03	0	0	0	0	0	R	R	0	0	06	06	0	R	0	0	0	0	0	0	0	06	09	L	L	0	0	0	R	R	R	0	06	12	0	0							
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082075	06	03	0	0	0	0	0	R	R	0	0	06	06	0	R	0	0	0	0	0	0	0	06	09	L	L	0	0	0	R	R	R	0	06	12	0	0							
082875	06	03	0	D	0	0	0	R	R	0	0	06	06	0	R	0	0	0	0	L	0	0	06	09	L	L	0	0	0	R	R	R	0	06	12	0	0							
090475	06	03	L	D	0	D	0	R	R	0	0	06	06	0	R	0	0	0	0	L	0	0	06	09	L	L	0	0	0	R	R	R	0	06	12	0	0							
091175	06	03	L	D	0	D	0	R	R	0	0	06	06	0	R	0	0	0	0	L	L	0	06	09	L	L	0	0	0	R	R	R	0	06	12	0	0							
091875	06	03	L	D	0	D	0	R	R	0	0	06	06	0	R	0	0	0	0	L	L	0	06	09	L	L	0	0	0	R	R	R	0	06	12	0	0							
092575	06	03	L	D	0	D	0	R	R	0	0	06	06	0	R	0	0	0	0	L	L	0	06	09	L	L	0	0	0	R	R	R	0	06	12	0	0							
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100975	06	03	L	D	0	D	0	R	R	0	0	06	06	0	R	0	0	0	0	L	L	0	06	09	L	L	0	0	0	R	R	R	0	06	12	0	0							
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102375	06	03	L	D	L	D	0	R	R	L	0	06	06	0	R	0	0	0	0	L	L	0	06	09	L	L	0	0	0	R	R	R	0	06	12	0	0							
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MO DA YR	TR	CD										TR	CD										TR	CD										TR	CD									
080475	07	01	0	0	0	0	0	L	0	0	0	07	04	0	0	0	0	0	0	0	0	0	07	07	0	0	0	0	0	0	0	0	L	07	10	L	0	0	L	L	L	L	L	L
080775	07	01	0	0	0	0	0	L	0	0	0	07	04	0	0	0	0	0	0	0	0	0	07	07	0	0	0	0	0	0	0	0	L	07	10	L	0	0	L	L	L	L	L	L
081375	07	01	0	0	0	0	0	L	0	0	0	07	04	0	0	0	0	0	0	0	0	L	07	07	0	0	0	0	0	0	0	0	L	07	10	L	0	0	L	L	L	L	L	L
082075	07	01	0	0	0	0	0	L	0	0	0	07	04	0	0	0	0	0	0	0	0	L	07	07	0	0	0	0	0	0	0	0	L	07	10	L	0	0	L	L	L	L	L	L
082875	07	01	0	0	0	L	0	L	0	0	0	07	04	0	0	0	D	L	L	0	0	L	07	07	0	0	0	L	L	0	0	0	L	07	10	L	0	0	L	L	L	L	L	L
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080475	07	02	L	0	0	0	L	L	0	L	L	07	05	0	0	0	0	0	0	0	0	0	07	08	0	L	L	0	0	0	0	0	0	07	11	0	0	0	0	0	0	0	0	0
080775	07	02	L	0	0	L	L	L	0	L	L	07	05	0	0	0	0	0	0	0	0	0	07	08	0	L	L	0	0	0	0	0	0	07	11	0	0	0	0	0	0	0	0	0
081375	07	02	L	0	0	L	L	L	0	L	L	07	05	0	0	0	0	0	0	0	0	0	07	08	L	L	L	0	0	0	0	0	0	07	11	0	0	L	L	0	0	0	0	0
082075	07	02	L	0	0	L	L	L	0	L	L	07	05	0	0	0	0	D	0	0	0	0	07	08	L	L	L	0	0	0	0	0	0	07	11	0	0	L	L	0	0	0	0	0
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091175	07	02	L	D	0	L	L	L	D	L	L	07	05	A	L	0	0	D	0	L	0	0	07	08	L	L	L	0	L	L	D	L	0	07	11	A	L	L	L	0	L	0	L	L
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092575	07	02	L	D	0	L	L	L	D	L	L	07	05	A	L	D	D	D	0	L	D	0	07	08	L	L	L	0	L	L	D	L	0	07	11	A	L	L	L	0	L	0	L	L
100275	07	02	L	D	0	L	L	L	D	L	L	07	05	A	L	D	D	D	0	L	D	0	07	08	L	L	L	0	L	L	D	L	0	07	11	A	L	L	L	0	L	0	L	L
100975	07	02	L	D	0	L	L	L	D	L	L	07	05	A	L	D	D	D	0	L	D	0	07	08	L	L	L	0	L	L	D	L	0	07	11	A	L	L	L	0	L	0	L	L
101675	07	02	L	D	0	L	L	L	D	L	L	07	05	A	L	D	D	D	0	L	D	0	07	08	L	L	L	0	L	L	D	L	0	07	11	A	L	L	L	0	L	0	L	L
102375	07	02	L	D	0	L	L	L	D	L	L	07	05	A	L	D	D	D	L	L	D	0	07	08	L	L	L	0	L	L	D	L	L	07	11	A	L	L	L	0	L	0	L	L
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080475	07	03	0	0	0	0	0	0	0	L	L	07	06	R	R	0	R	0	0	0	0	0	07	09	0	0	0	0	0	L	L	0	L	07	12	0	0	0	R	R	0			
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090475	07	03	0	0	0	0	L	0	0	L	L	07	06	R	R	L	R	D	0	0	L	L	07	09	0	A	L	L	L	L	L	0	L	07	12	D	L	0	R	R	0			
091175	07	03	0	0	0	A	L	D	0	L	L	07	06	R	R	L	R	D	0	0	L	L	07	09	A	A	L	L	L	L	L	0	L	07	12	D	L	0	R	R	0			
091875	07	03	0	0	0	A	L	D	0	L	L	07	06	R	R	L	R	D	0	0	L	L	07	09	A	A	L	L	L	L	L	0	L	07	12	D	L	0	R	R	0			
092575	07	03	0	0	0	A	L	D	0	L	L	07	06	R	R	L	R	D	0	0	L	L	07	09	A	A	L	L	L	L	L	0	L	07	12	D	L	0	R	R	0			
100275	07	03	0	0	0	A	L	D	0	L	L	07	06	R	R	L	R	D	0	0	L	L	07	09	A	A	L	L	L	L	L	0	L	07	12	D	L	0	R	R	0			
100975	07	03	0	0	0	A	L	D	0	L	L	07	06	R	R	L	R	D	0	0	L	L	07	09	A	A	L	L	L	L	L	0	L	07	12	D	L	0	R	R	0			
101675	07	03	0	0	0	A	L	D	0	L	L	07	06	R	R	L	R	D	0	0	L	L	07	09	A	A	L	L	L	L	L	0	L	07	12	D	L	0	R	R	0			
102375	07	03	0	0	0	A	L	D	0	L	L	07	06	R	R	L	R	D	0	0	L	L	07	09	A	A	L	L	L	L	L	L	L	07	12	D	L	L	R	R	0			
102875	07	03	0	0	0	A	L	D	0	L	L	07	06	R	R	L	R	D	0	0	L	L	07	09	A	A	L	L	L	L	L	L	L	07	12	D	L	L	R	R	0			

MO DA YR	TR	CD										TR	CD										TR	CD										TR	CD									
080475	08	01	0	0	0	0	0	0	R	R	0	08	04	R	0	0	0	0	0	0	C	0	08	07	R	R	0	0	0	0	0	0	0	08	10	0	0	0	0	0	0	0	0	0
080775	08	01	0	0	0	0	0	0	R	R	0	08	04	R	0	0	0	0	0	0	0	0	08	07	R	R	0	0	0	0	0	0	0	08	10	0	0	0	0	0	0	0	0	0
081375	08	01	0	0	0	0	0	0	R	R	0	08	04	R	0	0	0	0	0	0	0	0	08	07	R	R	0	0	0	0	0	0	0	08	10	L	0	0	0	0	0	0	0	0
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080475	08	02	0	0	0	0	0	R	0	0	0	08	05	0	0	0	0	0	0	L	L	0	08	08	0	0	0	0	0	0	0	0	0	08	11	0	0	0	0	0	0	0	0	0
080775	08	02	0	0	0	0	0	R	0	0	0	08	05	0	0	0	0	0	0	L	L	0	08	08	0	0	0	0	0	0	0	0	0	08	11	0	0	0	0	0	0	0	0	0
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101675	08	02	0	0	D	0	0	R	0	0	0	08	05	0	0	L	L	0	0	L	L	0	08	08	L	L	0	0	L	L	L	0	0	08	11	L	D	0	0	0	0	L	L	0
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102875	08	02	0	0	D	0	0	R	0	0	0	08	05	0	0	L	L	0	0	L	L	0	08	08	L	L	0	0	L	L	L	0	0	08	11	L	D	0	0	0	0	L	L	0
080475	08	03	0	0	0	0	R	0	0	0	0	08	06	0	0	0	0	0	0	0	0	0	08	09	0	0	0	0	0	0	0	0	0	08	12	0	R	R	L	0	0			
080775	08	03	0	0	0	0	R	0	0	0	0	08	06	0	0	0	0	0	0	0	L	0	08	09	0	0	0	0	0	0	0	0	L	08	12	0	R	R	L	0	0			
081375	08	03	0	0	0	0	R	0	0	0	0	08	06	0	0	0	0	0	0	0	L	0	08	09	0	0	0	0	0	0	0	0	L	08	12	0	R	R	L	L	0			
082075	08	03	0	0	0	0	R	0	0	0	0	08	06	0	0	A	0	0	0	0	L	0	08	09	0	0	0	0	0	0	0	0	L	08	12	0	R	R	L	L	0			
082875	08	03	L	0	0	0	R	0	A	0	0	08	06	0	0	A	0	0	0	0	L	0	08	09	0	0	0	0	0	L	A	0	L	08	12	0	R	R	L	L	0			
090475	08	03	L	L	0	0	R	0	A	0	0	08	06	0	0	A	0	0	0	0	L	0	08	09	0	0	0	0	0	L	A	0	L	08	12	0	R	R	L	L	0			
091175	08	03	L	L	0	0	R	D	A	0	0	08	06	0	0	A	0	0	0	0	L	0	08	09	L	D	0	0	0	L	A	0	L	08	12	0	R	R	L	L	0			
091875	08	03	L	L	0	0	R	D	A	0	0	08	06	0	0	A	0	0	0	0	L	0	08	09	L	D	0	0	0	L	A	0	L	08	12	0	R	R	L	L	0			
092575	08	03	L	L	0	0	R	D	A	0	0	08	06	0	0	A	0	0	0	0	L	0	08	09	L	D	0	0	0	L	A	0	L	08	12	0	R	R	L	L	0			
100275	08	03	L	L	0	0	R	D	A	0	0	08	06	0	0	A	0	0	0	0	L	0	08	09	L	D	0	0	0	L	A	0	L	08	12	0	R	R	L	L	0			
100975	08	03	L	L	0	0	R	D	A	0	0	08	06	0	0	A	0	0	0	0	L	0	08	09	L	D	0	0	0	L	A	0	L	08	12	0	R	R	L	L	0			
101675	08	03	L	L	0	0	R	D	A	0	0	08	06	0	0	A	0	0	0	0	L	0	08	09	L	D	0	0	0	L	A	0	L	08	12	0	R	R	L	L	0			
102375	08	03	L	L	0	0	R	D	A	0	L	08	06	0	0	A	0	L	0	0	L	L	08	09	L	D	0	0	0	L	A	0	L	08	12	0	R	R	L	L	0			
102875	08	03	L	L	0	0	R	D	A	0	L	08	06	0	0	A	0	L	0	0	L	L	08	09	L	D	0	0	0	L	A	0	L	08	12	0	R	R	L	L	0			

MO DA YR	TR	CD										TR	CD										TR	CD										TR	CD									
080475	09	01	R	0	0	0	0	0	0	0	0	09	04	0	0	0	0	0	0	0	0	0	09	07	0	0	0	0	0	0	0	0	0	09	10	0	0	0	0	0	0	0	R	0
080775	09	01	R	0	0	0	0	0	0	0	0	09	04	0	0	0	0	0	0	0	0	0	09	07	0	0	0	0	0	0	0	0	0	09	10	0	0	0	0	0	0	0	R	0
081375	09	01	R	0	0	0	0	L	0	0	0	09	04	0	0	0	0	0	0	L	0	0	09	07	0	0	0	0	0	0	0	0	0	09	10	0	0	0	0	0	0	0	R	0
082075	09	01	R	0	0	0	0	L	0	0	0	09	04	0	0	0	0	0	0	L	0	0	09	07	0	0	0	0	0	0	0	L	0	09	10	0	0	0	A	0	0	0	R	0
082875	09	01	R	L	0	D	0	L	0	0	0	09	04	L	0	0	0	0	0	L	0	L	09	07	0	0	0	0	0	0	0	L	0	09	10	0	0	0	A	0	0	0	R	0
090475	09	01	R	L	0	D	0	L	0	0	0	09	04	L	0	0	0	0	L	L	0	L	09	07	0	L	0	0	0	0	0	L	0	09	10	D	0	0	A	0	0	0	R	0
091175	09	01	R	L	0	D	0	L	0	0	0	09	04	L	0	0	0	0	L	L	0	L	09	07	0	L	0	0	0	0	0	L	0	09	10	D	0	0	A	0	0	0	R	0
091875	09	01	R	L	0	D	0	L	0	0	0	09	04	L	0	0	0	0	L	L	0	L	09	07	0	L	0	0	0	0	0	L	0	09	10	D	0	0	A	0	0	0	R	0
092575	09	01	R	L	0	0	0	L	0	0	0	09	04	L	0	L	0	0	L	L	0	L	09	07	0	L	0	0	0	0	0	L	0	09	10	D	0	0	A	0	0	0	R	0
100275	09	01	R	L	0	D	0	L	0	0	0	09	04	L	0	L	0	0	L	L	0	L	09	07	0	L	0	0	0	0	0	L	0	09	10	D	0	0	A	0	0	0	R	0
100975	09	01	R	L	0	D	0	L	0	0	0	09	04	L	0	L	0	0	L	L	0	L	09	07	0	L	0	0	0	0	0	L	0	09	10	D	0	0	A	0	0	0	R	0
101675	09	01	R	L	0	D	0	L	0	0	0	09	04	L	0	L	0	0	L	L	0	L	09	07	0	L	0	0	0	0	0	L	0	09	10	D	0	0	A	0	0	0	R	0
102375	09	01	R	L	0	D	0	L	0	0	0	09	04	L	L	L	L	0	L	L	0	L	09	07	0	L	0	0	0	0	0	L	0	09	10	D	0	0	A	0	0	0	R	L
102875	09	01	R	L	0	D	0	L	0	0	0	09	04	L	L	L	L	0	L	L	0	L	09	07	0	L	0	0	0	0	0	L	0	09	10	D	0	0	A	0	0	0	R	L
080475	09	02	R	0	0	0	0	0	0	0	0	09	05	0	0	0	R	0	0	R	0	0	09	08	0	0	0	0	R	0	R	0	0	09	11	0	0	R	0	0	0	0	0	0
080775	09	02	R	0	0	0	0	0	0	0	0	09	05	0	0	0	R	0	0	R	0	0	09	08	0	0	0	0	R	0	R	0	0	09	11	0	0	R	0	0	0	0	0	0
081375	09	02	R	0	0	0	D	0	0	L	0	09	05	0	0	0	R	0	0	R	0	0	09	08	0	0	0	L	R	0	R	0	0	09	11	0	0	R	0	0	0	0	0	0
082075	09	02	R	0	0	0	D	0	0	L	0	09	05	0	0	0	R	0	0	R	0	0	09	08	0	0	0	L	R	0	R	0	0	09	11	0	0	R	0	0	0	0	0	A
082875	09	02	R	0	0	L	D	0	0	L	0	09	05	L	0	L	R	L	0	R	0	0	09	08	0	0	0	L	R	0	R	L	0	09	11	0	0	R	0	D	D	0	0	A
090475	09	02	R	0	0	L	0	0	0	L	0	09	05	L	0	L	R	L	0	R	L	0	09	08	L	0	0	L	R	0	R	L	0	09	11	0	0	R	0	D	D	0	0	A
091175	09	02	R	0	0	L	D	0	0	L	0	09	05	L	0	L	R	L	0	R	L	0	09	08	L	0	0	L	R	0	R	L	0	09	11	0	0	R	0	D	D	0	0	A
091875	09	02	R	0	0	L	D	0	0	L	0	09	05	L	0	L	R	L	0	R	L	0	09	08	L	0	0	L	R	0	R	L	0	09	11	0	0	R	0	D	D	0	0	A
092575	09	02	R	0	0	L	D	0	0	L	0	09	05	L	0	L	R	L	0	R	L	0	09	08	L	0	0	L	R	0	R	L	0	09	11	0	0	R	0	D	D	0	0	A
100275	09	02	R	0	0	L	D	0	0	L	0	09	05	L	0	L	R	L	0	R	L	0	09	08	L	0	0	L	R	0	R	L	0	09	11	0	0	R	0	D	D	0	0	A
100975	09	02	R	0	0	L	0	0	0	L	0	09	05	L	0	L	R	L	0	R	L	0	09	08	L	0	0	L	R	0	R	L	0	09	11	0	0	R	0	D	D	0	0	A
101675	09	02	R	0	0	L	D	0	0	L	0	09	05	L	0	L	R	L	0	R	L	0	09	08	L	0	0	L	R	0	R	L	0	09	11	0	0	R	0	D	D	0	0	A
102375	09	02	R	0	0	L	D	L	0	L	0	09	05	L	0	L	R	L	0	R	L	0	09	08	L	0	0	L	R	0	R	L	0	09	11	0	L	R	0	D	D	L	L	A
102875	09	02	R	0	0	L	D	L	0	L	0	09	05	L	0	L	R	L	0	R	L	0	09	08	L	0	0	L	R	0	R	L	0	09	11	0	L	R	0	D	D	L	L	A
080475	09	03	0	0	0	0	0	0	0	0	0	09	06	0	0	0	0	0	0	0	0	0	09	09	0	0	0	0	0	0	L	L	0	09	12	0	0	0	R	0	0	0	0	R
080775	09	03	0	0	0	0	0	0	0	0	0	09	06	0	0	0	0	0	0	0	0	0	09	09	0	0	0	0	L	0	L	L	0	09	12	0	0	0	R	L	0	0	0	R
081375	09	03	0	0	0	0	0	0	0	0	A	09	06	0	0	L	0	0	0	0	0	0	09	09	0	0	0	0	L	0	L	L	0	09	12	0	0	0	R	L	0	0	0	R
082075	09	03	0	0	0	0	0	0	0	D	A	09	06	0	0	L	0	0	0	0	0	0	09	09	0	0	0	0	L	0	L	L	0	09	12	0	0	0	R	L	0	0	L	R
082875	09	03	0	L	0	0	0	0	L	D	A	09	06	0	0	L	0	0	0	0	0	L	09	09	0	0	0	L	L	L	L	L	L	09	12	0	0	0	R	L	0	0	L	R
090475	09	03	0	L	0	0	0	0	L	D	A	09	06	0	0	L	0	0	0	L	D	L	09	09	0	0	0	L	L	L	L	L	L	09	12	0	0	0	R	L	0	0	L	R
091175	09	03	0	L	0	0	0	0	L	D	A	09	06	0	0	L	0	0	0	L	D	L	09	09	0	0	0	L	L	L	L	L	L	09	12	0	0	0	R	L	0	0	L	R
091875	09	03	0	L	0	0	0	0	L	D	A	09	06	0	0	L	0	0	0	L	D	L	09	09	0	0	0	L	L	L	L	L	L	09	12	0	0	0	R	L	0	0	L	R
092575	09	03	0	L	0	0	0	0	L	D	A	09	06	0	0	L	0	0	0	L	D	L	09	09	0	0	0	L	L	L	L	L	L	09	12	0	0	0	R	L	0	0	L	R
100275	09	03	0	L	0	0	0	0	L	D	A	09	06	0	0	L	0	0	0	L	D	L	09	09	0	0	0	L	L	L	L	L	L	09	12	0	0	0	R	L	0	0	L	R
100975	09	03	0	L	0	0	0	0	L	D	A	09	06	0	0	L	0	0	0	L	D	L	09	09	0	0	0	L	L	L	L	L	L	09	12	0	0	0	R	L	0	0	L	R
101675	09	03	0	L	0	0	0	0	L	D	A	09	06	0	0	L	0	0	0	L	D	L	09	09	0	0	0	L	L	L	L	L	L	09	12	0	0	0	R	L	0	0	L	R
102375	09	03	0	L	0	0	0	0	L	D	A	09	06	0	0	L	0	0	0	L	D	L	09	09	0	0	0	L	L	L	L	L	L	09	12	0	0	0	R	L	0	L	L	R
102375	09	03	0	L	0	0	0	0	L	D	A	09	06	0	0	L	0	0	0	L	D	L	09	09	0	0	0	L	L	L	L	L	L	09	12	0	0	0	R	L	0	L	L	R

MO DA YR TR CD

080475	09	13	0	0	0	0
080775	C9	13	0	0	0	0
081375	09	13	0	0	0	0
082075	09	13	0	0	0	0
082875	09	13	L	0	0	0
090475	09	13	L	0	0	0
091175	09	13	L	0	0	0
091875	09	13	L	0	0	0
092575	09	13	L	0	0	0
100275	09	13	L	0	0	0
100975	09	13	L	0	0	0
101675	09	13	L	0	0	0
102375	09	13	L	0	0	L
102875	09	13	L	0	0	L

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MO DA YR	TR	CD										TR	CD										TR	CD										TR	CD									
080475	10	01	0	0	0	L	0	0	0	R	0	10	04	0	0	0	0	0	0	0	R	0	10	07	0	0	0	0	0	0	0	0	0	10	10	0	0	0	R	0	0	0	0	0
080775	10	01	0	0	0	L	0	0	0	R	0	10	04	0	0	0	0	0	0	0	R	0	10	07	0	0	0	0	0	0	0	0	0	10	10	0	0	0	R	0	0	0	0	0
081375	10	01	0	0	0	L	0	L	0	R	L	10	04	0	0	0	0	0	0	0	R	0	10	07	0	0	0	0	0	0	0	0	0	10	10	0	0	0	R	0	0	0	0	0
082075	10	01	0	0	0	L	0	L	0	R	L	10	04	0	0	0	0	0	L	0	R	0	10	07	0	0	0	0	0	0	0	0	0	10	10	0	0	0	R	0	0	0	0	0
082875	10	01	0	0	0	L	0	L	0	R	L	10	04	0	0	0	0	0	L	0	R	0	10	07	0	0	0	0	0	0	0	0	0	10	10	0	L	0	R	0	0	0	0	0
090475	10	01	0	0	0	L	0	L	0	R	L	10	04	0	0	0	0	0	L	0	R	0	10	07	0	0	0	A	0	0	0	0	0	10	10	0	L	0	R	0	0	0	0	0
091175	10	01	0	0	0	L	0	L	0	R	L	10	04	0	0	0	0	0	L	0	R	0	10	07	0	0	A	A	0	0	0	0	0	10	10	0	L	0	R	0	0	0	0	0
091875	10	01	0	0	0	L	0	L	0	R	L	10	04	0	0	0	0	0	L	0	R	0	10	07	0	0	A	A	0	0	0	0	0	10	10	0	L	0	R	0	0	0	0	0
092575	10	01	0	0	0	L	0	L	0	R	L	10	04	0	0	0	0	0	L	0	R	0	10	07	0	0	A	A	0	0	0	0	0	10	10	0	L	0	R	0	0	0	0	0
100275	10	01	0	0	0	L	0	L	0	R	L	10	04	0	0	0	0	0	L	0	R	0	10	07	0	0	A	A	0	0	0	0	0	10	10	0	L	0	R	0	0	0	0	0
100975	10	01	0	0	0	L	0	L	0	R	L	10	04	0	0	0	0	0	L	0	R	0	10	07	0	0	A	A	0	0	0	0	0	10	10	0	L	0	R	0	0	0	0	0
101675	10	01	0	0	0	L	0	L	0	R	L	10	04	0	0	0	0	0	L	0	R	0	10	07	0	0	A	A	0	0	0	0	0	10	10	0	L	0	R	0	0	0	0	0
102375	10	01	0	L	0	L	L	L	0	R	L	10	04	0	0	0	0	L	L	0	R	0	10	07	0	0	A	A	0	0	0	L	0	10	10	0	L	0	R	L	0	L	0	0
102875	10	01	0	L	0	L	L	L	0	R	L	10	04	0	0	0	0	L	L	0	R	0	10	07	0	0	A	A	0	0	0	L	0	10	10	0	L	0	R	L	0	L	0	0
080475	10	02	0	0	0	0	0	0	0	0	0	10	05	0	R	R	0	0	0	0	0	0	10	08	0	0	0	0	0	R	R	R	0	10	11	0	0	R	0	0	0	0	0	0
080775	10	02	0	0	0	0	0	0	0	0	0	10	05	0	R	R	0	0	0	0	0	0	10	08	0	0	0	0	0	R	R	R	0	10	11	0	0	R	0	0	0	0	0	0
081375	10	02	0	0	0	0	0	0	0	0	0	10	05	0	R	R	0	0	0	0	0	0	10	08	0	0	0	0	0	R	R	R	0	10	11	0	0	R	0	0	0	0	0	0
082075	10	02	0	0	L	0	A	0	0	0	0	10	05	0	R	R	0	0	0	0	0	0	10	08	0	0	0	0	0	R	R	R	0	10	11	0	0	R	0	0	0	0	0	0
082875	10	02	0	0	L	0	A	0	0	0	0	10	05	0	R	R	0	0	0	0	0	0	10	08	0	0	0	0	0	R	R	R	0	10	11	0	0	R	0	0	0	0	0	0
090475	10	02	0	L	L	0	A	L	D	0	0	10	05	0	R	R	D	L	0	0	0	0	10	08	0	0	0	0	0	R	R	R	0	10	11	0	0	R	0	0	0	0	0	0
091175	10	02	0	L	L	0	A	L	D	0	0	10	05	0	R	R	D	L	0	0	0	0	10	08	0	0	0	0	0	R	R	R	0	10	11	L	L	R	0	0	0	0	0	0
091875	10	02	0	L	L	0	A	L	D	0	0	10	05	0	R	R	D	L	0	0	0	0	10	08	0	0	0	0	0	R	R	R	0	10	11	L	L	R	0	0	0	0	0	0
092575	10	02	0	L	L	0	A	L	D	0	0	10	05	0	R	R	D	L	0	0	0	0	10	08	0	0	0	0	0	R	R	R	0	10	11	L	L	R	0	0	0	0	0	0
100275	10	02	0	L	L	0	A	L	D	0	0	10	05	0	R	R	D	L	0	0	0	0	10	08	0	0	0	0	0	R	R	R	0	10	11	L	L	R	0	0	0	0	0	0
100975	10	02	0	L	L	0	A	L	D	0	0	10	05	0	R	R	D	L	0	0	0	0	10	08	0	0	0	0	0	R	R	R	0	10	11	L	L	R	0	0	0	0	0	0
101675	10	02	0	L	L	0	A	L	D	0	0	10	05	0	R	R	D	L	0	0	0	0	10	08	0	0	0	0	0	R	R	R	0	10	11	L	L	R	0	0	0	0	0	0
102375	10	02	L	L	L	L	A	L	D	0	L	10	05	0	R	R	D	L	0	0	0	0	10	08	0	0	0	L	0	R	R	R	0	10	11	L	L	R	L	0	L	0	0	0
102875	10	02	L	L	L	L	A	L	D	0	L	10	05	0	R	R	D	L	0	0	0	0	10	08	0	0	0	L	0	R	R	R	0	10	11	L	L	R	L	0	L	0	0	0
080475	10	03	0	0	0	0	0	0	0	0	0	10	06	0	0	0	0	0	0	R	0	0	10	09	0	0	0	0	0	0	0	0	0	10	12	0	0	0	0	0	R			
080775	10	03	0	0	0	0	0	0	0	0	0	10	06	0	0	0	0	0	0	R	0	0	10	09	0	0	0	0	0	0	0	L	0	10	12	0	0	0	0	L	R			
081375	10	03	0	0	0	0	0	0	0	0	0	10	06	0	0	0	0	0	0	R	0	0	10	09	0	0	0	0	0	0	0	L	0	10	12	0	0	0	0	L	R			
082075	10	03	0	0	0	0	0	0	0	0	0	10	06	0	0	0	0	0	0	R	0	0	10	09	0	0	0	0	0	0	0	L	0	10	12	0	0	0	0	L	R			
082875	10	03	0	L	0	A	L	0	0	0	0	10	06	0	0	0	0	L	0	R	0	0	10	09	0	0	L	0	0	0	0	L	0	10	12	0	0	0	0	L	R			
090475	10	03	0	L	0	A	L	0	0	0	0	10	06	0	0	0	0	L	0	R	0	0	10	09	0	0	L	0	0	0	0	L	0	10	12	0	0	0	0	L	R			
091175	10	03	0	L	0	A	L	0	L	0	L	10	06	0	0	0	0	L	0	R	0	0	10	09	0	0	L	0	0	0	0	L	0	10	12	0	0	0	0	L	R			
091875	10	03	0	L	0	A	L	0	L	0	L	10	06	0	0	0	0	L	0	R	0	0	10	09	0	0	L	0	0	0	0	L	0	10	12	0	0	0	0	L	R			
092575	10	03	0	L	0	A	L	0	L	0	L	10	06	0	0	0	0	L	0	R	0	0	10	09	0	0	L	0	0	0	0	L	0	10	12	0	0	0	0	L	R			
100275	10	03	0	L	0	A	L	0	L	0	L	10	06	0	0	0	0	L	0	R	0	0	10	09	0	0	L	0	0	0	0	L	0	10	12	0	0	0	0	L	R			
100975	10	03	0	L	0	A	L	0	L	0	L	10	06	0	0	0	0	L	0	R	0	0	10	09	0	0	L	0	0	0	0	L	0	10	12	0	0	0	0	L	R			
101675	10	03	0	L	0	A	L	0	L	0	L	10	06	0	0	0	0	L	0	R	0	0	10	09	0	0	L	0	0	0	0	L	0	10	12	0	0	0	0	L	R			
102375	10	03	0	L	0	A	L	0	L	L	L	10	06	L	L	0	0	L	L	R	0	0	10	09	0	0	L	0	0	0	L	L	L	10	12	L	0	0	L	L	R			
102875	10	03	0	L	0	A	L	0	L	L	L	10	06	L	L	0	0	L	L	R	0	0	10	09	0	0	L	0	0	0	L	L	L	10	12	L	0	0	L	L	R			

APPENDIX B

NUT DAMAGE AND NUT LOSS

DATA FOR 1976

1976 Appendix B Code

MO = Month

DA = Day

TR = Tree

CD = Card Number

Card Number 1 = Nuts 1-25

2 = Nuts 26-50

3 = Nuts 51-75

4 = Nuts 76-100

5 = Nuts 101-125

6 = Nuts 126-150

G = Good Nuts

L = Light Scab

M = Medium Scab

H = Heavy Scab

S = Hickory Shuckworm

P = Powdery Mildew

F = Nuts Punctured by the Pecal Weevil

W = Nuts with Pecan Weevil Larvae in Them

Blank = Lost Nuts

D = Dried or Shriveled Kernel

S = Spotted or Stained Kernel

R = Nuts rejected from the Sample

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MO DA YR TR CD                                              TR CD
080576 01 1 G G L L L G M G L L L L L L L G L G G M L   G L 01 4 L L L G G M H L L L L L L G G G H H H   G G R H
081276 01 1 M L L L L L M G M L L L L L L L L L L M L   G L 01 4 L M L G G M H L L L L L L G   G H   H   L L R H
081976 01 1   L L L L L M G M L L M L L L L L L L   L   G L 01 4 L M L G G H H L L L L L L G   G H   H   L L R
082676 01 1   L L L L L M G M L L M L   M L L L L   L   G L 01 4 M M L G G H H L   L L L L G   G H   H   L L R
090176 01 1   L M L L L M G M L M M L   M L L L L   L   L L 01 4 M M L G G H H L   L L L L G   G H   H   L L R
090976 01 1   L M L L L M G M L M M L   M L L L L   L   L L 01 4 M M L G G H H L   L L L L G   G H   H   L L R
091676 01 1   L M L L L M G M M M M L   M L L L L   L   L L 01 4 M M M F G H H M   M M M M L   L H   H   L L R
092376 01 1   L M L L L M G M M M M L   M L L L L   L   L L 01 4 M M M F G H H M   M M M M L   L H   H   L L R
092876 01 1   L M L L L M G M M M M L   M L L L L   L   L L 01 4 M M M F G H H M   M M M M L   L H   H   L L R
093076 01 1   L M L L L M G M M M M L   M L L L L   L   L L 01 4 M M M F G H H M   M M M M L   L H   H   L L R
100576 01 1   L M L L L M G M M M M L   M L L L L   L   L L 01 4 M M M F G H H M   M M M M L   L H   H   L L R
101276 01 1   G   D G G D G D   G D G   D G         G   G G 01 4 D D G G D D D G   G G G D G   G D   D   G G R

080576 01 2 M   G G L G     L G L G L R G L G L   R L   G G 01 5 L L R L G L L L L G L L L L G H M L L L R G G L
081276 01 2 H     G L L     L L L G L R G L G L   R L   L L 01 5 L M R M G   L L L L M L L L   H   L L L R L G L
081976 01 2 H     G L L     L L L G L R   L G L   R L   L L 01 5 L M R M G   L L L L M L L L   H   L L L R L G L
082676 01 2 H     G L L     L L L G F R   L G L   R L   L L 01 5 L M R F G   L L L L M M L L   H   L L L R L G L
090176 01 2 H     G L L     L L     F R   L G M   R M   L L 01 5 L M R F G   L L L L M H L     H   L L L R L G L
090976 01 2 H     G L L     L L     F R   L G M   R M   L L 01 5 L M R F G   L L L L M H L     H   L L L R L G L
091676 01 2 H     G L L     L L     F R   L G M   R M   L L 01 5 M M R F G   L L L L H   L     H   M M L R L L L
092376 01 2 H     G L L     L L     F R   L G M   R M   L L 01 5 M M R F G   L L L L H   L     H   M M L R L L L
092876 01 2 H     G L L     L L     F R   L G M   R M   L L 01 5 M M R F G   L L L L H   L     H   M M L R L L L
093076 01 2 H     G L L     L L     F R   L G M   R M   L L 01 5 M M R F G   L L L L H   L     H   M M L R L L L
100576 01 2 H     G L L     L L     F R   L G M   R M   L L 01 5 M M R F G   L L L L H   L     H   M M L R L L L
101276 01 2 D     G G G     G G     G R   G G B   R G   G   01 5 G   R D G   G G G G     G         G G G R G G G

080576 01 3 G G   G G G G G L L L L G L L L L M L L L L L G 01 6 L L L L L L L G L L L G G G G G L G G M M   L L
081276 01 3 G G   L L L G G L L L L L   L L M M L L L L L G 01 6 L L L L L L L L L L L L L L G G L L L M M   L L
081976 01 3 G L   L L L L L L L L L L   L L M M L L L L L G 01 6 L L L L L L L L     L L L L G G L L L H H   L L
082676 01 3   L   L L L L L L L L L L   L L M M L L L L L L 01 6 L L L M L I L L     L L L M G G L L L H H   L L
090176 01 3   L   L L L L L M M L L L   M M M M L L L L L L 01 6 M M L M L L L L     L L L M G G L L L H H   L L
090976 01 3   L   L L L L L M M L L L   M M M M L L L L L L 01 6 M M L M L L L L     L L L M G G L L L H H   L L
091676 01 3   F   L F L L L M M L M L   M M M H L L M L M L 01 6 M M M M M M L L     L L M M G L   L L H H   L L
092376 01 3   F   L F L L L M M L M L   M M M H L L M L M L 01 6 M M M M M M L L     L L M M G L   L L H H   L L
092876 01 3   F   L F L L L M M L M L   M M M H L L M L M L 01 6 M M M M M M L L     L L M M G L   L L H H   L L
093076 01 3   F   L F L L L M M L M L   M M M H L L M L M L 01 6 M M M M M M L L     L L M M G L   L L H H   L L
100576 01 3   F   L F L L L M M L M L   M M M H L L M L M L 01 6 M M M M M M         L L M M G L   L L H     L L
101276 01 3   G   D G G G G     G G G   G G D D G G G G G G 01 6 G G     G G         G G G D G G   D G D       G G
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MO DA YR	TR	CD		TR	CD	
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081276	02	1	L G L L L L G L M L L L M G L G L	02	4	M L L H H R R M M M L M M L M M L M L L L M
081976	02	1	L G L L L L G L M L L L M G L G L	02	4	M L L H R R M M M L M M L M M L M L L L M
082676	02	1	L L L L L L G L M L L L M G L G L	02	4	M L L H R R M M M L M M L M M L M M M L M
090176	02	1	L L L M H H L L M L L L H G M G L	02	4	M L L H R R M M M L M M L M M L M M M M M
090976	02	1	L L M M H H L L M L L L H G M G L	02	4	M L H H R R H H H L M M L M M M L M M M M M
091676	02	1	L L M M H H L L H L L L H G M G L	02	4	M L H H R R H H H M M M M M M H M M M
092376	02	1	L L M M H H L L H L L L H G M G L	02	4	M L H H R R H H H M M M M M M H M M M
092876	02	1	L L M M H H L L H L L L H G M G L	02	4	M L H H R R H H H M M M M M M H M M
093076	02	1	L L M M H H L L H L L L H G M G L	02	4	M L H H R R H H H M M M M M M H M M
100576	02	1	L L M M H H L L H L L L H G M G L	02	4	M L H H R R H H H M M M M M M H M M
101276	02	1	G G G G G G G D G G G D G G G	02	4	D G G D R R D D D G D G G D G D D D D
080576	02	2	G L L L G M L M H L M L L H M G L H G G L G	02	5	L L L L L M R G L M L L L R R R L L L L L L L
081276	02	2	L L L M M L M L M L L H M G L H G G L L	02	5	L L L L L M R G L L L L R R R L L L L L L
081976	02	2	L L L M M L M L M L H L L H L G L L	02	5	L L L L L M R G L L L L R R R L M L L L L
082676	02	2	L L L M M L M L M L H L L H L G L L	02	5	L L L L L M R G L M L L R R R L M L L L L
090176	02	2	L M L M M H M L L H L M H L G L L	02	5	M M L L L H R G L H L L R R R L M L L L L
090976	02	2	L M L M M M M L H L M H L L M L	02	5	M M L L L H R G L H L L R R R L M L L L L
091676	02	2	L M L M M M M L H L M L L M L	02	5	M M M L L H R L F L M R R R L M M M L
092376	02	2	L M L M M M M L H L M L L M L	02	5	M M M L L H R L F L M R R R L M M M L
092876	02	2	L M L M M M M L H L M L L M L	02	5	M M M L L H R L F L M R R R L M M M L
093076	02	2	L M L M M M M L H L M L L M L	02	5	M M M L L H R L F L M R R R L M M M L
100576	02	2	L M L M M M M L H L M L L M L	02	5	M M M L L H R L F L M R R R L M M M L
101276	02	2	G G G G G D G G G G G G	02	5	B G G G G D R G G G R R R G G G G G
080576	02	3	L L L M L L G G M M L L M M L M L L L G M L	02	6	H H R R L L G L L L M H L L L L R L M M R L L
081276	02	3	L M L L L G M H L L M L M L L L G M L	02	6	H R R L L G L L L M H L L L L R L M M R L L
081976	02	3	L M L L L G L L M L M L L L G M L	02	6	H R R L L G L L L M H L L L L R M M M R L L
082676	02	3	M L L L G L L M L M L L L G M L	02	6	R R L L G L L L H H L L L L R M M M R M L
090176	02	3	M M M L L L L M L M L L L G M M	02	6	R R L L G L L L H H L L L L R H M M R M H
090976	02	3	M M M L L L L M L M L L L G M M	02	6	R R L L G L L L H H L L L L R H M M R M H
091676	02	3	M M M L L M M M M M M M L G M M	02	6	R R M M G L L L H H M M L L R H M R M H
092376	02	3	M M M L L M M M M M M M L G M M	02	6	R R M M G L L L H H M M L L R H M R M H
092876	02	3	M M M L L M M M M M M L G M M	02	6	R R M M G L L L H H M M L L R H M R M H
093076	02	3	M M M L L M M M M M M L G M M	02	6	R R M M G L L L H H M M L L R H M R M H
100576	02	3	M M M L L M M M M M M L G M M	02	6	R R M M G L L L H H M M L L R H M R M H
101276	02	3	D G G G G G G B B G G G D G	02	6	R R G G G G G G G L G G G G R D G P G G

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MO DA YR TR CD                                                      TR CD
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081276 03 1 G L L G L G G L G G L L H   G G G   G L H L G L 03 4 L G G G G G G G G L L G G L G G G G G G L G L
081976 03 1 G L L G L L G L G G L L H   G G G   G   H L G L 03 4 L G G G G G G G G L L G G L L G G G G G L G L
082676 03 1 G L L G L L G L G G L   H   G G G   G   H M L L 03 4 M G G G G G G G G L   G G L L G G G G G L G L
090176 03 1 G M L G L L G M G G L   H   L G G   L   H M L L 03 4 M L G G G G G G G L   G G L L G L L G G L G L
090976 03 1 G M L G L L G M G G L   H   L G G   L   H M L L 03 4 M L G G G G G G G L   G G L L G L L G G L G L
091676 03 1 G M L G L L G M G G L   H   L G G   L   H M L L 03 4 H L G G G G G G L L   G G L L G L L G G L G L
092376 03 1 G M L G L L G M G G L   H   L G G   L   H M L L 03 4 H L G G G G G G L L   G G L L G L L G G L G L
092876 03 1 G M L G L L G M G G L   H   L G G   L   H M L L 03 4 H L G G G G G G L L   G G L L G L L G G L G L
093076 03 1 G M L G L L G M G G L   H   L G G   L   H M L L 03 4 H L G G G G G G L L   G G L L G L L G G L G L
100576 03 1 G M L G L L G M G G L   H   L G G   L   H M L L 03 4 H L G G G G G G L L   G G L L G L L G G L G L
101276 03 1 G G G     G G G G G G       G   G   G       G   03 4 D G   G G G G G G G   G   G G G G G G G G G G

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081276 03 2 G G G G L L G R L L L G G G   L L G M G   G G G 03 5 L G P G G M G L M G G G L   G L G G G M G G G L
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101276 03 2 G G     G   G R G   D     G   G       G   G G   03 5 G G G G G   G     G G G     G G G G       G   D

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081976 03 3 L   L L L L G L L L L L M H H L L G G G G G G   03 6 G G L L     L M M M     L G L G   R G L G L L L
082676 03 3 L   L L L L G L L L L L M H H L L L L G G G G   03 6 G G L L     M M M F     L L L L   R G L G L L M
090176 03 3 L   L L L L G M M L L H M H H L L F L L L L L   03 6 G G L L     M M M F     L L M L   R L L G L M M
090976 03 3 L   L L L L G M M L L M M H H L L F L L L L L   03 6 G G L L     M M M F     L L M L   R L L G L M M
091676 03 3 L   L L L L G M M L L M M H   L L F L L L L L   03 6 G G L L     M M M F     L L M L   R L L G L M M
092376 03 3 L   L L L L G M M L L M M H   L L F L L L L L   03 6 G G L L     M M M F     L L M L   R L L G L M M
092876 03 3 L   L L L L G M M L L M M H   L L F L L L L L   03 6 G G L L     M M M F     L L M L   R L L G L M M
093076 03 3 L   L L L L G M M L L M M H   L L F L L L L L   03 6 G G L L     M M M F     L L M L   R L L G L M M
100576 03 3 L   L L L L G M M L L M M H   L L F L L L L L   03 6 G G L L     M M M F     L L M L   R L L G L M M
101276 03 3 G     G G G G G G       D       G G G G G G G   03 6, G G G D         G G     G G       R G G   G G G
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MO DA YR TR CD                                              TR CD
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081976 04 1 L H L L L M R L L   M L L L L   M M L M M L L L 04 4 M M M R L H H L L L M M H H M   L L L L R R L L
082676 04 1 L H L   L H R L     M L L L L   M M L M M L L L 04 4 M M M R L H H L L L M M H H H   L L L L R R L L
090176 04 1 L H L   L H R L     H L H L L   M M   H H M M M 04 4 H H M R L H H L L L H M H H     L L L L R R M L
090976 04 1 L H L   M H R L     H L H L L   M M   H H M M M 04 4 H H H R L H H L L L H H H H     L L L M R R M L
091676 04 1 L H M   M H R L     H F H M L   H H   H H M M M 04 4 H H H R L H H L L L H H H H     M L M M R R M L
092376 04 1 L H M   M H R L     H F H M L   H H   H H M M M 04 4 H H H R L H H L L L H H H H     M L M M R R M L
092876 04 1 L H M   M H R L     H F H M L   H H   H H M M M 04 4 H H H R L H H L L L H H H H     M L M M R R M L
093076 04 1 L H M   M H R L     H F H M L   H H   H H M M M 04 4 H H H R L H H L L L H H H H     M L M M R R M L
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101276 04 1 G   G   G   R       G   G G     D D   G D G G G 04 4   D   R G D D G G   D D D D     G G G G R R G G

080576 04 2 L   R R L L L L L L H   M M L L L L H L L G M M 04 5 L M L M L L G L L L L M L H L L L L M L L L M L
081276 04 2 L   R R L L L L L M H   M M L L L M H M L G M M 04 5 L M L M L L   L L L M M     L L L L M L M L M L
081976 04 2 M   R R L L L L L M H   M H L L M M   M L G M H 04 5 M M L M L L   L L L M M     L L L L M L M L M L
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090176 04 2 M   R R M L M M L M H   M   M M H H   M L G H H 04 5 M M M   M L   M L M H M     L L L L M L M M M L
090976 04 2 M   R R M L M M L M H   M   M M H H   M L G H H 04 5 M M M   M L   M   M   M     L L L L M L M M M L
091676 04 2 M   R R M L M M L H H   M   M M H H   M L G H H 04 5 M M M   M L   M   M   M     L L M L M M M M M L
092376 04 2 M   R R M L M M L H H   M   M M H H   M L G H H 04 5 M M M   M L   M   M   M     L L M L M M M M M L
092876 04 2 M   R R M L M M L H H   M   M M H H   M L G H H 04 5 M M M   M L   M   M   M     L L M L M M M M M L
093076 04 2 M   R R M L M M L H H   M   M M H H   M L G H H 04 5 M M M   M L   M   M   M     L L M L M M M M M L
100576 04 2 M   R R M L M M L H H   M   M M H H   M L G H H 04 5 M M M   M L   M   M   M     L L M L M M M M M L
101276 04 2 G   R R   G G G G D         G G G D     G G B   04 5   G G   B G   G   G   G     G G G   G G G   G G

080576 04 3 L L L M G R L L L R R R R L L L H H L R M M L M 04 6 M M G R L M M   H   L M R R L M L L L L R L L L
081276 04 3 L L     G R L L L R R R R L L L H H L R M M L M 04 6 M M L R M M M   H   M M R R L M L L L L R L L L
081976 04 3 L L     G R   L L R R R R L L L H H L R M M M M 04 6 M M L R M M H       M H R R L M   L   L R L L L
082676 04 3 F L     G R   L M R R R R L L L H H L R M M M M 04 6 M M L R M M H       M H R R L M   L   L R L L L
090176 04 3 F L     G R   L M R R R R M L L H H M R M M H H 04 6 M M L R H H         H H R R L M       M R M M L
090976 04 3 F L     G R   L M R R R R M L L H H M R M M H H 04 6 M H M R H H         H H R R M         M R M M L
091676 04 3 F L     G R   L M R R R R M L L H H M R M M H H 04 6 H H M R H H         H H R R M         M R M M L
092376 04 3 F L     G R   L M R R R R M L L H H M R M M H H 04 6 H H M R H H         H H R R M         M R M M L
092876 04 3 F L     G R   L M R R R R M L L   H M R   M H H 04 6 H H M R H H         H H R R M         M R M M L
093076 04 3 F L     G R   L M R R R R M L L   H H R   M H H 04 6 H H M R H H         H H R R M         M R M M L
100576 04 3 F L     G R   L M R R R R M L L   H M R   M H H 04 6 H H M R H H         H H R R M         M R M M L
101276 04 3 G G     G R   G G R R R R G G G   D G R   G G G 04 6 D D G R G G         D D R R           D R G G G
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MO DA YR	TR	CD																								
080576	05	1	G	G	G	G	G		R	G	G	G	G	G	G	G	G	G			L	G	G	G	G	G
081276	05	1	G	G	G	G	G		R	G	G	G	G	G	G	G	G	G			L	G	G	G	G	G
081976	05	1	G	G	G	G	G		R	G	G	G	G	G	G	G	G	G			L	G	G	G	G	G
082676	05	1	G	G	G	G	G		R	G	G	G	G	G	G	G	G	G			L	L	G	G	G	G
090176	05	1	G	G	G	G	G		R	G	G	G	G	G	G	G	G	G			L	L	G	G	G	G
090976	05	1	G	G	F	G	G		R	G	G	G	G	G	G	L	G	G			L	L	G	G	G	G
091676	05	1	G	G	F	G	G		R	G	G	G	G	G	G		G	G			L	L	G	G	G	G
092376	05	1	G	G	F	G	G		R	G	G	G	G	G	G		G	G			L	L	G	G	G	G
092876	05	1	G	G	F	G	G		R	G	G	G	G	G	G		G	G			L	L	G	G	G	G
093076	05	1	G	G	F	G	G		R	G	G	G	G	G	G		G	G			L	L	G	G	G	G
100576	05	1	G	G	F	G	G		R	G	G	G	G	G	G		G	G			L	L	G	G	G	G
101276	05	1	G	G			G		R	G	G	G	G	G	G			G					G	G	G	G
080576	05	2	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
081276	05	2	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G	G	G	G	G
081976	05	2	G	G	G	G			G	G	G	G	G	G	G	G	G		G	G	G	G	G	G	G	G
082676	05	2	G	G	G	G				G	G	G	G	G	G	G	G		G	G	G	G	G	G	G	G
090176	05	2	G	G	G	G				G	G	G	G	G	G	G			G	G	G	G	G	G	L	G
090976	05	2	G	G	G	G				G	G	G	G	G	G	G			G	G	G	G	G	G	L	F
091676	05	2	G	G	G	G				G	G	G	G	G	G	G			G	L	G	G	G		L	F
092376	05	2	G	G	G	G				G	G	G	G	G	G	G			G	L	G	G	G		L	F
092876	05	2	G	G	G	G				G	G	G	G	G	G	G			G	L	G	G	G		L	F
093076	05	2	G	G	G	G				G	G	G	G	G	G	G			G	L	G	G	G		L	F
100576	05	2	G	G	G	G				G	G	G	G	G	G	G			G	L	G	G	G		L	F
101276	05	2		G		G				G	G	G	G	G	G	G			G	G	G	G	G		G	
080576	05	3	G	G	G	G	G	G	G	G	G	G	G	G	G	G	L	G	G	G	G	G	G	G	G	G
081276	05	3	G	G	G	G	G	G	G	G	G	G	G	G	G	G	L	G	G	G	G	G	G	G	G	G
081976	05	3	G	G	G	G	G	G	G	G	G	G	G	G	G	G	L	L	L	G	G	G	G	G	G	G
082676	05	3	G	G	G	G	G	G	G	G	G	G	G	G	G	G	M	L	L	G	G	G	G	G	G	G
090176	05	3	G	G	G	G	G	G	G	G	G	G	G	G	G	G	M	L	L	G	G	G	G	G	G	L
090976	05	3	G	G	G	G	G	G	G	G	G	G	G	G	G	G	M	L	L	G	G	G	G	G	G	L
091676	05	3	G	G	G	G	G	G	G	G	L	G	G	G	G	G	M	L	L	G	G	G	G	G	G	L
092376	05	3	G	G	G	G	G	G	G	G	L	G	G	G	G	G	M	L	L	G	G	G	G	G	G	L
092876	05	3	G	G	G	G	G	G	G	G	L	G	G	G	G	G	M	L	L	G	G	G	G	G	G	L
093076	05	3	G	G	G	G	G	G	G	G	F	G	G	G	G	G	M	L	L	G	G	G	G	G	G	F
100576	05	3	G	G	G	G	G	G	G	G	F	G	G	G	G	G	M	L	L	G	G	G	G	G	G	F
101276	05	3	G		G	G	G	G	G		G	G	G	G	G	G	G		G	G	G	G	G		G	G

MO DA YR	TR	CD																								
080576	05	4	G	G	G	G	G		G	G	G	G	G	G	G	G	G	G		G	G	G	G	G	G	G
081276	05	4	G	G	G	G	G		G	L	G	G	G	G	G	G	G	G		G	G	G	G	G	G	G
081976	05	4	G	G	G	G	G		G	L	G	G	G	G	G	G	G	G		G	G	G	G	F	G	G
082676	05	4	G	G	G	G	G		G	L	L	L	G	G	G	L	L	G		G	G	G	G	F	G	F
090176	05	4	L	G	G	G	G		G	M	L	L	G	G	G	L	L	G		F	G	G	G	F	G	F
090976	05	4	L	G	G	G	G		G	M	F	L	G	G	G	L	L	G		F	G	G	L	F	G	F
091676	05	4	L	G	G	G	G		G	M	F	L	G	G	G	L	L	G		F	G	G	L	F	G	F
092376	05	4	L	G	G	G	G		G	M	F	L	G	G	G	L	L	G		F	G	G	L	F	G	F
092876	05	4	L	G	G	G	G		G	M	F	L	G	G	G	L	L	G		F	G	G	L	F	G	F
093076	05	4	L	G	G	G	G		G	M	F	L	G	G	G	L	L	G		F	G	G	L	F	G	F
100576	05	4	L	G	G	G	G		G	M	F	L	G	G	G	L	L	G		F	G	G	L	F	G	F
101276	05	4	G	G	G	G			G	G	G	G	G		G		G	G			G	G	G		G	
080576	05	5	G	G	G			G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
081276	05	5	G	L	G			G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G
081976	05	5	G	L	G			G	G	G	L	G	G	G	G	G	G	G	G	G	G	G	G	G		G
082676	05	5	G	L	G			G	G	G	L	G	G	G	G	G	G	G	G	G	G	G	G	G		G
090176	05	5	G	L	L			G	G	G	L	G	G	G	G	G	G	G	G	G	G	G	G	G		G
090976	05	5	G	L	L			G	G	G	L	G	G	G	G	G	G	G	G	G	G	G	G	G		G
091676	05	5	G	L	L			G	G	S	L	G	G	G	G	G	G	G	G	G	G	G	G	G		G
092376	05	5	G	L	L			G	G	S	L	G	G	G	G	G	G	G	G	G	G	G	G	G		G
092876	05	5	G	L	L			G	G	S	L	G	G	G	G	G	G	G	G	G	G	G	G	G		G
093076	05	5	G	L	L			G	G	S	L	G	G	G	G	G	G	G	G	G	G	G	G	G		G
100576	05	5	G	L	L			G	G	S	L	G	G	G	G	G	G	G	G	G	G	G	G	G		G
101276	05	5		G	G				G		G	G	G	G	G	G	G		G		G	G				G
080576	05	6	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
081276	05	6	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
081976	05	6	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G	G	G	G	G	G	G	G	F
082676	05	6	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G	G	G	G	G	G	G	G	F
090176	05	6	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G	G	G	G	G	G	G	G	F
090976	05	6	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G	F	G	G	G	G	G	G	F
091676	05	6	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G	F	G	G	G	G	G	G	F
092376	05	6	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G	F	G	G	G	G	G	G	F
092876	05	6	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G	F	G	G	G	G	G	G	F
093076	05	6	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G	F	G	G	G	G	G	G	F
100576	05	6	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G	F	G	G	G	G	G	G	F
101276	05	6	G			G		G	G	G	G	G	G			G	G	G				G	G	G	G	

MO DA YR	TR	CD																								TR	CD																								
080576	06	1	L	L	L	L	G	L	R	G	M	R	M	G		G	G	G	L	L	L	G	R	L	L	L	06	4	M	G	G	L	L	R	R	L	R	L	L	R	L	L	L	L	L	L	G	R	L	L	L	L
081276	06	1	L	L	L	L	G	L	R	G	M	R	M	G		G	G	G	L	L	L	G	R	L	L	L	06	4	M	G	G	L	L	R	R	M	R	L	L	R	L	L	L	L	L	L	G	R	L	L	L	L
081976	06	1	L	L	L	L	G	L	R	G	M	R	H	G		G	L	G	L	L	L	G	R	M	L	L	06	4	M	G	G	L	L	R	R	M	R	L	L	R	L	L	L	L	L	L	G	R	L	L	L	M
082676	06	1	L	L	L	L	G	L	R	G	M	R	H	G		G	L			L	L	G	R	M	L	L	06	4	M	G	G	L		R	R	M	R	L	L	R	L	M	M	M	L	L	L	R	M	M	L	M
090176	06	1	M	L	L	L	L	L	R	L	M	R	H	G		G	L			L	L	G	R	M	L	L	06	4	M	G	L	L		R	R	M	R	M	M	R	L	M	M	M	L	L	L	R	M	M	M	M
090976	06	1	M	L	L	L	L	L	R	L	M	R	H	G		L	L			L	L	L	R	M	L	L	06	4	M	G	L	L		R	R	M	R	M	M	R	L	M	M	M	L	L	L	R	M	M	M	M
091676	06	1	M	L	L	L	L	L	R	L	M	R	H	G		L	L			L	L	L	R	M	L	L	06	4	F	G	L	L		R	R	F	R	F	F	R	L	M	M	M	L	L	L	R	M	M	M	M
092376	06	1	M	L	L	L	L	L	R	L	M	R	H	G		L	L			L	L	L	R	M	L	L	06	4	F	G	L	L		R	R	F	R	F	F	R	L	M	M	M	L	L	L	R	M	M	M	M
092876	06	1	M	L	L	L	L	L	R	L	M	R	H	G		L	L			L	L	L	R	M	L	L	06	4	F	G	L	L		R	R	F	R	F	F	R	L		M		L	L	L	R	M	M	M	M
093076	06	1	M	L	L	L	L	L	R	L	M	R	H	G		L	L			L	L	L	R	M	L	L	06	4	F	G	L	L		R	R	F	R	F	F	R	L		M		L	L	L	R	M	M	M	M
100576	06	1	M	L	L	L	L	L	R	L	M	K	H	G		L	L			L	L	L	R	M	L	L	06	4	F	G	L	L		R	K	F	R	F	F	R	L		M		L	L	L	R	M	M	M	M
101276	06	1	G	G	G	G	G	G	R	G	G	R	D			G	G			G	G	G	R	G	G	G	06	4	W	G	G			R	R	G	R	B	G	R			D		G	G	G	R		G	G	D
080576	06	2	G	R	R	L	L	G	L	L	R	M	G	L	L	L	M	L	M	R	L		M	L	R	L	06	5	L	L	L	L	M	M			L	L	H	M	L	L	L	L	L	H	L	L	L	L	L	R
081276	06	2	G	R	R	L	L	G	L	L	R	M	G	L	L	L	M	L	M	R	L		M	L	R	L	06	5	H	H	L	L	M	M			L	L	H	M	L	L	L	L	L	H	L	L	L	L	L	R
081976	06	2	G	R	R	L	L	G	L	L	R	M	G	L	L		H	L	M	R	L		H	L	R	L	06	5			L	L	M	M			L	L	H	M	L	L	L	L	L	H	L	L	L	L	L	R
082676	06	2	G	R	R	L	L	G	L	L	R	M	G	M	L		H	L	M	R	L		H	L	R	L	06	5			L	L	M	M			L	L	H	H	L	L	L	L	M	H	L	L	L	L	L	R
090176	06	2	G	R	R	L	L	G	M	L	R	M	G	M	L		H	L	H	R	L		H	L	R	L	06	5			L	L	M	M			L	L	H	H	L	L	L	L	H	H	M	M	L	L	L	R
090976	06	2	G	R	R	L	L	G	M	L	R	M	G	M	L		H	L		R	L		H	L	R	L	06	5			L	L	M	M			L	L	H	H	L	L	L	L	H	H	M	M	L	L	L	R
091676	06	2	G	R	R	L	L	G	F	L	R	F	G	M	L		H	L		R	L		H	L	R	L	06	5			F		M	M			L	L	H	H	L	L	F	F	H	H	M	M	L	L	L	R
092376	06	2	G	R	R	L	L	G	F	L	R	F	G	M	L		H	L		R	L		H	L	R	L	06	5			F		M	M			L	L	H	H	L	L	F	F	H	H	M	M	L	L	L	R
092876	06	2	G	R	R	L	L	G	F	L	R	F	G	M	L		H	L		R	L		H	L	R	L	06	5			F		M	M			L	L	H	H	L	L	F	F	H	H	M	M	L	L	L	R
093076	06	2	G	R	R	L	L	G	F	L	R	F	G	M	L		H	L		R	L		H	L	R	L	06	5			F		M	M			L	L	H	H	L	L	F	F	H	H	M	M	L	L	L	R
100576	06	2	G	R	R	L	L	G	F	L	R	F	G	M	L		H	L		R	L		H	L	R	L	06	5			F		M	M			L	L	H	H	L	L	F	F	H	H	M	M	L	L	L	R
101276	06	2	G	R	R	W	G	G	D	G	R	G	G	G	G		D			R	B		D	G	R	D	06	5			G		G	D			G	G	D	G	G	G	G	G	D	D	G	G	G	G	G	R
080576	06	3	L	L	L	L		L	L	L	H	L	L	L	G	G	L	L	L	G	L	L	G	G	L	L	06	6	R	G	L	L	M	L	L	G	L	G	L	L	L	L			L	R	L	R	L	L	L	G
081276	06	3	L	L	L	L		L	L	H		L	L	L	G	G	L	L	L	G	L	L	G	G	L	L	06	6	R	G	L	L			L	G	L	G	L	L	L	L			L	R	L	R	L	L	L	G
081976	06	3	L	L	L	L		L	L			M	L	L	G	G	L	L	L	G	L	L	G	G	L	L	06	6	R	G	L	L			L	G	L	G	L	L	L	L			L	R	L	R	L	L	L	G
082676	06	3	L	L	L	L		L	L			M	M	L		G	L	L	L	L	L	L	G	G	L	L	06	6	R	G	L	L			L	L	L	L	L	L	L	L			L	R	L	R	L	L	L	L
090176	06	3	L	L	M	M		L	L			M	M	M		G	L	L	L	L	L	L	G	L	L	M	06	6	R	L	L	L			L	L	L	L	L	L	L	L			L	R	L	R	L	L	M	M
090976	06	3	L	L	M	M		L	M			F	M	M		F	L	L	L	L	F	L	G	L	L	F	06	6	R	L	L	L			L	L	L	L	L	L	L	L			L	R	L	R	L	L	M	M
091676	06	3	L	L	M	M		L	M			F	H	H		F	L	L	L	F	F	F	G	L	L	F	06	6	R	L	L	L			L	L	L	L	L	F	L	L			L	R	L	R	L	L	M	F
092376	06	3	L	L	M	M		L	M			F	H	H		F	L	L	L	F	F	F	G	L	L	F	06	6	R	L	L	L			L	L	L	L	L	F	L	L			L	R	L	R	L	L	M	F
092876	06	3	L	L	M	M		L	M			F		H		F	L	L	L	F	F	F	G	L	L	F	06	6	R	L	L	L			L	L	L	L	L	F	L	L			L	R	L	R	L	L	M	F
093076	06	3	L	L	M	M		L	M			F		H		F	L	L	L	F	F	F	G	L	L	F	06	6	R	L	L	L			L	L	L	L	L	F	L	L			L	R	L	R	L	L	M	F
100576	06	3	L	L	M	M		L	M			F		H		F	L	L	L	F	F	F	G	L	L	F	06	6	R	L	L	L			L	L	L	L	L	F	L	L			L	R	L	R	L	L	M	F
101276	06	3	G	G	G	G			G			G		D		G		G	G	G	G	G	G	G	G		06	6	R	G	G	G			G	G	G	G	G	G	G	G			G	R	D	R	G	G		

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MO DA YR TR CD                                                                    TR CD
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082676 07 1 M L M M G G L H M L L P G L L H L L M H L R L M 07 4   L M M M L M M M M L L M L M M M L H H H H H H
090176 07 1   H H M G L L H M L M P G L L H L L M H M R L H 07 4   M H H M M M M M M L L M L M M M L H H H H H H
090976 07 1       M G F L H M L M P G L L H L L M H M R L H 07 4   M H   M M M M M M M M M L M H H M H H H H
091676 07 1       M G F L H M L F P G L   H L   H H M R L H 07 4   M     H M H   M M M M M F M H H H H     H
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093076 07 1       M G F L H M L F P G L   H L   H H M R L H 07 4   M     H M     M M M   M F M H H H H     H
100576 07 1       M G F L H M L F P G L   H L   H H M R L H 07 4   M     H M     M M M   M F M H H H H     H
101276 07 1       G G G G D G G G   G G   D G   D D   R G   07 4   G     G D     D G G   G G G D G G D

081276 07 2 M H L L L G H H L L H   L L H     H M M H H L G 07 5     L R L L L L     M H L L M M M M L M M M   M
081976 07 2     L L L G H H L L H   L L H     H M M H H L G 07 5     L R L L L L     M H L L M M M M L M M M   M
082676 07 2     L L L G   H L L     L L H     H M M H H L L 07 5     L R L L L L     M H M M H H M M M M M M   M
090176 07 2     L M H G   H M L     L L H     H H H H H L L 07 5     L R L M M M     M H M M H H M M M M M M   H
090976 07 2     L M H G   H M L     L L H     H H H H H L L 07 5     L R M M M M     M H M M H H M M M M   H   H
091676 07 2     L M H G   H M L     L L H     H H H H H L L 07 5     M R M M M M     H H M M H H M M M M       H
092376 07 2     L M H G   H M L     L L H     H H H H H L L 07 5     M R M M M M     H H M M H H M M M M       H
092876 07 2     L M H G   H M L     L L H     H H H H H L L 07 5     M R M M M M     H H M M H H M M M M       H
093076 07 2     L M H G   H M L     L L H     H H H H H L L 07 5     M R M M M M     H H M M H H M M M M       H
100576 07 2     L M H G   H M L     L L H     H H H H H L L 07 5     M R M M M M     H H M M H H M M M M       H
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081976 07 3 M M M L L L L M M L L L L H H M M M M L L L L L 07 6 L L   F M L M L L L M   M G L L   L M L M L L L
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MO DA YR TR CD                                              TR CD
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C81976 08 1 G   H G G L G L M L L G G G   G M L   M L R M G 08 4 L G   G G G   G G M M M L   R G G G G G G G G
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101276 08 2 G G   G R       D G G G   G   G G G R G G R     08 5 G G G   G G   G G G G G G R G G R   G G G G G R

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101276 08 3 G G G   G   R G G G G G     G G G G   R G G G D 08 6 R D     G   G G G G G   G G R G D D G G R R G
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MO DA YR TR CD                                              TR CD
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101276 09 1 G R B w B G G G       G G   G G       G   G   G 09 4 D G G D   D D     D D D G G G G G G D D     G G

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101276 09 3 R G G G D   G D D B B G G     G G     D G G G G 09 6   G   G G D G D           G   G G G G R G   G G
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MO DA YR TR CD                                                           TR CD
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100576 10 1 R F L F M M L   L     R M   L L M L P L L M F H 10 4      R   H H L L M   R R F L R L M M M M M
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081276 10 3   L M M M L H H H H M M R L M M R M L L L L G G 10 6 G L R L L L L L L L G R R G G G L R L R M M L L
081976 10 3   L M M M L   H H H M M R L M M R H L M L M G L 10 6 G L R M L L L L L L G R R G G G L R L R M M L L
082676 10 3   L H H M M   H H H M M R L M M R H L   M M G L 10 6 L M R M L M M M M M L R R G G G L R L R M M M M
090176 10 3   L H H M M     H H M M R M M M R H L   M M G L 10 6 L M R M L H M M M M L R R G G G L R L R M M M M
090976 10 3   L H H M M     H H M M R M M M R H L   M M L L 10 6 F M R M M H M M M M L R R L F F L R L R M M M M
091676 10 3   L H H M       H H M F R M M H R H L   M M L L 10 6 F M R M M H M M M M L R F F F F L R L R M H M M
092376 10 3   L H H M       H H M F R M M H R H F   M M L L 10 6 F M R M M H M M   M L R R F F F L R L R M H M M
092876 10 3   L H H M       H H M F R M M H R H F   M M L L 10 6 F M R M M H M M   M L R R F F F L R L R M H M M
093076 10 3   L H H M       H H M F R M M H R H F   M M L L 10 6 F M R M M H M M   M L R R F F F L P L R M H M M
100576 10 3   L H H M       H H M F R M M H R H F   M M L L 10 6 F M R M M H M M   M L P R F F F L R L R M H M M
101276 10 3   G B D G       D D G G R G D D R D G   G G G G 10 6   G R D D D D D   D G R R G G G G R G R D G G G
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MO DA YR TR CD                                              TR CD
080576 11 1 L G M L G G G L M L L L L L H G M M G L G M G L 11 4 M M L L L L L G G G L L L L L L L L L L L   L G
081276 11 1 L L M L L G G L M M L L L L H G H M L L L H G L 11 4 M M L L L L L G L L L L L L L L L L L L L   L L
081976 11 1 L L M L L G G L M M L L L L H G   M L   L H G L 11 4 M M L L L L L G L L L L L L L L L L L M L   L L
082676 11 1 L L M L L G G L M M L M M L H G   M L   L H G L 11 4 M M L L L L L L L L L L L M L M L L L M L   L L
090176 11 1 L L M L L L G L H H M M M L H G   M L   L H L M 11 4 H H L L L L L L L L L L L M M M L L M M M   L L
090976 11 1 M L M L L L G L H H M M M L H G   M L   L H L M 11 4 H H L L L L L   L   L L L M M M L L M   M   L L
091676 11 1 M L H L L L G L H H M M M M H G   M L   L H L M 11 4 H H L L F L L   L   L L L M M M L L M   M   L L
092376 11 1 M L H L L L G M H   M M H M H G   M L   L H L M 11 4 H H F L F L L   L   L L L M M M L L M   M   L L
092876 11 1 M L H L L L G M H   M M H M H G   M L   L H L M 11 4 H H F L F L L   L   L L L M M M L L M   M   L L
093076 11 1 M L H L L L G M H   M M H M H G   M L   L H L M 11 4 H H F L F L L   L   L L L M M M L L M   M   L L
100576 11 1 M L H L L L G M H   M M H M H G   M L   L H L M 11 4 H H F L F L L   L   L L L M M M L L M   M   L L
101276 11 1 G G D G D     G D   G G   G D       G   G D G   11 4 D D D G G G G   G     G G       G G G   G   G G

080576 11 2 L   L M L L G   M L L M L L L L L L M G G   G G 11 5 L L L L L L L L L L L       L L L L L M L M G L
081276 11 2 L   L M L L G   M L L M L M L L L L M G G   L L 11 5 L L L L L L L L M L L       L L L L L M M M G L
081976 11 2 L   L M L L G   M L L M L M L L L L M L G   L L 11 5 L L     L L L L M L L       L L L L L M M M   L
082676 11 2 L   L M L L G   M L L M L M L L L L M L G   L L 11 5 L L     L L H L M M L         L L L L M M M   L
090176 11 2 L   L M L L G   M L L M M M L M M L M L G   L L 11 5 M M     M L H M M M M         L L L M M M M   L
090976 11 2 L   L M L L G   M L L M M M L   M L M L G   L L 11 5 M M     M M H   M M           L L L M M M M   L
091676 11 2 L   F H F L G   M L F M M M L   M L M L G   L L 11 5   F     M M H   M M           L L L M M M H   L
092376 11 2 F   F H F L G   M L F M M M L   M L M L G   L L 11 5   F     M M H   M M           L   M M M M H   L
092876 11 2 F   F H F L G   M L F M M M L   M L M L G   L L 11 5   F     M M H   M M           L   M M M M H   L
093076 11 2 F   F H F L G   M L F M M M L   M L M L G   L L 11 5   F     M M H   M M           L   M M M M H   L
100576 11 2 F   F H F L G   M L F M M M L   M L M L G   L L 11 5   F     M M H   M M           L   M M M M H   L
101276 11 2 G     D G   G       D   G B G   G   D   G   G G 11 5   G     B G     G G           G   G G D G D   G

080576 11 3 M L L L L G G L L G G G   H H G G L G L L L G H 11 6 G L L R L L L L L G G G L G G G M M M M M M L L
081276 11 3 M L L L L L L L L L G     H H L L L G L L L G H 11 6   L L R L L L L L L L L L L L L H H H M M M L M
081976 11 3 M L L L L L L L L L G     H H L L L G L L L G H 11 6   L L R L L L L L L L L L L L L H H H H H H L M
082676 11 3 M L L L L L L L L L L     H H L L L G M L L G H 11 6   M M R L L M L L L L L L L L L H H H H H H M M
090176 11 3 M L   L L L L L L L L     H H L L L G M M L G H 11 6   M M R L L M L L L L L L M M M H H H H H H M M
090976 11 3 M L   L L L L L L L L     H H F L L G M M L G H 11 6   M M R L M M L L L L L L       H H H H H H M M
091676 11 3 M L   L L L L M M L L     H H F L L G M F L G H 11 6   M M R L M M L L L L L L       H H H H H H M M
092376 11 3 M L   M M L L M M L L     H H F L L G M F L G H 11 6   M M R L M M L M L L L L       H H H H H H M M
092876 11 3 M L   M M L L M M L L     H H F L L G M F L G H 11 6   M M R L M M L M L L L L       H H H H H H M M
093076 11 3 M L   M M L L M M L L     H H F L L G M F L G H 11 6   M M R L M M L M L L L L       H H H H H H H M
100576 11 3 M L   M M L L M M L L     H H F L L G M F L G H 11 6   M M R L M M L M L L L L       H H H H H H H M
101276 11 3 G B   G G     G G   B     D     G G G W   B G D 11 6.  D G R G G G D G G   G G       D   D D D D B D
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MO DA YR	TR	CD																									TR	CD																								
080576	12	1	L	L	L	L	L	G	L	L	L	G	L	R	L	M	L	G	R	L	H	H	L	L	L	M	12	4	M	H	H	R	H	M	M	R	L	G	H	H	M	L	H	M		L	L	L	L	L	L	L
081276	12	1	L	L	L	L	L	G	L	L	L	G	L	R	M	M	L	G	R	L	H	H	L	L	L	M	12	4	M	H	H	R	H	H	M	R	L	G	H	H	M	M	H	M		L	L	L	L	L	L	L
081976	12	1	L	L	L	L	L	G	L	L	L	G	L	R	M	M	L	G	R	L	H	H	L	L	L	H	12	4	M	H	H	R	H	H	H	R	L	G	H	H	H	H	H	H		M	M	L		L	L	L
082676	12	1	L	L	L	L	L	L	L	L	L	L	L	R	M	M	L	G	R	L	H	H	L	L	L	H	12	4	M	H	H	R	H	H	H	R	L	G	H	H	H	H	H	H		M	M	L		L	L	L
090176	12	1	L	L	L	L	L	L	L		L	L	L	R	M	M	M	G	R	M	H	H	L	L	L	H	12	4	M	H	H	R	H	H		R	L	G	H	H	H	H	H	H		M	M	L		L	L	L
090976	12	1	L	M	L	L	L	L	L		L	L	L	R	M	M	M	G	R	M	H	H	L	L	L		12	4	M	H	H	R	H	H		R	L	F	H	H	H	H	H	H		M	M	L		L	L	L
091676	12	1	L	M	F		L	F	F		L	F	L	R	M	M	M	F	R	M	H	H		L			12	4	M	H	H	R	H	H		R	F	F	H	H	H	H	H	H		M	M	L		L	L	F
092376	12	1	L	M	F		L	F	F			F	L	R	M	M	M	F	R	M	H	H		L			12	4	M	H	H	R	H	H		R	F	F	H	H	H	H	H	H		M	M	M		M	L	F
092876	12	1	L	M	F		L	F	F			F	L	R	M	M	M	F	R	M	H	H		L			12	4	M	H	H	R	H	H		R	F	F	H	H	H	H	H	H		M	M	M		M	L	F
093076	12	1	L	M	F		L	F	F			F	L	R	M	M	M	F	R	M	H	H		L			12	4	M	H	H	R	H	H		R	F	F	H	H	H	M	H	H		M	M	M		M	L	F
100576	12	1	L	M	F		L	F	F			F	L	R	M	M	M	F	R	M	H	H		L			12	4	M	H	H	R	H	H		R	F	F	H	H	H	H	H	H		M	M	M		M	L	F
101276	12	1	D	G	G		G	W				B	G	R	D		G	D	R	G	D	D		G			12	4		D	D	R				R	W		D	D	D	D	G	D		G	G	G		G	G	G
080576	12	2	L	L	M	L	L	L	M	H	L	L	M	R	H	M	R	R	H	H	L	M	H	H	L	L	12	5	L	L	H	H	L	L	G	G	L	M	G	L	L	L	L	L	G	G	G	G	L	L	L	L
081276	12	2	M	M	M	L	L		H	H	L	L	M	R	H	M	R	R	H	H	L	M	H	H	M	L	12	5	L	L	H	H	L	L	G	G	L	M	G	L	L	L	L	L	G	G	G	G	L	L	L	L
081976	12	2	M	M	M	L	L			H	L	L	M	R	H	H	R	R	H	H	M	M	H	H	M	L	12	5	L	L	H	H	L	L	G	G	L	M	G	L	L	L	L	L	G	G	G		L	L	L	L
082676	12	2	M	M	M	M	L			H	L	L	M	R	H	H	R	R	H	H	M	M	H	H	H	L	12	5	L	L	H	H	L	L	G	G	L	M	G	L	L	L	L	L	G	L	G		L	L	L	L
090176	12	2	M	M	M	M	M			H	L	L	M	R	H	H	R	R	H	H	M	M	H	H	H	L	12	5	L	L	H	H	L	L	G	G	L	M	G	L	L	L	L	L	G	L	G		L	L	L	L
090976	12	2	M	M	M	M	M			H	L	L	M	R	H	H	R	R	H	H	M	M	H	H	H	H	12	5	L	L	H	H	L	L	G	G	L	M	G	L	L	L	L	M	G	L	G		L	L	L	L
091676	12	2	M	M	M	M	F			H	L	F	M	R	H	H	R	R	H	H	M	M	H	H	H	H	12	5	L	L			L	L	F	F	L	M	L	L	L	L	M	M	G	L	L		L	L	L	L
092376	12	2	M	M	M	M	F			H	L	F	M	R	H	H	R	R	H	H	M	M	H	H		H	12	5	L	L			L	L	F	F	L	M	L	L	L	L	M	M	G	L	L		L	L	L	L
092876	12	2	M	M	M	M	F			H	L	F	M	R	H	H	R	P	H	H	M	M	H	H		H	12	5	L	L			L	L	F	F	L	M	L	L	L	L	M	M	G	L	L		L	L	L	L
093076	12	2	M	M	M	M	F			H	L	F	M	R	H	H	R	R	H	H	M	M	H	H		H	12	5	L	L			L	L	F	F	L	M	L	L	L	L	M	M	G	L	L		L	L	L	L
100576	12	2	M	M	M	M	F			H	L	F	M	R	H	H	P	R	H	H	M	M	H	H		H	12	5	L	L			L	L	F	F	L	M	L	L	L	L	M	M	G	L	L		L	L	L	L
101276	12	2	G		G	G	G			D	G	G	G	R	D	D	R	R	D	D	D	G	D	D		D	12	5	G	G			G	G	G	G	G	D	G	G	G	G	G	D	G	G	G		G	G	G	G
080576	12	3	L	H	H	G	L	M	M	G	G	L	L	H	H	H	H	L	L	H	M	R	R	H	H	L	12	6	M	R	R	R				R	L	R	L	L	L	L	L	L	R	L	L	G	G	R	H	M
081276	12	3	L	H	H	L	L	M	M	P	P	L	L	H	H	H	H	L	L	H	M	R	R	H	H	L	12	6	M	R	R	R				R	L	R	M	L	L	L	L	L	R	L	L	G	G	R	H	M
081976	12	3	L	H	H	L	L	H	H	P	P	L	L	H	H	H	H	M	M	H	H	R	R	H	H	M	12	6	M	R	R	R				R	L	R	M	M	L	M	M	M	R	L	L	G	G	R	H	
082676	12	3	L	H	H	L	L	H	H	P	P	L	L	H	H	H	H	H	H	H	H	R	R	H	H	M	12	6	M	R	R	R				P	M	R	M	M	L	M	M	M	R	L	L	G	L	R	H	
090176	12	3	L		H	L	L	H	H	P	P	L	L	H	H	H	H	H	H	H	H	R	R	H	H	M	12	6	M	R	R	R				R	M	R	M	M	M	M	M	M	R	L	L	L	L	R		
090976	12	3	L		H	L	L	H	H	P	P	L	L	H	H	H	H	H	H	H	H	R	R	H		M	12	6	M	R	R	R				R	H	R	M	M	M	M		M	R	L	L	L	L	R		
091676	12	3	L		H	L	L	H	H	P	P	L	F	H	H			F	F	H	H	R	R			M	12	6	M	R	R	R				R	H	R	M	M	M	M		M	R	L	L	L	L	R		
092376	12	3	M		H	L	L			P	P	L	F	H	H			F	F	H	H	R	R			M	12	6	M	R	R	R				R	H	R	M	M	M	M		M	R	M	M	L	F	R		
092876	12	3	M		H	L	L			P	P	L	F	H	H			F	F	H	H	R	R			M	12	6	M	R	R	R				R	H	R	M	M	M	M		M	R	M	M	L	F	R		
093076	12	3	M		H	L	L			P	P	L	F	H	H			F	F	H	H	R	R			M	12	6	M	R	R	R				R	H	R	M	M	M	M		M	R	M		L	F	R		
100576	12	3	M		H	L	L			P	P	L	F	H	H			F	F	H	H	R	R			M	12	6	M	R	R	R				R	H	R	M	M	M	M		M	R	M		L	F	R		
101276	12	3	G			D	D			G	G	G	D	D	D			G	D		D	R	R			D	12	6	G	R	R	R				R	D	R	D	G	G	G		D	R	G		W	W	R		

MO DA YR	TR	CD																								
080576	13	1	L	L	L	G	L	G	M	G	G	L	L	G	G	G	L	L	L	L	G	G	M	M	G	G
081276	13	1	L	M	L	G	L	L	H	L		M	L	L	L		L	L	L	L	L	G	H	H	P	P
081976	13	1	L	M	L	G	L	L	H	L		M	L	L	L		L	L	M	M	L	G	H	H	P	P
082676	13	1	L	M	L	G	L	L	H	L		M	L	L	L		L	L	M	M	L	G	H	H	P	P
090176	13	1	M	H	L	G	L	L	H	L		M	L	L	L		L	L	M	M	L	G	H	H	P	P
090976	13	1	M	H	L	G	L	L	H	L		H	L	L	L		L	L		M	L	L	H	H	P	P
091676	13	1	M	H	L	G	L	L	H	L		H	L	L	F		L	L		H	L	F	H	H	F	P
092376	13	1	M	H	L	L	L	F	H	L		H	L	L	F		L	L		H	L	F	H	H	F	P
092876	13	1	M	H	L	L	L	F	H	L		H	L	L	F		L	L		H	L	F	H	H	F	P
093076	13	1	M	H	L	L	L	F	H	L			L	L	F		L	L		H	L	F	H	H	F	P
100576	13	1	M	H	L	L	L	F	H	L			L	L	F		L	L		H	L	F	H	H	F	P
101276	13	1	G	D	G	G		G	D	G			G	G	G		D	G		G			D	D		
080576	13	2	L	G	L	G	G	L	L	L	L	L	L	G	G	L	L	G	L	L	L	L	G	G	G	L
081276	13	2	L	G	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	L	G	G	L
081976	13	2	L	G	L	L	L	L	L	L	L	L	L	M	L	L	L	L	L	M	L	L	L	G	G	L
082676	13	2	L	G	L	L	L	L	L	L	L	L	L	M	L	L	L	L	L	M	M	L	L	G	G	L
090176	13	2	M	G	L	L	L	L	L	L	L	L	L	M	L	L	L	L	L	M	M	L	L	G	G	L
090976	13	2	M	G	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	H	H	L	L	G	G	L
091676	13	2	M	F	F	L	L	L	L	L	L	L	L	H	L	L	L	L	L	H	H	F	L	G	F	F
092376	13	2	M	F	F	L	L	L	L	L	L	L	F	H	M	L	L	L	L	H	H	F	L	G	F	F
092876	13	2	M	F	F	L	L	L	L	L	L	L	F	H	M	L	L	L	L	H	H	F	L	G	F	F
093076	13	2	M	F	F	L	L	L	L	L	L	L	F	H	M	L	L	L	L	H	H	F	L	G	F	F
100576	13	2	M	F	F	L	L	L	L	L	L	L	F	H	M	L	L	L	L	H	H	F	L	G	F	F
101276	13	2		G	G	G	G	G	G	G	G	G	W	D	G	G	G	G	G	D	D	D	B	G	G	G
080576	13	3	M	M	L	L	L	H	M	H	G	G	G		L	L	L	L	L	L	L	L	L	L	L	H
081276	13	3	M	M	L	L	L	H	H	H	G	G	G		L	L	L	L	L	L	L	L	M	L	L	H
081976	13	3	M	M	L	L	L	H	H	H	G	G	G		L	F	L	L	L	L	L	L	M	L	L	H
082676	13	3	M	M	L	L	L	H	H	H	G	G	G		L	F	L	L	L	L	L	L	M	L	L	H
090176	13	3	M	M	L	L	L	H	H	H	G	G	G		L	F	L	L	L	M	M	M	M	M	M	H
090976	13	3	H	H	L	L	L	H	H	H	G	G	G		L	F	L	L	L	M	M	M	M	M	M	H
091676	13	3	H	H	L	L	L	H	H	H	L	L	L		L	F	L	L	L	M	M	M	M	M	M	H
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092876	13	3	H		L	L	L	H	H	H	L	L	L		L	F	L	L	L	M	M	M	M	M	M	H
093076	13	3	H		L	L	L	H	H	H	L	L	L		L	F	L	L	L	M	M	M	M	M	M	H
100576	13	3	H		L	L	L	H	H	H	L	L	L		L	F	L	L	L	M	M	M	M	M	M	H
101276	13	3	D		G	G	G	D	D	D	G	G	G			W	D	D	D	G	D	D	D	G	G	D

MO DA YR	TR	CD																								
080576	13	4	H	L	G	L	M	R	M	G	G	G	L	L	M	G	G	G	L	M	M	L	L	L	L	L
081276	13	4	H	L	L	L	H	R	H	G	G	G	L	M	M	G	G	G	M	M	M	L	L	L	M	L
081976	13	4	H	L	L	L		R					M	M	M	L	L	L	M	H	M	L	L	L	M	L
082676	13	4	H	L	L	L		R					M	M	M	L	L	L	M	H	M	L	M	M	M	M
090176	13	4	H	L	L	M		R					M	M	M	L	L	L	H	H	H	M	M	M	M	M
090976	13	4	H	L	L	M		R					M	M	M	L	L	L	H	H	H	M	M	M	M	M
091676	13	4	H	L	L	M		R					M	M	M	L	F	L		H	H	M	M	M	M	M
092376	13	4	H	M	L	M		R					M	H	M	L	F	L		H	H	M	M	M	M	M
092876	13	4	H	M	L	M		R					M	H	M	L	F	L		H	H	M	M	M	M	M
093076	13	4	H	M	L	M		R					M	H		M	F	F		H	H	M	M	M	M	M
100576	13	4	H	M	L	M		R					M	H		M	F	F		H	H	M	M	M	M	M
101276	13	4		G	G	G		R					D	G						D	D	G	G	G		
080576	13	5	L	L	L	L	L	L	L	L	L	G	G	L	G	G	L	L	L	L	G	G	L	L	L	M
081276	13	5	L	L	L	L	L	L	L	L	L	L	G	L	G	G	L	L	L	L	G	L	L	L	L	M
081976	13	5	L	L	L	L	L	L	L	L	L	L	L	L	G	L	L	L	L	L	G	L	L	L	M	H
082676	13	5	L	L	L	L	L	L	L	L	L	L	L	L	G	L	L	L	L	L	G	L	L	L	M	H
090176	13	5	L	L	L	L	L	L	L	M	L	L	L	L	L	L	L	L	L	L	G	L	L	L	H	H
090976	13	5	L	L	L	L	L	L	L	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	H	H
091676	13	5	L	L	L	L	L	F	L	M	F	L	L	L	L	L	L	L	L	L	L	L	L	L	H	H
092376	13	5	L	L	L	L	L	F	L	M	F	L	L	L	L	L	L	L	L	L	L	L	L	L	H	H
092876	13	5	L	L	L	L	L	F	L	M	F	L	L	L	L	L	L	L	L	L	L	L	L	L	H	H
093076	13	5	L	L	L	L	L	F	L	M	F	L	L	L	L	L	L	L	L	L	L	L	L	L	H	H
100576	13	5	L	L	L	L	L	F	L	M	F	L	L	L	L	L	L	L	L	L	L	L	L	L	H	H
101276	13	5	G	B	G	W	G	B	G	D	G	G	G	G	G	G		G	G	G	G	G	G	G	D	D
080576	13	6	L	L	G	G	L	G	G	L	L	L	L	L	L	G	G	G	G	G	L	L	G	L	G	G
081276	13	6	L	L	L	G	L	G	G	L	L	L	L	L	L	G	G	G	L	G	L	L	G	L	L	G
081976	13	6	L	L	L	G	L	G	G	L	L	L	L	L	L	G	G	G	L	G	L		G		L	G
082676	13	6	L	L	L	L	L	L	L	L	L	L	M	M	M	G	G	G	L	G	L		L		L	L
090176	13	6	L	L	L	L	L	L	L	L	L	L	M		M	G	L	L	L	G	L		L		L	L
090976	13	6	L				L	L	L	L	L	M	M		M	G	L	L	L	L	L		L		L	L
091676	13	6	L				L	L	L	L	L	M	M		M	G	L	L	L	F	L		F		L	F
092376	13	6	L				L	L	L	L	L	M	M		M	G	L	L	L	F	L		F		L	F
092876	13	6	L				L	L	L	L	L	M	M		M	G	L	L	L	F	L		F		L	F
093076	13	6	L				L	L	L	L	L	M	M			G	L	L	L	F	L		F		L	F
100576	13	6	L				L	L	L	L	L	M	M			G	L	L	L	F	L		F		L	F
101276	13	6	G							B	B	W	D			G	G	G	G	G	W		G		G	G

MO DA YR	TR	CD																								TR	CD																								
080576	14	1	R	G	R	G	H	G	M	R	G	G	H	L	M	G	M	M	L	L	R	L	G	M		M	14	4	R	G		M	H	M	L	L	L	R	P	R	L	R	M	L	L	L	R	R		L	M	M
081276	14	1	R	L	R	G	H	G	M	K	G	G	H	L	M	G	M	M	L		R	L	G	M		M	14	4	R	G		M	H	H	L	L	L	R	R	R	L	R	M	L	L	L	R	R		M	M	M
081976	14	1	R	L	K	G		G	M	R	G	G	H	L	M	G	M	M			R	L	G	M		M	14	4	R	G		H		H	L	L	L	R	R	R	L	R	M	L	L	L	R	R		M	M	M
082676	14	1	R	L	R	G		G	M	R	G	G	H	L	M	G	M	M			R	L	G	M		M	14	4	R	G		H		H	L	L	L	R	K	R	L	R	M	L	L	L	R	K		M	M	M
090176	14	1	R	L	R	G		G	M	R	G	G	H	L	M	G	M	M			R	L	G	M		M	14	4	R	G		H		H	L	L	L	R	R	R	L	R	M	L	L	L	R	R		H	H	H
090976	14	1	R	L	R	G		L	M	R	L	G	H	L	M	L	M	M			R	L	F	H		M	14	4	R	L		H		H	L	L	L	R	R	R	M	R	M	M	M	M	R	R		H	H	H
091676	14	1	R	L	R	G		L	H	R	L	G	H	F	M	L	M	M			R	L	F	H		M	14	4	R	L		H		H	M	M	M	R	R	R	M	R	M	M	M	M	R	R		H	H	H
092376	14	1	R	L	R	G		L	H	R	L	G	H	F	M	L	M	M			R	L	F	H		M	14	4	R	L		H		H	M		M	R	R	R	M	R	M	M	M	H	R	R			H	H
092876	14	1	R	L	R	G		L	H	R	L	G	H	F	M	L	M	M			R	L	F	H		M	14	4	R	L		H		H	M		M	R	K	R	M	R	M	M	M	H	R	R			H	H
093076	14	1	R	L	R	G		L	H	R	L	G	H	F	M	L	M	M			R	L	F	H		M	14	4	R	L		H		H	M		M	R	R	R	M	R	M	M	M	H	R	R			H	H
100576	14	1	R	L	R	G		L	H	R	L	G	H	F	M	L	M	M			R	L	F	H		M	14	4	R	L		H		H	M		M	R	R	R	M	R	M	M	M	H	R	R			H	H
101276	14	1	R	G	R	G		G	D	R	G	G	D	G	G	G	D	G			R	G	D			G	14	4	R	G				D	B		G	R	R	R	G	R	D	G	G	G	R	R			D	D
080576	14	2		G	R	R	G	R	L	M	L	R	L	P		H	L	L	L	L	M	L	M	R	L	L	14	5	G	G	R	R	L	H	R	M	L	L	L	L	L	L	L	R	L	L	M	M	L	L	M	L
081276	14	2		G	R	R	G	R	L	M	L	R	L	R			L	L	L	L	M	L	M	R	L	L	14	5	G	G	R	R	L	H	R	M	L	L	L	L	L	L	L	R	L	L	M	M	L	L	M	L
081976	14	2		G	R	R	G	R	L		L	K	L	R			L	L	L	L	M	L	M	R	L	L	14	5	G	G	R	R	M	H	R	M	L	L	L	L	L	L	L	R	L	L	H	H	L	L	M	M
082676	14	2		G	R	R	L	R	L		L	K	L	R			L	L	L	L	M	L	M	R	P	P	14	5	G	G	R	R	M	H	R	M	L	L	L	L	M	M	L	R	M	M	H	H	L	L	M	M
090176	14	2		G	R	R	L	R	M		L	R	L	P			L	L	L	L	M	L	M	R	P	P	14	5	G	G	R	R		H	K	M	L	L	L	L	M	M	L	R	M	M	H	H	L	L	M	M
090976	14	2		G	R	R	L	R	M		L	R	L	R			L	L	L	L	M	L	M	R	P	P	14	5	G	G	R	R		H	R	M	L	L	L	L	M	M	L	R	M	M	H	H	L	L	M	M
091676	14	2		G	R	R	L	R	F		L	R	M	R			L	L	L	L	M	F	H	R	P	P	14	5	G	G	R	R		H	K	M	F	L	L	L	M	M	L	R	M	M	H	H	F	F	M	M
092376	14	2		G	R	R	L	R	F		L	R	M	R			L	L	L	L	M	F		R	P	P	14	5	G	G	R	R		H	R	M	F	L	L	L	M	M	L	R		M	H	H	F	F		M
092876	14	2		G	R	R	L	R	F		L	R	M	R			L	L	L	L	M	F		R	P	P	14	5	G	G	R	R		H	R	M	F	L	L	L	M	M	L	R		M	H	H	F	F		M
093076	14	2		G	R	R	L	R	F		L	R	M	R			L	L	L	L	M	F		R	P	P	14	5	G	G	R	R		H	R	M	F	L	L	L	M	M	L	R		M	H	H	F	F		M
100576	14	2		G	R	R	L	R	F		L	R	M	K			L	L	L	L	M	F		R	P	P	14	5	G	G	R	R		H	R	M	F	L	L	L	M	M	L	R		M	H	H	F	F		M
101276	14	2			R	R	G	R	G		G	R	G	R			G	D	G	G	G	G		R	G	G	14	5	G	G	R	R		D	R	G	G	G					G	R		G	D	D	G	W		G
080576	14	3	L	H		M	R		L	R	R	H	M	L	L	L	L	L	R	R	L	L	L	L	R	L	14	6	G	L	G	G	L	L		L	L	M	L			R	L	L	M	R	P	L	M	M	L	L
081276	14	3	L	H		H	R		L	R	R	H	M	L	L		L	L	R	R		L	L	L	R	L	14	6	G	L	G	G	L			L	L	M	L			R	L	L	M	R	R	L	M	M	L	L
081976	14	3	L	H		F	R		M	R	R	H	H	L	L		L	L	R	R		L	L	L	R	L	14	6	G	L	G	G				L	L	M	L			R	L	L		R	R		M	M	L	L
082676	14	3	L	H			R		M	R	R	H	H	L	L		L	M	R	R		L	L	L	R	M	14	6		L						L	L	M	L			R	M	M		R	P		M	M	L	L
090176	14	3	L	H			R		M	R	R	H	H	L	L		L	H	R	R		M	M	L	R	M	14	6		L						L	L	M	L			R	M	M		R	R		M	M	L	L
090976	14	3	M	H			R		M	R	R	H	H	L	L		L	H	R	R		M	M	L	R	M	14	6		L						M	M	M	L			R	H	H		R	R		M	M	L	L
091676	14	3	M	H			R		M	R	R		H	L	L		L	H	R	R		M	M	L	R	M	14	6		L						M	M	M	F			R	H	H		R	R		M	M	L	L
092376	14	3	M	H			R		M	R	R		H	L	L		L		R	R		M	M	L	R	M	14	6		L						M	M	M	F			R	H	H		R	R		M	H	L	L
092876	14	3	H	H			R		M	R	R		H	L	L		L		R	R		M	M	L	R	M	14	6		L						M	M	M	F			R	H	H		R	R		M	H	L	L
093076	14	3	H	H			R		M	R	R		H	L	L		L		R	R		M	M	L	R	M	14	6		L						M	M	M	F			R	H	H		R	R		M	H	L	L
100576	14	3	H	H			R		M	R	R		H	L	L		L		R	R		M	M	L	P	M	14	6		L						M	M	M	F			R	H	H		R	R		M	H	L	L
101276	14	3		D			R		D	R	R		D	G	G		G		R	R		G	G	G	R	G	14	6		G						G	G	G	G			R	D	D		R	R		G	D	G	G

MO DA YR	TR	CD																								
080576	15	1	L	L	L	L	L	L	L	L	L	G	L	M	L	L	L	L	G	G	R	L	R	R	L	L
081276	15	1	L	L	L	L	L	L	L	L	L	G	L	M	L	L	L	L	G	G	R	L	R	R	L	L
081976	15	1	L	L	L	L	L	L	L	L	L	G	L	M	L	L	L	L	G	G	R	L	R	R	L	L
082676	15	1	L	L	L	M	L	L	L	L	L	G	L	M	L	L	L	L	G	G	R	L	R	R	L	L
090176	15	1	L	L	L	M	M	M	L	L	L	L	L	M	L	L	L	L	L	G	R	L	R	R	L	M
090976	15	1	L	L	L	M	M	M	L	L	L	L	L	M	L	L	L	L	L	G	R	L	R	R	L	M
091676	15	1	L	L	L	M	M	M	L	L	L	L	L	H	L	L	L	L	L	L	R	L	R	R	L	M
092376	15	1	L	L	L	M	M	M	L	F	L	L	L		L	L	F	L	L	L	R	L	R	R	L	M
092876	15	1	L	L	L	M	M	M	L	F	L	L	L		L	L	F	L	L	M	R	M	R	R	M	H
093076	15	1	L	L	L	M	M	M	L	F	L	L	L		L	L	F	L	L	M	R	M	R	R	M	H
100576	15	1	L	L	L	M	M	M	L	F	L	L	L		L	L	F	L	L	M	R	M	R	R	M	H
101276	15	1	G	G	G	B	G	G	G	G	G	G	D		D	G	W	G	G	G	R	D	R	R		
080576	15	2	L	L	L	H	G	L	G	G	G	L	L	L	R	L	H	G	G	L	M	G	G	G	G	L
081276	15	2	L	L	L		G	L	G	G	G	L	L	L	R	L	H	G	G	M	M	G	G	G	G	M
081976	15	2	L	L	L		G	L	G	F	G	F	L	L	R	L	H	G	F	M	H	G	G	G	G	H
082676	15	2	L	L	L		G	L	G	F	G	F	L	L	R	L	H	L	F	H	H	G	G	G	G	H
090176	15	2	M	M	L		G	M	G	F	L	F	L	L	R	L	H	L	F	H	H	G	G	L	L	H
090976	15	2	M	M	L		G	M	G	F	L	F	L	L	R	L	H	L	F	H	H	G	G	L	L	H
091676	15	2	M	M	L		G	M	G	F	L	F	L	L	R	L	H	L	F	H		G	G	L	L	H
092376	15	2	M	M	L		L	M	G	F	L	F	L	L	R	L	H	L	F	H		G	L	L	L	H
092876	15	2	M	M	L		L	M	G	F	L	F	L	L	R	L	H	L	F			G	L	L	L	H
093076	15	2	M	M	L		L	M	G	F	L	F	L	L	R	L	H	L	F			G	L	L	L	H
100576	15	2	M	M	L		L	M	G	F	L	F	L	L	R	L	H	L	F			G	L	L	L	
101276	15	2	G	G	G		G	G	D		G	G	G	G	R	G		G				G	G		W	
080576	15	3	L	L	L	L	L	L	L	L	L	L	L	M	H	H	L	L	M	L	L	L		G	L	L
081276	15	3	L	L	L	L	L	L	L	M	M	M	L	M	H	H	L	L	M	L	L	L		G	L	L
081976	15	3	L	M	L	L	L	M	L	M	M	M	L	M	H	H	L	L	M	L	L	L		G	L	L
082676	15	3	L	M	L	L	M	M	M	M	H	H	M	M	H	H	L	L	M	M	L	L		G	M	L
090176	15	3	M	M	L	L	M	M	M	H	H	H	M	H	H	H	L	M	M	M	L	L		G	M	M
090976	15	3		M	L	L	H	M	M		H	H	M	H	H	H	L	M	M	M	L	L		L	M	M
091676	15	3		M	L	L	H	H	H		H	H	M	H	H	H	L	M	M	M	L	L		F	H	H
092376	15	3		M	M	M	H	H	H				H	H	H	H	L	M	M	M	L	L		F	H	H
092876	15	3		M	M	M	H	H	H				H	H	H	H	L	M	M	M	L	L		F	H	H
093076	15	3		M	M	M	H	H	H				H	H	H	H	L	M	M	M	L	L		F	H	H
100576	15	3		M	M	M	H	H	H				H	H	H	H	L	M		M	L	L		F	H	H
101276	15	3			G	G	D	D					D	D	D	D	G	G		G	G	G			D	D

MO DA YR	TR	CD																								
080576	15	4	L	L	L	L	M	M	M	G	G	G	L	L	L	L	L	L	M	M	L	L	L	L	L	L
081276	15	4	L	L	L	M	M	M	M	G	G	L	L	L	L	L	L	L		M	M	L	L	L	L	L
081976	15	4	L	L	L	M	M	H	H	G	G	L	L	L	L	L	L	L		M	M	L	L	L	M	M
082676	15	4	L	L	L	M	M	H	H	G	L	L	L	L	L	L	L	L		H	H	L	L	L		M
090176	15	4	M	L	L	M	M	H	H	L	L	L	L	L	L	L	L	L		H	H	M	M	M		H
090976	15	4	M	L	L	M	M	H	H	L	L	L	L	L	L	L	L	L		H	H	M	M	M		H
091676	15	4	M	L	L	M	M	H	H	L	L	L	L	L	L	L	L	L		H	H	M	M	M		H
092376	15	4	M	M	M	H	H	H	H	L	L	L	M	M	M	M	M	L			H	M	M	M		H
092876	15	4	M	M	M	H	H	H	H	L	L	L	M	M	M	M	M	L			H	M	M	M		H
093076	15	4	M	M	M	H	H	H	H	L	L	L	M	M	M	M	M	L			H	M	M	M		H
100576	15	4	M	M	M	H	H	H	H	L	L	L	M	M	M	M	M	L			H	M	M	M		H
101276	15	4	B	G	G	D	D	G	G	G		G	G	G	G	G	G	G			D	D	G	G		
080576	15	5	L	G	L	L	L	L	L	L	L	L	R	G	L	G	L	L	L	G	H	M	L	L	G	G
081276	15	5	L	G	L	L	L	L	L	L	L	L	R	L	L	L	L	L	L	G	H	H	L	L	G	G
081976	15	5	L	L	L	L	L	L	L	L	L	L	R	L		L	L	L	L	G	H	H	L	L	G	L
082676	15	5	L	L	L	M	L	L	L	L	M	M	R	L		L	L	L	L	G	H	H	L	L	L	L
090176	15	5	L	L	M	M	M	M	L	M	M	M	R	L		L	M	M	L	G	H	H	L	L	L	L
090976	15	5	L	L	M	M	M	M	L	M	M	M	R	L		L	M	M	L	G	H	H	L	L	L	L
091676	15	5	L	L	H	H	M	M	M	M	M	H	R	L		L	M	M	L	G	H	H	L	L	L	L
092376	15	5	L	F	H	H	M		M	M	M	H	R	L		L	M	M	L	G	H	H	M	M	L	L
092876	15	5	L	F	H	H	M		M	M	M	H	R	L		L	M	M	L	G	H	H	M	M	L	L
093076	15	5	L	F	H	H	M		M	M	M	H	R	L		L	M	M	L	G	H	H	M	M	L	L
100576	15	5	L	F	H	H	M		M	M	M	H	R	L		L	M	M	L	G	H			M	L	L
101276	15	5	G	G									R	G		G	G	G	G	G	D			G	G	G
080576	15	6	L	L	L	L	L	G	G	L	L	L	L	L	L	L	G	L	G	G	G	L	L	L	L	L
081276	15	6	L	L	L	L	L	G	G	M	L	L	L	L	M	L	G	L	G	G	G	L	L	L	L	L
081976	15	6	L	L	L	L		G	L	M	L	L	L	L	M			L	G	G	G	L	L	L	L	L
082676	15	6		L	L	L		G	L	M	M	M	L	L	M			L	G	G	G	L	M	L	M	M
090176	15	6		L	L	L		G	L	M	M	M	M	M	H			L	G	G	G	L	M	L	M	M
090976	15	6		L	L	M		L	L	M	M	M	M	H	H			L	G	G	G	L	M	L	M	M
091676	15	6		L	L	M		L	L	M	M	M	H	H	H			L	G	G	G	L	M	L	M	M
092376	15	6		L	L	M		L	L	M		M	H		H			L	G	G	G	L	M	L	M	M
092876	15	6		L	L	M		L	L	M		M	H		H			L	G	G	G	L	M	L	M	M
093076	15	6		L	L	M		L	L	M		M	H		H			L	G	G	G	L	M	L	M	M
100576	15	6		L	L	M		L	L	M		M	H		H			L	G	G	G	L	M	L	M	M
101276	15	6		G	G	G		G	G	D		D	D		D			G	G	G					G	G

VITA

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Master of Science

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