

A NEW LOOK AT REACH & FREQUENCY

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Ed Barz has spoken to us today as a respected user of research who uses the results as a basis for making advertising decisions involving millions of dollars. Naturally, all of his points deserve careful explanation, but there will hardly be time today to do justice to more than a few of the major ones that appear to have far-reaching implications. It just takes more time to answer questions than to raise them.

One such point grows out of Ed's statement that the real issue is reach and frequency rather than the single-issue audiences provided by the filter-recall and through-the-book measurement techniques. By the way, in case there's any doubt about it, I have a very close, personal, business, and sentimental attachment to a rather large syndicated service that utilizes the through-the-book or reader-interest methods. One thing Ed said, however, as his evidence of the irrelevancy of the single-issue audience questions really shook me up when I first saw it last week. He pointed out that single-issue audience results obtained by the filter-recall method correlate .985 for women and .996 for men with the results of the through-the-book method.

Now, of course, this isn't entirely new to us: Every year it has happened that a few months after our audience findings are out, someone will tell me about another set of data just released that seem to agree closely with our figures. What I didn't realize, however, is just how exceedingly close the figures really were. Correlations in the neighborhood of .99 you just hardly ever find where more than a few estimates are involved and where you are dealing with data from completely independent sample survey procedures.

To see just what this means, consider a measure called the "coefficient of determination" which is merely the square of the correlation coefficient. In the case of a correlation of .996, the coefficient of determination is .992. Now as any standard statistical textbook will tell you, this means that 99.2 percent of the total variation in the average issue audiences found by one service are explained by or "determined" by the average issue audiences produced by the other service. Or stated the other way around, it means that only 8/10 of one percent of the variation in the audiences found by one service is unexplained by the audience figures produced by the other service.

When one considers the normal tolerance limits that must be allowed whenever we deal with sample estimates, the likelihood of obtaining two series of completely independent audience estimates that agree so closely entirely by chance would appear rather remote. When we further consider that the sampling plans between the filter-recall service and our own are quite different indeed, that the questioning procedure and the entire basis of pinning down readership is quite

different, who can say how small the chance would actually be of producing results that correlate so highly.

For these reasons and because Ed mentioned that he had observed close agreement in subsequent years, we also decided to check this out in order to see if the year 1965 was just a freak occurrence. The results of our further check on subsequent years are shown in Table 1. It does indeed seem apparent that Ed is entirely correct in suggesting that the total audiences for men and women have been turning out to be extremely close, year-after-year with relentless consistency.

Table 1 - Correlation Coefficients
Filter-Recall vs. Through the Book

	<u>Men</u>	<u>Women</u>
1965	.9944 (21 Mags)	.9965 (22 Mags)
1966	.9987 (32 Mags)	.9986 (26 Mags)
1967	.9991 (42 Mags)	.9990 (37 Mags)
1968	.9990 (38 Mags)	.9990 (33 Mags)
1969	.9995 (36 Mags)	.9994 (34 Mags)

Now I must point out that this close agreement we see in total audiences in fact is a little deceptive. As many of our clients have pointed out, there is substantial difference in our findings and those of the filter-recall method when we look at special breakdowns of the total audience.

Apparently, it is not sufficient just to produce the right number of readers for it makes a great difference which particular respondents are counted as readers. For instance, Table 2 shows differences between our findings and those of the filter-recall service for several magazines by income groups. The differences range upward to 49.7 percent. Table 3 shows the percent differences by some educational classification, and there the differences are even greater, ranging upward to 79.5 percent. Without belaboring the point, let me just state that there are endless numbers of cases in which we can find these kinds of differences when comparing results for particular demographic or for product user groups.

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Table 2 - Percent Filter-Recall Differs from Through-the-Book by Income

	Family Circle	House Beautiful	Reader's Digest	Redbook	Time
Total Women	+6.0%	-1.6%	+4.5%	+1.8%	+1.1%
Household Income					
\$15,000+	+10.1	-24.2	+5.5	+3.2	-16.2
\$10,000 - 14,999	+2.8	+11.7	+9.1	+15.8	-2.5
\$8,000 - 9,999	+26.2	+2.1	+36.2	+27.3	+49.7
\$5,000 - 7,999	+12.5	+26.0	-4.0	+4.7	+15.3
Less Than \$5,000	-15.1	-20.3	-10.1	-33.0	-14.2

Now this only seems to compound the dilemma, for we find results of two widely different methods that agree closely in total, but fail substantially to agree in many of their parts. In an attempt to solve this enigma, let's take a close look at this filter-recall method, which is, in fact, a euphemistic title for a completely unaided recall question about respondents reading that takes place for a period of up to four months.

Following is an example of the way this recall question actually works:

Below is a list of magazines that are put out once a week. Next to each magazine, please check the box that describes how many different issues of the magazine, if any, you personally have read or looked into in the last 4 weeks. This includes all issues of the magazine that you have looked into in the last 4 weeks, even if they came out some time ago and you just got around to reading them in the past 4 weeks.

Please be sure to check only one box next to each magazine.

Weekly Magazines	Do Not Read Magazines	Read Now & Then But Not In Last 4 Wks.	In the last 4 weeks, I read:			
			1 Issue	2 Issues	3 Issues	4 Issues
Life	-x 32- ()	-o ()	-1 ()	-2 ()	-3 ()	-4 ()

Table 3 - Percent Filter-Recall Differs from Through-the-Book by Education

	Family Circle	House Beautiful	Reader's Digest	Redbook	Time
Total Women	+6.0%	-1.6%	+4.5%	+1.8%	+1.1%
Education					
Graduated College	+12.8	-24.0	+19.3	+18.1	+23.9
Some College	+70.5	+59.1	+79.5	+59.6	+43.8
Graduated High School	-6.4	-22.6	-7.2	-9.4	-22.7
Some High School	-9.8	-2.3	-21.9	-29.9	-28.7
Grammar School or Less	-4.9	+21.2	-13.0	-8.3	-29.1

For each of the monthly magazines, the respondent is supposed to be able to tell us just how many, if any, of the issues she has read in the past four months. Incidentally, for a monthly there is no special reason he might not have read as many as five or six issues within the last four months since a monthly magazine has a useful life of some ten to twelve weeks. I've often wondered how a responsible statistician might handle this problem in projecting the estimate based on scale type questions of this kind.

For the moment, though, the point is that this particular set of questions gives the respondent absolutely no memory aid whatever, no clue whatever as to which issues are under consideration. The only person that I could really believe could give a valid answer to this question, other than a mental prodigy, is someone who never reads any issues of, say, the *Digest*, or someone that never fails to read all of the issues. In these cases, he could answer the questions. But, if like most people, you read some of the issues and not others, I think you would most likely agree that the answers are highly speculative.

Now, with some slight variation, this particular set of questions yields information about four weeks of reading for weeklies, eight weeks of reading for biweeklies, and four weeks of viewing for each of some hundred and seventy-odd national network television programs. Now I would really like to ask each of you here today to take a good hard look at these questions and to ask yourselves just how validly you believe you could answer a series of questions like this.

For the moment, however, let's even overlook the prodigious feats of memory required of respondents, and let's make the assumption that all respondents can answer these questions correctly. Now, the point is, if they can and do answer these questions correctly, any results of the filter-recall question will inevitably lead to a serious inflation in average-issue audiences. That is to say, the question will lead to an inflation insofar as any of the readers may happen to read the same issue on more than one day. Now it is well known, of course, that monthly magazines tend to be read on as many as five or six different days, and sometimes the useful life of a monthly might extend over a period of up to ten or twelve weeks. Similarly, weekly magazines will often be read over a period of two to three weeks or even longer.

The following shows the respondent's direction in filling out the answers to the filter-recall question which tells him to "Check the box that tells how many issues you have read or looked into for the last four weeks."

"IF YOU HAVE READ THE MAGAZINE IN THE LAST 4 WEEKS, CHECK THE BOX THAT TELLS HOW MANY ISSUES YOU HAVE READ OR LOOKED INTO IN THE LAST 4 WEEKS."

TWO KINDS OF READING:

I = INITIAL READING = RESPONDENT BECOMES A READER

R = REPEAT READING = DOES NOT BECOME A READER

At this point, it is extremely important to recognize that there are two kinds of reading. There is initial reading and repeat reading, and they have one extremely important difference. A respondent becomes a reader of an issue on the very first day he reads (his initial reading). If he reads the

same issue again, he does not become another reader or contribute any further to the size of the audience estimate. As shown in the preceding, however, the respondent is not asked to distinguish his initial reading from repeat reading; he is merely asked to check how many issues he has read or looked into within the four-week period.

Now let's consider a particular respondent, who we will call Mr. A, who is an occasional reader of a weekly magazine and, for simplicity, let's just say that he reads one issue every four weeks, as shown in Table 4. He reads each issue once and only once so these are all initial readings. It will be quite clear, I believe, that at any time you might ask Mr. A how

Table 4 - Initial Reading By Weeks

	W E E K S												
	0	1	2	3	4	5	6	7	8	9	10	11	12
MR. A.		I			I				I				

I = INITIAL READING = BECOMES A READER
R = REPEAT READING = DOES NOT BECOME A READER

many issues of this magazine he has read in the last four weeks, he would respond correctly, for he reads one and only one—assuming perfect memory, of course.

Now let's consider Mr. B who also reads one issue out of every four of this same weekly magazine but who, unlike Mr. A, keeps the magazine around and reads it during a period of, let's say, one week.

Table 5 shows that the first week he is an initial reader and in the second week he is a repeat reader, in the fifth he is an initial reader and in the sixth a repeat reader, and so on.

If Mr. B should fill out his self-administered questionnaire in the week between his initial and repeat reading of an issue, his correct response would be that he read two issues within the last four weeks. On the other hand, if he should fill out his questionnaire in the three-week period between his repeat reading of one issue and his initial reading of another, his correct response would be that he read only one issue within the last four weeks. Thus, one week out of every four, Mr. B reports an extra issue. Obviously, this leads to a 25 percent

Table 5 - 25 Percent Inflation
One Week Out of Every Four
Respondent Reports an Extra Issue

	W E E K S													
	0	1	2	3	4	5	6	7	8	9	10	11	12	
MR. A.		I			I				I					
MR. B.		I	—	R			I	—	R			I	—	R

↓ ↓
RESP = 2 RESP = 1
of of
4 4

I = INITIAL READING = BECOMES A READER
R = REPEAT READING = DOES NOT BECOME A READER

inflation, since for every Mr. B who fills out the questionnaire in this particular week, there will be three others like him who fill it out in the remaining three weeks of the cycle.

Table 6 shows a little different version. Again we see Mr. A on the top line who correctly reports his reading as one issue read in four weeks. Mr. C, however, also reads one issue out of four but he tends to hang onto the issue for two weeks before he finishes his reading of it. Obviously, the same thing happens to Mr. C that happens to Mr. B. If he reports on his self-administered questionnaire during the two-week interval between his initial reading and repeat reading of an issue, he must report that he has read two issues within the last four weeks.

On the other hand, if he should fill out his self-administered questionnaire during the two week interval between his repeat reading of one issue and his initial reading of another issue, he must report reading only one issue within the last four weeks. Thus, for every Mr. C who reports reading one issue, there's another who reports reading two issues, obviously leading to a 50 percent inflation.

Table 6 - 50 Percent Inflation
Three Weeks Out of Every Four
Respondent Reports an Extra Issue

	W E E K S													
	0	1	2	3	4	5	6	7	8	9	10	11	12	
MR. A.		I			I				I					
MR. C.		I	—	R			I	—	R			I	—	R

↓ ↓
RESP = 2 RESP = 1
of of
4 4

Table 7 shows the results for Mr. D who is just like Mr. B and Mr. C except that he hangs onto his issues a little longer, reading each of them over a three-week period of time. Also, being blessed with perfect memory, when he fills his questionnaire out within the three-week interval between his initial and repeat reading of any issue, he must report reading two issues within the last four weeks, whereas during the one-week interval between his repeat reading of one issue and initial reading of another, he will correctly report reading only one issue.

Table 7 - 75 Percent Inflation
Three Weeks Out of Every Four
Respondent Reports an Extra Issue

	W E E K S													
	0	1	2	3	4	5	6	7	8	9	10	11	12	
MR. A.		I			I				I					
MR. D.		I	—	R			I	—	R			I	—	R

↓ ↓
RESP = 2 RESP = 1
of of
4 4

In three weeks out of four, he will correctly report reading only one issue. In three weeks out of four, he reports an extra issue, meaning that there are three times as many "Mr. D's" who report reading two issues in four weeks as report one issue in four weeks, leading to a 75 percent inflation.

Finally, Table 8 shows Mr. E who hangs on to each issue he gets his hands on until he replaces it with another. Obviously, he must always report reading two issues within the last four weeks, leading to an inflation of 100 percent or just double a correct reporting of audience.

Please notice in every case, the amount of inflation in the response is directly proportional to the time interval during which repeat reading occurs. Thus, Mr. A, who does no repeat reading, leads to no inflation. Mr. B, who reads the issue over a period of one week out of four, yields a 25 percent inflation. Mr. C, with a two-week span of repeat reading out of four, yields an inflation of 50 percent, and so on.

Also, please note that the inflation in reading in every case is because of an increase in the frequency of reading that is reported. Let's keep our finger on this particular point, because it bears on another question that Ed Barz has posed today.

Before leaving the reporting bias, however, let's note that there are endless combinations of reading patterns, including initial and repeat reading, that could be examined. While we haven't had an opportunity yet to fully check all of this out, I believe that further investigation will bear out the following rule:

With respect to each and every issue on which a respondent reports reading, there is an inflationary bias equal to the span of repeat reading interval for that issue taken as a percent of 28 days.

Please note also that we are not talking about a response bias, for with our assumptions of perfect memory, the responses are correct. Instead, it is basically a bias in the questioning method because the respondents are instructed to include their repeat reading. I think we can appreciate the problem in making this distinction, however, for it would stagger the imagination to assume that respondents could also indicate which of the issues they had read in the last four weeks they had not read prior to that four-week period.

Table 8 - 100 Percent Inflation
Respondent Always Reports an Extra Issue

	0	1	2	3	4	5	6	7	8	9	10	11	12
MR. A.		I				I							I
MR. E.		I	-----	-----	R								I
							I	-----	-----	R			

↓
RESP = 2
of
4

Unfortunately, we have only succeeded in adding still further to our dilemma. Now we are not only confronted with total audiences that agree as between two widely different methods while the breakdowns of the audiences do not agree. We are also confronted with the fact that the total audience

should not agree whereas the breakdowns of the audience should in fact agree if the totals agree. Stated differently, the total audience figures produced by the filter-recall method appear to be right, but they are right for the wrong reason. From what we see here, it appears that there must be some other bias in a downward direction that more or less compensates for the substantial upward bias that we have discovered with respect to the total audience figures.

I'm afraid we have no good indication of the net inflationary effect that results from the many different reading situations that might really occur. Anyone could make his own assumption regarding the extent of repeat reading and the span of time over which repeat reading occurs and apply the rule suggested above to get some indication. For monthlies, of course, the situation might be more serious because of the much longer issue life and the greater number of reading days monthlies enjoy.

It should be apparent to everyone here that this recall questioning procedure, which is self-administered by the respondent to save the time and cost of interviewing, is so simple and easy to carry out that our firm could save a great deal of money if we could avoid the expensive interviewer kits and time-consuming procedures involved in the through-the-book method.

However, besides the demonstrable inflationary bias in frequency of reading and questions of faulty memory, there is also empirical evidence. The recall-type questions have been utilized several times in the past and have consistently led to an inflation in audience findings; the sole exception to our knowledge being the particular figures that Ed Barz has presented today. Everyone has been trying to find an answer to this problem. It's like the Holy Grail.

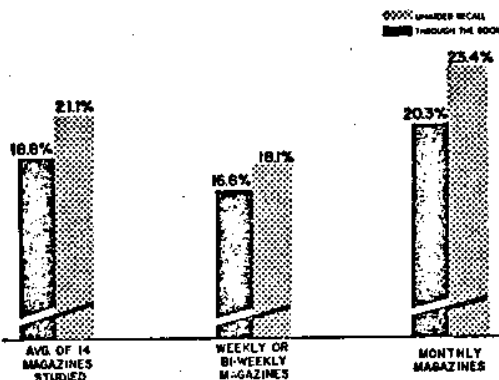
In Britain, for instance, in a study conducted for the Institute of Practitioners in Advertising as reported by Corlett and Osborne, four separate scaling tests were developed to find out which, if any, would work out. The most promising method was tested against the reader-interest technique. The results, of course, indicated that the frequency scale overestimated the average-issue readership.

In the *Journal of Advertising Research*, Don McGlathery reported a test he had conducted while he was with Standard Rate and Data Research Service. It appears that Standard Rate and Data also carried out this test to see what differences existed between the through-the-book method of interviewing and the unaided recall questions about reading over a period of a four-issue cycle. The results showed the same general tendency—that is, the recall questions yielded an inflation in audiences that was greater for monthlies than it was for weeklies.

At the 1967 ARF Conference, a special test conducted by Alfred Politz in consultation with ARF was reported, the results shown in Figure 1. It seems evident from this carefully documented test that when you ask respondents about their reading over the last four weeks or four months, the responses lead to an inflation of magazine audiences as compared with the through-the-book or reader-interest method of questioning. Also note the amount of inflation is considerably higher for monthlies than it is for weeklies.

For the last three years, we ourselves have been asking respondents, at the conclusion of our second interview, a set of recall questions covering six issues of each publication. We never assumed that the answers to such questions could lead to sound audience results, but we did want the information to help any of our clients assign individual probabilities of

Figure 1
Audience Size Comparison — Through
the Book vs. Unaided Recall*
Avg. Issue Adult Female Audience
(Percent Coverage)



reading to fit any media selection models they may be using, based on assigned probabilities.

The results of our own work, however, have uniformly confirmed in all three years the findings of the several other tests I have reported here. Table 9 shows that the single-issue audiences are in every case inflated by the unaided recall question and that the degree of inflation tends to be higher

Table 9 — Comparison of Single Issue Audiences Through the Book vs. Unaided Recall*

	SINGLE ISSUE AUDIENCE		
	Through The-Book	Unaided Recall	% Difference
WOMEN'S MAGAZINES (WOMEN)			
Family Circle	188	235	+25.0%
Good Housekeeping	218	253	+16.1%
Ladies' Home Journal	198	226	+14.2%
McCall's	257	290	+12.8%
Woman's Day	177	206	+16.4%
AVERAGE	207.6	242.0	+16.6%
DUAL AUDIENCE MAGAZINES (ADULTS)			
Life	478	541	+13.2%
Look	496	510	+ 2.8%**
Post	283	329	+16.3%
Parade	401	445	+11.0%
This Week	410	484	+18.0%
Reader's Digest	529	654	+25.5%
AVERAGE	432.8	493.8	+14.0%
MEN'S MAGAZINES (MEN)			
Playboy	97	101	+ 3.9%
Time	124	139	+12.1%
AVERAGE	110.5	120.0	+ 8.6%
OVERALL AVERAGES	296.6	339.5	+14.5%

*Unweighted Tabulation of 1800 Interviews—Spring 1968

**Tabulations included results for the issues of LOOK containing the Manchester-Kennedy story which appears to have had a relatively high frequency of reading.

for monthlies than it is for weeklies, ranging in general from 15 to 25 percent.

Now it is rather axiomatic to most serious researchers who have studied questioning bias that when you ask respondents questions to which they really don't know the answer, they tend to fill in the missing data with some speculation on their part which all too often is colored by their own ego needs. Thus, if you ask respondents which newspapers they usually read or regularly read, the *New York Times* comes back far higher than the *New York News* relative to circulation.

In the same way, we feel that these results reflect tendencies for respondents to claim more frequent reading of the magazines they deem to be prestigious, and most of them are. Respondents will rarely say, if they read the *Reader's Digest* at all, that they only read one or two issues of it, almost always it's three or four or even more.

To see how this worked out on our own scale of questions, however, we compared the results of those reading six out of six issues as projected from the two questions. Sure enough, Table 10 shows that the recall questions produced far too many respondents reading six out of six issues of these magazines.

We also checked out and found far too few reading only one out of six issues of the magazine as compared with the through-the-book results, as shown in Table 11. In other words, in dealing with loose-type questions for which the respondents don't really know the answers, we get a higher frequency of reading reported than any more objective type of evidence could possibly support.

Table 10 — Comparison of Audiences Reading Every Issue Out of Six Through the Book vs. Unaided Recall*

	READ ALL SIX ISSUES OUT OF SIX		
	Through-The-Book	Unaided Recall	% Difference
WOMEN'S MAGAZINES (WOMEN)			
Family Circle	51	117	+129.4%
Good Housekeeping	61	147	+141.0%
Ladies' Home Journal	65	123	+ 89.2%
McCall's	101	173	+ 71.3%
Woman's Day	53	107	+101.9%
AVERAGE	66.2	133.4	+101.5%
DUAL AUDIENCE MAGAZINES (ADULTS)			
Life	176	290	+ 64.8%
Look	191	253	+ 32.5%
Post	93	173	+ 86.0%
Parade	251	375	+ 49.4%
This Week	208	374	+ 79.8%
Reader's Digest	262	430	+ 64.1%
AVERAGE	196.8	315.8	+ 60.5%
MEN'S MAGAZINES (MEN)			
Playboy	53	50	5.7%
Time	53	74	+ 36.9%
AVERAGE	53.0	62.0	+ 17.0%
OVERALL AVERAGES	124.5	206.6	+ 65.9%

*Unweighted Tabulation of 1800 Interviews—Spring 1968

Now this leads, naturally, into the next subject on which Ed has raised some interesting questions—the matter of reach and frequency distribution resulting from two services that seem to agree so well in terms of single-issue audience.

I must begin by admitting, once again, a thing that I must have said no less than two dozen times, both publically and privately. In 1965, we *goofed*. If we need a defense at this late date, I could add that we made a somewhat natural mistake that many others have made before and since. We asked about reading two issues of each publication with the same interview. We found out that there was a tendency for respondents to claim either reading both of the two issues when asked about them in the same interview or else to claim reading neither of them.

Somehow, if the respondent claims to have read one of the issues shown him, he feels, in the same interview, compelled to also indicate that he read the other. This tendency led to a reduction in the turnover rate, leading to a lower audience accumulation and higher frequencies. This discovery was, in fact, most unfortunate for us in the following year. Since then, we have found it necessary to make two separate interviews in order to obtain, reliably, information about reading of two separate issues of each publication.

Obviously, the double interview is considerably more expensive for us as the consequences to our profit in 1966 will demonstrate. Fortunately, the addition of new subscribers since that time has alleviated this problem, but I only want to make the point that we took a drastic and extremely ex-

pensive step to correct the mistake five years ago that Ed's remarks show still lay at our door. Perhaps my only further comment is that if we can't ask about two issues safely without depressing come rates, how are people so willing to tolerate questions about four issues in the same interview?

In getting into the problem of reach and frequency that Ed has posed, let's begin by asking ourselves the question about why audiences accumulate in the first place. The answer obviously is because of the absence of duplication in the reading of separate issues (or programs). If there is little duplication in the audience of two separate issues, it means a high rate of audience turnover and, hence, a fast rate of accumulation. Conversely, if most of the audience of one issue is duplicated in the audience of another issue, there is little turnover in audience between issues, and the accumulation rate will be slow. Naturally, a high rate of accumulation must be accompanied by a low frequency of reading and vice versa.

More precisely, the turnover rate as shown in Figure 2 is defined as the unduplicated audience between separate issues taken as a percent of the average issue or average program audience. Now we have found in the course of our work in the last few years, turnover rates that vary all the way from 10 percent to 80 percent and they lead to vastly different accumulation rates and frequency patterns.

I emphasize this range in turnover rates particularly because it has so much to do with Ed's hypothesis regarding the U-shaped frequency of reading curve in which there are many solid core four out of four issue readers and many one out of four readers and fewer two and three issue out of four issue readers, leading to the U-shaped frequency curve.

We do, indeed, find this particular rule of thumb to work out in a great many instances, but it is honored by the breach almost as often as in its observance, and, therefore, it seems worthwhile to note the circumstances under which the rule tends to work and also the circumstances under which it fails to work.

Table 11 — Comparison of Audiences Reading Just One Issue Out of Six Through the Book vs. Unaided Recall*

	READ JUST ONE ISSUE OUT OF SIX		
	Through-The-Book	Unaided Recall	% Difference
WOMEN'S MAGAZINES (WOMEN)			
Family Circle	111	59	-46.8%
Good Housekeeping	121	77	-36.4%
Ladies' Home Journal	100	76	-24.0%
McCall's	105	76	-27.6%
Woman's Day	99	58	-41.4%
AVERAGE	107.2	69.2	-35.4%
DUAL AUDIENCE MAGAZINES (ADULTS)			
Life	204	149	-27.0%
Look	202	156	-22.8%
Post	151	117	-22.5%
Parade	92	37	-59.8%
This Week	130	38	-70.8%
Reader's Digest	163	109	-33.1%
AVERAGE	157.0	101.0	-35.7%
MEN'S MAGAZINES (MEN)			
Playboy	52	43	-17.3%
Time	52	46	-11.5%
AVERAGE	52.0	44.5	-14.4%
OVERALL AVERAGES	121.7	80.1	-34.2%

*Unweighted Tabulation of 1800 Interviews—Spring 1968

Figure 2 — Turnover Rate

TWO-ISSUE REACH — ONE-ISSUE REACH

ONE-ISSUE REACH

EXAMPLE

	ONE-ISSUE REACH	TWO-ISSUE REACH
TOTAL ADULTS	10,000,000	15,000,000
TURNOVER RATE	$\frac{5,000,000}{10,000,000}$	= 50%

In a nutshell, as I mentioned before, the shape of the frequency distribution is determined virtually entirely by the turnover rate as I have defined it. To a very much lesser extent, it is also a function of the single issue or single program audience size, but since audience size itself is highly (but negatively) correlated with turnover rates, the turnover rate alone virtually tells us the entire story.

To illustrate this point, we have ranked the magazines in our service from high to low according to the size of their turnover rates, showing for each the frequency distribution of from one to four issues. Nine of them are shown in Figure 3 with turnover rates ranging from .626 for *Business Management* down to .215 for *This Week*.

We see immediately that without exception where the turnover rate exceeds 41 percent (and 31 of the magazines studied in 1969 are in this group), we do not have a U-shaped frequency distribution, but there tends to be more readers of only one issue than readers of two issues, than readers of three issues, than readers of four issues, in that order.

In the middle ranges, say between 20 and 35 percent turnover rates, we do find frequency distributions that pretty well resemble the U-shaped curve.

Where turnover rates fall between 20 and 25 percent, the frequency curve is very skewed, also this time to the right with many more four-issue readers than one-issue readers although both of these exceed the two- and three-issue readers.

Where turnover rates fall below 19 percent, as shown in Figure 4, we find more four-issue readers than any other kind, being more or less the reverse of what we found for the high turnover rates exceeding 40 percent. These extremely low turnover rates are usually found in special population groups consisting of a high proportion of loyal readers. For instance, within a magazine's primary target audience group, the turnover rate tends to be low because there is a high frequency or consistency of reading. These examples are taken from our 1969 report.

Before leaving magazines, however, it is worth taking a look at the turnover rates and frequency patterns for five magazines as measured by Alfred Politz in the "Four Media Study" conducted in the early 1950's (see Figure 5). Please note that they are all uniformly much higher than we now find for these same publications, but their frequency distributions follow, however, the principles I have just described. That is, more one issue readers than two issue readers, than three issue readers, than four issue readers, consistent with high turnover rates.

The explanation for these higher turnover rates found in the early 1950's would appear to lie in the fact that there were relatively fewer subscriptions and more newsstand sales of copies by a large margin in the early 1950's than exist today. This, in turn, would tend to lead to less regular or less frequent reading and hence a high turnover rate.

Figure 3
Frequency Distribution Comparisons
(% of 4-Issue Adult Audience Reading 1,2,3 or 4 Issues)

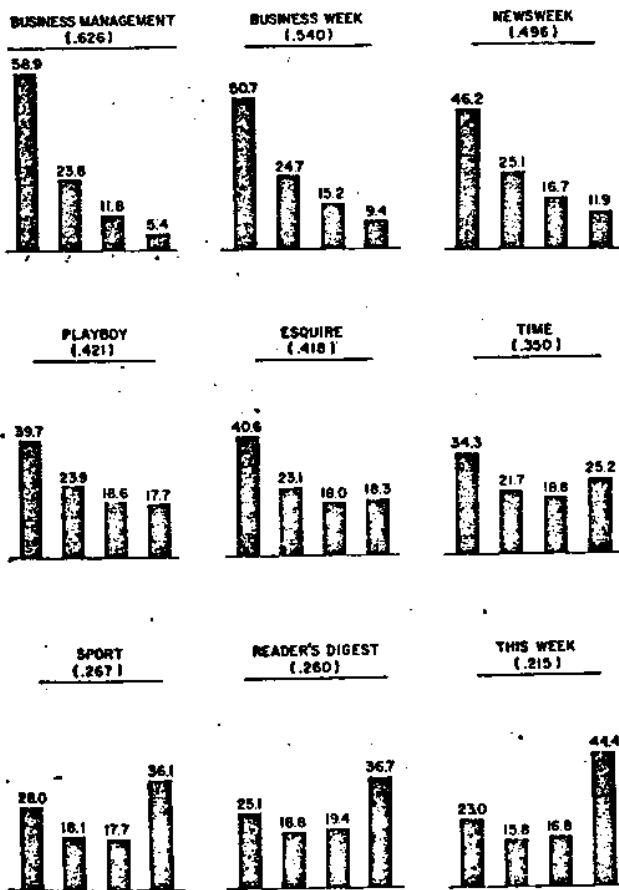


Figure 4
Frequency Distributions of Magazines with Turnover Rates Below 19%

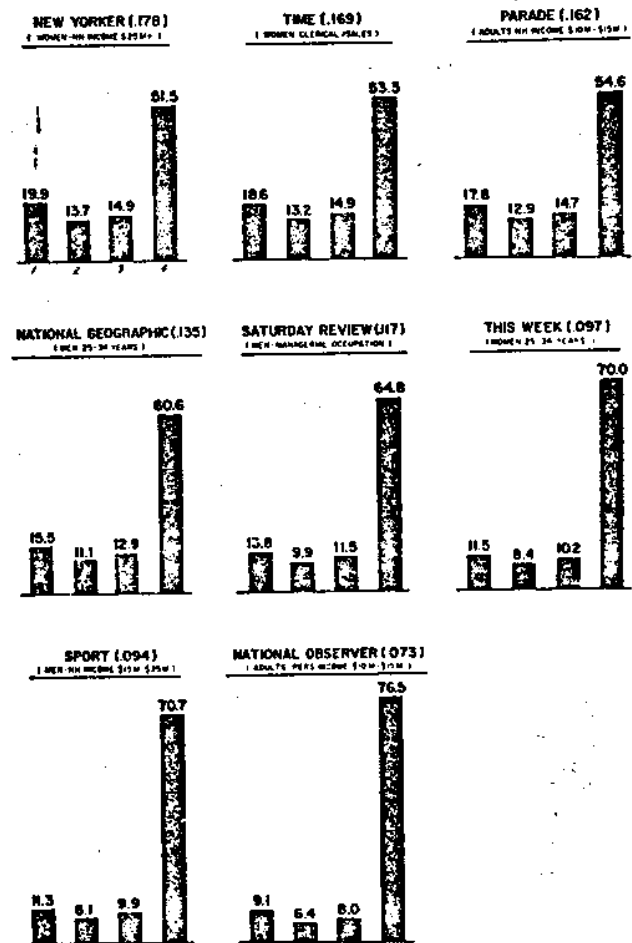
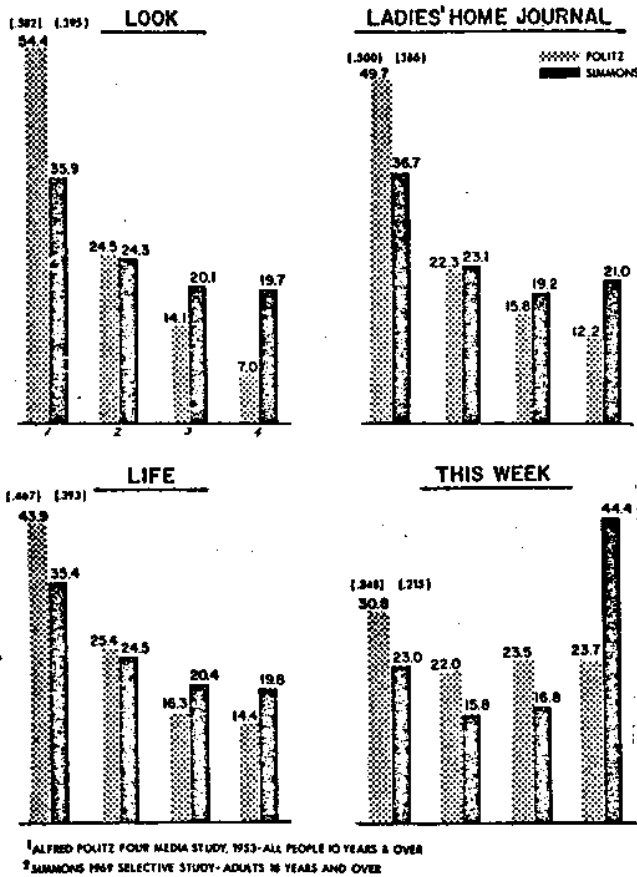
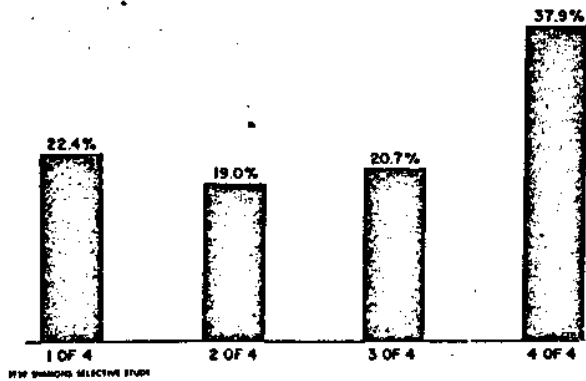


Figure 5
Frequency Distribution Comparisons
Politz 1953 vs. Simmons 1969
% of 4-Issue Audience Reading 1, 2, 3 or 4 Issues



It may be of particular interest to observe the turnover rates and frequency distributions that exist among newspaper audiences, shown in Figure 6. It has often been assumed that newspapers tend to have exceedingly loyal audiences, implying virtually no turnover in the audience of separate issues. Here

Figure 6
Avg. Frequency Distribution for
Daily Newspapers in Metropolitan Areas
% of 4-Issue Audience Adults
Turnover Rate = 248



we see that there is indeed turnover in audience accumulation among newspaper audiences, although, to be sure, they are smaller than for some other media, indicating a relatively high degree of loyalty.

Of course, Figure 6 shows an average for all newspapers, and individual papers may often vary considerably from this average. We have data that contrast the turnover rates as between upper and lower demographic groups, but I am skipping the data to save time. Uniformly, they show that the upper demographic groups have lower turnover rates reflecting more frequent reading.

Finally, let's take a look at the turnover rates and frequency distributions applicable to television. Figure 7 shows, for example, a very high turnover rate to exist among weekend daytime shows, probably reflecting the great many factors that may compete for respondent's attention on weekends, such as playing golf, taking weekend trips, sporting expeditions, etc., creating relatively many occasional viewers. The TV data presented here, by the way, are taken from our 1964 Television Reach & Frequency Report which we have done because in that year we measured television by the use of four-week individual diaries, allowing us to have actual observations of four-week cums and frequencies that could be compared to the Beta extensions that are produced by formula.

In each case, the open bars represent actual observations and the solid bars represent the Beta extensions of reach and frequency, so that one can tell how well the formula checks out. While observing the extent of the agreement between the formula estimates and the observations, please do not overlook the extremely high turnover rates and the skewed distribution which bear little resemblance to anything like a U-shaped curve.

Figure 8 shows prevailing patterns among weekday daytime programs which tend to have turnover rates decidedly lower than those of the weekend daytime programs. Again, though, please note the extent of the agreement between the formula and the actual observations. Finally, Figure 9 shows the evening prime time television audiences in average, and when ranked in the order of their turnover rates together with the frequency distributions that they yield, are shown in Tables 12 and 13.

Figure 7
Avg. Frequency Distribution & Reach of 10 Systematically
Selected Weekend Daytime Programs
Empirical vs. Beta
People 10 Years and Over

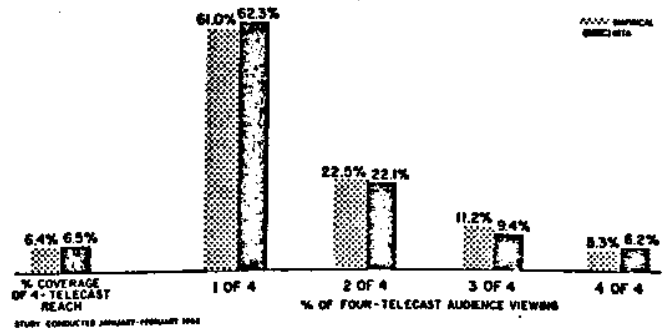


Figure 8

Avg. Frequency Distribution & Reach of 10 Systematically Selected Weekday Daytime Programs Empirical vs. Beta Adult Females

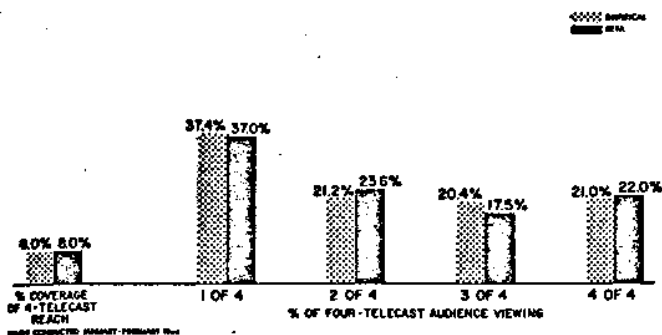


Figure 9

Avg. Frequency Distribution & Reach of 20 Systematically Selected Evening Programs Empirical vs. Beta People 10 Years and Over

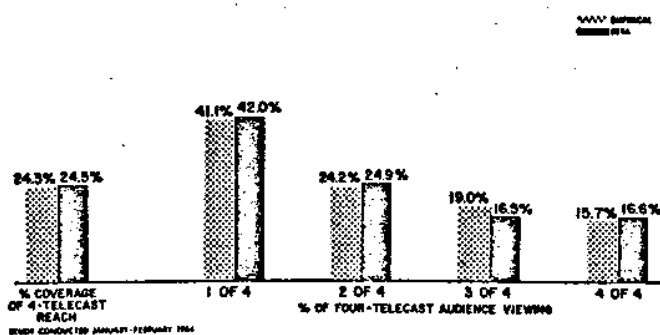


Table 12 - Frequency Distribution of Systematically Selected Evening Programs* Empirical vs. Beta People 10 Years and Over

	Turnover Rate	% Coverage of 4 Telecast Reach	% of 4-Telecast Audience Viewing			
			1 of 4	2 of 4	3 of 4	4 of 4
Bob Hope Chrys. Theatre						
Empirical	.65	26.1	59.3	27.5	9.1	4.1
Beta	.65	26.3	63.3	22.2	9.0	5.5
That Was The Week That Was						
Empirical	.62	10.1	55.1	26.4	13.5	4.9
Beta	.62	10.4	60.1	23.2	10.1	6.6
77 Sunset Strip						
Empirical	.58	20.0	54.8	23.9	14.0	7.3
Beta	.58	20.2	55.7	24.4	11.7	8.2
Hollywood Palace						
Empirical	.55	18.8	50.5	27.0	13.5	9.0
Beta	.55	18.9	52.5	25.0	13.0	9.6
Mon. Nite at the Movies						
Empirical	.53	23.5	50.3	23.6	15.9	10.2
Beta	.53	23.7	50.3	25.3	13.8	10.6
The Eleventh Hour						
Empirical	.52	18.6	45.4	28.2	16.0	10.4
Beta	.52	19.0	49.2	25.5	14.2	11.1
Twilight Zone						
Empirical	.50	27.3	45.1	25.1	19.2	10.6
Beta	.50	27.7	47.1	25.7	15.0	12.3
The Farmer's Daughter						
Empirical	.49	16.9	47.0	24.0	15.8	13.2
Beta	.49	16.9	46.0	25.7	15.4	12.9
Walt Disney						
Empirical	.47	25.0	41.1	27.0	19.1	12.8
Beta	.47	25.4	43.8	25.8	16.1	14.2
The Jack Benny Show						
Empirical	.47	26.9	43.8	24.8	17.2	14.2
Beta	.47	27.0	43.8	25.8	16.1	14.2

*Study conducted Jan.-Feb. 1964

Table 13 - Frequency Distribution of Systematically Selected Evening Programs* Empirical vs. Beta People 10 Years and Over

	Turnover Rate	% Coverage of 4 Telecast Reach	% of 4-Telecast Audience Viewing			
			1 of 4	2 of 4	3 of 4	4 of 4
Password						
Empirical	.45	22.1	40.9	25.2	18.8	15.1
Beta	.45	22.4	41.7	25.8	16.9	15.7
The Paty Duke Show						
Empirical	.44	21.5	42.1	23.4	17.7	16.7
Beta	.44	21.5	40.6	25.7	17.3	16.4
Mr. Novak						
Empirical	.43	20.7	41.5	22.4	19.7	16.4
Beta	.43	20.1	39.6	25.6	17.6	17.2
Arrest & Trial						
Empirical	.43	18.8	38.5	24.6	21.4	15.5
Beta	.43	18.9	39.6	25.6	17.6	17.2
Hazel						
Empirical	.42	25.7	39.4	23.7	19.9	17.0
Beta	.42	25.6	38.5	25.5	18.0	18.0
Perry Mason						
Empirical	.40	32.2	35.9	23.9	22.1	18.1
Beta	.40	32.2	36.4	25.3	18.6	19.7
Rawhide						
Empirical	.39	29.8	37.0	22.2	20.9	19.9
Beta	.39	29.7	35.3	25.1	18.9	20.7
McHale's Navy						
Empirical	.38	14.2	34.0	21.6	24.3	20.1
Beta	.38	14.3	34.3	24.9	19.2	21.6
Dick Van Dyke Show						
Empirical	.37	40.3	32.0	23.8	22.7	21.5
Beta	.37	40.7	33.2	24.7	19.5	22.6
The Beverly Hillbillies						
Empirical	.30	47.5	24.1	20.9	25.3	29.7
Beta	.30	48.4	26.0	22.4	20.9	30.6

*Study conducted Jan.-Feb. 1964

Tables 14 and 15 show individual results for weekday Beta estimates of frequency compared with actual observations. Tables 16 and 17 show comparisons of our diary estimates with the filter-recall results and the meter-diary method referred to by Ed Barz.

Summary

To summarize the results of our investigation of the question that Ed Barz has raised, we find the following:

- Over the last six years, the total audience results of the filter-recall method have followed those of the through-the-book method, being consistently in remarkably close agreement.
- The filter-recall questions are really unaided recall questions since absolutely no aids to memory are shown to respondents. All other scale-type questions of which we have knowledge produce results that have led to inflated single-issue audience figures.
- The agreement in total audiences between the two methods

Table 14 - Frequency Distribution of Systematically Selected Weekday Daytime Programs Empirical vs. Beta Adult Females*

	Turnover Rate	% Coverage of 4 Telecast Reach	% of 4-Telecast Audience Viewing			
			1 of 4	2 of 4	3 of 4	4 of 4
Father Knows Best						
Empirical	.57	3.5	54.7	23.6	13.7	7.9
Beta	.57	3.5	54.7	24.6	12.1	8.6
The Loretta Young Theatre						
Empirical	.54	8.3	53.2	22.6	14.2	10.1
Beta	.54	8.2	51.4	25.2	13.4	10.1
To Tell The Truth						
Empirical	.50	13.5	45.5	24.7	18.5	11.2
Beta	.50	13.3	47.1	25.7	15.0	12.3
Captain Kangaroo						
Empirical	.50	5.2	50.0	24.1	12.2	13.7
Beta	.50	5.1	47.1	25.7	15.0	12.3
Missing Links						
Empirical	.48	5.5	49.2	22.0	15.1	13.7
Beta	.48	5.4	44.9	25.8	15.8	13.6
Word for Word						
Empirical	.46	5.2	41.8	24.9	19.7	13.5
Beta	.46	5.2	42.8	25.8	16.5	14.9
Say When						
Empirical	.43	6.1	42.7	21.8	19.0	16.5
Beta	.43	6.0	39.6	25.6	17.6	17.2
General Hospital						
Empirical	.38	4.6	34.4	20.2	25.7	19.7
Beta	.38	4.6	34.3	24.9	19.2	21.6
Search for Tomorrow						
Empirical	.26	10.7	20.5	19.2	25.9	34.3
Beta	.26	10.8	22.1	20.6	21.1	36.3
As the World Turns						
Empirical	.25	17.8	21.2	16.4	26.2	36.2
Beta	.25	17.9	21.1	20.1	21.0	37.8

*Study conducted Jan.-Feb. 1964

seems to occur despite a demonstrable, serious inflationary bias in the frequency of reading that would be expected to lead to an inflation in the single-issue audience levels. Thus, since the total audience figures agree, there must be a compensating downward bias, the source of which is as yet undetected.

- The agreement in total audience is not accompanied by corresponding agreement among many breakdowns of the audience which tend to depart rather substantially as measured in the filter-recall method from those of the through-the-book method.
- The memory burden in filling out the self-administered questionnaire to report reading over a period of up to four months along with more than 20 pages of other information would appear to place great stresses upon the respondent's memory. This leaves the responses questionable at best.
- The demonstrable inflation in frequency of reading must inevitably yield a frequency distribution that is much more nearly skewed toward more four out of four issue readers than towards the one out of four issue readers.

Table 15 - Frequency Distribution of Systematically Selected Weekend, Daytime Programs Empirical vs. Beta People 10 Years and Over*

	Turnover Rate	% Coverage of 4 Telecast Reach	% of 4-Telecast Audience Viewing			
			1 of 4	2 of 4	3 of 4	4 of 4
Exploring						
Empirical	.77	4.5	77.1	14.2	6.6	2.1
Beta	.77	4.5	76.2	16.4	4.8	2.5
ABC's Wide World of Spts.						
Empirical	.72	12.2	67.4	21.4	9.0	2.2
Beta	.72	12.4	70.9	19.1	6.4	3.6
Tennessee Tuxedo						
Empirical	.70	3.2	64.7	23.8	8.8	2.7
Beta	.70	3.2	68.7	20.1	7.1	4.1
Quick Draw McGraw						
Empirical	.65	7.8	65.1	19.7	10.3	4.9
Beta	.65	7.7	63.3	22.2	9.0	5.5
Mighty Mouse Playhouse						
Empirical	.63	7.4	59.5	23.9	11.3	5.3
Beta	.63	7.4	61.2	22.9	9.8	6.2
The Alvin Show						
Empirical	.62	3.8	56.1	25.2	13.7	4.9
Beta	.62	3.9	60.1	23.2	10.1	6.6
Bugs Bunny						
Empirical	.61	5.1	60.3	21.8	11.5	6.4
Beta	.61	5.0	59.0	23.5	10.5	6.9
Fireball XL-5						
Empirical	.59	3.3	53.5	27.6	12.2	6.7
Beta	.59	3.3	56.8	24.1	11.3	7.7
Roy Rogers Show						
Empirical	.57	9.7	54.2	23.2	14.5	6.1
Beta	.57	9.8	54.7	24.6	12.1	8.6
American Bandstand						
Empirical	.55	7.3	51.4	25.0	13.4	9.1
Beta	.55	7.4	52.5	25.0	13.0	9.6

*Study conducted Jan.-Feb. 1964

In 1965, all three services then in operation produced reach and frequency estimates based on results of a procedure in which more than one issue of each publication was asked about in a single interview. We found that this led to a lower turnover rate and a high frequency of reading because of the effects of respondent conditioning. (Our studies in subsequent years are based on two separate interviews four or five weeks apart in which the reading of one-issue of each publication is covered.)

Turnover rates and the consequent frequency distributions vary widely between different forms of media as one would expect.

The Beta function extensions of reach and frequency, based on information about the viewing of two programs,

Table 16 - Frequency Distribution Comparisons
Adult Females

	4-Tel. Reach	Percent of Total Population Viewing:			
		1 of 4	2 of 4	3 of 4	4 of 4
Daktari					
Diary (8:00-8:30)	27.9	12.4	7.1	4.9	3.5
D/Meter (8:15-8:30)	32.1	17.4	7.7	4.9	2.1
F.R. (7:30-8:30)	29.2	6.6	8.0	4.1	10.5
Red Skelton					
Diary (8:30-9:00)	41.7	16.9	10.7	7.9	6.1
D/Meter (8:30-8:45)	39.9	17.7	9.8	8.9	3.5
F.R. (8:30-9:30)	44.7	18.8	7.5	10.1	8.4
ABC Sunday Night Movies					
Diary (9:00-9:30)	40.6	20.3	11.2	6.3	2.9
D/Meter (9:00-9:15)	38.0	20.9	10.9	5.4	0.8
F.R. (9:00-11:00)	30.4	9.1	8.4	4.2	8.6
Walt Disney's World of Color					
Diary (8:00-8:30)	21.7	10.8	5.6	3.4	2.0
D/Meter (8:15-8:30)	33.9	19.4	9.4	3.6	1.5
F.R. (7:30-8:30)	36.3	14.0	5.2	11.3	5.8
Dean Martin					
Diary (10:00-10:30)	42.3	18.0	11.2	7.8	5.3
D/Meter (10:00-10:15)	45.6	20.8	12.7	8.2	3.9
F.R. (10:00-11:00)	50.1	22.1	4.5	18.2	5.3
Good Company					
Diary (10:00-10:30)	6.7	4.3	1.6	0.6	0.2
D/Meter (10:00-10:15)	13.2	9.4	2.6	0.7	0.5
F.R. (10:00-10:30)	5.6	4	8	1.4	3.1
Dragnet					
Diary (9:30-10:00)	24.1	11.7	6.2	3.9	2.3
D/Meter (9:30-9:45)	33.8	17.7	8.3	5.1	2.7
F.R. (9:30-10:00)	24.2	6.0	6.7	4.2	7.3
Dating Game					
Diary (7:30-8:00)	23.6	11.4	6.0	3.8	2.4
D/Meter (7:30-7:45)	27.8	16.6	6.2	3.8	1.2
F.R. (7:30-8:00)	34.1	18.4	7.1	5.4	3.2
Andy Griffith					
Diary (9:00-9:30)	37.3	14.6	9.2	7.2	6.4
D/Meter (9:15-9:30)	43.0	19.3	11.9	7.9	3.9
F.R. (9:00-9:30)	43.9	19.5	7.2	8.6	8.6
Voyage to the Bottom of the Sea					
Diary (7:30-8:00)	19.1	9.3	4.8	3.0	1.9
D/Meter (7:45-9:00)	22.2	13.3	5.5	2.1	1.3
F.R. (7:00-8:00)	23.4	6.5	6.1	3.6	7.2
Hondo					
Diary (9:00-9:30)	15.2	7.7	3.8	2.3	1.3
D/Meter (9:15-9:30)	22.1	12.0	5.7	3.1	1.3
F.R. (8:30-9:30)	16.7	1.7	3.3	3.2	8.4

Diary - October 1 - November 19, 1967
D/Meter - September 25 - December 17, 1967
F.R. - December 1, 1967 - January 31, 1968

permit quite accurate estimates of the reach and frequency of four separate programs, as compared with actual observations.

- Finally, I must add that the filter-recall method can hardly deserve to be taken seriously until the service utilizing it at least has been subjected to the careful review and analysis by the Advertising Research Foundation that our own service has availed itself of (at our expense) in four separate years.

If they have any real serious problems in raising the funds for this highly worthwhile project, I believe our own Board of Directors could be persuaded to make a contribution to this worthy end.

Table 17 - Frequency Distribution Comparisons
Adult Males

	4-Tel. Reach	Percent of Total Population Viewing:			
		1 of 4	2 of 4	3 of 4	4 of 4
Daktari					
Diary (8:00-8:30)	25.6	11.9	6.5	4.3	2.9
D/Meter (8:15-8:30)	27.3	15.9	6.1	3.2	2.1
F.R. (7:30-8:30)	25.2	7.1	8.1	2.9	7.0
Red Skelton					
Diary (8:30-9:00)	41.2	15.9	10.3	8.0	7.0
D/Meter (8:30-8:45)	37.5	17.8	9.3	6.3	4.1
F.R. (8:30-9:30)	43.9	20.4	5.3	12.6	5.6
ABC Sunday Night Movies					
Diary (9:00-9:30)	33.6	17.3	9.0	5.0	2.3
D/Meter (9:00-9:15)	34.4	20.3	9.3	4.1	0.7
F.R. (9:00-11:00)	30.4	9.5	8.2	4.7	8.0
Walt Disney's World of Color					
Diary (8:00-8:30)	24.7	12.7	6.4	3.7	1.9
D/Meter (8:15-8:30)	31.6	17.8	8.8	3.5	1.5
F.R. (7:30-8:30)	32.9	13.9	4.7	9.9	4.4
Dean Martin					
Diary (10:00-10:30)	45.5	19.3	11.9	8.4	5.8
D/Meter (10:00-10:15)	39.5	19.2	11.9	5.8	2.6
F.R. (10:00-11:00)	43.3	23.7	4.2	11.3	4.0
Good Company					
Diary (10:00-10:30)	7.0	5.8	1.1	0.2	
D/Meter (10:00-10:15)	10.1	8.2	1.4	0.4	0.2
F.R. (10:00-10:30)	4.7	4	8	1.4	2.1
Dragnet					
Diary (9:30-10:00)	32.1	14.8	8.3	5.5	3.6
D/Meter (9:30-9:45)	31.9	17.5	8.9	3.7	1.8
F.R. (9:30-10:00)	26.8	11.3	4.0	7.6	3.9
Dating Game					
Diary (7:30-8:00)	16.8	8.7	4.2	2.5	1.4
D/Meter (7:30-7:45)	22.4	15.0	4.4	2.5	0.5
F.R. (7:30-8:00)	24.1	12.8	3.6	3.8	3.8
Andy Griffith					
Diary (9:00-9:30)	33.2	14.4	8.5	6.0	4.3
D/Meter (9:15-9:30)	34.1	16.6	9.3	5.5	2.7
F.R. (9:00-9:30)	35.0	16.0	6.4	7.1	5.5
Voyage to the Bottom of the Sea					
Diary (7:30-8:00)	23.0	9.9	5.7	4.1	3.3
D/Meter (7:45-8:00)	20.9	12.5	4.8	2.9	0.7
F.R. (7:00-8:00)	28.2	11.7	6.4	6.3	3.8
Hondo					
Diary (9:00-9:30)	19.5	11.4	4.9	2.3	0.9
D/Meter (9:15-9:30)	20.4	11.6	5.0	2.6	1.2
F.R. (8:30-9:30)	18.0	4.6	4.7	2.6	6.2

Diary - October 1 - November 19, 1967
D/Meter - September 25 - December 17, 1967
F.R. - December 1, 1967 - January 31, 1968