# MAGAZINE AUDIENCE ACCUMULATION: DEVELOPMENT OF A MEASUREMENT SYSTEM AND INITIAL RESULTS

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Questions have often arisen regarding the rate at which an individual magazine issue accumulates its total audience over time. This interest has been sparked less by methodological debate about the best way to capture this information than by the practical importance of developing accumulation or velocity curves for print media planning. Despite the importance of this issue, no one in the United States has conducted any major research on accumulation since 1977, and no national study of this phenomenon has been conducted for more than 35 years.

Interest in audience accumulation has been rekindled in the past two years for a combination of reasons. First, Erwin Ephron's advocacy of "recency planning" prompted a tremendous demand to know when a particular magazine issue is read. If magazine advertising exposure needs to coincide with the reader's buying decision, magazines and agency planners must know what percentage of an issue's total readership is being read at key points in time. Second, the development of multimedia planning optimizers requires placing magazines on an equal footing with other media, especially television. Media optimizers, which focus on weekly reach, require velocity information about magazines on any given week. The confluence of these two events has led Mediamark Research Inc. to develop a research methodology to capture magazine audience accumulation. This paper reports on the history of audience accumulation measurement in the United States, the development of MRI's particular methodology and results from two pilot studies and Stage One of its large-scale audience accumulation study.

**Historical Approaches**

Prior to MRI's initiatives, only two other companies had made a concentrated effort to understand audience accumulation. (For a more detailed summary of this history, see Douglas' paper.) Alfred Politz' s Media Studies series examined the audience accumulation of four leading magazines (*Readers Digest, The Saturday Evening Post, Life,* and *Look)* in 1960. Seventeen years later, Audits & Surveys conducted a similar study of the three newsweeklies (i.e., *Newsweek, Time* and *U.S. News & World Report)* in the Milwaukee area. ASW measured readership of three additional titles, but did not develop curves for those magazines.

Both studies were conducted by in-person interview, employing a similar technique. Both studies employed daily, replicated area probability samples. Randomly selected respondents were shown from three to five of the most recent issues of the measured magazines, which were used as prompts to identify the specific issue read of claimed yesterday reading of the particular magazine. The ASW study also asked whether the yesterday reading occasion was the first for that issue. The studies produced curve-fitted models of accumulation that are discussed in Marty Frankel's paper.

Although these research efforts were seminal, neither could serve as a guide for developing a methodology consistent with today's needs. Since the marketplace now requires that empirical curves be developed for more than a handful of magazines, carrying some 200-300 full issues of only 60-70 magazines was considered impossible. In addition, the cost of conducting in-person interviews among replicated samples daily was deemed prohibitive. It was also unlikely that we could ensure daily sample returns with high response rates in a fashion similar to the prior studies. MRI was thus compelled to develop an alternative methodological approach.

**MRI's Approach**

MRI's objectives were multiple:

- To develop either a mail or a telephone approach which could capture "first-time reading" of many magazines.
- To capture "first-time reading" on a daily basis, ensuring sufficient detail for developing curves (particularly for weekly magazines).
- To employ a methodology that utilizes real-time recording of readership.
- To employ a methodology that deals with the "on-sale" issue date.
- To optimize the data capture of "first-time reading" efficiently by measuring multiple issues of the same magazines at one time.
- To ensure that cooperation levels adequately represent major demographic variables.
- To ensure that the required tasks would be understood by respondents and that they would have little difficulty fulfilling their responsibilities.

To allow MRI to assess each respondent's ability to complete the survey accurately.

MRI considered a number of alternatives to meet these goals. We were immediately faced with the need to measure more than one issue of any magazine at the same time. Lester Frankel noted that "first-time reading of an issue" required huge sample sizes, especially if only one issue of any magazine were studied at a single time (Frankel, 1977). He contended that sampling efficiency could be gained if the five most recent issues were measured at the same time, multiplying the in-tab for developing accumulation curves. If we were to measure multiple issues simultaneously and also measure numerous magazines, MRI would necessarily be unable to present clear visual cues for each measured issue in any modest sized mailed questionnaire and no visual cues would be possible were we to use telephone interviewing.

MRI also wanted to collect as much real-time recording of readership as possible. Both previous studies had employed a daily readership measurement technique and we wanted to maintain this highly specific methodology. For this reason, we wanted to employ either a "real-time" recording of current readership or, the very least, a "yesterday recall" methodology. The daily measurement of "first-time" reading also enabled the flexibility of aggregating data to larger time frames (e.g., weekly, monthly) if necessary, a flexibility unavailable using methodologies asking only about the past seven days.

## MRI's Methodology

Faced with these multiple objectives, MRI opted for a diary-based approach. Our decision was predicated not only on these goals but also on prior readership research using the diary method. As far back as 1966, British researchers investigated the feasibility of replacing the NRS-type readership study with a panel-diary method (Joyce and Bird, 1967). Although rejecting the replacement of the NRS with a diary-based method, the authors concluded:

> We do, however, see a future for the use of readership panels for experimental purposes, particularly if a satisfactory method of obtaining diary records of readership can be achieved. Panels run on these lines can provide information about patterns of readership behaviour which are not available from any other source. They may have an application in measuring advertising effectiveness if ways of linking the time sequence of advertising exposures to the time sequence of purchases are found (Joyce and Bird, 1967).

More than fifteen years later, another group of British researchers echoed this opinion:

> Examples quoted in the report suggest that diary panels can produce valuable data on reading behaviour not available by other means.
>
> In view of the above the TSG recommended that further work on a diary panel should concentrate on its role as an adjunct to the NRS rather than as a substitute for it (Beeson and Dodson, 1985).

In 1982, Axel-Springer employed diary-based research to capture audience accumulation data in Germany.

Although there are a number of research concerns associated with the diary method (e.g., the timing of completing the diary, the ability to record in-home and out-of-home readership, the use of a modified pre-list), daily recording of readership offered several key advantages. They were:

- Diaries capture first-time reading of any previously published issue, thereby increasing sampling efficiency for accumulation measurements.
- Diaries have been used successfully in the United States for radio audience measurement, serving as the accepted methodology for radio ratings.
- Given the existing information about time spent reading magazines on a daily basis, the diary task is minimally burdensome for most respondents. (We expected the respondent to take no longer than one-to-two minutes per day to complete the diary.)
- The editing of a diary affords the researcher the ability to assess a respondent's understanding of "first-time" read. A number of papers have noted that "first-time read" is a difficult concept to convey to respondents. By following the logical trail of a weekly diary, editors can note whether a reading occasion has been properly recorded as first time read. We believe no other methodology provides a similar opportunity to assess a respondent's understanding of "first-time" read.

Diaries enable the researcher to determine or adjust claimed on-sale dates for particular magazines. This is a particularly crucial piece of information for those engaged in maximizing weekly reach for print and in planning multimedia schedules. Douglas notes that monthly magazines can begin distribution one to two weeks prior to their claimed "on-sale" date (Douglas, 1992). Methodologies, which employ issue-specific recognition (e.g., the Politz studies), show issues based on "on-sale" dates (i.e., issues are shown to respondents only after the claimed on-sale date). The diary allows respondents to enter issue-specific reading occasions on any given date, even if the reading event precedes the magazine's claimed on-sale date.

- The diary does not place a time-constraint on "first-time" reading. Respondents can enter any issue date, regardless if the issue is a year or more old. Other studies, on the other hand, established maximum shelf lives for the studied magazines, thereby creating an upper limit for full accumulation. Although those shelf-life estimates were reasonable, they did affect the shape of the accumulation curves developed from the data.

MRI began its diary development in the Spring of 1998. We simplified the diary task by requiring the respondent to enter only the following information:

- The name of the magazine read or looked into on a specific day. (MRI presented the respondent with a prelisted set of magazines; the final diary version enabled respondents to enter the names of other magazines in spaces provided at the end of the pre-list.)
- The issue date of a magazine read or looked into.
- Whether or not the reading occasion was a "first-time" read or looked into that specific issue.
- Whether or not the reading occasion took place at home.

By limiting the information required from the respondent, MRI sought to heighten the willingness of respondents to return their weekly diary.

MRI also decided to generate weekly replicated samples rather than to create a panel whose members would be required to keep a readership diary for four or more weeks. Once again, this approach eased respondent burden and increased the probability of a respondent's commitment to record the diary thoroughly for the entire week.

## Pilot Study One

The first pilot study for capturing accumulation data was conducted in the Summer of 1998. The purpose of the study was threefold. First, we needed to evaluate respondents' ability to understand all diary instructions and to complete the diary accurately. Second, we tested two different diary executions (Exhibits 1 and 2). (Exhibit 3 shows the detailed instructions in the diary.)

Exhibit 1

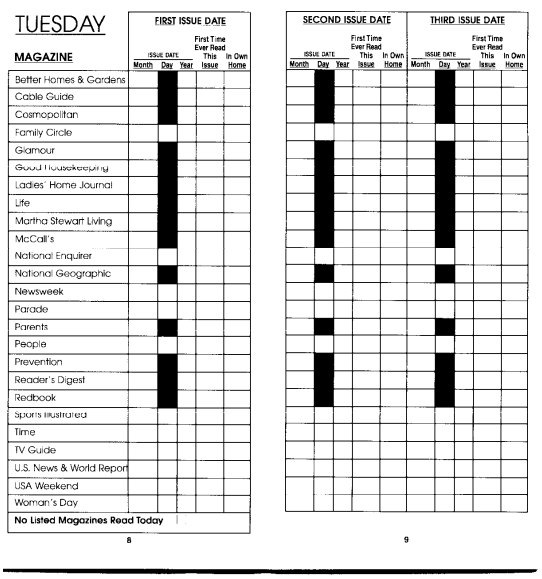



Exhibit 2

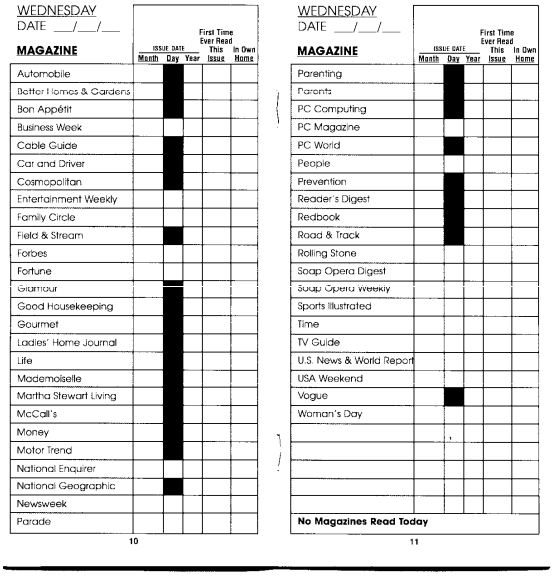
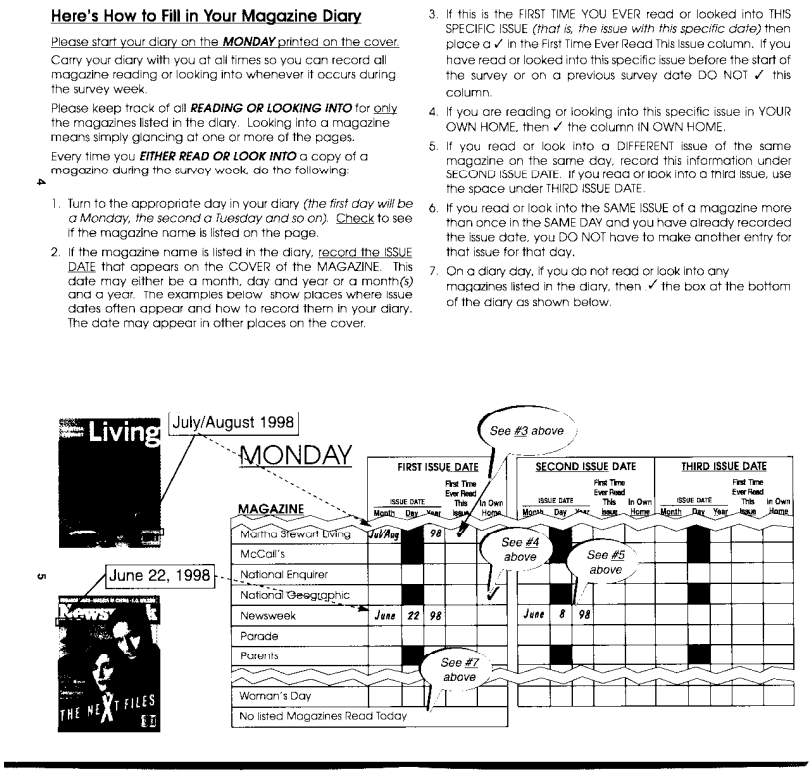


Exhibit 3




The first version displayed a pre-listed set of 25 magazines that enabled the respondent to record multi-issue reading of any of the magazines on the same day. The second version listed 46 magazines, but also provided additional space for respondents to record other magazine reading or other issue reading of listed magazines on a given day. Third, we evaluated the feasibility of using a random-digit probability telephone sample/follow-up mail diary for capturing the data.

MRI used Bruskin-Goldring's weekly RDD omnibus study to conduct this test. From the results of this pilot, we concluded that:

- The diary instructions were clearly understood by an overwhelming majority of respondents. Almost without exception, respondents entered the correct issue dates of weeklies, biweeklies and triweeklies. In addition, the diaries indicated a logical flow to readership entries, indicating a clear understanding of the "first-time" reading concept. (See Exhibits 4-9).

Exhibits 4 and 5 illustrate a respondent's ability to enter multiple issue reading during the week and also demonstrate an accurate recording of issue dates.

Exhibit 4

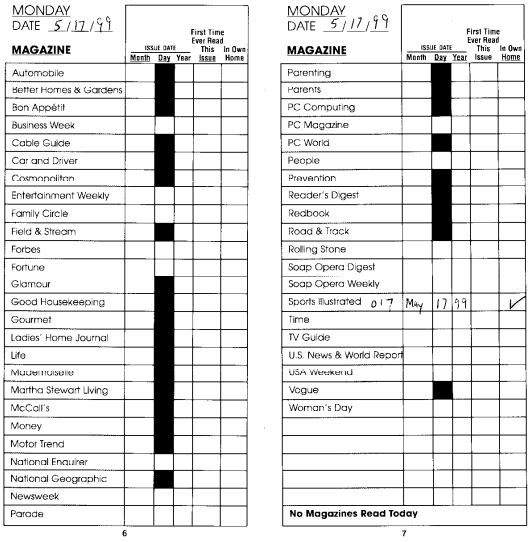
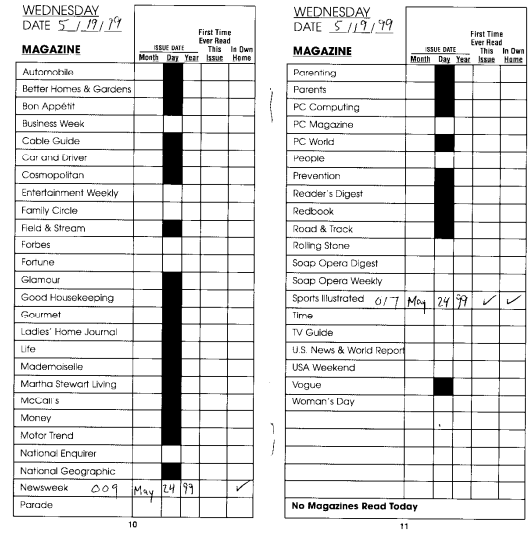



Exhibit 5




Exhibits 6 and 7 show the logical flow of multiple readings of a single issue and also indicate a respondent's clear understanding of "first-time" read. In addition, it provides evidence that issues can be read for the first time well after the on-sale date.

Exhibit 6

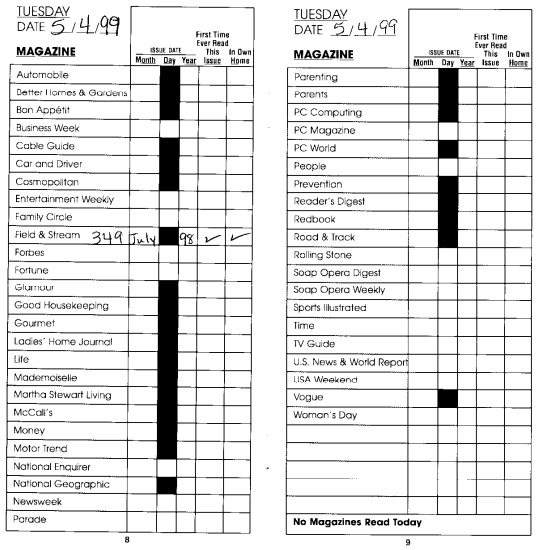
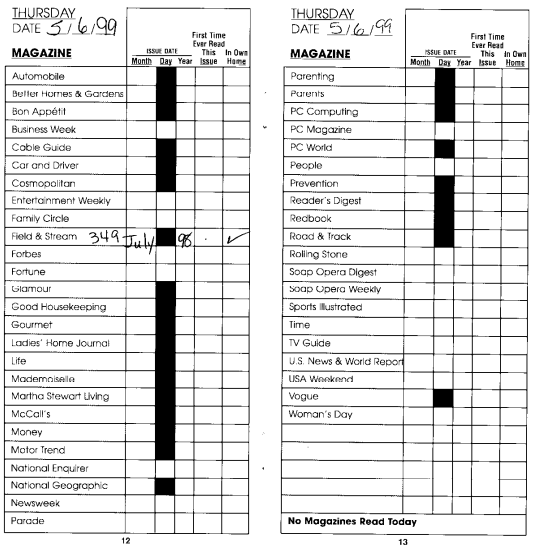



Exhibit 7



Exhibits 8 and 9 illustrate respondents' entering of non-listed magazines.

Exhibit 8

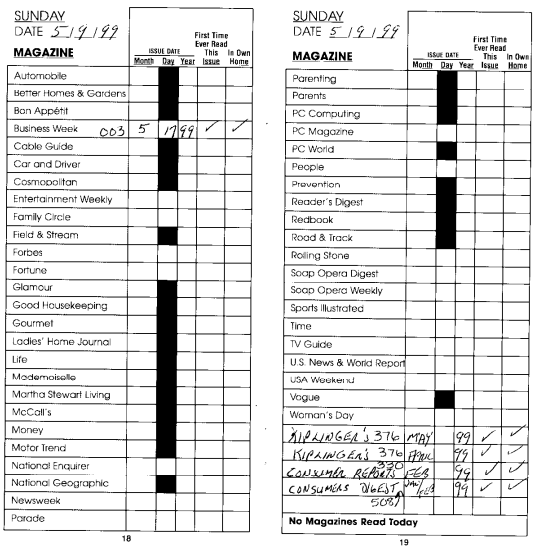
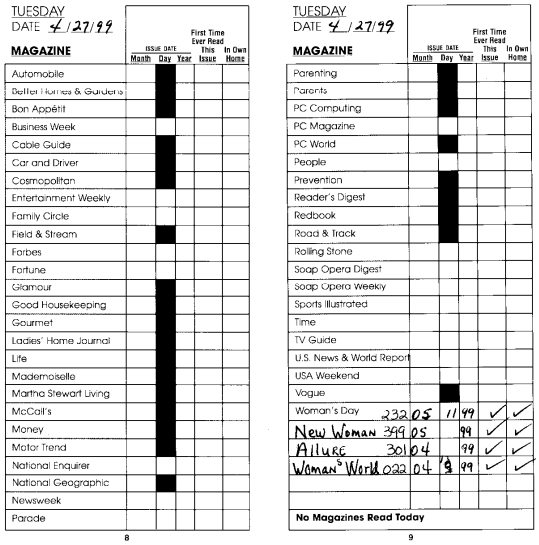



Exhibit 9




Combined with in-depth telephone follow-up interviews of diary respondents, MRI felt confident that the diary instructions and examples were clearly understandable.

- Respondents clearly preferred the diary version that afforded them additional space to record other magazine reading. In the "notes" section of the diary, a number of respondents expressed frustration at their inability to record readership of magazines not included in the closed-ended set.

- Using a random-digit telephone sample was unacceptable. Less than 50% of the original sample agreed to participate in the follow-up mail/diary survey and only 30.3% (131 out of 433 respondents who received a diary) returned a completed one. Response rate levels were exceptionally low and diary respondents were disproportionately elderly females.

## Pilot Study Two

Having settled on a version of the diary, MRI contracted with NPD, a company with a nationally distributed panel, to provide the sample for a second pilot study. We wanted to be certain that the diary was simple and straightforward and that we needed no further refinements to our procedures. Additionally, we wanted to test the feasibility of using the NPD panel for our full-scale study.

In January 1999, we mailed an advance letter and, subsequently, the readership diary to 50 selected panel respondents in the New York area. MRI received 37 completed diaries, 4 of which were rejected because the respondent demographics failed to match the known sex or age of the panel member. Once again, elderly women were more likely to complete the diary. Follow-up in-depth interviews reinforced our confidence in the diary instrument and led to a number of minor procedural or diary changes for Stage One of the full-scale study.

## Stage One

The first stage of the full-scale study was completed in the Spring of 1999. Using the NPD panel, MRI generated four successive, weekly-replicated samples of 600 respondents. Week one of the diary began on Monday, April 19th and the final diary week began on May 10th. The sample was stratified to ensure oversampling of men and of younger, employed adults of both sexes. The sample allocation, shown in Table 1, accounted for the differential response rates evident in the two pilot studies.

Table 1
Weekly Age/Sex Sample Allocation

| | Male | | Female | |
|---|---|---|---|---|
| Age | N | % | N | % |
| 18-24 | 60 | 17.14% | 42 | 16.80% |
| 25-34 | 90 | 25.71% | 62 | 24.80% |
| 35-44 | 81 | 23.14% | 54 | 21.60% |
| 45-54 | 55 | 15.71% | 38 | 15.20% |
| 55-64 | 30 | 8.57% | 22 | 8.80% |
| 65+ | 34 | 9.71% | 32 | 12.80% |
| Total | 350 | 100.00% | 250 | 100.00% |

Prior to the diary mailing, we sent respondents an advance letter describing the study and asking for their cooperation. The letter contained a brief description of the respondent's task, instructions on completing the diary, and an incentive.
MRI also attempted to contact all respondents on the weekend before they were to begin their diary recording. This call served both as a reminder to begin completing the diary on Monday and to answer any questions about the diary instructions.

The completion rate of acceptable diaries was 51.5% (1235 of the initial 2400 mail-out). Table 2 shows the age/sex composition of the completed diaries. Slightly more than half (51.8%) of the respondents were men, indicating that our oversampling successfully accounted for the anticipated differential response rates.

Table 2
Sex/Age Composition
Of Diary Respondents

| | Men | | Women | |
|---|---|---|---|---|
| Age | N | % | N | % |
| 18-24 | 89 | 13.91% | 79 | 13.28% |
| 25-34 | 147 | 22.97% | 132 | 22.18% |
| 35-44 | 153 | 23.91% | 132 | 22.18% |
| 45-54 | 113 | 17.66% | 112 | 18.82% |
| 55-64 | 58 | 9.06% | 62 | 10.42% |
| 65+ | 80 | 12.50% | 78 | 13.11% |
| Total | 640 | 100.00% | 595 | 100.00% |

The diary collection was not an unmitigated success. Prospective respondents chastised us for failing to account for their occupational hazards, for our omission of the Bible (any version)) in the diary, and for our "thoughtless intrusion" into their otherwise busy lives. (See Exhibits 10-12.) Nevertheless, we were satisfied with the overall level and quality of the response.

Exhibit 10

**Comments...**

Because I am a farmer this is an extremely busy time of year. I dont have time to even open a magazine, unless it rains for a few days.

20

**A Quick Checklist**

Before you mail your diary, please make sure you have...

- ✓ Answered all the questions on pages 2 and 3.
- ✓ Included all your magazine reading during the survey week.
- ✓ Checked if your reading of each issue was "First Time Ever Read This Issue."
- ✓ Checked if your reading was "In Own Home."
- ✓ Recorded any magazines read or looked into that were not listed.
- ✓ Checked the "No Magazines Read Today" box if you did not read or look into any magazines on that day.

You've now finished your diary! Please return your completed diary immediately after the survey week is over in the envelope we've included. Postage is already paid.

**Thanks again for your help!**

21

Exhibit 11

**Comments...**

There is no mention of the Holy Bible, which I read Chapters everyday. Just an observation. I really like all Magazines but a lot of great facts Simple Pleasures

Thanks for the Pen

20

**A Quick Checklist**

Before you mail your diary, please make sure you have...

- Answered all the questions on pages 2 and 3.
- Included all your magazine reading during the survey week.
- Checked if your reading of each issue was "First Time Ever Read This Issue."
- Checked if your reading was "In Own Home."
- Recorded any magazines read or looked into that were not listed.
- Checked the "No Magazines Read Today" box if you did not read or look into any magazines on that day.

You've now finished your diary! Please return your completed diary immediately after the survey week is over in the envelope we've included. Postage is already paid.

**Thanks again for your help!**

21

Exhibit 12

**Comments...**

My husband very rarely reads magazines and I'd have no idea where you got the idea that he would carry around a "magazine diary" and fill all of that crap out. He is a hard working steel manufacturer who has no time or interest in a survey like this.

20

**A Quick Checklist**

Before you mail your diary, please make sure you have...

- Answered all the questions on pages 2 and 3.
- Included all your magazine reading during the survey week.
- Checked if your reading of each issue was "First Time Ever Read This Issue."
- Checked if your reading was "In Own Home."
- Recorded any magazines read or looked into that were not listed.
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You've now finished your diary! Please return your completed diary immediately after the survey week is over in the envelope we've included. Postage is already paid.

**Thanks again for your help!**

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## Stage One Results

The empirical curves of audience accumulation are based on the 1235 in-tab. Preliminary analysis showed that curves were not only sharply different between magazines with different publication intervals, but that they were equally divergent among magazines of similar publication frequency.

Chart 1 shows the audience accumulation curve for weekly newspaper supplements (i.e., *Parade* and *USA Weekend*). Almost all of the total audience reach (97.7%) is amassed within two days of the initial on-sale date. This steep accumulation curve is consistent with existing, estimated curves (90% accumulation in one-day). The data also indicate that magazines carried within Sunday/weekend newspapers share the papers' short, precipitous accumulation pattern.

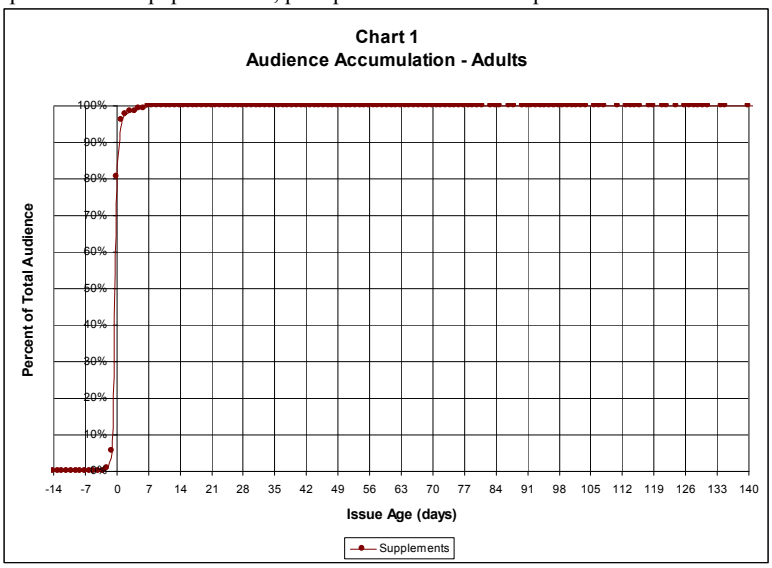


Chart 2 shows the readership velocity rate for *TV Guide* and compares this pattern to the weekly supplements. Within one week of its on-sale date, *TV Guide* has already attracted 90.3% of its total audience. Once again, this curve closely resembles estimated curves (90% weekly reach) currently in use in the United States.

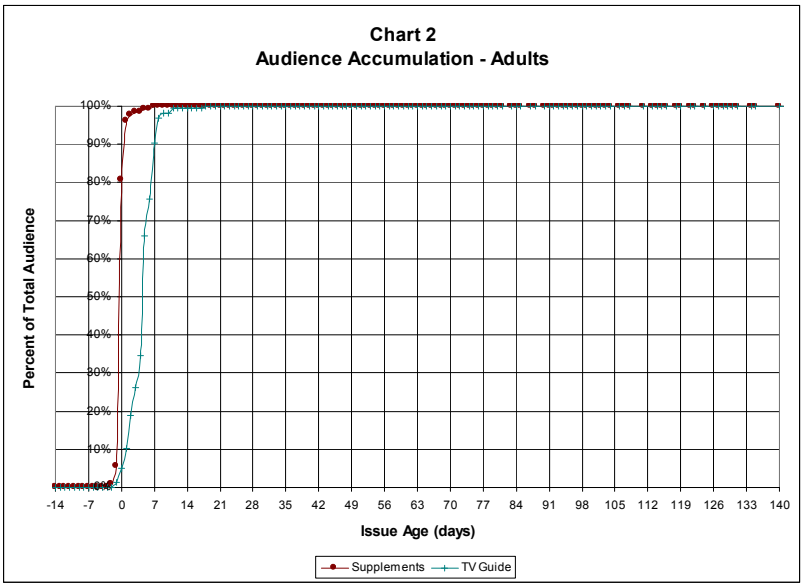



Chart 3 adds the newsweeklies (*Time*, *Newsweek* and *U.S. News & World Report*) to the previously drawn accumulation curves. As expected, the pattern of accumulation is less precipitous than the two other types of weekly magazines. 65.9% of the newsweeklies' total average audience become readers within one week of the reported on-sale dates. Almost 90% of all readers are reached within the first four weeks after the newsweeklies go on sale. These figures are equally consistent with current, theoretical curves.

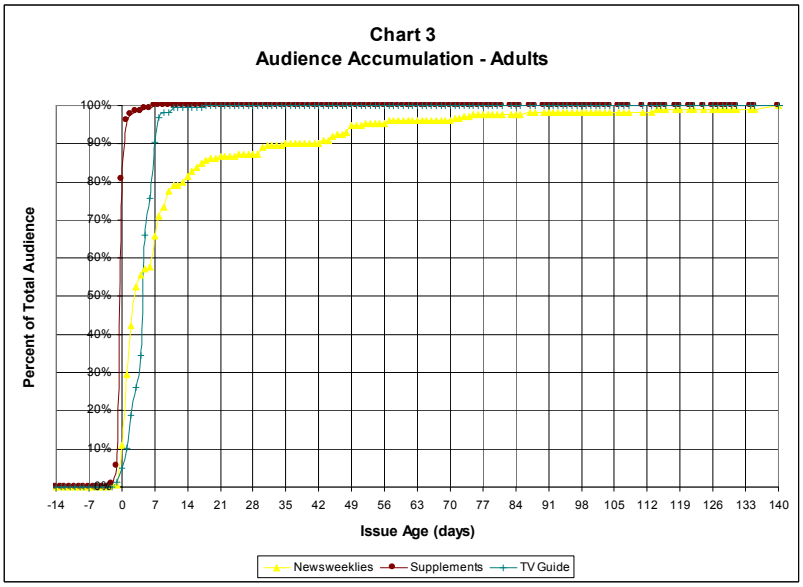
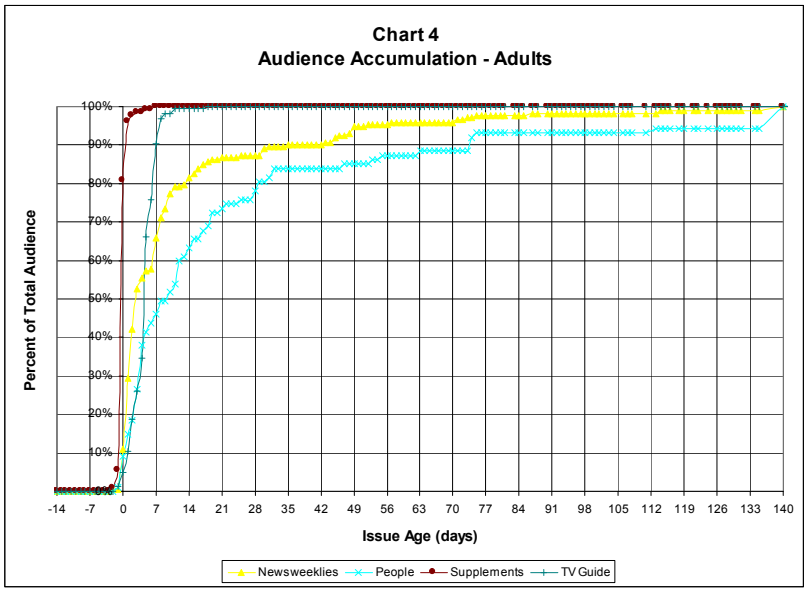
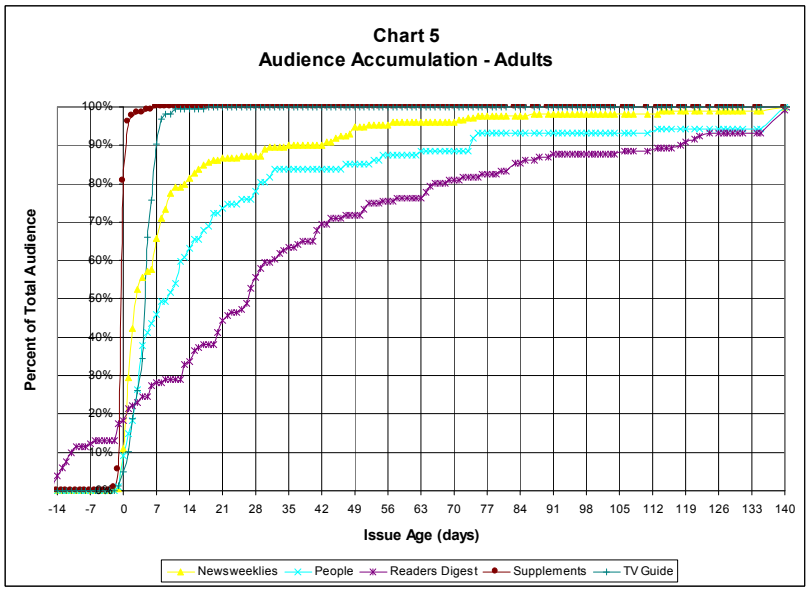


Chart 4 adds the velocity curve of *People Magazine* to the weekly magazine curve mix. It is readily apparent that *People*'s curve is markedly different from those of the other weekly magazines. Only 46.0% of the total audience are reached within the first week of the magazine's availability.



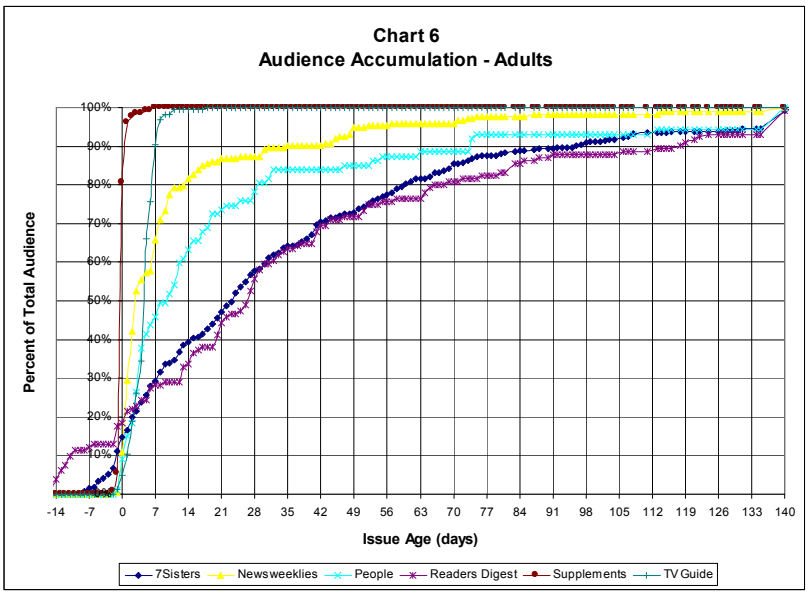

The data lend support to the previously held belief (see Douglas, 1992) that magazines with higher readers-per-copy tend to have longer accumulation curves than other publications with similar publication frequencies. There is also reason to speculate that place-of-reading, circulation distribution and editorial content are all playing prominent roles in explaining the different shaped curves of various weekly magazines. No matter what the underlying causes, the data underscore the contention that accumulation curves are not driven by publication frequency alone.

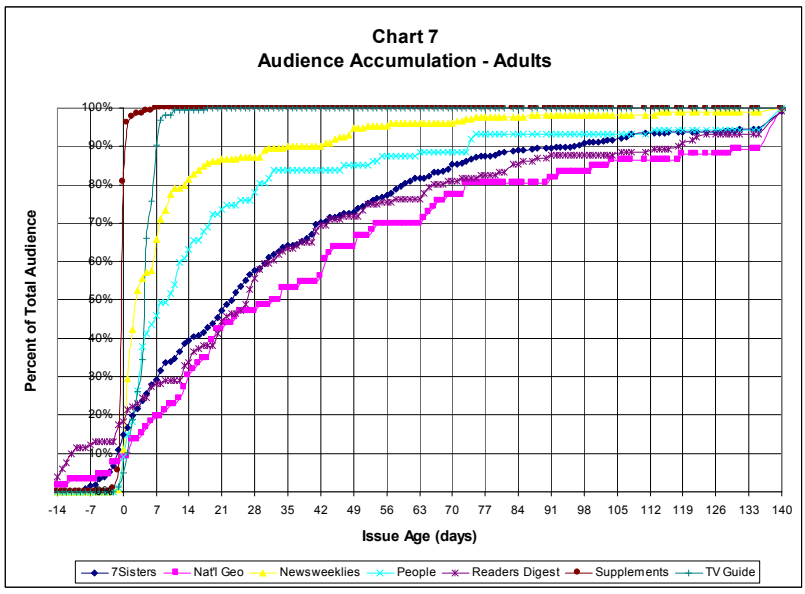
An accumulation curve for a monthly magazine, *Reader's Digest*, is shown along with the weekly magazine curves in Chart 5. *Reader's Digest*'s curve is slower than any one of the weekly curves, consistent with the theoretical relationship between weekly and monthly accumulation curves. Approximately 60% of *Reader's Digest's* average-issue readers are captured within the first month of the magazine's declared on-sale date. The curve also shows that some 20% of all the audience is accumulated prior to the on-sale date, reflecting *Reader's Digest*'s staggered delivery system. The "pre on-sale" accumulation figure also illustrates the diary's capacity to capture first-time readership independent of a stated on-sale date.




This curve appears to be somewhat slower than existing, theoretical curves (see Douglas, 1992). Part of the difference may be driven by the still relatively small in-tab of our Stage One study and part may be driven by the fact that a diary methodology need not impose an arbitrary limit on full accumulation.

Charts 6 and 7 add accumulation curves for the Seven Sisters (i.e., women's service magazines) and *National Geographic*, respectively. The seven women's service magazines, a combination of triweekly and monthly publications, show a similar accumulation pattern to *Reader's Digest*. *National Geographic*'s curve appears slower, but caution is advised due to the in-tab for the magazine. Once again, these curves, although slower than those of any of the weekly publications, appear somewhat slower than existing theoretical curves. There is also some reason to speculate that readers-per-copy plays a less significant role in shaping accumulation curves for monthlies than it does for weeklies. (At the same time, it should also be noted that the readers-per-copy differences among the analyzed monthly magazines amount to little more than one reader-per-copy.) This speculation must await the collection of additional data in the full study.




Beyond analyses of particular magazines, the data begin to show sharply different accumulation curves for in-home and out-of-home readers. Charts 8-10 compare in-home and out-of-home accumulation patterns for the newsweeklies, *People Magazine*, and the women's service magazines, respectively. It has been argued that out-of-home accumulation is markedly slower than in-home accumulation. The data lend substantial support to this hypothesis. Regardless of magazine and publication frequency, out-of-home readership accumulation curves are noticeably slower than their counterpart in-home curves, lagging by some 10-20% at key points after the on-sale date.

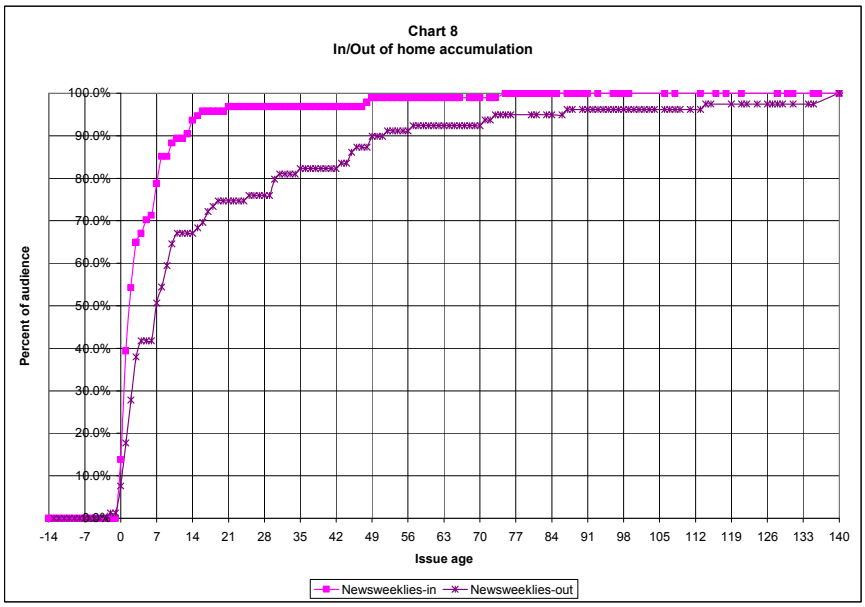


Chart 8
In/Out of home accumulation
Percent of audience
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
-14 -7 0 7 14 21 28 35 42 49 56 63 70 77 84 91 98 105 112 119 126 133 140
Issue age
Newsweeklies-in
Newsweeklies-out

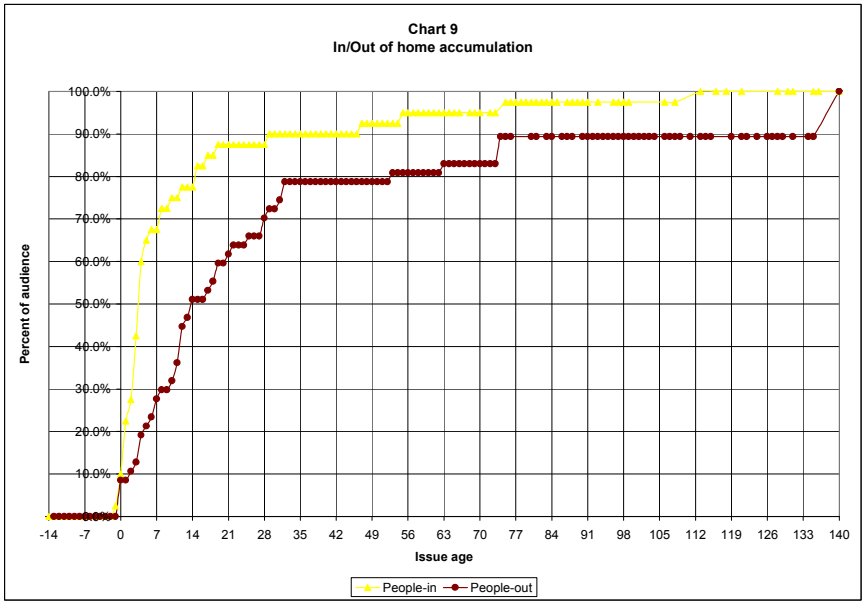
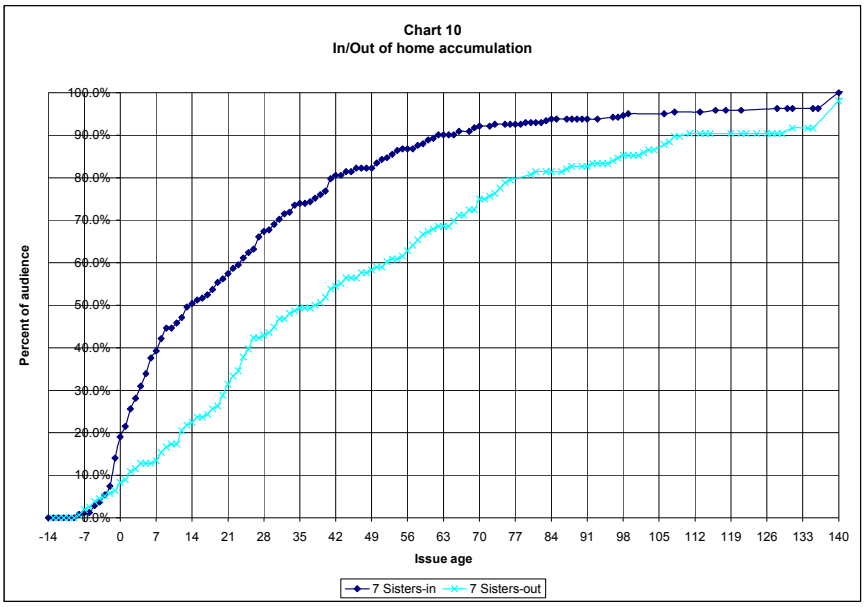


Chart 9
In/Out of home accumulation
Percent of audience
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
-14 -7 0 7 14 21 28 35 42 49 56 63 70 77 84 91 98 105 112 119 126 133 140
Issue age
People-in
People-out




**What Lies Ahead**

The results of Stage One represent only the first step in developing new audience accumulation curves for use in media planning. At this symposium, Marty Frankel's paper explains the theory and work behind the critical task of developing underlying curves to fit the data collected in this study. MRI plans to extend the study to capture first-time readership for over 10,000 respondents. The additional data should add substantial stability to the displayed curves, offer the possibility of examining accumulation patterns for different demographic groups, and reduce seasonality issues related to the data. The past year's research efforts, however, have laid the groundwork for the follow-up studies.

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