IRREGULARLY PUBLISHED MAGAZINES: FREQUENCY AS A MEANS OF ESTIMATING READERSHIP IN A RECENT READING ENVIRONMENT

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Synopsis

PMB's planned move to RR involved seeking a solution to the question of what to do about the various types of irregularly published magazines currently measured. PMB adopted the proposal made by Audits and Surveys' President Richard Lysaker who acted as consultant on the issue. He recommended using RR where reasonable, and in cases where the irregularity was more exteme, to use the frequency method.

This paper analyses the results of the Canadian screening card test from a new perspective, to see whether the results confirm the U.S.A. findings on which Lysaker's recommendation was based. It takes the analysis a step further by looking at differences in the frequency: recency relationship for different questioning configurations. It looks at the impact on specific irregular publications as well as the overall averages.

The paper suggests that selective use of the questioning technique can influence the frequency: recency relationship and so allow choice of a configuration that produces a reasonable match between the two techniques, at least as good as using recency, and less difficult to administer. The "Horizontal aided" configuration on average produced frequency based AIR's within 10% of the recency based AIR for monthlies and less-than-monthlies. The paper concludes with a suggested refinement to the Lysaker method that brackets the frequency AIR between two recency measures.

Background

An interesting problem faced PMB in its review of the possibility of moving to Recent Reading from Through-the-book. It was the question of how to treat irregularly published periodicals. It is not a trivial problem for PMB. We have publications that drop a summer or winter issue, and more complex publication schedules such as fortnightly at some times of the year and monthly at other times. Some periodicals publish 5, 7, 8 or 9 times a year.

Out of the approximately 70 periodicals that PMB presently measures, over 20 have an annual publishing frequency that is other than daily, weekly,fortnightly, monthly, bimonthly or quarterly. Of those 20, perhaps half have a publishing frequency that is more complicated than simply skipping an issue (see Exhibit 1 for details).

In Dick Lysker's analysis in 1989 (1), he found that 30 publications had at least some irregularity.

Irregular issue lengths [1]
20 publications - 242 issues

# wks	#issues
2-3	4
5-7	40
9-11	12
13-15	4
17	2
	62 = 26% of all issues

1 In addition, some apparantly regular intervals (4,8 weeks), were irregular in the context of the publication's modal frequency

It is possible to speculate that PMB's current TTB measurement method, being largely independent of the publishing interval, does not restrict a publisher from publishing on an irregular schedule if that makes sense from a business point of view. In contrast, in an RR environment, a publisher would presumably have to think carefully about the implications of such a frequency. To drop an issue while staying in the same monthly group risks understatement of average issue readership for those asked about readership in a period when no issue was available.

Irregulars Within Recent Reading

The obvious alternative was to review the possibility of measuring irregulars within RR. There are always going to be some variations in publications' publishing intervals, and of course, the publication will not get into the hands of even the most regular subscriber at exactly the same time each month. These kinds of fluctuations have not been found to impede RR as a measurement tool in many countries around the world, so our first step before trying to use an alternative, was to investigate the alternatives within RR. The key issue was to make a choice as to what qualifying interval to use. There are four different alternatives to examine:

i) The most common publishing period (the best fit approach)
ii) A shorter qualifying period with an adjustment factor,
iii) Custom qualifying periods,
iv) Variable qualifying periods.

i) Use the most common publishing period (the "best fit" approach):

MRI uses this approach for cases where there are minor variations in the frequency of publication caused by adding or dropping issues in specified time periods. These cases are handled as minor variations that do not affect the data collection or reporting. The 1990 MRI Technical Appendix, for example, lists 26 publications with some degree of irregularity :

MRI 1990 (Fall)
Listing of publications with frequency alterations

RR Qualifying Period	Actual Frequency	Number of Publications
Weekly	50,51	5
	57	1
Fortnightly	24	2
Monthly	9	2
	10,11	11
	13,14	2
		26

Consequences:

· Understatement from missing issues : If a publication misses an issue, or otherwise has fewer issues than the norm, then in the conventional RR method, its readership score is understated relative to what it would have achieved had it published the missing issue.

The degree of understatement is simple to estimate. It is one issue's worth of readers, as a proportion of the total number of issues being measured. Thus, if the survey measures 10 months in the year, and one issue is missed during the interviewing period, then the conventionally reported recent reading AIR will be an understatement of 10% relative to what it would have achieved had the missing issue been published and gained the same number of readers as the others.

In PMB the majority of interviewing is conducted in two 3-month waves, so that the understatement will be proportionately greater, 1/6 = 16.7%. These percentages are only a first estimate: the net understatement

will be affected by the way the telescoping, replication and parallel reading biases change as a publication's publishing interval change.

· Understatement from shorter qualifying period (ie. shorter than the publishing period) The same procedure can be used to estimate the degree of understatement if an irregular publication is treated as a regular one.

Take for example a publication that publishes monthly and fortnightly for a total of 18 issues a year, and is treated as a fortnightly in the RR qualifying period. Then the equivalent first estimate of understatement over a full 12 months (26 fortnights) will be 1-18/26=31%. The percentage could vary up to 50% if the a shorter interviewing period is used.

· Overstatement from using longer qualifying period (ie. than the publishing period)
Conversely, there will be a tendency to overstatement in any period where there is more than one issue in the qualifying period. However, what was lost on the missed issue is not necessarily regained on the extra issue! If the RR qualifying period includes more than one issue, then the conventional RR question is actually not the average issue audience, but the reach of two issues (C2). The overstatement can thereforebe estimated as the ratio of C2:AIR.

In PMB we have estimates of that ratio (based on the binomial expansion) varying from 1.25 to 1.67 with an average of just under 1.50 . The overstatement then is of the order 25-67% in the qualifying period under investigation. If that period accounts for one month out of six, then the impact on the reported AIR would be of the order one-sixth of that level i.e. 4-11%

ii) Adjusting for the over/under statement

Since one can readily estimate the degree of over/under statement that the RR procedure might generate, it is natural to wonder whether a simple adjustment would not be the quickest way to resolve this problem. And there is a precedent for using a factor that corrects for the understatement that occurs when the qualifying period is less than the publishing interval. In the FRY technique the qualifying interval is shortened down to just yesterday, and the readership figure is multiplied by the factor:

$$\text{Factor} = \frac{\text{publishing interval}}{\text{Qualifying period}}$$

This is however by no means a satisfactory solution within a conventional non-FRY technique.

- Replication becomes more pronounced as the qualifying period is shortened, for example becoming as high as 700% for a TV listing in a yesterday reading question. Consequently, an adjustment factor would likely over compensate.
- A shortened qualifying period should only be used with an anti-replication device, the "first time read" question as used in the FRY method, or a number of reading occasions measure. Either of these questions imply substantial changes to the questionnaire.
- Short qualifying periods reduce the sample sizes.

iii) Custom time period as the qualifying period

For those publications whose irregularity takes the form of having unusual intervals, eg 6, 7 or 10 weeks etc, one could theoretically set RR qualifying periods to that number, be it 6,7 or 10. While this might be practical in an unaided question format, in the aided version preferred for PMB on other grounds, it would be doubtful that respondents could give meaningful information about their activities in such unusual time frames.

In PMB's review, this option never commanded much interest. The reason was simple. The cases of irregularity we deal with are not of publications publishing every 6 or whatever weeks, for which such a procedure might conceivably be tried. The six or seven week intervals arise out of a publishing strategy which results in that interval occurring occasionally, but not regularly.

iv) Varying the qualifying interval to match the publishing interval

Theoretically, the recent reading model might be made to work with changing qualifying intervals to match the publishing intervals. However, this could only work over the long term. In the short term, any time there is change in qualifying interval, a bias is created because it is not possible to select a date to change to the new qualifying period without introducing either under statement or overstatement. When the publication reverts to its previous frequency, the bias may be partially compensated for, but it may not, again depending on the choice of dates for changing the qualifying period.

In practice it would be a considerable administrative problem to change qualifying periods in the field on a recurrent basis. No doubt it could be handled, but it would be a significant problem. Not least is that it introduces a whole new class of errors into the survey administration. Presently our surveys are structured so it is virtually impossible to misplace a monthly in the weekly group or vice versa. But if interviewers were to be routinely moving publications from one group to another, it would surely happen sometime that a publication was misplaced, or not moved, or moved when it shouldn't have been.

Conclusion re: use of RR for irregulars

It was Dick Lysaker who recommended to PMB a "keep it simple" approach to this problem. He advocated using recency in those straightforward cases where there was a common (modal) publishing interval that matched a standard RR qualifying period (weekly, monthly, bi-monthly or quarterly). As to how much variation from the common publishing interval would be acceptable, he suggested some fairly liberal benchmarks, the exceptions should not exceed one-third of cases, and the publishing interval of the exceptions should not exceed twice the common interval.

Reviewing each of the PMB publications' schedule, this proposal covered over half (17 out of 30) of the cases of irregularity. About 12 or 13 periodicals had publishing schedules that defied even those liberal criteria, mostly on the grounds that during our interviewing periods, there was no common publishing interval matching an RR qualifying interval. In other cases it was because the exceptions deviated too dramatically from the norm.

The Frequency Alternative

Frequency was proposed as a reasonably acceptable alternative for those exceptional case. The frequency method is used more in Canada and the U.S.A. then in Europe or elsewhere; its use in South Africa having been discontinued in the mid-80's. As used in Canada, a respondent's answer to the frequency question is taken at face value. If the answer is "all or almost all" then the respondent is considered a reader. Respondents giving an answer indicating they read about half the issues are given a reading probability of 50%. Table 1 shows the Canadian frequency scale, as shown to respondents, and the theoretical probabilities used to calculate the AIR:

Table 1 - Canadian Frequency Scale

	Assigned Theoretical Probability
All or almost all	100%
Most (about 3 out 4)	75%
About half (about 2 in 4)	50%
Some (about 1 in 4 issues)	25%
Occasionally (less than 1 in 4 issues)	12.5%
Never	0%

Use of frequency to estimate AIR in U.S.A.

Lysaker pointed out this approach was used by MRI in U.S.A. for publications such as skiing magazines which reduce publishing frequency in the summer. The method is used for all publications in the Mendelsohn study (affluent survey), and by J.D. Power (automobile survey) and by Simmons (in their upper management survey). In this latter case, the probabilities are factored by approximately 70% to match more closely the reading probabilities found in the regular SMRB national readership survey. (2)

As evidence of the applicability of this alternative, Dick Lysaker showed MRI comparisons between the regular AIR (ie. as calculated using RR), and an AIR calculated using the frequency method. On average, the frequency method produced figures very close, within 4%, of the average AIR across all 183 publications then measured by MRI. Of course, not all publications show that same close relationship. But a high proportion of them do: in fact in over 70% of cases, the frequency estimate of the AIR was within ±10% of the recency method (table 2):

Table 2 - MRI Comparison of AIR Estimates
Recency vs. Frequency (3)

Publications ... 183 Overall Index of frequency AIR to Recency AIR 104

Range of indices	# Publications	(%)
under 90	16	(9%)
91-110	128	(70%)
110-120	21	(11%)
over 120	18	(10%)
	183	(100%)

To what extent is this average typical of all magazines? In the same presentation, Dick Lysaker showed table 3 below. In general, in the MRI survey, monthlies as a group had the closest match between recency AIR and frequency, with grouped indices ranging from 95 to 106. Weeklies as a group would have a 21% higher AIR estimated by the frequency method, and bimonthlies 14% lower.

Table 3 - Frequency AIR vs Recency AIR

Average indices by type of publication - MRI USA 1989 (3)

Type	# Publications	Average Index
Weekly	8	121
Monthly		
- 7 Sisters	7	98
- Fashion	7	106
- General	6	101
- Shelter/Garden	10	101
- Male/Spec. Int	33	95
Bimonthly	7	86

The Canadian Recent Reading Test - Evidence on RR vs. Frequency

This paper now examines whether the Canadian experience with RR matches those U.S. results, both in terms of overall average and in terms of the dispersion of individual titles. We are also able to look at how the relationship between recency and frequency is affected by different RR configurations. The source is the Canadian Recent reading test, which was reported on extensively by Hans Vorster in his paper "On the Effect of Screening Cards and Questioning Technique" (4) at the Hong Kong symposium. Briefly, PMB tested 9 different recent reading formulations . These included

- 3 different cards: MRI style, German MA style, and the "Canadian Prototype"
- 2 different question orders: vertical, and horizontal
- 2 different recency questions: aided and unaided.

Out of the 12 (=3x2x2) possible combinations, nine were tested using a Canadian Facts Monitor study with 3000 total sample (see table 4 below).

Table 4 - 9 RR variations tested in PMB RR test - 1989

MRI card	German card	Canadian Prototype
1 Vertical + unaided	4 Vertical + unaided	7 Vertical + unaided
2 Horizontal + unaided	5 Horizontal + unaided	8 Horizontal + unaided
3 Horizontal + aided	6 Horizontal + aided	9 Horizontal + aided

Principal Findings - Frequency vs. Recency

Averaged together across all the nine different treatments, and across all publications, frequency produced an average AIR almost identical (98 index) to recency, see table 5:

Table 5 - Frequency AIR vs Recency AIR
Average by type of publication - Canadian test 1989 (5)

	#Publications	Canadian Average Index	For Comparison M.R.I.
Weekly	6	128	121
Monthly	16	95	95-106
Less than monthly	11	69	86
	33	98	104

As in MRI, weeklies were overstated in frequency vs RR, monthlies produced similar results in both, and less frequent publications are understated relative to RR. Analysis by editorial, by distribution method, by circulation size and by readers-per-copy showed no differences other than those attributable to the weekly, monthly, other pattern observed above, see exhibit II, page 2.

The MRI statistic that 70% of cases fell into a range of 90-110 was a measure of how consistent these relationships were. In the PMB test, 70% of cases were within a range of ±25%. This is a wider range, which is perhaps attributable to the smaller sample on which the data are based, 3000 in the Canadian test vs. MRI over 20,000.

Effect of different treatments

For any given publication or group of publications, both the RR and frequency AIR's could theoretically have been influenced by the particular configuration used. Since there could also be interacting effects, this could be an extremely complex analysis.

Fortunately, as was documented in Hans Vorster's paper, (dealing only with recency based AIR estimates), neither the type of screening card, nor the questioning technique had any real effect on readership levels. The same is broadly true of AIR's calculated via frequency method. Table 6 shows how closely the overall AIR's matched:

Table 6 - Frequency vs Recency based AIR - by card type(6)

	Frequency Based	Recency Based	Index
MRI card	10.7	10.8	99%
German card	9.7	10.1	97%
Canadian Prototype	10.4	10.8	97%

However, when looked at by publishing frequency, and by type of recencyy/frequency question, differences emerged between the different configurations. This is not surprising. One can hypothesise that, for example the question order with frequency and recency adjacent to each other could well cause the respondent to try for an answer that, to the repondent, at least, is consistent.

Table 8 - Index of Freq AIR vs. Recency AIR
Horizontal Aided method (7)

	Vertical	Horizontal	Unaided	Aided
(exc. irregs)				
Weeklies	139	134	134	116
Monthlies	86	89	89	106
Other	59	61	61	101
	95	97	97	109

The aided design indexes at 106 and 101 for monthlies and others, so this would be the preferred one from the point of view of using frequency as a substitute for RR, given that the goal is mostly to find a substitute that would work for irregulars in the monthly and less frequent categories.

Application to Irregulars

While the overall average indices suggest that the horizontal aided technique might be the method of choice, it would of course not work if there were evidence that the method did not work for the specific publications under consideration, ie. the irregulars. This section now concentrates on these publications.

There is a difficulty to deal with. Whereas for the regular publications we know the goal we are looking for is a match between frequency and recency. There is not such a clear goal for the irregulars. However we know that the RR method will be under or over stating depending on the relationship of the publishing interval to the qualifying interval. Ideally, the frequency method would correct both the under and the overstatement.

Determining which publications are subject to overstatement and which understatement is a matter requiring careful attention to the publication dates and the qualifying intervals. This turns out to be a complicated process, but the results can be shown quite simply (Exhibit III). Out of the 12 irregular publications in the test:

- 5 of the irregular monthlies would be understated
- 3 of the irregular less than monthlies would be overstated
- 3 were not actually irregular in the test
- 1 had both under and over statement.

The understated group: For this group one can apply a nice test. Not only should the frequency AIR be higher than the recency value, it should also be less than the two publication period. In other words, the frequency value should be bracketed by the one and two issue recency figures. For the "aided" method, this proves to be the case, in each of the three card types, and for each of the five publications:

Table 9 - Bracketing test: Frequency AIR % (horiz-aided) compared to % claiming to have read in past 1 and 2 qualifying periods

	M R I card			German card			Canadian Prototype		
Irregular monthly	Recency Low	high	Freq AIR	Recency Low	high	Freq AIR	Recency Low	high	Freq AIR
E	4.4	10.2	7.3	4.6	12.9	8.5	8.8	13.3	9.6
H	10.5	15.8	11.7	10.7	13.8	9.5	12.7	18.8	14.5
K	6.6	10.9	8.1	3.8	11.7	9.7	4.6	11.5	6.5
O	3.2	6.1	5.4	1.3	5.2	4.4	5.2	9.5	6.7
P	3.8	7.4	5.0	3.4	7.2	5.7	6.9	10.7	7.5

The overstated group: This group comprises three publications for which the recent reading interval used in the test was 2 or 3 months. But, the publications actually published a copy 2 or 3 weeks earlier than the 2-3 month interval. In theoretical terms this would lead to RR overstating the AIR because, as has been

described earlier, the recency question is asking about multiple issues in the same time period, ie. it is like an estimate of C2, the 2 issue reach.

Ideally, in our chosen RR configuration, we would find the frequency AIR for this group lower than the RR presumed over-estimate. As shown below, that is not the case. The "aided" cell had higher AIR's using frequency than using recency:

Overstatement group:
Frequency AIR % compared
to recency AIR (horiz-aided)

	Horiz -aided	
Irregular less-than-monthly	Recency AIR %	Freq. AIR %
F	1.2	1.7
H	3.3	4.0
K	1.5	1.3
	2.0	2.3

Differences in demographics

One of the criticisms of the frequency method is that the scale can be misunderstood by the respondent to mean a variety of other things (8). For example, some people might not understand we are asking about the number of issues read out of four issues of the publication, and reply instead in terms of how often in a given time frame. Dieter Müller (9) has suggested that respondents might be responding in terms of their attachment to the publication. Should this be a strongly significant effect, then there is a risk that even if the overall readership numbers might be close between RR and frequency, their demographic make-up might be quite different. This would happen if those with higher attachment (eg. women for women's magazine) gave a higher frequency claim than a man with lower attachment.

The test did not show that kind of tendency. The profile by age, sex, and income for the irregular publications shows no significant differences between the RR AIR and the frequency AIR.

Conclusions

1 **Irregulars within RR**. Within recent reading, any irregularly published magazine is bound to suffer from either under or overstatement, or both. This is relative to the readership figures that would obtain in recent reading if it had the same readership but was published regularly.

An estimate of the degree of understatement can be made, but it is not reliable enough to be used as a factor adjustment. Such a correction factor would be subject to criticism that it overcompensates.

2 **Frequency as a substitute**. In these circumstances, the frequency method can be made into a relatively satisfactory substitute for RR. The results are not wholly equivalent, but it is possible to select a question configuration that preserves the RR:frequency relationship, at least for some classes of publications. The "horizontal aided" methodology proved in the Canadian recent reading test to produce satisfactory results for publications that would have been understated by RR.

3 **A useful test :** A useful test of "satisfactory" results is to see whether the selected frequency method produces a figure that is both higher than the RR understatement, and lower than the RR overstatement. This suggests a refinement to the Lysaker proposal for irregulars: - to deliberately select qualifying periods that bracket the irregular publishing periods, then check that the frequency result lies between those two brackets.

REFERENCES/SOURCES

1 Audits and Surveys "The recency method and measuring AIR for publications with irregular publishing freqeuncy" - PMB Reseach committee records - August 1989
2 Jonathan Swallen: 4th International Readership Symposium Barcelona 1988 (p 121)
3 Source: MRI 1989. Quoted by D. Lysaker. PMB Research Committee October 5/1989.
4 Hans Vorster - On the Effect of Screening Cards and questioning technique: 5th InternationalReadership symposium Hong Kong 1991
5 See exhibit - Methodology test - Frequency AIR by magazine/group (pg 2)
5 See exhibit - Methodology test - Frequency AIR by cell (pg 3)
7 ditto
8 Dear Reader Michael Brown - p116 quoting Wally Langschmidt, and Pym Cornish.
9 Ist International Readership Symposium - New Orleans 1981 pg 363

EXHIBITS

I Current list of irregular publications (PMB'92)
II Methodology Test: Frequency AIR vs. Recency AIR
III List of irregulars in test
IV Publishing dates for irregulars in test

Exhibit I

PMB'92

Publications with irregular Publishing Intervals

CanadianHouse&Home	8
Desitinations	8
Hamilton This Month	8
Homemaker's Magazine	8
Images	6
Inside Guide	6
Leisureways/Westworld	5
London Magazine	8
Metro Toronto Business Journal	10
Outdoor Canada	9
Select Homes & Food	9
TG Today's Generation	6
Today's Parent	7
Toronto Life Fashion	6
Travel à la Carte	6
Tribute	7
You	5
A+MagazineAffaires	10
Décormag	10
Décoration Chez Soi	10
L'actualité	16
Le Bel Age	10
Les Idées de ma Maison	10
Madame au Foyer	8
Rénovation Bricolage	10
Santé	10
Sentier Chasse Pêche	11

Source: PMB'92 vol 5 page 0082

METHODOLOGY TEST - FREQUENCY AIR BY MAGAZINE/GROUP COMPARED TO RR

				Percent Readership -- by cell									Percent Readership -- summarised							Frequency overall avg		Recency Overall avg		Index Freq vs RR
	Screener->			— MRI —			- German -			Cdn Prototype			SCREENING CARDS			Freq/RR		RR METHOD						
	Order->			vert	horiz	horiz	vert	horiz	horiz	vert	horiz	horiz	MRI	GER	CDN	vert	horiz	Unaided	Aided					
	Un/Aided->			Un	Un	Aided	Un	Un	Aided	Un	Un	Aided	Avg	Avg	Avg	(Unaided)		Horizontal		AIR	rpc	AIR	rpc	
Weekly																								
past	52		A	11.1	12.8	9.3	6.9	7.3	9.5	7.9	8.0	7.5	11.1	7.9	7.8	8.6	9.4	9.4	8.8	8.9	6.1	7.1	4.8	126%
seven	52		B	6.6	8.3	8.3	4.1	6.0	5.4	5.1	5.0	6.1	7.7	5.2	5.4	5.3	6.4	6.4	6.6	6.1	8.3	3.7	5.1	163%
days	52		C	28.3	26.1	28.6	24.2	22.9	26.5	27.1	25.9	28.1	27.7	24.5	27.0	26.5	25.0	25.0	27.7	26.4	7.0	17.8	4.7	148%
	52		D	30.8	23.0	26.4	22.6	23.8	24.9	27.9	24.9	24.6	26.7	23.8	25.8	27.1	23.9	23.9	25.3	25.4	11.5	16.6	7.5	154%
	52		E	36.0	29.2	32.8	28.6	27.9	33.2	29.0	26.9	25.4	32.7	29.9	27.1	31.2	28.0	28.0	30.5	29.9	5.7	27.1	5.2	110%
	52		F	21.2	16.0	16.4	13.5	16.1	18.5	18.3	19.2	20.1	17.9	16.0	19.2	17.7	17.1	17.1	18.3	17.7	1.4	16.9	1.3	105%
Monthly																								
past	12		A	5.8	4.8	5.9	4.4	5.0	5.3	7.0	7.6	8.0	5.5	4.9	7.5	5.7	5.8	5.8	6.4	6.0	7.5	4.9	6.2	122%
month	12		B	5.4	5.8	9.2	5.3	5.0	5.2	4.0	5.8	6.6	6.8	5.2	5.5	4.9	5.5	5.5	7.0	5.8	9.4	6.9	11.1	84%
	12		C	23.4	14.9	18.4	17.8	16.7	17.9	20.6	19.9	21.0	18.9	17.5	20.5	20.6	17.2	17.2	19.1	19.0	5.3	21.7	6.1	87%
	12		D	27.5	18.3	20.5	26.1	23.2	23.3	21.7	23.6	22.7	22.1	24.2	22.7	25.1	21.7	21.7	22.2	23.0	3.7	25.7	4.1	89%
	10	Irreg	E	12.2	9.0	7.3	7.1	9.9	8.5	8.8	10.3	9.6	9.5	8.5	9.6	9.4	9.7	9.7	8.5	9.2	16.7	8.7	15.8	105%
	12		F	4.5	5.6	7.0	3.2	4.4	4.4	4.6	4.6	5.1	5.7	4.0	4.8	4.1	4.9	4.9	5.5	4.8	5.5	4.2	4.7	116%
	12		G	8.9	8.2	10.6	9.2	8.3	11.4	9.9	9.5	10.6	9.2	9.6	10.0	9.3	8.7	8.7	10.9	9.6	7.2	10.5	7.8	92%
	8	I	H	11.5	11.3	11.7	12.6	9.3	9.5	12.1	9.2	14.5	11.5	10.5	11.9	12.1	9.9	9.9	11.9	11.3	1.4	12.0	1.5	94%
	12		I	7.7	4.3	5.7	4.6	4.8	3.5	5.1	4.5	5.9	5.9	4.3	5.2	5.8	4.5	4.5	5.0	5.1	2.0	5.8	2.3	89%
	12		J	5.3	7.6	7.9	3.2	3.7	3.4	3.1	4.1	4.4	6.9	3.4	3.9	3.9	5.1	5.1	5.2	4.7	2.7	4.9	2.8	97%
	9	I	K	8.5	8.0	8.1	8.9	7.4	7.7	8.6	8.2	6.5	8.2	8.0	7.8	8.7	7.9	7.9	7.4	8.0	9.3	8.0	9.3	100%
	12		L	12.8	6.4	11.5	9.3	8.7	12.7	12.6	13.7	11.5	10.2	10.2	12.6	11.6	9.6	9.6	11.9	11.0	1.8	12.3	2.0	90%
	12		M	44.9	32.2	32.5	37.4	34.5	37.4	38.7	33.3	38.5	36.5	36.4	36.8	40.3	33.3	33.3	36.1	36.6	4.2	39.5	4.6	93%
	12		N	5.4	5.6	9.4	4.3	3.1	4.5	2.4	3.9	5.3	6.8	4.0	3.9	4.0	4.2	4.2	6.4	4.9	6.4	4.5	5.9	108%
	8	I	O	7.7	5.4	5.4	5.4	4.1	4.4	5.1	5.9	6.7	6.2	4.6	5.9	6.1	5.1	5.1	5.5	5.6	6.4	4.8	5.5	115%
	9	I	P	5.7	3.2	5.0	6.1	8.0	5.7	7.9	5.8	7.5	4.6	6.6	7.1	6.6	5.7	5.7	6.1	6.1	6.4	6.2	6.4	99%
Other																								
past	6		A	14.6	12.7	15.0	15.9	10.4	15.6	15.9	14.6	13.8	14.1	14.0	14.8	15.5	12.6	12.6	14.8	14.3	10.5	19.9	14.6	72%
two	7	I	B	7.1	6.1	7.7	7.3	9.0	7.0	8.1	6.3	8.0	7.0	7.8	7.5	7.5	7.1	7.1	7.6	7.4	10.8	10.5	15.3	71%
mos	6		C	6.4	9.7	7.1	8.1	6.7	4.8	7.1	6.9	5.8	7.7	6.5	6.6	7.2	7.8	7.8	5.9	7.0	6.6	10.0	9.4	70%
	6		D	9.0	5.3	6.1	6.1	5.6	5.3	4.8	4.4	7.6	6.8	5.7	5.6	6.6	5.1	5.1	6.3	6.0	5.9	8.6	8.4	70%
	6	I	E	3.3	3.6	2.9	2.8	5.2	2.8	4.3	4.4	4.3	3.3	3.6	4.3	3.5	4.4	4.4	3.3	3.7	1.8	6.0	2.9	62%
	6	I	F	1.6	0.7	2.6	0.8	1.4	0.8	1.4	3.3	1.8	1.6	1.0	2.2	1.3	1.8	1.8	1.7	1.6	1.6	1.9	1.8	85%
	6	I	G	4.5	3.6	5.6	3.9	4.2	7.0	3.2	3.8	4.7	4.6	5.0	3.9	3.9	3.9	3.9	5.8	4.5	5.7	6.6	8.3	68%
	6	I	H	2.6	2.0	3.8	4.2	2.8	3.0	4.3	4.6	5.1	2.8	3.3	4.7	3.7	3.1	3.1	4.0	3.6	4.3	4.9	5.8	73%
	6		I	3.4	1.6	4.1	1.7	1.5	0.9	1.1	2.0	1.9	3.0	1.4	1.7	2.1	1.7	1.7	2.3	2.0	1.1	3.4	1.8	59%
	5	I	J	3.4	3.3	2.9	1.4	2.2	4.2	3.0	2.8	3.1	3.2	2.6	3.0	2.6	2.8	2.8	3.4	2.9	2.3	4.6	3.6	64%
3mos	4	I	K	0.8	1.1	1.7	0.9	0.4	0.6	2.4	0.5	1.6	1.2	0.6	1.5	1.4	0.7	0.7	1.3	1.1	0.6	2.0	1.0	56%

METHODOLOGY TEST - FREQUENCY AIR BY MAGAZINE/GROUP COMPARED TO RR

	Percent Readership -- by cell									Percent Readership -- summarised							Frequency overall avg		Recency Overall avg		Index Freq vs RR
Screener->	— MRI —			- German -			Cdn Prototype			SCREENING CARDS			Freq/RR		RR METHOD						
Order->	vert	horiz	horiz	vert	horiz	horiz	vert	horiz	horiz	MRI	GER	CDN	vert	horiz	Unaidex	Aided					
Un/Aided->	Un	Un	Aided	Un	Un	Aided	Un	Un	Aided	Avg	Avg	Avg	(Unaided)		Horizontal		AIR	rpc	AIR	rpc	
AVERAGE	11.8	9.6	10.8	9.6	9.4	10.1	10.4	10.1	10.7	10.7	9.7	10.4	10.6	9.7	9.7	10.6	10.3	4.0	10.5	4.1	98%
Weeklies	22.3	19.2	20.3	16.7	17.3	19.7	19.2	18.3	18.6	20.6	17.9	18.7	19.4	18.3	18.3	19.5	19.1	4.3	14.9	3.4	128%
Monthlies	12.3	9.4	11.0	10.3	9.8	10.3	10.8	10.6	11.5	10.9	10.1	11.0	11.1	9.9	9.9	10.9	10.7	3.8	11.3	4.0	95%
Other	5.2	4.5	5.4	4.8	4.5	4.7	5.1	4.9	5.2	5.0	4.7	5.1	5.0	4.6	4.6	5.1	4.9	3.9	7.1	5.6	69%
AVG (ex. irregs*)	14.7	11.9	13.4	11.8	11.4	12.6	12.6	12.4	12.9	13.3	11.9	12.7	13.0	11.9	11.9	13.0	12.6	4.1	12.6	4.1	101%
Irregulars	6.0	4.9	5.6	5.3	5.3	5.3	5.9	5.5	6.3	5.5	5.3	5.9	5.7	5.2	5.2	5.7	5.6	3.4	6.4	3.9	87%
Monthlies	13.8	10.3	12.6	11.3	10.7	11.7	11.8	11.9	12.7	12.2	11.2	12.1	12.3	11.0	11.0	12.3	11.9	3.9	12.8	4.2	93%
Others	7.3	6.6	7.0	6.9	5.9	5.9	6.6	6.5	6.7	7.0	6.2	6.6	7.0	6.3	6.3	6.5	6.6	4.5	9.6	6.5	69%
Circulation (000)																					
>300 Largest	20.9	15.6	17.6	16.8	16.2	17.6	18.2	17.3	18.2	18.0	16.9	17.9	18.6	16.4	16.4	17.8	17.6	3.3	17.1	3.2	103%
Middle	6.7	6.5	6.8	5.9	5.4	6.1	6.3	6.0	6.4	6.7	5.8	6.2	6.3	6.0	6.0	6.4	6.2	4.7	7.6	5.7	82%
<150 Smallest	6.4	5.8	7.1	5.3	5.5	5.7	5.6	6.0	6.5	6.4	5.5	6.0	5.7	5.8	5.8	6.4	6.0	7.8	6.2	8.1	97%
Editorial																					
Newswkly	29.6	24.6	27.5	23.4	23.4	25.7	27.5	25.4	26.4	27.2	24.2	26.4	26.8	24.4	24.4	26.5	25.9	8.6	17.2	5.7	151%
Womens	12.0	9.0	10.3	10.9	10.4	10.7	11.4	10.7	12.0	10.4	10.7	11.4	11.4	10.0	10.0	11.0	10.8	3.2	12.4	3.7	87%
TV	23.3	17.2	20.2	17.1	17.6	21.5	20.0	19.9	19.0	20.3	18.7	19.6	20.1	18.2	18.2	20.2	19.5	2.4	18.7	2.3	104%
Business	5.8	7.1	7.3	4.1	4.5	4.8	4.5	4.7	5.2	6.7	4.5	4.8	4.8	5.4	5.4	5.8	5.3	4.1	4.9	3.8	108%
Shelter	9.0	6.8	6.8	6.6	7.7	6.6	7.3	7.5	8.1	7.5	7.0	7.6	7.6	7.3	7.3	7.2	7.4	10.5	8.0	11.4	92%
Genl Int	9.1	7.4	8.7	8.0	7.1	7.7	8.0	7.8	8.5	8.4	7.6	8.1	8.4	7.4	7.4	8.3	8.0	4.6	9.4	5.4	85%
Distribution method																					
Bulk	4.3	3.4	4.6	2.9	3.6	3.6	3.7	4.1	4.4	4.1	3.4	4.1	3.6	3.7	3.7	4.2	3.8	2.7	4.7	3.3	82%
Sub/News-	15.0	12.0	13.5	12.6	12.0	13.0	13.2	12.7	13.3	13.5	12.5	13.1	13.6	12.2	12.2	13.3	13.0	5.6	13.1	5.6	100%
Controlled	6.2	6.2	6.7	6.8	4.9	5.1	7.3	4.9	8.1	6.4	5.6	6.7	6.7	5.3	5.3	6.6	6.2	1.2	7.0	1.4	89%
w/OtherPub	13.3	11.8	12.2	8.4	9.9	11.0	10.7	11.7	12.3	12.4	9.7	11.5	10.8	11.1	11.1	11.8	11.2	1.5	10.9	1.5	103%
TTB Readers Per Copy																					
1.5 or less	7.0	6.4	6.8	5.2	5.5	5.7	6.3	6.0	7.1	6.7	5.4	6.5	6.2	6.0	6.0	6.5	6.2	1.4	7.1	1.7	88%
1.6-2.9	13.4	10.3	11.9	10.7	10.3	11.5	10.8	10.7	11.3	11.9	10.9	11.0	11.7	10.5	10.5	11.6	11.2	4.0	11.7	4.2	96%
3.0-4.5	13.3	10.4	12.3	11.2	10.8	11.9	12.9	12.4	13.7	12.0	11.3	13.0	12.5	11.2	11.2	12.6	12.1	6.4	11.0	5.8	110%
>4.5	12.1	10.6	11.5	10.7	10.3	10.5	11.5	11.0	10.7	11.4	10.5	11.1	11.5	10.6	10.6	10.9	11.0	10.5	11.5	11.0	96%
RR Readers Per Copy																					
4 or less	7.1	5.6	6.7	5.1	5.3	5.7	6.3	6.4	6.9	6.5	5.4	6.5	6.2	5.8	5.8	6.4	6.1	1.5	7.0	1.8	88%
4.1-6	17.5	14.6	15.8	14.4	13.6	15.2	14.6	14.2	15.1	15.9	14.4	14.6	15.5	14.1	14.1	15.3	15.0	5.1	13.9	4.7	108%
6.1-10	11.4	9.0	10.4	9.7	9.5	10.0	10.8	10.1	10.7	10.3	9.7	10.5	10.6	9.5	9.5	10.4	10.2	7.3	10.3	7.4	99%
>10	9.8	8.4	9.8	8.9	8.6	9.1	9.2	9.3	9.5	9.3	8.9	9.3	9.3	8.7	8.7	9.5	9.2	11.4	11.5	14.3	80%

Methodology Test: Frequency AIR by cell - compared to Recency AIR

	Percent Readership -- by cell									Percent Readership -- summarised							Recency	
Screener->	--- MRI ---			- German -			Cdn Prototype			SCREENING CARDS			Freq/RR		RR METHOD		overall	
Order->	vert	horiz	horiz	vert	horiz	horiz	vert	horiz	horiz	MRI	GER	CDN	vert	horiz	Unaidec	Aided	average	
Un/Aided->	Un	Un	Aided	Un	Un	Aided	Un	Un	Aided	Avg	Avg	Avg	(Unaided)		Horizontal		AIR	rpc
RECENCY AIR																		
AVERAGE	12.7	10.7	9.0	10.9	10.2	9.1	11.0	10.9	10.5	10.8	10.1	10.8	11.5	10.6	10.6	9.5	10.5	4.1
Weeklies	16.5	15.0	16.6	12.2	12.4	17.6	13.4	13.7	16.5	16.0	14.1	14.5	14.0	13.7	13.7	16.9	14.9	3.4
Monthlies	14.2	10.7	9.3	12.3	11.0	9.2	11.7	11.9	11.2	11.4	10.8	11.6	12.7	11.2	11.2	9.9	11.3	4.0
Other	8.4	8.2	4.4	8.2	7.8	4.3	8.6	7.9	6.1	7.0	6.8	7.6	8.4	8.0	8.0	4.9	7.1	5.6
AVG (ex. irregs*)	15.4	12.6	11.4	12.7	11.5	11.8	12.9	12.7	12.6	13.1	12.0	12.7	13.7	12.3	12.3	11.9	12.6	4.1
Irregulars	7.2	6.7	4.3	7.4	7.5	3.7	7.1	7.4	6.3	6.0	6.2	6.9	7.2	7.2	7.2	4.7	6.4	3.9
Monthlies	16.2	12.1	10.9	13.6	11.9	11.2	13.2	13.1	12.8	13.1	12.2	13.1	14.4	12.4	12.4	11.7	12.8	4.2
Others	12.3	11.0	6.1	11.4	9.7	6.1	11.7	10.5	7.3	9.8	9.1	9.8	11.8	10.4	10.4	6.5	9.6	6.5
FREQUENCY AIR FOR COMPARISON																		
AVERAGE	11.8	9.6	10.8	9.6	9.4	10.1	10.4	10.1	10.7	10.7	9.7	10.4	10.6	9.7	9.7	10.6	10.3	4.0
Weeklies	22.3	19.2	20.3	16.7	17.3	19.7	19.2	18.3	18.6	20.6	17.9	18.7	19.4	18.3	18.3	19.5	19.1	4.3
Monthlies	12.3	9.4	11.0	10.3	9.8	10.3	10.8	10.6	11.5	10.9	10.1	11.0	11.1	9.9	9.9	10.9	10.7	3.8
Other	5.2	4.5	5.4	4.8	4.5	4.7	5.1	4.9	5.2	5.0	4.7	5.1	5.0	4.6	4.6	5.1	4.9	3.9
AVG (ex. irregs*)	14.7	11.9	13.4	11.8	11.4	12.6	12.6	12.4	12.9	13.3	11.9	12.7	13.0	11.9	11.9	13.0	12.6	4.1
Irregulars	6.0	4.9	5.6	5.3	5.3	5.3	5.9	5.5	6.3	5.5	5.3	5.9	5.7	5.2	5.2	5.7	5.6	3.4
Monthlies	13.8	10.3	12.6	11.3	10.7	11.7	11.8	11.9	12.7	12.2	11.2	12.1	12.3	11.0	11.0	12.3	11.9	3.9
Others	7.3	6.6	7.0	6.9	5.9	5.9	6.6	6.5	6.7	7.0	6.2	6.6	7.0	6.3	6.3	6.5	6.6	4.5
INDEX : Frequency AIR vs. Recency AIR																		
AVERAGE	93%	90%	120%	88%	92%	112%	95%	93%	103%	99%	97%	97%	92%	91%	91%	111%	98%	
Weeklies	135%	128%	123%	137%	140%	112%	144%	134%	113%	129%	127%	129%	139%	134%	134%	116%	128%	
Monthlies	87%	88%	118%	84%	89%	112%	92%	89%	103%	96%	93%	95%	88%	89%	89%	111%	95%	
Other	61%	55%	122%	59%	58%	110%	58%	61%	86%	72%	69%	67%	59%	58%	58%	104%	69%	
AVG (ex. irregs*)	95%	94%	118%	93%	99%	107%	98%	98%	103%	101%	99%	99%	95%	97%	97%	109%	100%	
Irregulars	83%	73%	132%	72%	71%	145%	84%	75%	100%	91%	86%	86%	79%	73%	73%	121%	87%	
Monthlies	85%	85%	115%	83%	90%	105%	89%	90%	99%	94%	92%	93%	86%	89%	89%	106%	93%	
Others	60%	60%	115%	61%	61%	96%	57%	62%	92%	71%	69%	67%	59%	61%	61%	101%	69%	

* note: Irregular publication "Other E" was not excluded.
It was regular during the test.

LIST OF IRREGULAR PUBLICATIONS IN TEST - EXHIBIT III

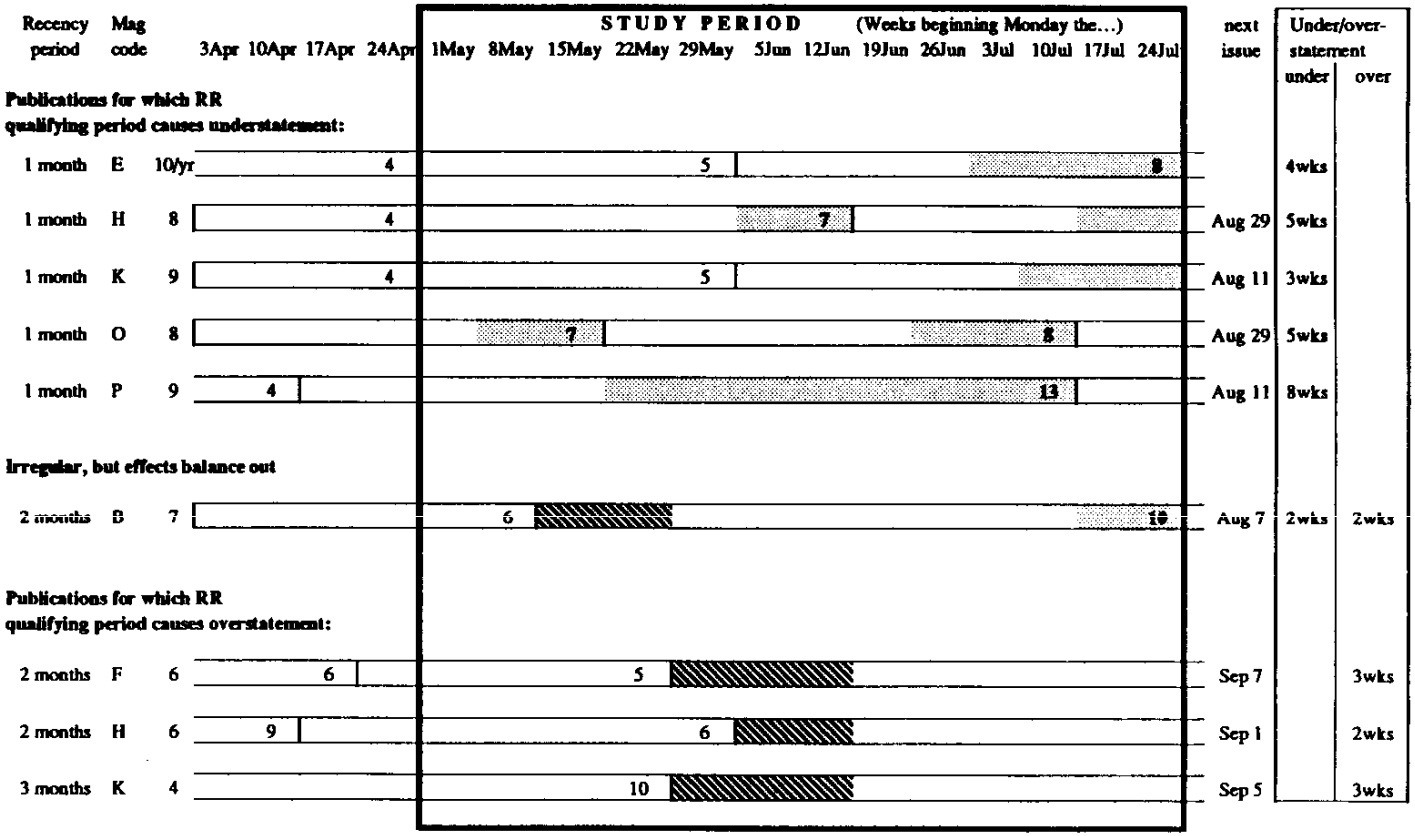
RR period	Magazine code		Irregular in test period? Yes or no	Over or under stated by RR?
Monthlies				
1 Month	E	10/year	Yes	Under*
	H	8	Yes	Under
	K	9	Yes	Under
	O	8	Yes	Under
	P	9	Yes	Under
Others				
2 mos	B	7	yes	Balance out
	E	6	no	
	F	6	yes	over
	G	6	no	
	H	6	yes	over
	J	5	no	
3 mos	K	4	yes	over

TOTAL =12 (out of 33)

* The degree of over or under statement is shown on the next exhibit IV, derived from the analysis of the actual publication dates.

Recent Reading test Summer 1989 - Publishing dates for irregulars

EXHIBIT IV



LEGEND: 5 Box represents one issue, and the number at the right end indicates the number of weeks since issue date

Cells with light shading represent weeks when the recency qualifying period is less than the publishing interval, -> understatement

This shading represents the reverse, when the recency period is greater than the time since the last issue, leading to overstatement because we are collecting readership of two issues, instead of just one issue.

This page only shows those irregulars which were actually irregular during the test period.