

3.2

TAKING ACCOUNT OF THE TIME FACTOR

The purpose of this paper is to draw attention to a significant omission from readership research data that are used every day. Throughout the world, media planning is being carried out based on an assumption which, given a moment's thought, very few media planners would accept and yet is inherent in the basic raw data used by the media planner. I am referring to average issue readership figures.

Average issue readerships are of course the basic 'currency' of press schedule planning and buying. For daily and Sunday newspapers there are on average around three readers-per-copy, but for monthly magazines the average readers per copy figures may be much higher. Let us look for example at some readers-per-copy figures published in the JICNARS NRS report for January – December 1987.

Publication	Average number of adult readers-per-copy
Do-it-Yourself	19.0
Motor Sport	16.1
Practical Gardening	14.3
The Field	16.1
What Hi-fi	12.8

Source: JICNARS NRS Report,
January – December 1987.

At this point, one seems to hear a ghostly voice saying 'replication'. Much has been written on the subject of the accuracy of such readership figures; I seem to recall saying a few words on the subject myself in the past (and will, no doubt, do so again in the future!) but let me hastily reassure you that the purpose of this paper is *not* to question the accuracy of those

readers-per-copy figures obtained in the National Readership Survey. The point that I shall be making is equally valid whether *Do-it-Yourself* has 19 or nine readers-per-copy, as I hope will become clear. Let us take one of the above publications as an example; for *Practical Gardening*, the figures were as follows:

Adult average issue readership (NRS Jan-Dec 1987):	1,236,000
Circulation (ABC Jan-Dec 1987):	86,310
Average adult readers-per-copy	14.3

Assuming, purely for the sake of this argument, that the average issue readership figure is correct, then it can be seen that an average issue of *Practical Gardening* generates an average of 1,236,000 readers; that figure can then be used as a basis for media evaluation, cost-per-thousand calculations are based on it, and it is used as a parameter for schedule reach and frequency estimates when combined with other publications. However, all those everyday media activities are based on the assumption that all the 1,236,000 readers are achieved on day one, the day that the magazine actually arrives at the bookstalls. But is that assumption justified? Let us look at the 1,236,000 readers in more detail. Given the circulation figures, then we can say that, for *Practical Gardening*, 86,310 are 'primary' readers who actually bought the magazine, and the remaining 1,149,690 (ie another 13.3 readers-per-copy) are 'secondary' readers who see the copy after the buyer has finished with it. Because some copies are read only by the buyer, it must mean that other copies are read by even more readers, because the average number of secondary readers-per-copy is 13.3. Each of the people who see the copy will take time to

read it; moreover it is very unlikely that the next reader in each case is waiting impatiently to pick up the copy the very instant that the previous reader puts it down and the copy might hang around unperused for a significant time between readings. Depending on the size and content of the magazine, the process of a copy being seen by a succession of readers might take weeks or even months, which means that it is taking weeks or even months to build up to that total readership figure of 1,236,000. And if copies of magazines find their way into hairdressers', doctors' or dentists' waiting rooms, then they could stay there for years accumulating readers!

So when one starts thinking about the problem, it becomes obvious that readership of a publication will take some time to build up. The speed of the growth is something that we might look to research to establish. However, that is not a very easy task. To find out the readership accumulation pattern of magazines it is necessary to establish the readership of specific issues as opposed to average issue readership. The process normally means asking people to keep detailed diaries to record when they read specific issues of publications; that sort of research, carried out on a large scale, can be very expensive and therefore is not done very often. I have however managed to find some figures from the USA, which I think can be put in the category of 'received wisdom'. They are so old that I have been unable to establish their source; if they do

deserve some respect, then perhaps it should be due to age rather than pedigree! Anyway, they do tend to confirm a common-sense view and they give the following average picture of week-by-week accumulation for various types of publication (Table 1).

Whatever the source of the US data, it is interesting and encouraging to note that more recent figures from Germany tend to confirm them. In 1982, the Axel Springer publishing house, in association with the Doyle Dane Bernbach advertising agency, carried out a study of readership accumulation which indicated the average results as shown in Table 2.

I am most grateful to Rolf Speetzen of the Axel Springer Group who was kind enough to let me have a copy of that valuable and interesting study. It was of 12 weeks' duration only and it will be noted that the fortnightly and monthly publications do not achieve all their readership within that period, but the similarity to the US data will be immediately apparent.

There is a further source of research data in this field. In the UK, in 1978, Research Services Ltd carried out, for Standbrook Publications, a very interesting study into the readership of women's monthly magazines. This report, which has come to be known as the 'Living survey' after the sponsoring magazine, differed from previous surveys in that it recognised

Table 1

Week-by-week percentage accumulation of readership

Publication type	1	2	3	4	5	6	7	8	9	10	11	12	13
Dailies	100												
Sunday Supps.	95	98	100										
TV Guide	89	96	100										
Weeklies	60	79	91	95	98	99	100						
Monthlies	44	60	70	76	81	86	89	92	95	97	98	99	100

Table 2

Week-by-week percent accumulation of readership

Publication type	1	2	3	4	5	6	7	8	9	10	11	12
Sundays	80	99	100									
TV weeklies	78	97	98	99	99	100						
General weeklies	65	82	88	92	94	96	97	98	98	99	99	100
Women's weeklies	58	78	85	89	92	94	95	96	97	98	99	100
Fortnightlies	47	67	79	84	90	92	94	95	96	97	98	99
General monthlies	38	57	66	72	77	82	86	89	90	93	95	96
Women's monthlies	40	57	66	73	75	77	80	82	83	85	87	90
Reader's Digest	48	66	77	80	84	85	86	89	90	91	92	93

Source: Die Dimension Zeit in der Mediaplanung, Axel Springer Verlag AG – 1982

the problem of readership accumulation over time and went some way towards tackling it. Acknowledging, in the preamble to the report, that "... the process of building-up the total readership of any given issue of a publication with high pass-on and secondary readership must therefore take a long time ...", the survey, among other aims, tried to establish how readership is "... divided over time between early readers who read or look at an issue within a few weeks of its publication and deferred readers who see it later". In this survey it was not possible to establish readership on a week-by-week basis but the readership of six monthly magazines was analysed into three categories.

(i) Primary readers 'who had personally bought the issue or were members of a household in which the issues had been bought.'

(ii) Early pass-on readers who had read the issue within eight weeks of publication.

(iii) Deferred pass-on readers who had not seen the issue within eight weeks of publication.

The results are shown in Table 3.

There are plainly differences in the patterns of readership but the sample sizes are small and it may be better to take the six titles together. It is not possible to establish week-by-week accumulation, but it is not unreasonable to suppose that primary readers had seen a given issue by the end of the first week and we do have an indication of the eight week readership. It is interesting to note that the average figure for the six titles of 38.1% of the total average issue readership being achieved after eight weeks, is very different from the US data and the Axel Springer study which tended to confirm each other as seen in Table 4.

Quite why the *Living* study should show such markedly different results from the other two sources is difficult to say but such differences merely illustrate the main point of this paper which is that there is a serious lack of research in this field. However, leaving aside these observed differences and accepting that figures for one country cannot necessarily be assumed to apply directly to another, if monthly magazines achieve only 40% of their potential readership within the first week then that is surely something that should be taken into account in media planning.

Table 3**Categories of readership as a percentage of total AIR**

Publication	Primary %	Early pass-on %	Total 8 weeks %	Sample
Living	38.5	13.6	52.1	62
Family Circle	26.5	11.4	37.9	83
Good Housekeeping	18.9	19.5	38.4	60
She	12.4	20.1	32.5	39
Woman & Home	16.3	20.8	37.1	82
Ideal Home	9.9	21.0	30.9	34
Total	20.6	17.5	38.1	360

Source: The Readership of Women's Monthlies. RSL Sept. 1978

Table 4**Comparison of weekly readership accumulation for monthly magazines**

Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13
US data	44	60	70	76	81	86	89	92	95	97	98	99	100
Axel Springer general monthlies	38	57	66	72	77	82	86	89	90	93	95	96	
Axel Springer women's monthlies	40	57	66	73	75	77	80	82	83	85	87	90	
Living	21							38					

Most reach and frequency evaluation models use as their basis the average issue readership figures for each publication, but make the assumption that all such readership is achieved on the first day of issue. It can be seen that estimates of coverage and frequency may, as a result, be seriously misleading. A great improvement is to use a model which takes the readership build-up of each publication into account and then provides a reach and frequency evaluation on a week-by-week basis.

That can be done by storing, for each publication in a given readership survey, an estimate of the cumulative build-up pattern over any period up to say six months. It is then a comparatively straightforward matter to prompt the user for the start and end dates of a given campaign and the insertion date for each booking in the schedule. The model can then provide weekly breakdowns of reach and frequency within a total schedule reach and frequency evaluation.

3.2

TAKING ACCOUNT OF THE TIME FACTOR

Let us take a very simple fictitious example to illustrate the sort of analysis that I mean. Suppose that we have a ten week campaign consisting of six insertions, being two in each of three monthly magazines A, B and C. A standard reach and frequency evaluation of the schedule might give us the following results:

			%
Magazine A	(1)	readership	16.0
Magazine A	(2)	readership	16.0
Magazine B	(1)	readership	12.0
Magazine B	(2)	readership	12.0
Magazine C	(1)	readership	14.0
Magazine C	(2)	readership	14.0
Schedule reach			45.0

Average frequency = 1.87

Let us suppose that these monthly magazines each have the same sort of accumulation pattern that we have seen earlier, with the weekly cumulative build-up shown in Table 5.

Let us further suppose that we propose to schedule them four weeks apart, in weeks 1, 5 and 9, in the schedule shown in Table 6.

If we analyse the schedule on an 'exclusive' week-by-week basis, that is showing the reach and frequency attained in each week separately, the result will be something like the pattern shown in Table 7.

On this type of analysis, showing each week separately as if it were completely independent of all other weeks, it is interesting to note the variations in the media exposure levels (particularly in reach) week by week and it might well be thought desirable to boost the media exposure in certain weeks by using say daily newspapers.

Table 5

Week-by-week percent accumulation of readership

Magazines	1	2	3	4	5	6	7	8	9	10	11	12
A, B & C	40	57	66	72	75	78	81	84	87	90	93	95

Table 6

Magazines		Weeks										
		1	2	3	4	5	6	7	8	9	10	
Monthly A	(1)	x										
Monthly A	(2)					x						
Monthly B	(1)	x										
Monthly B	(2)										x	
Monthly C	(1)					x						
Monthly C	(2)										x	

3.2

TAKING ACCOUNT OF THE TIME FACTOR

Table 7

Week-by-week reach and frequency for 3 vehicles, 6 insertions

		Weeks										Total
		1	2	3	4	5	6	7	8	9	10	%
		%	%	%	%	%	%	%	%	%	%	%
Magazines												
Monthly A	(1)	6.4	2.7	1.4	1.0	0.5	0.5	0.5	0.5	0.5	0.5	16.0
Monthly A	(2)					6.4	2.7	1.4	1.0	0.5	0.5	16.0
Monthly B	(1)	4.8	2.0	1.1	0.7	0.4	0.4	0.4	0.4	0.4	0.4	12.0
Monthly B	(2)								4.8	2.0		12.0
Monthly C	(1)					5.6	2.4	1.3	0.8	0.4	0.4	14.0
Monthly C	(2)								5.6	2.4		14.0
Reach%		10.9	4.7	2.5	1.7	12.3	5.8	3.5	2.6	11.5	5.9	45.0
Gross%		11.2	4.8	2.5	1.7	12.8	5.9	3.5	2.6	12.1	6.2	84.0
Av. freq.		1.03	1.01	1.01	1.00	1.05	1.03	1.02	1.02	1.05	1.04	1.87

Table 8

Cumulative weekly reach and frequency for 3 vehicles, 6 insertions

		Weeks										Total
		1	2	3	4	5	6	7	8	9	10	%
		%	%	%	%	%	%	%	%	%	%	%
Magazines												
Monthly A	(1)	6.4	9.1	10.6	11.5	12.0	12.5	13.0	13.4	13.9	14.4	16.0
Monthly A	(2)					6.4	9.1	10.6	11.5	12.0	12.5	16.0
Monthly B	(1)	4.8	6.8	7.9	8.6	9.0	9.4	9.7	10.1	10.4	10.8	12.0
Monthly B	(2)								4.8	6.8		12.0
Monthly C	(1)					5.6	8.0	9.2	10.1	10.5	10.9	14.0
Monthly C	(2)								5.6	8.0		14.0
Reach%		10.9	15.3	17.6	19.2	26.6	29.9	31.7	33.1	37.5	39.6	45.0
Gross%		11.2	16.0	18.5	20.2	33.0	38.9	42.5	45.1	57.3	63.4	84.0
Av. freq.		1.03	1.04	1.05	1.05	1.24	1.30	1.34	1.36	1.53	1.60	1.87

An alternative method of evaluating the schedule is on a 'cumulative' basis, showing the reach and frequency for the campaign to date as the readerships accumulate week by week as shown in Table 8.

Now it can be seen that, although the total reach is 45%, that level may not be achieved for several more weeks, which may be sometime after the campaign is officially over. The analysis shows that the reach and frequency in the

early stages of the campaign may be below what was intended.

It is quite possible that, if the time factor is not taken into account, advertising campaigns are currently being planned on a basis that is at best incomplete and, at worst, dangerously misleading, particularly for campaigns for seasonal products. The preamble to the *Living* study drew attention to this point: "... To manufacturers of highly seasonal goods and those making special offers for a limited time, readership deferred beyond this season may have negligible value".

Let us pursue this matter a little further with the 10-week campaign that was analysed above. It can now be revealed that this campaign is in fact for a highly seasonal product for the Stitz Corporation: 'Big Norma's Christmas Puddings', which each year are advertised from mid-October until Christmas Eve. Subsequent advertising exposure is considered to be useless because nobody buys Christmas puddings after the shops close on Christmas Eve and any unsold puddings would simply go mouldy on the shelves (Table 9).

It will be noted that the campaign starts in the week beginning October 17th, but that market research has shown that the advertising should

build up until levelling off at the end of November, remaining at a peak throughout December until the 24th of that month. Advertising exposure after that date is of no value. Although women's monthly magazines are the ideal advertising media for this product, it is possible that the readership may not have built up until too late. We can find out the best pattern of insertions by applying the campaign weight to each week's advertising. Although a more complicated response function could be defined, by taking the weekly reach and frequency of the campaign into account, it is felt that the pattern of insertions should be optimised by applying the weekly campaign weights to the gross exposures each week, which are of course the result of summing, over all publications in the schedule, the average issue readership figure modified by the relevant weekly readership percentage. We can start by carrying out this calculation on our existing schedule (Table 10).

In each case, the readership percentages in that week are summed to produce the gross exposures for that week; the weekly gross exposures are then multiplied by the campaign weight for that week to produce an effectiveness figure; (eg in week 1, the gross exposures (11.2%) are multiplied by the campaign weight (40) to give the effectiveness score of 448).

Table 9

1988 campaign for Big Norma's Christmas Puddings

Weeks	1	2	3	4	5	6	7	8	9	10
	October				November			December		
	17	24	31	7	14	21	28	5	12	19
Campaign weight	40	64	78	87	92	95	97	98	99	100

Source: Norma Stitz Inc.

Table 10

Week-by-week reach and frequency for 3 vehicles, 6 insertions

		Weeks										Total
		1	2	3	4	5	6	7	8	9	10	
		%	%	%	%	%	%	%	%	%	%	%
Magazines												
Monthly A	(1)	6.4	2.7	1.4	1.0	0.5	0.5	0.5	0.5	0.5	0.5	16.0
Monthly A	(2)					6.4	2.7	1.4	1.0	0.5	0.5	16.0
Monthly B	(1)	4.8	2.0	1.1	0.7	0.4	0.4	0.4	0.4	0.4	0.4	12.0
Monthly B	(2)									4.8	2.0	12.0
Monthly C	(1)					5.6	2.4	1.3	0.8	0.4	0.4	14.0
Monthly C	(2)									5.6	2.4	14.0
Reach%		10.9	4.7	2.5	1.7	12.3	5.8	3.5	2.6	11.5	5.9	45.0
Gross%		11.2	4.8	2.5	1.7	12.8	5.9	3.5	2.6	12.1	6.2	84.0
Cume.gross%		11.2	16.0	18.5	20.2	33.0	38.9	42.5	45.1	57.3	63.4	
Av. freq.		1.03	1.01	1.01	1.00	1.05	1.03	1.02	1.02	1.05	1.04	1.87
Weights		40	64	78	87	92	95	97	98	99	100	
Effectiveness		448	305	197	146	1,181	564	343	259	1,202	616	5,261
Cume. effect.		448	753	949	1,095	2,277	2,841	3,184	3,443	4,645	5,261	

I have also shown the gross exposures and effectiveness scores expressed cumulatively and the overall effectiveness of the schedule is represented by the sum of the effectiveness scores across all the ten weeks.

It is clear that by changing the pattern of the insertions, the weekly (and thus the overall) effectiveness scores can vary considerably. There are in fact 27 different ways of allocating two insertions in each of three magazines in up to three different months, assuming that one does not place two insertions in the same magazine in the same month. It has already been seen (Table 8) that the reach and frequency of our first schedule had not achieved its total potential level by the end of 10 weeks. Let us therefore change our schedule to give the maximum opportunity for these monthly maga-

zines to build up their readership by placing all the insertions as early as possible (Table 11).

As would have been expected, the gross exposures have increased considerably from our original schedule (from 63.4% to 70.6%) and the overall effectiveness has also increased from 5,261 to 5,463. However, if we look at the antithesis of this exposure pattern, (ie to place the insertions as late as possible, we get the analysis shown in Table 12.

Rather surprisingly, although the gross exposures are at a minimum (56.7%), the weighting for this particular campaign, emphasising, as it does, the importance of advertising towards the end of the period, results in the overall effectiveness being slightly higher at 5,465; this figure is in fact the highest for the 27 schedules

Table 11

Week-by-week reach and frequency for 3 vehicles, 6 insertions

		Weeks										Total
		1	2	3	4	5	6	7	8	9	10	
		%	%	%	%	%	%	%	%	%	%	%
Magazines												
Monthly A	(1)	6.4	2.7	1.4	1.0	0.5	0.5	0.5	0.5	0.5	0.5	16.0
Monthly A	(2)					6.4	2.7	1.4	1.0	0.5	0.5	16.0
Monthly B	(1)	4.8	2.0	1.1	0.7	0.4	0.4	0.4	0.4	0.4	0.4	12.0
Monthly B	(2)					4.8	2.0	1.1	0.7	0.4	0.4	12.0
Monthly C	(1)	5.6	2.4	1.3	0.8	0.4	0.4	0.4	0.4	0.4	0.4	14.0
Monthly C	(2)					5.6	2.4	1.3	0.8	0.4	0.4	14.0
Reach%		15.9	7.0	3.7	2.5	16.7	8.0	4.9	3.7	2.5	2.5	45.0
Gross%		16.8	7.1	3.8	2.5	18.1	8.4	5.0	3.8	2.5	2.5	84.0
Cume.Gross %		16.8	23.9	27.7	30.2	48.3	56.7	61.7	65.5	68.0	70.6	
Av. freq.		1.06	1.02	1.01	1.01	1.08	1.05	1.03	1.03	1.02	1.02	1.87
Weights		40	64	78	87	92	95	97	98	99	100	
Effectiveness		672	457	295	219	1,662	798	489	370	249	252	5,463
Cume. Effect.		672	1,129	1,424	1,643	3,305	4,103	4,591	4,962	5,211	5,463	

examined. Incidentally, the lowest overall effectiveness scores (4,752) was produced by the schedule with all the insertions in weeks one and nine, with none in week five.

Obviously the results in this case are specific to the media, accumulation curves and campaign weights used, but the examples should serve to illustrate the value of this approach to media planning. Present day computer hardware in the form of ubiquitous micro-computers, coupled with models and software already available, mean that the only limiting factor to timebased media planning is the lack of relevant data. Currently, in our models, we are having to use the generalised readership accumulation data such as the information derived from the Axel Springer study. Though limited, it is obviously far better than basing schedule

evaluation on the assumption that all readership is generated instantaneously on the date of publication, but there may well be differences between individual magazines within the same media group which only research will reveal.

The time factor in press media planning is not one that can be safely ignored. Once the principle of time-based media planning is more universally appreciated, and it also becomes possible to apply such a principle in practice with reasonable precision, then that should go some way towards reducing the competitive advantage of television, where precise timing of advertising exposure has been one of the medium's benefits. However, there is a further important point. There is, throughout the world, an increasing interest in the improvement in the allocation of advertising budgets by

linking advertising exposure to sales, such as the system operated by IRI in the USA. Our experience in the UK is that such work is more successful with television campaigns than with press; one reason is that, using television, it is possible to determine advertising exposure precisely, while, in the press, given the data currently available, such precision is impossible to achieve. Press is therefore at a disadvantage arising from the difficulties of evaluation, even though, as a medium, it may be as or more effective than television. Research data should reflect the needs of the market-place and the

necessity for time related press exposure data will become increasingly urgent.

It is one of the great benefits of our industry that we are fortunate enough to have a forum like this, where it is possible to discuss with one's colleagues such problems as the very real lack of readership accumulation data, to which I have drawn attention in this paper. It is hoped that, in the not too far distant future, such information will be available, enabling the vital time factor to be taken into account.

Table 12

Week-by-week reach and frequency for 3 vehicles, 6 insertions

		Weeks										Total
		1	2	3	4	5	6	7	8	9	10	
		%	%	%	%	%	%	%	%	%	%	%
Magazines												
Monthly A	(1)					6.4	2.7	1.4	1.0	0.5	0.5	16.0
Monthly A	(2)									6.4	2.7	16.0
Monthly B	(1)					4.8	2.0	1.1	0.7	0.4	0.4	12.0
Monthly B	(2)									4.8	2.0	12.0
Monthly C	(1)					5.6	2.4	1.3	0.8	0.4	0.4	14.0
Monthly C	(2)									5.6	2.4	14.0
Reach%						15.9	7.0	3.7	2.5	16.7	8.0	45.0
Gross%						16.8	7.1	3.8	2.5	18.1	8.4	84.0
Cume. Gross %						16.8	23.9	27.7	30.2	48.3	56.7	
Av. freq.						1.06	1.02	1.01	1.01	1.08	1.05	1.87
Weights												
Effectiveness		40	64	78	87	92	95	97	98	99	100	
Cume. Effect.		0	0	0	0	1,546	678	367	247	1,788	840	5,465
		0	0	0	0	1,546	2,224	2,591	2,838	4,625	5,465	