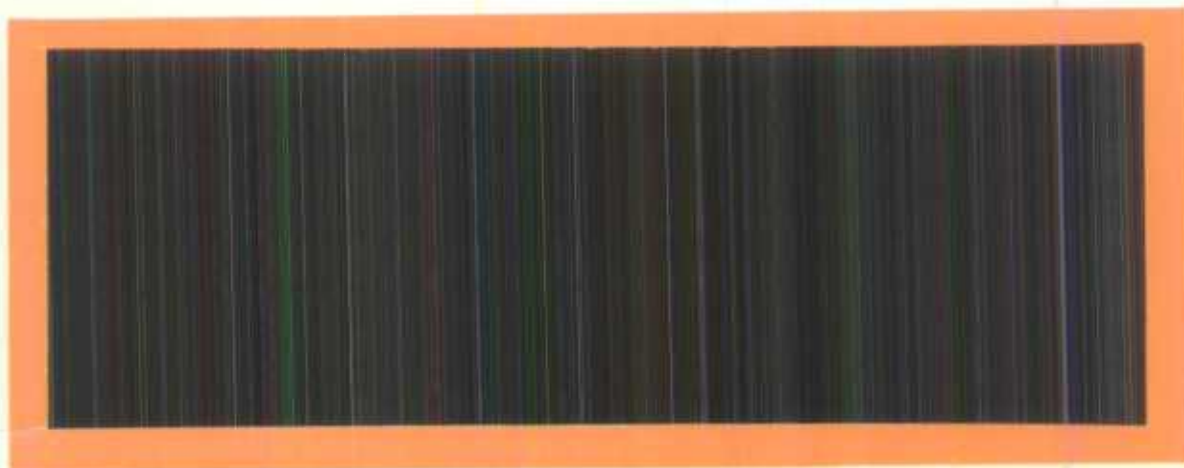# Methodology Branch

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Direction de la méthodologie

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Canada

PHASE-IN OF THE REDESIGNED

LABOUR FORCE SURVEY SAMPLE

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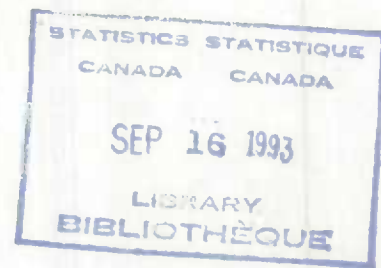
1. INTRODUCTION

Following each decennial population Census of Canada, the Labour Force Survey has undergone a sample redesign (Platek and Singh, 1976). The 1981 post censal redesign was extensive, with several design changes and complete re-stratification, leading to selection of a new sample independent of the old sample (Singh, Drew and Choudhry, 1984). This report describes the procedures being followed for replacing the old LFS sample with the new sample, over the period from October 1984 to March 1985.

In section 2 the requirements for a gradual introduction of the new sample extending over three or more months are discussed, and three alternative phase-in strategies are presented. The rationale for choice of phase-in strategy is given in section 3. Section 4 describes some of the practical implications of the chosen strategy, while section 5 describes the impact of the strategy on various parts of survey operations. Finally section 6 describes some of the issues to be considered in evaluating the phase-in.

2. ALTERNATIVE SAMPLE PHASE-IN STRATEGIES

2.1 Requirement for Gradual Phase-in

Three principal factors dictate that the redesigned LFS Sample must be introduced gradually into the field over a period of three or more months:

(i) Rotation Group Bias

The LFS Sample is comprised of 6 equi-sized panels identified by rotation numbers 1 to 6. Normally on any survey occasion, one panel is in the survey for a 1st occasion, another for a second, and so forth. For major LF characteristics such as unemployed and employed, the expected value of the sample differs between panels - a phenomenon known as rotation group bias. Unemployment rates are higher in the first month, for example, than in later months. It takes 6 months to introduce an LFS Sample so that all of its panels are properly aged.

If the sample were to be introduced in less than six months, the expected value of survey estimates would differ initially from those of a properly aged sample. However under the levels of rotation group bias observed in the old survey, the time period required to achieve an adequate approximation to a properly aged sample can be shortened to three or four months, during which time the new sample should not be used for deriving official estimates.

(ii) New Interviewer Effect

A consequence of the new sample being selected independently of the old was a requirement for new interviewers in Non Self-Representing Areas wherever the location of the sample changed. Past studies have shown that the work of new interviewers differs from that of experienced interviewers in initial months, although comparability of work is achieved after approximately three months. The differences relate both to operational measures such as non response and edit failure rates, and to LF characteristics. Hence wherever a sizable proportion of new interviewers are required, the redesigned sample should not be used for official estimates until after a period of stabilization.

(iii) Field Capacity

Rotate-in dwellings require more time to interview, hence data quality related aspects (i) and (ii) aside, interviewers could not cope with introducing an entirely new sample in a single month; rather this work has to be spread over several months.

2.2 Strategies

Three alternative phase-in strategies considered were as follows:

Strategy 1: On-line implementation

Under this strategy, the new sample would be introduced month by month by simply replacing the dwellings from the existing design with new ones from the re-design in the appropriate rotation. Operational considerations, namely the pace at which the work was proceeding, dictated that the earliest month in

which such a phase-in could begin was October 1984. The pattern of interviewing by rotation is given below.

	Rotation Number	
Date	New Sample	Old Sample
Oct. 84	4	5,6,1,2,3
Nov. 84	4,5,	6,1,2,3
Dec. 84	4,5,6,	1,2,3
Jan. 85	4,5,6,1	2,3
Feb. 85	4,5,6,1,2	3
Mar. 85	4,5,6,1,2,3	-

During this period, official estimates would be based on weighted averages of the separate estimates for the old and new samples; eg,

Oct. 84 official estimate = 5/6 estimate from old sample

+ 1/6 estimate from new sample

Strategy 2: Off-line implementation

In this strategy, the new sample would be allowed to build up in parallel with the existing sample. During this time period official estimates would be based entirely on the old sample. Once the new sample had been adequately aged to prevent rotation group bias and new interviewer effects, the old sample would be dropped and the new sample would continue. This strategy is represented figuratively below:

		Rotation Number	
	Date	New Sample	Old Sample
Sept.	84	-	4,5,6,1,2,3
Oct.	84	2*,3*,4*	5,6,1,2,3,4
Nov.	84	2*,3*,4*,5*	6,1,2,3,4,5,
Dec.	84	2*,3*,4*,5*,6*	1,2,3,4,5,6
Jan.	85	2, 3, 4, 5, 6, 1	-

* sample not used for official estimates.

Strategy 3: Combined Strategy

Under this strategy all areas would be designated as either on-line or off-line. The on-line method as described would be used in those provinces where Economic Region boundaries had not changed between 1971 and 1981 and where most of the old interviewers could be retained for the new sample.

In those provinces where ER boundaries had changed or where a significant number of new interviewers was anticipated, the introduction would be off-line according to the schedule as shown for strategy 2. In order to further minimize the amount of off-line sample in these provinces, core portions of SRU areas unaffected by boundary changes would also be introduced on-line.

Figure 2.1 describes the composition of the Labour Force Survey Sample by rotation group each month during the phase-in period for the two different types of areas.

FIGURE 2.1
COMPOSITION OF SAMPLE BY ROTATION GROUP
UNDER THE COMBINED STRATEGY

	Rotation	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March
on-line areas	1	O	O	O	O	n	n	n
	2	O	O	O	O	O	n	n
	3	O	O	O	O	O	O	n
	4	O	n	n	n	n	n	n
	5	O	O	n	n	n	n	n
	6	O	O	O	n	n	n	n
off-line areas	1	O	O	O	O	n	n	n
	2	O	Oa	Oa	Oa	n	n	n
	3	O	Oa	na	na	n	n	n
	4	O	Oa	Oa	Oa	n	n	n
	5	n	O	Oa	na	n	n	n
	6	O	O	O	Oa	n	n	n

O = old sample

n = new sample for official estimates purposes

a = advanced new sample (not for official estimates purposes).

3. RATIONALE FOR CHOICE OF PHASE-IN STRATEGY

The phase-in strategy adopted was number 3, the combined strategy. In this section the rationale leading to its choice is developed by examination of the strengths and weaknesses of the on-line and off-line strategies.

3.1 On-line Strategy:

Advantages

(i) It retains the normal panel structure of the LFS sample, so that there are no problems with respect to rotation group bias.

(ii) Its cost is minimum. Since the old sample is dropped rotation by rotation, as the new sample is introduced, there is no doubling up of new and old samples.

Disadvantages

(i) Subprovincial Estimation in the Face of Boundary Changes

There is no problem under the on-line strategy for deriving estimates for areas such as provinces, which consist of collections of complete strata in both the old and new samples, even though individual strata are different. In principle, the estimate would be obtained by summing the two independent estimates (i.e., from old and new samples) for the area in question (followed by the normal ratio estimation steps).

Problems arise however for subprovincial areas (i.e., Economic Regions or CMA's) whose boundaries have changed, since estimates for the old (or new) boundaries could not be produced from the new (or old) sample using standard estimation techniques. This problem could have been overcome by resorting to small area estimation techniques used to derive estimates for areas not conforming to design strata. However, this would have required integration of a separate system for small area estimation into the head office processing system, and was not favoured on the grounds of the additional steps and complexity it would introduce into the already tight schedule for production of survey estimates.

(ii) Lack of Stabilization Period for New Interviewers

In those provinces which are sampled less heavily; i.e., Ontario and Quebec, the independence of the old and new samples will frequently result in location of the new NSR sample being quite distant from the location of old sample and interviewers. Consequently in the NSR portions of these provinces, it is anticipated that a high proportion of new interviewers will be required. The same holds true for British Columbia and Newfoundland, due to their difficult geography. Under the on-line strategy, the use of new sample for estimation purposes from the outset, would run the risk of their being a sizable new interviewer effect on the estimates in these provinces.

While it would have been possible to select "dummy" samples in NSR areas to be used only in the case of new interviewers, to provide them with a few months break in period before the start of the on-line phase-in, a serious drawback would have been that the time required to carry out the dummy interviewing would have delayed the introduction of the "live" sample. Also, such "dummy" samples would have detracted from the cost advantages of the on-line strategy.

(iii) Small Initial Assignments for New Interviewers

Where new interviewers are required, assignments would consist of only a single rotation in month one, and would thereafter build-up slowly by adding one rotation per month over the next five months. Such workloads might create problems in retaining new interviewers.

The small initial workloads could have been circumvented by selection of "dummy" dwellings (without any delay in the timing of the phase-in as per (ii) above).

Of the disadvantages (i) and (ii) mattered the most, since there were no satisfactory solutions to these problems under the on-line strategy.

3.2 Off-line Strategy

The offline strategy overcomes the three problems associated with the online strategy. Moreover the expected differences due to rotation group bias from estimates based on a correctly aged sample would be negligible. However it suffers from serious drawbacks, in terms of cost and burden on field staff where old interviewers are to be retained for the new sample. These aspects are discussed in more detail below.

Advantages

(i) New Interviewer Effect

The new sample builds up for 3 months under this strategy before it is used. Previous experience has shown this to be a sufficient break-in period

for new interviewers.

(ii) New Interviewer Workloads

Under this strategy, new interviewers are started with 3/6th of a full assignment in the initial months and all of these are first month interviews which require more work. Workloads in subsequent months of phase-in are 4/6th and 5/6ths of a normal assignment. These workloads are thought to be appropriate for new interviewers.

(iii) Change in Subprovincial Boundaries

Under this strategy, estimates would continue to be based on old boundaries during the off-line build-up, and then would switch over to the new boundaries at the end of the phase-in period. At this juncture the new sample becomes official and the old sample is dropped.

(iv) Impact of Rotation Group Bias

Rotation group biases for Canada, 1981, by NSR and SR types of areas as calculated by Ghangurde (1982) are given in Table 3.1. The departure of these indices from the base value of 100 for the entire sample indicates the percent by which the expected value of a given panel over-estimates (100) or under-estimates (100) the mean of all six panels.

Under the off-line strategy, the age of the sample in terms of number of months by rotation will be 1, 4, 4, 4, 3, 2 in January, and 2, 1, 5, 5, 4, 3 in February for rotations 1-6 respectively. Applying the rotation group bias indices against this age structure yields index values of 100.2 and 100.1 for employed, and 100.8 and 99.8 for unemployed in January and February respectively. These expected differences from a correctly aged sample are sufficiently small not to be problematic.

TABLE 3.1
ROTATION GROUP BIAS
INDICES FOR LFS (1981)*

	Unemployed		Employed	
Month in Survey	NSR	SR	NSR	SR
1	103.3	99.1	96.8	99.9
2	101.5	102.6	100.9	101.0
3	101.4	101.3	100.6	101.3
4	99.8	100.4	101.2	100.7
5	96.5	97.7	100.7	100.4
6	97.6	98.9	99.9	99.8

* source Ghangurde (1982).

Disadvantages

(i) Doubling Up of Old and New Samples

While the off-line strategy works well where new interviewers are required for the new sample, it is burdensome in cases where old interviewers will be retained for the new sample. Retained interviewers would have to do both new and old samples during the phase-in period, which further would be feasible only if survey weeks for the new and old sample in off-line areas were different.

(ii) Costs

Costs of the extra interviews required under the off-line strategy were estimated to be roughly $1.1 million, as compared to the negligible cost of the on-line scheme.

3.3 Combined Strategy

Having discussed in detail the advantages and disadvantages of the on-line and off-line strategies, the rationale for adoption of the combined strategy is clear. Precisely, it resorts to the on-line method wherever it is not problematic, on the grounds that it is preferable in terms of both cost and field operations. In problematic cases for the on-line method; i.e., areas affected by boundary changes, or where a large proportion of new inter-viewers are required, adoption of the off-line method provides an effective solution.

The costs of extra interviews under the combined strategy were estimated at approximately $350,000. Also, it is worth noting the rotation group biases would be closer to 100 (viz., 100.1 amd 100.0 for employed, and 100.3 and 99.9 for unemployed for January and February respectively at the Canada level) than under the off-line strategy.

4. APPLICATION OF THE STRATEGY

Based on the considerations of section three, the combined strategy of off-line and on-line phase-in was selected. The objective was to have as much as possible of the sample introduced on-line. The criteria used to determine how a particular part of the sample would be phased-in were the degree to which boundaries of Economic Region and Self-Representing Units changed and the expectation of requiring large numbers of new interviewers.

4.1 Designation of Provinces

Labour Force Survey Economic Regions normally consist of combinations of Census Divisions decided upon in consultation with the provinces. Three provinces - Ontario, Quebec and Alberta - requested the adoption of new sets of ER's for the redesigned sample. The new ER's in Ontario and Alberta consisted of different groupings of CD's whereas in Quebec, the new ER's were defined using provincially defined small areas known as Municipalités Régionales de Comté (MRC). Because of the lack of comparability of ER's

between the old design and the redesign, these provinces were designated to be introduced off-line.

There were minor adjustments to CD boundaries in Saskatchewan at the 1981 Census but since these represented small differences in sparsely population areas they were disregarded.

Because of geographical difficulties posed in British Columbia and Newfoundland (large distances between PSU's and limited access due to mountains), it was concluded that the new sample could require a significant proportion of new interviewers in these provinces.

Hence as a result of the above factors 5 provinces - Newfoundland, Quebec, Ontario, Alberta and British Columbia - were designated as off-line and the other 5 provinces - Prince Edward Island, Nova Scotia, New Brunswick, Manitoba and Saskatchewan - were designated as on-line.

4.2 SRU's in Off-line Provinces

In order to maximize the amount of on-line sample (the off-line provinces include the four largest), all SRU's were evaluated to determine which could be introduced on-line. All SRU's whose boundaries remained unchanged with the redesign were to be introduced on-line. In those SRU's where there were annexation, or deletions, core areas comprised of collections of complete 1971 strata unaffected by boundary changes were identified to be introduced on-line. The 1981 strata were then made to respect the boundary of the so defined core.

4.3 Exceptions in On-line Provinces

Annexations to Census Metropolitan Areas in these provinces made it necessary to modify the phase-in. In Nova Scotia a significant portion of NSR from ER 25 was annexed to the CMA of Halifax. A core area consisting if the original CMA was introduced on-line. The remainder of the ER including the annexed parts to become SRU in the new design was introduced off-line.

Similarly a part of NSR from ER 61 in Manitoba had been added to the CMA of Winnipeg. Again the core part of Winnipeg corresponding to the old CMA was on-line and all of ER 61 was off-line.

There were changes also to the CMA of Saskatoon in ER 73 of Saskatchewan. In this case it was not possible to identify a significant core area, where 1971 and 1981 SRU units could be made to coincide. Thus all of ER 73, including the SRU of Saskatoon, was introduced off-line.

4.4 Apartment Sample

In the redesign, 18 SRU areas have separate apartment sample strata. In all but two cases the SRU's were introduced on-line and therefore so was the apartment sample. In Saskatoon, which was to be off-line, the apartment sample was introduced on-line, since the old and new frames were identical.

In Hull, the apartment sample was set up for the first time as part of the redesign and this sample was introduced off-line along with the SRU.

4.5 Allocation of Sample

As a result of applying the mixed strategy just over 58% of the sample would be phased-in on-line. Table 4.1 presents the new sample as a percent of total sample used for official estimates by province for each month during the phase-in. Detailed specification by areas is given in the appendix.

TABLE 4.1
-% NEW SAMPLE BY MONTH

	October	November	December	January	February	March
Newfoundland	3.3	6.8	10.3	91.9	96.0	100.0
Prince Edward Island	17.4	34.5	48.8	67.9	84.1	100.0
Nova Scotia	15.5	30.4	45.7	67.9	83.9	100.0
New Brunswick	16.5	33.2	50.1	67.0	83.6	100.0
Quebec	6.0	12.2	18.4	86.9	93.3	100.0
Ontario	9.0	17.9	26.6	83.4	91.8	100.0
Manitoba	13.3	26.8	40.9	66.4	82.3	100.0
Saskatchewan	11.6	23.7	36.0	73.0	86.5	100.0
Alberta	6.2	12.1	18.2	88.1	94.0	100.0
British Columbia	6.1	12.2	18.4	84.9	92.8	100.0
CANADA	9.4	18.9	28.5	80.1	90.0	100.0

5. SURVEY OPERATIONS DURING PHASE-IN

5.1 Background

LFS operations during a normal survey month comprise several tightly sequenced steps. To begin with, the head office sampling system creates a file of new dwellings known as births. For returning dwellings a file is produced containing information from the previous month that is to be pre-printed on the questionnaires. These files are transmitted to the Regional Offices, where survey forms are pre-printed on the RO mini-computers. The forms are manually batched into interviewer assignments and shipped to interviewers. At the end of each day during survey week, interviewers ship back their day's work to the Regional Office. Data are entered into the Regional Office mini-computers and transmitted to Ottawa each evening from the Tuesday of survey week, until the Wednesday of the following week. The final transmission is known as "cut-off" and it signals the beginning of next month's cycle (i.e., with preparation of sampling material for transmission to the regions).

Cut-off occurs before completion of the current month's cycle. Remaining steps include coding of industry and occupation, and editing and imputation steps. Both these steps begin as soon as data are received from the Regional Offices. Following their completion, the resultant data are weighted and tabulated leading to release of the survey estimates 13 days from the end of survey week.

5.2 Data Base and Systems Considerations

The principal factors bearing on the data base and systems approach to phase-in were:

(i) The advancement of the new sample in off-line areas by one week. This spread out not only the double workload of both old and new samples for those old interviewers to be retained, as mentioned before, but also spread out the extra data entry work required in the Regional Offices and extra editing in Head Office.

(ii) During the phase-in, both old and new samples would be present, and had to be separately identifiable to the system.

Initially the use of a separate data base for the new sample or the off-line portion of the new sample was considered. This would have resulted in a clear separation of the two samples during sampling, data capture, transmission, and head office processing. However, except for weighting of the survey data, such a separation was not needed. Indeed data entry and transmission/receipt would have been problematic. The data entry system in the RO is set up for one data base only. Switching between data bases as an ongoing operation during survey week would hamper transmissions in either case mentioned above. That is, if new sample were on a separate base, the October to December period would require switching bases between old and new portions. If off-line sample were on a separate base then the January to March period would have required switching or else the two bases would have had to be merged into one. Such a merger was not feasible within the current data base management system.

For these reasons, a one-data-base approach was adopted.

As regards (ii) above, the use of a single data base required the old and new sample to be uniquely distinguishable by the numbering system. A change in the numbering system for the redesigned sample was introduced to ensure this distinction. In the old sample, the major frames of the LFS can be deduced from the third digit of the PSU (i.e., 0 = NSRU, 1-8 = SRU/APT, 9 = Special Area), as well as from the group number. For the redesigned sample the significance of the third digit of the PSU number was left unchanged, but the significance of the group number was changed, as per Table 5.1 below. Hence new and old sample can be uniquely identified by looking at both the third digit of the PSU and the Group Number.

Also with respect to (ii), the continued use of the old data base required that its most voluminous file, the LINE file containing address descriptions for over 1.4 million dwellings, be purged of dwellings in exhausted clusters (i.e., those which have rotated out of the sample), in order to make room for the new sample.

TABLE 5.1

IDENTIFICATION OF OLD AND NEW SAMPLES

FRAME	THIRD DIGIT PSU	CURRENT GROUP NUMBERS	REDESIGN GROUP NUMBERS
NSRU	0	61 - 89	11 - 49
SRU	1 - 8	01 - 18	61 - 89
APT	1 - 8	21 - 57	91 - 96
Special Areas	9	90 - 99	01 - 10

Factor (i), the advancement by one week of the new sample in off-line areas during October, November, and December, was accommodated by inserting file splits to separate the entire sample into advanced sample (new sample in off-line areas), and non-advanced sample (all other sample) at various stages in the processing system. The advanced sample was transmitted to and from the regions one week earlier than normal. This is elaborated in the subsequent sections.

5.3 Sampling and Data Entry

During the period from October to December new dwellings were being selected from the old design in off-line areas, and from the new design in both off-line and on-line areas. This sampling of new dwellings was done only once each month for all areas. At various stages the sample was then split into advanced and regular samples.

In October, the first month for the advanced sample, the normal preparation of data for the regions for questionnaire printing was performed a week early so that the advanced sample could be split off and transmitted. The pre-printing occured a week earlier than normal, and all operations for that sample were advanced by one week. The following week the data was prepared for transmission again, this time splitting off the regular sample only.

For data entry, no distinctions were made between advanced and regular

sample. Capture of the advanced sample took place from the Tuesday of the advanced survey week to the Wednesday of the regular survey week. During the Tuesday and Wednesday of regular survey week, any regular sample could also be entered, although priority was given to completing the advanced sample.

The sampling files for the advanced sample for November and December consisted of both new dwellings and information on returning dwellings. The information on returning dwellings was assembled after all data for the advance sample from the previous month had been received (on the Wednesday night of regular survey week). As in October, these survey files were sent out a week in advance of the regular survey.

In January 1985, the old sample in off-line areas was dropped and the new sample in off-line areas returned to the regular schedule, so that sampling and data capture operations returned to normal.

5.4 Head Office Processing of Data

No distinctions were made between advanced and regular sample or between new and old sample during the industry/occupation coding and the editing and imputation steps. Such distinctions were however necessary in weighting the survey data. To begin with, just prior to the weighting step, the advanced sample, which was not used for estimation purposes, was split off.

The weighting process consists of two separate steps:

(i) sub-weights are determined as the inverse of the selection probabilities established by the sample design, inflated by a factor to compensate for nonresponse, and

(ii) a ratio estimation step, in which sub-weights are inflated by an additional factor so that survey estimates of population agree with independently derived estimates.

As a result of redesign research, step (ii) was extended from a simple post stratified ratio adjustment by age-sex population cells within each province, to a raking ratio estimation procedure, incorporating additional controls on population 15+ for subprovincial areas. Since this step is independent of the design of the sample, it was changed at the beginning of 1984, using subprovincial areas based on the old design.

Changes in the redesigned sample necessitated redevelopment of step (i)

for the new sample.

The approach to weighting the data during phase-in was as follows. First, the (non-advanced) sample was split into old and new samples. Both old and new samples were processed through their respective weighting systems for step (i) (derivation of sub-weights). During October to December, in order to base sub-provincial estimates on old ER and CMA boundaries, the resulting output file from the new weighting system had its PSU numbers recoded to allow for recognition of old CMA and ER boundaries. The final ratio estimation step was then carried out on the old plus recoded new files.

In January and February 1985, weighting proceeded similarly (although there was no longer any advanced sample to be excluded from the weighting). Again old and new samples were split off the survey file and processed through their respective weighting systems to derive sub-weights. This time, however, the output of the old system was recoded to recognize the new CMA and ER boundaries, prior to applying raking ratio estimation to the merged file.

Tabulation and publication of the survey data were unaffected by the phase-in, other than the adoption of new tables for ER and CMA estimates, commencing in January 1985. To assist users in interpretation of data in provinces with new Economic Regions, retrospective estimates for 1984 for the new ER's were produced based on the old design.

Finally, a new variance estimation system was implemented in January 1985 (Choudhry, Lee, Sida (1984)). The principal change was that the new variance estimation methodology takes account of the raking ratio estimation procedure. Variance estimates produced during January to September 1984, which did not reflect this, were re-run under the new system. During the phase-in, due to the uniqueness of the numbering system all survey strata could be identified on the output file from the weighting system. Whether the strata were from the old or the new design was of no concern during variance estimation. The only special measures during phase-in were the collapsing in certain cases of areas which normally define replicates. For example, replicates in SRU areas consist of rotation groups within strata. For the new sample in October 1984, and for the old sample in February 1985, SR strata had to be collapsed and treated as pseudo replicates since only one rotation is present per stratum in these cases.

5.5 Sample Size Stabilization During Phase-In

Sampling rates for the LFS are established to yield a desired sample size at the outset of the design. Over time, however, continued application of the original rates would result in a 2-3% annual increase in the sample size, since the universe of dwellings is growing at this rate.

Sample size stabilization is a step in the sample selection process to prevent such growth in the sample size. Under it, the sample of newly selected dwellings each month is systematically cut back to the desired or "base" sample size, and corresponding factors to increase the weights of non-dropped dwellings are introduced (Drew, 1977). In the old design, the sample was stabilized separately for SRU apartments, regular SRU, NSR urban and NSR rural within each province.

During October to December, sample stabilization was restricted to new dwellings selected under the old design in off-line areas. Hence dwellings from the new design were split off prior to stabilization. The base sample sizes were reduced by the proportion of old sample which was off-line in each province/area considered in stabilization.

A revised stabilization program was introduced for January. No sample was selected from the old design at this time (although two rotations were still phasing out). January was thus the first month where the full sample selection was derived from new sample only (i.e., Rotation 1). Hence as only the births each month are stabilized the new sample will become completely stabilized by June 1985.

The new stabilization features a more flexible definition of the area to be stabilized in terms of ranges of PSU's. Typically CMA's and SR and NSR portions of economic regions form stabilization areas. Special surveys especially can now specify their own set of stabilization areas.

Base figures for the redesign sample were based on expected households under the new sample allocation as determined from 1981 Census data together with current survey estimates of the proportion of vacants in each stabilized area. The vacancy rate was required to convert households into dwellings since the sample is in terms of dwellings.

The off-line new sample for October and November was used to finalize these base figures prior to January survey sampling in the first week of December.

6. CONCLUDING REMARKS

In this paper we have documented the arguments and rationale used in the choice of phase-in methodology. Further we have indicated the operational impact of the chosen strategy, and the means taken to implement it.

6.1 Plans for Evaluation of Phase-In

Results of monitoring and evaluation of the phase-in will be the subject of a later report. However, in closing, a few of the issues to be addressed are outlined below.

Evaluation of the phase-in period will seek to answer questions such as: What effect did new interviewers have on the data? How good were assumptions about the proportion of new interviewers required? In off-line area where old interviewers were retained, were there any adverse impacts from the doubling of workloads from October to December? In light of the above findings was the overall choice of strategy a good one, and should there have been any changes to the designation of areas as on-line or off-line?

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APPENDIX

<u>On-line</u> All of the provinces of PEI, NS, NB, MAN and SASK, with the following exceptions:

NS   A core area of Halifax corresponding to the 1971 SRU will be on-line, the remainder of ER 25 will be off-line.

MAN   Only a core area of Winnipeg corresponding to the 1971 SRU will be on-line. All of ER 61 will be off-line.

SASK   All of ER 73 including the SRU of Saskatoon will be off-line.

<u>Off-line</u> All of the provinces of BC, ALTA, ONT, QUE, and NFLD with the following exceptions:

These SRU's will be introduced completely on-line

Cornwall, Ont.	Shawinigan, Que.
Belleville, Ont.	St. Jean, Que.
Sault Ste Marie, Ont.	St. Hyacinthe, Que.
Peterborough, Ont.	Sala. De Valleyfield, Que.
Guelph, Ont.	St. Jerome, Que.
Barrie, Ont.	Joliette, Que.
Oshawa, Ont.	Granby, Que.
Sarnia, Ont.	Rouyn, Que.
Owen Sound, Ont.	
Stratford, Ont.	Vancouver, B.C.
Fort Erie, Ont.	Victoria, B.C.
Halton Hills, Ont.	Vernon, B.C.
Milton, Ont.	
	St. John's, Nfld.

The following core areas of SRU's will be introduced on-line

Edmonton   Core area consists of all 1971 SRU area except that which corresponds to 1971 subunits 86121, 86122 and 86124.

Calgary   Core area consists of all 1971 SRU area except that which corresponds to 1971 subunits 83114, 83115, 83117, 83120, 83122, 83123 and 83125.

Ottawa   Core area consists of all 1971 SRU area (not Hull).

Kingston   Core area consists of Kingston city only

St. Catherines   Core area consists of all 1971 SRU area except that which
– Niagara   corresponds to 1971 subunit 54206. Core area also includes new separate SRU of Fort Erie.

Hamilton   Core area consists of all 1971 SRU area corresponding to 1971 subunits 54101 to 54114

London   Core area consists of London city only

Windsor   Core area consists of all 1971 SRU area except that which corresponds to 1971 subunits 56109 and 56110.

Toronto   Core area consists of all 1971 SRU area except that which corresponds to 1971 subunit 53161. Core area also includes new separate SRU's of Halton Hills and Milton.

Quebec   Core area consists of all 1971 SRU area.

Montreal   Core area consists of all 1971 SRU area except that which corresponds to 1971 subunits 46114 to 46121 inclusive plus 46180, 46181, 46212 to 46219 inclusive and 46223.

All other SRU's in these provinces are to be introduced off-line.

Apartment Sample

The apartment samples will be introduced on-line in:

Halifax, N.S.	Hamilton-Burlington, Ont.	Winnipeg, Man.
Quebec, Que.	London, Ont.	Saskatoon, Sask.
Montreal, Que.	Kitchener-Waterloo, Ont.	Calgary, Alta.
Ottawa, Ont.	Oshawa, Ont.	Edmonton, Alta.
Toronto, Ont.	St. Catherines, Ont.	Vancouver, B.C.
	Windsor, Ont.	Victoria, B.C.

The apartment sample in Hull, Que. will be introduced off-line.

Special Areas

All special area samples in all provinces will be introduced off-line.

A print out specifying the on and off-line status of all sample areas, by PSU range, is attached.