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**SRS LIST VS. AREA
OVERLAP DETERMINATION:
LIST DOMINANT AND
FROZEN DOMAIN PROCEDURES**

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AUTHOR'S NOTE

This paper was first circulated as a draft proposal in July 1980. Its purpose was to suggest modifications in livestock survey overlap concepts in order to have uniformity for all SRS multiple frame surveys. The proposed procedures were tested in December 1980 and have consistently been applied since then. The paper is now published as a reference work on the basic principles and reasoning behind current SRS procedures to establish overlap between area and list frames.

ABSTRACT

This paper describes list dominant overlap (OL) determination and a frozen nonoverlap domain (NOL) procedure as they apply to livestock multiple frame surveys. Reasoning underlying the procedures and planning for implementation are discussed. The list dominant procedure to determine overlap between an area and a list frame had been applied through manual data manipulation in some SRS surveys. This was the first attempt to automate the process. The proposed frozen nonoverlap domain procedure was an entirely new concept. It applies for those multiple frame surveys which relate back to a previous survey period where overlap had already been determined. Significant benefits result from the changes in procedures and guidelines for implementing the changes are provided.

ACKNOWLEDGEMENTS

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 This paper was prepared for limited distribution to the
 research community outside the U.S. Department of Agriculture

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SUMMARY

This report describes procedures to simplify and standardize overlap (OL)/nonoverlap (NOL) concepts for SRS multiple frame (MF) surveys. It addresses a number of interrelated aspects to the change in procedure and is directed to a varied audience having a stake in the survey process. The paper encompasses not only the basic list dominant OL/NOL procedure for base period enumerative surveys (DES and JES) but also presents a new procedure to apply in surveys conducted subsequent to the base survey (frozen NOL basis).

The purpose of the paper is fourfold:

1. Describe the list dominant procedure,
2. Describe the frozen NOL domain procedure,
3. Outline the activities necessary for implementation of the new procedures, and
4. Describe the provisions for quality control and for measuring of the impact of changes in procedure on survey indications.

Some advantages for using the list dominant procedure, beyond the major advantage of consistency and uniformity of rules for all multiple frame surveys, include:

1. Generally provides the smallest sampling error among the alternative OL/NOL procedures.
2. Simplifies the OL/NOL code boxes and decision charts. No computation or entering of fractions for any NOL tracts.
3. Facilitates automated data manipulation (editing to zero, proration, etc.) for list frame questionnaires.
4. By coding stratum codes for overlap tracts, it permits easier verification of overlap or extreme operator codes for improved quality control.

There are also benefits associated with using a new estimating procedure for the multiple frame nonoverlap domain in surveys following the base period. This new approach, called the frozen NOL procedure, was developed specifically for the March and September hog surveys to work in tandem with the list dominant procedure. The advantages of the frozen NOL approach include:

1. The frozen NOL approach is cleaner than the procedure it replaced; i.e. it requires fewer assumptions concerning offsetting errors than previously.
2. Data collection from area NOL operators in surveys after the base period could now be done by mail and telephone instead of personal interview resulting in highly significant cost savings.

3. Decision diagrams providing rules for survey conduct are more consistent between area and list questionnaires.
4. Questionnaires are simplified since tract acres and farm acres no longer need to be determined at the time of the survey following the base period.

The principal modifications in survey procedures are summarized here. The survey enumerator's job is essentially the same so the changes begin when the reports reach the state statistical office (SSO).

1. The statistician does not prorate, manipulate, or edit out reported data on the area or list questionnaire.
2. The SSO provides the list frame stratum code for each operator, partner, or operation name reported on area and list questionnaires for cattle and for hogs.
3. Two additional code boxes are included on the list questionnaire. One code specifies the type of sampling unit selected, and the other the type of reporting unit returned.
4. An operator having both an individual and partnership operation would provide each operation on a separate list questionnaire with a different subtract code for the reports.
5. When partners split-up and operate independently after the base survey, each of the partners not on the list will be included in the selected sampling unit, whether area or list, for subsequent surveys.
6. Weights (Tract acres/Farm acres) applied to entire farm data in subsequent surveys for NOL operators are frozen at the same fraction as in December or June. Data will be collected in the later surveys from the DES or JES operator (if they still operate in the state) regardless of whether they still operate the specific tract selected in the base survey.

The changes discussed in this report were instituted in the following DES survey and subsequent hog multiple frame survey in March. Comparisons between survey indications for hogs and cattle were made as part of the conversion process between survey procedures and differences in data expansions were judged insignificant (1). Therefore, the new procedures were adopted and have been applied consistently to SRS multiple frame surveys.

REFERENCES

- (1) Carney, B. "An Assessment of the Frozen Weights Procedure: March and September Multiple Frame Hog Survey". SRS, USDA, May 1982
- (2) Vogel, F., Bosecker, R., and Rockwell, D. "Multiple Frame Livestock Surveys: An Evaluation of Alternative Methods of Overlap Determination". SRS, USDA, June 1976.
- (3) Nealon, J. "Review of the Multiple and Area Frame Estimators". SRS, USDA, March 1984.

SRS LIST VS. AREA OVERLAP DETERMINATION:

LIST DOMINANT AND FROZEN DOMAIN PROCEDURES

R. R. Bosecker

INTRODUCTION

Beginning with the 1980 December Enumerative Survey (DES) a uniform set of rules for overlap (OL)/nonoverlap (NOL) determination of area frame units against list frame units apply for all multiple frame (MF) commodities. The list dominant procedure described in this paper was already in use for many multiple frame surveys (labor, farm production expenditures, cost of production, white corn, rice, potatoes, etc.) but had not been applied to cattle or hogs since the partial overlap procedure was introduced. Consequently, there was opportunity for confusion about the correct set of rules to apply to a given survey.

The list dominant procedure is characterized by allowing the list frame to estimate for any operating unit where the operator, any active partner, or the operation name is present on the list. An area frame tract will, therefore, be classified as nonoverlap only when none of the names associated with an operation are found on the list sampling universe. Hence, the name list dominant for this procedure. When multiple opportunities for sampling a given unit are found in the list frame, i.e., more than one partner's name is on the list, the list questionnaire data is adjusted to reflect this. The way this adjustment is made will be presented with the rules for the list dominant procedure later.

The partial nonoverlap procedure, which was replaced by the list dominant, is characterized by assigning data to the nonoverlap domain according to the proportion of total partners in an operation who are not on the list. For a thorough presentation of contrasting approaches to determining overlap and nonoverlap, see the research report "Multiple Frame Livestock Surveys: An Evaluation of Alternative Methods of Overlap Determination, June 1976 (2).

It should be remembered throughout this paper that the list dominant procedure differs from the partial OL/NOL procedure only for partnership operations. Partnerships account for about 10-15 percent of the area frame tracts and 15-20 percent of the list sample units. All existing rules for individual operations, operation names and managed land remain the same.

This report outlines the steps necessary to implement the list dominant procedure for hog and cattle surveys, while at the same time ensuring quality control on the application of the procedure and measuring the impact of the change. These four features are critical to the implementation of a change in procedure:

1. Planning the new procedure,
2. Quality control over its application,
3. Measuring the impact of the change, and
4. Training in its application.

Initially some added work was needed to accomplish these goals. The nature of the work was chiefly in three areas: organizing records and data files, additional questionnaire coding, and homework to understand the new system.

Often changes are made in methodology without appropriate documentation of the "how" and "why" behind such changes. This paper attempts to record the reasoning and activities which brought about changes to SRS multiple frame methodology.

LIST DOMINANT PROCEDURE

List dominant describes the relationship between the reporting units from each of the two sampling frames involved -- area and list. The reporting unit (land operated) associated with a list sampling unit (operator's name) is given priority over information coming from the area frame concerning the same land. The set of rules associated with the procedure are necessary to insure that all data are represented in the combined totals of the two frames without omission or duplication. If possible, the data will be included in the list frame estimate through a list sampling unit. Otherwise, the area frame will account for the data.

Procedures described here for the 1980 DES area frame NOL indications and the livestock list frame expansions provide the methodology to implement the list dominant procedure with a minimum of manual data manipulation. Coding in the questionnaires permits automated calculation of both the list dominant and the partial NOL procedures for comparison. By understanding the purpose and use of the codes, one learns the concepts of the list dominant methodology.

Multiple frame estimation has been discussed in many SRS reports. A review and thorough list of references may be found in (3). Since all states conducting the December Enumerative Survey employ at least an extreme operator list, they are all "multiple frame" and the same rules apply. These rules and their application will now be discussed for each frame.

AREA FRAME NONOVERLAP DOMAIN

For an operation to be in the nonoverlap domain under the list dominant procedure, none of the operating names associated with the farm can appear on the list. One name on the list qualifies the operation as overlap. Because the multiple frame states have overlap operators who are not "extreme" operators (EO) there are three domains which must be indicated on the area frame questionnaire. Because no fractions are required, unlike the partialing procedure, the coding is as easy as 1-2-3 for area frame operators:

- 1 = nonoverlap operation (no operator or operation name on list)
- 2 = overlap operation (at least one operator or operation name on list but none in an EO stratum)
- 3 = extreme operator overlap (at least one operator in an EO stratum)

The code boxes can then be simplified from the previous boxes on the face page of the area questionnaire to one box per multiple frame commodity with simply a 1 or 2 or 3 entered to specify the domain. Eventually, the manual coding of overlap status would be replaced entirely by machine computations based on stratum designations for each name associated with an area tract.

The code boxes would look like:

CATTLE			HOGS			CHICKENS		
NOL	<input type="checkbox"/>	1	NOL	<input type="checkbox"/>	1	NOL	<input type="checkbox"/>	1
OL	<input type="checkbox"/>	2	OL	<input type="checkbox"/>	2			
EO	<input type="checkbox"/>	3	EO	<input type="checkbox"/>	3	EO	<input type="checkbox"/>	3
<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>		

The presurvey overlap status check would be designated in the upper row of boxes and the survey proper code designation would be entered in the bottom row after verification of the operator at the time of the survey. For the 1980 DES, the presurvey historic classifications of NOL, OL, and POL (partial) are valid. This will permit sampling of the partial tracts as usual and allow computation of the multiple frame indication on a partial OL basis to compare with the list dominant procedure. During the survey itself, only the list dominant codes of 1 or 2 or 3 need to be entered. Any partial overlap tract becomes completely overlap.

Computation of the partial indication and an edit check of the list dominant OL/NOL code will be based on the hog and cattle list stratum codes to be associated with each name entered on the area frame questionnaire. Next to each line requesting the operation name, operator's name, and partners' names, will appear stratum code boxes similar to this.

<input type="checkbox"/>	Cattle	<input type="checkbox"/>	Hog	<input type="checkbox"/>	Chicken
	Stratum		Stratum		Stratum

By entering the list frame stratum corresponding to the name on the list (or code 100 if not on the list (NOL), each list dominant NOL/OL/EO code can be verified and the partial factor computed automatically to provide a measure of change between the two procedures.

The ability to easily determine the list stratum code for each name is also necessary to apply the list dominant procedure to the list frame side as will be seen. A tract with an out-of-state operator overlap with another state's list will be coded with the stratum code of the other state.

One other office use box providing the total number of partners will make it easier to compute and verify what the partial factor would have been under the previous system. Examples of the Face Page and Section A of the area frame questionnaire are shown in Appendix Illustrations 1 and 2. An edit decision diagram for the area frame is shown in Appendix Illustration 3.

Data in the area frame questionnaires will be multiplied by a factor of 1 for NOL tracts and 0 (zero) for OL tracts to compute the list dominant nonoverlap contribution to the multiple frame indication.

LIST FRAME DOMAIN

The list frame will account for all livestock on land operated wholly or partially by any name on the list. An operation name will take precedence over any other sampling unit. A combination of individual names takes precedence over the individual names themselves. If an operation name or combination name is not present on the list, an individual can report for any partnership in which he is involved as well as his individual operation. These rules are all consistent with previous procedures.

A major change in procedure concerns the number by which the data should be divided in partnership operations reported by individuals. Formerly, one would divide by the total number of partners regardless of whether or not they were on the list. The ease of this procedure raised questions about whether all the partners listed would have been given or accepted as legitimate partners on the area frame side. A bias could thus result whenever list and area reports were inconsistent.

Under the list dominant procedure, the list data are divided only the number of partners who are on the list frame. When one partner is on the list and the other is not, all data remains intact and accounted for by the list frame questionnaire.

Since each individual partner on the list could report for the entire operation, a procedure is needed to avoid duplication. Currently if duplication is detected in the list, the sampling

unit in the higher stratum (most livestock in control data) predominates. If the sample unit in question is in the higher stratum, the data is kept, but if it is in a lower stratum, the report goes to zero. This rule will be continued under the list dominant procedure to determine which partner reported by an individual sampling unit is to account for the livestock on the operation. If two partners are both in the same highest stratum, the data will be divided by two so that each partner accounts for half of the livestock. In other words, the data will be divided by the number of partners in the highest stratum.

This is not a difficult procedure and can be easily built into the data processing. In order to accomplish the editing and data manipulation necessary, the following coding is required:

1. Record the stratum code associated with each operation name or partner provided by the respondent other than the original sampling unit. The reported names must be looked up on the list frame in order to determine who is in the highest stratum so a place will be provided to record the stratum number.
2. A code on the face page designating the type of name sampled is needed. There are only three kinds of sampling units: individual (code 1), combination of individual names (codes 2-7), and operation names (code 8). Editing this sampling unit code against a reporting unit code will determine the proper handling of the report. For example, a sample unit coded individual that has an operation name on the list or has a reporting unit code signifying managed land would be zeroed out. Use of this code will offset a natural inclination to resist editing out data.
3. Coding in the operation description section is needed to indicate the reporting unit for the operation. There are four possibilities: individually operated land, partnership operations, managed land, or no land operated by the sampling unit. Again, editing the reporting unit back against the sampling unit will enable the proper data manipulation.

The coding for the new operation description section to designate reporting unit would be as follows:

- = (1) Individually operated land.
- = (2-7) Partners jointly operate land and share in decision making.
- = (8) Hired manager on land owned by someone else.
- = (9) Do not now operate land for agricultural purposes. (i.e., landlord, retired, out-of-business, etc.)

The total number of partners involved (2-7) would be entered when a partnership was designated. This number would then be used to calculate the number of head which would have been included under the partial procedure. Combining this with the area frame coding will give the multiple frame indication using partial OL/NOL which is consistent with the historical data series. .

The number of partners entered will also be used to verify that stratum codes (including code 100 for not-on-list partners) have been entered for all partners. A seven (7) will designate 7 or more partners.

Because an individual could check both individual and partnership land and report for both, it is desirable to provide the ability for each reporting unit to be entered on separate questionnaires. This is consistent with the area frame procedure of using different questionnaires when the same person operates two tracts under different operating arrangements. This is also necessary to permit full automation of the list frame data manipulation under the list dominant procedure (and simultaneously the partial procedure). A modification of the summary system should permit the use of a different subtract code (other than 01) when more than one reporting unit is associated with an individual sampling unit. Subtract 01 would continue to be preprinted but could be changed for an operation with two or more operating arrangements. Only the subtract 01's (at least one per sampling unit) would be counted for determination of the expansion factor.

One other modification deserves attention to ease the automation of the list frame data manipulation. The list frame questionnaire provides for two additional partners to be recorded and the area questionnaire provides for three. Because of these limitations and to restrict the number of item codes necessary to reserve for partner's stratum codes, it is recommended that any partnership with seven or more partners must have an operation name on the list to be considered overlap with the list. This would be the same situation as now required for managed land. Any area frame tract with seven or more partners but no operation name on the list, would be nonoverlap and any list frame unit with seven or more partners would have to be represented by an operation name sampling unit. Individual names reporting 6 or more additional partners would go to zero.

The above three coding procedures and program modifications will make it unnecessary for the SSO statistician to manually prorate, divide, or edit out any data on the questionnaire because of multiple frame theory considerations. This will also permit a measure of the amount of data being removed from the total reported. A nine (9) coded in the operation description section code box for type of reporting unit (no land operated) would automatically exclude the data from summary. This would include

a 9 coded because of a yes answer to the "Did any of the following occur" question in the list edit decision diagram (see Appendix Illustration 6). A 10 code could be reserved in case there were any situations where the data would have to be manually adjusted.

In order to provide a manual quality control safety check on the machine calculations, any report with the data adjusted or deleted will be printed out in the edit for verification. A hand listing of those records expected to be printed out may be desired to save time later. An alternative to this record keeping would be a data box next to total inventory which would contain the statist adjusted inventory. The only reports printed would then be cases where the machine calculations differed from the stat numbers. This would apply only to situations involving adjustments because of the list dominant procedure.

An example of the code boxes required as they appear on the list questionnaire and the list frame decision diagram are presented in Appendix Illustrations 4, 5, and 6.

FROZEN NOL PROCEDURE

The list dominant procedure also necessitates some adjustments in the off-quarter (March and September) hog multiple frame surveys. The overlap and nonoverlap domains for the March 1981 survey have been established during the December survey. Since only the nonoverlap domain is subsampled for the March survey, there is a problem in dealing with changes between the base survey (December) and the March survey on a historic OL/NOL basis.

The current partial procedure associates each DES nonoverlap tract with the March operator as NOL regardless of whether or not the new operator is on the list. It then makes the assumption that about the same proportion of land is changing from overlap to nonoverlap as the other way around so the errors are compensating. In this way the DES overlap tracts do not have to be subsampled in addition to the nonoverlap tracts.

The list dominant procedure applied under these same rules would make this same assumption plus additional assumptions about partnerships. It would have to be assumed that the formation and dissolution of partnerships with some partners on the list and some not were occurring with about the same frequency in the between-survey period. For example, what has been a partial overlap partnership with a chance of being included in the March NOL domain would now be fully overlap with no chance of selection in March. If the partners split up into individual operations or the not-on-list partner takes over nearly the entire operation, the NOL partner has no chance of being included in

March. To offset this would require not-on-list individual operators to form partnerships with list operators so that potential double reporting of the operation could occur.

There is a cleaner, and in many ways, easier procedure. By cleaner, is meant that not as many assumptions about offsetting errors are needed. It is still not perfectly clean. The key to the new procedure is to freeze the weights associated with the DES NOL tracts

Dec 1 Tract Acres
Dec 1 Farm Acres

 and account for the March 1 hogs on

all land operated by the base period operator regardless of whether he still operates the area tract in March.

To understand this approach, it is necessary to ask what changes can occur with the base period operators. On Dec. 1, with the "current" OL/NOL determination, all operators were appropriately represented in one of the two frames. By March 1, they are either (1) still operating as they were (although the acreage may have changed), (2) not operating at all, or (3) have changed their type of operation (i.e., from individual to partnership or vice versa). If each NOL operator was represented correctly in December by the portion of his operation inside sample segments (the weights), then this same operator should be represented by the same weights in March. The weights associated with this operator, and the hogs on his land, still sum to one as they did in December and as they should.

If the December NOL operator has gone completely out-of-business, then his land was taken by: (1) another NOL operator (represented properly by DES chance of selection), (2) a list frame operator (represented properly by his chance of selection from the list), or (3) an operator entirely new to agriculture in the state (to be represented by substitution for the original unit). The third situation is already practiced on the list frame side and would now be made consistent on the area frame side.

If an NOL operator changes his type of operation, say from individual to partnership, he may (1) become partners with an on-list (OL) operator(s), (2) become partners with another NOL operator(s), or (3) become partners with someone new to the state's agriculture. In the first instance, when the NOL operator has all his land in partnership with an on-list operator, the hogs are represented on the list and become zero on the NOL report. In the second case where only former individual NOL operators form a partnership, all data associated with the new operation are divided by the number of NOL operators since each NOL partner had an opportunity to represent the new operation with weights summing to one. In the third case when the

partner is new to agriculture in the state, the new NOL partnership is substituted for the original NOL operation again with the same weight as assigned in December.

Although this procedure is considerably different in many respects from the partial procedure, it has some simplifying aspects for the SSO's:

1. Data manipulation can again be automated (besides the stratum code for each partner, as in December, only a designation of whether or not the person is new to the state's agriculture is needed).
2. The assigned NOL name is the one to interview if he is still operating anywhere in the state. If the assigned name went completely out-of-business since December and the new operator is completely new to the state's agriculture, then interview the new operator. This then becomes consistent with the list frame instructions.
3. The total land operated is no longer needed for the March NOL operators since the December weights are frozen and can be automatically carried forward.
4. Since verification of the March operator on the selected DES tract is also no longer needed, the DES operator can be contacted by mail or telephone to cut survey costs. The difference in data collection costs between a mail-telephone-personal interview procedure and personal interview only, was estimated in 1980 to be about \$15.00 per questionnaire. With a sample of about 7,000 NOL tracts in the fourteen hog states for the March and September surveys, the change in procedure resulted in an approximate cost savings of \$105,000 per year.

The vast majority of farmers and ranchers operating in December will still be operating in March. However, when it has been determined that an operator has gone out-of-business or had a major name change since the base survey, decision diagrams 1 and 2 will present the appropriate action regarding the new operator.

In March, it will be important to determine if the type of operating arrangement has changed since December. This will be easy for the area frame NOL tracts but an additional question will be necessary on the March list questionnaire. This question might read, "Has this operating arrangement changed in the last three months?"

YES, EXPLAIN

NO, CONTINUE

If a partnership split up between the DES and March, and the other partner was not on the list, then both partners' data must be submitted for the selected sample unit (both list and area). This is another case in the list frame which would be helped by being able to submit other questionnaires as subtracts for a sample unit.

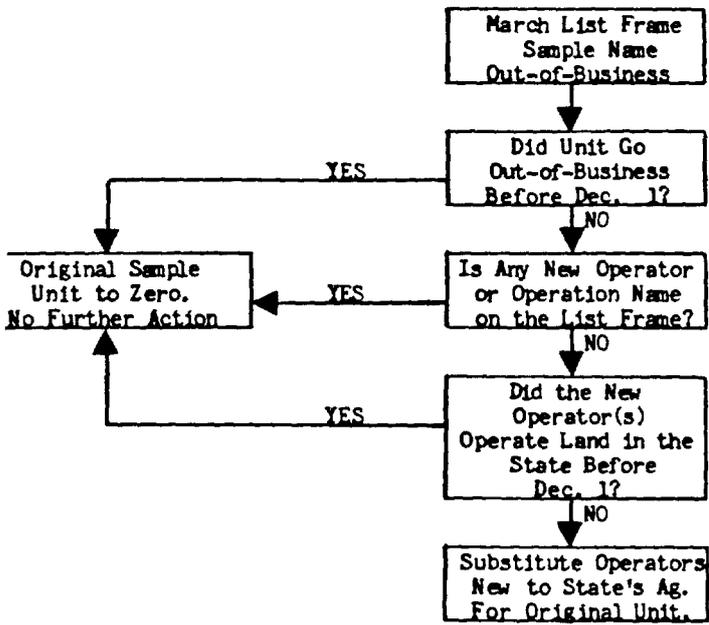
Decision diagrams 3 and 4 show the proper action to take if a change in operating arrangement has occurred since the base period. Then decision diagram 5 and 6 provide instructions to follow whenever partners are reported on list or area questionnaires.

In order to visualize the effects of this change in procedure for surveys on a historic OL/NOL basis, several examples have been prepared and included in Appendix Illustration 7 with examples 7a through 7g. The situation is first presented for the base period (DES) for the list dominant and partial procedures. Then a series of changes are introduced which could occur between December 1 and March 1. The impact of these changes is demonstrated for the proposed frozen domain procedure and the previous partial procedure. The effect of using the list dominant approach under the previous rules (those applied to the partial procedure) are also provided.

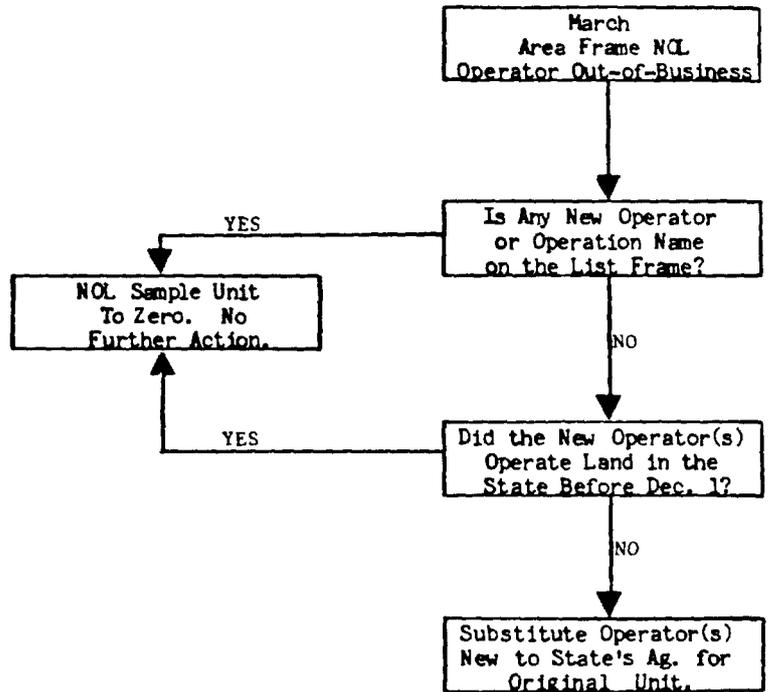
To demonstrate how the results of the different procedures compare to the true number of hogs, it was necessary to construct a hypothetical state where the tracts of land, their operators, their acres and the number of hogs are complete and are known. This "state" is shown in Appendix Illustration 7 with the entire state divided into seven tracts of land. These tracts have five operators (one partnership) with known OL or NOL status for December and 50 hogs on each tract. The number of hogs per tract will be kept the same for both December and March. Therefore, 350 head is the correct number of hogs for the state. Whenever the March OL/NOL procedure produces a different number of hogs because of the way changes in operations are handled, this signifies that offsetting changes must be assumed to occur in the opposite direction to compensate.

It may be seen from the examples that the proposed procedure is generally cleaner (fewer compensating errors needed) than either the previous partial procedure or the list dominant procedure under previous rules.

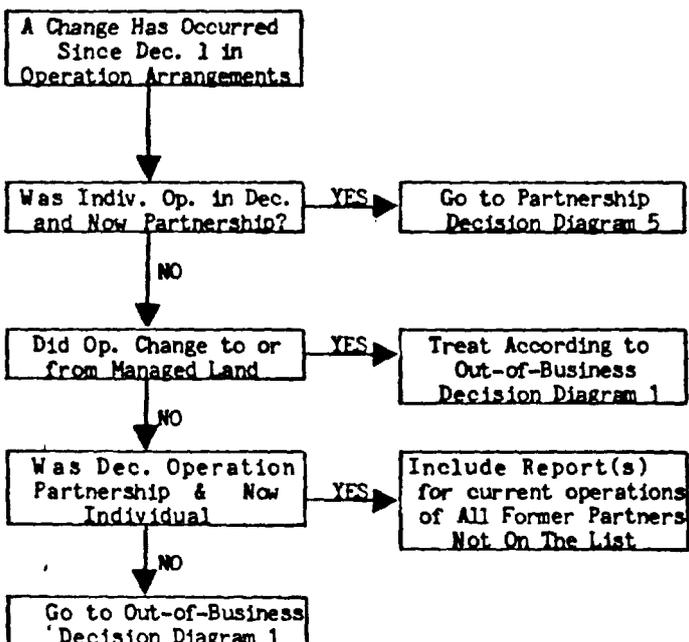
Decision Diagram 1:
Out-of-Business Operations in March (List)



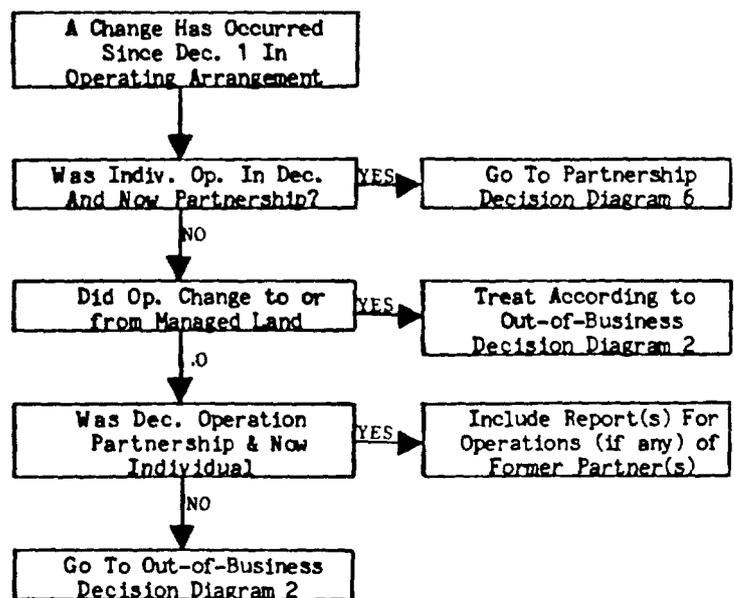
Decision Diagram 2:
Out-of-Business Operations in March (Area NCL)



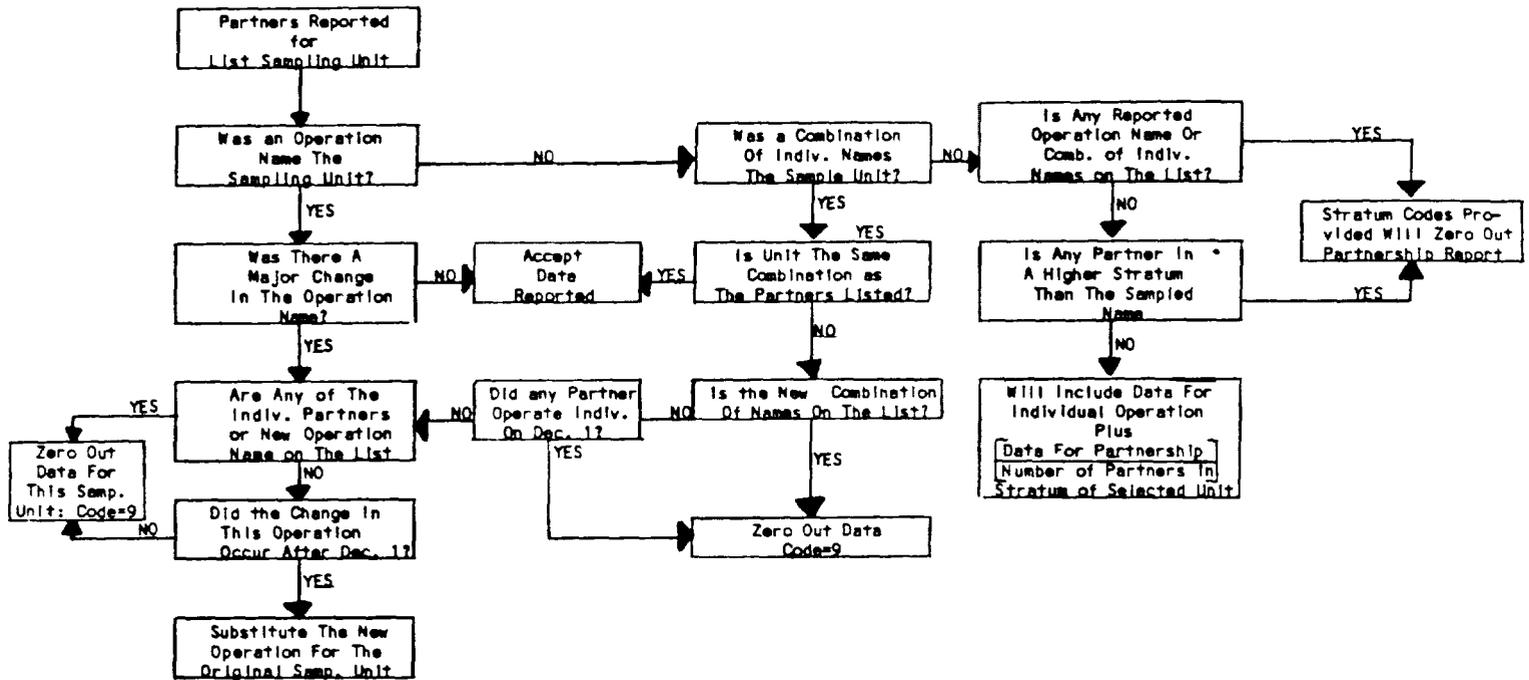
Decision Diagram 3:
Change in Type of Operation Since Base Survey (List)



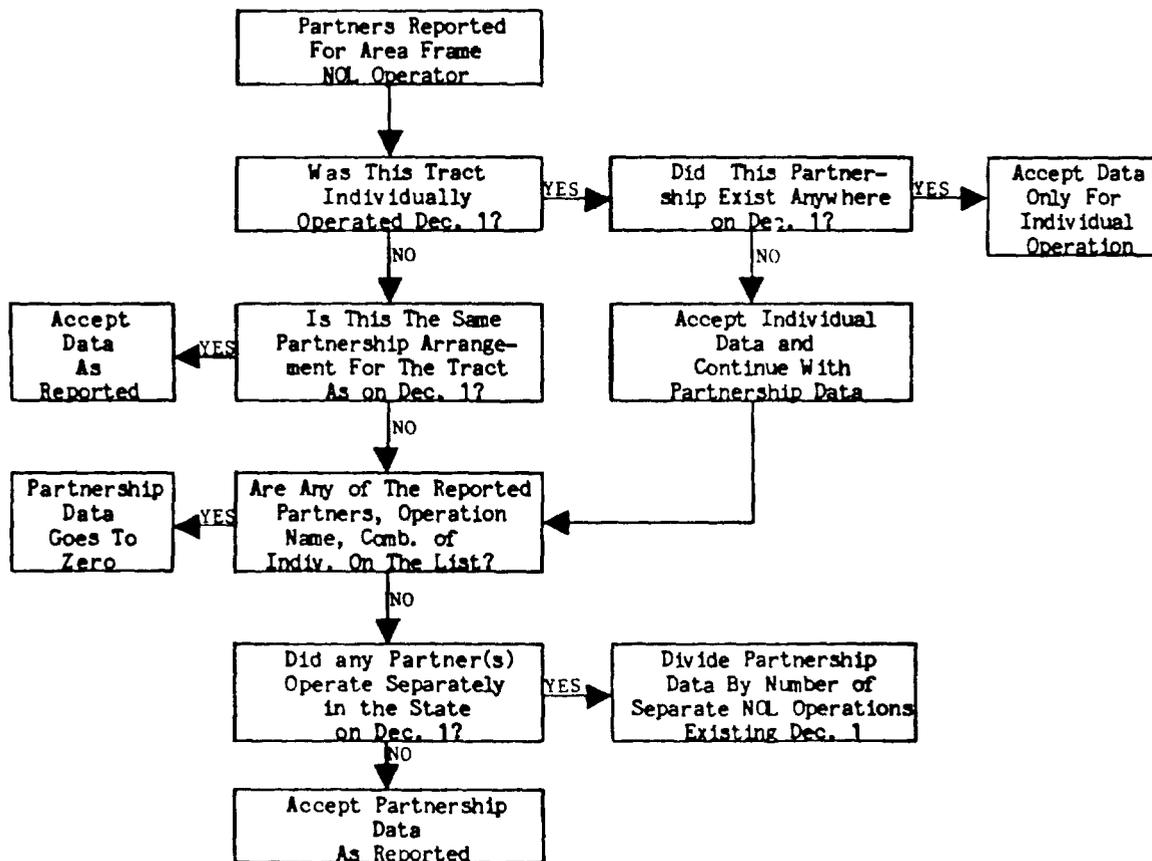
Decision Diagram 4:
Change in Type of Operation Since Base Survey (Area NCL)



Decision Diagram 5:
Partners are Reported on March List Questionnaire



Decision Diagram 6:
Partners are reported on March Area NOL Questionnaires



IMPLEMENTATION

There are many tasks to be undertaken when a procedural change is to be implemented in a major statistical program. The following outline is provided to document the activities accomplished by the respective Statistics branches concerned. Those branches of SRS involved included:

1. Methods Staff -

- a. Provide overall plan for making changes necessary to implement the list dominant procedure, insure quality control and measure change from the partial overlap/nonoverlap procedure,
- b. Provide rules which apply so list dominant application corresponds with theory,
- c. Set up the questionnaire coding and edit parameters necessary to automate the edits and data manipulation for both the list dominant and partial overlap procedures,
- d. Cooperate with SSO's to insure that the necessary strata information is available for each name on the list to do the requested coding,
- e. Produce the summary parameters to yield all survey indications on a list dominant basis and the total inventory indications for the partial OL (POL) procedure for comparison purposes.

2. Systems Branch -

- a. Modify the existing summary system sufficiently to permit separate list questionnaires (subtracts) to be submitted when an operator has two different types of operations, e.g. individual and partnership. Only one questionnaire per sampling unit must be counted for the calculation of the expansion factor,
- b. Provide the same assistance as always for successful testing and production data processing.

3. Data Collection Branch -

- a. Modify the questionnaires to contain the necessary coding,
- b. Change the S&E Manual to provide instruction for the questionnaire coding and for the explanation of the list dominant OL/NOL procedures,
- c. Provide for adequate training in the new procedure at the training schools.

4. Livestock Branch -
 - a. Review procedures to be followed,
 - b. Evaluate results of list dominant vs. partial NOL procedures for total Inventory Indications.
5. State Statistical Offices (SSO) -
 - a. Learn both how and why the rules are applied to produce the survey indications under the list dominant procedure,
 - b. Provide a stratum code for each reported name associated with the operation on both list and area questionnaires for hogs and cattle; names on the list will have the respective list frame stratum code and those not on the list will have a special nonoverlap code (100),
 - c. Do the necessary coding and editing on the questionnaires.

**QUALITY CONTROL
AND MEASURE OF
CHANGE**

Most facets of the quality control program associated with implementation of this new program for the 1980 DES and March MF Hog and Pig Survey have already been discussed. They will only be summarized here. First, in the area frame, provisions have been made so that the coding of the list dominant overlap/nonoverlap status may be checked by computer verification based on stratum codes for each operator.

In the list frame, all data manipulation is handled by computer with the reported data left intact. This replaces a manual procedure where adjusted or edited data was processed with little opportunity for verification once the data was key-punched. By keeping a listing of those sampling units expected to be modified during processing, the statistician can provide a quality check against a computer print of altered reports.

In both cases, area and list, the proposed coding permits a computer check on the stat actions and a statistician's verification of computer actions.

Any modification of an existing program should have a measure of the impact to the survey indication caused by the change. Fortunately, as a byproduct of the coding necessary for quality control over the new procedures, it will also be possible to generate the survey indications to compare the list dominant with the partial nonoverlap procedure and, for surveys after the base period, the frozen domain approach with the earlier area tract enumeration.

An outside review team commissioned by the Statistics Unit has documented the need for more quality control as a high priority issue. The procedures described above are a step toward responding to this need in our enumerative and multiple frame surveys.



Economics, Statistics, & Cooperatives Service

U.S. Department of Agriculture
Washington, D.C. 20250

December ACREAGE & LIVESTOCK Enumerative Survey

State	District	Segment	Tract	Sub Tract
00000				

Response to this survey is voluntary and not required by law. However, cooperation is very important in order to establish acreage planted to wheat and rye and current livestock and poultry numbers. Facts about your farm or ranch will be kept CONFIDENTIAL and used only in combination with similar reports from other producers.

Segment Number: _____ Tract Letter: _____

County: _____

Cattle	Hogs	Chicken	Optional List ID
NOL (1) OL (2) EO (3)	NOL (1) OL (2) EO (3)	NOL (1) EO (3)	
402	403	404	

Respondent if different than operator in June _____

- I need to make sure that we have your (the operator's) name and address complete and correct.

411	412
Ct1	Hog

Name of Farm, Ranch or Operation: _____

Name of Operator: _____
(Last) (First) (Middle)

Address: _____
(Route or Street)

(City) (State) (Zip)

Phone No.: () _____

413	414
Ct1	Hog

In June, this tract was: Individually operated Jointly operated Managed Land

- How is this tract operated now:

Individually operated	-1	<input type="checkbox"/> Enter Code <input type="text" value="845"/>
Partnership or joint	-2	<input type="checkbox"/>	
Managed Land	-3	<input type="checkbox"/>	

In June the operator lived: Inside Outside....of this tract.

- Does the operator now live INSIDE or OUTSIDE the tract?

Inside -5 Enter Code 1
Outside -6

SECTION A--PARTNERSHIP OR JOINT OPERATION

Refer to face page to check box.
Operation partnership or joint

YES--Continue NO--Go to Section B

Earlier you indicated this operation was a partnership or joint arrangement.

1. Do all partners share equally in day-to-day decisions?

Total # Partners

YES - (consider the oldest as the operator)

425

NO - (the partner that makes most of the day-to-day decisions is the operator)

(Operators shown on face page must be the one making most day-to-day decisions or the oldest. Make corrections if necessary.)

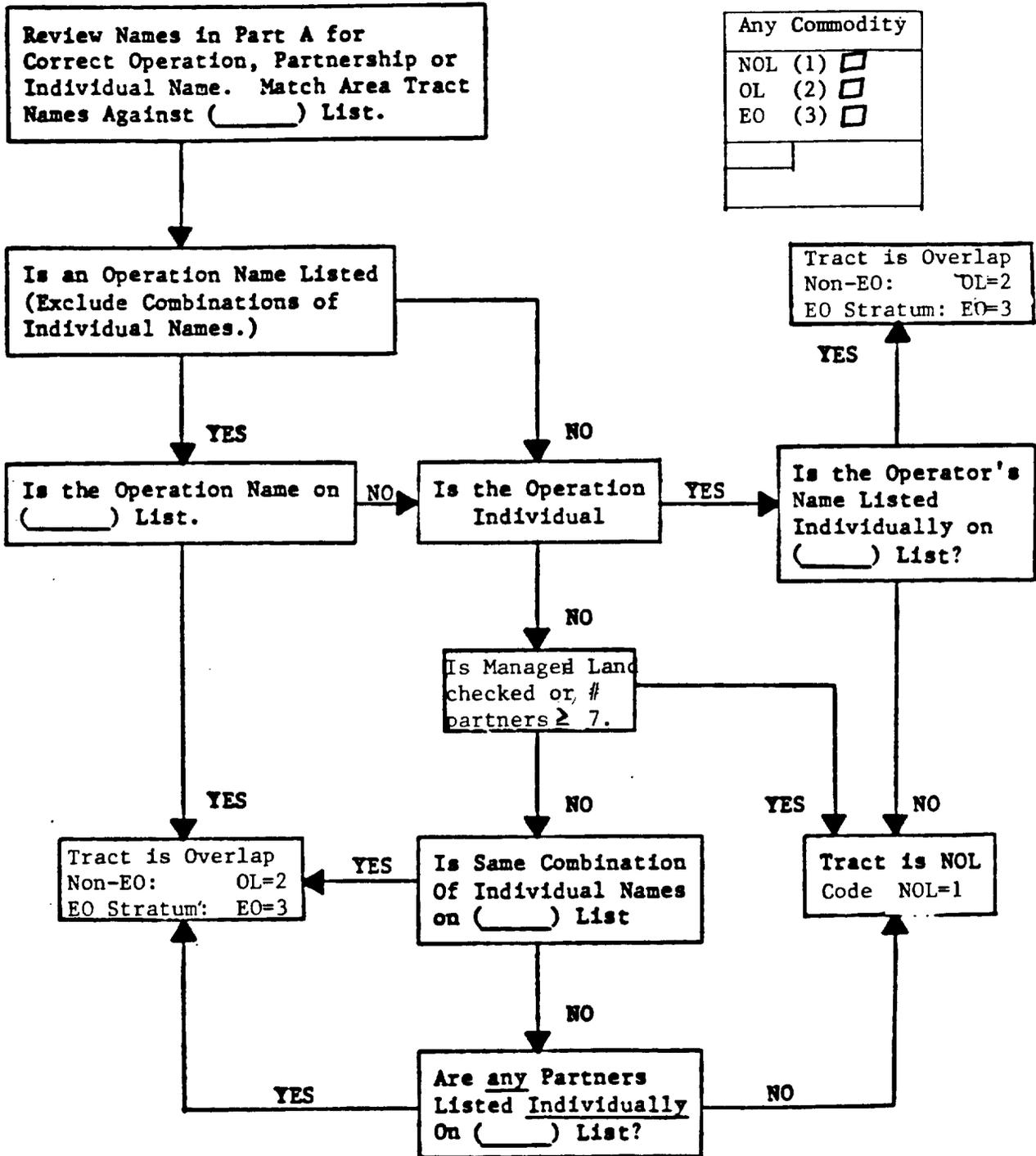
2. Now I would like to identify the other person(s) in this partnership or joint land operating arrangement. (Exclude landlord--Tenant, cash rent or share crop arrangements)

Name _____	_____	_____
(Last)	(First)	(Middle)
Address _____	_____	
	(Route or Street)	
_____	_____	_____
(City)	(State)	(Zip Code)
Phone Number () _____		
	415	416
	Ct1	Hog

Name _____	_____	_____
(Last)	(First)	(Middle)
Address _____	_____	
	(Route or Street)	
_____	_____	_____
(City)	(State)	(Zip Code)
Phone Number () _____		
	417	418
	Ct1	Hog

Name _____	_____	_____
(Last)	(First)	(Middle)
Address _____	_____	
	(Route or Street)	
_____	_____	_____
(City)	(State)	(Zip Code)
Phone Number () _____		
	419	420
	Ct1	Hog

Determination of Overlap and Nonoverlap
Between Agricultural Tracts and Lists



Any Commodity	
NOL (1)	<input type="checkbox"/>
OL (2)	<input type="checkbox"/>
EO (3)	<input type="checkbox"/>



Economics, Statistics, & Cooperatives Service

U.S. Department of Agriculture

HOG AND PIG SURVEY

December 1,

C.E. 110087a

Stratum	ID	Tract	Subtract	
00		01	01	
Survey	Resp.	Office	Office	Research
13	910	911	920	821
1				1

Dear Reporter:

Your HELP is needed to MAKE HOG and PIG ESTIMATES as ACCURATE as possible.

Your name was selected in a small sample of farmers in the State and a report is needed even if you have no hogs and pigs or only a few. Questions refer to hogs and pigs on all the land you operate. Facts about your operation will be kept confidential and used only in combination with similar reports from other producers.

Response to this survey is voluntary and not required by law. However, your cooperation is very important to insure timely and accurate estimates.

Please help reduce survey costs by completing this inquiry and returning it as soon as possible. Should your report be delayed in reaching us, one of our interviewers may request your assistance by phone or in person. The enclosed envelope requires no stamp. Thank you.

Respectfully,

John W. Kirkbride, Chairman
Crop Reporting Board

Please make corrections in name, address and Zip Code, if necessary

Is your operation known by any other name than printed above?

NO

YES

Enter Name _____ 923

H O G A N D P I G I N V E N T O R Y

2. Are there now any hogs or pigs, regardless of ownership, on the land you now operate?

YES

NO

2a. Have there been any HOGS or PIGS on the land you operate since September ____?

YES Continue with Item 7, Page 2

NO Continue with Item 22, Page 4

(Please continue on Page 2)

PURCHASES

11. HOGS and PIGS PURCHASES since June 1, 19__ now on hand? (Include feeder pigs purchased) 317

If item 11 is zero, skip to item 13

12. FEEDER PIGS purchased during November 19__ 340
a. Average PRICE PER HEADDollars and Cents 341
b. Average WEIGHT PER HEADPounds 342

DEATHS AFTER WEANING

13. WEANED PIGS and OLDER HOGS that died during September, October and November 19__? 335

OPERATION DESCRIPTION OF LAND

Additional information is needed on your operation to assist in detecting possible duplication in reporting. (Please make any necessary corrections when operation description information has been entered below.)

18. Which of the following best describes your farming operation? (Check only one unless you, the individual or operation listed on the face page, have more than one operating arrangement.)

= 1 -- Individually operated land

= 2-7 - Partners jointly operate land and share in decision making

= 8 -- Hired manager of land owned by someone else

921

= 9 -- Do not now operate land for agricultural purposes. (Landlord, retired, out-of-business, etc.) Specify _____

Complete Items 19 and 21 only if Partnership is checked. Please make any corrections when operation description information is entered.

19. Who are the persons in this partnership or joint land arrangement with you?

a. Name _____ Phone No. () _____
(Last) (First) (Middle)
b. Address _____
(Route or Street) (City) (State) (Zip)
c. Partnership or Operation Name _____

925

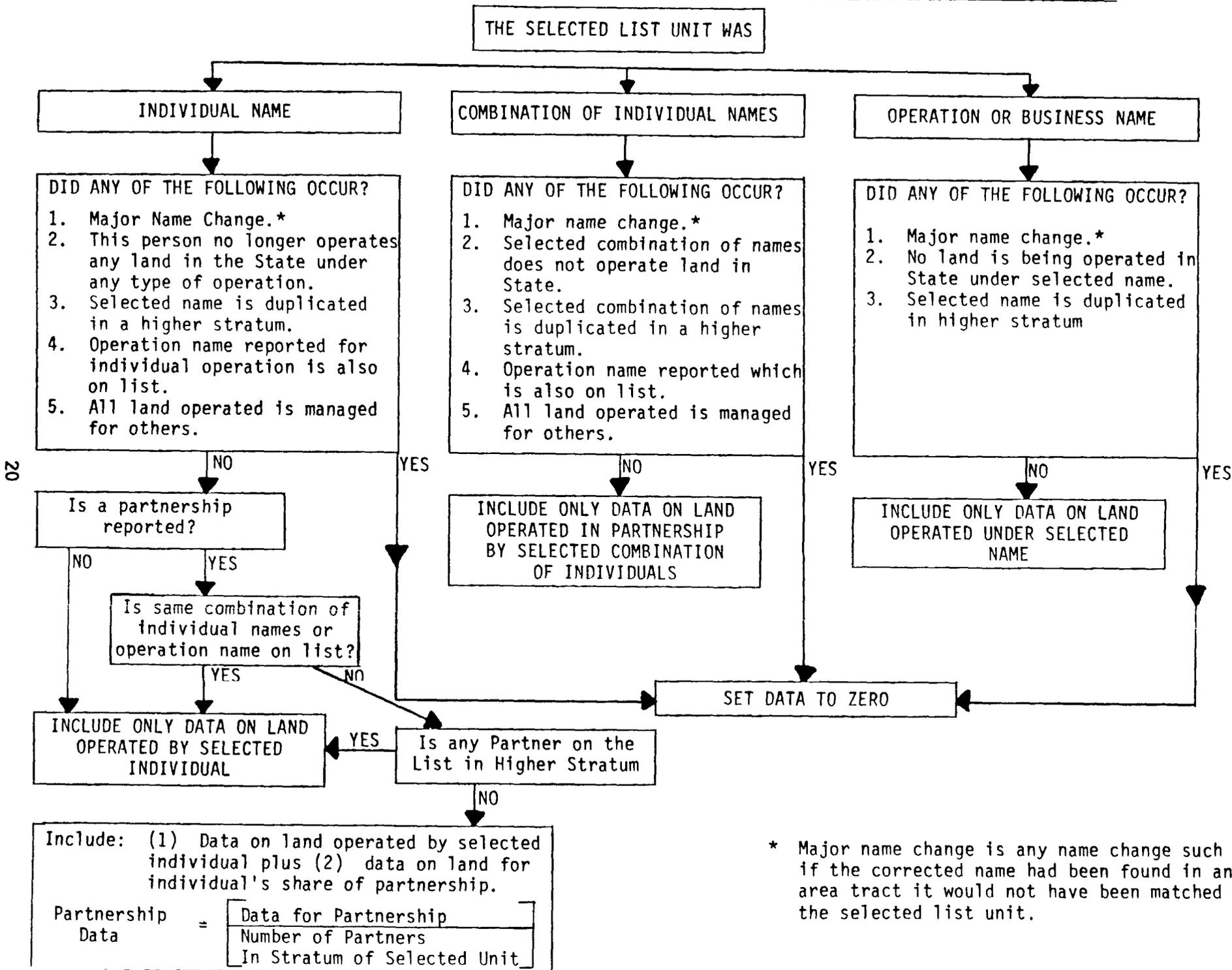
924

a. Name _____ Phone No. () _____
(Last) (First) (Middle)
b. Address _____
(Route or Street) (City) (State) (Zip)
c. Partnership or Operation Name _____

927

926

ACTION DIAGRAM FOR LIST QUESTIONNAIRES (EXCLUDES MARCH/SEPT. HOG NOL'S) - LIST DOMINANT



20

-- APPENDIX ILLUSTRATION 6 --

* Major name change is any name change such that if the corrected name had been found in an area tract it would not have been matched with the selected list unit.

Include: (1) Data on land operated by selected individual plus (2) data on land for individual's share of partnership.

Partnership Data	=	<table border="1"> <tr> <td>Data for Partnership</td> </tr> <tr> <td>Number of Partners</td> </tr> <tr> <td>In Stratum of Selected Unit</td> </tr> </table>	Data for Partnership	Number of Partners	In Stratum of Selected Unit
Data for Partnership					
Number of Partners					
In Stratum of Selected Unit					

-- APPENDIX ILLUSTRATION 7 --

All Tracts, Operators, and Acres In the "State"
(50 Hogs Per Tract or 350 Hogs In the State)

T01 OP. A 10 A. NOL	T02 OP. B 20 A. NOL	T03 OP. C 30 A. OL
T04 OP. A 40 A. NOL		T05 OP. C 50 A. OL
T06 OP. D&E (Partners) 20 A. NOL	T07 OP. D&E (Partners) 20 A. NOL	

Operator A, Tracts 01 & 04, Individual Op., NOL, 50 A., 100 Hogs
 Operator B, Tract 02, Individual Op., NOL, 20A., 50 Hogs
 Operator C, Tracts 03 & 05, Individual Op., OL, 80A., 100 Hogs
 Operators D & E, Tracts 06 & 07, Partnership, D-OL & E-NOL, 40A., 100 Hogs

DES BASE SURVEY

<u>List Dominant Procedure</u>	<u>Hogs</u>
T01, OP. A, Individ., NOL = 100 Hogs · $\frac{10A}{50A}$ (wt)	20
T02, OP. B, Individ., NOL = 50 Hogs · $\frac{20A}{20A}$ (wt)	50
T03 & T05, OP. C, Individ., OL = 100 Hogs	100
T04, OP. A, Individ., NOL = 100 Hogs · $\frac{40A}{50A}$ (wt)	80
T06 & T07, OP. D, 2 Ptners, OL = 100 Hogs	<u>100</u>
	350
<u>Partial OL/NOL Procedure</u>	
T01, OP. A, Individ., NOL = 100 Hogs · $\frac{10A}{50A}$	20
T02, OP. B, Individ., NOL = 50 Hogs · $\frac{20A}{20A}$	50
T03 & T05, OP. C, Individ., OL = 100 Hogs	100
T04, OP. A, Individ., NOL = 100 Hogs · $\frac{40A}{50A}$	80
T06 & T07, OP. D, Part., OL = 100 Hogs · 1/2 partners	50
T06, OP. E, Part., NOL = 100 Hogs · $\frac{20A}{40A}$ · 1/2 NOL	25
T07, OP. E, Part., NOL = 100 Hogs · $\frac{20A}{40A}$ · 1/2 NOL	<u>25</u>
	350

APPLICATION OF 'NEW FROZEN DOMAIN PROCEDURE FOR MARCH HOG SURVEY AND COMPARISON WITH PREVIOUS PARTIAL PROCEDURE

Example 7a: Suppose Operator B operates T01 and T03 as well as T02 in March

TRACT(S) OF LAND	OPERATOR(S)		TYPE OF OPERATION		ESTIMATION PERIOD		DESCRIPTION OF COMPUTATIONS	# OF HOGS & PIGS
	DEC	MAR	DEC	MAR	DEC	MAR		
							MARCH: NEW FROZEN DOMAIN PROCEDURE	
T01	A	B	I	I	NOL	NOL	(Frozen WT.) 10/50A* 50 Hogs (OP.A Still has one tract)	10
T02	B	B	I	I	NOL	NOL	(Frozen WT.) 20/20A* 150 Hogs (three tracts)	150
T03	C	B	I	I	OL	NOL	OL in December No chance of selection in March area frame	0
T04	A	A	I	I	NOL	NOL	(Frozen WT.) 40/50A* 50 Hogs	40
T05	C	C	I	I	OL	OL	50 Hogs (one tract only)	50
T06 & T07	D&E	D&E	P	P	OL	OL	100 Hogs (Reported from list by D)	100
							TOTAL ^{1/}	350
							MARCH: PREVIOUS PARTIAL PROCEDURE	
T01	A	B	I	I	NOL	NOL	(WT. Not Frozen) 10/60A* 150 Hogs	25
T02	B	B	I	I	NOL	NOL	(WT. Not Frozen) 20/60A* 150 Hogs	50
T03	C	B	I	I	OL	NOL	OL in December No chance of selection in March area frame	0
T04	A	A	I	I	NOL	NOL	(WT. Not Frozen) 40/40A* 50 Hogs	50
T05	C	C	I	I	OL	OL	50 Head (one tract only)	50
T06 & T07	D&E	D&E	P	P	POL	POL	100 Head (same as shown for December)	100
							TOTAL ^{2/}	275

^{1/} For NOL tracts that changed hands since the base survey but the former operator still farms in the state, freezing the weights requires the land and livestock of the original (December) operator be reported.

^{2/} This same result (275 head) would occur from using the list dominant procedure under the current rules of letting the weights change. An offsetting error from an OL operator taking over NOL land to produce duplication is needed to "average out" to the right answer.

APPLICATION OF NEW FROZEN DOMAIN PROCEDURE FOR MARCH HOG SURVEY AND COMPARISON WITH PREVIOUS PARTIAL PROCEDURE

Example 7b: Suppose Op. B buys out Op. A (Tracts 01 and 04) and T03 while Ops. D & E take over Tract 05.

TRACT(S) OF LAND	OPERATOR(S)		TYPE OF OPERATION		ESTIMATION PERIOD		DESCRIPTION OF COMPUTATIONS	# OF HOGS & PIGS
	DEC	MAR	DEC	MAR	DEC	MAR		
MARCH: NEW FROZEN DOMAIN PROCEDURE								
T01	A	B	I	I	NOL	NOL	(Frozen WT.) 10/50A* 0 Hogs (DES Op. out-of-bus. & new Op. not new to state)	0
T02	B	B	I	I	NOL	NOL	(Frozen WT.) 20/20/A* 200 Hogs (four tracts)	200
T03	B	B	I	I	OL	NOL	No chance of selecting tract in March area frame	0
T04	C	B	I	I	NOL	NOL	40/50A* 0 Hogs (See T01)	0
T05	C	D&E	I	P	OL	OL	Taken care of by Op. D on list	150
T06 & T0L	D&E	D&E	P	P	OL	OL	Taken care of by Op. D on list as above	
TOTAL ^{1/}								350
MARCH: PREVIOUS PARTIAL PROCEDURE								
T01	A	B	I	I	NOL	NOL	10/100A* 200 hogs	20
T02	B	B	I	I	NOL	NOL	20/100A* 200 Hogs	40
T03	C	B	I	I	OL	NOL	No chance of selecting tract in March area frame	0
T04	A	B	I	I	NOL	NOL	40/100A* 200 Hogs	80
T05	C	D&E	I	P	OL	POL	No chance of selecting tract in March area frame	0
T06 & T07	D&E	D&E	P	P	POL	POL	Op. D - 150 Hogs x 1/2 partners (three tracts)	75
T06 & T07	D&E	D&E	P	P	POL	POL	Op. E - 20A/90A* 150 x 1/2 NOL (T06) + 20A/90A x 150 x 1/2 NOL (T07)	33
TOTAL ^{2/}								248

^{1/}The same total is achieved even if both partners (D&E) were NOL because T05 goes to zero but then the completely NOL tracts T06 & T0L each supply 75 head ((Frozen WT.) 20/40A x 150 (three tracts) + 20/40A x 150).

^{2/}The list dominant procedure under current rules would yield 290 hogs in this example. If both partners (D&E) were NOL then the total for the list dominant under current rules would be 206 hogs because tracts 06 & 07 would contribute only 66 hogs.

APPLICATION OF NEW FROZEN DOMAIN PROCEDURE FOR MARCH HOG SURVEY AND COMPARISON WITH PREVIOUS PARTIAL PROCEDURE

Example 7c: Suppose the partnership D(OL) and E(NOL) split up and operate separately in March (D-T06 & E-T07)

TRACT(S) OF LAND	OPERATOR(S)		TYPE OF OPERATION		ESTIMATION PERIOD		DESCRIPTION OF COMPUTATIONS	# OF HOGS & PIGS
	DEC	MAR	DEC	MAR	DEC	MAR		
MARCH: NEW FROZEN DOMAIN PROCEDURE								
T01	A	A	I	I	NOL	NOL	10/50A* 100 Hogs	20
T02	B	V	I	I	NOL	NOL	20/20A* 50 Hogs	50
T03 & T05	C	C	I	I	OL	OL	100 Hogs (from list)	100
T04	A	A	I	I	NOL	NOL	40/50A* 100 Hogs	80
T06	D&E	D	P	I	OL	OL	50 from D and 50 from E list frame ^{1/}	100
TOTAL								350
MARCH: PREVIOUS PARTIAL PROCEDURE								
T01	A	A	I	I	NOL	NOL	10/50A* 100 Hogs	20
T02	B	B	I	I	NOL	NOL	20/20A* 50 Hogs	50
T03 & T05	C	C	I	I	OL	OL	100 Hogs (from list)	100
T04	A	A	I	I	NOL	NOL	40/50A* 100 Hogs	80
T06	D&E	D	P	I	POL	OL	50 from list and 20/20A* 50 Hogs from DES, POL tract D	100
T07	D&E	E	P	I	POL	NOL	20/20A* 50 Hogs from DES POL tract E	50
TOTAL ^{2/}								400

^{1/} Both partners in base period must be accounted for on list questionnaires in March.

^{2/} Duplication results from partial procedure in March. The list dominant approach applied with the current rules would result in 300 hogs (undercount). This is because the POL tracts 06 and 07 would have been entirely OL in the DES so only operator D (50 head) would have had a chance of selection in March.

APPLICATION OF NEW FROZEN DOMAIN PROCEDURE FOR MARCH HOG SURVEY AND COMPARISON WITH PREVIOUS PARTIAL PROCEDURE

Example 7d: Suppose partnership operators D&E were both NOL in December and add operator C as a partner before March 1.

TRACT(S) OF LAND	OPERATOR(S)		TYPE OF OPERATION		ESTIMATION PERIOD		DESCRIPTION OF COMPUTATIONS	# OF HOGS & PIGS
	DEC	MAR	DEC	MAR	DEC	MAR		
							MARCH: NEW FROZEN DOMAIN PROCEDURE	
T01	A	A	I	I	NOL	NOL	10/50A* 100 Hogs	20
T02	B	B	I	I	NOL	NOL	20/20A* 50 Hogs	50
T03 & T05	C	C,D&E	I	P	OL	OL	200 (List operator now reports for four tracts)	200
T04	A	A	I	I	NOL	NOL	40/50A* 100 Hogs	80
T06 & T07	D&E	C,D&E	P	P	NOL	OL	0 Hogs (Represented by list operator C)	0
							TOTAL ^{1/}	350
							MARCH: PREVICUS PARTIAL PROCEDURE	
T01	A	A	I	I	NOL	NOL	10/50A* 100 Hogs	20
T02	B	B	I	I	NOL	NOL	20/20A* 50 Hogs	50
T03 & T05	C	C,D&E	I	P	OL	OL	200 Hogs/3 Partners regardless if on list	66
T04	A	A	I	I	NOL	NOL	40/50A* 100 Hogs	80
T06	D&E	C,D&E	P	P	NOL	NOL	20/120A* x 200 Hogs x 2/3 NOL	22
T07	D&E	C,D&E	P	P	NOL	NOL	20/120A* x 200 Hogs x 2/3 NOL	22
							TOTAL ^{2/}	260

^{1/} By allowing Tracts 06 and 07 to become OL with additional on-list operator produces proper total hogs.

^{2/} The partial procedure requires offsetting duplication. The list dominant procedure under the existing rules would result in 416 hogs requiring offsetting omission. The overcount results because the 200 hogs reported by operator C would be divided only by the number of partners on the list (1) for the list dominant procedure.

APPLICATION OF NEW FROZEN DOMAIN PROCEDURE FOR MARCH HOG SURVEY AND COMPARISON WITH PREVIOUS PARTIAL PROCEDURE

Example 7e: Suppose a person new to the state (Operator F) buys tracts 02, 03, and 04.

TRACT(S) OF LAND	OPERATOR(S)		TYPE OF OPERATION		ESTIMATION PERIOD		DESCRIPTION OF COMPUTATIONS	# OF HOGS & PIGS
	DEC	MAR	DEC	MAR	DEC	MAR		
							MARCH: NEW FROZEN DOMAIN PROCEDURE	
T01	A	A	I	I	NOL	NOL	(Frozen) 10/50A* 50 Hogs (one tract in March)	10
T02	B	F	I	I	NOL	NOL	(Frozen) 20/20A* 150 Hogs (substitute Op F for out-of-business NOL operator)	150
T03	C	F	I	I	OL	NOL	No chance of selection in list or area frame in March	0
T04	A	F	I	I	NOL	NOL	(Frozen) 40/50A* 50 Hogs (Op A still operates in March)	40
T05	C	C	I	I	OL	OL	50 from list frame (one tract)	50
T06 & T07	D&E	D&E	P	P	OL	OL	100 from list frame	100
							TOTAL ^{1/}	350
							MARCH: PREVIOUS PARTIAL PROCEDURE	
T01	A	A	I	I	NOL	NOL	10/10A* 50 Hogs	50
T02	B	F	I	I	NOL	NOL	20/90A* 150 Hogs	33
T03	C	F	I	I	OL	NOL	No chance of selection	0
T04	A	F	I	I	NOL	NOL	40/90A* 150 Hogs	67
T05	C	C	I	I	OL	OL	50 from list	50
T06 & T07	D&E	D&E	P	P	POL	POL	100/2 (from list) + 20/40A* x 100 x 1/2 NOL + 20/40A* x 100 x 1/2 NOL	100
							TOTAL ^{2/}	300

^{1/} New operators to the state are substituted if the base survey operator has gone completely out of business. This occurs for both the list frame and the area frame (weight still frozen).

^{2/} The list dominant procedure under the present rules would result in the same number of head (300) as the partial.

APPLICATION OF NEW FROZEN DOMAIN PROCEDURE FOR MARCH HOG SURVEY AND COMPARISON WITH PREVIOUS PARTIAL PROCEDURE

Example 7f: Suppose a person new to the state (Operator F) buys tracts 03, 04, and 05.

TRACT(S) OF LAND	OPERATOR(S)		TYPE OF OPERATION		ESTIMATION PERIOD		DESCRIPTION OF COMPUTATIONS	# OF HOGS & PIGS
	DEC	MAR	DEC	MAR	DEC	MAR		
							MARCH: NEW FROZEN DOMAIN PROCEDURE	
T01	A	A	I	I	NOL	NOL	(Frozen) 10/50A* 50 Hogs (one tract)	10
T02	B	B	I	I	NOL	NOL	20/20A* 50 Hogs	50
T03 & T05	C	F	I	I	OL	OL	150 (substitution for out of business list operator)	150
T04	A	F	I	I	NOL	NOL	(Frozen) 40/50A* 50 Hogs (Op A still operates)	40
T06 & T07	D&E	D&E	P	P	OL	OL	100 Hogs (from list)	100
							TOTAL	350
							MARCH: PREVIOUS PARTIAL PROCEDURE	
T01	A	A	I	I	NOL	NOL	10/10A* 50 Hogs	50
T02	B	B	I	I	NOL	NOL	20/20A* 50 Hogs	50
T03 & T05	C	F	I	I	OL	OL	150 (substitution for out of business list operator)	150
T04	A	F	I	I	NOL	NOL	40/120A* 150 Hogs	50
T06 & T07	D&E	D&E	P	P	POL	POL	100 Hogs from combination list and area	100
							TOTAL	400

APPLICATION OF NEW FROZEN DOMAIN PROCEDURE FOR MARCH HOG SURVEY AND COMPARISON WITH PREVIOUS PARTIAL PROCEDURE

Example 7g: Suppose a person new to the state (Operator F) buys T04 and T05.

TRACT(S) OF LAND	OPERATOR(S)		TYPE OF OPERATION		ESTIMATION PERIOD		DESCRIPTION OF COMPUTATIONS	# OF HOGS & PIGS
	DEC	MAR	DEC	MAR	DEC	MAR		
							MARCH: NEW FROZEN DOMAIN PROCEDURE	
T01	A	A	I	I	NOL	NOL	(Frozen) 10/50A* 50 Hogs	10
T02	B	B	I	I	NOL	NOL	20/20A* 50 Hogs	50
T03	C	C	I	I	OL	OL	50 (list frame) (List operator still operates)	50
T04	A	F	I	I	NOL	NOL	(Frozen) 40/50A* 50 Hogs (NOL operator still operates)	40
T05	C	F	I	I	OL	NOL	No chance of selection from list (C still operates) or area (OL in Dec)	0
T06 & T07	D&E	D&E	P	P	OL	OL	100 Hogs (from list)	100
							TOTAL ^{1/}	250
							MARCH: PREVIOUS PARTIAL PROCEDURE	
T01	A	A	I	I	NOL	NOL	10/10A* 50 Hogs	50
T02	B	B	I	I	NOL	NOL	20/20A* 50 Hogs	50
T03	C	C	I	I	OL	OL	50 (list frame)	50
T04	A	F	I	I	NOL	NOL	40/90A* 100 Hogs	40
T05	C	F	I	I	OL	NOL	No chance of selection	0
T06 & T07	D&E	D&E	P	P	POL	POL	100 Hogs from combination of list and area	100
							TOTAL ^{2/}	294

^{1/} The new procedure is not perfectly clean. New to state operators buying only parts of various operations must be offset by new operators buying entire farms from both list and NOL operators. Because of the substitution rule for both frames there would then be duplication.

^{2/} Current rules for partial or list dominant approach (also 294 head) are also not clean.