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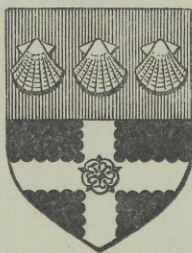
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Farm management



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**BUDGETARY CONTROL AS AN AID TO
FARM MANAGEMENT**

By

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BUDGETARY CONTROL AS AN AID TO

FARM MANAGEMENT

The last decade has seen a great advance in the use of analytical and planning techniques as an aid to farm management. This study considers the need for suitable control techniques once a particular farm plan has been adopted. The author is indebted to those colleagues and farmers with whom these techniques have been discussed.

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I. Introduction

The widespread giving of 'farm management' advice began in the early 1950's when the war time and post war urge for higher output gave way to considerations of cost and the more efficient use of resources. Since then a great deal of time and thought has been spent by agricultural economists and advisers in the development of satisfactory ways of analysing and planning the farm business. Gradually the tools employed have been sharpened and recently the emphasis has been changing from 'analysis of the past' to 'planning for the future'. The day may not be so very far away when the farmer's main concern will be to select the most suitable of alternative plans provided for him by electronic computer.

It is frequently and rightly claimed by the adviser, however, that the real and lasting problems of farm management in practice are the implementation of a plan and its day to day control; and that these tasks begin, not end, where the computer (human or mechanical) leaves off. It is somewhat surprising, therefore, that the study of farm business control has been so neglected and that most of the current thought and development in the farm management field is still concerned with the further sophistication of analytical and planning techniques: so much so that the latest of these techniques seem to have far outstripped those dealing with implementation and control.

This study considers the scope for a simple technique by which budgets are used to assist farmers in the economic control of

their businesses. The technique is known as 'budgetary control'. It is already widely used in manufacturing industry and a few progressive farmers have developed appropriate methods of their own. These, however, are the exception. For the mass of farmers some simple guidance in how to pursue a given plan, and how to identify, explain and, where necessary, remedy deviations from that plan could be of more assistance than the further refinement of the plan itself.

The advantages of budgetary control need not, however, be confined to the farmer. As a means of measuring the progress of a farm towards a given objective, it could provide the farm adviser with a direct check on the effectiveness of his advice. This could make an important contribution to what is perhaps the most neglected aspect of farm management advisory work in recent years - the 'follow up', and incidentally could diminish reliance on the increasingly criticised use of comparative analysis.

These and other aspects of the help that 'budgetary control' could offer the farmer and his adviser are discussed in the following pages.

II. The need and scope for budgetary control

Farm business management as it has been evolved in recent years contains three main stages of work. These are:-

- (i) The keeping of records
- (ii) The examination of those records, and
- (iii) Planning ahead.

'Budgetary control' adds a fourth stage to this sequence, namely the checking of performance against a plan, leading subsequently to corrective action on the farm and to successive refinements of the plan itself.

The fact that agriculture has lagged behind manufacturing industry in the application of this technique is largely explained by two facts. First, by the relative smallness of most farm businesses, and secondly by the existence in farming of various overlapping production cycles. Generally speaking the smallness of the farm business has excluded the accountant and his management techniques from employment as part of the farm firm. At the same time the various seasonal production cycles in farming seem, at least at first sight, to restrict the possibility of any very frequent or useful checks on 'in-cycle' performance.

There is much, for instance, in the arable and livestock rearing sectors of farming and in the use of discrete or 'lumpy' inputs - notably labour and machinery - that offers relatively little scope for day to day control in the financial sense once an annual programme has been set in motion. Clearly, this is not to deny the scope for the daily physical control over how particular resources are put to work, but rather to recognise the frequently severe limitations to controlling

the cost of those resources once the decision to employ them has been made. The decision, for example, to grow a particular acreage of corn immediately involves certain anticipated expenditure on such items as seeds, fertilisers and sprays. It calls also for a given complement of men and machinery in order to handle the crop at all stages of its growth, harvesting and storage, and certain returns are anticipated from the sale of the crop or from its use on the farm. Attention to technical and commercial details throughout this cycle can, of course, help to maximise the anticipated profit from the enterprise, but there is relatively little that can be done during the production cycle to control or alter in a very substantial way the anticipated flow of expenditure. This has been largely determined and fixed by the initial decision to grow corn on a given scale and, ultimately, the weather may have more influence than anything else on the final return.

This type of limitation to financial or physical checks on many aspects of farming requires two important qualifications. First, there are those sectors of farming which do in fact lend themselves to and need frequent checking. The so-called 'factory enterprises' with their continuing and controllable flow of feed inputs provide the best example of this. These enterprises will be considered separately in Section III. Secondly, if applied at the right time of the year and at the right time interval, a periodic check on performance can be usefully made on all sectors of a farm. Since the final profit on most farms results from a combination of activities, it is especially important for the entrepreneur :-

- (a) to know how far those activities, when combined into a farming system, can be reasonably expected to produce a required profit, and
- (b) to check, periodically, how far such expectations are in fact realised.

In other words, it is important to have an annual budget for the whole farm and to check actual performance against that budget.

It is true to say that the majority of farmers do not make use of budgets in this way and are, therefore, limited in the extent to which they can carry out any systematic annual check on the success of their businesses. Here, of course, they are not very different from many of their counterparts in other sectors of the economy. More often than not they are aware only of a 'target income' which, in round figures, they need to maintain over the years in order to enjoy an accustomed standard of living. Seldom is this income related to the capital invested in the business and many farmers have admitted in discussion that their criterion of success is often cruder than the one suggested here. So long as there is money in the bank (or the overdraft has not increased) everything is in order!

In fact, no target that is expressed in terms of the result alone, without some account being taken of how that result is likely to be produced, can provide a really satisfactory check on the success of a farm or any other business. The point has already been made that most farm profits result from a combination of activities and that these profits are frequently relatively small in comparison with the value of

associated inputs and outputs. Relatively small changes in some of these larger items can, therefore, have severe repercussions on the much smaller profit figure - either by altering its actual size (upwards and downwards) or, where compensating changes have occurred, by allowing efficiency in one sector of the farm to mask inefficiency in another.

It is precisely this inefficiency that budgetary control helps first to locate and then to explain. It does so by enabling a check to be made on each sector of the business against predetermined expectations which have been expressed in the form of a budget. The preparation and use of budgets for this purpose is considered in the following section.

III. Whole-farm budgets as an aid to control.

More often than not whole-farm budgets are prepared only when a farmer is taking over a new farm or when he is contemplating radical changes to an existing system; changes that make partial budgeting both difficult and inadequate. In these circumstances, the main purpose of a budget is to provide an indication of final profit. This figure enables an existing system to be compared with alternatives and one alternative to be compared with another. The detailed items that have made up the budget are, in this context, of secondary importance and for this reason are frequently 'lost' in presentation. Thus, the style of the following budget for a 250 acre farm with 40 dairy cows, 80 ewes, a 20 sow breeding unit and 130 acres of barley, is not untypical of the way in which many budgets are presented to farmers by advisers in the field:-

| <u>Output</u> | £ |
|---------------|--------|
| Milk | 4,816 |
| Cattle | 30 |
| Sheep | 652 |
| Barley | 4,680 |
| Pigs | 1,370 |
| <hr/> | |
| Total | 11,548 |

| <u>Costs</u> | |
|---------------------|-------|
| Bought food | 2,160 |
| Bought seed | 550 |
| Fertiliser | 810 |
| Wages | 1,920 |
| Rent | 875 |
| Power and Machinery | 1,750 |
| Sundries | 875 |
| <hr/> | |
| Total | 8,940 |

Net Farm Income £2,608

Underlying each figure here are assumptions about potential performance on the farm. The main object of this budget, however, has been to indicate the order of profit from a system, and for this reason the details behind the figures do not appear - just as the details of valuations seldom appear in farm trading accounts. And like most trading accounts, budgets of this type, having fulfilled their primary function, are seldom consulted again.

The whole essence of budgetary control is in complete contrast with this conventional use of budgets. The assumptions that are made about performance and which underlie each figure in the budget must be shown and at appropriate intervals actual performance must be checked against these assumptions. Without this detail and the periodic checking there is no budgetary control.

The whole purpose of such control is to spot and to help explain deviations from intention. The amount of detail that needs to be shown in a budget prepared for control purposes depends on the accuracy with which these deviations are to be explained. Using the budget above, the following example will help to illustrate this point:-

| <u>Output</u> | <u>Budget</u> | <u>Actual Result</u> | <u>Difference</u> |
|------------------------|---------------|----------------------|-------------------|
| | £ | £ | £ |
| Milk | 4,816 | 3,850 | - 966 |
| Cattle | 30 | 64 | + 34 |
| Sheep | 650 | 546 | - 106 |
| Barley | 4,680 | 4,219 | - 461 |
| Pigs | 1,370 | 1,620 | + 250 |
| Total | 11,548 | 10,399 | -1,249 |
| <u>Costs</u> | | | |
| Bought food | 2,160 | 2,590 | + 430 |
| Bought seed | 550 | 574 | + 24 |
| Fertilisers | 810 | 812 | + 2 |
| Wages | 1,920 | 1,947 | + 27 |
| Rent | 875 | 875 | - |
| Power and Machinery | 1,750 | 1,600 | - 150 |
| Sundries | 875 | 750 | - 125 |
| Total | 8,940 | 9,148 | + 208 |
| <u>Net Farm Income</u> | 2,608 | 1,151 | -1,457 |

Here the differences between the budget and the actual results have been measured but have not been explained. Attention is focussed on the production of milk and barley and the use of bought feed. But there is no indication from the analysis as to why the differences in these or any other items exist. Effective budgetary control needs to answer the question 'why?' or at least force management to answer it. There are, of course, a multitude of technical and commercial reasons

why a particular budget or target may not be reached in practice. Deficiencies of capital, of planning, or of organisational ability; lack of timeliness in cultivations or in marketing; inadequate disease control; the misuse of feedingstuffs or, simply, unplanned expenditure - all of these and countless other reasons could contribute towards failure, while influences in the opposite directions may mean that the target is exceeded. Usually there will be a combination of influences involved and there will be some 'overshooting' and some 'undershooting' of the target. In one recently encountered example the actual and budgeted farm profits were identical to within £1. But in fact unfavourable deviations for specific items totalled £3,932, and favourable ones £3,931. This emphasises the possibility of under and over-shooting; and that a budget is by no means a blue print to be slavishly followed. Favourable deviations should be welcomed and exploited. Unfavourable ones checked and corrected.

If budgetary control is to help management and not to confuse it, then this type of complex situation must be explained in relatively simple terms. One means of doing this is to accept that all unfavourable deviations from a plan can be explained initially by one of three reasons. The first concerns the longer term strategy of the plan and the second and third the current tactics:-

- (i) Because, physically speaking, the plan underlying the budget has not been fully implemented, (eg. shortage of cow numbers).
- (ii) Because (irrespective of the physical plan) the specified rate of output per unit has not been achieved, either in

terms of quantity (e.g. gallons of milk per cow)
and/or in terms of prices (e.g. pence per gallon).

- (iii) Because (again, irrespective of the plan) the specified rate of inputs have been exceeded either in terms of physical units (e.g. cwt. of concentrates) and/or in terms of the price of these units (e.g. £'s per ton).

Favourable deviations will, of course, be explained by similar influences acting in the opposite direction and if, in any comparison of actual and planned results, all differences between the two are to be explained in this way, then it follows that both the budget and the actual results must be shown in the appropriate detail. This simply means that they must show:-

- (i) The number of productive units involved in the plan (i.e. cropping and stocking)
- (ii) The output from this plan in both physical and financial terms, and
- (iii) The inputs associated with the plan again in physical and financial terms.

If, for instance, the milk production figures in the illustration above had been expressed in these terms, then the difference of £966 could not only have been measured in total (as it was there) but also the reason for this difference could have been described, as follows, in terms of deficiencies in the plan (e.g. number of cows), and deficiencies in the yield per cow and the price per gallon:-

| | <u>Plan</u> | <u>Yield</u> | <u>Price</u> | <u>£</u> |
|-----------------------------------|-----------------------------|----------------------|----------------------|----------|
| <u>Budget:</u> | 40 cows x 850 galls.per cow | x 2/10d.per gall. | = | 4,816 |
| <u>Actual Results:</u> | 35 cows x 800 galls.per cow | x 2/9d. per gall. | = | 3,850 |
| <u>Difference</u> | -5 cows | -50 galls.per cow | -1d. per gall. | -966 |
| <u>Share of total difference:</u> | -£550 ⁽¹⁾ | -£275 ⁽²⁾ | -£141 ⁽³⁾ | -£966 |

Equipped with this type of analysis for each item in the farm budget, management is then in a position to answer the following questions:-

- (a) Which particular sectors of the farm are most responsible for any overall deficiency in profit?
- (b) What aspects of management are most responsible for deviations within these sectors, (including here the possibility that the budget itself has been unreasonable)?
- (c) How far the correction of deviations is possible and desirable?
- (d) What, in fact, should be done?

Appendix I illustrates the application of this technique to the farm situation described earlier in this section. The comparison of actual with budgeted results (Sections A and B) shows that the planned number of cows and acres of corn were not quite reached and that in various sectors of the business the physical and financial targets have been either missed, reached or exceeded by varying degrees. These variations have then been measured (Section C) and finally explained in relation to the specified plan, output and inputs (Section D).

-
- (1) 5 cows x 800 galls. per cow x 2/9d. per gall.
 - (2) 50 gallons x 40 cows x 2/9d. per gall.
 - (3) 1d. per gallon x 40 cows x 850 gallons per cow.

Critics of this approach to the control problem would no doubt point out that it is beset at the very outset with all of the uncertainties associated with budgeting ahead; ⁽¹⁾ that the subsequent comparison of actual results with the budget contains its own special problems, ⁽²⁾ and, most important of all, that the analysis comes too late: that the stable door is closed after the horse has bolted!

Nobody would deny that, in this context, dealing with ancient history should be avoided whenever possible. But the fact is that except in the case of those items to be considered in the next section there is frequently, in agriculture, a time lag between the moment when accounting and other types of information can first be made available to management and the moment when action, based on that information, can be taken. As explained earlier the level of many items in a year's trading has been more or less fixed once the annual programme has been set in motion. Subsequent action based on what these levels actually turn out to be can only influence decisions about the next annual programme. In other words, if one horse has already bolted what really matters is that the stable door is closed at the right time in order to prevent a second horse from doing so - and it matters little if the door remains open when there is no horse left in the stable! What usually matters is that the stable door is closed by the late autumn when it is not too late to make changes in anticipation of another season. For spring

(1) Some of these problems are discussed in Section V.

(2) See footnotes to Appendix I.

ending accounts, therefore, an analysis some time before autumn ploughing will often be adequate - while for an autumn ending account some forecast of the coming result may avoid a year's delay in effecting changes.

Perhaps more important, however, than the time when this particular technique should be used, are the advantages it can offer the average farmer. In the first place it deals with the whole farm business - and ultimately it is the profit from the whole farm that determines success or failure. Secondly, coupled with a budget, it makes use of the information that is available to him in a document that all farmers have anyhow, namely the annual trading account. So long as this account shows or is backed elsewhere in the farm records by a reasonably detailed description of all transactions and valuations the subsequent analysis involved is relatively simple and one that, with some initial guidance, many farmers could complete for themselves. The detail in which the farmer decides to employ the technique could depend on his own circumstances and wishes. There is little doubt that in many cases the simple measure of difference illustrated on page 8 would be a substantial advance on any method of control hitherto practiced. Probably something between this and the full analysis shown in Appendix I would be adequate on most farms. A simple worksheet for this purpose is illustrated in Appendix II.

IV. Performance checks during the year

Section III dealt with the use of an annual check on performance based on a farm trading account and a predetermined target. It also referred to the need, wherever possible and useful, for more frequent checks on performance. The purpose of this section is to discuss the main principle that underlies these checks.

Firstly, it is suggested, that the opportunities for this type of 'in-cycle' check are confined primarily to those activities where a continuous and measurable flow of resources is being used. The principal example of this situation is in the use of concentrated feeding-stuffs in the 'factory enterprises', including dairying other than during the purely grazing season. There are, however, other inputs, such as labour, machinery and general farm expenses which are incurred in a more or less continuous flow and the control of these should at least be considered.

The factory enterprises

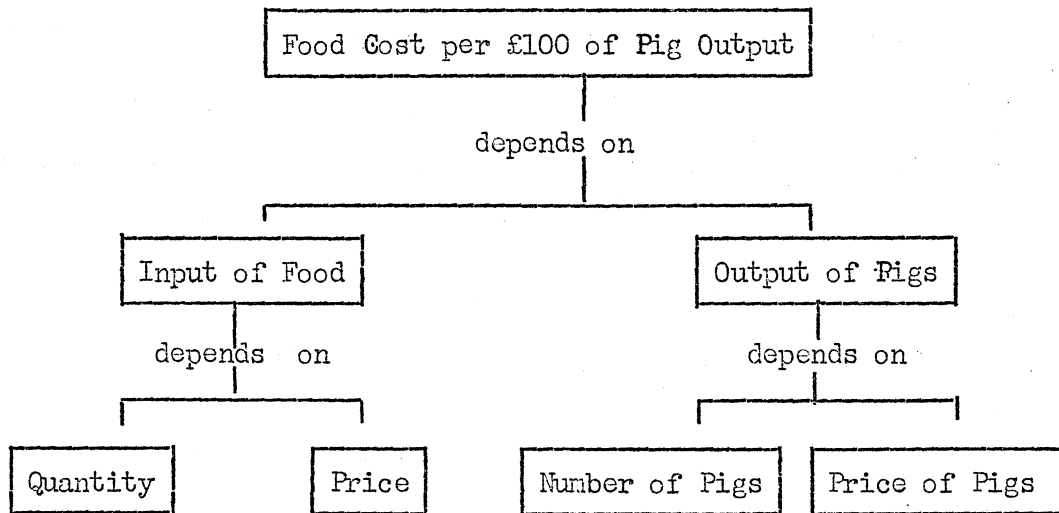
It is no coincidence that the word 'factory' is used to describe those enterprises where the opportunity in farming for the use of short period control techniques is greatest. Once the major policy decisions have been made about the scale of these enterprises, and about the buildings and the labour they require, day to day business management is concerned primarily with the efficient processing of food. Short period checks on these enterprises should, therefore, be concerned only with the items which are, in fact, controllable during the period in

question. The inclusion of items that are not controllable at the time is not only pointless from their own standpoint, but it frequently camouflages vital information about the controllable items. It is, for instance, of little immediate help in the case of milk production to calculate the "total food cost per gallon of milk", when this cost includes a charge for grazing which has probably been incurred sometime previously, which cannot be retrieved and which in any case can only be charged on an extremely arbitrary basis.

Unfortunately, the logic of this approach is only gradually being generally accepted. And even now as the N.A.A.S., private consultants, the trade and other organisations move increasingly into the management field, the farming community is confronted with a bewildering multitude of spot check techniques some of which do not fully embrace this basic principle. The influence of enterprise costing on this type of problem, with its frequently arbitrary allocation of overhead and joint costs has been a strong one, even though enterprise cost studies are, themselves, designed for an entirely different purpose.

The principles involved in a short period check can be simply demonstrated by reference to a pig enterprise. Here, day to day management is almost wholly concerned with the efficient conversion of food into pig meat. In the short run little else matters. The net financial result of this conversion can be measured in terms of 'Food Costs per £100 of Output' and the following diagram illustrates the dependence of this ratio on four basic elements, i.e.

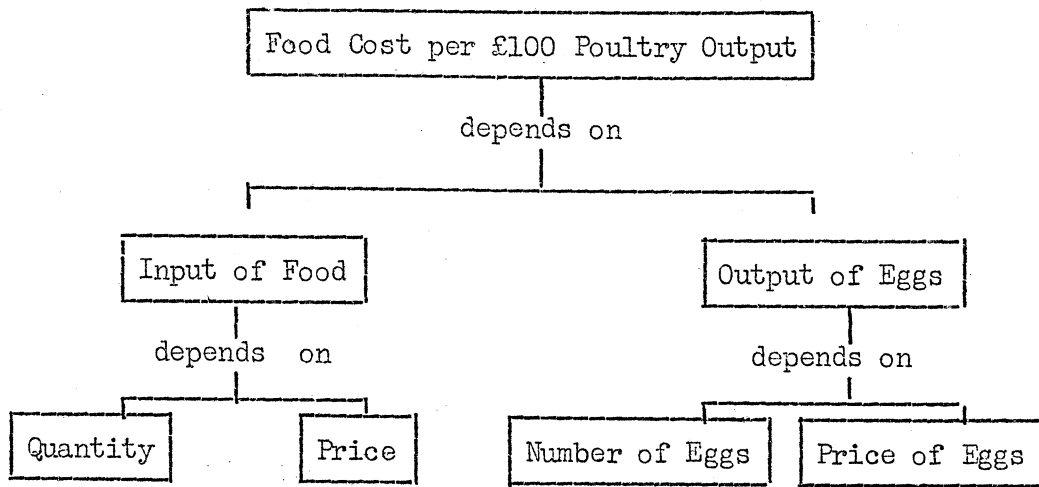
the quantity and cost of the food used and the number and price of the pigs produced.



Targets can be set for each of these items and actual performance checked against them. A poor result in terms of 'Food Costs per £100 of Output' can be caused (or hidden) by any one of them. No amount of cross calculation will usefully lead away from these four. It will certainly always have to return to them and short period performance checking, whether in isolation or as part of a wider budgetary control system, should concentrate on isolating the effects of each. Beyond that stage, management itself must take over from the figures in providing the final diagnosis. Checking the pig enterprise in this way is usually advocated on a six monthly basis. This accords with the natural production cycle and avoids the problem of the too frequent valuation of growing pigs. A simple monthly system, however, based on a six monthly moving average of sales and food-use is illustrated

at the foot of this page. Except when a change in the scale of enterprise is taking place this method offers a simple check on performance and avoids the valuation problem.

Similar principles operate in the case of Poultry where, once major policy decisions have been made, useful short period performance checks are virtually confined to the input of food and the output of eggs:-



This monthly pig check has been devised by and is reproduced here with the permission of Mr. B. M. Cook of Shillingford, Oxon.

| MONTH | PIG SALES | | | | FOOD USE | | | | EFFICIENCY MEASURES (6 monthly moving average) | | | | | |
|----------|------------------------|-----------------------------------|--------------|---------------------------------------|------------------|-----------------------------------|---------------|-----------------------------------|--|----------------------------|--------------------------|-----------------------|----------------------|-----------------------|
| | No. of pigs despatched | Cumulative total for last 6 mths. | Proceeds (£) | Cumulative total for last 6 mths. (£) | Food used (tons) | Cumulative total for last 6 mths. | Food used (£) | Cumulative total for last 6 mths. | Proceeds less Food cost (£) | Food cost as % of proceeds | Food per pig sold (cwts) | Food cost per ton (£) | Proceeds per pig (£) | Food cost per pig (£) |
| January | | | | | | | | | | | | | | |
| February | | | | | | | | | | | | | | |
| March | | | | | | | | | | | | | | |

etc. etc.

A check on these factors can be made as often as is required - but in contrast to pigs, seasonal differences will be important in the interpretation of results. The need, however, for a few simple and relevant measures rather than for endless and circuitous calculations is common to both enterprises.

Few enterprises have been the victim of more attempts at performance checking than has milk production. Even within a single service like the National Agricultural Advisory Service a multitude of approaches exist, varying in detail if not in aim.

In order to understand the aim of a short period check on dairy performance it is necessary to distinguish between three types of reasons why actual performance may not match expectation:

First, there are the long term strategic reasons involving, perhaps, deficiencies in the overall scale of the enterprise and the system of management. Such deficiencies are primarily the concern of once and for all decisions and are therefore associated with the annual rather than the short period check.

Secondly, there are intentional deviations in the short term such as the extra use of feedingstuffs in adverse weather conditions. The extent of these can be measured by a monthly check, but the deviation as such needs no further explanation.

Thirdly, there are unintentional deviations and it is in the discovery and explanation of these that the short period check on supplementary feeding in relation to output plays its really important role.

Recently, more and more of the checks in use have come to accept this principle and to be concerned only with this particular input/output relationship. In the words of one such check "once committed to a particular system of milk production, many costs such as wages and even the cost of growing forage crops are beyond your immediate control. The daily and weekly hand-feeding of your cows, however, is very much within your control and needs constant attention".

The N.A.A.S., somewhat embarrassed by its previous inability to offer a unified approach to this problem, is currently devising a scheme for national use. This should be welcomed so long as standardisation does not result in over-complication or a brake on development. The scheme seems likely to operate on the basis of a comparison between the actual concentrate/milk ratio in any month and an appropriate target for that month. Added together, the monthly targets would correspond to the annual target of conventional budgeting. The technical considerations underlying the preparation of these targets is not the concern of this study. Budgetary control is concerned more with what happens in fact, with how this differs from intention, with how these differences are explained and with what corrective action, if any, can be taken.

The main obstacle to answering these questions on most farms is a lack of knowledge of what food has in fact been consumed during a given period and by what enterprises. In turn, this implies the lack of an adequate system of 'stock control'. The essence of such control simply means knowing:-

- (a) what quantity of food is on hand at the beginning of a period
- (b) what quantities are introduced by purchase or home production during the period
- (c) what quantity is on hand at the end of the period
- (d) what quantity has therefore 'disappeared' during the period
(i.e. (a) + (b) - (c))

A reliable 'stock control' of this type is essential for all food consuming (and producing) enterprises if the economics of those enterprises is to be assessed with any degree of accuracy. Checked against an intended level of feeding it provides a measure of the accuracy with which those intentions have been carried out. In practice, however, all manner of difficulties seem to prevent the great majority of farmers from exercising this control. A few do so successfully and a study of their methods would make a valuable contribution to farm management. One of the few attempts within the industry to examine 'unintentional deviations from plan' was made recently by R.S.Cook. His assessment and explanation of "The Cost of Inaccuracy in Dispensing Concentrates to Dairy Cows" on 337 farms, embraces all the essential features of effective budgetary control in the dairy, i.e. having an intended level of feeding and measuring, explaining, and correcting, where possible, the actual deviations from this level.

Other flow type of expenditure

In addition to concentrated feed, three other farm inputs are used in a continuous if less obviously controllable flow. These are labour, and those items collectively labelled as 'Power and machinery'

and 'Miscellaneous' expenditure. Ignoring the question of machinery depreciation (which is not reflected in regular cash transactions in the way that machinery running costs are) these three items have one characteristic in common: they are not, in general, storable in the way that feedingstuffs, seeds and fertilisers are. Generally speaking they represent expendible services that, once employed, are used up in a more or less continuous flow. This is no doubt more true of labour than it is of machinery and miscellaneous costs but collectively, if not item by item, they too constitute a steady flow of outgoings. In this respect they could be likened to a stream in flow, as opposed to those items of expenditure (e.g. seed, fertiliser, rent) which are incurred at specific points of time and are then turned off, like a tap. When the tap is 'off' there is no need for further control. In contrast, the danger of the stream running unchecked immediately suggests the need for some control - or, at least, for some regular measurement. This measurement can best be made by a periodic check (say monthly) on the cumulative expenditure on these items. This can then be checked against:-

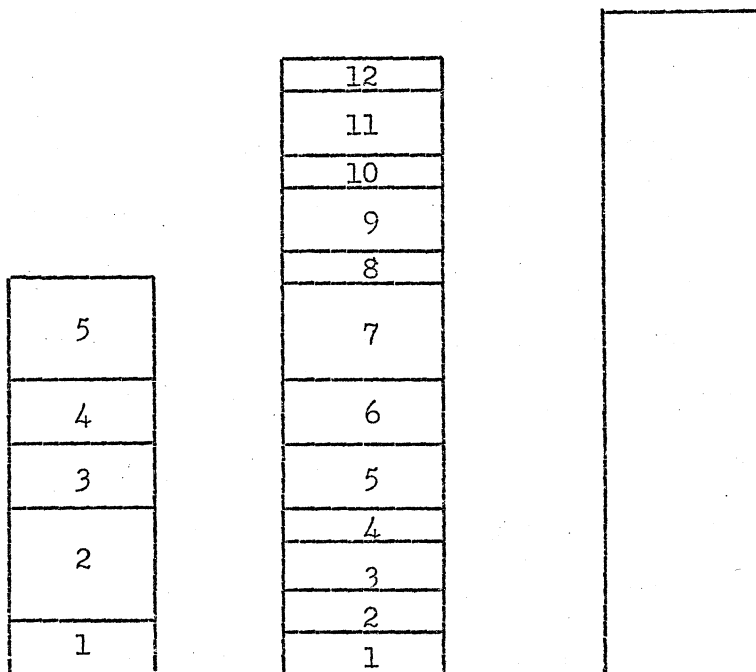
- (a) An annual target for these items taken from the overall farm budget, or
- (b) Expenditure during similar periods of the previous year (on which, presumably, (a) will be largely based anyhow).

This measurement could be recorded either by a graph or a histogram.

In histogram form it would appear as follows:-

Record of Miscellaneous Expenditure

| | | |
|--|--|---|
| Cumulative Ex- penditure to date (5 months) £ | Last year's expenditure in months £ | This year's Budget for whole year. £ |
|--|--|---|



How much control can in fact be exercised on the basis of this type of measurement is very much a matter for debate. Some farmers operating such checks would certainly claim that,

(a) they are of very real interest to management and

(b) that they help management to keep its finger on the pulse of the business. This could be particularly important to an absentee farmer employing a manager.

The histogram will certainly draw attention to whether or not expenditure is running at a relatively high or low level. In the illustration above, for example, it could be asked why, after five

months of the year, is miscellaneous expenditure running well above the level it had reached at that time in the previous year and has already absorbed over half of the year's budget?. It may be that the reason is beyond immediate control, and that because of some unforeseen contingency expenditure is inevitably higher than usual. But without this information, the question would never be asked - and even though the scope for action on this particular point may be limited, the mere knowledge of what is happening and of its possible effect on the year's results may well affect decisions over more controllable items elsewhere on the farm or over personal spending.

As yet farming has not evolved a satisfactory approach to the business control problem and there is immense scope for development in this field. How far a wider use could be made of the monthly check illustrated here is open to question. Some believe that budgetary control in farming would be most effectively exercised through a monthly measurement of all items of input and output on the farm - and that only in this way can the finger of management really be on the pulse of the business. The main objection to this from the point of view of the average farmer seems to be that he would be involved in considerable work, including the problem of dealing with short period valuation changes, much of which may well be of interest but not of direct assistance in decision making. Others have suggested that if every enterprise on the farm could be the subject of an appropriate short period check, then together with expenditure checks of the type

described above, they would provide a comprehensive basis for control. This would imply a 'building-up' of the various small parts of the business into a whole, rather than a breaking down of the whole into its component parts as suggested in Section III.

Bearing in mind the needs of the average farmer, it is believed that the trading account approach, supplemented by selected checks of the type described in this section, could minimise the work involved and maximise the use to which that work can be put.

V. Budgetary control and the adviser

So far this study has been concerned with the development of techniques that can assist the farmer in his capacity as a business manager. Budgetary control, however, has advantages also for the farm adviser and some of these are considered now.

First, it has already been claimed that the method of whole-farm budgetary control described in section III can help to pin-point the progress of a farm plan for the farmer concerned. It can do this also for his adviser. This fact could help to give more precision to his 'follow-up' work which many feel is the weakest aspect of current management advice. Frequently this work is conducted in fairly general terms, guided by what can actually be seen on the farm, by what the farmer says is happening and by the latest overall farm profit. All of these can be misleading. Even the direct comparison of one year's

trading account with another leaves much to be desired since, in that way, changes are measured against something which itself may have been very imperfect. On the other hand, comparison with a continually refined budget measures progress against a long term objective. It shows clearly those sectors of the farm where progress has not been made and it concentrates discussion upon them. This type of 'blinkerred' approach could greatly improve the effectiveness of follow-up work.

Secondly, this increased precision in follow-up work could itself help substantially in evaluating the effectiveness of farm management advice. Little or nothing is known about this aspect of the work over the past decade, other than by general impressions and by the publication of individual case studies. These are no substitute for some objective assessment. The problems involved in obtaining evidence of this sort are, of course, immense - and some of the chain reaction to advice will always elude measurement. Nevertheless, some reliable evidence in this field could have an important bearing on future policy. Wherever budgets are prepared and budgetary control is subsequently practised a precise measurement of how far a plan is accepted, and some insight into the reasons for acceptance or non-acceptance of the plan, could be obtained. It could provide advisory services with considerably more facts about their own impact than they have had hitherto.

Thirdly, by the use of a continually refined target, budgetary control could help to make advisers less dependent on the increasingly

criticised use of comparative analysis through local standards. As it happens, most of this criticism has stemmed from those who are not practical advisers and who, unlike the practical adviser, are frequently more concerned with the problems of maximisation than with those of improvement. They seem unable to accept standards only as "possible indicators of the directions in which improvements in management might be effected".⁽¹⁾ The value of comparative standards is perhaps greatest when the adviser is confronting a particular farm for the first time. In this situation he needs first to 'get his bearings' and then to begin to make judgements about the farm and the farmer on scant evidence. Comparative standards can usually help in these initial assessments and will no doubt remain part of the advisers' equipment for some time to come.

Most advisers, however, will also contend that each farm is a unique business unit, and that ultimately its performance must be judged against what is possible on the particular farm, taking into account all the resources that are or can be made available. And the most telling of these is usually the farmer himself. In other words each farm needs its own blueprint and this, budgetary control can help to provide.

No one would underestimate the difficulties of preparing whole-farm budgets. The difficulties are most acute in the case of the new entrant to farming where there is no guide at all from previous capability - but where guidance is nevertheless sought. When preparing

(1) C.H. Blagburn. Farm Standards and the theory of production: A Rejoinder. Journal of Agricultural Economics. Vol. XV. No. 2. December 1962.

budgets in these circumstances individuals naturally differ in the extent of their optimism and pessimism and in their estimates of what is necessary and what is not. These differences are then reflected in the statement of their expectations. If, in the preparation of a budget, this personal optimism or pessimism affects the assessment of each item, the cumulative effect on the final forecast can be quite startling. Appendix III illustrates the extent to which three separate assessments of a single situation can differ. On a 100 acre dairy farm, with 50 cows and 1 man, budget A shows a loss, budget B shows a reasonable return to the farmer's own labour and budget C shows also a substantial return to management and capital. There is probably no single assumption in any one of these budgets that most farm advisers would regard as particularly unrealistic - but in budget A pessimism has operated consistently in one direction; while in budget C optimism has done so - and the two forecasts differ by nearly £1800.

This difficulty of trying to forecast future events is no excuse, as is sometimes suggested, for not trying to do so. It is surely more reasonable, especially whenever investment is involved, to provide some estimate of future performance and rewards, mustering all the accuracy and experience that is available, than to proceed merely in hope. It is equally important, however, that as soon as possible this estimate of expectation is corrected in the light of what actually happens. ⁽¹⁾

(1) In addition there may well be radical alterations to a budget as changing circumstances call for alterations to the farm plan itself. Such alterations, however, lie in the field of replanning and not in the control of a given plan in the context of this study.

Budgetary control as envisaged in Section III would enable these corrections to be made and over a number of years a 'blueprint' of the reasonable expectations for the individual farm will emerge. It would be based on known performance on that farm - which would then be judged on its own merits and not according to the average result for a group of farms all of which are to a greater or lesser extent different from each other and from the farm to be judged.

Finally it should be repeated that the method of budgetary control suggested in this study is one that could fairly easily be taught to the average farmer. This could not be claimed for many of the techniques currently used in farm management work. If it is accepted that the long term aim of all advisory work is to teach, then the wider use of this particular technique could contribute substantially to that aim.

VI. Conclusions

At the outset it was claimed that budgetary control adds a fourth stage to the familiar three-tier approach to farm business management. This stage, it was claimed, has previously been neglected in preference for the other three.

In an attempt to help correct this situation a method of control has been suggested here, based on a detailed formal budget for the whole

farm, and a comparison of actual results with that budget. Wherever possible and helpful this technique could be supplemented by short period control checks, notably on the factory enterprises, and also on certain 'flow' types of expenditure. As a by-product of this approach more precision could be given to the adviser's 'follow up' work and to an evaluation of his advice.

The basic principles to emerge from this study are as follows:-

1. It is impossible for a farmer to measure his success accurately at the end of a year's trading unless, at the beginning of that year, he had a precise idea of what success he should obtain.
2. This 'idea' can be expressed in the form of budgets which should, therefore, form a regular part of the farmer's managerial equipment - quite apart from their more accepted use in helping to answer immediate problems.
3. Whatever form these budgets and the subsequent analysis take they should be simple enough to help and not to confuse management and should provide a guide to action. Any repetitive collection and presentation of information which provides no basis for action should be avoided.
4. Following the analysis, action should be taken by management wherever it is possible and desirable. Without it there is no control.

In essence, this control simply means having an acceptable plan and having the appropriate information, at the right time, in order to

exploit favourable deviations from the plan and to correct, where possible, unfavourable ones.

Further Reading

- | | |
|--|---|
| Farm Business Management | by D.G.Pearce (Oliver and Boyd) |
| Management Accounting for Agriculture. | by S.V.P.Cornwell (Gee & Co.Ltd.) |
| Planning in Horticulture | by E.B. Fekete. Agriculture Vol.69, September 1962 (H.M.S.O.) |
| Farm Accounts III How do I compare? | by J.A.Gilchrist. Scottish Agriculture Autumn 1962.(H.M.S.O. for Dept. of Agriculture and Fisheries for Scotland) |
| The Cost of Inaccuracy in Dispensing Concentrates to Dairy Cows. | by R.S.Cook. Miscellaneous Studies No. 28. Dept. of Agricultural Economics, Reading University |
| Measuring Money | by M.W.Hartley, N.A.A.S.Quarterly Review Vol. XV Autumn 1963. (H.M.S.O.) |

APPENDIX I

APPENDIX I.

THE DIFFERENCE BETWEEN ACTUAL AND

| | SECTION A | | SECTION B | | | |
|---------------------------------|--|------------------------------|--|---|------------------------------|-----------------|
| | <u>FARM PLAN:</u> 40 cows, 130 acres of barley. 80 ewes, 120 acres of grass. 20 sows. | | <u>ACTUAL CROPPING AND STOCKING</u> 35 cows, 125 acres of barley. 80 ewes, 125 acres of grass. 20 sows. | | | |
| ITEM | BUDGET | £ | £ | ACTUAL RESULTS | £ | £ |
| <u>OUTPUT (1)</u> | | | | | | |
| <u>Milk</u> | 40 x 850 gallons at 2/10d | | 4,816 | 35 x 800 gallons at 2/9d | | 3,850 |
| <u>Cattle:</u> | 10 culls at £45 38 calves at £10 Less: 10 heifers at £80 | 450 380 830 800 | 30 | 6 culls at £44 35 calves at £8 Less: 6 heifers at £80 | 264 280 544 480 | 64 |
| <u>Sheep:</u> | 112 lambs at £6 20 culls at £4 Less: 20 ewes at £10 | 672 80 752 200 | 552 | 96 lambs at £6 20 culls at £3.10.0 Less: 20 ewes at £10 | 576 70 646 200 | 446 |
| <u>Wool:</u> | 80 x 5 lbs at 5/- | | 100 | 80 x 5 lbs at 5/- | | 100 |
| <u>Barley:</u> | 130 x 27 cwts at 20/- Def. payment 130 x £9 | 3,510 1,170 | 4,680 | 125 x 25 cwts at 20/- 125 x £8.15.0 | 3,125 1,094 | 4,219 |
| <u>Pigs:</u> | 20 x 14 weaners at £5 6 culls at £25 Less: 6 gilts at £30 | 1,400 150 1,550 180 | 1,370 | 20 x 15 weaners at £5½ 5 culls at £24 Less: 5 gilts at £30 | 1,650 120 1,770 150 | 1,620 |
| <u>TOTAL GROSS OUTPUT</u> | | | 11,548 ===== | | | 10,299 ===== |
| <u>INPUTS</u> | | | | | | |
| <u>Bought feed:</u> | (a) Cows: 40 tons @ £30 p.t. (b) Sheep: 2 tons @ £30 p.t. (c) Pigs: 30 tons @ £30 p.t. | 1,200 60 900 | 2,160 | 50 tons at £32 per ton 2 tons at £30 per ton 31 tons at £30 per ton | 1,600 60 930 | 2,590 |
| <u>Bought seed:</u> | (a) Barley: 130x1.5 cwts at 40/- (b) Grass: 40 at £4 per acre | 390 160 | 550 | 125 x 1.5 at 45/- 38 at £4 per acre | 422 152 | 574 |
| <u>Fertiliser:</u> | (a) Barley: 130x3 cwts @ 20/- (b) Grass: 120x2 cwts @ 20/- 120x2 cwts @ 15/- | 390 240 180 | 810 | 125 x 3 cwts at 20/- 125 x 2 cwts at 20/- 125 x 2 cwts at 15/- | 375 250 187 | 812 |
| <u>Wages:</u> | 1 cowman at £15 per week 2 gen. workers @ £10 p.w. Casual labour | 780 1,040 100 | 1,920 | 1 cowman 2 general workers Casual labour | 795 1,060 92 | 1,947 |
| <u>Rent:</u> | 250 acres @ £3.10.0 p.a. | | 875 | | | 875 |
| <u>Power and Machinery (iv)</u> | at £7 per acre | | 1,750 | | | 1,600 |
| <u>Sundries: (iv)</u> | at £3.5.0 per acre | | 875 | | | 750 |
| <u>Total Inputs</u> | | | 8,940 ===== | | | 9,148 ===== |
| <u>Net Farm Income</u> | | | 2,608 ===== | | | 1,151 ===== |

BUDGETED RESULTS ON A 250 ACRE MIXED FARM.

| SECTION C | | SECTION D | | |
|------------------------------|----------------|----------------------------------|-------------|-------------|
| <u>MEASURE OF DIFFERENCE</u> | | <u>EXPLANATION OF DIFFERENCE</u> | | |
| By Enterprise. | By Item. | Plan | Yield | Price |
| £ | £ | £ | £ | £ |
| -966 | -966 | -550 ⁽¹¹⁾ | -275 | -141 |
| | -186 | -176 | - | - 10 |
| | -100 | - 24 | - | - 76 |
| + 34 | -320(+) | -320(+) | - | - |
| | - 96 | - | - 96 | - |
| | - 10 | - | - | - 10 |
|) -106 | - | - | - | - |
| | -385 | -125 | -260 | - |
| -461 | - 76 | - 44 | - | - 32 |
| | +250 | - | +100 | +150 |
| | - 30 | - 24 | - | - 6 |
| | - 30(+) | - 30(+) | - | - |
| +250 | | | | |
| <u>-1,249</u> | <u>-1,249</u> | <u>-593</u> | <u>-531</u> | <u>-125</u> |
| ===== | ===== | ===== | ===== | ===== |
| <u>By input</u> | <u>By item</u> | <u>Plan</u> | <u>Unit</u> | <u>Cost</u> |
| | +400 | -150 ⁽¹¹¹⁾ | +450 | +100 |
| | - | - | - | - |
| +430 | + 30 | - | + 30 | - |
| | + 32 | - 15 | - | + 47 |
| + 24 | - 8 | - 8 | - | - |
| | - 15 | - 15 | - | - |
| | + 10 | + 10 | - | - |
| + 2 | + 7 | + 7 | - | - |
| | + 15 | - | - | + 15 |
| | + 20 | - | - | + 20 |
| + 27 | - 8 | - | - 8 | - |
| - | - | - | - | - |
| -150 | -150 | - | -150 | - |
| -125 | -125 | - | -125 | - |
| +208 | +208 | -171 | +335 | + 44 |
| <u>-1,457</u> | <u>-1,457</u> | <u>-422</u> | <u>-866</u> | <u>-169</u> |
| ===== | ===== | ===== | ===== | ===== |

FOOTNOTES TO APPENDIX I

(i) In practice some part of the differences between budgeted and actual output would probably be explained by valuation changes which do not appear in this example.

(ii) For ease of presentation and interpretation of the 'difference' in milk output, the 'plan' has been attributed with the output of 5 cows at actual yields and prices. Deficiency of yield and price on these five 'missing' cows has then been included under 'yield' and 'price' (see also footnotes on page 11).

(iii) This negative figure indicates that in terms of the 'plan' (which was deficient by five cows) the food bill should have been £150 (i.e. 5 tons at £30 per ton) less than the budget. In fact it was £400 more, so that, in total, the 'units' employed and their 'cost' were together £550 in excess of expectations.

(iv) Any attempt to explain the difference in these items may be very arbitrary. It will frequently be due to a combination of plan, unit and cost factors which may be difficult to unravel. In this case the deficiency of farm plan could have had little influence on the level of these items, so the difference has been shared jointly between 'unit' and 'cost'. This difficulty of allocation strengthens the case for a constant check on these items as suggested in Section IV.

APPENDIX II

BUDGETARY CONTROL WORKSHEET

An annual check on the variation between
actual and budgeted results

Year ending _____

OUTPUT

| Item | Budget | £ | Actual Results | £ | Differ- ence £ | Explanation of Difference | | | |
|--------------|--------|---|----------------|---|----------------------|---------------------------|-------|-------|---------|
| | | | | | | Plan | Yield | Price | Comment |
| Milk | | | | | | | | | |
| Cattle | | | | | | | | | |
| Sheep & Wool | | | | | | | | | |
| Crops | | | | | | | | | |
| Pigs | | | | | | | | | |
| Poultry | | | | | | | | | |
| Sundries | | | | | | | | | |
| TOTAL | | | | | | | | | |

COSTS

| Item | Budget | | Actual Results | | Differ- ence £ | Explanation of Difference | | | |
|------------------------------------|--------|--|----------------|--|----------------------|---------------------------|------|------|---------|
| | £ | | £ | | | Plan | Unit | Cost | Comment |
| Concentrates and other bought food | | | | | | | | | |
| Bought Seeds | | | | | | | | | |
| Fertiliser | | | | | | | | | |
| Labour | | | | | | | | | |
| Rent | | | | | | | | | |
| Power and machinery | | | | | | | | | |
| Sundries | | | | | | | | | |
| TOTAL | | | | | | | | | |
| INCOME | - | | - | | | | | | |

PHYSICAL DETAILS

FARM PLAN

ACTUAL SYSTEM

CROPPING:-

STOCKING:-

NOTES

APPENDIX III.

A COMPARISON OF BUDGETS FOR A SINGLE SYSTEM UNDER DIFFERING PERFORMANCE ASSUMPTIONS

System:- 100 acre all-grass dairy farm, with a flying herd of 50 cows, employing 1 man at £14. per week, and paying a rent of £4. per acre.

| <u>BUDGET A</u> | | <u>BUDGET B</u> | | <u>BUDGET C</u> | |
|---|--------|-----------------------------------|--------|-----------------------------------|---------|
| <u>OUTPUT</u> | £ | | £ | | £ |
| <u>Milk:</u> 50 cows x 750 galls. per cow x 2/9d per gall. | = 5155 | 50 x 800 x 2/9d | = 5500 | 50 x 850 x 2/10d | = 6020 |
| <u>Cattle:</u> 12 culls at £40 each = 480 | £ | 12 culls at £45 = 540 | £ | 12 culls at £50 = 600 | £ |
| 45 calves at £3 each = 135 | | 45 calves at £4 = 180 | | 45 calves at £7 = 350 | |
| Less: 615 | | 12 repl. at £85 = 1020 | | 12 repl. at £80 = 960 | |
| 12 replacements at £90 each = -465 | | | | | |
| TOTAL OUTPUT | = 4690 | | = 5200 | | = 6020 |
| <u>COSTS</u> | | | | | |
| <u>Bought feed:</u> 46 tons at £35 per ton | = 1610 | 50 tons at £33 per ton | = 1650 | 50 tons at £32 per ton | = 1600 |
| <u>Bought seed:</u> 20 acres at £5 per acre | = 100 | 20 acres at £5 per acre | = 100 | 20 acres at £4 per acre | = 80 |
| <u>Fertilisers:</u> 100 acres x 3 cwt x 20/- per cwt) = 460 | | 100 x 2 cwt x 20/- per cwt) = 360 | | 100 x 2 cwt x 20/- per cwt) = 350 | |
| 100 acres x 2 cwt x 16/- per cwt) | | 100 x 2 cwt x 16/- per cwt) | | 100 x 2 cwt x 15/- per cwt) | |
| <u>Wages:</u> 1 man at £14. per week | = 728 | 1 man at £14. per week | = 728 | 1 man at £14. per week | = 728 |
| <u>Rent:</u> at £4. per acre | = 400 | at £4. per acre | = 400 | at £4. per acre | = 400 |
| <u>Power & Machinery:</u> at £9. per acre | = 900 | at £8. per acre | = 800 | at £7. per acre | = 700 |
| <u>Sundries:</u> at £5. per acre | = 500 | at £4½. per acre | = 450 | at £4. per acre | = 400 |
| Total Costs | = 4663 | | = 4488 | | = 4258 |
| <u>NET FARM INCOME</u> | = -27 | | = +712 | | = +1762 |

