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North of Scotland Box Pool Proposal A Feasibility Study

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Sea Fish Industry Authority
Industrial Development Unit

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NORTH OF SCOTLAND BOX POOL PROPOSAL
A FEASIBILITY STUDY

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SUMMARY

The study examines the way in which a box pool could be established in the N.E. of Scotland taking advantage of the introduction of plastic boxes to replace the traditional wooden box.

The unit costs of handling plastic boxes are expected to be less, provided a degree of control can be exercised with penalties introduced for misuse. The proposed scheme is centred on the main ports in N.E. Scotland of Peterhead, Aberdeen and Fraserburgh with agencies at other ports on the Moray Firth Coast and the North and West Coasts of Scotland.

Two alternative systems are costed - one in which the entire stock of boxes is held by the box pool and the other in which the ownership of the boxes is shared between the pool and users. The systems are described in detail and the capital and operating costs given along with the likely revenues.

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1. INTRODUCTION & BACKGROUND

1.1 Introduction

The dispute between box users and the fish selling companies in 1984 over box hire charges could have resulted in severe disruption to the Fish Industry and the supply position. The Sea Fish Industry Authority were asked to intervene and carry out an independant assessment of the charges. This was done and led to a interim agreement being reached but the assessment also highlighted the need for a complete review of the present system based on re-usable wooden boxes, with a limited life.

Some small savings could have been made by rationalisation of the services but the short life and the high cost of collection and servicing remained inescapable costs inherent in the wooden box.

The switch to plastic or some other modern material which was adaptable to mechanised handling seemed timely. In the past the use of plastic boxes at sea has been resisted for a number of reasons, some justifiable and some not. On shore, a plastic stack nest box is readily accepted by processors, merchants and transport companies and on the Continent there is an almost universal adoption of a 70litre plastic box.

This paper sets out the background to the problem and then examines the costs of introducing a new system. It has been written to assist the industry, finance institutions, banks and regional development agencies, understand the reasons and the benefits of change and the likely costs.

This is a major investment opportunity which is likely to be self financing and is directly related to the aims of the Sea Fish Industry Development Programme of raising quality standards and the image of the Fish Industry as a whole.

1.2 Background

Traditionally wood has been used for boxes for the carriage of iced fish. Scottish vessels and indeed most inshore boats in the United Kingdom have boxed fish at sea graded and ready for presentation on the market where it is sold as box lots. This is in contrast to the former deep-sea practice where fish was bulk stowed at sea, landed as loose fish and then graded on the quayside before sale in boxes or kits. Trawlers still stow and land fish in this manner at the former deep-sea ports, including Aberdeen. It is clearly advisable for quality reasons however that fish is boxed, graded and iced at sea and remains undisturbed until it is processed. Therefore SFIA have encouraged a move from bulk to boxed stowage throughout the industry. The Scottish fleet has for many years used a shallow wooden box which has proved stable in use and robust enough to last over several months of hard wear. Other fishermen, notably Scandanavians have used light weight non-returnable wooden boxes. There is however little price differential and in terms of length of useful life the Scottish box is clearly the better value for money.

The supply of generally large cod and haddock from the distant water grounds traditionally landed from the large trawlers in the Humber has virtually ceased. For many years this was the mainstay of UK supplies. As a result the Scottish fleet has become the main source of supply but is in competition with foreign producers. The Scottish wooden box is inadequate for holding large fish if they are to be properly iced and not crushed. Similarly, much more fish is now sent South from Northern Scotland, particularly to Humberside processors. This fish is trucked in the boats' own boxes and therefore the problems of crushing and inadequate icing with large fish are exacerbated.

Fish is also held in these boxes for longer periods as larger vessels make longer trips and especially when it is subsequently trucked to England. Important new fresh fish opportunities are opening up for the trade and in many sectors buyers demand that their suppliers obtain the best quality fish and operate in hygienic circumstances. It is no secret that some of these supermarkets prefer to buy abroad where they can guarantee that their demanding standards have been met. To many of these supermarkets, the wooden box which absorbs melt water and slime is an anathema, whatever attempts are made to clean it with high pressure hot water and detergents. Similarly these boxes can and do pick up taint from sources such as spilled diesel oil on decks or docksides.

Boxes made from high density polyethylene, do not absorb melt water, oil or other taints. Surface deposits are removed by proper detergent washes and what is more they can be seen to be clean.

Injection moulding leads itself to the design of boxes which will stack securely when full of fish and also be nested, when empty. They can be designed with proportions more suitable to the carriage of a range of sizes of fish and ice whilst retaining intrinsic strength. They can be handled in multiples by fork lift trucks without the use of pallets and they remain of a relatively light weight throughout their life, a major handling consideration.

The cost of such a box is now about twice that of the traditional wooden box but it has a life expectancy of at least eight times that of the wooden box due to its intrinsic strength. Therefore in terms of cost effectiveness it is clearly a more attractive container. However, there is no question that whilst the attributes of the plastic box mean that it is much more attractive, it is also more liable to misappropriation and misuse.

For this reason the introduction of plastic boxes must be allied to a properly run box movement and recording system backed up by clearly defined and enforceable penalties for misuse acceptable to the users.

This latter consideration is the main impetus for the creation of centrally controlled boxpools at least on a regional basis in the first instance. It has been demonstrated in other fields that the leasing of similar products e.g. pallets, can be effectively controlled and indeed there is a fishbox service using plastic boxes operating in Denmark on which it is proposed to model this system.

Scope of the Report

This report includes the following:

- The regional area, to be serviced by the box pool.

- Box requirements for each port based on projected levels of landings and turnround of boxes.

- The organisational framework to manage the pool and control the movement of boxes.

- Alternative management/ownership schemes and their operation.

- The financial feasibility of a regional box pool including capital required and suggested box hire and service charges.

- The results of trials with plastic boxes indicating the most suitable type of fish box for use onshore and at sea. A specification for potential manufacturers is included as appendix V.

- An outline of alternative operation ownership and financing arrangements, setting out the advantages and disadvantages of each with recommendations for the final choice. (This is shown as Appendix VI which has been prepared by FERU in close association with IDU).

2. REGION TO BE SERVICED

The extent of the area or region to be serviced within the proposed North of Scotland box pool is largely that presently covered by the North East Salesmens' Box Association and includes ports used by the Grampian based fleet. Due to quota management of stocks, the fleet, is increasingly exploiting and developing fishing grounds other than in the traditional North Sea area. A major development is the increased effort in the Minches and around the Western Isles. Consequently, this pattern of fishing has resulted in increased landings into fishing ports on the North West coast of Scotland such as Kinlochbervie, Lochinver and Mallaig.

To provide the fleet with a cost effective service, the box pool would cover landings at the following ports (Fig. 1):

East Coast

- Aberdeen and District
- Peterhead
- Fraserburgh

Moray Firth and Pentland Firth

- Macduff
- Whitehills
- Buckie
- Lossiemouth
- Wick
- Scrabster

West Coast

- Kinlochbervie
- Lochinver
- Ullapool
- Mallaig
- Oban.

Since large quantities of fish are sent South to Humberside and other locations in unprocessed form and in the same boxes in which they are landed the proposed scheme allows for recovery and washing outside of the main area to be serviced.

3. BOX REQUIREMENT AND STOCK ALLOCATION WITHIN THE BOX POOL REGION

The box pool would cater for the box requirements of the following sections of the Industry:

Vessel Owners
Merchant/Processor in N.E. Scotland
Consigning Agent (English markets)

3.1 Total Box Requirement

The total number of boxes to be purchased initially to ensure that boxes are always available to service the Industry is calculated at 360,000 for system 1 and 300 000 for system 2 (Appendix I). This estimate is calculated using the following assumptions:

3.1.1. Boxes are landed at one of the approved ports defined in Section 2.

3.1.2 That the allocation of boxes used within the Industry is as follows:
60% - at sea with the fleet, or on land at the merchants/processors.
40% - holding stock, which covers boxes in compounds and those being serviced by washing plants and those boxes in transit at any one time.

3.1.3 This calculation of total boxes required is based on 1984 landings of 197 705 tonnes at the approved ports.

3.1.4 Box requirements are based on plastic box usage, correctly filled as follows:
Demersal fish - 7 stone fish/box or 23 boxes/tonne fish landed.
Shellfish - 4 stone liveweight/box or 40 boxes/tonne shellfish.

3.1.5 That box utilisation (ratio/stock) is 13.5/1 for system 1 and 16/1 for system 2.

3.1.6 That the quayside stock at a compound equates to a port's total weekly landings during a peak fishing period.

3.1.7. For system 2 it is envisaged that some saving in total stock could be assumed and therefore a total stock of 300 000 boxes is suggested.

3.2 Box Allocation - Quayside Stock Holding

The quayside stock requirement for the respective ports is outlined in Fig. 2 and can be summarised as follows:

	System 1	System 2
East Coast	Box Stock Holding	Box Stock Holding
Aberdeen	18 000	15 000
Peterhead	60 000	50 000
Fraserburgh	13 000	11 000
Moray Firth and Pentland Firth		
Macduff	3 000	2 500
Whitehills	1 000	900
Buckie	3 000	2 500
Lossiemouth	1 000	900
Wick	1 000	800
Scrabster	2 000	1 700
West Coast		
Kinlochbervie	15 000	12 500
Lochinver	8 000	6 700
Ullapool	4 000	3 500
Mallaig	10 000	8 500
Oban	4 000	3 500
	143 000	120 000

These equate in each case to 40% of the total boxes operated by the box pool. The balance of 60% are at sea on the vessels or on shore with merchants or processors.

4. BOX POOL INFRASTRUCTURE

To provide the service in all the ports, as outlined in 3.2, would require a management team operating independently of any other industry function and devoting its full attention to the business in hand.

4.1 Movement of boxes within the Box Pool Region.

The distribution service proposed would be controlled through principal box compounds located at:

Aberdeen
Peterhead
Fraserburgh

These principal box compounds would not only service the Industry within these major ports, but would also provide a support service to the Moray Firth, North and West Coast ports. At these ports the service would be sub-contracted to an officially appointed agent at each port. The agencies would fall into two catagories:

a. Major agencies at: Kinlochbervie
Lochinver
Mallaig

b. Minor agencies at: Macduff
Whitehills
Buckie
Lossiemouth
Ullapool
Oban
Wick
Scrabster

Boxes will still be supplied to ports other than the approved ports, through the vessel's agent. The boxes will be supplied to the vessel's agent and signed for as they would be to boats.

Servicing of the Moray Firth and Northerly ports would be undertaken by the Fraserburgh compound.

Servicing of the West Coast ports would be from the three principal compounds on the East Coast utilising fish vehicles. These vehicles would return with a load of boxes from the North East compounds after delivering fish to the N.E. Region or Humberside.

Capital costs are included for the principal compounds only. However, it is possible that separate sources of finance would be provided for the provision of these facilities. Similarly, it is envisaged that the compounds at the other ports operated by agencies, would be financed by local port authorities as a service in the same way as piers and markets are presently provided.

4.2 Principal Box Compounds

The compounds sited at Aberdeen, Peterhead and Fraserburgh would be completely secure, with clean boxes being stored in a covered area. All box compounds will be staffed 24 hours a day, utilising a 3 shift system. The shift timings and staffing proposed are as follows:

04.00 hours - 12.00 hours	3 staff (Peterhead 4)
12.00 hours - 20.00 hours	2 staff
20.00 hours - 04.00 hours	1 staff

In addition there would be one security officer.

Each principal compound would be controlled and managed by a Compound Manager who in turn would be responsible to the box pool General Manager. Prefabricated or portable building type accommodation to be provided at each compound.

A preliminary estimate of area required at each of the three principal compound sites is calculated in Appendix II. The areas of approximately 1306m^2 at Aberdeen 1220m^2 at Fraserburgh and 2020m^2 at Peterhead, are based on a compound layout utilising 2 forklifts and one towing vehicle at each of the compounds to handle the movement of boxes. This is based on the assumption that the boxes used would be of the "stack and nest" type thus allowing the most effective use of space.

On the assumption that reduced stocks would be required with system 2, compound areas of 1255m^2, 1200m^2 and 1850m^2 respectively would be required for Aberdeen, Fraserburgh and Peterhead.

All compounds would require access to a quayside service area to allow boxes to be directly supplied from the compound to the fishing boat.

A typical "nested" stack of boxes for forklift handling would be 20/25 boxes vertically disposed. Two such stacks can be handled by a standard forklift using a special fork adapter without the use of pallets. This stack would be approximately two metres in height and is equivalent to the height of 8 stacked (full) boxes.

The varying height of fishrooms poses several mechanical handling problems. It is likely that all boats could stow tiers of empty boxes up to 25 high, but the height of the stack of full boxes will vary from about 8 to as high as 12. Multiples of 4 high full boxes would, therefore, appear to be the recommended unit loads for mechanical handling.

The box compound's external dimensions would be dictated by:

a. The maximum quantity of boxes to be held, including washed and dirty boxes, if the boxpool operates its own washing plant.

b. The chosen nesting configuration, e.g. 20 or 25 or whatever per tier.

c. Sufficient space to accommodate washing plant if desired.

The compound would, therefore, have to have a height of about 3m. It should be covered by some form of roofing to protect clean boxes from the combination of rainwater and industrial pollution which quickly soils boxes stacked in the open. This is not so apparent with wet wooden boxes simply because contamination is not obvious. The compound should be divided into a clean (dry) area and a dirty (wet) area with adequate drainage. The precise sizes of these areas will require to be determined at a later date. It is, of course, possible that existing buildings, e.g. disused market halls, existing box washing compounds may well be made available and would be perfectly adequate with some additional security provision (see Fig. 3). The area for storage of dirty boxes would not be covered and therefore would not be rateable for costings calculations.

There will have to be full height double gates for delivery of boxes to the compound and a separate gate for delivery to vessels. It is envisaged that a fork lift will unload delivery vehicles.

A number of barrows fitted with cages similar to British Rail's mail trolleys, would be available for the use of crews from boats lying alongside the box pounds (Fig. 4). These trolleys or barrows would be capable of holding 2 tiers of 25 boxes (nested). These could be loaded manually.

In addition, larger trailers would be available for transporting boxes to boats not immediately alongside the pound (Fig. 5). These trailers could have a capacity of say 200 nested boxes in 2 x 4 tiers of 25. They would be loaded in a similar manner to the hand trolleys and would have a similar cage constructed on a platform. A small tractor type vehicle would tow these trailers and leave them alongside boats as required. One towing vehicle could, therefore service a number of loading points not immediately alongside the box pound.

It is worth noting at this point that the loading of empty boxes in tiers of 25 would be a very rapid operation and typically a boat would be moved off a berth within 10 minutes or so (in ideal conditions) having taken 200 boxes off a trailer. There are occasions, of course, at certain piers when, due to tidal conditions, it would be inconvenient to use the boat's gear for loading from a quay. It is suggested that the provision of simple swinging booms at say, 20 m intervals on the quays where boxes are taken, would allow boxes to be loaded at all stages of the tide. The boat's winch would still be used with these quayside booms (Fig. 6).

It is, therefore, envisaged that a principal compound would require:

Vehicles:
- 2 forklifts - LPG 1000kg capacity.
- 1 towing vehicle.
- 6 hand trolleys, with 4 wheels and rubber tyres and with overall platform dimensions about 1m x 1.7m with cages approx. 150mm heavy mesh and a towing handle.
- 6 large trolleys, with 4 wheels and rubber tyres and a towing hook, overall platform dimensions about 2m x 1.7m with wire mesh sides.

Staff
- 1 at reception of dirty or washed boxes (checking numbers mainly in mutliples of 25).
- 1 driving forklift at this point.
- 1 at despatch of boxes to boats point, similarly checking boxes out.
- 1 driving trailer towing vehicle from despatch point. Boats' crewmen would load both hand and towed trolleys, the latter with assistance from towing vehicle driver.

4.3 Authorised Agencies

Authorised agencies at ports outwith the three principal compounds would be responsible for the local requirements. Boxes would have to be supplied from secure compounds with a covered storage area.

Depending on the box throughput at a given port, the agency would fall into one of two classifications; a major compound or a minor compound.

4.3.1 A major compound would provide a manned service offering a three shift system:

08.00 - 16.00 hours	1 full time +
	1 part time (4 hours)
16.00 - 24.00 hours	2 persons full time.
24.00 - 08.00 hours	1 full time

A management fee would be paid to agents in addition to labour costs.

4.3.2 A minor compound would cover the period of landings, each port would have its own service period, these periods cover two 4 hour periods.

typically: 08.00 - 12.00 hours
16.00 - 20.00 hours

These service periods would be covered by one full time and on part time person working a split day. This custom is currently operated by existing agencies.

4.4 Centralised Management

Centralised management control would be operated at one of the principal box compounds, Aberdeen or Peterhead where most of the boxes will have to be collected. This control unit would consist of the following personnel:

General Manager	Accountant
Box Control Manager	Typist/Secretary
3 Computer Terminal Operators.	1 Admin. assistant.

In addition to the management of all compounds and agencies, the centralised management will record all daily box movements from telephoned or preferably telexed information from the major and minor agencies and between the principal agencies by micro-computer. N.B. The eventual installation of computer facilities at ports would greatly facilitate the exchange of information.

The box pool's invoicing and administration/accounting would be part of the centralised management again utilising the use of micro computerised systems.

The purchase of all boxes would be the responsibility of the centralised management.

5. OPERATIONAL SYSTEM - TWO ALTERNATIVE SYSTEMS.

Two alternative systems have been proposed in discussions with the N.E. Industry. These alternative systems are presented for consideration.

System 1 envisages the purchase of all boxes by the box pool organisation, and the operation of a nationwide information service and control of boxes.

An alternative System 2 is proposed where users would each purchase their own stock of boxes and be responsible for the return of boxes to the compounds. In the latter case, the box pool would require to purchase a 'float' or reserve of boxes only, equivalent to 30% of the total box requirement. This has been introduced at the suggestion of the merchants who already maintain a large stock of boxes for use in their own premises and who would be willing to adopt a universal design of box interchangeable with other users. System 2 also envisages boxpool owned washing plant at principal compounds.

5.1 System 1 - Wholly owned by Box Pool

This system (Fig. 7) is based on the box pool company purchasing or leasing all boxes of a plastic "nest and stack" type and being the sole owners

All boxes will carry the box pool name and logo.

5.1.1 Box hire service - Vessel Owner.

(a) The supply of the boxes to the vessel is to be undertaken by the box pool. The initial stock of boxes are to be supplied to the vessel and recorded and signed for by the vessel owner or agent. Replacement of vessel's stock is to be undertaken on a trip to trip basis. The number of replaced boxes will equate to boxes landed.

(b) Additional boxes supplied over and above the vessel's stock holding will be paid for by the vessel at current box replacement cost (i.e. boxes taken in excess of those landed).

(c) The box hire rate will apply upon the landing of the box by the vessel at a fixed charge per box landed.

(d) Information on the box landings into the market or consigned by the vessel to another port is to be supplied to the box pool by the fish salesman or agent.

(e) Information on the number of boxes supplied to a merchant through the auction sale or by consignment is to be supplied to the box pool salesman/agent on a daily basis.

(f) The transfer of the box to the merchant denotes the end of the vessel owner's hire contract.

5.1.2 Box Hire Service - Merchant

(a) Purchase of the boxed fish at firsthand sale through auction or direct from an agent/salesman denotes the commencement of the box hire from the box pool company.

(b) Hire charges to a merchant will be on a daily rate hire basis with a maximum hire period of 4 days. (See also 5.1.2f)

(c) The non-return of a box after a maximum 4 day period - will result in the merchant being charged with the full cost of the box replacement. (See also 5.1.3.b)

(d) For the tipper, two recommendations are offered.

(i) all tipping is to be prohibited, or
(ii) the merchant must declare to box pool whether he is a tipper or not.

If he is registered as a tipper, then all the boxes purchased at the auction by a merchant must be tipped. Tipped boxes must be returned to the box compound by the tipper, otherwise the full cost of the box will be charged to the tipper.

(e) The merchant is to be responsible for the cost of collection from his own premises and delivery to the designated compound or washing facility.

(f) Receipt of a box by the box pool would be acknowledged with an official signed receipt recording the merchant's name and the number of boxes returned. This signed receipt denotes the end of the hire period.

(g) All the boxes used in Aberdeen will be recovered by a box collection service organised by the box pool.

(h) Boxes will be collected from merchants premises at appointed times.

(i) An Official box return note is to be completed by the merchant recording the merchant's name and the number of boxes returned. This box return note will be in a 3-part set.

Top copy - return to box pool.
2nd copy - retained by box collector.
3rd copy - retained by merchant (this denotes end of hire).

The completed set of box return notes are to be presented with the boxes to the box collector, who checks that the boxes returned agree with return note and then accepts agreed number of boxes and signs box return note. The box collection service is to be contracted out to existing collection services operated by washing companies.

5.1.3 Box hire service Consigned Boxes

(a) The consignor is to declare to the box pool the number of boxes consigned and details of the box recipient.

A signed consignment note is to be produced to box pool supporting this statement.

(b) A maximum hire period of 4 days will be allowed. If the balance of boxes held by a buyer is not adjusted to account for the return of an equivalent number of boxes within four days, then the consignor will be charged with the full cost of box replacement.

(c) Recovery of those boxes trucked south would be assisted by the following suggested additional safeguards.

1. A coded tally to be ring sealed to the consigned box. This tally to incorporate a code number of the consigning agent/merchant.

2. The box pool will authorise agencies on Humberside,Fleetwood, etc., to receive/collect boxes from merchants.

3. The Collecting agency will issue a box pool receipt for the number of boxes uplifted.
N.B: Only these boxes with the coded tally attached are to be accepted by the approved agencies.

4. The Receipt of the box by an authorised agency would terminate the box hire.

5. The Cost of the collection service and the return of the box to North Scotland would be borne by the forwarding merchant or agency in the North of Scotland.

6. All boxes should be washed where possible in the port of collection. After washing, the box pool would arrange for the box to be transported back to a North Scottish compound.

5.1.4 Box Washing

(a) All boxes (plastic) are to be washed in a mechanised box washing plant only.

(b) All box washing is to be contracted out to designated box washing operators. See also (h).

(c) The box pool would negotiate yearly contracts with box washing companies. An annual (fixed period) fixed price per box washed to be negotiated. The box pool would guarantee to a box wash operator a given proportion of the total annual throughput. Should there be a short fall on guaranteed throughput then a supplementary rate would be paid to the box washer by the box pool. The costs of washing boxes would be incorporated within the box hire charges levied on all users.

(d) All boxes received by contracted washing service agencies are to be recorded on receipt.

(e) Nos. of boxes returned by a washing company are to be checked against

a. box collection return notes, and
b. number of boxes washed and invoiced.

(f) The number of boxes required to be washed in the North East region is estimated in Appendix III at 4.3 million per annum.

(g) Based on the assumption that a 1000 boxes/hour (nominal maximum) washing plant is capable of working 6 hours/day at 56% of production capacity, the number of machine units required is estimated at 5 machines located at Aberdeen, Peterhead and Fraserburgh. This effectively means the relocation of one Aberdeen plant in Fraserburgh.

(h) Alternatively should the box pool decide to purchase its own plant then further rationalisation of throughput capacity could reduce the requirement to three plants in total.

5.2. System 2 - Shared ownership of boxes

This alternative system (Fig. 8) eliminates the box purchase cost from the hire rate with exception of a 30% working stock reserve. Consequently the fixed rate per box used will be charged. The charge

will recover servicing charges and finance charges relating to the operation of the boxpool and to the purchase of the necessary float of boxes. System 2 will operate as follows:-

5.2.1 Initial purchase of boxes - to be undertaken by box pool on behalf of users.

5.2.2 The vessel owner and merchant to pay the box company at cost for the number of boxes required to service:
a. A vessel's total box requirement, based on typical outfit of boxes for a new boat.
b. A merchant's maximum box usage requirement (this usage is to be based on a merchant's box utilisation over 4 peak trading days), and
c. consignor - A box stock sufficient to cover 7 days trading during a peak trading period.

5.2.3 Both the vessel owners and merchants are to be circularised prior to start of the box pool so that each representative organisation can submit their requisition for the number of boxes required.

5.2.4 The box company would purchase an additional reserve service stock, equivalent to 30% of total, over and above that purchased by vessel owners or merchants. This float of boxes would be necessary to ensure continuity of box supply. The cost would be recovered in the box usage charges.

5.2.5 The box pool would allow the trade a 6-month period for the initial payment of boxes requisitioned.

5.2.6 <u>Operational System</u>

A) <u>Box service to the Vessel</u>
- Total boxes landed to be replaced by the box pool after each trip.

- Additional boxes used over and above the requisition/allocation to be charged at the full box replacement cost.
- Vessel to be charged on boxes landed basis with the fleet's share of costs relating to box pool costs only. (See also 5.2.4).

B) Box service to the Merchant/Consignor

- The same number of boxes supplied at firsthand sale must be returned to the box pool compound by the merchant, within the allowable time period. (See 5.1.2c)
- The total responsibility for and the cost of the return to the box pool compound is to be borne by the merchant.
- Should the merchant have in his possession as indicated by the computerised daily balance sheet more boxes than requisitioned, then those additional boxes used will be charged to the merchant at a full box re-placement cost.
- The box service charge is to be levied on each box bought from the vessel. This box service charge will relate to the merchant's share of the costs of the box pool. (See also 5.2. and 5.2.4.).

5.2.7 Boxes purchased are to be written-off over a 5 year period.

5.2.8 The box pool is to be responsible for all washing services.

5.2.9 The box pool infrastructure required to service the Industry i.e. compounds/agencies and centralised administration is to remain as outlined in Section 4.

6. LEAD-IN PERIOD AND PROVISION FOR LOSS ON GOING OUT OF WOODEN BOXES.

6.1 Transitional Period

Should the Industry take the decision to formulate a regional box pool based upon a plastic box, the question arises as to what transitional period is required to move from the existing agency operated box service utilising a wooden box to that of a regional box pool utilising a plastic box.

Five factors influence this decision:

i. Plastic and wooden boxes cannot be mixed in service i.e. a boat would require to take either one kind or the other.

ii. The working life expectancy of a wooden box is approximately 9 months. (SFIA/RGIT Report, October 1984).

iii. The lead-in time to establish:

   a. what type of plastic box is required, and
   b. production period required to produce total box requirement.

iv. The time period required to establish a box pool company, its infrastructure and staff.

v. The time period required to convert the fleet's fish holds from using wood to plastic boxes, e.g. ideally not in the middle of a peak fishing period.

The above factors indicate approximately an 8 - 9 month lead-in period from the time of a decision on implementation.

No doubt agencies would be prepared to supply boats not able to be modified immediately with wooden boxes, until such time as the fishroom alterations could be completed.

6.2 Provision for loss on going out of wooden boxes

The move from wood to plastic will create a redundant stock of wooden boxes. As these boxes have been purchased by the various agencies, the box pool will have to consider the question of provision for loss on going out of wooden boxes. This would be a matter for negotation. Consequently for the purpose of cost and revenue projection, an assumed figure is built into the projected economic forecast to cover such a contingency.

7. FINANCIAL PROJECTIONS

The financial projections are considered in terms of the capital sum to be raised, the operating expenses and the likely return against sales. Certain assumptions have been made as to a range of charges likely to be acceptable to box users although clearly minor changes to those could have a substantial effect on returns and profitability. Finally a cash flow statement is presented.

7.1 Capital Requirements - System 1

The capital requirements are shown in Table 1 for the principal compounds at Aberdeen, Peterhead and Fraserburgh. No capital sum has been included for the agency managed major and minor compounds as these are of a relatively small and variable nature dependant on the port in question. In any case it is suggested that such expenditure might well be funded by the respective Port Controlling Authority.

A small amount of working capital has been allowed as start up cash for the first 18 weeks of full operation.

An estimate is given to cover the cost of acquiring box washing plants should the box pool wish to do so rather than to contract box washing to existing plants.

7.2 Capital Requirements - System 2

In system 2 where the onus is upon the user to purchase and maintain a stock of boxes it is anticipated that good housekeeping will increase the ratio of box utilisation and that this could rise to about 16:1 therefore the proposed stock of boxes is reduced accordingly. In addition the 'float' of boxes required to guarantee a supply to users estimated at 30% of that total is similarly reduced. Capital estimates for system 2 are contained in table 2. Similarly provision for boxpool owned washing plant is included within total capital expenditure.

TABLE 1

CAPITAL EMPLOYED - SYSTEM 1

					£
a)	Boxes - 360,000 Boxes at £7 each				2,520,000
b)	Buildings & Fencing	Box Stock	Covered Area	Open Area	
	Peterhead	60000	1520m^2	500m^2	46000
	Aberdeen	18000	806m^2	500m^2	24000
	Fraserburgh	13000	720m^2	500m^2	22000
					92000
c)	Plant & Fittings				
	3 - Portable Office Units				15000
	Furniture, Canteen etc				6000
					21000
d)	Transport				
	Forklifts/Tractors	9 at £11250			101250
	Trailers				30000
	Car				8000
					139250
e)	Electronic Equipment				
	3 micros computers with Modem links				30000
f)	Total Fixed Capital Employed				2,802250
g)	Working Capital		£/week		
	Operating expenses, compound and agency charges		10796		
	Box collection - local		2000		
	Miscellaneous		1000		
	No. of Weeks		13796	x 18 weeks	248328
h)	Total Capital Employed - Exluding cost of own Washing Plants				3,050578
i)	Washing Plant				
	2 Washing Units at £65000 each				130000
	1 " " " £25000 each				25000
					155000
j)	Total Capital Employed including cost of own Washing Plants				3,205578
					say £3.2 million

TABLE 2

CAPITAL EMPLOYED - SYSTEM 2

					£
a)	Boxes - 90,000 Boxes at £7 each				630000
b)	Buildings & Fencing	Box Stock	Covered Area	Open Area	
	Peterhead	50000	1350m^2	500m^2	40500
	Aberdeen	15000	755m^2	500m^2	22600
	Fraserburgh	11000	700m^2	500m^2	21000
					84100
c)	Plant & Fittings				
	3 - Portable Office Units				15000
	Furniture, Canteen etc				6000
					21000
d)	Transport				
	Forklifts/Tractors	9 at £11250			101250
	Trailers				30000
	Car				8000
					139250
e)	Electronic Equipment				
	3 micros computers with Modem links				30000
f)	Total Fixed Capital Employed				904350
g)	Working Capital		£/week		
	Operating expenses, compound and agency charges		10796		
	Washing plants		5187		
	Miscellaneous		1000		
	No. of Weeks		16983	x 18 weeks	305694
h)	Total Capital Employed - Exluding cost of own Washing Plants				1,210044
i)	Washing Plant				
	2 Washing Units at £55000 each				130000
	1 " " " £25000 each				25000
					155000
j)	Total Capital Employed including cost of own Washing Plants				1,365044
					say £1.4 million

7.3 Operating Income & Expenses - System 1

Table 3 shows the income derived from System 1 using the charge rates as follows:-

Vessel - 34p per box landed

Merchant - 7p per box per day plus 3p per box for local recovery services.

Transport costs associated with boxes taken beyond the local collection network (north of Arbroath Route 3A) and overland recovery costs would be additional to the above charges.

The income and expenditure in Tables 3 and 4 show an annual surplus of income over expenditure of £753.665 or 30.8% return on sales. (See Table 5)

Should the box pool elect to purchase and operate its own box washing plant at cost. This would produce an estimated cost reduction of £114380 on total costs - Appendix IV4 and Table 4.

This would increase the return on sales to £868045 or to 35.4%.

Table 4 shows the annual operating costs for System 1 in which the boxes are wholly owned by the box pool. The unit costs of each component have been converted into a proportional charge per box handled assuming a total of 4,800,000 boxes are leased annually.

TABLE 3

SALES TO THE BOX POOL - SYSTEM 1

Hire Charges					£
a) Vessel - 4.8 million @ 34p/box landed					1,632000
b) Merchant	Allocation %	Boxes	No Days Hire	Rate/Day	
Tipper	17	816000	1	7p	57120
		Collection	-	1p	8160
Local	40	1,896000	2	7p	265440
		Collection	-	3p	56880
Route 3A	29	1,408000	2	7p	197120
		*Collection	-	3p	42240
Overland	14	680000	4	7p	190400
TOTAL SALES					2,449360
SALE REVENUE PER BOX LANDED					51.03p/box

* Excludes Route 3A Transhipment Costs
Excludes Box Recovery Costs

\- Both these costs would be additional cost to merchant.

TABLE 4

BOX POOL COST OF SALES STATEMENT - SYSTEM 1

a) No. boxes landed per annum 4,800,000

b) Cost of Sales	£	Cost box landed pence/Box
Compound Operating Costs:		
Principal Compounds - (App.IV.1)	256557	5.34
Box Agencies - (App.IV.2		
- major	110634	2.30
- minor	90352	1.88
Box pool management - (App. IV.3)	103872	2.16
Box washing - (App. IV.4)		
- NE Scotland 4.3 million at 10p each	430000	8.96
- other 0.5 million at 10p each	50000	1.04
Cost of re-delivering to compounds		
- 4.3 million at 1p each	43000	.90
Box collection		
Local - 1.896 million at 3p each	56880	1.19
Route 3A - 1.408 million at 3p each*	42240	.88
Tipper - 0.816 million at 1p	8160	.17
	1,191695	24.82
Box Cost		
- 360,000 @ £7 each apportioned over 5 years	504000	10.50
TOTAL COST OF SALES	1,695695	35.32
Less N.E. Scotland washing costs	430000	
	1,265695	
Add washing costs 4.3m @ 7.34p	315620	
Alternative total cost of sales box pool owned washing plant,	1,581315 or 32.94p/box	

* Route 3A refers to destinations within Scotland, North of Abroath.

TABLE 5

RETURN ON SALES - BOX SYSTEM 1

	£	Per Box Landed Pence/Box
Sales - Table 4	2449360	51.03
Less: Cost of Sales - Table 3	1695695	35.32
RETURN ON SALES	753665	15.71
% RETURN ON SALES	30.77%	
Alternative cost of sales, box pool washing	1581315	32.94
Return on sales	868045	35.4%

7.4 Operating Income & Expenses - System 2

Table 6 shows the income derived from System 2 using the charge rates as follows:

Vessel - 16p per box landed

Merchant - 15p per box landed.
The costs of recovery and return to the box pool are the responsibility of the merchant

The income and expenditure in Tables 6 and 7 show a surplus of income over expenditure of £434,965 or 29.2% return on sales, (Table 8).

Table 7 shows the annual operating cost for System 2 in which the bulk of the boxes are owned by the users (merchants and vessel owners) and the box pool provides a collection and washing service together with a 30% margin of reserve of boxes. The effect of this is to reduce substantially the capital investment of the box pool and provide a better basis for achieving profitability on the service activities. However, capital cost of boxes depreciation and interest charges have still to be borne by the users.

TABLE 6

INCOME TO THE BOX POOL SYSTEM 2

SALES	£
HIRE CHARGES:-	
a) Vessel - 4.8m boxes @ 16p box landed	768000
b) Merchant - 4.8m - @ 15p box landed	720000
	1488000
Sale of Boxes to Trade	
210000 boxes at £7/box	1470000
TOTAL SALES	2958000

TABLE 7

BOX POOL COST OF SALES STATEMENT - SYSTEM 2

(i.e. Box Pool provides Service & Management with shared ownership of boxes)

a) No. boxes landed per annum 4,800,000

b) Cost of Sales	£	Cost box landed - pence/box		
		Total	Fisherman	Merchant
Compound Operating Costs:				
Principal Compounds - (App. IV.1)	256557	5.34		
Box agencies - major - (App. IV.2)	110634	2.30		
- minor - (App. IV.2)	90352	1.88		
Box pool management (Appendix IV:3)	103872	2.16		
Box washing				
- N.E. area at 7.34p/box (Appendix IV:4)	315620	6.58		
- Other areas at 10p/box (Appendix IV:4)	50000	1.04		
	927035	19.30	9.65	9.65
Box Cost				
90000 Boxes - 30% Working Service Stock at £7 each apportioned over 5 years	126000	2.62		
COST OF SALES	1053035	21.92	10.96	10.96

c) Cost of boxes for Re-sale to Trade - 210000 boxes at £7/box 1470000

d) **TOTAL COST OF SALES** 2523035

TABLE 8

RETURN ON SALES - BOX POOL SYSTEM 2

	£	PER BOX LANDED		
		Total	Fishermen	Merchant
SALES				
Hire Charges - Table 7	1488000	31.00	16.00	15.00
Sale of Boxes to Trade - Table 7	1470000	-	-	-
TOTAL SALES	2958000	31.00	16.00	15.00
Less				
Cost of Sales - Table 6	1053035	21.92	10.96	10.96
Cost of Boxes for Re-sale to trade	1470000	-	-	-
RETURN ON SALES	434965	9.08	5.04	4.04

% Return on Sales - (Hire a/c) 29.23%

7.5 Cash Flow Forecasts

Assuming that the capital requirements, capital funding and pre-tax operating profits are as projected, the cash flows associated with the two alternative systems before any grant funding are outlined in tables 9 and 10.

These cash flows are based on the assumption that a six month setting-up period is required prior to the start of trading with the management and staff being employed for three months prior to the commencement of trading.

The cash flow for system 1 (table 9) produces a positive cash flow in year four.

The pay-back period to recover capital investment and the setting-up period expenses is estimated at 3.8 years after the start of trading.

System 2 produces a positive cash flow (table 10) in year three. The projected pay back period for system 2 is estimated at 2.7 years after the start of trading.

TABLE 9

CASH FLOW - SYSTEM 1

	Setting-up Period (6 month)	YEAR 1 (full trading)	YEAR 2	YEAR 3	YEAR 4	YEAR 5
1. Cash in-flow	£	£	£	£	£	£
cash balance b/fwd	-	(2892357)	(2138692)	(1385027)	(631362)	84303
Return on Sale	-	753665	753665	753665	753665	753665
2. Total cash in-flow		(2138692)	(1385027)	(631362)	122303	837968
3. Cash out-flow						
Boxes	2520000					
Buildings & Fences	92000					
Plant & Fittings	21000					
Transport	139250				8000	131250
Electronic Equipment	30000				30000	
	2802250					
Expenses: Setting up period - 3 months.						
Compounds	64139					
Management	25968					
4. Total out-flow	2892357	-	-	-	38000	131250
5. Net Cash Surplus	(2892357)	(2138692)	(1385027)	(631362)	84303	706718
6. Pay-back period	3.8 years.					

TABLE 10

CASH FLOW - SYSTEM 2

	Setting-up period (6 month)	YEAR 1 (full trading)	YEAR 2	YEAR 3	YEAR 4	YEAR 5
1. Cash in-flow	£	£	£	£	£	£
Cash Balance B/fund	-	(1189237)	(754272)	(319307)	115658	512623
Return on sale	1470000	434965	434965	434965	434965	434965
2. Total cash in-flow	1470000	(754272)	(319307)	115658	550623	947588
3. Cash out out-flow						
Boxes	2100000					
Building £ Fences	84100					
Plant & Fittings	21000					
Transport	139250				8000	131250
Washing plants	155000					
Electronic Equipment	30000				30000	
	2529350				38000	131250
Expenses: Setting-up period - 3 months						
compounds	64139					
management	25968					
washing plant	39780					
	129887				38000	131250
4. Total out-flow	2659237				38000	131250
5. Net cash surplus	(1189237)	(754272)	(319307)	115658	512623	826338
5. Pay Back Period	2.7 Years					

8. BASIS FOR CALCULATION OF BOXES THROUGHPUT

The calculations in Section 7 assume an annual throughput of boxes of 4.8 million based on 1984 landings and after adjustment for the increased number of boxes required to allow for the revised carrying capacity of 7 stone (45 kg).

Landings will inevitably fluctuate but projections made by the SFIA (ref 1) show that the total catching capacity of the fleet is likely to remain fairly constant through to 1990 but that there could be a transfer of some of this capacity, albeit on a seasonal basis, to the West Coast ports.

References

1. Grampian Regional Plan, Projected Fleet & Landings, SFIA Internal Report No. 1203 - April 1985.

2. N.E. Box Pool, Study by RGIT and SFIA - October 1984.

9. PRESENT CHARGES VERSUS PROPOSED CHARGES

The interim agreement reached in August 1984 is based on no change of the ownership and organisational framework by which the fish selling companies own and lease their own wooden boxes. It is also well known that the wooden boxes invariably carry an excess weight of fish for the volume of the box. A switch to plastic boxes would necessitate a break with tradition.

Table 11 shows a comparison between the current charges and the proposed charges for System 1 and how the current charges would be affected by adopting a uniform weight of 7 stone in the wooden boxes.

Table 11: Cost per Tonne of Fish Landed

	System 1 7 stone/ box	Interim Agreement 8 stone/box	Revision of Interim Agreement to Uniform Weight of 7 stone/box
No. of boxes per tonne	23	20	23
Cost to Vessel Owner	£ 7.82	£7.60	£ 8.74
Cost to Local Merchant	£ 3.91	£3.60	£ 4.14

10. FINANCIAL SUMMARY

		SYSTEM 1	SYSTEM 2
10.1	Boxes Landed	4,800,000	4,800,000
10.2	Boxes Owned	360,000	90,000
10.3	No. of Persons employed		
	- Full-Time	53	67
	- Part-TIme	11	11
10.4	Sales		
	Hire	2,449,360	1,488,000
	Sale of Boxes	-	1,470,000
	TOTAL SALES	2,449,360	2,958,000
10.5	Cost of Sales		
	Hire	1,695,695	1,053,035
	Box Sales	-	1,470,000
		1,695,695	2,523,035
10.6	Return	753,665	434,965
10.7	% Return on Sale - Hire	30.77%	29.23%
	- Box Sale	-	-
10.8	Total Capital Employed	£3,050,578	£1,365,044
10.9	Depreciation - P.A. (Table 12.2)	£ 44,020	£ 59,362
10.10	Box Reserve - P.A. (Table 12.1)	£ 360,000	£ 108,000
10.11	Provision for loss of in going out of wooden boxes (Table 12.3)	£ 100,000	£ 100,000
10.12	Estimated average P.B.I.T.	£ 329,645	£ 247,603
10.13	Est. average P.B.I.T. Ratio to Capital employed	10.81%	18.14%

TABLE 12

FISCAL EXPENSES

		System 1	System 2
1.	Box Reserve	£pa	£pa
	Boxes - 300,000 replaced after 5 year period at £6 per box (assumed that the unit cost will reduce with time)	360,000	
	90,000 replaced after 5 years at £6/box		180,000
2.	Provision for Depreciation		
	Buildings - Dep'n at 2% W.D.V.	1,840	1,682
	Plant & Fittings		
	Portable Office Units - Straight Line Dep'n - 5 years	3,000	3,000
	Furniture etc. . . . . - 5 years	1200	1200
	Transport		
	Fork Lifts - Straight Line Dep'n - 4 years	25,313	25,313
	Car - Straight Line Dep'n - 3 years	2,667	2,667
	Electronic Equipment - Straight Line Dep'n - 3 years	10,000	10,000
	Washing Plant - Straight Line Dep'n - 10 years		15,500
		44,020	59,362
3.	Provision for loss on going out of Wooden Boxes		
	It is assumed that approx 30% (100,000) Wooden Boxes would be redundant on the change over from wood to plastic at a second hand value of say £1 per box.	£100,000	

11. CONCLUSIONS

11.1 With a proper control of box movement the introduction of a plastic box will provide financial and quality benefits to the Industry as a whole.

11.2 Whilst the charges per box used can be reduced with the new systems to all users it is acknowledged that a greater number of boxes per tonne of fish landed will be needed for the plastic boxes filled to the recommended 7 stone. This makes comparison with the interim agreement not possible. System 1 offers a comprehensive box service based on the proven record of other systems including UK pallet control.

11.3 System 2, offers a similar box movement monitoring service but reduces capital investment by the 'box pool' though increasing investment by individual users.

APPENDIX I

NUMBER OF BOXES REQUIRED BY BOX POOL (SYSTEM 1)

	1984 LANDINGS		Estimated Number		DEMERSAL & SHELLFISH Est. Total Box Requirement		
A.	DEMERSAL (23 boxes/tonne) tonnes		Landings 'Boxes'	Distributed Overland (South Markets)	Quayside 40%	In use(60%) Fleet/M'cht	Total Est.
	40 652	Aberdeen	934 996		18 000		
	93 717	Peterhead	2 155 491	12% 269 436	60 000		
	15 786	Fraserburgh	363 078		13 000		
	4 505	Macduff	103 615		3 000		
		Whitehills			1 000		
	2 684	Buckie	61 732		3 000		
	692	Lossiemouth	15 916		1 000		
	17 754	Kinlochbervie	408 342	50% 204 171	15 000		
	8 331	Lochinver/ Ullapool	191 613	50% 95 807	12 000		
	6 640	Mallaig	152 720	50% 76 360	10 000		
	2 870	Oban	66 010	50% 33 005	4 000		
*	1 744	Wick	40 114		1 000		
*	2 330	Scrabster	53 600		2 000		
	197 705		4 547 227	678 779	143 000	217 000	360 000

B.	SHELLFISH (40 boxes/tonne)		4st/box
	954	Buckie	38 160
	579	Lossiemouth	23 160
	1 146	Fraserburgh	45 840
	127	Macduff	5 080
	155	Kinlochbervie	6 200
	2 534	Lochinver	101 360
	5 086	Mallaig	203 440
	2 308	Oban	92 320
	225	Wick/Scrabster	9 000
	13 114		524 560

TOTAL EST. LANDINGS 5 071 787 'BOXES'

(Source 1984 Landings DAFS)

* includes only landings utilising 'agency boxes'.

APPENDIX I.I

1984 MONTHLY LANDINGS - TONNES

TOTAL	DEM'SAL LANDINGS	JAN.	FEB.	MAR.	APL.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
	1983	Tonnes											
40 652	(18%) Aberdeen	2572	4600	4430	3818	4092	3141	3044	3802	2657	3494	2662	2050
93 717	(1.5) P'head	6141	8492	9069	8276	8606	8083	9503	9239	8366	7951	5595	4396
15 786	(32.3) F'burgh	820	1397	1989	1462	1548	1180	1084	2095	1419	1242	865	685
4 505	(0.7) Macduff	239	283	278	332	476	413	412	599	389	366	463	255
2 684	+41% Buckie	257	260	303	191	170	150	171	269	198	191	293	231
692	(30%) Lossie	58	86	99	79	55	65	53	45	34	38	37	43
17 754	K'bervie	848	1274	2039	1491	1904	2578	1412	696	1491	1412	1305	1304
1 744	Wick												
2 330	Scrabster												
8 331	U'pool/L'inver	-	382	649	599	829	2011	1348	445	328	411	788	541
6 640	Mallaig	261	530	759	811	585	372	273	549	435	533	939	593
2 870	Oban	178	94	237	362	405	285	217	281	192	168	240	211
Specified ports -													
Subtotal 197 705		**11374**	**17398**	**19842**	**17421**	**18970**	**18278**	**17517**	**18020**	**15509**	**15806**	**13187**	**10309**
Dem'sal Total Scotland		14206	21148	25043	26618	34253	31566	30057	29226	19905	20170	17202	13353
TOTAL	**SHELLFISH**	**1014**	**2300**	**2882**	**2412**	**3130**	**3381**	**3867**	**4201**	**3138**	**3206**	**2587**	**2276**
954	Buckie	35	29	110	31	73	23	97	173	132	96	88	67
579	Lossiemouth	13	23	22	36	43	66	82	88	45	55	53	53
1 146	Fraserburgh	29	40	26	12	12	65	151	425	191	68	69	58
127	Macduff	2	2	1	2	1	-	1	40	2	15	47	14
155	Kinlochbervie	1	7	8	24	3	11	18	8	6	16	14	39
2 534	U'pool/L'inver	65	144	345	221	211	282	465	222	155	116	197	111
5 086	Mallaig	124	346	487	427	687	733	531	561	379	256	307	248
2 308	Oban	73	100	222	224	311	247	296	331	106	125	145	128
225	Wick/Scrabster												
TOTAL 13 114													

APPENDIX I.2

MAJOR PORT DAILY LANDING ANALYSIS

PETERHEAD	Total	Total	Box Stock	Daily Ave	No.Wash	No.M/C
May 1984	Boxes	Weeks	Maximum	Landed	M/C Hrs	Units
Mondays	24 863	(3)	9 000	8 288	20	3
Tuesdays	27 899	(5)		5 778	14	2
Wednesdays	24 294	5		4 859	12	2
Thursdays	46 823	5		9 365	22	4
Fridays	39 667	4		9 917	24	4
Saturdays	22 907	4		5 727	14	2
				41 931		
June 1984						
Mondays	26 441	4		6 610	16	3
Tuesdays	21 463	4		5 366	13	2
Wednesdays	24 848	4		6 212	15	3
Thursdays	27 993	4		6 998	17	3
Fridays	47 628	5		9 526	23	3
Saturdays	27 399	5		5 480	13	2
July 1984						
Mondays	37 392	5		7 478	18	3
Tuesdays	38 019	5	8 000	7 604	18	3
Wednesdays	28 022	4	8 000	7 005	17	3
Thursdays	36 203	4	10 000	9 051	22	4
Fridays	41 330	4	12 000	10 333	25	4
Saturdays	21 882	4	8 000	5 471	13	2
				46 942		
August 1984						
Mondays	28 683	4		7 171	17	3
Tuesdays	22 209	4		5 552	13	2
Wednesdays	33 236	5		6 647	16	3
Thursdays	45 948	5		9 190	22	4
Fridays	52 646	5		10 529	25	4
Saturdays	21 129	4		4 226	10	2
			55 000	43 315		

(Source R.G.I.T.)

APPENDIX I.3

ABERDEEN DAILY BOX LANDINGS - MAY-JULY 1984

	Total Boxes	Total Weeks	Box Stock Maximum	Daily Ave. Landed
May 1984				
Mondays	11869	3	4000	3956
Tuesdays	11607	5	3000	2321
Wednesdays	10494	5	3000	2099
Thursdays	16902	5	4000	3380
Fridays	13167	4	4000	3292
Saturdays	-	-		
			18000	15048
June 1984				
Mondays	6796	4		1699
Tuesdays	6960	4		1740
Wednesdays	11397	4		2849
Thursdays	12596	4		3149
Fridays	10186	4		2547
Saturdays	-	-		-
				11984
July 1984				
Mondays	8808	4		2202
Tuesdays	12795	5		2559
Wednesdays	5654	3		1872
Thursdays	6959	3		2320
Fridays	3811	2		1906
Saturdays	-	-		-
				10859

(Source: R.G.I.T.)

APPENDIX I.4

FRASERBURGH DAILY BOX LANDINGS - JANUARY 1985

Week Commencing	Boxes Landed Daily	Box stock Maximum
14th Jan. '85.		
Monday	1618	2000
Tuesday	1486	2000
Wednesday	206	1000
Thursday	2080	3000
Friday	850	2000
Saturday	1609	2000
	7849	12000
21st Jan. '85.		
Monday	390	
Tuesday	120	
Wednesday	-	
Thursday	150	
Friday	1070	
Saturday	1180	
	2910	
25th Jan. '85		
Monday	770	
Tuesday	745	
Wednesday	1005	
Thursday	2382	
Friday	1718	
Saturday	286	
	6906	

(Source: SFIA)

APPENDIX II

PRINCIPAL COMPOUNDS - ESTIMATES OF AREA NEEDED (SYSTEM 1)

(Covered Storage = 58 Boxes Per m^2

1. ABERDEEN

Stock	=	18000 boxes		
Area covered	=	(including washing)	Allow	806m^2
Working Area	=			500m^2
Compound Area	=			1306m^2

2. PETERHEAD

Stock	=	60,000 boxes	
Area covered	=	(including washing)	1520m^2
Working Area	=		500m^2
Compound Area	=		2020m^2

3. FRASERBURGH

Stock	=	13000 boxes	
Area covered	=	(including washing)	720m^2
Working Area	=		500m^2
Compound Area	=		1220m^2

For system 2 with reduced stock holding total areas required are:

Aberdeen	1255m^2
Peterhead	1850m^2
Fraserburgh	1200m^2

APPENDIX III

SYSTEM 1 BOX WASHING ESTIMATES

Box Landings (Ref. Appendix 1)	No. Washed P/A
Demersal	4453513
Shellfish	515560
	4969073
Less Washed outside N.E. Scotland (Appendix 1)	680000
	4289073

EST. BOX WASHING PLANT REQUIREMENTS - BOX WASH MACHINE CAPACITY - 1000 BOXES/HR.

1. Machine Capacity - 56% throughout x 6 hrs day - 3360 boxes/day
   - 840 000 p.a.
2. No. washing plants required
   throughput p.a. = 4.3 million
   throughput per m/c p.a. = 840 000 boxes
   Est. No. Machines - 56% capacity - 5 machines
   - 80% capacity - 4 machines.

APPENDIX IV.1

PRINCIPAL BOX COMPOUND ESTIMATE OF OPERATING COSTS

1.1 Compounds Staffed 24 hours per day

1.2 Locations - Aberdeen
Peterhead
Fraserburgh

1.3 Staff

1 Compound Manager (Staff)		
6 Assistants (Staff)	Peterhead	7
Security Officer		
8 Total per compound	Peterhead	9

1.4 Operating Cost Estimate

1.4.1 Labour costs:- per compound

Shift	Staff	(Peterhead)	Total Daily Man. Hours.
04.00 - 12.00	3	(4)	32
12.00 - 20.00	2		16
20.00 - 04.00	1		8
			56

Annual Labour Cost per Compound:-		£ p.a. Ab'dn & Fr.	Peterhead
48 x 5.5 days/week x 52 x £2.75hr	=	37752	44044
Labour on-cost say 20%	=	7550	8809
Overtime @ time & half	=	2870	2870
Compound Manager + 20% on cost	=	10200	10200
Security man		9600	9600
1.4.2 Fork-lift running costs £48.20 p.week x 3 (50 weeks p.a.)		7230	7230
Direct costs per Compound		67972	75523
1.4.3 On Site - overhead costs £150 p.week x 52		7800	7800
1.4.4 Total Compound cost		83002 x 2	90553
1.4.5 Total annual cost of operating 3		166004	
		90553	
Compounds		256557	

APPENDIX IV.2

2. Box Agency Cost Estimate

2.1 Major Agency

2.1.1 Locations - Kinlochbervice
- Lochinver
- Mallaig

2.1.2 Employed by Major Agency

Shift	Employees	Total Daily Man. Hours
08.00 - 16.00 hrs	1 full-time	8
	1 part-time	4
16.00 - 24.00 hrs	2 full-time	16
24.00 - 08.00 hrs	1 full-time	8
		36

2.1.3 Operating Cost

		£ P.Week.
Labour 36hrs @ £2.75 x 5 days	=	495.00
Labour on-cost - 20% full time staff	=	99.00
Management fee includes supervisor, payment of wages, information transfer to Aberdeen/Peterhead (incl. overheads).	=	60.00
Overtime night shift	=	55.20
		709.20

2.1.4 Total Annual Costs £36,878

2.1.5 Total Major Agency Costs (3) £110,634

APPENDIX IV.2/CONTD.

2.2 Minor Agencies

2.2.1 Locations - MacDuff
Whitehills
Buckie
Lossiemouth
Ullapool
Oban
Wick
Scrabster

				£ P.Week.
2.2.2	Employed by minor agency	- 1 person @ £2.75 p.h.	=	110.00
		On-cost @ 20%	=	22.00
		1 part-time		55.20
		Management as 2.1.3	=	30.00
				217.20
2.2.3	Cost per Annum		=	11294.0
2.2.4	Total Cost Minor Agencies (8)		=	£90352.00

APPENDIX IV.3

3. Box Pool Centralised Management

Staff:-	£ p.a.
General Manager	20000
Accountant	10000
Box Control Manager	10000
Secretary/Typist	6000
1 Admin. staff	6240
Computer Terminal staff 3 x £6240	18720
	70960
Labour On-Cost @ 20%	14192
Box Pool Overheads	18720
	103872

APPENDIX IV.4

4. Washing Cost Estimate - Plastic "Nest + Stack" Box Washing Cost/Machine

4.1 Capital cost including automatic feeder = £65000

4.2 Throughput - Boxes/Day = 3360

4.3

Operating Costs	£ per day	p/box
Staff 3 @ £2.75 hr x 8hrs	66.00	1.96
Labour on-cost @ 20%	13.20	.39
Cleaning Materials	6.38	.19
Heat + Water	80.00	2.38
Maintenance	17.00	.51
	182.58	5.43
Overheads	80.00	2.38
	262.58	7.81
Depreciation/Interest	46.28	1.38
	308.58	9.18
Profit	27.04	.82
Daily Operating Cost*	335.90	10.00

APPENDIX IV.4 (2)

BOX POOL OWNED WASHING PLANT OPERATING 2 SHIFT SYSTEM

4.2.1. Capital cost including automatic feeder £65000

4.2.2. Throughput boxes/day max. 5600 x 2
Two shift system @ 66% max. 7400 boxes/day.

4.2.3. Operating Costs	£/day	p/box
Staff 6 @ £2.75/hr x 8hr	132.00	1.78
Labour on cost 20%	26.40	.35
Time & half night shift	33.00	.44
Cleaning materials	13.00	.17
Heat & water	140.00	1.89
Maintenance	25.00	.33
	369.40	4.96
Overheads	100.00	1.35
Daily operating cost	469.40	6.31

4.2.4. Based on one plant x 5.5 day week x 50 weeks i.e 275 days/year, then one plant required Aberdeen and one at Peterhead.

APPENDIX IV.4 (3)

BOX POOL OWNED SMALL SCALE WASHING PLANT

4.3.1. Capital cost including automatic feeder £25000

4.3.2. Throughput boxes/day max. 1600 x 1
@ 65% efficiency/day max. 1040

4.3.3.

Operating costs	£/day	p/box
Staff 2 @ £2.75/hr x 8hrs	44.00	4.23
Labour on cost 20%	8.80	0.84
Cleaning materials	2.00	0.19
Heat and water	14.40	1.38
Maintenance	15.00	1.44
	84.20	8.08
	14.40	1.38
Daily operating cost	98.60	9.46

4.3.4. Based on one plant x 5.5 day week x 50 weeks one plant required Fraserburgh.

APPENDIX IV.4 (4)

SUMMARY OF WASHING PLANT REQUIREMENTS

Aberdeen max. daily cap'y	11,200
Peterhead max. daily cap'y	11,200
Fraserburgh max. daily cap'y	1,600
Total max. cap'y -	24,000/day

Daily running costs at 65/66% efficiency, for three plants: 15840 boxes/day275 days, 4.35m/annum.

	£	p/box
Aberdeen	469.40	
Peterhead	469.40	
Fraserburgh	98.60	
	1027.40	6.55
Contingency	123.52	.79
Total	1150.92	7.34

APPENDIX V.

SPECIFICATION FOR A DESIGN OF INJECTION MOULDED PLASTIC BOX SUITABLE FOR USE IN THE NORTH EAST OF SCOTLAND.

Most fishing vessels working out of North East Scottish fishing ports stow their fish in a standard wooden box 813mm x 483mm x 184mm (32in x 19in x 7.5in) external with a capacity of 57 litres. With good icing and no overfilling these boxes should contain 38kg of fish but in practice they are usually overfilled and contain between 45kg and 57kg of fish. Boxes made from wood are difficult to clean and with a short life span are becoming increasingly costly to maintain and replace.

With the planned introduction of a North East Scotland Box Pool, a unique opportunity may arise to introduce a plastic box and phase out the wooden ones. It is important to remember that this box is for use by both catching and processing sectors and with the operating environment of each being so different, it is inevitable that any box used will have to be a compromise to try and suit both.

The following draft specification outlines what the S.F.I.A., after consultation with the industry, consider to be the main features of such a box. The number of boxes required will readily allow for testing for a completely new box but this does not preclude the use of either an existing or possibly modified existing box if the design features can be met.

1. MATERIAL: High density polyethylene stabilised against the effects of ultra violet light, box washing detergents and extremes of temperature.
2. TYPE:

2.1 Box Type - Nest/Stack: This type of box is used almost universally ashore because of its handling cost advantages but may meet some resistance in the catching sector. There are good reasons for using a stack only type box at sea, but one major disadvantage is the stowage space required for empty boxes. This problem is

currently alleviated by the practice of overfilling. Plastic boxes cannot safely be overfilled, consequently more boxes will be required to stow fish in the same space.

2.2 Nest Facility: When nested, boxes should nest to less than 50% of their stacked volume. Stacks of empty boxes may be secured in the fishroom by wedging to the fishroom deckhead. The boxes must pull apart easily and not be prone to jamming into one another.

2.3 Stack Facility: The stacking location should be positive and easy to locate, and positive location should not be susceptible to minor box damage or small pieces of ice, etc. Obvious visual means of ensuring correct orientation must be provided.

3. FISH & ICE CAPACITY: 45kg (7 stones) of fish + 15kg of ice.
A maximum recommended lift for two men is 59-71kg and should be at the lower end when working in a confined space. Assuming a box tare weight of 4kg the total filled weight will be 64kg.

4. VOLUME: 70 litres.
Whereas the capacity of the wooden box can be artificially increased by overfilling, plastic boxes cannot safely be overfilled.

5. STRENGTH:

5.1 Stacking Depth: The boxes must be strong enough to stack up to 3m high in a loaded condition and at sea must withstand additional vertical accelerations of 1g and vessel rolling and pitching motions.

5.2 Robustness: Empty boxes are often thrown around. The empty box must be able to withstand repeated dropping onto one corner on a solid floor from a height of 3 metres without cracking and thereby weakening the box in a loaded and stacked situation.

5.3 Handholds: The handholds used for hook location during discharge must be strong enough to enable a stack of four loaded boxes to be lifted in one hoist.

6. DIMENSIONS:

6.1 Depth: The internal depth should be a minimum of 200mm and a maximum of 250mm. The minimum is to ensure sufficient depth for larger fish and ice without crushing. The maximum is to reduce the effect of crushing of small fish within the box itself.

6.2 Length: The internal length should be a minimum of 700mm. This should be across the full width of the box and not include recesses created by pillars. This is necessary to ensure that larger fish can be stowed without bending.

The external length should be a maximum of 900mm. Although the ability of a man to lift a box by the handle at either side may be considered as a criteria for defining maximum length, the most important is the clear opening of the fishroom hatch. The smallest would appear at present to be 1000mm x 1000mm of which, at least 50mm on either side must be allowed for clearance. Ideally perhaps the overall length of the existing wooden box (815mm) could be used to fit within the existing stowage layout in the fishroom, but this is not considered essential.

6.3 Width: Width will depend upon the length and depth as defined in 6.1 and 6.2, and also the box design. Ideally perhaps the width should be the same as that of the existing wooden box at 483mm to fit within the existing transverse squaring-off of the fishroom hold. Nevertheless the object is to provide a box suitable primarily for correct boxing procedure and optimum fish quality and restricting the box width to that of the existing box is not considered essential.

7. DRAINAGE: Drainage holes of at least 12mm diameter should be located at the outer edges of the base. The box must still be able to drain when placed on a flat wood or concrete surface.

8. HANDHOLDS: The box must have positive handholds at both ends. These handholds must also be suitable to accept unloading hooks (see 5.3). If the handholds consist of openings in the ends of the box, as with the existing wooden boxes, then the openings must be close to the top of the box to ensure that entry of the fingers is not impeded by the fish (particularly their teeth).

9. HANDLING ASHORE:

9.1 Fork Lift: The design of the box should incorporate a means of enabling the boxes to be handled by a fork lift truck in stacks of at least four high, directly without necessitating the use of pallets. This can be achieved by use of an outer rim.

9.2 Box Base: Allowance must be made for abrasion of the box base caused by dragging of the box in loaded condition across fishmarket floors.

10. BOX WASHING: All pockets on the box rims should have drain holes to enable wash water to drain away.

11. The Sea Fish Industry Authority would consider offering a box test service utilising a commercially available test rig. SFIA approval would be confirmed by the incorporation of the Authority logo on boxes meeting the aforementioned strength criteria.

APPENDIX VI

ALTERNATIVE OWNERSHIP STRUCTURES - A REVIEW

1. INTRODUCTION

The object of this appendix is to explore the alternative arrangements for running and financing the North of Scotland Box Pool.

The alternatives are examined with respect to their motivation, financial capacity, management skills, industry acceptability structural suitability and finally how the arrangements aid the long term aims of the industry. In the overall context of port operation box pools it cannot be considered in isolation from other activities associated with landing, selling and transporting fish. It is preferable that port operations be considered in totality and all functions combined effectively to form a specialised service to the fish industry. While this document is recognised as not providing an exhaustive set of criteria for selection, it does give a basis for elementary screening.

2. ALTERNATIVES

The alternatives considered are:-

2.1 Harbour authorities
2.2 Fish salesmen
2.3 Producer Organisations
2.4 Co-operatives
2.5 Processing associations
2.6 Regional Councils
2.7 Independent companies
2.8 Box Exchange
2.9 Consortium of interested parties.

2.1 Harbour authorities

Harbour authorities fall into three broad groups. In reality local authorities are represented on all three types.

(a) Independent harbour boards/trusts (Peterhead, Fraserburgh, Lossiemouth, Whitehills, Ullapool, Mallaig and Oban).

(b) Regional Council ports (Buckie and Macduff (Grampian Council) and Kinlochbervie and Lochinver (Highland Council)).

(c) Aberdeen differs from the other ports in being registered under the National Dock Labour Board Scheme. In other respects Aberdeen Harbour Board is similar to other independent harbour boards.

Although the corporate structure of these harbours may differ their roles are essentially the same. Their main fuctions are the operation of harbour facilities and their management, maintenance and improvement. They do not normally engage in service activities.

The advantages and disadvantages for extending their role to include box pool operations are discussed below:-

Advantages

(a) The port authorities are financially sound and could attract sufficient loan capital.

(b) Funds within the authorities may be sufficient to avoid a large borrowing especially where the authority is non profit making and is keen to minimise taxation.

(c) Facilities for box pounds/depots may already be available and owned by the authorities.

(d) Harbour authorities are particularly aware of the throughput of supplies through the auction system and recording box throughput may correspond with collection of harbour dues.

(e) Management skills within these organisations are sufficient to operate a box pool system.

(f) The port authorities would be acceptable to the users as a neutral third party.

(g) It may be possible for ports to extend their range of functions to include the provision of boxes, along with fish selling and other services in a similar way to some Continental ports. This would have a long term objective of creating a specialised and profitable enterprise, thereby ensuring a source of funding for future capital improvement in the port.

Disadvantages

(a) There may be a problem of rivalry between the various ports which could inhibit the intercharge of boxes. In an extreme case harbour boards could use the provision of subsidised boxes as a means of attracting traffic. It would be unfortunate if the neutral status referred to above was replaced by an unfair restrictive practice aimed at undermining the importance of other ports.

(b) There may be a problem in amalgamating harbour dues with box charges. Higher costs from one harbour because of a higher base charge for dues could be perceived as a barrier to development.

2.2 Fish Salesmen

The ports of Aberdeen, Peterhead and Fraserburgh have 9, 7 and 11 fish selling companies respectively. Other ports include Buckie (6), Macduff (4), Banff (2), Lossiemouth (2), Oban (2), Mallaig (1), Kinlochbervie (1) and Lochinver (1). Within these numbers several of these companies are directly owned or affiliated to one organisation. There may therefore be approximately 8 companies interested in the box pool.

Briefly the auctioneer or salesman offers a sales service to the fishermen and buyers and in turn charges the fisherman a commission of 5 per cent of the value of the sale/purchase. In some cases a service may include provision of ice, fuel and oil, boxes, food and sundries as well as making payments on behalf of fishermen of VAT, PO levies landing dues and handling SFIA levies on fish sold.

The main strength of the fish salesmen is that the fishermen are always likely to require such a service and it is convenient to have a single account.

Advantages

(a) Most of the fish selling companies are financially sound and could attract sufficient loan capital.

(b) Competition among ports could prevent box charges increasing.

(c) Management skills within these organisations are sufficient to operate a box pool system and they already know the business thoroughly.

(d) The fish selling companies with some re-organisation and definition of their roles could supply a comprehensive and specialised service to the industry.

Disadvantages

(a) Fish salesmen as non users of boxes are profit orientated and it could be argued that charges levied would reflect this interest.

(b) The existence of many salesmen at individual ports could create problems of o-operation.

(c) Different companies involved in individual ports could create problems of co-operation.

(d) Competition among salesmen between ports could result in different box charges resulting thus causing or affecting port popularity.

(e) Because of the long running dispute with the users over charges for wooden boxes, a pool operated by salesmen may be unacceptable to many of those users. This criticism of course could be levelled at most other alternative options.

2.3 Producer Organisations

There are three main P.O's which are recognised within the Grampian Region namely the Aberdeen Fish Producers Organisation Ltd., N.E. Scotland Fishermens Organisation Ltd., the Scottish Fishermen's Organisation Ltd. The present membership of the PO's is 42, 130 and 700 respectively.

The terms of reference for the operation of producer organisations under the Regulations of the EEC require them to:

(a) Operate a withdrawal price scheme;
(b) Co-ordinate the activities of individual fishermen;
(c) Plan the supply of fish to the market;
(d) Grade and label fish at the market;
(e) Claim financial assistance for market aid;

There is only one PO with sufficient resources as indicated in the size of membership to finance box pool developments - namely the SFO.

Advantages

(a) Popularity with fishermen.

(b) SFO could probably raise the necessary funds.

(c) They have had experience both with plastic boxes and fish selling activities and would view the box pool as a further extension to their role.

(d) They are non profit making and would have the incentive to keep charges to members as low as possible.

(e) They may be in a position to attract assistance from E.C. funds.

(f) It might make P.O. membership more attractive to fishermen, non-members.

(g) Members are widespread throughout Scotland but are particularly in strength in the North East.

(h) The P.O's are already active in planning the long term future of the industry and would take a much broader view than most other organisations.

Disadvantages

(a) Unpopularity with fish merchants.

(b) Unfair competition in relation to other PO's. SFO might attract members from both the Aberdeen Fish Producers Organisation Ltd. and the N.E. Scotland Fishermens Organisation Ltd.

(c) P.O. members may seek preference in box services over non members.

(d) Whilst the SFO has the managerial and financial strength for the proposed box pool, other PO's do not and expansion of the pool nationally may be inhibited.

2.4 Co-operatives

An alternative for the North of Scotland would be for a co-operative to be created to operate a box pool or for a number of co-operatives to jointly operate a box pool. It should be pointed out that co-operatives in the U.K. are not widespread and

would require considerable promotion. Evidence of success in relation to box pool operations comes from the Irish Republic where each port has its own fishermens' co-operative.

From the evidence provided the following points can be derived:-

Advantages

(a) Impetus from the box pool could promote the overall UK development of co-operative structure with extensions into processing etc.

(b) Evidence from the Irish Republic shows that co-ops attain a much higher success rate in relation to FEOGA applications. Although success is not guaranteed and the Irish experience suggests an all out development with the box pool only forming a component of the plan.

(c) Individual ports could have a degree of autonomy through a separate co-ops.

(d) Co-ops if finance and management skills existed, could provide the total service at a port.

Disadvantages

(a) Co-ops are unlikely to have sufficient funds to meet investment requirements.

(b) Development of co-ops could adversely conflict with existing arrangements which might result in duplicating an existing level of organisation.

(c) Fishermen tend to prefer flexibility and may find it difficult to remain loyal to one co-op in view of movements from East to West Coast fishing activity.

(d) Separate co-op development could lead to complications in

relation to FEOGA grant facilities under Reg. 355/77. Different co-ops could receive monies on different dates thus leading to confusion.

(e) The eventual extension of the co-ops role into fish processing could directly conflict with its box pool role.

(f) Because co-ops are not at present widely established, the process of building them up to an organisational level sufficiently strong enough to run the box pool would extend the lead time.

2.5 Processing Associations

There are five associations in the Grampian region, namely the Aberdeen Fish Curers' and Merchants' Association Ltd., Fraserburgh Fish Merchants' Association, Moray Firth F.M.A., Peterhead Fish Processors' Association and Peterhead Fish Traders Association. These associations operate under the umbrella of the Scottish Federation.

Advantages

There may inevitably be significant advantages from Association involvement. These may include:-

(a) Financial support of a box pool by the associations would be more acceptable to merchants than other organisations more closely identified with fishermen.

(b) The merchants are likely to own substantial numbers of the same boxes for their internal factory use.

(c) The merchants have considerable knowledge of trade demands.

(d) Control of those sections of the merchanting trade notoriously lax, with regard to responsible use of the box would be made easier.

Disadvantages

(a) Disatisfaction of outright ownership by fishermen with resulting problems in negotiating box charges.

(b) Lack of capital funds available to the Associations which would discourage loan capital.

(c) They represent a sectorial interest and as such would be unlikely to become involved with the wider issues of providing a total service to the fish industry.

2.6 Direct Regional Authority Involvement

The two regional authorities involved are Grampian and Highland Council.

Advantages

Advantages of their direct involvement include:

(a) Sufficient capital resources.

(b) Wholly acceptable as a neutral third party.

(c) Their ownership of some of the ports, i.e. Buckie, Macduff, Kinlochbervie and Lochinver and influence on others through representation on harbour boards.

Disadvantages

(a) The detachment of the councils from the trade and its demands.

(b) Conflict with port authorities not under council control.

(c) Lack of knowledge of the Trade and its complexities.

(d) Possibility that the box pool budget may be influenced by other financial matters within the Councils total budget.

2.7 Independent companies

Independent companies who may range from box manufacturers through to freight distributors could be sufficiently interested in running a box pool.

Advantages

The advantages of their involvement could be:

(a) Sufficient capital available for funding.

(b) Management expertise from similar businesses.

(c) Distribution links on a nationwide scale in the case of hauliers.

(d) Easy access to box supplies in the case of box manufacturers.

Disadvantages

(a) Should the organisation concerned be a box manufacturer, the industry may become vulnerable to monopoly power.

(b) Independent organisations' links with other industries could disrupt the flow of boxes into the region and between regional centres.

(c) Lack of detailed knowledge of the trade.

(d) Interest limited to the box pool and unlikely to be interested in providing the total service in the port.

2.8 Box Exchange

System 2 outlines a shared arrangement between vessel owners, fish merchants and fish salesmen (or box pool organisation) in which the capital cost is met by the participants. This scheme is very similar to the 1970's HIBEX system but on a much larger scale.

Advantages

The following advantages which are based on the experience of the HIBEX scheme could be expected:

(a) Buyers and sellers would be actively encouraged to participate in the scheme and promote the use of their own containers.

(b) Most of the advantages associated with P.O.'s and other trade organisations would apply and in addition:

(c) FEOGA and SFIA grant and loan assistance may be available to fishing vessels.

Disadvantages

(a) Owners may prefer to keep their own boxes rather than accept those of possibly inferior quality. This could affect the flow of boxes from one area to another and disrupt cleaning, stock taking etc.

(b) Financial assistance for fish processors would be limited due to restrictions in relation to FEOGA. Investment in fish boxes would only be treated favourably if it became a component part of some overall investment exceeding £25,000.

(c) Limited application in the longer term aims of the industry and not relevent to the total port service.

2.9 Consortium of interested parties

A combination of the above organisations could dispel many of the previously mentioned disadvantages as outlined earlier for the individual organisations.

Such a consortium would ideally consist of a) the Harbour Authorities financing up to 80% of the total investment i.e. Aberdeen (20%), Peterhead (20%), Grampian Regional Council (possibly including Fraserburgh (20%), and Highland Council (20%)) and b) the trade consisting of a) the fish salesmen (10%), the merchants association (5%), and the fishermen or their representatives the P.O.'s (5%). Such an arrangement, although based on arbitrary financial allocations, and not on box use/throughput, would be sufficiently motivated, have the financial and managerial capacities and most of all be acceptable to all members of the industry. Such a group would clearly have the long term aims of the industry in mind, but may be unable to reach consensus on the priorities.

The problem is likely to be in determining the financial share arrangements and making the share arrangements sufficiently attractive to all interested parties.

3. **RESTRICTIVE PRACTICES**

SFIA have consulted with the Monopolies Commission to ascertain if any of the alternatives introduce restrictive practices. The Box pool system is designed to be flexible and therefore suited to both one independent organisation or a number of independent organisations operating from separate ports. The control over the scheme by one organisation may be preferred as it would reduce friction between ports and would probably be in a better position to maintain box collection and supply. One probable objection to this may be that it contravenes the Rules as laid out by the Monopolies Commission.

The view put forward by the Commission suggests that single company involvement would be acceptable provided built in

clauses were introduced to prevent monopoly power. Suggestions were:

(1) Setting up a mechanism by which an organisation could lease the harbour facilities (or part of the harbour facilities) to provide the services needed by the industry as a whole. This would be a form of a franchise which could be renewed say every 5 years. The Harbour Authority would have the right to seek tenders from a number of competent organisations and could use its own financial strength for capital borrowing say for boxes which would then become part of the lease package.

(2) Introduction of a monitoring body to prevent unfair trading. Should the organisation be non profit making then there would be little reason to intervene.

4. SOURCES OF FINANCIAL ASSISTANCE

4.1 Development Areas

The existing Regional Development Grant (R.D.G.) and Selective Financial Assistance (SFA) is restricted to Special Development areas. Grampian Region is not included within the specified regional area although Highland Region is.

4.1.1 Regional Development Grants

Grants are paid towards the provision of new items of plant and machinery, building and works for a range of industrial projects including certain processing of agricultural products. Payment under this scheme will continue, the rate of grant being 22% and 15% depending on location

Assistance may be offered towards the creation of new jobs if related to a project involving capital expenditure, or a grant of 15% may be paid on expenditure itself. Service industries are eligible.

4.1.2 Selective Financial Assistance (S.F.A.)

Assistance can be provided to investment projects in the manufacturing and service industries, including the processing of agricultural products, which benefit employment and have good prospects for longer term viability. Assistance is normally in the form of discretionary grant aid provided where the applicant can make a sustainable case that such assistance is necessary to enable the project to proceed.

4.2 Scottish Measures

In addition to the above schemes of assistance which apply, the Government has arranged for a special provision of further incentives to industrial investment in Scotland. These incentives are administered through the Scottish Development Agency and the Highlands and Islands Development Board. These are statutory bodies set up by and largely funded by the Government.

4.2.1 The S.D.A.

The main objective of the Scottish Development Agency, which was established in 1975, are to stimulate the economic and industrial development of Scotland. The Agency in carrying out this task helps to establish new enterprises; supporting and developing small businesses; providing investment finance for industry; encouraging technological development; planning and promoting the development of particular localities; providing advance and purpose-built factories and workshops.

4.2.2. The H.I.D.B.

Because of special difficulties in some of the more remote parts of Scotland, the H.I.D.B. was set up by the Government to help economic and social development. It has powers to assist industrial development by means of investment grants, interest relief grants, removal grants and loans for buildings, plant and equipment and working capital. The Board may also hold equity; it may build factories for lease to developers and has in hand a programme of advance factory building.

4.2.3 Grampian Regional Councils

There may be an option for financial assistance from the Regional Councils. Grampina R.C. are currently investigating their own arrangements, the main criteria for investment being employment re-inforcement.

4.3 EEC and related Grants

4.3.1 Processing

EC Regulation 355/77 was designed to improve the processing and marketing of agricultural products which includes fisheries. The two aims outlined are:

(i) improvement in quality and presentation:
(ii) improvement and rationalisation.

Assistance is subject to the following conditions:-

(i) To ensure coherent improvement in the processing and marketing of agricultural products, the financial contribution from F.E.O.G.A. should be conditional on a specific programme laid down by member states. Within the recent 1982/84 submission plastic boxes are included, although experience has shown success is likely only when investment in boxes is a component part of an overall package.

(ii) The Member State concerned should approve the projects to be financed by the Fund and also contribute to their funding. (The Fund would not be more than 25% of the total investment). Should R.D.G.'s or S.F.A.'s not be included in the member states contribution - i.e. insufficient national grant available, deficiencies will be made available under Agricultural Products Processing and Marketing (Improvement Grant) Regulations 1977 which provides the minimum 8% member contribution.

(iii) Aid from the fund must neither strengthen nor create a dominant position in the EC.

(iv) Financial assistance will only be available to projects with capital investment greater than £25,000.

4.3.2 Fishing Vessels

EC Regulation 2908/83 was designed for restructuring, modernising and developing the fishing industry. Under this scheme priority is given to vessel replacement and to modernisation of fishing vessels. In the case of the latter these include projects which are co-ordinated in their economic and technical aspects and projects aimed at improving the processing of catches. Funds available may be up to 25% provided the member state concerned has approved the project and is willing to finance developments itself. Responsibility for this is undertaken by the Sea Fish Industry Authority under the terms of the 1981 Fisheries Act.

5. CONCLUSIONS

Even within the fairly narrow terms of reference dictated by the earlier sections of this report, it is clear that ownership possibilities for the box pool are diverse and numerous. There are several solutions within the limited field of the eight alternatives considered, which could prove equally satisfactory. In drawing up a list and reviewing possible alternatives, it has been assumed that the new plastic box pool cannot cost users more than they currently pay for the existing, mainly wooden, box system. This consideration must inevitably control the level of profitability possible.

The approach used to rank the alternatives was to select six characteristics, which were considered desirable features of any organisation running and financing a box pool. Of these characteristics, 'industry acceptability' was considered most important and was given the greatest weighting. This was

followed by 'financial capability' wider interest and 'motivation', which were given equal weighting. 'Financial capability' was intended to reflect both the financial resources available within an organisation and its credit worthiness in raising capital loans. Wider interest reflected the interest of the organisation to provide a total specialised service to the industry. 'Motivation' was intended to indicate how keen the organisation is likely to be in getting involved. The two other characteristics 'Management skills' and 'Structural suitability' were considered to be of less importance and were given the lowest weighting. It was thought that Management skills could probably be brought in if the organisation was financially sound. 'Structural suitability' was an attempt to measure how well the existing organistion was structured to undertake the task of operating a box pool. Inevitably such a system of ranking is arbitrary and even the choice of characteristics and their weighting is subjective. However the answers it produces coincide with the common sense ones and a systematic approach of this kind does highlight the strengths and weaknesses of all the alternatives. Table 14 shows the ranking order of the alternatives.

A consortium of interested parties and the harbour authorities are the two most favoured alternatives. Almost by definition a consortium would enjoy high industry acceptability and would be strongly motivated to become involved. Its financial standing and structure would be the probable weaknesses and it may be difficult to reach a consensus on many issues. Harbour Authorities on the other hand would be financially very sound and quite well placed to operate a box pool. Their industry acceptability is less certain, though they are in some senses neutral. Their particular strength lies in their desire to operate the ports profitably and efficiently and the box pool would be seen as a step in this process. It is also possible to envisage an evolution, in the long term, towards the specialised Continental fishing ports and their facilities.

Under such a multi functional approach, port authorities might extend their range of services to include the sale of fish even if this were to be franchised to suitable organisations.

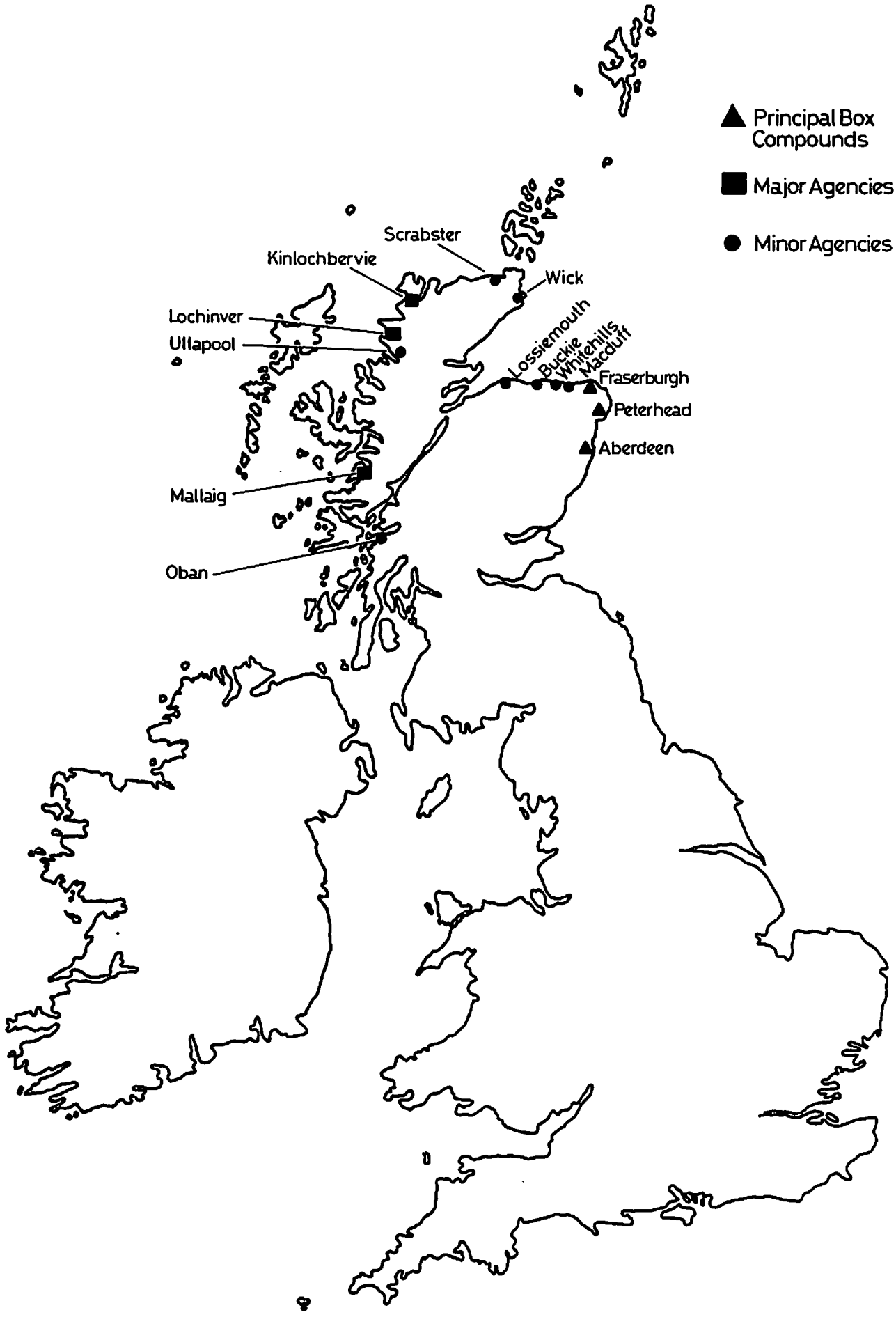
There are further considerations with respect to harbour authorities which are not brought out under the system of ranking. One of these is that in the North of Scotland at least, the two regional councils Grampian and Highland, represent a common element throughout the fishing ports as a result of membership of Boards and Trusts. While minority representation cannot guarantee cohesiveness it might be possible to reduce conflict.

Clearly there is no single answer to who should run the North of Scotland box pool. Although some organisations are better able to undertake the work than others at the end of the day a choice has to be made. This choice however should not be taken in consideration of the box pool only and the most important issue is to have as a long term objective efficient port facility providing the type of service needed by all users.

TABLE 13

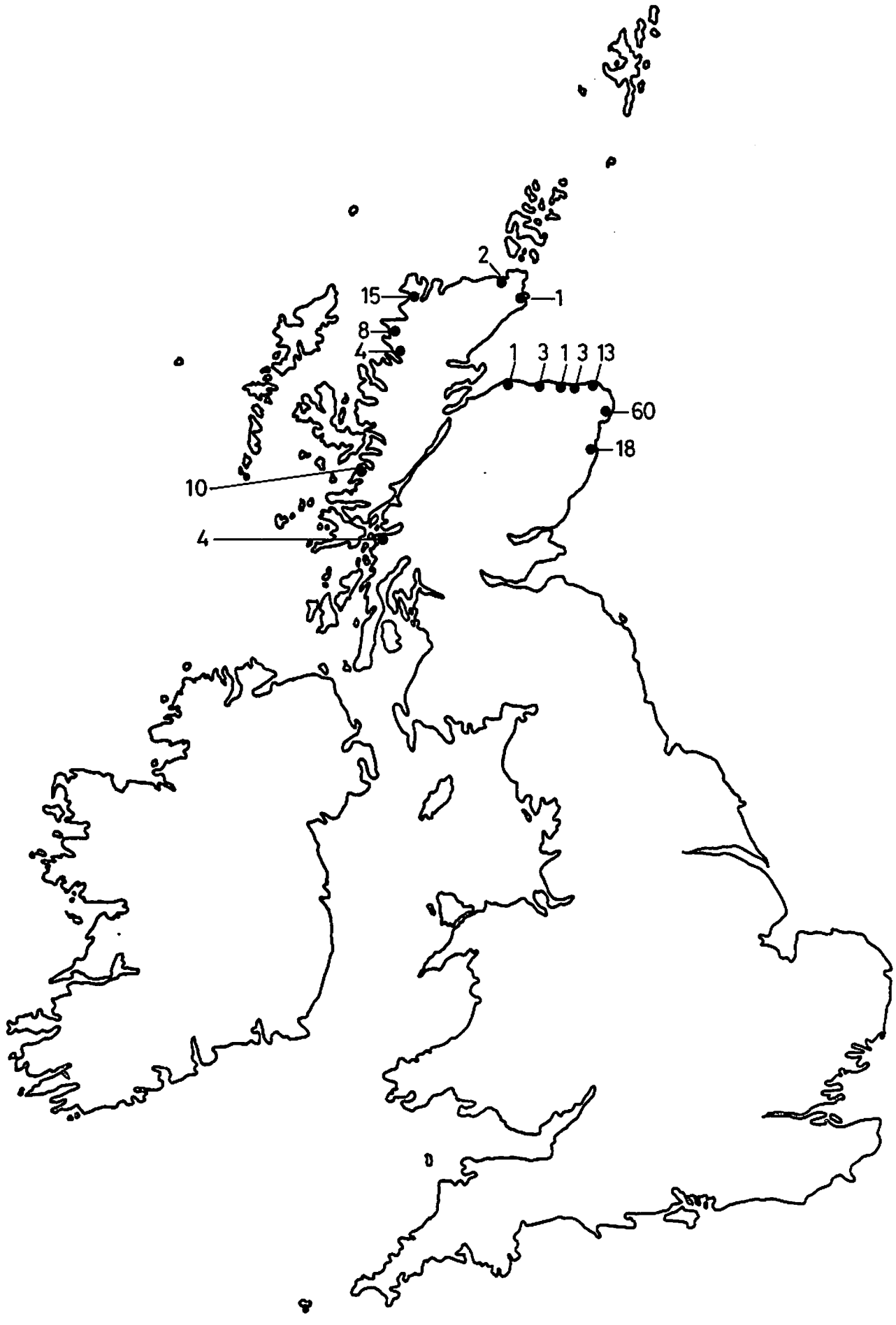
RANKING OF ALTERNATIVES

	ALTERNATIVES	WIDER INTEREST	MOTIVATION	FINANCIAL CAPABILITY	MANAGEMENT SKILLS	INDUSTRY ACCEPTABILITY	SRUCTURAL SUITABILITY	TOTAL
	Weighting	9	9	9	3	12	3	45
2.9	Consortium of Interested Parties	7	9	6	3	12	1	38
2.1	Harbour Authorities	9	6	9	3	8	2	37
2.2	Fish Salesmen	7	9	9	3	4	1	33
2.3	Producer Organisation	8	6	6	2	4	1	27
2.6	Regional Councils	3	6	9	3	4	1	26
2.7	Independent Companies	2	6	9	3	4	2	26
2.8	Box Exchange	2	6	3	2	12	1	26
2.5	Processing Association	3	6	3	2	4	1	19
2.4	Co-operatives	6	3	3	1	4	1	18



PORTS WITHIN BOX POOL REGION

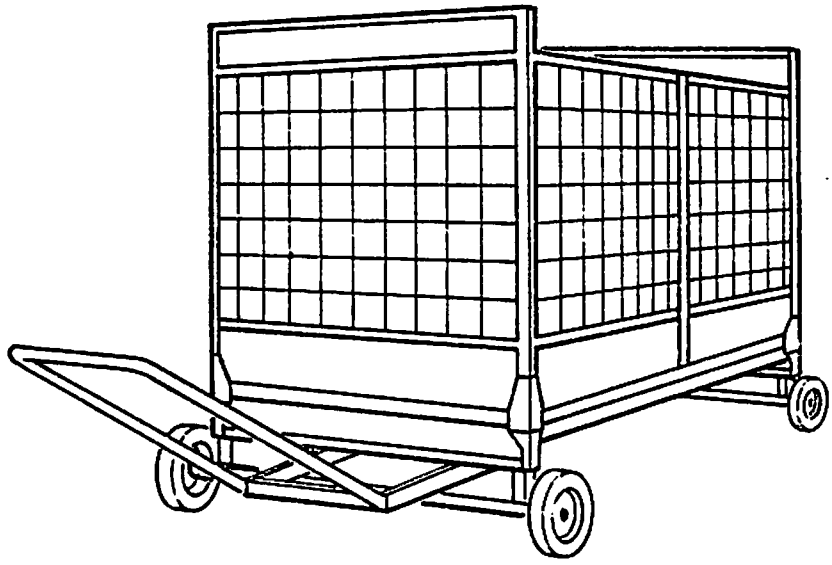
Fig.1



ESTIMATED QUAYSIDE STOCK HOLDING ('000 Boxes) Fig.2

Bremerhaven Box Compound Showing Box Pallet / Cages

Fig. 3



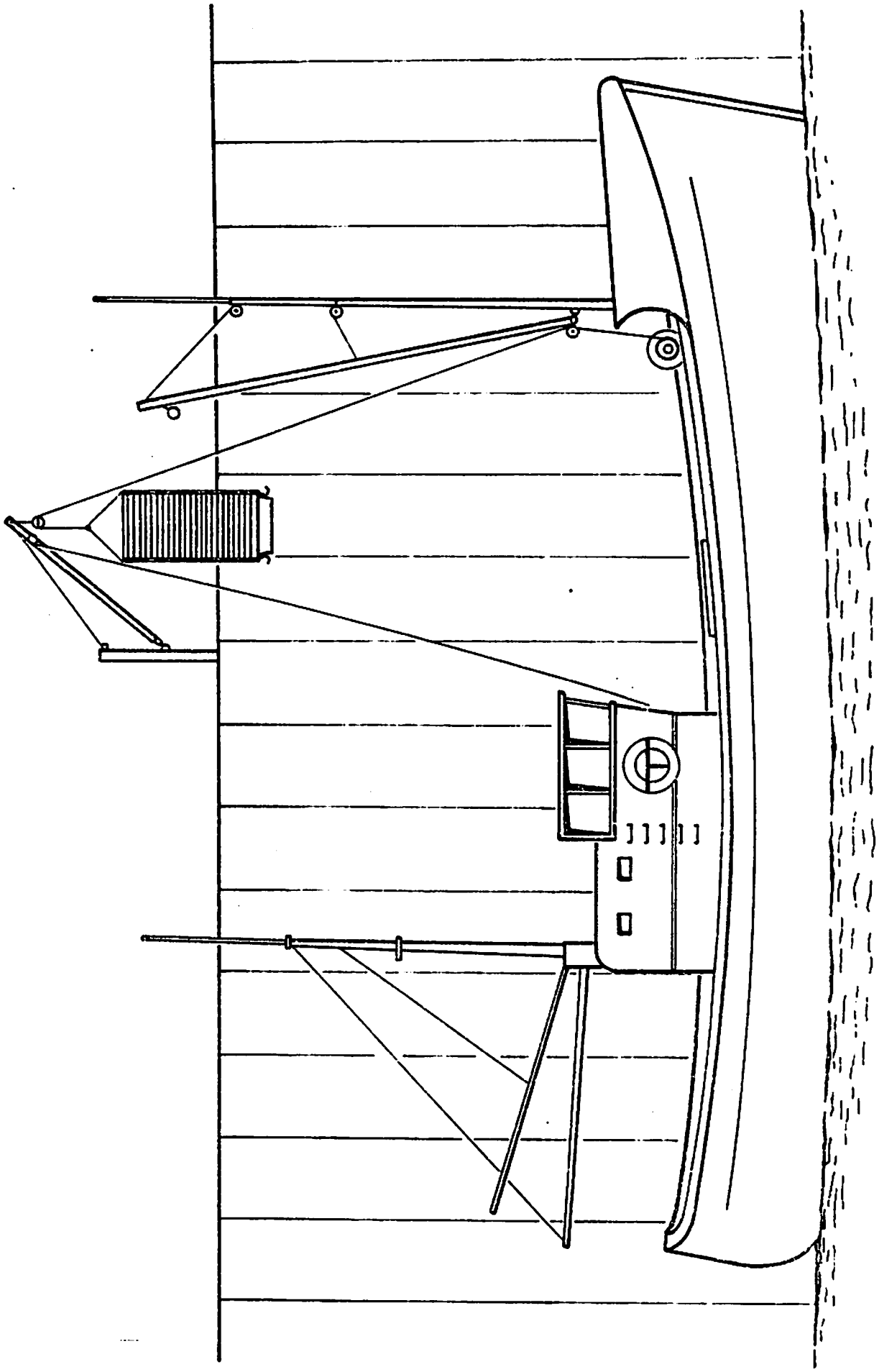
For 50 Boxes. Overall Dimensions 1·7m x 1·0m

SUGGESTED BOX HANDLING METHOD

Fig.4

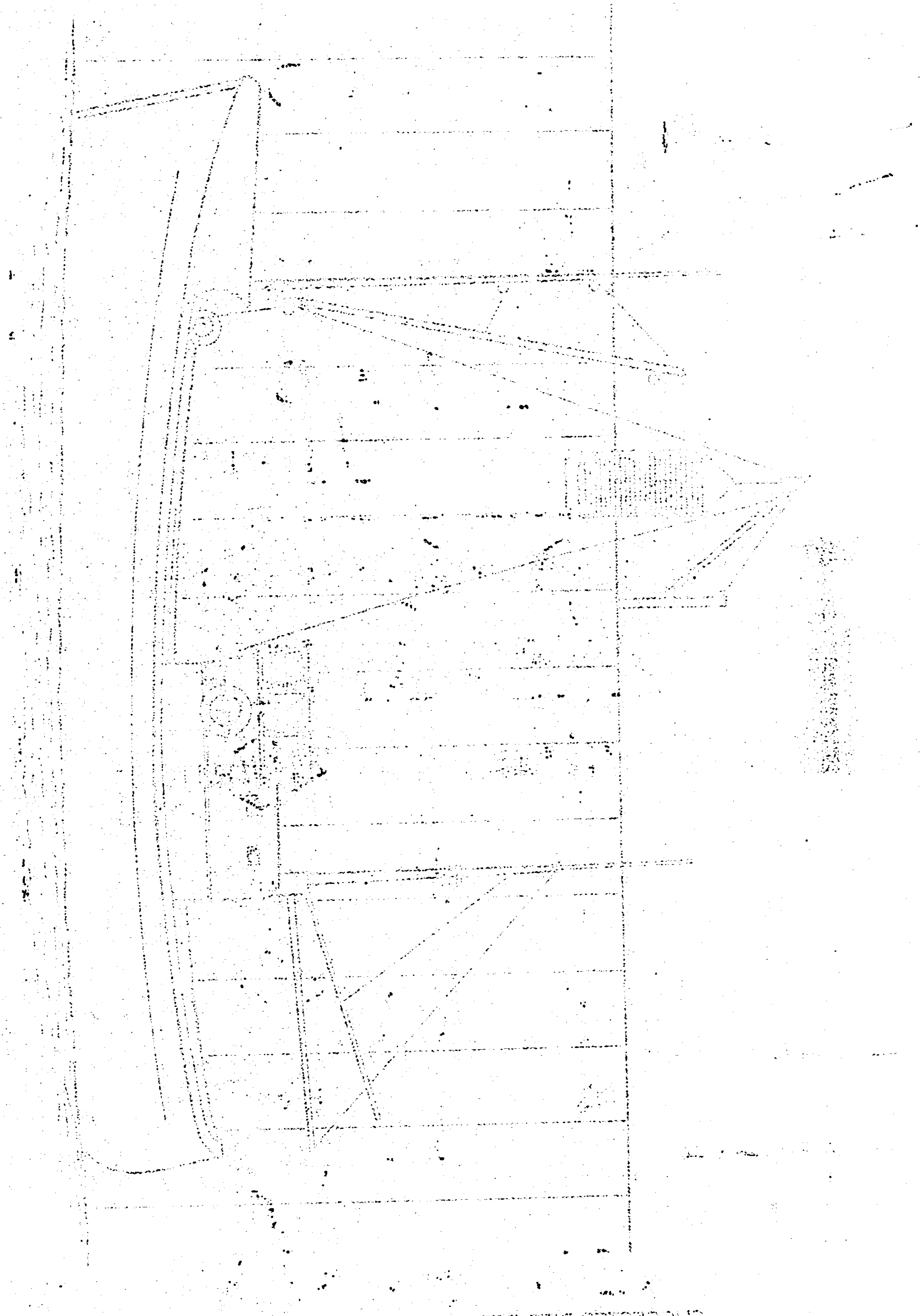
TYPICAL BOX TROLLEY

Fig. 5



SUGGESTED PIER DERRICKS FOR USE ON
PIERS WITH LOW WATER LOADING PROBLEMS

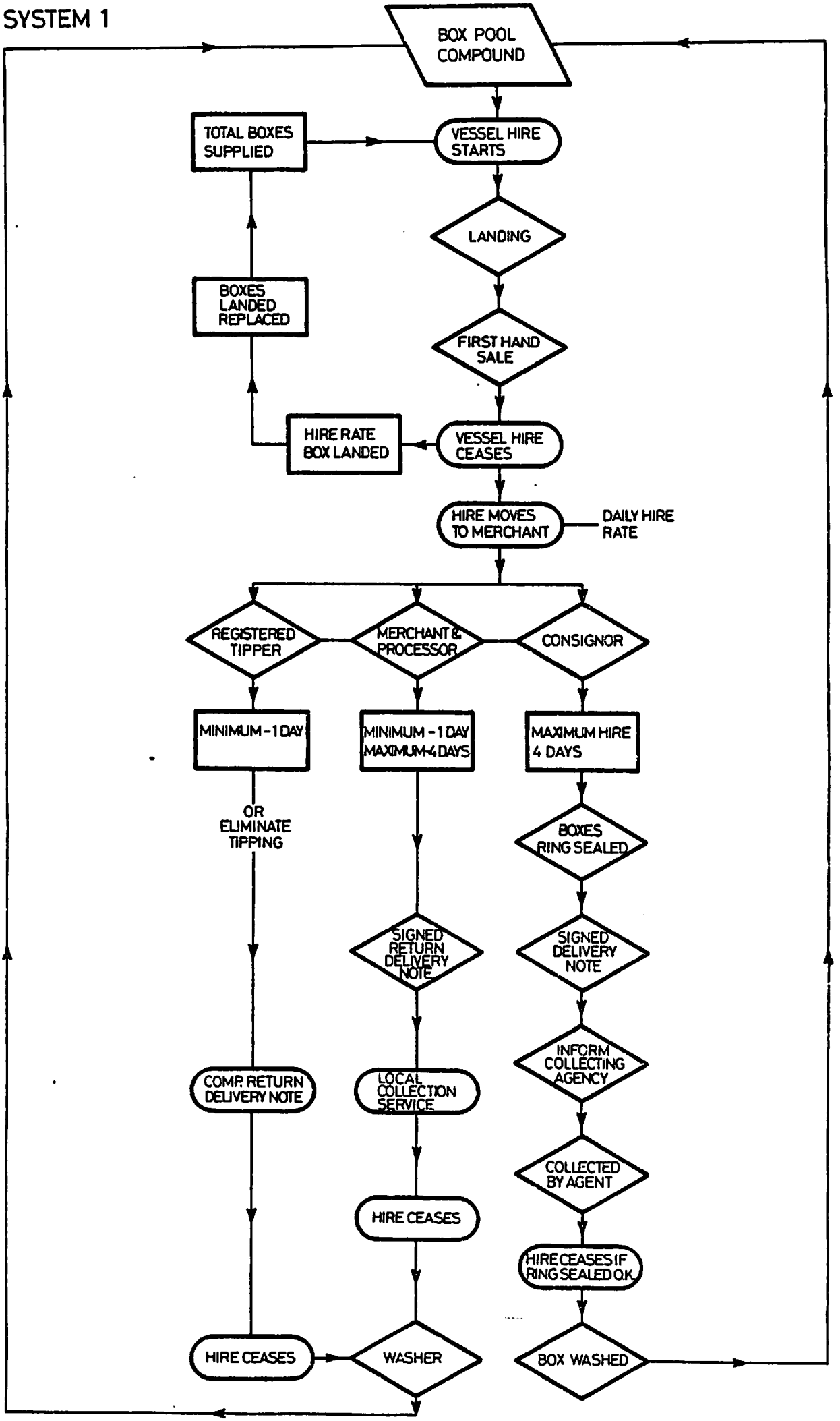
Fig. 6



SUGGESTED PIER DERRICKS FOR USE ON
PIERS WITH LOW WATER LOADING PROBLEMS

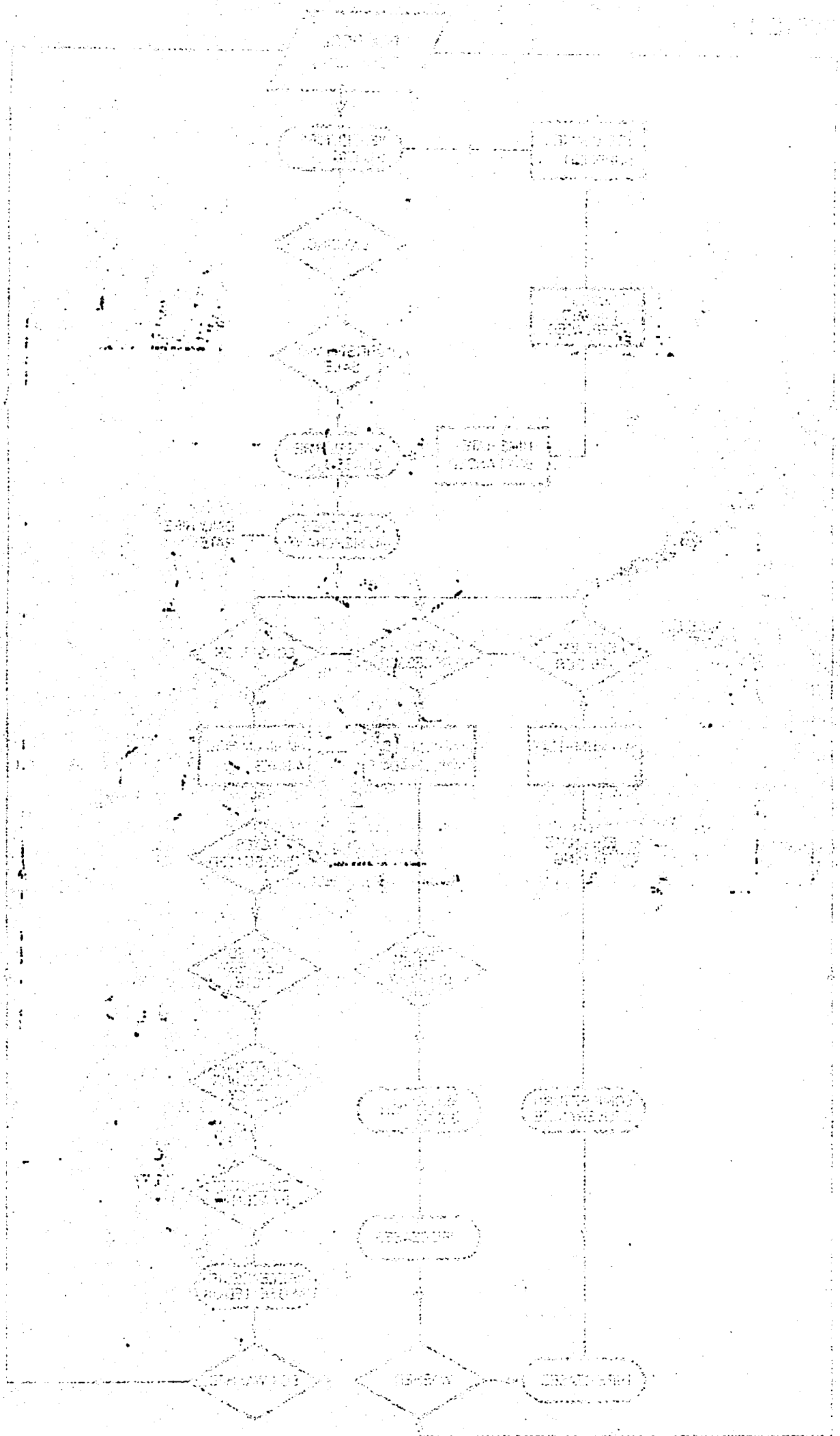
Fig. 8

SYSTEM 1

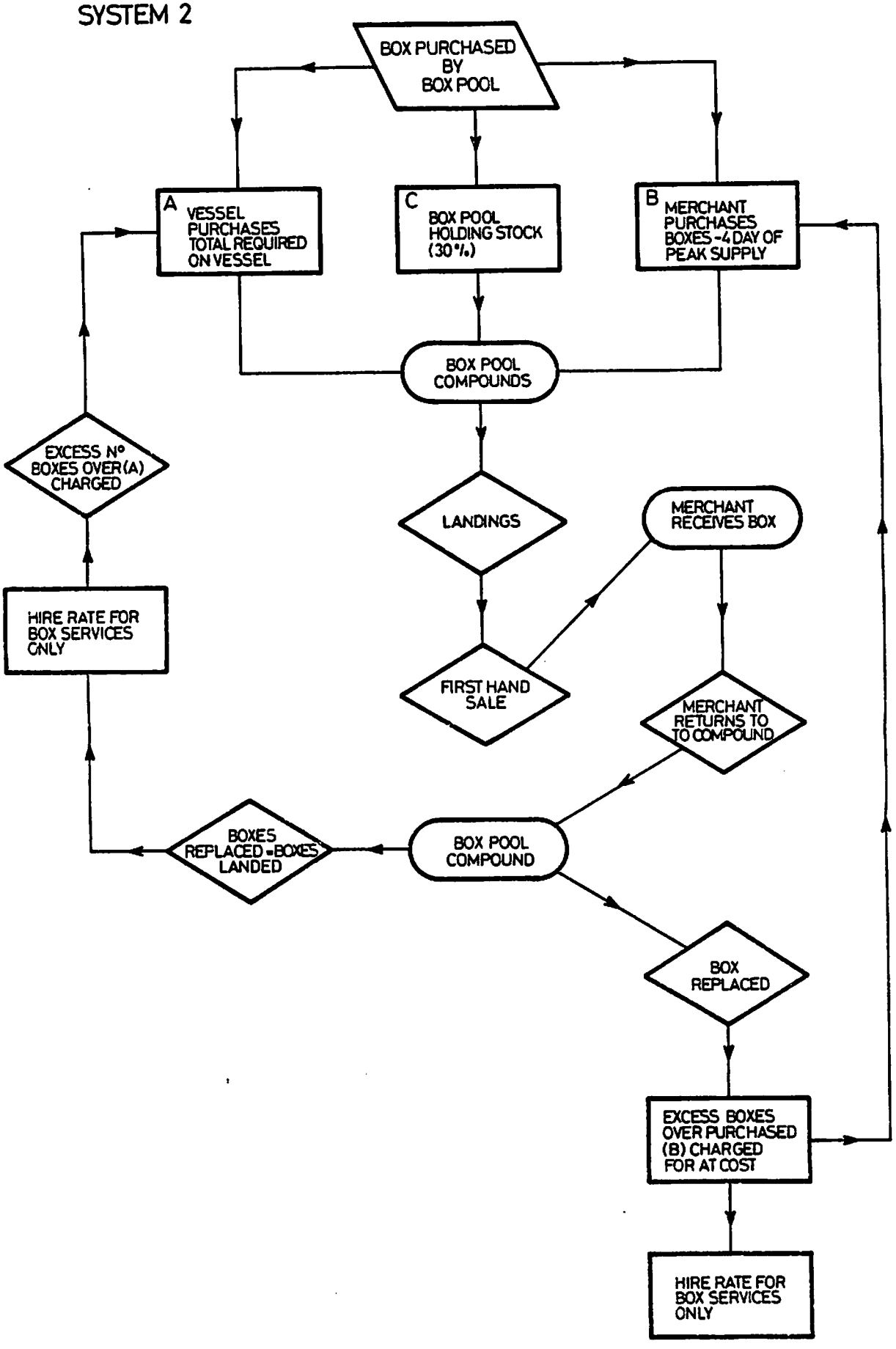


HIRE SYSTEM - BOXES PURCHASED BY BOX POOL

Fig.7



SYSTEM 2



BOXES PURCHASED BY BOX USER AND MANAGED BY BOX POOL Fig. 8