CORPORATION TAX - deduction in computing profits - expenditure on replacement of iron and steel pipes with pipes of polyethylene - whether improvements - no - whether repairs - yes - whether capital expenditure - no - whether revenue expenditure - yes - appeal allowed - ICTA 1988 s 74(1)(f)

THE SPECIAL COMMISSIONERS

TRANSCO PLC -Appellant

- and -

A DYALL -Respondent

(H M INSPECTOR OF TAXES)

SPECIAL COMMISSIONERS : DR A N BRICE

MR T H K EVERETT

Sitting in London on 12 - 16, 20, 22 and 23 November 2001

Graham Aaronson QC with James Henderson of Counsel, instructed by Freshfields Bruckhaus Deringer, for the Appellant

Timothy Brennan QC with Rebecca Stubbs of Counsel, instructed by the Solicitor of Inland Revenue, for the Respondent

DECISION

The appeals

1. Transco Plc (Transco) appeals against four assessments to corporation tax for the years 1995, 1996, 1997 and 1998.

2. In issuing the assessments the Inland Revenue added to the figure for trading profits in Transco's tax returns the amount of expenditure on the replacement of pipes and then allowed a deduction of part of that expenditure as capital allowances. Transco argued that all the expenditure was of a revenue nature and should be fully deductible. The amount of the expenditure was:

1. £169,346,000

2. £136,188,000
3. £150,827,000
4. £165,178,000

3. As part only of each assessment is in dispute this is a decision in principle. We were also informed that Transco wished to deduct expenditure of £199,532,000 for 1999. However, no formal notice of appeal in respect of that year was received.

The legislation

4. Section 18(1)(a)(ii) of the Income and Corporation Taxes Act 1988 (the 1988 Act) provides that tax shall be charged under Schedule D in respect of the annual profits or gains arising to any person from any trade. The relevant part of section 74 provides:

> **"(1) Subject to the provisions of the Tax Acts, in computing the amount of the profits or gains to be charged under Case I or Case II of Schedule D, no sum shall be deducted in respect of.**
>
> > **(f) any capital withdrawn from, or any sum employed or intended to be employed as capital in, the trade .."**

The issue

5. Transco operates an integrated gas transportation system across Great Britain. In the years in question Transco incurred expenditure on the insertion of pipes of polyethylene into certain iron and steel pipes. The Inland Revenue argued that the expenditure was in connection with a long term policy of renewal and improvement of the entire system and was therefore of a capital nature. Transco argued that the expenditure was on the repair of parts only of the system and so was of a revenue nature.

6. Thus the issue for determination in the appeal was whether, in computing the profits of Transco's trade, the disputed expenditure was of a capital nature and therefore not deductible (as argued by the Inland Revenue) or whether it was of a revenue nature and therefore deductible (as argued by Transco).

7. This appeal is concerned only with expenditure incurred by Transco in inserting pipes of polyethylene into some of its existing metallic pipes. All expenditure associated with extending the network of pipes (that is, laying completely new pipes in new positions), and with adding to the capacity of the network, has been treated by Transco as capital expenditure and is not in issue in this appeal. Also, where the diameter of a new polyethylene pipe was more than two inches greater than the diameter of a replaced pipe, Transco capitalised the cost of that work and that work is not at issue in this appeal either.

The evidence

8. Nine core bundles of documents were produced by Transco and an additional bundle of documents was produced by the Inland Revenue. Oral evidence was given on behalf of Transco by Mr Robert Malcolm Thomas, the Distribution Policy Manager of Transco. Mr Thomas exhibited some visual aids which included large

scale maps of pipelines in the United Kingdom and, in particular, at Kidderminster. He also exhibited some specimens of pipes and joints of different materials and sizes. We found Mr Thomas to be an impressive witness with an almost encyclopaedic knowledge of the gas industry. Oral evidence was also given on behalf of Transco by Mr Stuart Calvin Humphreys, the Financial Controller of Transco. Expert accountancy evidence was given on behalf of Transco by Mr Nigel Macdonald. Mr Macdonald is a member of the Institute of Chartered Accountants in Scotland (of which he was President in 1993.94); a partner in the firm of Ernst & Young; and a member of the Review Panel of the Financial Reporting Council. He is also a member of the Institute of Chartered Accountants in England and Wales and, until 1990, was a member of the Technical Committee of that Institute. Mr Macdonald has provided audit services to a number of large public companies, including British Nuclear Fuels Plc and the Post Office, and has advised the statutory water companies, the Director General of Telecommunications, and OFTEL. He was therefore in a position to give expert evidence about regulatory capital. We found Mr Macdonald to be a credible witness and we accept his expert evidence. Each witness had recorded his evidence in a written and signed statement and Mr Thomas and Mr Humphreys had also signed supplementary statements.

9. A transcript of the whole appeal proceedings is also available to the Court, should these appeals proceed further.

The facts

10. From the evidence before us we find the following facts. We first give a very brief history of the use of gas as this is necessary to understand the way in which Transco's existing network of pipes evolved. We then describe the existing network, and the materials used in it, as this information is necessary to understand the replacement policy adopted by Transco. After that we describe the replacement policy with specific reference to its evolution over time in response to safety requirements. We are then in a position to assess the effects of the replacement programme in the light of the evidence we received. Finally, we describe the accountancy treatment of the replacement expenditure.

11. At the outset we comment on the use of the word "replacement". This is the word used by Transco and so we have adopted it. However, it is important to be clear that the word is used to describe the current method of repairing a fractured metallic pipe (or a metallic pipe at risk of fracture) by inserting a pipe of polyethylene into the defective metallic pipe. That is the process which in this appeal is called "replacement". It means that the old metallic pipe has effectively been replaced with a pipe of polyethylene but the metallic pipe remains in place.

A short history of gas use

12. In 1795 coal gas (or towns gas as it came to be called) was first used for lighting. Towns gas was manufactured by heating coal in a closed container and separating the gas from the residue of coke. During the nineteenth century towns gas became widely used for heating and lighting and local gas companies proliferated. Towns gas was produced locally. A gas company would construct a gas works near a large town or city (and near to a colliery that produced coal, or to a canal which could transport the coal, if possible) and would lay a system of pipes to transport the gas to consumers in that locality. Thus there were then a number of separate local systems of pipes each isolated from the other. Towns gas was transported at low pressure. In the 1930s or 40s gas began to be reformed from oil and the oil reforming plants were able to produce gas in greater

volumes but still at low pressures. At that stage it became possible to amalgamate, by interconnected pipework, the pipe systems of some adjoining gas production companies. In 1949, when the gas industry was nationalised, there were more than a thousand local gas undertakings. On nationalisation these were vested in twelve Area Gas Boards.

13. In the 1960s extensive natural gas reserves were discovered in the North Sea. Natural gas is cleaner and dryer than towns gas and has a calorific value which is approximately twice that of towns gas. When natural gas became available a large national and local transmission system was constructed to carry it from the beach to the existing town pipe systems. The construction of the national and local transmission systems was substantially completed at the end of the 1970s. The existing town pipe systems were retained and were not significantly upgraded or replaced as they were able to distribute natural gas just as well as they could distribute towns gas. However, customers' appliances had to be converted before they could burn natural gas. Conversion of appliances in discrete areas began in 1967 and was completed in 1977. By that time connections had been made from the national and local transmission systems to the existing town and city pipelines so as to make one complete integrated network carrying natural gas. The production of towns gas then ceased.

14. This short history demonstrates that the core of the current network, which consists of the old town pipe systems, has existed for a century or more and originally carried towns gas whereas the national and local transmission systems were constructed comparatively recently to transport natural gas.

15. We heard some inconclusive evidence about the extent of the North Sea reserves of natural gas. This appears to be about thirty years but that is only because the producing companies do not wish to invest in discovering reserves which will not be produced earlier than thirty years. Also there is capacity for the importation of gas. On the evidence before us we proceed on the basis that Transco's network of pipes will be required for the foreseeable future.

The current network

16. Transco's current network extends "from beach to meter". Natural gas is delivered by producers from the North Sea and enters Transco's transportation system at one of seven beach terminals in the United Kingdom. Gas can also be imported or exported through a European Inter-connector and an Irish Inter-connector. After entry the gas is treated and strong smelling chemicals called mercaptans are added to enable the detection of leaks. The gas is then transported through a network of more than 275,000 km of pipes to consumers.

17. From the beach the gas enters the national transmission system from whence it moves to the local transmission system, thence to the local distribution system, and finally to service pipes which lead to each customer's meter. The network is completely integrated and interconnected. If one were to use an analogy with the road system, then the national transmission system is the equivalent of the motorways; the local transmission system is the equivalent of the main roads; the local distribution system is the equivalent of local residential roads; and the service pipes are the equivalent of the drive from the road to each house.

18. The national transmission system consists of about 6,000 kilometres of welded steel pipeline which is protected from corrosion with a multi-coated epoxy resin. The pipes range in size from between 150 and 1220 mm in diameter and the route of the pipes is generally through open country. The majority of the

pipes were constructed in the 1970s. The national transmission system operates at high pressures which range from 85 bar to 35 bar. The gas enters the system at a high pressure of 75 bar or 85 bar but, as it travels along the pipes at about 15 miles per hour, the pressure drops and this leads to a reduction in the quantity of gas carried. To remedy this there are twenty-four compressor stations which boost the pressure to maintain it at about 75 bar.

19. From the national transmission system the gas enters the local transmission system which consists of approximately 12,200 kilometres of steel pipeline operating at pressures between 35 bar and 7 bar. The pipelines are located in rural areas, or at some distance from occupied properties, and are also of relatively recent construction, most having been laid since 1960. There are 2,400 pressure reduction stations in the local transmission system which reduce the pressure as the gas enters the local distribution system.

20. From the local transmission system the gas enters the local distribution system where the individual pipes are referred to as mains or distribution mains. The local distribution system consists of over 258,000 kilometres of distribution mains and has three pressure tiers. The highest pressure is intermediate pressure and this is between 7 bar and 2 bar. It occurs where the gas enters the local distribution system from the local transmission system. These intermediate pressure distribution mains extend to approximately 5,800 kilometres and are mostly constructed of steel with some high density polyethylene; they make up 2.3% of all distribution mains and 2.1% of the network. There are district governors which reduce the pressure as the gas passes to the next highest pressure which is medium pressure. This is between 2 bar and 75 mbar. These medium pressure distribution mains extend to approximately 31,000 kilometres and are constructed in a variety of materials. 26% are ductile iron or steel; 54% polyethylene; and 20% cast iron. They make up approximately 12% of all distribution mains and less than 12% of the network. Low pressure distribution mains (below 75 mbar) extend to 221,000 kilometres; this is a complex structure from which most service pipes are taken. Low pressure mains make up 85% of all distribution mains and approximately 80% of the network. 41% of low pressure mains are laid in cast iron and 46% are now polyethylene. There are also some small lengths of non-standard materials, namely, asbestos, copper, concrete and polyvinyl chloride. A minimum pressure has to be maintained in the low pressure distribution mains so as to ensure that appliances burn efficiently. Gas does not flow in one set direction throughout the distribution system. There is no "one way" for gas to flow. In order to meet changing demand the distribution system is constructed as a series of interconnected loops.

21. The final part of the network is the services which are the small diameter pipes which lead from the local distribution system to each individual consumer's meter. 30% of services are constructed from steel and 70% from polyethylene. There are over 20 million service connections with an estimated average length of 12 metres. It is not the practice to include the approximate total length of the services when calculating the length of the network but the length of the services would add about 240,000 kilometres to the total length of the network. Transco's network ends at the customer's meter, after which the pipe-work is the responsibility of the house-holder.

22. Thus the current network consists of the national and local transmission systems, which operate at high pressure, and the local distribution system which operates at reducing pressures leading to the services where the pressure is low but must be maintained at a minimum level to permit the efficient use of appliances.

The materials used in the network

23. The four standard materials used in the network are steel; cast iron; ductile iron; and polyethylene. In 2001, 44% of the network was polyethylene; 36% was cast iron; 7% was ductile iron and 13% was steel. Of the local distribution system alone, 47% (approximately 120,000 kilometres) was polyethylene, 38% cast iron; 8% ductile iron and 7% steel. Not all the polyethylene used in the network has been inserted as part of the replacement programme. Polyethylene has also been used when extending the system (and extensions to the system are not in issue in this appeal). In evidence which we accept Mr Thomas estimated that about 50% of the total population of polyethylene pipes had been laid to replace old pipes and 50% to extend the system.

24. Steel piping offers high strength and is resistant to fracture. It is joined using welded, flanged or screwed joints which do not leak much, if at all. It is therefore used for all high pressure transmission pipelines in the national and the local transmission systems. It is, however, expensive and costs approximately £850,000 per kilometre to lay. It is also used for 7% of the distribution mains and for 30% of the service pipes. However, because of expense it is no longer laid in the distribution system except in the most exceptional circumstances. Steel can corrode if it has not been suitably protected, or if the protection has become damaged. Corrosion results in small holes in the pipe wall and the leakage can be detected before risk of injury occurs. This is because the leaked gas is likely to be detected by the public by its smell and the leak reported. Such reports are attended to usually within one hour and this keeps the quantity of escaped gas to the minimum.

25. Cast iron was used almost exclusively for local distribution mains from the birth of the industry. Considerable parts of the existing network date back to the late 1880s when there was a rapid expansion of the domestic market for towns gas. Many of the cast iron pipelines laid in the nineteenth century are still functional today and form part of Transco's network. Cast iron pipes range in diameter from 2 inches to 42 inches and are generally produced in lengths of 5.5 metres; each such pipe is then joined to the next. The combined population of cast iron and ductile iron pipes is approximately 116,000 kilometres and, in evidence which we accept, Mr Thomas estimated that there were approximately 21 million joints in the system. Cast iron pipes are joined using socket and spigot joints where the plain end of one pipe (spigot) is inserted into the flared end of another (socket). These joints are sealed using hemp yarn with a ring of lead (applied to the yarn when the lead is molten) to hold the yarn in place. The most common failure mode for cast iron pipes is joint failure and one reason for joint failure is the fact that the hemp yarn dries out because natural gas is a dry gas. However, Transco began to condition its natural gas at an early stage to prevent this drying out. This was done by injecting a mist or vapour containing a swelling agent which was absorbed by the yarn and so reduced leakage. Joint failure in cast iron leads to low level leakage which can be detected before risk of injury occurs. Failure of the pipe barrel can also occur as a result of fracture or corrosion. Fracturing can result from the subsidence of the ground or the presence of heavy vehicles above the pipe. As larger diameter pipes are stronger than those of a smaller diameter, they are less likely to fracture. Fracture can lead to the sudden release of large quantities of gas which can be dangerous. Corrosion takes the form of a product which adheres as a layer on the pipe and which does not give rise to leakage but which reduces the strength of the pipe. Cast iron forms approximately 38% of the distribution system (98,000 kilometres).

26. In the 1960s ductile iron was introduced and used instead of cast iron. Ductile iron is cast iron in which the carbon exists in spheroidal form rather than graphite flakes. It is less brittle than cast iron and less likely to fracture. It was used until the 1980s when its use declined with the introduction of polyethylene. Ductile iron pipes are generally produced in lengths of 5.5 metres and each such pipe is then joined to the next. The main failure mode for ductile iron is joint failure which leads to low level leakage which can be detected before risk of injury occurs. Ductile iron can also corrode and the corrosion leads to holes in the pipe through which the gas can escape; this can be dangerous.

27. Polyethylene is a thermoplastic material manufactured as a base polymer and blended with additives including a colourant. The pipes we saw were yellow (medium density polyethylene) and orange (high density polyethylene). Polyethylene was first introduced as low density polyethylene in the early 1970s and is now the material of first choice for the local distribution system. It is lighter than iron; easy to transport; easy to join; and offers high resistance to fracture and corrosion because it is resistant to ground movement and vehicle damage. Polyethylene pipes can be joined by heating both sides of the joint and bringing them together under pressure. However, the current method is to introduce the plain ends into sockets containing electric wires which are heated up and which cause the two ends to fuse. These joints are less likely to leak, even with dry natural gas, and so conditioning is not required. Polyethylene pipes range from three-quarters of an inch to 24 inches in diameter. 99% of all polyethylene pipes are of medium density. The most common failure mode for polyethylene is third party damage, mostly by highway authorities and utilities. Joint failure is much less common. Polyethylene is also about 20% cheaper than replacing with cast iron.

28. Polyethylene is now the material of first choice for the replacement programme. More than 50% of replacement is effected by inserting a polyethylene pipe of a smaller diameter into an existing cast iron fractured or otherwise defective pipe. An alternative is to introduce the polyethylene pipe as a swage lining when the polyethylene pipe is heated, drawn under tension through a reducing die, and inserted into the old pipe. On cooling the polyethylene pipe fits tightly into the inner wall of the old pipe. (Another method of replacement with polyethylene pipes is by digging an open trench and using a boring machine to create a passage through the ground though which the pipe is drawn. However, this technique is more frequently used for extending the system.)

29. The insertion of a smaller diameter pipe into a pipe of larger diameter leads to loss of capacity. However, polyethylene is a smoother material and so the gas passing through it encounters less friction than if it were passing through a cast iron or metallic pipe. If the diameters of the pipes were the same then there would be a 12.79% improved efficiency from the use of polyethylene. However, this is balanced out by the fact that the polyethylene pipes have a smaller bore as they fit inside the metallic pipes. An approximately 5% reduction in the size of the bore would eliminate any increase in flow capacity which would otherwise be achieved by a smoother pipe wall. Also, because Transco replaces pieces of pipe only (and not large areas or sectors) the use of polyethylene has not led to any significant increase in network capacity.

30. In addition, of the current 20 million services, approximately 14 million (70 per cent) are polyethylene, the remaining 6 million being of steel. Of the 14 million which are polyethylene, approximately four or five million were recent extensions to the system and so were constructed from polyethylene at the outset.

31. The average life expectancies of the standard materials differ. The most recent review in 1999 indicated that the technical life of steel in the national transmission system was 400 years; in the local transmission system was 325 years; in the local distribution system was 70 years (if protected) and 30 years (if unprotected). For cast iron the technical life is 70 years for pipes of a diameter of less than 3 inches and over 100 years for pipes with diameters of over 8 inches. Ductile iron has an expected life of 30 years operating at low pressure and 25 years at medium pressure, or shorter in difficult soil conditions. The technical life of low density polyethylene is 150 years and of high density polyethylene is approximately 75 years (because it is operated nearer to its design life criteria).

32. In addition to the standard materials of steel, cast iron, ductile iron and polyethylene, other non-standard materials have been used in the past. Asbestos was used from the late 1940s to the mid 1950s when there was a shortage of ferrous raw materials; there are currently 250 kilometres of asbestos pipes in use. Copper was used for small diameter piping in the 1960s and there is now less than 10 kilometres of copper still in use. Concrete was used during the war and post-war period; only ten kilometres now remain. Polyvinyl chloride was introduced during the 1960s when it had a life expectancy of fifty years; that still in use has a life expectancy of 30 years. There are presently 300 kilometres of polyvinyl chloride pipe in the distribution system. All these non-standard materials are targeted for replacement under Transco's risk based replacement programme; all asbestos will be replaced by 2006; copper and concrete by 2002; and polyvinyl chloride by 2006.

33. Thus the materials used in the current network reflect the history of the network. The national and local transmission systems were constructed in the twentieth century of steel and those pipes need very little attention. Most of the pipes in the local distribution system, and the services, were originally constructed in the nineteenth century of cast iron; that is liable to fracture and fractures lead to escapes of gas which can be dangerous. It is those pipes which are most likely to require the insertion of polyethylene pipes under Transco's replacement policy.

The history of Transco's replacement policy by reference to its regulation

34. Transco responds immediately to repair fractured pipes. However, for safety reasons, Transco cannot wait for a pipe to fracture before repairing it. Accordingly, over the years a policy has been developed to identify pipes most at risk of fracture and to insert polyethylene into those pipes as a matter of priority before failure actually occurs. Strictly, because there has been no actual disrepair, this might not be regarded as repair but it seems to us to be in the nature of a precautionary repair of pipes whose failure could be catastrophic. Also, the replacement has not been of whole areas of pipes but of what is referred to as "mains units". A mains unit is the pipe of whatever length which is between two joints. An un-repaired cast iron main was normally 5.5 metres between the joints and that was a mains unit. If, in the past, that mains unit had, say, fractured in the middle, and had been repaired by the insertion of a two metre length of polyethylene in the middle, then three new mains units would have resulted; one of cast iron from the first original joint up to the joint with the polyethylene; one of polyethylene, and the third of cast iron from the polyethylene to the second original joint.

35. Prior to 1974 there was no national policy for the replacement of the pipes in the local distribution system, or distribution mains as they were called. Mains were replaced if they were in poor condition or to meet increased demand.

However, in 1974 the Health and Safety at Work Act placed a duty on every employer to conduct his undertaking so as to ensure that persons not in his employment, but who were affected by his undertaking, were not exposed to risks to their health or safety. The Act also established the Health and Safety Commission and the Health and Safety Executive as regulatory bodies to enforce the legislation.

36. Accordingly, later in 1974 Transco's predecessor first introduced an interim national policy for the replacement of mains and services in hazardous locations. Mains replacement was set at 1,920 kilometres per year (approximately 1% of distribution mains and less than 1% of the network) for the next ten years.

37. However, in 1976-77, during the Christmas and New Year period, there were several severe gas explosions and the Secretary of State for Energy commissioned an Inquiry, chaired by Dr P J King, to recommend new measures to lead to a reduction in such incidents. The Report of the Inquiry (the King Report) was published in May 1977. It found that a major reason for explosions inside premises, which resulted from gas escapes outside the premises, was the fracturing of cast iron mains. Very few explosions resulted from leaking joints. Most fractures resulted from ground movement (particularly the wetting and drying out of clay soils and heavy traffic) rather than from age or corrosion. The Report analysed the rate of explosions in the previous five years and found that the five-year total was 541. Of these 51 gave rise to 57 fatalities and 144 caused severe damage. One third of the total number of explosions was caused by fractured mains or service pipes and the remaining two-thirds occurred at the meter or within the premises. The Report concluded that the probable cause of the explosions in the winter of 1976-77 was drought. It acknowledged that it was impractical to replace all the cast iron local distribution mains (of which at that date 80% of the distribution system was constructed) at an estimated cost of £4,000 million. Rather it recommended the targeted replacement of all higher risk priority mains by 1984 at the latest at an estimated cost of £400 million. Priority was to be given to higher risk mains in locations where a fracture could cause a serious incident.

38. After the publication of the King Report in 1977 Transco's predecessor updated its interim national policy so as to give first priority to the replacement of high risk mains in locations where a fracture would cause a serious incident. These hazardous locations included property which was a house with a cellar or basement; or which was a house very close to the road; or which was occupied as a school, hospital or public house. Between 1977 and 1984 the recommendations in the King Report were implemented. In this period an average of 2,753 kilometres of mains were replaced each year (1.3% of distribution mains and 1.2% of the network). Most of the work involved the replacement of small diameter cast iron pipes with pipes of polyethylene or ductile iron.

39. Meanwhile a study was commissioned to identify replacement work required after 1984, when the programme for implementing the recommendations in the King Report would be completed. It was concluded that, for incidents not to increase beyond the level forecast for 1984, it would be necessary, between 1984 and 1989, to replace 2,600 kilometres a year of distribution mains (1.9% of distribution mains and less than 1.8% of the network). This five year programme was agreed in 1981 and implemented from 1985 to 1989 and involved an early version of the "points scheme".

40. The points scheme was based on the assumptions that an "incident" was the fracture of a pipe (and not leakage from a joint) which resulted in a sudden release of gas; that the release of gas was into a building; that the gas subsequently ignited; and that the explosion caused death or injury and/or substantial damage to property. The points scheme attempted to score the probability of each of these events. Mains units which had the highest score were considered to be those which presented the highest risk. More points were given to smaller diameter pipes which were more prone to fracture; weighting was also given to the degree of hazard at the location; and more points were given to pipes which carried gas at medium pressure.

41. From 1985 to the end of 1989 approximately 2,961 kilometres of pipes were replaced each year being 1.3% of distribution mains and 1.2% of the network. This was called the "Post-King Replacement Programme".

42. Meanwhile a group chaired by Mr C J Marchant (the Marchant Group) considered the replacement programme to be adopted from 1989 to 1995. The Marchant Report revised the points scheme and altered the criteria for the identification of hazardous mains. In 1990 the points scheme was again reviewed and revised but continued as the principal guideline for determining the prioritisation of mains for replacement. Between 1990 and 1994 an average of 2,898 kilometres of pipe each year were replaced with polyethylene, being 1.2% of distribution mains and 1.1% of the network.

43. In 1992 a further review of the replacement programme was carried out and a document entitled "The Gas Business Engineering Committee's Mains Replacement Policy" was issued on 13 April 1992. It was referred to at the hearing by its number of ENG/92/170. It affirmed the points scheme and recommended the replacement of all mains which scored 1200 points or more. There were also additional recommendations. It was that policy which applied during the years which are the subject of this appeal. In those years there was a slight reduction in the volume of replacement from that between 1990 to 1994. During the years 1995 to 1999 inclusive approximately 1,810 kilometres a year (0.71% of distribution mains and 0.66% of the network) were replaced with polyethylene incurring total expenditure of £821,071,000 for those five years. Although during this period there was a reduction in the number of mains replaced, services continued to be replaced at a higher level.

44. In May 1994 the Department of Trade and Industry and Ofgas issued a joint consultation document about competition and choice in the gas market. This identified the need to provide an effective safety regime following the opening up of the gas market to competition in 1996. Also in May 1994 the Health and Safety Commission submitted a report to the Minister for Industry and Energy; the report was called "Britain's Gas Supply: A Safety Framework". The report described the means required to maintain the existing safety standards, the effectiveness of which had been demonstrated. Ultimately a new regulatory regime was established by means of regulations under the Health and Safety at Work Act. In particular, The Gas Safety (Management) Regulations 1996 contain provisions about the management of the safe flow of gas and the Pipeline Safety Regulations 1996 place duties on pipeline operators; they cover, among other things, safety systems and maintenance with specific reference to the physical integrity of the pipeline.

45. In response to this new regulatory environment Transco's predecessor in 1995 set up a group to consider future replacement strategy. The group recommended that the mains replacement level for the next ten years should be

approximately 2,500 kilometres a year, priority being given to "high risk pinch points" and medium pressure cast iron mains in hazardous locations. "High risk pinch points" were particular points of hazard along the length of an otherwise low or medium risk mains unit.

46. In October 1996 the Director General of Gas Supply made a reference to the Monopolies and Mergers Commission requiring them to report on whether the maintenance of the restriction on the price of Transco's predecessor's transportation and storage services operated against the public interest. In December 1996 Transco's predecessor presented to the Commission a "Safety Report: Mains and Service Replacement Strategy and Policy 1997-2006". The key proposal of this report was to "gradually improve the statistical level of confidence of not exceeding three incidents per year from a 42% confidence level to a 95% confidence level over a ten year period". (Between 1990 to 1995 there had been an average of about three incidents each year which gave a 43% confidence level that this average would be maintained; however, that meant that in any particular year it could be exceeded, possibly reaching as high as seven in severe weather conditions. The target of a 95% confidence level (that there would be no more than three incidents a year) in fact meant that the average of three had to be reduced to 1.7 and that in no year would the number exceed three even under severe conditions.). This target was to be met by a continuance of the points scheme with a reduction from 1200 to 800 points for mains units requiring replacement. The effect of these proposals would have been to maintain the rate of mains replacement at an average of 2,500 kilometres a year (1% of the distribution mains and 0.94% of the network). In February 1997 Transco's predecessor submitted further information to the Commission explaining the proposed reduction in the number of incidents and the proposed reduction of the points system from 1200 to 800. This emphasised the need for safety and an improvement of standards. A separate document submitted in February 1997 by Transco's predecessor entitled "Mains replacement cost benefit analysis" accepted that the programme was not justified on a "cost per prevented incident" basis. However, the Director General put to the Commission revised expenditure forecasts upon which Transco's predecessor commented in March 1997 stating that they would result in serious consequences for safety, reliability and operating costs and that the replacement programme had been approved by the Health and Safety Executive.

47. On 29 May 1997 the Commission reported and concluded that the full expenditure proposed by Transco's predecessor (to reduce the expected number of incidents to less than two a year) was difficult to justify without an assessment of the cost and benefits. They therefore assumed total expenditure of £150 million less than that recommended by Transco's predecessor, allowing only limited additional expenditure above that required to implement the points scheme at 1200 points. Paragraphs 8.13 to 8.23 of the Report were entitled "Capital investment projected for 1997 to 2001" and included the replacement expenditure as capital expenditure for regulatory purposes.

48. Accordingly, the 1992 points scheme methodology (ENG/92/170) continued to determine the replacement programme for the years under appeal. A review of the risk assessment policy, and the development of a new policy, was put in hand and was the subject of a report in 2001, which is after the years the subject of this appeal. On 18 September 2001 the Health and Safety Executive announced its new enforcement policy. This will require Transco to replace all cast iron mains within thirty metres of property over the next thirty years. This will mean an increase in replacement over the next five years of up to 3,580 kilometres a year for twenty years decreasing over the final five years.

49. Replacement of services usually occurs when mains are replaced. Typically mains will be replaced in areas of dense housing, particularly terraced property with basements and where the houses abut onto the pavement. Here the services would be closely spaced and might be connected to the mains at intervals of only five metres. Thus the replacement of mains in such an area would entail the replacement of a large number of services.

50. As well as replacing pipes at risk of failure, Transco also replaces mains units which fall outside the policy for replacement but which require maintenance because of corrosion or failing joints. This is called condition-based replacement. These mains units may be identified by the public reporting escapes of gas or by Transco when attending for an emergency repair. Replacement is only undertaken in these circumstances if it is cheaper than repair. Those main units approved for condition-based replacement during the years in question tended to be of medium pressure ductile iron. Condition-based replacement accounted for a small proportion of total expenditure in the period in question.

51. In summary, therefore, since 1977 Transco and its predecessors have operated a mains and services replacement programme very much in response to health and safety requirements. This has been a targeted programme. It has not involved the replacement of discrete areas of pipe-work but the replacement of individual small lengths of mains units and services which present the highest risk and where potential failure would give rise to the highest risk of injury. Since 1977 over 62,000 kilometres of mains have been replaced at an average rate of 2,587 kilometres a year (that is 1.1% of distribution mains each year or 1% of the network). The average rate of replacement of services since 1977 is in the region of 3% or 4%. In the years under appeal the rate of replacement was lower than the average which indicates that there was no special renewal programme in those years. Much of the replacement work has been to the smaller diameter cast iron mains which give rise to the greatest risk of fracture and thus of incident. The result is that polyethylene is now more common in the smaller diameter pipes and less common in the larger diameter pipes.

The effect of the replacement programme

52. The replacement of metallic pipes with polyethylene brings with it the advantages of polyethylene. It is cheaper to install; it is lighter and easier to transport; it is easier to join effectively; and it is highly resistant to fracture and corrosion which make it less prone to leakage and failure. If a whole system of pipes were to be constructed of polyethylene then conditioning would not be required but where (as here) polyethylene is inserted into individual mains units only, in a run of otherwise cast iron pipes, then conditioning remains necessary for the joints of the cast iron pipes. Although polyethylene is more prone to failure through damage by third parties, its use has helped to reduce the number of incidents to about three each year from an average of twenty-five each year in the 1970s. Thus the use of polyethylene has led to an increase in the safety of the network.

53. The pipe system as it existed before the introduction of polyethylene was capable of carrying natural gas. The introduction of polyethylene did not enable the system to transport any different type of gas. Also, the pipe system as it existed before the insertion of polyethylene was able to operate at all the required pressures. The introduction of polyethylene has not altered the pressure at which gas can be transported in the system. There has been no overall increase in pressure and there has been no change in the capacity of the network, which can still carry the same amount of gas. There has been no

material increase in the longevity (or technical lifetime) of the system. There has been no material reduction in leakage. The amount of leakage before the insertion of polyethylene was 1 per cent and the change to polyethylene pipes reduced that by 1.8% per cent. Thus the reduction of leakage has been of 0.018% (1.8% of 1.0%). From 1995 to 1999 inclusive expenditure of about £821M has resulted in savings from leaked gas of from £360,000 to £480,000 a year and savings from reduced repair work for leaks of between £360,000 and £730,000 a year; with a total value of between £720,000 and £1.21 million a year.

54. Thus the replacement work has not been justified on any cost/benefit analysis and Transco does not derive any material commercial benefit from it. The work does not increase the capacity of the network; nor does it enable Transco to transport a different type of gas; nor does it enable Transco to transport gas at a higher pressure. The work has reduced the average annual rate of incidents (failures which cause death or injury or substantial damage to property). The current level of three incidents a year was achieved in the early 1990s and has not been significantly reduced since then. There has been a very small (1.8%) reduction in leakage which itself was small (1%). We accept that Transco must maintain safety standards, as otherwise it might lose its licence, and so to that extent the work required for safety reasons has a commercial impact. However, we would like to record that we were most impressed by the evidence we heard which indicated that Transco regards safety as its first priority and does not look for a particular rate of commercial return from the amounts expended on replacement.

55. We therefore accept the evidence of Mr Thomas (day 4 page 36 line 11) that the amount of replacement work done by Transco was just enough (or perhaps only a little more) to maintain the system safely and to keep pace with the ongoing rate of fracture and joint failure. The programme of replacement in the years under appeal just maintained the system at a given level of safety confidence.

56. Some of the maps which were exhibited by Mr Thomas showed the present position of gas pipes. The gas pipes were colour coded, with blue lines for metallic mains and yellow for polyethylene mains. The maps made it clear that both metallic and polyethylene materials are now used in the same run of pipes and that the use of one or the other is piecemeal. So, for example, in one run of pipe there is a section of (blue) metal followed by a section of (yellow) polyethylene followed by another section of (blue) metal and so on. This brought home to us visually that the replacement policy had not resulted in the replacement of pipes wholesale nor had it resulted in the replacement of pipes in whole sectors. It had resulted in the replacement only of particular sections of pipe which required replacement because of the risk of incident or because of their condition. The maps also confirmed the view that Transco had done just enough to maintain the system safely. Maps 7, 8, 9 and 10 showed the same area of Kidderminster in 1975, 1981, 1991 and 2001. These illustrated the fact that in 1975 all the pipes were metallic; in 1981 polyethylene pipes had replaced a few of these; by 1991 there were more polyethylene pipes but the vast majority remained of metal; and by 2001 there were yet more polyethylene pipes but over half remained of metal. Currently a little over 32% of the mains in Kidderminster are of polyethylene against a national figure of 46%. Some of the polyethylene pipes have been laid as extensions to the network (for example to serve a new housing estate); the expenditure on such work is not in issue in this appeal.

The accountancy treatment

57. In considering the accountancy treatment we first outline the United Kingdom generally accepted accounting principles for the years in question. We then describe the accountancy treatment adopted by Transco. And, finally, we refer to Transco's regulatory capital.

58. In December 1977 guidance on fixed asset accounting was given in Statement of Standard Accounting Practice (SSAP) 12. This gave guidance on determining how fixed assets should be written down to revenue (depreciated) over their useful lives but gave no guidance on capitalisation. In the late 1980s the Accounting Standards Committee published an exposure draft (ED 51) entitled "Accounting for fixed assets and revaluations". Paragraphs 19 and 20 dealt with enhancement costs and paragraph 19 read:

> "19 Expenditure on improvements to a fixed asset should be capitalised and added to the gross carrying amount of the asset. It should be distinguished from expenditure on repairs that should be charged to the profit and loss account. Expenditure should only be capitalised if it increases the expected future benefits from the existing fixed asset beyond its previously assessed standard of performance. Examples of such future benefits include:
>
> (a) a significant prolongation of the fixed asset's useful life beyond that conferred by repairs and maintenance;
>
> a. an increase in its capacity;
>
> (c) a substantial improvement in the quality of output or a reduction in previously assessed operating costs; or
>
> (d) a substantial increase in the open market value of the fixed asset."

59. In August 1990 the Accounting Standards Committee was replaced by the Accounting Standards Board (the Board) and in 1996 the Board published a discussion paper entitled "Measurement of tangible fixed assets." Paragraph 1.24 read:

> "1.24 Paragraph 1.6 proposes that initial costs should be capitalised only to the extent that they relate to an enhancement of the future economic benefits of the tangible fixed asset. It follows that a similar principle should be applied to subsequent expenditure. The Board believes that subsequent expenditure should be capitalised only to the extent that it results in an enhancement of the asset's future economic benefits."

60. The discussion paper suggested that a determination be made of the period over which the economic benefits arising from the expenditure were expected to last. If this period exceeded one year, and if the expenditure was material, the expenditure should be capitalised. However, the discussion paper was criticised and rejected by the Board and we accept the evidence of Mr Macdonald that it did not at any time represent United Kingdom generally accepted accountancy principles.

61. Accordingly during the years the subject of this appeal there were no published accountancy standards dealing with the capitalisation of expenditure. In the absence of formal accounting standards accountants looked to the International Accounting Standards for guidance. International Accounting Standard 16 (IAS 16) "Property, Plant and Equipment" was in force throughout the 1990s. It stated that capitalisation of subsequent expenditure was required when it was probable that it would result in additional future economic benefits in excess of the originally assessed standard of performance of the existing asset and if the expenditure could be measured reliably. Examples of such benefits included an extension to the asset's useful life, or an increase in capacity, or a substantial improvement in the quality of output, or a reduction in previously assessed operating costs. (Thus these examples reflected those in ED 51).

62. In February 1999 Financial Reporting Standard 15 (FRS 15) - Tangible Fixed Assets was published. It was mandatory for accounting periods ending on or after 23 March 2000 although earlier adoption was encouraged. It introduced comprehensive guidance concerning the capitalisation of fixed assets and subsequent expenditure. Paragraphs 36 and 37 read:

> "36. Subsequent expenditure should be capitalised in three circumstances:
>
> > (a) where the subsequent expenditure provides an enhancement of the economic benefits of the tangible fixed asset in excess of the previously assessed standard of performance.
> >
> > (b) where a component of the tangible fixed asset which has been treated separately for depreciation purposes and depreciated over its individual useful economic life, is replaced or restored.
> >
> > (c) where the subsequent expenditure relates to a major inspection or overhaul of a tangible fixed asset that restores the economic benefits of the asset that have been consumed by the entity and have already been reflected in depreciation..
>
> 37. Subsequent expenditure on a tangible fixed asset is recognised as an addition to the asset to the extent that the expenditure improves the condition of the asset beyond its previously assessed standard of performance. Examples of subsequent expenditure that results in an enhancement of economic benefits include:
>
> > Modification of an item of plant to extent its useful economic life or increase its capacity.
> >
> > Upgrading machine parts to achieve a substantial improvement in the quality of output."

63. Transco has treated its expenditure on inserting polyethylene into some of its existing metallic pipes as a revenue item deductible in computing profits for the purpose of calculating its tax liabilities. However, all expenditure associated with extending the network of pipes, and with adding to the capacity of the network, has been treated by Transco as capital expenditure and is not in issue in this appeal. Also, where the diameter of a new polyethylene pipe was more than two

inches greater than the diameter of the replaced pipe, Transco capitalised the cost of that work and that work is not at issue in this appeal either.

64. Transco has a licence which provides for the operation of a price control formula which establishes a maximum price for gas transportation charges. The formula is modified every five years by the Regulator. The five-yearly review is based on forward-looking forecasts of operating costs and revenues. In settling the formula the Regulator takes a view on the appropriate level of operating expenditure; on depreciation; and on "the regulatory asset value" which is a notional figure for the assets of Transco upon which a return is allowed which represents the cost of capital. For this purpose the money spent on replacements is included in the regulatory asset value and does not form part of operating expenditure. For price fixing purposes operating expenditure is allowed to be recovered in the year in which it is spent, which adds to the cost of gas transportation in that year, whereas other expenditure has to be spread over time.

The arguments for Transco

65. For Transco Mr Aaronson argued that Transco had not renewed its pipeline but had repaired parts of it. Even if it had renewed the pipeline that renewal did not give rise to any improvement. The work involved the replacement of defective parts and not the replacement of the entirety. Transco's accounts treated the entirety as the entire system including the national transmission system, the local transmission system, the mains and the services. Even if the entirety was the mains, only part of that entirety was replaced. The replacement did not improve the performance of the system beyond its previous standards of performance nor add to the capacity of the system as a whole. The work the subject of the expenditure was done merely to keep the system as safe as possible and to maintain a low level of incident and did not change the character or nature of the pipeline system. Although the composition of the material of the pipes was changing that was merely a continuance of a process which had been commenced at the end of the nineteenth century.

66. Mr Aaronson relied upon Lurcott v Wakely & Wheeler [1911] 1 KB 905 CA; Highland Railway Company v Balderston 2 TC 485; Rhodesia Railways Limited v Collector of Income Tax, Bechuanaland Protectorate [1933] AC 368 PC; O'Grady v Bullcroft Main Collieries Limited (1932) 17 TC 93; Samuel Jones & Co (Devondale) Limited v Commissioners of Inland Revenue (1951) 32 TC 513; and Conn v Robins Bros Limited (1966) 43 TC 266. He distinguished Auckland Gas Co Ltd v Commissioners of Inland Revenue [2000] STC 527 (Privy Council) where the original leaky pipeline was not suitable for carrying natural gas; where there was a phased replacement of the entire system which resulted in the carriage of natural gas at a 20-fold higher pressure; where the original system had a leakage rate of 38.5%; where the replacement was carried out sector by sector; and where the reason for carrying out the work was economic as for the expenditure of NZ$9 million over five years a return of between 1 and 2.5 million per year was expected. In the present appeal the original pipeline was not very leaky; it was capable of carrying natural gas; there was no phased replacement of the entire system; the work was not done to increase pressure; and there was no economic objective to the work, the only objective being the need for safety.

67. Mr Aaronson cited Odeon Associated Theatres Limited v Jones 48 TC 257 (1971) CA and Gallagher v Jones [1993] STC 537 CA and argued that the normal principles of commercial accounting applied and they were the correct principles.

The evidence of Mr Macdonald was that, in the light of those principles, the expenditure was properly charged to revenue and not capital.

The arguments of the Inland Revenue

68. For the Inland Revenue Mr Brennan argued that Transco operated a business which was inherently risky and the expenditure in issue was made for the purpose of enhancing the system by reducing risk and improving safety. He argued that the benefits of the expenditure included leakage reduction, increased efficiency in the operation of the pipework, and increased reliability of the service and that the system was put into a state which was better than it had ever been. The national network was not completed until the 1970's and by 1977 the local distribution system required immediate and substantial improvement. At that stage Transco's predecessor adopted a long term policy of replacement of the old pipe systems which had continued ever since. He argued that the replacement programme had to be considered as a single programme which was a phased renewal of a major asset and was a major upgrading of the system such as had occurred in Auckland Gas. Replacement was not of pipes which had fractured but of pipes which were likely to fracture. If the programme had not been implemented then the system would have deteriorated; continual improvement was necessary to maintain a given level of safety. The use of polyethylene had made the system more robust. The expenditure improved the pipework to an extent beyond that dictated by repair or maintenance considerations alone.

69. Relying upon Auckland Gas Mr Brennan argued that the asset under consideration was not the whole network from beach to meter; records were separately maintained for the national transmission system, the local transmission system, the local distribution system and the services and only the local distribution system and the services had been improved. Mr Brennan suggested that the asset to be considered was either a single mains unit or service because Transco's replacement policy applied the points system to those individual assets and Lord Nicholls, in the Privy Council, was content to proceed on the approach of the parties. Alternatively he suggested that the asset was either the local distribution system and the services replaced with it; or services replaced independently of distribution replacement; or the entirety of the low pressure system including services; or all the low pressure pipes. Mr Brennan accepted that Transco's network of 258,000 km with, in addition, services of 240,000 km, was very much larger than that in Auckland Gas (1,650 km) and that unaccounted for gas of 6.7% (which included both leakage and theft) in Auckland Gas was greater than Transco's leakage rate of 1%. However, he relied upon the fact that in Auckland Gas the main reasons for the insertion of polyethylene pipe was to achieve improved reliability and not greater pressure and flow and in this appeal the main reason for the insertion was to achieve improved safety. He also relied on the fact that in Auckland Gas 4.5% of the network had been inserted annually and 6% of the services and in this appeal 1% of the network had been inserted annually and 3-4% of the services. Also, in Auckland Gas before the insertion programme the network was capable of delivering natural gas but it had an unacceptable level of unaccounted for gas and required extensive and costly maintenance; in this appeal Transco's system could deliver natural gas but, without the insertion programme, would have had unacceptable levels of safety, reliability and operating costs. Finally, the length of pipe replaced in this appeal was very much longer than the length replaced in Auckland Gas.

70. Finally, Mr Brennan argued that Transco itself referred to its expenditure as "replacement expenditure" and that was what it was - the replacement of one

asset for another. However, he accepted that condition-based replacement, and possibly the replacement of ductile iron pipes which corroded in such a way as to give rise to risk, might be regarded as being sufficiently close to repair to form part of a programme of maintenance that should properly be treated as being on revenue account. In that case, the difference between condition-based replacement and policy replacement marked the boundary between revenue and capital expenditure. The expenditure in this appeal was not on a rolling programme of repair but on improvements to the system.

71. On the subject of the accountancy evidence Mr Brennan accepted the principles in Odeon Associated Theatres and Gallagher v Jones. He also cited Heather v P-E Consulting Group Limited (1972) 48 TC 293 as authority for the view that the question of what is income and what is capital is a matter of law and for decision by the court and that the evidence of accountants was not conclusive. He argued that Mr Macdonald's opinion, while representing the ordinary principles of commercial accountancy for a trader not subject to regulation, failed to have regard to the degree and extent of the regulation of Transco by the Health and Safety Executive and by Ofgem, and to the fact that Transco could not charge what it liked, and also failed to give proper weight to the commercial importance of safety to Transco. ED 51, like all exposure drafts, was authoritative and not definitive.

Reasons for decision

72. In considering the arguments of the parties we first consider the authorities prior to the advice of the Privy Council in Auckland Gas. We then consider whether Auckland Gas established any new principle. And finally we consider the accountancy principles.

The earlier authorities

73. In Highland Railway (1889) a railway company acquired a section of railway line and claimed to deduct the expenditure incurred to improve that section to bring it up to the standard of the rest of their main line. The company also improved their existing main line so that it could carry extra weight. They did this by relaying with steel rails and heavier chairs, etc and claimed to deduct the expenditure over and above what would have been necessary to renew and relay the section as it was. In the accounts of the company all the expenditure was charged to capital. The Lord President of the Court of Exchequer in Scotland regarded the treatment in the accounts as persuasive but not conclusive and decided that the expenditure was capital in nature. The renewal or improvement of the purchased section of line brought it up to the proper standard and so was part of the cost of acquiring that section of line. As far as the relaying of the main line was concerned he said (at the commencement of the second complete paragraph on page 488):

> "Then when we come to the question of the alteration of the main line itself, it must be kept in view that this is not a mere relaying of the line after the old fashion; it is not taking away rails that are worn out or partially worn out, and renewing them in whole or in part along with the whole line. That would not alter the character of the line. It would not affect the nature of the heritable property possessed by the Company. But what has been done is to substitute one kind of rail for another, steel rails for iron rails. Now

> that is a material alteration and a very great improvement in the corpus of the heritable estate belonging to the Company, and so stated is surely a charge against capital."

74. The Lord President went on to say that the company sought to deduct the difference between the price of renewal at the old weight and at the new; that was entirely a permanent improvement and should therefore be charged against capital; it was a different railway and a much more valuable railway.

75. In the present appeal the expenditure has been charged to revenue in the accounts. Also, there has been no overall improvement in sections of the network, as polyethylene has only been inserted in pipes which required repair or which were at risk of fracture. What was done was a mere replacement of parts of the pipeline that were defective and the renewal of those parts. All that has been done was necessary to renew and relay the network as it was; only those parts of the pipes which were defective, or which were at a high risk of failure, have been renewed. The character and nature of the property possessed by Transco has not been changed nor indeed has it been materially improved. The material used (polyethylene) is cheaper than cast iron. To adapt the words of the Lord President, what was done was a mere insertion of polyethylene pipes into the old pipes, which were worn out or partially worn out, and renewing them in whole or in part along the whole network. That did not alter the character of the network. Although some old cast iron pipes have had polyethylene pipes inserted into them, that has been done only where necessary for the purposes of repair, or precautionary repair, and has not been done to the whole network. Those considerations would point to the conclusion that the expenditure is properly chargeable as revenue expenditure.

76. In Lurcott (1911) a lease of an old house contained a covenant by the tenant to keep the premises in repair. The local authority served a notice requiring the demolition of the front external wall of the house on the grounds that it was dangerous. The tenant failed to take action and the landlord demolished the wall and rebuilt it because the wall could not have been repaired without rebuilding. The issue was whether the landlord or the tenant should bear the cost of the demolition and rebuilding. The Court of Appeal held that the works done amounted to repair and so the liability was that of the tenant. Cozens-Hardy MR at 914 asked:

> "Is what has happened of such a nature that it can fairly be said that the character of the subject-matter of the demise, or part of the demise, in question has been changed? Is it something which goes to the whole, or substantially the whole, or is it simply an injury to a portion, a subsidiary portion . of the demised property?"

77. At 919 Fletcher Moulton LJ said:

> "For my own part, when the word "repair" is applied to a complex matter like a house, I have no doubt that the repair includes the replacement of parts. . Many, and in fact most, repairs imply that some portion of the total fabric is renewed, that new is put in place of old. Therefore you have from time to time as things need repair to put new for old."

78. At 924 Buckley LJ said:

> "Repair is restoration by renewal or replacement of subsidiary parts of the whole. Renewal, as distinguished from repair, is reconstruction of the entirety, meaning by the entirety not necessarily the whole but substantially the whole subject-matter under discussion. . it follows that the question of repair is in every case one of degree, and the test is whether the act to be done is one which in substance is the renewal or replacement of defective parts or the renewal or replacement of substantially the whole."

79. From this authority we derive the principle that the replacement of part of an asset is repair; that that is not altered by the fact that the replacement of part is by a new component of different materials; and that a test to decide whether there is a repair or an improvement is whether the character of the asset is changed by the work. Repair occurs when part of a complex whole is renewed or replaced and renewal occurs when substantially the whole is reconstructed or when the character of the subject-matter changes. In the present appeal the evidence supports the conclusion that it was only small parts of the complex whole of the network which were renewed each year and that it could not be said that substantially the whole was reconstructed nor did the character of the subject-matter change. It remained a pipeline through which gas was transported; neither the pressure nor the capacity was materially increased.

80. In O'Grady (1932) a colliery company replaced an unsafe and dangerous chimney by a new improved larger chimney, with increased capacity, which was built on an adjacent site. The issue was whether the chimney should be considered by itself (in which case the expenditure on the improvement was of a capital nature) or as part of the larger entirety of the whole factory (in which case the change was minimal). Rowlatt J held that the relevant entity was the chimney and, as that had been renewed and improved (and not merely repaired) the expenditure was of a capital nature.

81. In this appeal we are of the view that the entirety of the asset is the whole of the transmission and distribution system from the beach to the meter. That was accepted to be the case in Auckland Gas. Mr Brennan argued that something less than the entirety was the asset, relying upon the fact that Transco maintained records separately for the national transmission system, the local transmission system, the local distribution system, and the services; he made a number of alternative suggestions as to how the asset should be identified. We accept that Transco maintained separate records for different parts of the system but Transco treated the entirety as one asset in its accounts. Also, Mr Brennan had some difficulty in identifying the asset (if it were not the entirety). That confirms our view that the entirety is the asset to be considered. The change to the entirety in each year was minimal (about 1%). The entirety has not been renewed or improved but has been repaired and so the expenditure is of a revenue nature.

82. In Rhodesia Railways (1933) the railway company owned 394 miles of line and claimed to deduct expenditure on the renewal of 74 miles in a year of assessment. (That was 18.78% of the whole). The work was part of a general scheme of renewal. For 33.5 miles new rails, sleepers and fastenings were laid. For 40.5 miles the old rails were relaid but new steel sleepers were used in the place of wooden sleepers. The renewal brought the worn track back to normal; it did not render the track capable of giving more service than the original. The accountancy evidence was that the work was periodical repairs or delayed maintenance and was therefore deductible. The Privy Council, following Lurcott, held that the periodical renewal by sections of the rails and sleepers of the line was not a reconstruction of the whole railway and did not result in the creation of

a new asset. Highland Railway was distinguished as in that case there had been an improvement but in Rhodesia Railways there had only been a relaying of the line to restore it to its original condition and there had been no improvement.

83. In the present appeal there has been a programme of replacement of small sections of the pipeline (about 1% each year) but not a reconstruction of the whole pipeline and not the creation of a new asset. The expenditure has merely restored the pipeline to its original condition but has not rendered the pipeline capable of giving more service than the original. The accountancy evidence is that the work is deductible. There has been no improvement and no new asset has been created.

84. In Samuel Jones (1951) a company which processed paper replaced a dangerous chimney which had inadequate foundations (and removed the old one) but the replacement did not constitute any appreciable improvement. In the Court of Session as the Court of Exchequer in Scotland the Lord President Cooper said at page 518 that the chimney was "physically commercially and functionally an inseparable part of an "entirety" which was the factory". It was "one of many subsidiary parts of a single industrial profit-earning undertaking". He preferred the line of approach in Rhodesian Railways to that in O'Grady.

85. In the present appeal those parts of the pipeline which have been replaced are physically, commercially and functionally an inseparable part of an entirety which is the whole network. They are subsidiary parts of a single, industrial, profit-earning undertaking.

86. In Conn v Robins (1966) part of a shop was 400 years old and the other part was 200 years old. The greater part of the structure was rotten and unsafe and in a dangerous condition. The company incurred expenditure on the replacement of the roof; the insertion of steel joists at first floor level and the building of new walls above them; replacing oak flooring with concrete which included an underfloor heating system; replacing the shop front with a level front and removing a bow window; and replacing certain timbers with steel joists. No additional space was created but the inside appearance was changed. The General Commissioners found that the expenditure was all on essential work, on repairs and not on improvements and so was deductible and Buckley J declined to interfere with that finding. At 275F he remarked that the company had incurred the expenditure because, unless something were done, the state of the property would have become so decrepit that it would have been impossible for the company to continue to carry on its business at those premises. At 275G he said:

> "In the light of that circumstance it seems to me that this was expenditure incurred by the Company with a view to enabling it to continue to earn profits from its business, not by acquiring some asset for that purpose but by putting the company's existing asset into a state of repair which would enable it to continue to use that asset. No doubt in the course of carrying out these works certain structural alterations were made, as one would expect with any extensive repair of a building over 400 years old . But the fact that there were alterations in the structural details of the building does not seem to me to be a good ground for proceeding on the basis that the work produced something new. On the contrary, I think it is implicit in the Commissioners' finding that the result of this work was not to produce something new but to repair something which had previously existed. Upon that basis it seems to me that there is no ground for regarding this expenditure as a capital expenditure.

> It was expenditure incurred for the purposes of enabling the company to continue to earn its profits, and was therefore in my judgment expenditure which would properly be chargeable to income."

87. In the present appeal the expenditure was all on essential work and was incurred because, if it were not done, the state of the pipes was likely to cause damage to life or property. The expenditure was incurred to enable Transco to continue to carry on its business safely and to earn profits; no new asset was acquired but the existing asset was put into a state of repair which would enable its continued use. The work did not produce something new but repaired something which had previously existed.

88. Thus, in the light of the authorities decided before Auckland Gas, we would conclude that the expenditure at issue in this appeal is properly to be regarded as revenue expenditure and not expenditure of a capital nature. We therefore next consider Auckland Gas to see if it established any new principle which would lead to a different view.

Auckland Gas

89. In Auckland Gas (2000) gas was supplied through a mainly low pressure network of underground cast iron mains pipes and stainless steel services. There was a continuing problem with leakages of gas from the pipe joints and from fractures of the mains caused by subsidence and corrosion. Natural gas was introduced in the 1970s and, as it dried the joints, the leakage problems increased. The worst year was 1971 when 38.5% of the gas entering the system was lost. In the early 1980s the gas company started to use polyethylene pipes for all new mains and services but by 1986 the system was in a poor state of repair and maintenance had become expensive. In 1982 the percentage of unaccounted for gas was 6.7% and in 1986 it was 6.2%. The company then decided to insert the polyethylene pipes into the old cast iron mains and steel services in order to repair leaks, improve reliability and to achieve greater pressure and flow. This insertion solved the problem of the leaking joints and, although it reduced the volumetric capacity of the pipes, gas could be transmitted at a much higher pressure which increased the capacity of the system. For the five years from 1988 to 1992 inclusive polyethylene pipes were inserted into 23% of the total mains and 32% of the steel services and the gas company claimed to deduct the cost of the insertion programme. Their appeal was allowed at first instance by Williams J ((1997) 18 NZTC 13408) with whom, however, the Court of Appeal disagreed ((1999) 19 NZTC 15011).

90. The sole issue before the Privy Council was whether the expenditure on the polyethylene insertion programme was repair (and so deductible) or replacement (and not deductible). The Privy Council held that the answer depended upon a consideration of all the circumstances. It was necessary to identify the object and an important consideration was whether the work changed the character of the asset. It was the nature and scale of the work carried out to the asset which determined the character of the work. "For a leaky cast iron and steel low pressure system which it was not worthwhile renovating in its existing form, there had been substituted a system constructed of a new and different material, operating at a much higher pressure." The old mains and services were effectively abandoned and relegated to the role of housing for the new pipeline. The old mains and services no longer performed any function save protecting the polyethylene pipe against vibration and ground movement. The effect of the work was that, as a result of the insertion programme, substantial portions of the

distribution system no longer delivered gas through metallic pipes but through polyethylene pipes which were virtually leak free and were better suited to the carriage of a dry gas; that gas was carried at a higher pressure; and the old mains and services no longer discharged the function of a distribution system. The asset had, in effect, been rebuilt in a different way with a substantial change in its character and a different and substantially improved asset had been created. The work had changed the character of the distribution system, a substantial portion of which had been upgraded. Even though the objective had been to restore the system to its original functional and reliable state that did not deprive the expenditure of its capital nature. At page 533g Lord Nicholls said:

> "If a significant portion of this series of linked pipes is effectively abandoned and replaced wholesale with new pipes, the work may readily go beyond what would normally be regarded as repair of the existing system. This is especially so if the new pipes are made of materials which perform differently from the old ones. The work may be of such a nature and scale as to change the character of the existing system. This is to be contrasted with replacing or making good specific leaking pipes or joints. The latter would be repair. The former would do more than repair what was damaged."

91. We have considered all the circumstances and in this appeal we have identified the object as the entirety of the pipeline. In our view the work has not changed the character of that asset. As far as the nature and scale of the work is concerned it is relevant that in each of the years under appeal under 1% of the whole pipeline was replaced with polyethylene. Also Transco has no plan for the total replacement of the whole system (although that might be forced on Transco by the Regulator for safety reasons). Replacement only occurs when necessary for safety reasons. It could not be said that the previous system had been substituted by a system constructed of a new and different material. Very many parts of the old system still remain and, at the date of the hearing of the appeal, 38% of the pipes in the local distribution system remained of cast iron. Because Transco has not inserted polyethylene pipes into whole sectors of cast iron pipes it could not be said that substantial portions of the distribution system no longer deliver gas through metallic pipes; in most runs of pipe there is a mix of metallic and polyethylene pipes. It could not be said that the cast iron pipes in Transco's system were unsuited to the carriage of dry gas as, when natural gas was introduced in the 1970s, the cast iron pipes remained in place as they were able to distribute natural gas as well as they could distribute towns gas. It is relevant that the conversion of the system to natural gas was completed in 1977 and the years under appeal are 1995, 6, 7 and 8, nearly twenty years later. Thus the expenditure under appeal was not connected in any way with the change from towns gas to natural gas. Unlike the facts in Auckland Gas there has been no change in the pressure. The old mains and services have to a large extent been retained and continue to discharge the function of a distribution system. The asset has not been rebuilt and no different and substantially improved asset has been created. Defective pipes and joints have been replaced and made good, albeit in not exactly the same form, or with exactly the same materials, as before.

92. We conclude that the distinction between repair and replacement is a matter of fact and degree and regard must be had to all the circumstances. In this appeal we are satisfied that what was done was repair by renewal of subsidiary parts of the entirety of the pipeline system. It was not renewal or improvement of substantially the whole of the subject matter. There was no "wholesale" renewal

or renewal sector by sector but only renewal of individual pieces and so the character of the whole did not change.

93. Thus, we conclude that there is nothing in Auckland Gas which would lead us to change our view that the expenditure at issue in this appeal is properly to be regarded as revenue expenditure and not expenditure of a capital nature. Before reaching a final decision, however, we consider the principles of commercial accounting.

The principles of commercial accounting

94. In Odeon Associated Theatres (1971) the issue was whether expenditure on deferred repairs was of a capital or income nature. The evidence was that the ordinary principles of commercial accounting meant that the deferred repairs should be charged to revenue. The judgment made it clear that in computing the amount of profits to be charged to tax it was necessary to have an account in which the receipts appeared on one side and the costs and expenditure necessary for earning the receipts appeared on the other. Accordingly, deductions were only to be made if they were, on the facts of the case, proper debit items to be charged against the incomings of the trade when computing the profits of it. The profits of a trade had to be ascertained according to the ordinary principles of commercial accounting and it was for the court to decide if those were the correct principles of commercial accounting. At page 281G Lord Salmon said:

> "In my judgment the true proposition of law is well established, namely, that, in determining what is capital expenditure and what is revenue expenditure in order to arrive at the profit for tax purposes in any particular year, the Courts will follow the established principles of sound commercial accounting unless they conflict with the law as laid down in any Statute."

95. In Heather (1972) the issue was whether the costs to a company in securing and retaining the services of employees was revenue or capital expenditure. At 323D Buckley LJ said:

> "It must be axiomatic that the evidence of no witness can be conclusive on a question of law. It is well established that the question whether a particular payment is a payment of a capital nature or of a revenue nature must be answered in accordance with sound accountancy principles. Skilled accountants may well be much better qualified than most Judges to formulate and explain such principles; but nevertheless in every case of this kind it is the Judge and not the witness who must decide whether a witness's evidence in fact exemplifies sound accountancy principles. A Judge may . reject the accountant's evidence or he may accept it."

96. The same approach as in Odeon Associated Theatres was adopted in Gallagher v Jones (1993). There the issue was whether the actual payments made under a lease, which were very much higher in the earlier than in the later months, were deductible when they were made or whether the total amount payable should be spread evenly over the whole period of the lease. The uncontradicted expert accountancy evidence was that the payments should be spread as otherwise the accounts would give a completely misleading picture of the trading results. At page 555g Sir Thomas Bingham MR said:

> "The object is to determine, as accurately as possible, the profits or losses of the taxpayers' businesses for the accounting periods in question. Subject to any express or implied statutory rule, of which there is none here, the ordinary way to ascertain the profits or losses of a business is to apply accepted principles of commercial accountancy. That is the very purpose for which such principles are formulated."

97. It was the expert opinion of Mr Macdonald that, throughout the period under appeal, the expenditure, which was necessary to keep the network in serviceable condition, had properly been taken to revenue. Transco was correct to treat the entirety of the system as one asset for accounting purposes as it derived its benefit from the network in its entirety and not from a series of pipes. Indeed if Transco had sought to capitalise its expenditure then the accounts would have had to be qualified by the auditors on the ground that the resulting increase in the fixed asset base would have gone on rising indefinitely and would not have been matched by a corresponding increase in revenues because the replacement expenditure did not enhance the network; the omission of the expenditure from the profit and loss account would materially overstate the profits of Transco, such that a true and fair view of the results would not be shown.

98 In the years relevant to this appeal the generally accepted principles of commercial accounting were contained in ED 51. With regard to ED 51 we accept the evidence of Mr Macdonald that it would not be prudent or reasonable to capitalise expenditure on repairs merely because of some incidental benefit by way of a minor increase in capacity or a minor reduction in operating costs. Indeed to do so would not show a true and fair view of the financial results as it would disguise the true cost of the repairs and maintenance by "spurious" capitalisation. Mr Macdonald said that in this appeal there was a pipeline which consistently gave rise to a very low level of incidents and, after the maintenance expenditure, gave rise to a slightly lower level; that was not capital expenditure. Further Mr Macdonald gave evidence that the exposure draft, when referring in paragraph 19 to "expected future benefits", was referring to economic benefits and safety was not an economic benefit. Although the expenditure might have resulted in an increase in safety, it did not result in an economic return. Further, paragraph 19(c), in referring to "substantial improvements in the quality of outputs" did not refer to safety. We also accept the expert evidence of Mr Macdonald that the approach in FRS 15 is consistent with the approach in ED 51 of preventing the capitalisation of expenditure on repairs and maintenance.

99. ED 51 states that expenditure should only be capitalised if it increases the expected future benefits from the existing fixed asset beyond its previously assessed standard of performance. In this appeal there was no significant prolongation of the network's useful life beyond that conferred by repair or maintenance; there was no increase in capacity; there was no substantial improvement in the quality of output or reduction in previously assessed operating costs; and there was no substantial increase in the open market value of the fixed asset. In the years under appeal there was not even a significant increase in safety levels as the average of three incidents a year had been achieved in the early 1990s and remained at about that level. In any event we accept the evidence of Mr Macdonald that ED 51 referred to economic benefits and that safety was not an economic benefit.

100. Accordingly, in this appeal the established principles of sound commercial accounting also point to the conclusion that the expenditure was properly charged to revenue. If we had had any doubts in the light of Auckland Gas (where, it will

be recalled, the accounting evidence was conflicting) then such doubts would have been resolved by the accountancy evidence in this appeal.

101. Finally we mention the matter of regulatory capital. As far as the regulatory asset value is concerned we accept the evidence of Mr Macdonald that the Regulator's objectives are completely different from the objectives of the accountant. The regulatory asset value was produced by the Regulator who had regard principally to future cash flows and pricing and who had to make sure that an efficiently run regulated entity was able to finance its activities. A Regulator also sought to achieve tariff continuity and used regulatory values to achieve a smooth tariff pattern so as to ensure that consumers in one year did not subsidise the consumers of future years. The Regulator might choose to defer the recovery of cost from one period to another and would use the regulatory value as the mechanism for doing that but that would not make it capital. In the light of this evidence we are satisfied that the fact that Transco's expenditure on replacements was included in its regulatory asset value, and did not form part of operating expenditure for regulatory purposes, does not affect the views we have reached on the established principles of sound commercial accounting.

Decision

102. Our decision on the issue for determination in the appeal is that, in computing the profits of Transco's trade, the disputed expenditure was of a revenue nature and therefore deductible.

103. The appeal is, therefore, allowed.

104. As requested, this is a decision in principle. Under the provisions of Regulation 18(5) of the Special Commissioners (Jurisdiction and Procedure) Regulations 1994 SI 1994 No. 1811 we adjourn the making of the final determination until the further issues arising from this decision have been agreed by the parties or, failing agreement, decided by us after having heard the parties. Either party has liberty to apply for an adjourned hearing.

NUALA BRICE

T H K EVERETT

SPECIAL COMMISSIONERS

SC 3064/2001

22.01.02

Corrected under regulation 25(3)

18.02.02