

CHAPTER 4. THE CHLORIDE ELECTRICAL STORAGE COMPANY LIMITED

I. HISTORY AND DEVELOPMENT

Origin

172. The Chloride Electrical Storage Company Ltd. (Chloride) was registered as the Chloride Electrical Storage Syndicate Limited on 12th December, 1891, with a nominal capital of £262,500. Its principal object was to adopt a provisional agreement of 30th November, 1891, made between The Electric Storage Battery Company (E.S.B. Co.), New Jersey, and the United Gas Improvement Company, Pennsylvania, and John A. E. Hickson on behalf of the new company, and to work in countries other than the U.S.A. and Canada patents and applications assigned by the American companies, with rights to further development and improvements of the patented inventions. The American companies were to receive a cash payment and shares in the new company. A second agreement was made on 10th July, 1892, amending the schedule of patents and the method of payment, and an indenture of the same date records the assignment of the patents and the cash payment and allotment of shares in the new company. As amended, the patents and applications related for the most part to storage battery production and use, but a few relating to electrical equipment outside this field were included. In 1895 Chloride made the "Harvey agreement"* with E.S.B. Co. which provided for an interchange of technical information between the two companies and gave reciprocal rights in regard to patents and commercial exploitation on an exclusive geographical basis. Chloride enjoyed these rights in the United Kingdom and British Empire. In 1902 the company adopted its present name and reorganised its capital.

Development to 1918

173. The principal demand for storage batteries until the 1914-18 war was for the large stationary type used in generating stations and for domestic lighting installations. There was also a growing demand for batteries for submarines, in the production of which Chloride played a considerable part. As regards reference batteries, it seems from its records that Chloride first supplied ignition batteries about the year 1906, and may have been supplying traction batteries a year or so earlier, but the use of batteries for either of these purposes had not made very much progress before the first war.

Relations with competitors

174. The development of Chloride's relations with Lucas from 1914 is described in Chapter 3. Chloride's relations from about 1909 with a number of other battery producers, who were eventually to come under its control, were of some importance in regard to its own development. These companies (or their predecessors) were Pritchetts & Gold Ltd. (P. & G.) incorporated in 1901; The Tudor Accumulator Company Ltd. (Tudor) incorporated in 1897; the D.P. Battery Company Ltd. (D.P.) incorporated in 1895; the Hart Accumulator Company Ltd. (Hart) incorporated in 1898

* No copy of the Harvey agreement is available and this description is based on references in Chloride's minutes.

and the Premier Accumulator Co. Ltd. (Premier) incorporated in 1906. As in the case of Chloride, the principal interests of these companies lay originally in the production of the larger stationary accumulators. P. & G., however, manufactured traction batteries in its earliest days and, for a few years and on a sample scale, electric cars. Tudor was set up to work patents belonging to H.O. Tudor (whose domicile was Luxembourg) about the same time as a number of other "Tudor" companies in Continental countries. The company made an agreement in 1902 with the German company, Accumulatoren Fabrik A.G., which acquired control in 1905. Hart was primarily interested in train-lighting batteries, and from 1912 was controlled by J. Stone and Co. Ltd. (Stone).

175. There had been, from time to time, discussions on trading terms between these companies and Chloride and about 1912 they set up jointly the Accumulator Makers' Association (A.M.A.) and concluded an agreement* which provided for minimum prices and some sharing of profits on a turnover basis, each company being allotted a quota and excess profits pooled. These arrangements seem to have applied only to home sales of stationary batteries. In 1913 an export agreement for stationary batteries was discussed between the members, but it was not made until after the war. In 1914 the A.M.A. purchased the battery business of the Sandycroft Battery Co. and sold it to Premier. In 1915 P. & G. amalgamated with the Electrical Power Storage Co. Ltd.† and the general agreement of the A.M.A. was revised to take account of it. Early in 1917 some 95 per cent. of the shares in Tudor, registered in the names of enemy aliens, were vested in the Public Trustee. Chloride, according to its records, made an unsuccessful attempt to acquire these shares. Shortly afterwards they were bought jointly by P. & G., D.P. and Hart, and the amalgamation of the four companies was proposed. D.P., however, declined to continue negotiations and the proposal was dropped. In the same year Chloride made "a general agreement" with P. & G., Hart and D.P. "on prices for all classes of business". (Chloride says that, so far as it knows, automotive and traction business was not included.) In August, 1918, Chloride's minutes record the discussion of proposals for the amalgamation of Chloride, Hart, D.P. and Tudor but the project was dropped. At the end of that year P. & G. acquired the Peto & Radford accumulator business.

From 1918 to 1939

176. After the first war the use of batteries for lighting and starting motor vehicles as well as for ignition became more general and the demand from the developing motor industry increased rapidly. There was also, for a considerable time, a demand for accumulators for radio receiving sets. Demand for traction batteries for electric vehicles also increased, more particularly from about 1930. In this inter-war period Chloride made most of its acquisitions of other battery manufacturers, acquired the control of alkaline battery production, and established itself as the leading supplier of automotive and traction batteries.

* 1912 is the date of the agreement and, according to D.P.'s records, the A.M.A. was set up at the same time but according to its minutes P. & G. had agreed to join the association in 1909.

† The present company, Pritchett & Gold and E.P.S. Co. Ltd., is a successor, incorporated in 1920.

Acquisitions of other manufacturers

177. Chloride's principal acquisitions of lead acid battery producers largely developed out of its pre-war and war time relations with the other manufacturers in the A.M.A. In 1921 the A.M.A. members jointly purchased the interests of the Premier Accumulator Co. Ltd. (a project first considered in 1917)*. Towards the end of the following year Chloride made its first major acquisition, that of a controlling interest in P. & G. Shortly afterwards—the negotiations had been simultaneous—Chloride acquired a share in Tudor equal to those held by P. & G., Hart and D.P. Early in 1926 there was some discussion between Chloride and a director of Stone and Hart on the need for closer co-operation between Hart and Chloride, even to the extent of Chloride's acquiring control of the former company from Stone. In March the question of a general amalgamation was again proposed by certain members. Later in the same year A.M.A. again took joint action and bought the interests of the Fullers United Electric Works Ltd. from the liquidator.† According to Chloride's minutes this was done "so as to have control over the cutting of prices which had been hitherto carried on with effect by the Fuller Company".

178. In June, 1927, Chloride's minutes report that Hart was now allied to D.P. and that some approach would probably be made for a close association with Chloride, while at the end of the year P. & G.'s minutes also refer to the association of Hart and D.P. and report that discussions were taking place between Chloride and Stone on an amalgamation of all the A.M.A. companies. From May, 1927, onwards a number of agreements were concluded by which Stone and other shareholders in Hart and D.P. agreed to sell their shares in these companies in exchange for shares in a new company. This company, the National Accumulator Co. Ltd., was incorporated in March, 1928, with Stone as the majority shareholder. National held all the shares in D.P. and a controlling interest in Hart. A Chloride Board minute of March records that in view of the practical difficulty of operating a "company to whom the properties of the various battery makers would be sold, it seemed preferable to reconsider the earlier plan of obtaining control of the accumulator industry in this country by the purchase of a controlling interest in the Hart and D.P. Combination". Negotiations began and the purchase of National from Stone and the other shareholders was completed by the beginning of 1929. The acquisition of National brought with it that of Hart and D.P. and controlling interests in Premier and Fuller. Another company acquired through National was M.C.L. and Repetition Ltd. This had been set up in 1926 by Hart, D.P. and Stone; its principal business was the manufacture of "repetition" parts (principally, we understand, nuts and bolts) but for a time it also manufactured magnetos on a small scale. In connection with its acquisition of National, Chloride made agreements with Stone relating to the supply of lead acid and alkaline batteries for train lighting, which *inter alia* prohibited Stone from manufacturing lead acid and alkaline batteries; at the same time Stone assigned to Chloride the benefit of a 1927 agreement with Société

* The other members set up a new Premier company to buy the assets of the old company, the latter then being liquidated.

† In the case of Fuller (which had not been a member) the A.M.A. members set up a new company, the Fuller Accumulator Co. (1926) Ltd., to acquire the interests of the old company which was already in liquidation.

des Accumulateurs Fixes et de Traction (S.A.F.T.) which gave Chloride certain rights to the manufacture and sale of S.A.F.T. alkaline batteries for train lighting and other purposes. Chloride was to supply Stone with S.A.F.T. batteries for train lighting.

179. In the course of 1929 Chloride acquired the remaining shares in P. & G., National and Hart, and subsequently exchanged shares within these companies so that National controlled P. & G., Tudor, D.P., Hart and Premier, and Chloride controlled Fuller. The Board minute recording this decision suggests that Fuller would be used as a weapon to meet outside competition. In 1932 Chloride acquired the Alton Battery Co. Ltd. Chloride's shares in National, Fuller and Alton were held through nominees, as were those of most of its immediate subsidiaries during this period.

180. Two manufacturers of containers for lead acid batteries were acquired by Chloride during this period: Lorival Ltd. in 1927 and United Ebonite Manufacturers Ltd. in 1934. The second company acquired the assets of the first in 1939 and its name was changed to United Ebonite & Lorival Ltd. Two other acquisitions of some interest in regard to reference equipment were also made: that of the Rothermel Corporation Ltd. in 1938 and that of Midland Vehicles Ltd. in 1939. The former had a subsidiary which manufactured electrical accessories which included some equipment for road vehicles. The latter manufactured electric vehicles.

181. It was Chloride's policy to allow each of the companies in the group to operate as an independent unit and they were regarded as in competition with each other, a system of nominee holdings obscuring the relationship between them. The prices charged by the subsidiary companies were, however, determined by the parent company and Chloride's minutes for 1933, 1934 and other years show that the parent company's policy not infrequently required sales by subsidiaries to be made at a loss. On the technical side, as the group became more conscious of itself increasing emphasis was laid, Chloride tells us, on the collection and recording of know-how, which was pooled for common use. In explaining generally its policy in these years Chloride has said that there was considerable excess of production capacity for batteries in the United Kingdom and that, in the national interest, some rationalisation was essential. "Looking back, what in fact appears to have happened was that the then management of . . . Chloride . . . took the initiative and made Chloride the nucleus of that rationalisation." (Chloride's submissions will be found, in more detail, in paragraphs 879 and 880.) Some progress in the direction of rationalisation was effected by the closing down of particular production or marketing activities of a number of subsidiary companies. This is shown in summary form in Appendix 4.

Alkaline batteries

182. Alkaline battery manufacture had begun in the United Kingdom some time before the end of the first war and one of the first manufacturers was Worsnop & Co. Ltd., which later set up Alklum Electrics Ltd. In 1918 the principal Continental producer, Jungner of Sweden, set up Batteries Ltd. to manufacture alkaline batteries in this country under Jungner patents. Until production was established about 1924 Batteries Ltd. sold Jungner batteries imported from Sweden. The other suppliers

in the early twenties included a manufacturer of batteries for miners' safety-lamps and a number of selling organisations for United States and Continental producers. One of these, Iron and Nickel Batteries Ltd., was set up by Stone and Hart to sell imported S.A.F.T. batteries. Another, Edison Accumulators Ltd., originally set up in 1913 by the American Edison Company to sell batteries imported from the United States, passed, in 1928, into the control of Accumulatoren Fabrik A.G. and changed its name to Britannia Batteries Ltd. A second Edison company, also set up to import batteries from the United States, became a subsidiary of Britannia in 1931 and changed its name to Fe-ni-ca Accumulators Ltd. For a time Britannia, and possibly Fe-ni-ca, manufactured lead acid, alkaline and primary ("Pertrix") batteries.

183. In 1922 P. & G. (which had shown some interest in Jungner's research in 1901) acquired some shares in Worsnop and Alklum Electrics and considered buying its alkaline battery business, principally, it seems, with train-lighting uses in mind. Having tested the various products, P. & G. decided that the Jungner battery was superior and in 1923 (not long after it had passed into the control of Chloride) P. & G. made an agreement with Jungner under which it acquired one-third of the capital of Batteries Ltd. and agreed to have no other alkaline battery interests. P. & G.'s interests in Worsnop and Alklum Electrics were sold to Batteries Ltd. In 1925, Alklum Electrics was wound up. In 1932 Worsnop set up another company—Alklum Storage Batteries Ltd.—and in the following year went into liquidation.

184. According to Chloride there was severe competition among the producers and the survival and relative success of Batteries Ltd. was largely due to a contract it had secured for train lighting from Indian Railways and the interest which Lucas took in the automotive use of alkaline batteries. Lucas's interest was manifested in the exclusive selling rights for automotive alkaline batteries which it obtained from Batteries Ltd. in 1926 and 1928 and the shares in the company which it bought from P. & G. and Jungner in 1929 (see paragraph 121). As a result of this business from Lucas and Indian Railways, Batteries Ltd. was able to secure a reasonable volume of production and reduce its costs. In 1933 Chloride acquired the controlling interest in Batteries Ltd. from Jungner and the two companies made agreements providing for interchange of technical information and some mutual restriction on export to each other's territories. Lucas and Jungner remained minority shareholders in Batteries Ltd. which was about this time renamed Nife Batteries Ltd.

185. As part of the agreement made with Stone in 1928 (see paragraph 178) Chloride obtained certain manufacturing and selling rights for S.A.F.T. alkaline batteries* and (through Hart) a half share in the Iron and Nickel Battery Co. The remainder of the shares were obtained in 1929, and the company was renamed Ionic Alkaline Batteries Ltd. This company does not appear to have manufactured alkaline batteries. In 1935 Chloride acquired Alklum Storage Batteries Ltd. A Chloride Board

* The Stone-S.A.F.T.-Chloride agreement of 1928 was replaced by another in 1946. This expired at the end of 1961. Chloride does not regard this as having been of primary importance in the development of its alkaline battery production, and says the arrangement was primarily made to secure a supply of S.A.F.T. alkaline train-lighting batteries for a particular customer, viz. Stone.

minute in 1934 records that this company, though relatively small, was threatening under new management to be a serious competitor in nickel-iron batteries. A more important acquisition was that of Britannia Batteries Ltd. Chloride's minutes of 1929 and 1930 indicate that this company and its German owner, A.F.A., caused Chloride some concern by not adopting standards of "reasonable competition" in England. A Board minute of December, 1931, reports that A.F.A. was willing to come to an agreement and was considering the sale of Britannia to Chloride provided it retained an interest in the profits of the English market. Negotiations proceeded and in 1934 Chloride took over the dry battery business of Britannia. The purchase of the alkaline and other interests was completed in 1936. As part of the consideration A.F.A. received shares in certain of Chloride's German interests, and arrangements for technical interchange were made.

Development of automotive battery business

Initial equipment

186. Chloride's most important customers for initial equipment between the wars were Ford and Vauxhall. Supplies to Ford were first made in the early 1920's. Chloride owed this account in the first place to its links with E.S.B. Co. The connection with Vauxhall seems to have begun in the late 1920's. Chloride also supplied initial equipment to a number of other producers of cars in this country, including Rolls-Royce, and a number of companies of foreign origin, such as Chrysler, Citroen, Fiat and Lancia, to some commercial vehicle manufacturers, including A.E.C., Albion and Daimler, and to a few motor cycle manufacturers. Not all these accounts were on an exclusive basis at this time.

187. As we have already shown in Chapter 3, Lucas, with its established connections with the leading British car manufacturers, was Chloride's principal competitor on initial equipment. Chloride also met competition from overseas battery producers. Board minutes of June, 1928, and January, 1929, record that to retain orders for batteries for American cars it had been necessary to accept contracts involving a loss of approximately 1s. 6d. a battery, and that it might be necessary to incur a similar loss to retain Ford's European contract. Chloride has explained that, so far as can be remembered, the American car manufacturers concerned were Ford, Chrysler, Buick and Chevrolet, and that the main competitors were Lucas and the American manufacturers. It is not known how long the loss continued but Chloride succeeded in holding the Ford account and certain others.

188. The relative weakness of Chloride vis-à-vis Lucas lay in the fact that Chloride could supply only batteries while Lucas could offer a whole range of the electrical equipment required by car manufacturers. It is true that Chloride had, in M.C.L. & Repetition and the Rothermel Corporation, companies which did or could make other electrical components, and Chloride's representatives have said that the acquisition of the former company was one of the means by which it attempted to put itself in a better position to compete with Lucas. Some time in the middle 1930's, however, the company seems to have abandoned the attempt and concen-

trated its resources on battery manufacture. Lucas remained in a position in which it was able, unlike Chloride, to quote a price for a set of equipment, including a battery.

189. Chloride believes that when, during the 1920's and 1930's, it attempted to obtain business from one or another of Lucas's initial equipment customers, Lucas made use of this advantage by quoting or suggesting a very low "deletion price" for the battery to the customer who wanted to buy a set excluding the battery. It has no direct evidence of this, however, the belief being founded principally on salesmen's reports of what they were told by customers. It seems that these efforts on the part of Chloride to sell to Lucas's customers were only sporadic. It is clear from the matters described in Chapter 3 that Chloride and Lucas were becoming increasingly co-operative during this period and Lucas has referred to a number of attempts to reach agreement on initial equipment business. None, apart from the abortive 1942 agreement, was ever formally concluded. As we have already said (see paragraph 123), Chloride regarded this agreement as an attempt to codify and reduce to the terms of a legal document the position which had been built up over the years in regard to the demarcation between the two companies of production interests and initial equipment battery customers. It was, according to Chloride, the policy of each company to refrain from supplying the other company's established customers.

Replacement

190. The principal automotive battery business of the Chloride group was in the replacement market. Lucas was the principal competitor but there were also a large number of smaller battery manufacturers who supplied automotive batteries only or mainly for replacement and who offered increasing competition. The tendency was for each of the larger manufacturers to set up his own system of service agencies for the wholesale distribution of these batteries. As we have already mentioned in paragraph 120, by September, 1927, there appears to have been some co-operation between Chloride and other manufacturers in regulating discounts to the trade.

191. In 1933 Chloride, Lucas and Oldham set up the British Starter Battery Association (B.S.B.A.). The history and activities of the association are described in Chapter 5. Under the B.S.B.A. arrangements the various companies in the Chloride group which sold replacement batteries charged the same retail prices for their standard batteries as the other members, allowed the same discounts to the various classes of distributor and fleet user registered with the B.S.B.A., and each appointed Service Agents on an exclusive basis. For some years Chloride, like the other members, manufactured and supplied, through the "Jewel" battery company, a battery of lower quality than its standard range to counter competition in the replacement market from some of the smaller manufacturers.

192. In 1937 Chloride made an agreement with the Ever Ready Company (Great Britain) Ltd. whereby the latter agreed not to manufacture secondary batteries and to obtain its requirements from Chloride while Chloride agreed not to manufacture primary batteries* and to obtain its requirements from

* Primary batteries include *inter alia* the dry batteries used in pocket torches, some cycle lamps, and radio sets. Britannia Batteries Ltd. had some interest in primary battery production at this time.

Ever Ready. The secondary batteries in which Ever Ready could trade were restricted to portable types for starting cars, for radio receiving sets, for hand-lamps and the like. Chloride has explained that at the time the agreement was made it wished to concentrate on the secondary battery industry in pursuance of its policy of "being the nucleus of the rationalisation of that industry", while at the same time it wanted a source of primary batteries for sale by its Service Agents as a useful "other line". Ever Ready was principally concerned with the primary dry battery market but wanted a supply of secondary batteries for the radio market. Ever Ready abandoned the sale of car starter batteries in 1949; it was a member of the B.S.B.A. from 1941 to that date.

193. A further development in replacement business during this period was effected by the extension of the group's trading into distribution. As early as 1936 Chloride had taken over the business of a Service Agent in financial difficulties. A number of other agencies were later taken over, where there were similar difficulties or where an existing agent was giving up business and no suitable alternative independent agent could be found. In 1939 a holding company, Gaedor Ltd., was formed to acquire and superintend the various agencies in Chloride's control.

Traction battery business

194. During the 1930's the demand for traction batteries increased, particularly for electric road vehicles for the delivery of milk and other household goods. The principal manufacturing companies in the Chloride group were the parent company itself, Tudor and D.P. The group had the larger share of the market and from time to time discussed trading terms with the other manufacturers. There was no formal agreement. Alkaline traction batteries were manufactured by Nife Batteries Ltd. (formerly Batteries Ltd.) and Britannia.

The 1939-1945 War

195. The war brought an increase in demand for secondary batteries of all kinds for service purposes and an increase in trade for Chloride. It may also have tended to halt Chloride's rationalisation and generally to perpetuate the *status quo*. In 1942, however, Chloride disposed of Midland Vehicles Ltd. and in 1943 it acquired the premises and plant of Accumulators of Woking, a small battery manufacturer.

196. In 1942 Chloride made the agreement with Lucas already referred to and described in paragraph 123. Its operation was, according to Chloride, "more academic than actual" and it was cancelled, by mutual consent, in 1944. In fact, the line of demarcation between the established customers of the two companies was maintained during and after the term of the agreement. In 1943 Chloride disposed of Rothermel and M.C.L. & Repetition. Lucas was not the purchaser and the company says that this step was not connected in any way with the agreement with Lucas. Any policy to make serious use of these companies seems to have been abandoned some time before (see paragraph 188).

From 1945 to 1958

Organisation

197. In 1947 an important change was made in the relations of Chloride with its founder and traditional partner, E.S.B. Co. In addition to the three original agreements described in paragraph 172 Chloride had made two export agreements with E.S.B. Co. in 1920 and 1921 which provided for some sharing of world markets. In 1945 an anti-trust action under the Sherman Act was brought against the American company. The Department of Justice alleged that the five agreements were illegal and asked for them to be declared null and void. It also sought to restrain E.S.B. Co. from holding any shares in Chloride or from being represented on the Board. E.S.B. Co. submitted to a consent decree, and final judgment was given in November 1947. The three E.S.B. Co. directors resigned from the Board of Chloride and the shares held by E.S.B. Co. were vested in a Trust. In 1954, these were sold to the public in the United Kingdom. In the course of the anti-trust proceedings E.S.B. Co. and Chloride cancelled the Harvey, Hickson and Export agreements and substituted an agreement which provided for interchange of technical information between the two companies and its exploitation on a non-exclusive basis. As finally settled in 1947, each company was to retain the control of its own patents, the other company having rights to licences on non-exclusive terms.

198. Chloride has not acquired any other battery manufacturer in this country since the war, though it recently bought from A.E.I. the latter's battery-making plant and goodwill (see paragraph 391). A number of alterations in the functions of the various companies in the group were made after the war. The following are of particular interest in regard to the supply of reference goods and the rationalisation of production :

- (a) In 1949 the Summit Battery Co. Ltd. (a subsidiary founded in 1937 with the intention of manufacturing radio batteries but which had remained dormant), changed its name to Chloride Batteries Ltd. and took over the manufacture of and trade in electric storage batteries from the parent company. As from 1st January, 1950, the latter became a holding company only.
- (b) National was liquidated in 1951 and its shares in its subsidiaries, P. & G., Tudor and D.P., were transferred to nominees. These were subsequently transferred to Chloride—P. & G. in 1954, the others in 1957. The connection had been public knowledge for some years, the brand-names of batteries made by these companies being mentioned in Chloride's Annual Report for 1952.
- (c) The Accumulators of Woking works were closed in 1947 and its lead acid battery production transferred to Chloride. The Tudor works were closed in 1958 and its lead acid traction battery production transferred to D.P. In the following year P. & G. took over the selling functions for its batteries from Holsun Batteries Ltd., a company which had been set up in 1938, and, over the years, had been the concessionaire for various manufacturing companies in the group, principally P. & G.
- (d) On the alkaline battery side, Nife Batteries Ltd. (formerly Batteries Ltd.) changed its name in 1947 to Alkaline Batteries Ltd. and

amalgamated with Britannia Batteries Ltd., all alkaline battery production being transferred to the latter's factory at Redditch. Britannia Batteries was liquidated.* Alklum, which had not manufactured batteries since 1938, continued as a subsidiary of Chloride until 1958 and supplied material to Alkaline Batteries Ltd. It is now a dormant subsidiary of the latter company.

199. Chloride regards these transfers of production, in particular that of Tudor, as important steps in the programme of rationalisation which had begun in the pre-war years (see paragraph 181 and Appendix 4). It has also told us in regard to the alkaline merger that the production potential of both the Nife and Britannia factories had been greatly extended during the war and was far too large for post-war demands. Amalgamation was therefore decided upon in the interests of economy.

200. A Research and Development Department, serving all companies in the group, was set up as a separate unit in 1950 and moved to new and specially designed buildings in 1958.

Trading Policy

201. Chloride's trading policy on reference batteries after the war followed, for the most part, the lines already established. The company did, however, put an end to certain arrangements and understandings after the Restrictive Trade Practices Act, 1956 became law.

Automotive batteries

202. Chloride acquired a number of new customers for initial equipment, principally among manufacturers of commercial vehicles, motor cycles and scooters and light weight and special purpose cars. Among the other car manufacturers the line of demarcation between the established customers of Lucas and Chloride remained unchanged. Chloride continued to follow a policy of not seeking to supply Lucas's established customers—it was not, in any event, in a position to do so—and it was its clear understanding that Lucas observed a similar policy in regard to the group's customers and did not take advantage of its greater strength. According to Chloride, this position as regards customers was "tacitly recognised" by both companies and amounted to "a mutual desire to maintain the 'status quo'". Lucas does not agree that there was any such understanding, but the record of a discussion between executives from the two companies which took place in 1953 (see paragraph 124) indicates that, at executive level at any rate, Chloride's understanding was shared by the other side. As we have said in paragraph 125, Chloride also had discussions from time to time with Lucas and Oldham, at first separately and later together, about the prices to be charged for equipment to certain customers, principally heavy vehicle manufacturers and the Ministry of Supply. No formal agreements were reached.

203. We have referred in paragraph 125 to Chloride's view that it was not clear how far these various understandings, including the "mutual desire to maintain the 'status quo'" in regard to initial equipment customers would have been registrable under the 1956 Act. As we have said, in

* The name of Britannia Batteries Ltd. was taken in 1948 by Batteries Ltd., a subsidiary set up in 1939 by Nife.

order to set at rest any doubts on the matter, Chloride in a letter to Lucas of 21st February, 1957, formally terminated all agreements, arrangements and understandings (the B.S.B.A. arrangements apart) which would have required registration under the 1956 Act. A letter in similar terms was sent to Oldham.

204. Chloride's selling prices and discounts for replacement batteries and, to a considerable extent, its distribution arrangements continued to be regulated by the B.S.B.A. until February, 1957. There was some relaxation of these arrangements in mid-1956 when the exclusive agreements between the association and registered factors, special buyers and retailers were cancelled and all bona fide retailers were given the same maximum discount. In February, 1957 the B.S.B.A. renounced price-fixing, prescribed the maximum discounts to be allowed to distributors, and registered these and other arrangements in the new Constitution with the Registrar of Restrictive Trading Agreements. These arrangements, which are described in greater detail in paragraphs 230 to 241 lasted until the B.S.B.A. was dissolved in 1960. Certain alterations in the incentive rebates given to Service Agents and in the facilities for the assembly by Service Agents of rebuilt batteries were introduced by Chloride in the last phase of the B.S.B.A., and developed during its membership of the B.S.B.A. (1960) which after a gap of a few months succeeded the old association. These developments are described in paragraphs 509 and 518. No changes were made in retail prices for standard batteries or in the principal discounts.

Traction batteries

205. During the period to 1956, Chloride had, from time to time, separate discussions with two other manufacturers, Crompton Parkinson and Oldham, about prices, discounts and trading terms. A principal object which Chloride hoped to secure was to limit as far as possible the number of distributors who handled traction batteries, Chloride preferring for technical reasons to deal direct with its customers. Some understandings were reached and operated including, *inter alia*, the relationship between the prices of Chloride and its two competitors. No formal agreements were made but in 1956 Chloride decided to put the position as to possible registration beyond doubt. The matter was discussed with Crompton Parkinson and a letter from Chloride in November 1956 confirmed that the two companies terminated "entirely and without reservation all agreements, arrangements and understandings, express or implied, with regard to the matters set out below or with regard to any other matters which unless terminated would require to be registered under the Restrictive Trade Practices Act". The matters set out included "1. The prices, discounts, rebates and other terms of sale for traction batteries".* In the case of Oldham the termination of any understandings about traction batteries was covered in the letter of February, 1957 referred to in paragraph 203.

* Another matter was "the list prices, discounts, rebates and other terms of sale for car starter and commercial batteries". There had been discussions between Crompton Parkinson and the B.S.B.A. members and some understanding had been reached on these matters (see paragraph 229).

II. PRESENT STRUCTURE AND ORGANISATION

The Group

206. The Chloride Electrical Storage Company Limited (Chloride) is a holding company with an authorised capital of £7½m. of which £6,594,218 has been issued, made up of 62,000 6 per cent. Preference shares, and 4,746,600 "A" and 1,785,618 "B" Ordinary shares, all of £1. The company has some 35 subsidiary companies in the United Kingdom (of which 11 are dormant) most of which are wholly-owned, and some 22 subsidiary and associated companies in overseas countries. The principal interests of the group are the manufacture and sale of storage batteries. The other interests include the manufacture of light engineering products, barrier cream, sanitary ware and plastic and ebonite products including components for batteries. Chloride has the general managerial responsibility for the subsidiary companies in the United Kingdom.

207. Sales of automotive and traction batteries in the United Kingdom accounted for more than one-quarter by value of the group's total sales in 1960. The United Kingdom companies principally concerned in their production and sale are the following

Chloride Batteries Ltd. (C.B.L.)	} Manufacturers
Pritchett & Gold and E.P.S. Co. Ltd. (P. & G.)	
The D.P. Battery Co. Ltd. (D.P.)	
Alkaline Batteries Ltd.	
Gaedor Ltd. and its subsidiaries	} Holders of certain Service agencies for Exide batteries made by C.B.L.
United Ebonite & Lorival Ltd.	} Manufacturer of battery components.

These companies are wholly-owned with the exception of Alkaline Batteries Ltd., in which Chloride holds only 66 per cent. of the shares; the other shareholders are Lucas and Jungner who have holdings of 22 and 12 per cent. respectively. Shares are held directly by Chloride in each case.†

Production

Lead acid batteries

208. Automotive batteries are made by C.B.L., P. & G. and (to a very small extent) by D.P. Traction batteries are made by C.B.L. and D.P. The companies' factories, brand-names and home market sales in 1960 are as follows:

Company	Factory	Type	Brand-name	Sales in 1960 £'000
C.B.L.	Clifton Junction	Automotive	"Exide"	*
		Traction	"Exide-Ironclad" (a) ... and "Ajax"	*
P. & G.	Dagenham	Automotive	"Dagenite" and "Shednought"	*
D.P.	Bakewell	Automotive	"Kathanode"	*
		Traction	"Kathanode" and "Tudor"	*

(a) Some automotive batteries for heavy vehicles are also sold under the brand-name "Exide-Ironclad".

† Gaedor was held through nominees until 1959 and was first named as a subsidiary in the Company's Report for 1961.

* Omitted by the Board of Trade. See note on page iii.

“Exide” and “Dagenite” batteries are each made in a standard quality (“Silver Exide” and “Dagenite”) and in a superior quality (“Exide Double-Life” and “Dagenite Dual-Life”).

209. “Exide” automotive batteries and the various brands of traction batteries are made with hard rubber (ebonite) containers, manufactured in the main by United Ebonite & Lorival Ltd. “Dagenite” batteries are in the main made with Dagenite (composition) containers manufactured by P. & G. “Exide-Ironclad” traction batteries are made with tubular plates, “Ajax”, “Tudor” and “Kathanode” with flat plates.

210. All the batteries incorporate “Porvic” separators and “C.B.95” alloy for the plates, both of which are patented. Porvic separators are manufactured both by United Ebonite and P. & G. The material is a plastic and certain improvements have been made to it in recent years. Since 1960, Chloride has sold Porvic separators, mostly of the type known as Porvic No. 2, to other battery manufacturers. The plates and lead oxides are manufactured at the various works. Lead is the principal raw material. A certain amount is recovered from scrap batteries, but for the bulk of its requirements Chloride depends on purchases on the London Metal Exchange.

Range and standardisation

211. A very wide range both of automotive and traction batteries is produced. In the case of automotive batteries this is directly related to Chloride’s position as the principal supplier of replacement batteries and its policy of meeting all demands from this market. The two manufacturing companies in the group have therefore to keep in production types of batteries for the older cars which are still on the road and to introduce, as changes in dimensions and layout may require, new models to replace the new initial equipment batteries supplied by other manufacturers, mainly Lucas, to the vehicle manufacturers. Chloride has emphasised that the two markets, initial equipment and replacement, are separate and that replacement of the battery supplied as initial equipment by one of the same make is not by any means the universal practice. As regards the range of batteries manufactured for initial equipment, Chloride introduces new models with variations in dimensions and terminal arrangements to meet the needs of its largest customers, in the main Ford and Vauxhall; other vehicle makers are normally expected to make use of models already in production and generally find it more economical to do so.

212. The bulk of the group’s sales of batteries for initial equipment are made by C.B.L., P. & G.’s production being sold mainly for replacement. The two companies maintain ranges of replacement batteries, in both standard and superior qualities, which to a considerable extent duplicate each other and which are sold, type for type, at the same prices, through their separate selling organisations. The explanation of this is largely historical; until the 1950’s each manufacturing company was run as an independent unit, and over the years each has built up goodwill for its particular brand. As already indicated there are some differences in the products of the two companies. Chloride considers

that its policy has led to competition between the companies and that technical progress has been made as a result. The group's present policy is in the direction of securing a greater degree of uniformity and standardisation in the production arrangements of the two companies. The production capacity of United Ebonite has recently been increased and a possible development is the use of the hard rubber containers by P. & G. as well as by C.B.L. Chloride's fuller explanations of its production and standardisation policy are given in paragraphs 887 to 892.

213. The cells of traction batteries, unlike those of automotive, are manufactured separately and assembled to form batteries as required. The tubular-plate cells made by C.B.L. and the flat-plate types made by D.P. are produced in corresponding ranges, and prices, in terms of ampere-hour capacity per cell, are the same. Chloride finds that tubular-plate batteries are preferred for some purposes and flat-plate batteries for others; that this is largely a matter of consumer preference and no decision can yet be made as to which type is the more efficient overall. As in the case of automotive batteries, Chloride considers that in the past competition between C.B.L., D.P. and, until 1958, Tudor has led to technical progress, but that an important move towards rationalisation was made when Tudor and D.P. production was merged in 1958. Chloride says that the number of specifications made (some hundreds) is principally dictated by (a) the new models of electric vehicles and trucks which are constantly being made and which frequently require a new size of battery and (b) the replacement needs of the older existing models.

Alkaline batteries

214. Alkaline batteries are manufactured by Alkaline Batteries Ltd. at the Redditch works which formerly belonged to Britannia Batteries Ltd. The bulk of production is for non-reference purposes. There are two main types of reference batteries, flat-plate nickel-cadmium and tubular positive nickel-iron. The former are used both for traction application under the brand name "Nife" and for automotive application under C.A.V.'s name; the latter are used for traction application under the brand name "Britannia". In 1960 sales of traction batteries amounted to * and of automotive to *.

215. The demand for alkaline batteries for automotive and traction purposes has declined in recent years. Chloride has explained that they have certain technical advantages over lead batteries, e.g. for trucks in a factory where lead and sulphuric acid would not be permissible for chemical reasons, or for coaches which may be laid up for many months and in which a lead battery would spoil. These applications are limited. The disadvantages of alkaline batteries—the lower electrical capacity per cell and their greater weight, size and cost—are not always offset by their longer life. Whatever opinions may have been held about the merits of alkaline batteries forty years ago, Chloride does not consider that they offer, or have offered, any but the most limited competition to lead acid automotive or traction batteries (see also paragraph 881).

* Omitted by the Board of Trade. See note on page iii.

Distribution

216. C.B.L. and P. & G. each maintain seven regional depots for sales purposes. C.B.L.'s depots are in London, Bristol, Birmingham, Manchester, Leeds, Glasgow and Belfast. P. & G.'s north-eastern depot is in Newcastle-on-Tyne, the disposition of the others being the same as C.B.L.'s. C.B.L. has a team of 39 sales engineers and P. & G. a team of 23 who are based on the depots and supervise the technical operations and sales efforts of the respective Service Agents (see paragraph 507).

217. C.B.L.'s depots handle automotive replacement batteries, automotive initial equipment batteries for most customers other than Ford and Vauxhall, the majority of the traction batteries produced by C.B.L., and some non-reference batteries, including "Drydex" primary batteries obtained from Ever Ready. P. & G.'s depots are smaller and handle mainly automotive replacement batteries. Supplies of batteries not made through the depots are usually made direct from the factory to the customer. Virtually all Alkaline Batteries' automotive production is, however, distributed through Lucas's subsidiary, C.A.V. (see paragraph 121). Chloride's distribution arrangements are dealt with in greater detail in Chapter 10.

Policy with regard to Other United Kingdom Manufacturers

Automotive batteries

218. Since the exchange of letters with Lucas in February, 1957, Chloride says that it has cultivated contacts with some of the larger vehicle manufacturers who are among Lucas's customers so that the group may be able to step in when the right opportunity occurs. It is still nevertheless the group's policy to avoid provoking Lucas into retaliation, having regard to the latter's position as a supplier of a wide range of electrical equipment. Chloride has also said that it is by no means convinced that, in view of its other commitments here and overseas, it would be good policy to take on another big initial equipment customer at the present time (see also paragraph 911).

219. Chloride is a member of the B.S.B.A. (1960) to which Lucas and Oldham also belong. As explained in paragraphs 242 and 244, the association is only concerned with replacement batteries and one of its activities is the maintenance of an information service for members. Chloride's retail prices for standard batteries, like those of the other members, have remained unchanged since 1956. Chloride's explanation of this and of more general related matters is given in paragraphs 902 and 903.

Traction batteries

220. Chloride has discussions from time to time with Oldham about battery business generally, including traction replacement business and the general level of prices. It has also kept in touch with Crompton Parkinson. Chloride considers that there is a promising future for battery electric traction but that the development of the market depends on battery reliability and long life (see also paragraph 913).

Relations with Overseas Manufacturers

221. In addition to the technical agreement with E.S.B. Co., made in 1946, (see paragraph 197) Chloride has the following arrangements with overseas battery manufacturers :

- (a) A tri-partite agreement with Jungner and E.S.B. Co., made in 1957, which provides for exchange of technical information relating to alkaline batteries.
- (b) A market sharing agreement with Jungner under which neither party may supply alkaline batteries in the other's "sphere of primary interest" except through agents approved by the other. Chloride's sphere of primary interest includes the United Kingdom and the Commonwealth and Jungner's includes Europe. There is also a "Neutral Territory" which includes Russia and China.
- (c) Arising out of this, an arrangement with Jungner whereby each restricts its activities in lead acid batteries in the other's home country.
- (d) A number of agreements with overseas manufacturers for the exchange and sale of know-how, which include restrictions on the sale of batteries incorporating such know-how in the other party's defined territory. Some of these agreements have been made with companies set up under the aegis of British Batteries Overseas Ltd., a company incorporated in 1958 and jointly owned and controlled by Lucas and Chloride (see paragraphs 128 and 914).

Research and Development

222. Chloride maintains a research and development department the services of which are available to the whole group in the United Kingdom and overseas. Its work falls into two main divisions—electro-chemical research and plant development. In addition the manufacturing subsidiary companies carry out research by way of testing materials and the further development and improvement of existing types of batteries. In 1960 Chloride spent £225,472 on the department while expenditure on research by the battery manufacturing subsidiaries in the United Kingdom and United Ebonite and Lorival amounted to about £185,000. We estimate that out of the total amount about £170,000 may be allocated to reference goods, representing about 2 per cent. of the group's sales of these goods. Chloride devotes a great deal of care to the technical training of its Service Agents who are normally responsible, among other things, for the filling and first-charging of automotive replacement batteries. It also provides some technical education for retailers, and courses and meetings are arranged by its sales engineers and its Service Agents' representatives. For its traction battery business, Chloride employs a staff of specially trained inspectors whose functions include the technical training of customers' employees.