The rise of Ford in Britain: From sales agency to market leader, 1904–1980

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FORD BEGAN TO ASSEMBLE CARS IN BRITAIN IN 1911, and production of *Ford* cars ceased in Britain in 2002. During that period, Ford produced over 24 million vehicles in Britain, of which over 18 million were cars. In 1972, its peak year of production, Ford made 681,394 vehicles, including over half a million cars, and during the 1960s it averaged nearly 300,000 vehicle exports per year. Its best-selling cars included the *Anglia* and *Prefect* which sold nearly 2 million between 1938 and 1967; the *Cortina* which sold 4 million between 1962 and 1983; the *Escort* which sold 4.5 million between 1967 and 2000; and the *Fiesta* which sold nearly 3 million between 1976 and 2000. This formidable output created many jobs, and Ford's British employment peaked at over 75,000 workers in 1979. As late as 1998, Ford still produced nearly 300,000 cars and half a million vehicles in Britain in a single year.

But in 2002 it completely ceased to manufacture *Ford* cars in Britain. Its British activities were reduced to engine production and the production of *Transit* vans, while car production was delegated to its recently acquired British subsidiaries of Jaguar, Aston Martin and Land Rover. Employment fell from a peak of 76,000 in 1979 to barely 20,000. In parallel to these developments in production, its performance in sales also declined. In 1980-1981, it reached a peak of nearly 31% share of the British car market, and for thirty successive years (1972-2002) the best-selling car in Britain was always a *Ford*. In twenty-four of those years, the top two best-sellers were *Fords*. Nevertheless, Ford's market share was almost halved between 1981 and 2002, falling to 16% (though even at this reduced level it remained the British market leader). After an uneven start, Ford built up a massive position in Britain over forty years, and from the 1950s to the 1980s it dominated the British industry in terms of production, sales and profits, only to see its position ebb and decline, at first slowly, but then with gathering speed.

The history of Ford in Britain is analysed in two chapters. The first one describes the establishment and rise of Ford of Britain to become Ford's dominant European subsidiary and the second-placed, but consistently most profitable, car company in Britain. The story focuses on the strategy, organization and performance of the company up to the 1970s, presenting an integrated analytic narrative based primarily on archival research. The second chapter describes the period of declining production and weakening sales after the peak years of the 1970s. It will follow the same themes as the first chapter, but, because archival evidence is not available for this period, it will treat the themes in a different way. The analysis in the second chapter is deliberately more thematic and structural and provides much less full answers to many critical questions about internal decision-making within the firm that are more fully investigated in the first chapter.

Given the constraints of time and space, this cannot be a complete history of Ford of Britain. In particular, it does not fully cover the history of labour relations in the company, which is a huge and complex subject in itself. Labour issues are necessarily discussed, since at times they were of fundamental importance in the history of the company, but they cannot receive the detailed, multi-faceted and contextualised attention which they deserve. That must be the subject of further study. Similarly, the behaviour of corporate rivals and the development of the British political and institutional context are also covered in rather a subdued light, though, once again, a fuller analysis would have to place Ford more deeply in these (and other) contexts.

1. Ford in Britain, 1904–1939

From its beginnings in a small import sales agency, Ford moved rapidly to the establishment of a full branch in Britain and an assembly plant in Manchester. By the First World War, the *Model T* was the best-selling car in Britain. But this precocious lead fell apart in the inter-war years. Conflicts in strategy and organizational culture between Detroit and Manchester crippled the organization and marginalized its products in the 1920s. In the early 1930s, an over-ambitious programme for European regional centralization around a new British plant was brought down by the Great Depression. Nevertheless, new energies, new models, and a growing autonomy for the British operations brought strong recovery in the late 1930s, and by the outbreak of World War Two, Ford was again contending for British market leadership.

A. From sales agency to car assembly, 1904-1913

The origins of Ford activities in Britain are obscure, but Mira Wilkins & Frank Hill reconstructed what is still the best available account based on the limited documentation available and the recorded reminiscences of those involved in the first few years of Ford business in Britain[1]. In March 1904, less than a year after the foundation of the Ford Motor Company in Detroit, the first *Ford* cars to arrive in Britain were exhibited at the Cordingley Automobile Show in the Agricultural Hall in Islington, London. They were shipped there by Arthur Shippey of Shippey Brothers American Manufacturers Direct Supply Agency, on behalf of Ford's newly appointed New York export agent, Robert M. Lockwood[2]. The cars were seen by Aubrey Blakiston, who placed an order for a dozen *Model As* and became the British sales agent for *Ford* cars, based in a showroom at 117-119 Long Acre, London. It took more than a year to sell those cars, but during that time, Blakiston drew a number of associates into the business and expanded it under a new name, the Central Motor Car Company. The associates were friends from his London club, the Albemarle, and included the socially well-connected Herbert Stourton, Anthony Hasslacher (a wine merchant), C. W. Russell (a banker), as well as Percival Perry, who was to become the central figure in the history of Ford of Britain for almost the next fifty years[3].

Percival Lea Dewhurst Perry had been born the son of a clerk in Bristol on 18 March 1878 and won a scholarship to King Edward VI's School in Birmingham. After a spell of employment in a lawyer's office, he worked for a while for Harry J. Lawson's automotive interests. As a result of the experience he acquired there, he was invited by Blakiston and his colleagues to make a technical report on the imported *Fords*, and went on to join them in the new dealership. Perry acquired £500 of the £10,000 capital of the company and became a director[4]. The Central Motor Car Company struggled in the next few years. It sold three *Model B*s in 1905 that became some of London's earliest motor taxis, but sales were slow[5]. Blakiston left the firm, and in 1906 Perry was chosen to become the managing director. In pursuit of additional support for the dealership, Perry and his wife, Catherine, travelled to Detroit in 1906 and met Henry Ford. He immediately struck up a good rapport with the founder of the company and the Perrys were invited to stay as house-guests with the Fords in their house in Harper Avenue for the remainder of their trip. But Ford declined to put any funds into the dealership[6].

The continuing difficulties of the dealership led to a reconstruction in 1907, and two new backers came in to help form a new organization (Perry, Thornton & Schreiber), which took over the selling rights of the old agency. Sales of the *Model N* improved, but within a year, the new partners had fallen out. Thornton

held the most capital and wanted a dominant role to match, and, after various disagreements both Schreiber and Perry quit. Perry turned to importing and selling Reo cars (made by R.E. Olds & Co.). But in 1909, with the *Model T* a runaway success in the USA, Ford turned his attention to developing sales in Britain. Perry was aware of this interest and had corresponded with Henry Ford, reaffirming his desire to promote Ford in the UK[7], and Ford had lost confidence in the activities of the remnants of the existing agency. Accordingly, when James Couzens was despatched to Europe to develop marketing there, he enlisted the delighted Perry to set up a new British branch for Ford in October 1909. Ford provided the new branch with solid financial backing and gave it full and clear title to business in the British and Irish markets by re-drawing an earlier agreement that had placed these territories under the direction of Ford Canada[8].

Sales of the *Model T* in Britain grew rapidly after the formation of the branch, and this quickly suggested to both Perry and the US directors that very large savings on freight costs could be made by shipping the cars to Britain knocked down and assembling them in a British plant. Moreover, tariffs were in the air, even though Britain remained a free trade country at this time. Perry found a suitable site at Trafford Park in Manchester, with direct access to the sea by the Manchester Ship Canal and excellent rail access to the rest of Britain. The branch was now upgraded and incorporated as the Ford Motor Company (England) on 8 March 1911, wholly owned by the parent company. The Manchester plant opened in October 1911[9]. Like Ford's American branch plants, Manchester received complete engine and chassis kits from Detroit and added locally made bodies. Manchester was more advanced than many of Ford's pre-war branch plants in the United States, most of which had been designed for stationary assembly and could not produce more than a hundred cars per day. A powered chassis assembly line was installed in Manchester only months after the completion of the first moving chassis assembly line in Detroit[10].

Manchester was an immediate success and its rising output made it difficult for it to obtain the consistent supply of knocked-down (KD) parts from Detroit that it required. When Henry Ford visited the plant in 1912, Perry tackled him on this. Forty years later Perry recalled what followed and how it initiated a relationship that was to be crucial to the future of Dagenham. Perry asked Ford "to please give me somebody in America who wore a phylactery. He [Henry Ford] didn't know what a phylactery was, so I had to explain to him that it was something that a devout Jew wore on his forehead as a denotation of his sect and belief, generally containing sacral scripts. I said: "What I want on my man's phylactery is 'Manchester' so that he will live with it all the time". Mr. Couzens found a

man, and the next time I went to America, which was only about three months later on, he said: "I've got that Jew friend of yours". I didn't know what he was talking about. He said, "Come on down"… We went down – and it was bitterly cold – on through some of the exposed platforms at the Highland Park plant. It was where I saw a man whom I thought looked like a virtual Adonis. It was Charles E. Sorensen who was dressed up in true Scandinavian style with a fur cap on his head. Of course they had him working in zero temperature".[11] For the next thirty years Sorensen, alongside Henry and his son Edsel, were to be the key Detroit overseers of the British operations.

Before the First World War, sales of cheap small cars were below 15% of total sales in Britain, and the emphasis was on larger and generally more costly cars. In these conditions, Ford had penetrated the UK market dramatically by offering a similar-sized car at much lower prices. Most British producers concentrated on quality cars for this sector of the market, but Ford's vigorous marketing campaign was able to overcome resistance to "cheap and nasty" American cars and uncover a potential market for rugged basic transportation in Britain. Perry had hoped for various modifications to the *Model T* to improve its reception in Britain, notably a design for inset headlamps and provision of a protective collar to protect the radiator in collisions. But these had been rejected out of hand in Detroit[12]. However, he did manage to introduce a few modifications locally, including the provision of right-hand drive, and he also modified distribution policies to suit British conditions. A non-exclusive dealer system allowed dealers to make further modifications to the vehicles for local tastes[13]. By 1913 Manchester had become the largest car-producing factory in Europe, producing 6,138 cars, compared with the next largest European producers, Peugeot and Renault, with around 5,000 cars apiece, and the second largest British producer, Wolseley with about 3,000 cars[14] (see Appendix Tables 1a, and 4a page 118).

B. The First World War and the fall of Perry, 1914-1919

The coming of the First World War transformed the situation, but Perry piloted Ford's British company through the War despite difficult circumstances. In the early phases, Henry Ford's *Peace Ship* and his pacifist pronouncements had generated extreme prejudice against Ford products including a boycott orchestrated by leading newspapers. Perry had limited the damage as best he could while not offending his employer. By his own account, his "chosen method of meeting the difficulty" was by "cutting off the prejudice and agitation at the fountain head". He pursued political connections and "getting closely acquainted with the biggest men in the country" and used his public roles and status to further

Ford interests. Perry held numerous important government posts related to agriculture and transport during the war that he believed were "of material assistance in enabling me to carry out the Company business". By such means Perry made the Ford of England company a good patriotic citizen, worked closely with the government (the primary source of wartime business), procured orders, and made the company prosper[15]. Partly as a result, Ford became the principal supplier of government contracts and generated healthy profits throughout the later years of the war. Looking back, he concluded, "I have been more successful than could have been expected or hoped", and since "the principal management of the company consists in negotiating with government": he felt that Ford remained in a prime position at the end of the war in what would remain a highly politicised environment for some years to come[16].

Nevertheless, despite his striking wartime record, Perry was to be dismissed soon after the end of the war. His fall was a murky affair. Criticism and allegations swirled around Detroit concerning his political ambitions in Britain and his ambitions for the British company in European affairs. These were spiced up by rumours arising from his involvement in wartime management of the affairs of Ford of France and by cultural and organizational prejudices and jealousies[17]. Perry argued, probably rightly, that many of these were "either made in ignorance of the prevailing conditions or with the intention of deliberately misleading you and making mischief"[18], but the new vice-president and treasurer in Detroit, Frank L. Klingensmith, was sufficiently impressed by them to send the Highland Park plant manager, William S. Knudsen, to Europe in early 1919 to investigate further charges of "subordination of funds, organization, and product to personal interest"[19].

Knudsen's reports during his visit were damning for Perry, but they exemplify the very different perceptions and priorities of the actors involved. Perry, defending himself in correspondence with Detroit, stressed the centrality of his political positions in helping him manage Ford business. But Knudsen saw it differently: "While I am frank to admit the way in which the Managing Director helped to win the war, I am just as sure that political aspirations as being necessary to conduct of our company's business after the war is pure buncombe […] in the long run bound to hamper us." Perry's business networking was disparaged: "There is no doubt that a coterie of men have until recently received substantial preference in their business the directorates of which interlock to a great extent, and that these men have possibly obtained such advantage by assisting the managing director's political aspirations which are frank and undisguised." Finally Perry's London-based orchestration of the business was

condemned: "The way our business here is run […] consists of a head and a tail and no body. The organization is run on a kindergarten plan with different men getting overlapping charges […]. An enormous amount of business radiates direct from the office on Shaftesbury Avenue where business, politics, personal matters, and policies are being worked at with feverish haste and in a hopeless tangle." Perry's position was further undermined by his fragile health. The wartime efforts had taken their toll and Knudsen reported that Perry was "in poor shape physically", suffering from fainting fits and under the care of doctors[20].

In April 1919, following Knudsen's report, Perry travelled to Dearborn to discuss his position and plans for Britain directly with Henry and Edsel Ford. It is not clear how vulnerable he felt himself to be when he travelled, but his position was damaged by a further episode of sickness on his arrival that forced his first major meeting to be postponed. When he did meet with the Fords, the meeting was brutal. Henry Ford voiced unhappiness with Perry's business practices, told him that he would not support his Southampton scheme for a dramatic expansion of British production[21], and rejected any suggestion of the participation of English shareholders in his company. He asked Perry to stand down as managing director of Ford of England and offered him instead simply a salaried post as manager of the Cork tractor plant (which would require him to live in Ireland). Perry turned the job down, and, with his health worsening, resigned from Ford in September 1919[22].

C. The "American era" in Manchester, 1919-1928

Knudsen replaced Perry with Warren G. "Fuzzy" Anderson, former head of the Saint-Louis, Missouri, assembly branch, a man thoroughly schooled in the workings of branch assembly and imbued with the idea that "anything Perry had done was wrong and to undo anything that Perry had done was right"[23]. He insisted on the most rigid adherence to Detroit practices. In conformity with American standards, the right-hand drive version of the *Model T* that Perry had introduced before the war was withdrawn and Manchester had to produce only left-hand drive cars (which then had to be converted by their buyers). Similarly, Perry's approach to marketing was reversed. Perry had allowed *Ford* dealers, as was the normal British practice, to also handle other makers' cars. But Anderson insisted on exclusive dealerships on the US pattern, resulting in protests and disruption. The exclusivity policy was repugnant to most British dealers and the number of dealers fell from 1,200 to 400[24]. Anderson also eliminated Perry's experiments with hire purchase[25]. Discussing these policies, a frustrated Perry warned: "It is no use burying one's head in the sand and going ahead applying

policies over here, no matter how successful they may have been in America, because conditions here are different."[26]

Anderson lasted only nineteen months in the job. He did not assert himself effectively over the plant or the British organization, and his reforms to the dealerships damaged sales badly. Nevertheless, his removal from office was brutal. In December 1920 he received a cable from Ford's executive secretary (not a senior management figure) to: "Secure passage on earliest date possible and report immediately to Detroit on arrival". Anderson cabled back: "How long do you expect me to remain in Detroit?" The response was curt: "Arrange matters so you will not be inconvenienced if you do not return to England."[27] Back in Detroit he was "shifted around from one office to another", handed his notice in a lobby, and left sitting in the corridors of Highland Park writing sad letters lamenting that no senior figure had deigned to meet him[28].

This was typical of the Detroit regime of the day, and Knudsen and Klingensmith also suffered similar fates around this time.[29] Anderson's successor H. A. Bate only lasted seven months before Charles L. Gould (a former head of the branch plant in Omaha, Nebraska) was put in to head the Manchester plant. Because Gould's experience was primarily in sales, however, Sorensen also sent in W. E. "Ernie" Davis (a senior manufacturing manager from Highland Park) to supervise manufacturing operations. Their overlapping jurisdictions and rivalries created confusion, and after a year Gould simply refused to talk to Davis any longer[30]. Attempts by Detroit to mediate between them were ineffectual, and the position of the company deteriorated[31]. Gould bullied his sales agents and guillotined them arbitrarily, and the dealer organization seethed with resentment[32]. Gould tried to force sales by dumping vehicles on dealers. Sometimes they retaliated by refusing to accept them and cars might end up stuck in railway sidings to rust[33]. The only way the dealers could get rid of the cars was by cutting prices, but this undermined Ford's proclaimed "one-price policy". The Manchester purchasing manager wrote to Sorensen: "Ford business in this country is going to hell and there is no need for it […]. Never in the history of the *Ford* car in this country has there been more price cutting and more unbelief by the public that there is only one price for Ford products."[34] Car sales fell precipitously at the beginning of the 1920s. In 1922, Sorensen belatedly allowed Manchester to make right hand drive cars. The belated action helped rally sales in 1923[35].

On the manufacturing side matters were also in poor shape. Before and after the war, Perry had cherished hopes of moving from the rather cramped Manchester site to a new factory in Southampton on the South Coast, that could

be a stepping off point for large-scale British exports to Europe. But the plan fell with Perry[36]. After the abandonment of the Southampton plan, Manchester had been modernized and expanded (despite the limitations of the site), and $5 million was spent to increase its capacity from 15,000 to 25,000[37]. Nevertheless, its capacity was still limited and because Manchester had no foundry, it had to source its cast parts from the Cork tractor plant. But the parts imported from Cork were of very poor quality, and after Irish independence in 1921 a new 22% tariff on imported materials made them expensive as well, pushing up *Model T* costs. The operational problems of the plant seem to have been beyond Davis' capacity. The assembly line was shut down for long periods each day because parts, notably those supplied from Cork, were defective. Engineering problems accumulated because of lack of trained staff and there was much evidence of "gross negligence from the inspection and quality standpoint"[38].

Edsel and Sorensen were aware of the unsatisfactory state of affairs at Manchester through reports from visiting engineers and they despatched a stream of cabled instructions and critical letters. Finally, in December 1923, a group of experts including Theodore Gehle, William Klann (head of production in Detroit) and Ed Harper were sent to investigate the British operations[39]. Klann later recalled that "they told me to go over and fire the whole bunch"[40]. Their instructions may not have been so concise, but once they arrived in Manchester they were shocked at conditions and took drastic action. Initially, Gould and Davis tried to keep them out of the plant. For three weeks Klann tried to see Gould, but was put off with excuses. Finally, according to Klann, "I just busted the door open and there he was with his feet on the top of the desk, drinking tea and reading the morning paper". Klann reported this to Ernest Kanzler, his boss at Highland Park, querying: "What shall I do – fire him?" Kanzler advised waiting. They delayed firing Gould for four months, but Davis was fired by noon the next day. On leaving, "he admitted to Mr. Klann that he did not understand automobile motor work"[41].

The copious reports from the trio of investigators show their incomprehension and outrage at the disorganization and poor work of the plant. As Gehle described it to a colleague at Highland Park: "You will remember we sometimes felt that there was a lack of organisation here or there, but imagine yourself in a place where the word organisation isn't even known, planning and scheduling is unknown."[42] Processes were often shambolic and the products poor. In many of the cars being produced the top gear did not function; 90% of the pistons received in the plant were defective; welding was "awful poor"; defective rear axles were accepted because they would "wear in"; and across the plant they found

"poor sloppy jobs and terrible practice"[43]. They began by going round "raising hell" with inspectors, workmen and supervisors, sacking people and taking forcible personal control on the shop-floor.[44] But they ended up by staying and trying to implement more thoroughgoing reforms of works practice. Klann stayed for four months and Gehle remained for over a year. Beyond the shock at operational conditions, the reports also reveal a profound cultural gulf between the hustling hard-driving men of Detroit, accustomed to high pressure high volume production, and the Manchester plant with its low and falling volumes, defective supplies, poor and cramped physical conditions, and workers who still aspired to craft status.

Detroit and Manchester: a cultural gulf

Some of the encounters were both comic and revealing. The Detroit men lambasted the culture of the "stiff white collars" (craft workers and supervisors) in the plant. For Klann the clothing and deportment of these key workers became an almost iconic issue. Searching for "good men" to work with in transforming the plant, Klann identified Tom Gorst, a craftsman coach-builder, as an able and dedicated worker who could become the sort of all-round engineer the plant needed. Klann told him to put on overalls and come down to the shop-floor with him to work on engines. But Gorst objected that he was a carriage-builder by trade and that he knew nothing about engines. "He said, 'I can't build motors, I can't build axles, and I can't build transmissions'. I said, 'You're going to do it.' 'No, I'm not.'. 'Yes, you are.' Of course, he had a white shirt on and cuffs. I said: 'What kind of shirt is it?' He took his coat off and he had a little dickey on. He had a red flannel shirt under it. He took his cuffs off. There were hooks on his cuffs to fasten on the red flannel shirt. I said, 'Take off those white clothes [...] Put on some overalls and tomorrow we'll go to work.' So we did."[45]

Following many sharp personal clashes over ways of working (like the one described in the Box), Klann found an effective Works manager in Tom Gorst, who he appointed as Gould's successor[46]. On other occasions the cultural clashes were resolved more robustly. Once, Klann was trying to get four sedans repaired by the end of the day when "the whistle blew for tea, and the men started walking off the job". When Klann asked the men to delay their tea-break by half an hour, their supervisor "laughed out loud in the presence of the men asked to stay […] indicating that it was a ridiculous request". A few days later Klann rearranged the

department and put an end to such nonsense. “They had a big brewing room over there where they used to brew their teas. I rearranged the motor assembly to go right through this brewing room and out.”[47]

The Detroit inquisition had also been mandated to consider wider solutions to the problems of production in Britain. The inadequacies of the Manchester site and its supplementary supplies from Cork suggested the need for a new and larger factory with its own foundry. Accordingly they, together with Ed Grace (the managing director at Cork) re-investigated the Southampton site that Perry had identified[48]. But Henry Ford did not like Southampton, and after combing the East coast for sites, they recommended Dagenham as a possible site. It had excellent communications by train with London, plenty of space and a tidewater site, plus good access to a labour supply from East London[49]. A decision in principle was taken, and a public announcement of Ford’s plans was made in early 1924, but the whole matter remained an issue of considerable uncertainty. Perry, watching from the sidelines, observed that “the truth is that none of us know whether to go ahead with it or not”[50], and in the meantime the possibility of the new plant became an “alibi” for inaction on important production developments in the Manchester shops[51].

Underlying this uncertainty were Ford’s growing problems in the British market. Ford passenger car sales had resumed their pre-war success for a couple of years at the end of the war, and output in 1920 reached record levels. By that time innovations by Austin and Morris and British rivals were shifting the nature of competition towards more nimble, diverse and better-equipped small cars. Ford, however, stuck rigidly to the large cheap and basic *Model T* and refused to adapt to changing conditions. Throughout the 1920s Detroit refused to listen to continued appeals from European engineers and managers for a new smaller car to replace the hefty and outdated *Model T*. Local managers had no doubt from an early stage that radically different markets and motoring conditions required different products. Shorter average journeys, higher petrol prices, more differentiated and restricted demand, and intrusive and costly taxation systems were all conducive to significantly smaller and more economical cars. In particular the British horse-power tax hit Ford very badly. While the *Austin Seven* was taxed as a 7HP vehicle, the *Ford T* was rated as 23HP, adding an extra $78 to the cost of a car.

When H. S. Jenkins (a former head of the Argentina branch) replaced Gould as head of the British organization in 1924, he quickly recognized the need for a new smaller car. As a visiting Detroit engineer noted, “the entire Manchester organization are hoping that the company will give them a redesigned motor so that they can overcome the well-nigh impregnable sales resistance they now

encounter"[52]. Yet Detroit refused to listen. Indeed such ideas were dangerous sacrilege. When Gehle returned from Manchester to Detroit, he dined with Henry Ford. Edsel and Ernest Kanzler (the director of the Rouge) asked him, even at the risk of dismissal, to paint a frank picture of the English situation. According to Gehle: "Ford wanted to know what kind of a car, to my mind, we needed there […]. I gave him my idea of what I had in mind. Then he burned up. He said: "You are trying to tell me how to design an automobile for the English market?" I said: "No, Mr. Ford, I am giving you […] what I think the Ford Motor Company will have to do to retrieve their share of the English market, or they will continue to go down hill." […]. Henry Ford did not reply at all. He just walked out."[53]

As a result, by the mid-1920s, Ford sales in Britain were collapsing utterly during a period of rapid expansion of the overall car market. Between 1913 and 1929, Ford's share of the British market fell from 24% to 4%. Car output fell from 25,000 in 1920 to a meagre 1,817 in 1927. The company only remained alive because of more robust truck and van sales. This situation was matched by similar poor performance in the European sales branches. By 1926, Detroit's senior managers admitted that "we have been defeated and licked in Britain"[54]. Henry Ford and Kanzler blamed "a bunch of clowns [who] ran the British operation" for the failure, but the local managers had been shackled by Detroit's insistence on the rigid application of American policies to English conditions.

In the absence of a new model, Jenkins was allowed to promote a new "English body" on the *Model T*, but the differences were trifling and did little to remedy worsening sales[55]. Change came only when the parallel decline of the *Model T* in the USA forced Ford to halt production and, after a lengthy shutdown, commence production of the *Model A* in December 1927. The *Model A* was given a smaller (14.9HP) engine for the European market (the *AF* – the *F* stood for "Foreign"), the first concession by Detroit to differing needs in foreign markets. But the British version of the *Model A* was still an American car, much bigger and more expensive than *Austin* or *Morris*. Moreover, the slow changeover to produce the new car at Manchester was not completed until 1928. Combined sales of cars and trucks in Britain fell to a postwar low of 6,224 units in 1928 – the year of peak post-war British car demand!

D. The *1928 Plan* and the creation of Dagenham

The *Model A* and *AF* were intended to provide the platform for a Ford revival in Europe, linked to its *1928 Plan* to restructure its European operations[56]. The centrepiece of the *Plan* was the construction of the massive new

works at Dagenham that had been contemplated for several years. Henry Ford visited Britain in 1928 to give final approval to the site, and he took the opportunity to recall Percival Perry to take charge of the new venture, which closely resembled Perry's earlier disparaged "Southampton scheme". Perry worked closely with Henry and Edsel in Detroit in working out the details of the scheme. Dagenham was designed to be a one-tenth scale version of the River Rouge plant in Detroit. It was built on 310 acres of rat-infested marshes standing on a concrete raft on top of 22,000 concrete piles driven 80 feet into Thames clay. It took three and a half years to build and cost over £9 million. Construction began in May 1929. Ford bought more land than it needed for its own use and encouraged suppliers to lease land and build there too. Among these companies were key Detroit suppliers like its body supplier Briggs, and its wheel supplier Kelsey-Hayes[57]. In support of the project, the London County Council built the largest housing estate in Britain to house the workers in 25,000 homes. At the end of 1931, Manchester was vacated and its tooling shifted. In 1932 tractor production was wound up at Cork and tractor production moved to Dagenham[58].

Dagenham was a massive manufacturing centre built to serve not only the British market but also the smaller European assembly plants. Dagenham would have the same relation to the Europe assembly plants and markets that the Rouge had to the US branch plants. As a result, it was hoped, Ford could tap economies of scale by integrating its European operations. The *Plan* envisaged a partial retreat from the "Americanization" of the 1920s, in so far as it allowed for a greater role for European nationals in top management and the participation of outside investors in the capital of the European subsidiaries to raise additional cash, and 40% of the Dagenham investment was eventually contributed by British investors. There was also some limited product adaptation for European markets: though the *AF* was still simply a big American car, and the design and construction of Dagenham also emphatically reasserted the primacy of American manufacturing methods[59].

In the initial *Plan*, European markets would absorb one-third of Dagenham's planned output of 250,000 cars per year[60]. But even before Dagenham opened, Perry realised that this was unrealistic and believed it would be a "prodigious task" to reach even half of that target[61]. The Depression and the rise of European protectionism in the 1930s meant that Dagenham was never able to operate on this scale or fill such a role. Dagenham's capacity was cut back to 120,000 even during construction, and its peak annual output before the Second World War never exceeded 72,000.

In terms of product policy, Detroit continued to stubbornly resist arguments from British management that they needed a new small 8HP car as their primary product for Europe. Instead, Henry Ford insisted on tooling up Dagenham for the big *Model A* despite sluggish sales[62]. The result was disaster. By the time Dagenham opened, the *AF* could barely be sold at all. Only *five* were ever produced at Dagenham and production at Dagenham in 1931-1932 was confined to trucks and vans (see Appendix Table 1a, page 118). In October 1931, Edsel returned to Detroit from the opening of Dagenham convinced that a small car for Europe was essential and urgent. He was probably instrumental in the unexpected conversion of Henry Ford to the idea. Once persuaded, Henry insisted that a Dearborn design and engineering team carried this out "pretty darn quick". He demanded that it be ready to go into production within nine months, even though this coincided with continuing intense development work on the V8 and *Model B* in Dearborn[63]. The first prototypes were prepared in the Dearborn Engineering Laboratories within three months by a team headed by Laurence Sheldrick, Ford's chief engine designer, while Edsel played a leading role in body design[64]. Rowland Smith, who had been recalled by Perry to head up production at Dagenham, spent much of the winter of 1931-1932 in Dearborn involved in the development process. Based on intensive study of the best small European cars of the day, a new car (the *Model Y*) was developed from scratch in a matter of months[65]. The first prototypes were shipped for assessment to Europe in January 1932. But these were simply rough mock-ups that had to be scrapped after exhibition, and there then followed a race against the clock to modify the designs and get them ready for production to start in May 1932.

The developmental capacity of Dearborn engineering, even with a type of small lightweight car that was technologically unfamiliar to them, was remarkable. Sheldrick was largely responsible for creating an entirely new small engine, though he struggled to get it to run smoothly and his work was not helped by some quirky personal interventions by Henry Ford[66]. Even more difficult was the body design. Ford in Detroit had no body styling department of its own. The *Model A* body had been designed mainly by external design engineers like Amos Northup of the J. G. Murray Corporation and Joe Thompson of Cadillac. But Eugene Gregorie was hired in from Henry Crecelius' design studio at Lincoln, and he led the design work, in the process laying the basis for Ford's own design studio to be established in 1935. In turning the designs into metal, the crucial role was played by Joe "Shit Metal" Galamb, a Hungarian-born wizard in sheet metal who made pioneering use of clay model techniques in developing the *Model Y* body[67].

However, this achievement was not matched in terms of engineering for manufacture in British conditions. The designers knew little about production and markets in England. But Dagenham was barred from introducing local modifications even to meet the superior equipment of British rivals, or when the costs of locally available materials made minor design changes necessary[68]. Smith was rebuked on several occasions for using his own initiative. On one occasion, he tried to make some changes to the camshaft design to facilitate more economical working. Caught out, he received a cable from Sorensen that read: "Smith. Are you aware that we are controlling design over here? Sorensen.", and only kept his job because of a vigorous defence by Perry[69]. Instead Dearborn insisted on absolute conformity to Detroit practice. The run-up to production was frantic. The revised prototypes were delivered to Dagenham only ten weeks before planned production, and layout had to be chopped and changed by engineers and supervisors with scant experience of such matters. Briggs bodies was unable to deliver its first bodies on time and had to resort to shipping the first three thousand bodies directly from Detroit[70]. Nevertheless, production of the *Model Y* commenced on 10 August 1932, only two and a half months behind schedule.

Pre-production preparation was further blighted by Dearborn pulling top managers out of Dagenham and sending them to Dearborn for several months to study Ford practice there, rather than being on the shop-floor at Dagenham solving problems[71]. This and the hurried introduction had a legacy in a host of serious unreliability problems, from leaks to failures of critical parts. Dagenham lacked engineers, particularly in unfamiliar high-volume production techniques involving chrome steel, and this delayed and disorganized the launch and was responsible for a serious crisis of persistent axle failures in the early models[72].

In terms of marketing, Sorensen insisted on putting the *Model Y* on the market at super-low prices. The Detroit way, he insisted, was that "our costs have come down to meet our price […]. In setting the price we never gave a thought to what it would cost in the first instance […]. This was exactly the way we do it here at Dearborn, and this same idea must be carried out in England"[73]. The result was consternation in England where, as Perry pointed out, there was no basis for the idea that price reductions would increase sales in Europe. Faced with import quotas and sales restrictions in key markets, cuts in prices would simply result in cuts in revenue[74]!

Dagenham management chafed at the over-rigid application of Dearborn policy, but they were still enthusiasts for Ford methods properly targeted. While Perry criticised Dearborn's mandated price cuts, or the inappropriate criteria underpinning the formal statistical audits used to measure British cost performance, he

wholeheartedly embraced the classic Ford priority of a low £100 selling price for the *Y*, as a way of enlarging the market. However, he recognised that achieving this would require a significantly different approach in Britain. While Dearborn focused almost solely on Dagenham's process costs inside the factory (the legacy of its experience with highly integrated operations in Detroit), Perry and his purchasing manager, Patrick Hennessy, instead focused most intensively on the reduction of the cost of bought-in components which comprised some two-thirds of total manufacturing costs at Dagenham[75]. Through a mixture of advice, technical assistance and bullying, Hennessy and his staff drove down supplier prices to make it possible for Ford to regain its lead in low-prices[76]. Crucially Briggs was brought to agree to reduce the price per body by £2 as part of a drive to reduce the sales price to £100, which they hoped would enable them to double sales[77]. The £100 *Popular* did indeed increase sales, increasing Ford's share of the segment of the market below 8HP from 22-41% in 1936-1937, but it was not profitable. In June 1937 the car was selling at a loss of £3.16s. per unit and it was with some relief that, following a wider upward movement of prices among competitors, Ford was able to put the price up to £105 in July 1937[78].

In this case, the use of Detroit technical expertise and assistance was effectively channelled and focused on precise problem-solving. But inside Dagenham itself there was a lack of systematic technical collaboration. Perry wanted permanent American engineering staff stationed in the plant to advise on complex machining work and "teach men from the outside the proper meaning and values of Ford methods". Dearborn engineers, however, came and went, and often ended up as "regular loose ends", "under nobody's real control", and outside the local managerial hierarchy[79]. As Perry put it, they saw themselves as "critics with supervisory functions" and their work occasionally degenerated into embarrassing shouting matches on the shop-floor.[80] In other respects, Dagenham perhaps imitated the disorganized and factional Rouge a little too directly, as visiting staff from Detroit engaged in spying or took sides in factional politics[81].

In terms of model policy, Henry Ford's interest in smaller cars for Europe was short-lived. Perry hoped to develop more powerful quality low-price small cars, possibly relying on "more labour and less mass production"[82], but Dearborn showed no interest and discontinued development work on the *Model Y* after 1934, focusing its developmental attention on the larger *Model C* (a car which could accommodate both 4-cylinder and V8 engines)[83]. In 1934-1935 Edsel pushed Perry to seriously contemplate dropping the *Y* altogether to focus exclusively on the

Model C[84]. Eventually (and fortunately) allowed the *Model Y* to continue to run in parallel to the *C* which did not sell well.

The big success of the late 1930s came through Dagenham engineers using their own initiative to refine and reduce the price of the *Model Y*. By stripping and de-costing the *Y*, they produced the £100 *Popular* in October 1935, and then redesigned and improved it to create the *7Y* in 1937. Such work was strictly against the rules: when Dagenham first showed its designs for the *7Y* to Dearborn, Sorensen "blew up" and told them to "take an axe and chop them up"[85]. But, finally, Dagenham was allowed to go ahead and launch the *7Y* in August 1937. This car is sometimes described as the first *Ford* car to be designed and developed in the UK, but it was primarily a reworking and facelift of the original *Y*, cannibalising mechanical innovations in brakes, wheels and steering from Dearborn's *Model C* programme[86]. Yet while sales of the *Model C* line were moderate, the *7Y* proved to be Ford's most successful car of the late 1930s.

By the late 1930s, however, Dearborn's primary interest (in conformity to its US policies) was the transfer of its new V8 technology to Europe. Dearborn wanted Dagenham to move into large-scale production of V8 cars, involving over $1 million of new investment. But Perry saw no substantial market for such a large powerful car, and he resisted[87]. Ultimately, Perry convinced Dearborn to test the market with imported V8s (sold at a loss at very low prices to attract consumers)[88]. Perry's doubts were vindicated. Demand was so weak, even at artificially low prices, that Dearborn realised that the car made no sense for England and abandoned plans to manufacture V8 cars at Dagenham[89].

Nevertheless, Dearborn still insisted on shifting its British commercial vehicle programme wholly to V8 engines – with disastrous effects. The V8 was over-powered for UK conditions, and the use of low gears to compensate for this resulted in heavy petrol consumption and bad engine wear. Morris and Bedford swooped on the market. Market share fell from 25% to less than 15% within a year. Dealers were unanimous in clamouring for the return of a 4-cylinder engine, and in 1938 Ford bowed to pressure and reintroduced a 4-cylinder truck, primarily designed at Dagenham and discontinued V8 engine production at Dagenham[90]. Reflecting on the disastrous history of the V8 trucks, Perry commented to Sorensen: "I hope you will not mind me saying that GM seems to have outmanoeuvred us by using their foreign factories for the production of vehicles suitable to the country of origin and not facsimiles of American production."[91]

2. Ford in Britain, 1945–1962

During the Second World War, Ford of Britain made a major contribution to the British war effort, both through its own production at Dagenham and its management of an aircraft "shadow factory" in Manchester. There is no space here to describe this role, which has been covered at length elsewhere[92]. Three of Ford's British leaders (Perry, Cooper and Hennessy) were knighted for their wartime services, and the company emerged from the war financially strong and productively sound.

A. Post-war recovery and the new model programmes, 1945-1956

Dagenham resumed civilian production in June 1945 with the pre-war *Anglia* and *Prefect* models. In addition it utilised the big V-8 engine that had become a wartime workhorse as the basis for the old-fashioned *Pilot* that it introduced in 1947[93]. The first three years after the war were a hand-to-mouth period spent producing obsolete models and buffeted by shortages, quotas, petrol rationing and purchase taxes. Nevertheless, as a result of wartime financing, Ford had plenty of funds to re-launch itself: it had accumulated £3 million in depreciation and contingency funds in the last three years of the war, and also held about a further £3 million in retained profits[94].

The immediate issue was not resources, but the shape of the post-war new car programme. Hennessy (who became the general manager in 1945 and was soon the real power at Dagenham) lobbied hard for Dearborn to provide a new small 8-10HP car to respond to the unprecedented demand for such vehicles as a result of petrol shortages and rationing. In May 1948, Hennessy, Rowland Smith and a team of Dagenham engineers went to Detroit to argue for the speedy development of a new small car. They emphasized that "the car they particularly wanted and which was of paramount importance to them, was a car which should not weigh over 1,750 pounds, and they explained farther that the design of this car, both chassis and body, should be based entirely on the use of a 4-cylinder engine". If a 6-cylinder car were also to be developed it should be based on a different chassis and different body. "They were very emphatic about this fact and stressed time and again that they do not want the 4-cylinder car to suffer, rather the 6-cylinder. As they expressed it, the 6-cylinder car is entirely incidental […]. They explained that without a 4-cylinder car of low weight and high economy, they would be unable to export the car in competition with other European cars in this category." But Detroit turned them down flat, and, despite Dagenham's protests discontinued all development work on a 1200cc small car for England[95].

Instead, Dearborn opted to avoid intense competition in the small car sector and to focus on larger higher margin products (1500cc and 2500cc engined cars) where they could also draw on their own development programmes, notably that for the 1949 *Ford*[96].

Such a line of development was reinforced by the abolition of the old British horse-power tax in 1948, which ended tax discrimination against large cars by introducing a new flat rate tax. This gave Ford a new design freedom to build larger cars in the UK. Some at Dagenham wanted to use this to pursue their own development from the *Pilot*, but Henry Ford (who had been picked up in *Pilot* on his arrival in the UK on his 1948 trip) hated the "bastard interim product" and ordered it axed[97]. Instead, Dearborn designers were given the opportunity to tackle the problem with an open brief. They took full advantage of this to produce the *Consul/Zephyr* range that was launched in 1950. These cars were almost entirely developed and engineered in Dearborn. The prototypes were developed in Detroit and shipped to Dagenham for "productionising". Dagenham had no role before the layout drawing stage, and even at the detailing stage was confined to work on the electrical systems, soft trim and wooden body parts. Such extreme centralisation was often counterproductive. Dearborn specified many items not easily available in Britain, and which (to Hennessy's embarrassment) also isolated Ford from the government drive to increase component standardisation in the car industry. This was partly ameliorated by heavy reliance on US suppliers based in Britain, like Kelsey-Hayes for wheels, Briggs for bodies, and Firestone for tyres. Nevertheless, major items, such as the front sheet metal, had to be redesigned at a late stage to be able to use the only available British lamps (from Lucas). As a result, Dearborn concluded that, in future model developments, it would be essential to give Dagenham a larger role in body and chassis engineering[98].

However, the *Consul/Zephyr* programme initiated a fundamental design departure for Ford of Britain, involving both radical new design and new production techniques. Many new elements became paradigmatic for Ford design in the coming decade and more. The programme was the first to be based on monocoque or unitary construction (developed in conjunction with Briggs), the first to utilise Macpherson strut suspension, and the first to use hydraulic brakes (from Girling). In the absence of the horsepower tax, the old constraints of narrow-bore engines with long piston strokes were eliminated, and Ford's engineers developed new "oversquare" 4- and 6-cylinder engines, introducing overhead-valve engines (OHVs) for the first time. The styling was also perceived as revolutionary[99]. All of these were major innovations in the UK context, and they were also linked to the development of new production and assembly techniques. Extensive transfer

machining was introduced for cylinder blocks and crankshafts for the new engines, and the assembly lines eliminated "pit work" by moving cars along at different levels for ease of assembly. These product and production changes generated major price advantages over competitors in this class of car, and Ford quickly dominated the medium priced sector, particularly because the product responses from Morris and Austin were laboured and old-fashioned. The *Consul/Zephyr* line became the backbone of Ford's profits in the 1950s[100].

Nevertheless, the focus on the larger cars, and the enormous investments involved, constrained Ford to jog along with barely face-lifted versions of its pre-war *Anglia* and *Prefect* until 1953. Their outdated suspension systems made them "like a puppy on polished lino" on wet roads and they were generally regarded as inadequate for rough foreign roads[101]. They lagged behind the technical development of rivals like the *Morris Minor* (launched in 1948), but continued to sell well because cars were in short supply and because Ford could offer low prices since all the development and tooling costs had long since been amortised[102]. This enabled Ford to buy time for model development. However, in the early 1950s, their market share began to tumble in face of more modern rivals[103]. The Dearborn development studios under Walter Appel responded with a "startling and complete" transformation and re-launch of the *Anglia* and *Prefect* in 1953[104]. Like the *Consul/Zephyr* line, the new cars were distinctively modern in style and based on unitary construction and MacPherson strut suspension, with dramatically improved mechanical features. According to, one commentator: "Apart from the model names, nothing was carried over from the old cars."[105]

But the new *Anglia* and *Prefect* were not radical in all respects. Dearborn was very concerned with the profit implications of killing off the company's "cash-cow" models. The old cars were earning 13% profit on sales (close to the 15% earned by the new *Consul*) but heavy investment in a replacement programme might wipe this out[106]. As a result, Ford chose not to produce an all-new engine for the new series. Many thought that a new engine was essential, in order to match the new standards in fuel economy, acceleration and gearing achieved by Austin, Morris and Standard. Ford certainly had the engineering capacity to do this, but they chose not to. Instead, they developed a new engine "on the cheap". Dearborn engineers ingeniously reworked the pre-war 1,172cc sidevalve, which dated back to the *Model C*, achieving dramatic improvements in performance by careful redesign of every part of the engine. This enabled them to carry over a remarkable 70% of the tooling from the old engine to the new, and achieve dramatic capital cost savings because the old tools "have unquestionably been amortised several times over"[107].

Even so, the investment costs were still high. The Finance division objected that the profits on the new cars would be "inadequate", but they were overruled. To maintain sales, a new light car was essential, and "there is little alternative to going ahead now due to the aforementioned urgency of the matter."[108] As the finance department had forecast, profitability fell, and Ford could not match the low prices of the new cars from Austin and Morris[109]. But Ford sustained its overall profits in the following years by ingenious opportunism. Rather than scrapping the old *Anglia*, Ford completely stripped it down, reduced its price far below that of all other cars of its type, and offered it as the *Popular*[110], which sold profitably in substantial volumes for three more years. The car had no pretensions and was rough and noisy: Burgess-Wise has described it as a "mechanised coelacanth". But its rock bottom price of £390 was more than £100 less than the cheapest of the new *Anglia/Prefect* series and £50 less than the old vehicle it was based on. In a further clever twist by the marketers, all the items deleted from the obsolete *Anglia* were made available as optional extras to bring the *Popular* back up to the old *Anglia* standard of equipment. The buyer had to pay an extra £2.75 for traffic indicators, 38p for ashtrays, or 42p for an interior light[111].

Thus Ford evolved a distinctive strategy for the UK. High margin larger vehicles and stripped down small ones maintained profitability. Automation and mechanization were pursued, but on a more flexible basis than in the US, using common machines for several variants of engines and major mechanical parts to offset lower volumes. Meanwhile, in contrast to their pre-war approach, engineering capabilities were rigorously used to minimise costs through design and frugal adaptation to the demands of the local context – although they still deliberately steered clear of pursuit of a European mass produced small car. Perhaps above all, however, Ford benefited from the plentiful space, integration and layout that its Dagenham plant brought with it from the 1930s. In those years, the giant plant had suffered from costly overcapacity and had run at a substantial loss, but in the first post-war decade it provided a productive potential which none of its rivals enjoyed, and imposed few constraints on production. For example, it allowed Ford to keep a model like the *Popular* running almost as a "free good" alongside its own replacement. Even so, however, Ford's pattern of relatively large capital investment in modern factory equipment for its new models was not necessarily wholly effective: in 1956, the British Motor Corporation (BMC) held a 39% market share with net assets of £62 million, while Ford used more assets (£65 million) to take only 27% of the market[112].

B. Hennessy's domain: Dagenham in the 1950s and 1960s

The figure of Sir Patrick Hennessy dominated Dagenham in the 1950s and early 1960s. Detroit retained final control over product and investment policy, and intervened directly on several occasions. But more and more responsibility was devolved to or captured by British management in these years. Henry Ford II was very impressed by the quality of Dagenham's top managers, the "three knights" (Perry, Cooper and Hennessy) during his 1948 trip. He was at pains to ensure that Dagenham would receive "assistance, encouragement, and appreciation of their difficulties" from Detroit during reconstruction. In contrast, to many past experiences, he insisted that "carping, unconstructive criticism will butter no parsnips. Encouragement and help is what is needed"[113]. Henry and Graeme Howard, the new head of Ford International, specifically identified Hennessy as "the executive upon whom we hope to build the future at Dagenham". However, they were also well aware, from private complaints from his senior colleagues, that Hennessy could be "too domineering" and could evade control from other executives[114], and that his dominance inhibited the development of middle managers and potential successors.

Ford International's scrutiny and direction of European operations was relatively ineffectual in the 1950s[115], and on major issues top management in Detroit often by-passed it to deal directly with Dagenham. But, for the most part American supervision was loose. Between 1950 and 1956, its chief manufacturing officer, J. J. Welker, dealt with European manufacturing matters on a part-time basis, travelling to Europe when necessary, and permanent American manufacturing staff were not stationed in Europe[116]. In this context, Hennessy manoeuvred to do things in his own ways. He objected to what he regarded as over-fussy and onerous reporting to Dearborn. He believed that many of the cost comparisons that Dearborn required were meaningless. For example, in 1949, Dearborn engineers criticised the high costs of Dagenham's V8 engines compared to Detroit ($168 versus $142 per engine). But, as Hennessy pointed out, Dagenham produced only 32 of these engines per day, compared to Detroit's 4,253 per day! Similarly, he believed (quite rightly, in fact) that excessively strict "harmonisation" of financial procedures, notably the strictures of the notorious "Section 6 Chapter 30" of the FMC *Controllers' Manual*, were primarily designed to shackle him[117]. He also chafed at Ford's rigid planning procedures based on formal forecasting tied to capital budgeting. In relation to export markets, he argued that "there is little point in constant market research, and we can only assume perhaps that what we lose on the swings will be balanced by what we gain on the roundabouts". He was wary of over-investment that could result from

formal forecasting techniques. His preference, which may have reflected the resources of the Dagenham site, was to rely on conservative estimates, and then: "If we can sell more, we have the capacity to meet demand, and existing facilities can be easily stretched with small additional investments."[118]

Nevertheless, Hennessy engaged Detroit's support in building up Dagenham's capacities in engineering, product planning and styling. In 1953, he established a Product Planning department for the first time, with a brief to identify market trends and produce forward plans for new models, rather than simply reacting to developments. He also created Dagenham's own specialist styling department under Colin Neale, created an R&D Centre at Birmingham, and aggressively pursued graduate recruitment at a time when this was rare in the British motor industry.These developments played important roles in development programmes from the mid-1950s, and, though in many respects Dagenham's product developers continued to dispute detailed control of design and development with Dearborn, the emergence of major figures like Terence Beckett and Neale, gave them increasing confidence and autonomy by the late 1950s[119] .

During the 1950s, Hennessy consolidated his personal dominance. From time to time, Dearborn tried to rein him in. They made some attempts to divest him of certain responsibilities and to build up the Financial Policy Committee and strengthen Stanford Cooper as a restraint on him. But Hennessy saw through this, and, rather than incur his resentment, Detroit decided to back off[120]. Dearborn also looked around for other figures they could build up for greater responsibility. Charles Thacker was their favoured choice, though they lamented a lack of alternatives[121]. Eventually, in December 1956, Thacker was appointed managing director (under Hennessy as chairman), but "with some reservations" on the part of Henry Ford II and Ernest Breech. They felt that Thacker was not sufficiently positive, probably as a result of working for too long under a "desperate character" like Hennessy[122]. But by the late 1950s, problems were becoming more apparent: top management was ageing and there was a succession problem. As G. W. Malone, a senior Ford International official, reported in 1959, Dagenham had "a capable management which has grown up with the plant as it has expanded, and knows every brick and machine". But, "the company has become too big to have its responsibilities and decisions assigned to one or two men and therefore it must develop a decentralization policy, a method of setting objectives [...] and a performance reporting system". Malone pointed his finger at Hennessy and his refusal to implement profit budgeting, which had become "a serious matter deserving the highest level of attention", and he warned: "We are not convinced that Dagenham will continue to make the kind

of contribution which could reasonably be expected from a well-run organization." The development of the sort of formal controls that Hennessy had resisted could not continue to be put off. "Ford International will be subject to serious criticism if we do not take every action to insure that Ford of England uses the control techniques necessary to operate a large organization in the extremely competitive European auto industry." Nevertheless, top management in Detroit still hesitated to confront Hennessy over his uncondoned policies. Henry Ford II, for instance, rejected the idea that he should write a personal letter to Hennessy about implementing profit budgeting, as "too drastic"[123].

C. Diverging from Detroit: From expansion to "Archbishop", 1956-1962

The increased autonomy of Dagenham under Hennessy paved the way for growing divergences between Dagenham and Detroit on policy matters, in particular as crucial decisions on products and capacity were made between 1958 and 1962.

In 1948, Dagenham produced just over 100,000 vehicles, surpassing its pre-war peak output. By 1953 it had doubled this output with about two-thirds of its production being exported. By 1955 output had increased a further 50% to 300,000 vehicles. Such rising demand carried Dagenham to the limits of even its own very large capacity. Swelling profits made it relatively easy for Ford to undertake a massive $300 million (£75 million) investment programme to more than double Dagenham's capacity from 1,000 to 2,000 units per day (approximately 500,000 units per year) between 1954 and 1957. This expansion was preceded by the acquisition and integration of the neighbouring Briggs Body plant from 1953, partly in response to (justified) fears that its US parent was about to be taken over by Chrysler[124]. The capacity expansion had two main dimensions. Firstly, numerous activities were moved out of Dagenham into their own specialised smaller plants, thus avoiding congestion and overload on the main site. A giant new spare parts depot was created at Aveley, mainly to service the export market, new machine shops were set up at Woolwich and Basildon, and a new Research Centre was established at Birmingham, close to the Coventry centre of the British motor industry. The old *Popular* was shunted into an assembly plant at Doncaster (a former Briggs' factory) for the final years of its production (1955-1959). Meanwhile, big new developments were lavished on the Dagenham site itself. The old Briggs Body plant was remodelled, a new foundry was built, new press shops were installed, and in a second phase completed in 1959, a new paint trim and assembly building (PTA) constructed. Taken as a whole, this was the largest autombile investment ever undertaken in Europe to this time[125].

Capacity expansion provided the platform for new model planning in the late 1950s. The focal point in these discussions was the replacement for the *Anglia/Prefect*, due in 1958-1959. Dagenham, it will be recalled, had not initially favoured the product configuration that Dearborn had chosen in the late 1940s, but they had by now become wedded to it. The *Anglia/Prefect* price-model configuration fitted well with the distinctive pattern of market segmentation that had developed in post-war Britain. It was a product package that precisely targeted its British competitor models from BMC and Hillman, and Dagenham believed that the replacement model (*105E*) needed to continue to fulfil this function. A secondary aim would be to compete with the *Volkswagen* or the *Opel Rekord* in export markets. But this, they argued, should not primarily shape the design of the car. Dagenham preferred to design for the home market and rely on the product being accepted in export markets.

However, the *Anglia/Prefect* package was not ideally suited to Continental markets. It did not directly target European low price cars (*4PC*, *FIAT 600*, *Lloyd*, etc.), which were much smaller and strictly frugal, nor did it meet the more powerful and better-equipped 1200-1500cc range at higher prices, such as the *Volkswagen* and the *Opel Rekord*. Instead, it sold at a price close to that of the small European cars, but was larger and more spacious. This took it close to the *Volkswagen* and *Rekord* in size, but left it under-equipped and under-powered in comparison. Its size/power combination was effective in Britain and a number of Commonwealth export markets, but in Europe, where either smaller or more powerful cars were required, it had under-performed. Moreover, because it was a larger but underpowered car selling in a small-car price segment, its profit margins had been quite narrow[126].

In 1956-1957, Dearborn raised the question of whether this sort of product package could prosper in changing European conditions. Important figures in Ford International believed that, in the future, the necessary economies of scale for new models would require a sales base much larger than any national market could offer, and they also doubted if, in any case, the relative isolation of the British market would last. J. W. Sundelson, of Ford International, argued that free trade developments in Europe, associated with the emerging Common Market, were likely to become of great importance over the next five-year product cycle[127]. A rapid opening up of European trade would leave Dagenham exposed: “It would not appear wise to assume that a product that might not stand up to the *VW* or the *Dauphine* should believe that these and other hot cars would not also come into the hitherto protected UK domestic market as well. The trend is

inevitable, the timing is vague."[128] Dagenham, in contrast, maintained that free trade developments in Europe in 1956-1957 were of marginal importance, and should not distract from the primary importance of having the right product for the British market.

Dearborn, however, pressed the issue of whether Dagenham should break from its British market focus and instead develop a pan-European car based on mass production and economies of scale. In December 1956, it proposed that Dagenham should postpone its proposed replacement of the *Anglia/Prefect* (the *105E*) in 1958/1959 and redesign it as a 1500cc *VW*-class car for launch in 1962. This would involve a leap to a wholly new "dream car" based on front-wheel drive and fully competitive with its leading European rivals in specifications and price. In conjunction, Dagenham might either drop out of the low-price segment altogether, or develop a genuinely small 1000cc new light car for October 1958, which could challenge the *FIAT 600*, *Renault 4PC* or the *Lloyd*. In December 1956, Dearborn released funding for long lead-time tooling for such a car[129].

Dagenham was ready to accept development of a "new light car" as an additional model, though it warned that this would require high levels of transatlantic co-operation and might be hard to achieve. But it strongly resisted cancelling the *105E*. It argued that delaying an *Anglia/Prefect* replacement pending the preparation of a "dream car in 1962" would seriously damage their position in the British market. For key figures in Ford International, however, this was a hopelessly compromised position. Dagenham's approach, they concluded, was "the dental school of product planning", the main criterion of which was to fill every gap or cavity in the market. Instead, "the merits of a real economy of scale versus the dental approach" should now be the focus[130]. Dagenham was able to fight off these proposals, even though Sundelson found their supporting figures "evasive" and "pretty shabby", and reinstated the already well-advanced *105E* programme[131].

Dagenham was able to defend the *105E* project partly because it had substantially advanced its own engineering capabilities and could now handle such a project with quite limited American input. In particular, since 1953, its R&D and product planning group under Terence Beckett had become a very capable unit[132]. This not only increased Dagenham's autonomy, but also deepened its commitment to a distinctive technological trajectory. In engines, resources were focused on the development of a linked series of in-line overhead valve engines ("Kent" engines) with an innovative approach to commonization that enabled a wide variety of engines to be made on the same transfer machines.

In drive configurations, the focus was on front-engine rear-wheel drive layouts. Such a line of development was radically counterposed in engineering terms to the front-wheel drive and V4 engine configuration (the "Ponypac"). Ford had raised the possibility of such a configuration for a "dream car" built at Dagenham. Frustrated there, Detroit now moved the project sideways and began to develop it as a German-American collaboration under the codename "*Cardinal*"[133].

The "*Cardinal*" project aimed to build a low-cost front-wheel drive medium-sized car in Germany targeted against the *Volkswagen* and the *Opel Rekord*, but also to be used as an economy sub-compact in the US market. It offered the potential of entering front-wheel drive technology and linking European and American markets through the new car. It also underlined the isolation of the *British 105E* development and Dagenham's inability to provide a platform for the next generation of European light cars. Once the *Cardinal* project was under way in 1960, the thoughts of Ford International turned again to drawing Dagenham into this stream of development.

Hennessy's response was not only to resist fiercely such collaboration, but also to initiate a British alternative to the *Cardinal*, based on Dagenham's conventional rear-wheel drive layout, which would be developed very rapidly to beat or meet the launch date of the *Cardinal*. Dagenham pointedly adopted the codename "*Archbishop*" for their response to the *Cardinal* (an Archbishop outranks a Cardinal)[134]. Hennessy angrily insisted that he would not be outflanked by his German rivals and threw all of Dagenham's resources into his riposte[135]. Dagenham's initial idea was to replace the *Anglia* with a conventional C-class car, with the old *Anglia* being stripped down to sell as a B-class car once the "*Archbishop*" was launched[136]. But, during the process of development, the concept took an innovative turn. The *Cortina* (as the car was finally known) was positioned as a car that spanned the C-class and D-class segments. It offered the performance and space of a medium-sized family saloon at prices previously associated with much smaller cars, and it combined the higher margins of the larger car with the higher volumes and production economies of the medium-sized car[137]. In conjunction with the panache of its marketing and image, the *Cortina* created a new segment in the British car market and became the fastest selling car in British auto history[138].

The history of the product planning and engineering behind the *Cortina* also reflected the changing dynamics and balance of forces within Ford's international organization. Firstly, the development of the *Cortina* represented the creative application of Dearborn methods to an English problem

under English leadership, and the evasion of Ford-International's belated turn to more "Americanizing" ideas, such as the quest for common mass production platforms for European sales.

The *Cortina* was not a mechanically innovative car. As Terence Beckett put it, the *Cortina* was "in overall specifications a rather ordinary motor car". Less charitably, according to one critic, the *Cortina* was "without an original thought in its conception" [...]; pioneered nothing yet sold to everyone"[139]. It had none of the engineering innovations that characterised the rival *BMC 1100*, a technically advanced car of engineering excellence, which was launched at the same time, with front-wheel drive, transverse-mounted engine, disc brakes, hydrolastic suspension, Pininfarina styling, and advanced internal packaging[140]. Rather, the *Cortina*'s achievement was to create an innovative package out of conventional no-nonsense mechanics and cost reducing engineering.

Its product planning team, headed by old Etonian Hamish Orr-Ewing, vigorously applied Dearborn methods in competitive rivalry with the American/German *Cardinal* project. The key to the *Cortina*'s success was dramatic weight reduction through an innovative bodyshell. This was achieved through strict implementation of Dearborn's *Red Book* procedures in product development controls, and extensive use of (then unfamiliar) concurrent engineering practices[141]. Using aircraft stressing techniques, Dagenham's designers took out 150lbs of weight and 20% of parts from the *Consul Classic* body that they used as their base[142]. Meanwhile, Dearborn's input was minimised. Although Dagenham's design team was now supervised by Roy Brown, formerly Ford's chief stylist for the Edsel, Detroit's direct influence was largely confined to sheet metal styling. But above all, the *Cortina* was designed and developed with remarkable speed. The clay model was approved in November 1960 only nine months after design started and the car duly caught up with the *Cardinal* and was launched in September 1962.

As a car, the British *Cortina* had a much greater impact than the *Cardinal*. It created a new market segment, it linked product innovation to low cost production through effective design-for-manufacture, and it consolidated Dagenham's mastery of its rear-wheel drive in-line engine configurations that were enormously successful in the 1960s. In contrast, the *Cardinal*, eventually launched as the *Taunus 12M*, was a guinea-pig for front-wheel drive for Ford. Ford did not develop and build on the *Cardinal* technology and it allowed front-weel drive to die in Germany in 1969. Nevertheless, in the short-term, it provided an injection of technology, output and dynamism into Ford Germany, and began the revival of a struggling organization[143].

There is no doubt that the *Cortina* looked, performed and sold better than the *Taunus*, and it went on to become one of the best-selling British cars of all time and was the core of Ford's market share in the 1960s and 1970s. In Britain, it was launched in September 1962 at almost exactly the same time as the *BMC 1100*: this was an innovative and modern front-wheel drive package from BMC. It was a smaller car than the *Cardinal*, and it was much more innovative and excellent in its engineering, with features such as disc brakes, hydrolastic suspension, and "Continental" Pininfarina styling. It outsold the *Cortina* almost every year in Britain between 1963 and 1972, but it did not match *Cortina* export sales. Moreover, the price of its technical excellence was high production costs, and while the *Cortina* was very profitable, profit margins on the *1100* were wafer thin[144]. Dagenham's conventionally engineered *Cortina* more than matched its challenge, and despite Detroit's doubts, showed itself to be a highly viable product for the expanding European market. 50% of *Cortinas* made during the 1960s were exported, and 20% of all UK car exports at this time were *Cortinas*. The roadblock to British growth in Europe was not the product, but as we shall see, the changing economic institutional configuration as European integration developed.

D. Mergers and markets: An aborted Rootes merger, 1959-1960

From 1947 to 1960, the leading car company in Britain had been Austin-Nuffield and its successor BMC. Throughout this period, this group had held around 40% of the UK passenger car market. Ford had leapt forward from 15% to 27% between 1947 and 1955 with its new models and large production capacity. But between 1955 and 1960 it made no further gains. Meanwhile three other producers (Rootes, Vauxhall and Standard) had all held close to a steady 10% of the market through these years – in fact the shares of all these car-makers were to remain fairly constant until the early 1970s (see Appendix Tables 4a and 4b, page 118).

Ford had generally been averse to takeovers in its European operations, unlike its major US rival, General Motors (GM). But, in 1959, the famous Coventry firm Rootes Brothers made it known in various quarters that they would be "willing sellers" of their entire ordinary share capital to a suitable buyer. Ford learnt that Chrysler was very interested in acquiring Rootes as a way to establish itself rapidly and sizeably in the British and Commonwealth markets where they hitherto had hardly competed. GM also seemed interested. Rootes was a "ripe plum" and this raised important "defensive considerations" for Ford[145]. Buying Rootes would give Ford a 38% share of the UK market, almost equal to BMC. If GM acquired it,

it would give them 22%, and put them "within reaching distance" of Ford UK's current 27%. If BMC acquired it, it would give them 50% of UK market and leave Ford "a pretty distant second". A takeover would shut Chrysler out, block rapid GM expansion, and prevent BMC establishing an overwhelming position of dominance. A preliminary analysis for Ford International concluded: "Opportunities of this size and type are not numerous and the case against them must be proven." In the opinion of the report, "this has not been done"[146].

Rootes accounted for 11% of UK's global car sales. It depended heavily on sales of larger D-class cars and it had well-established dealer networks throughout the Commonwealth and USA. 37% of its exports went to the USA and 16% to the Commonwealth. The company had growing problems: its profits had been disappointing through the 1950s and it had a complex and high cost wage structure. With a mixed bag of assets and a low level of manufacturing integration, it depended heavily on external suppliers, and there were fears that strategic suppliers could be swallowed up by rival companies. Rootes knew that it would soon have to undertake very high levels of new investment if it was to survive on its own[147].

The case for a strategic acquisition was taken up by Ford International, but Dagenham was much less sanguine. Hennessy saw Rootes' class D-cars as a direct competitor to the *Prefect*. Their product range, he argued, "is in no sense complementary to ours". He was also wary about the Rootes' Brothers desire to impose conditions on a merger. They wanted to preserve the "essentially British" character of the company and the continuity of the company name and product line, as well as a significant Rootes family presence in future management, and Hennessy did not want to share control. Moreover, Rootes wanted a high price. The current market price was £8.6 million. But Rootes wanted £19.4 million. Ford International believed that up to £15 million might be reasonable, and they were prepared to offer £12 million. Hennessy believed this was too much and felt "poles apart" on price[148].

Beyond that, Hennessy also feared that a merger would open up a can of worms on labour matters. The Briggs merger and subsequent strikes had illustrated the tensions and disruption that could arise from trying to integrate other labour relations systems and wage structures into the Ford system[149]. Hennessy foresaw a repetition of this pattern. A merger would involve low-wage Ford in the "embarassment and upward pressure" of wage comparisons with high-wage Coventry. Rootes currently paid its production workers 8/- per hour compared to Ford's 6/4d, and an increase of 1 shilling per hour on FMC rates would increase Ford's annual wage bill by £4 million.

Ford International was unimpressed by Hennessy's concerns about wage differentials. It proposed that a "separate" Rootes organization could be maintained within the company and slowly assimilated. This would modify problems about equalization of wages and, in any case, it seemed unlikely that "the tail should succeed in wagging the dog". Rootes itself paid less than Dagenham in plants that it owned in South East England. In any case, looking ahead, such issues would be inescapable whether there was a merger or not. As Ford International put it: "In the long-term it does not seem likely that marked wages and benefits differences can continue to exist between centres as near as London and Coventry." Ford would soon need new capacity in the UK for further expansion and there were unlikely to be any options for expansion in the London area, so "it would be unwise to foreclose expansion objectives because of wage differentials, particularly when these may gradually cease to exist"[150].

The divergent views of Dagenham and Ford International did not have to be resolved because the Rootes Brothers themselves backed away from merger for their own reasons, and decided to make a further attempt at expansion with their new Linwood plant. However, the issue was not entirely dead. In 1963, Ford again had discussions with Rootes about a possible merger and came even closer to doing a deal. According to one version, Ford was on the point of concluding an agreement when Ford's financial controller, Arjay Miller, persuaded Henry Ford II not to sign the deal, reputedly using scribbled bullet points on memo cards to guide him as he put his case to Henry while he was having his morning shave in the company flat in Grosvenor House in Park Lane on the morning of the final negotiations[151].

E. Capacity problems and the origins of Halewood, 1959-1963

Despite the massive expansion programme of the late 1950s, capacity problems remained a major issue at the beginning of the 1960s. In 1959 even Ford's most conservative market forecasts indicated that the UK market would grow at over 8% per year between 1963 and 1966, and reach 1 million cars annually by then. If Ford were to maintain or increase its current market share of close to one-third, it would have to broaden and deepen its model range and comprehensively develop its dealers. At this time, shortly before the turn to the *Cortina* project, it was anticipated that this growth would probably focus on a new D-class *Prefect*. Total Ford UK car volume would rise from 319,000 in 1959 to 548,000 in 1963-1966 and total vehicle production from 450,000 vehicles in 1959 to 750,000 in 1963-1966. Accordingly, capacity would need to increase from 1,900 units to 2,710 units per day, and nearly all the increase would be focused on C and D-cars (see Table 1).

Table 1: Ford UK: Forecast market share for key car models, 1960 and 1963-1966 (%)

	1960	1963-1966
Class C (*Anglia*)	20.8	14.3
Class D (*Prefect*)	-	10.5
Class E (*Consul*)	8.8	7.7
Total	29.6	32.5

Source: "Ford of England expansion program", 23 March 1960 FIA AR 65-71 Box 29

By this time, the capacity crisis was already striking home. Even with the newly completed paint trim and assembly plant (PTA), Dagenham struggled to produce 350,000 vehicles per year, and production was congested and at times dangerous. When the new *Anglia* was launched in 1959, Ford could not satisfy demand for the new model. In its first year, Ford received 100,000 export orders for the *Anglia* and was only able to supply 25,000. In March 1960 it decided to build 500 *Anglias* per month at Antwerp for export to European markets. The *109E Classic* which was originally scheduled for launch in Spring 1960, had to be delayed because of lack of production capacity at Dagenham, and it could only be built when Ford's heavy truck operations were moved out to Langley to free up space in May 1961[152].

There was a clear consensus that Ford would urgently have to build a large new factory with up to 200,000 units annual capacity. The key question was where to build it. A widespread but erroneous consensus has grown up concerning the subsequent decisions over the planning and location of the plant. Historians of the car industry and analysts of regional policy in the UK regularly state that Ford wanted to expand at Dagenham, but was forced by government to build a new plant in a region of high unemployment, at Halewood on Merseyside. According to Rawbone: "In reality, Ford was establishing the Halewood plant under compulsion, the result of misguided government policy, going against all economic commonsense." Burgess-Wise states that Hennessy did not want to move to a new site but was pressured by government policy into accepting the "least worst" solution at Halewood. More broadly, Peter Scott argues that Board of Trade regional policy interventions in the motor industry in 1960 (including the Halewood case) achieved "the worst of both worlds, neither allowing industry to choose its own location according to efficiency criteria, nor being prepared to plan the location of industry according to long-term growth-oriented considerations"[153].

In fact, the situation was rather different. Ford planners had already concluded that, even if government policy permitted it, expansion at Dagenham was impractical because of internal congestion and limited access to the plant. One alternative was a nearby site in Basildon, but this was rejected because of the limited availability of labour. Instead, they identified Halewood on Merseyside as providing the best site. A new factory could be built with a capacity of 200,000 units per annum (to complement 350,000 at Dagenham), including both stamping and assembly facilities. Costs at Halewood would be £3 per unit higher than at the putative Basildon site (mainly due to increased transport costs) but this would be more than offset by lower wage rates at Halewood. However, there were good reasons for not making the decision public. As the Planning Office put it: "In order to maintain maximum financial benefit from the government inducements to be received for relocating industry, the company is maintaining that it would have preferred to have expanded at Dagenham." Accordingly, in December 1959, having identified Liverpool as the best site, Hennessy proposed a factory at Basildon to Reginald Maudling, president of the Board of Trade, in order that it would be rejected. Ford was then asked to bring forward a new plan, which it did in January 1960, this time proposing Halewood[154].

There were great financial advantages to expanding in regions prioritised by the government and Ford had systematically surveyed them all (especially Renfrew, Newcastle and Llanelly) before settling on Halewood. Merseyside was especially attractive because of its good port, good transport and proximity to Midlands suppliers. Moreover, in return for expansion at Liverpool, the government would also allow Ford some further local expansion around Dagenham. Ford would be allowed to develop the Basildon site to accommodate all its tractor operations, thus freeing up space inside Dagenham, and Ford would also be allowed to redevelop its engine plant on the Dagenham site. Ford would agree to a voluntary labour ceiling of 37,000 workers in the Dagenham/Basildon area[155].

Ford's Halewood plan was quickly confirmed by Maudling and the Cabinet. Apart from a cash subsidy, Ford also pursued additional guarantees. Standard-Triumph had already applied to expand at nearby Speke, and Ford wanted the government to block this development that might compete for labour in the area. It asked for a guarantee from the government "that (because of conditions of labour availability) no other large car manufacturer would be permitted also to expand in Merseyside". In February, Vauxhall proposed a further Merseyside development at Ellesmere Port. Ford pushed hard for the government to block these schemes, and even threatened to withdraw its own project, but after lengthy discussions, Ford failed to get its way. It did, however, receive assurances that no limits would be placed on its own future expansion in Merseyside[156].

Even without additional guarantees, the deal was a very attractive one for Ford. Total investment would be $196 million, and government incentives would contribute $21 million of this amount. The factory could be easily financed out of profits. Current profits in 1959 were $90 million. Without a major new investment, they were expected to rise to $125 million per year in 1963-1966 on current forecasts. But, with the added output from the new investment, future profits for 1963-1966 were forecast to rise to $168 million per year, *even after* financing the expansion largely from retained profits. Even in the worst case scenario assuming that output would barely rise above 1960 levels, profits would still rise. The likely profitability of the investment was "impressive". Ford UK expected to make after tax profits of $882 million in 1960-1966, and, after the government subsidy, would require only $176 million for Halewood and a further $159 million for other projects such as a new headquarters, a new R&D centre, and normal improvements and expansion of existing plant. As a result, Ford's cash balances would quadruple by 1966. Pre-tax return on assets (ROA) in 1963-1966 would be 27% and Halewood's break-even point would be only 55% of planned capacity[157].

Thus, far from being forced to go to Halewood, Ford decided on the move on the basis of extremely strong financial and strategic projections. While it was convenient to engage in public argument with government to extract the most advantageous terms for its new factory, scrutiny of the Ford story suggests that the issue of the automobile companies and industrial policy may need further evaluation. Stephen Rosevear has shown that in an earlier phase of regional policy in the 1940s, Ford was in practice able to evade most of the attempts of government to force it to develop away from the London region and to continue on pretty much its own terms.[158] It may be that in the 1960s the balance of advantage between car firms and government was less adverse to the car firms than has often been claimed[159].

F. Slipping behind Germany, 1964-1965

Until the mid-1960s, Britain was clearly the preponderant player in Ford's European operations. Ford Germany had been revived and was growing strongly, but it was clearly a junior partner. But in the 1960s, even before the formation of Ford of Europe, this began to turn around. One critical factor in this was the marginalization of Britain from EEC markets in this period, and the ramifications this had for Ford's European capacity strategy. Relatively *ad hoc* decisions taken between 1964 and 1966 were to have great significance for later developments.

By 1964 it was clear to Ford International planners that there would be a capacity shortage in Ford's European plants by 1968-1970. The European car market was expected to grow from 5.3 million in 1964 to 6.6 million in 1970. Existing Ford capacity in Britain and Germany was close to its limits and could stretch to about one million cars per year. 56% of this capacity was in Ford of Britain at Dagenham and Halewood and 44% in Ford Germany at Genk and Cologne (see Table 2). Even allowing for some expansion of existing plants, by 1970 European growth would require a further 250,000 units, roughly equal to a fifth assembly plant.

Table 2: Current passenger car capacity of Ford of Britain and Ford of Germany (1965), compared to planned capacity for 1968-1970 (Units and % share of total European Ford manufacturing capacity)

Year	Ford of Britain		Ford Germany	
Model	Units	share of capacity	Units	share of capacity
1965	536,000	(56%)	418,000	(44%)
1968-1970*	700,000	(45%)	850,000	(55%)

*Planned average capacity in 1965 Plan

Source: "Long range product and merchandising plan: Europe", 16 September 1965, FIA AR 89-204107.

Because Ford's product-line was split between British and German products, the capacity requirements were complex. Neither company individually could justify an all-new plant for its own products. Ford of Britain had a particular problem with its EEC exports. In the mid-1960s, it exported about 70,000 cars (mainly *Cortinas* and *Anglias*) to EEC markets. The cars were well-received and there seemed good prospects of increasing these sales towards 100,000 in the next few years. But, because of EEC taxes and duties, these cars were unprofitable. The actual amount of loss incurred was controversial within the company, depending on some fairly complex assumptions about the possible wider impact of not offering these products, but they varied from estimates of break-even to loss of $100 per car[160]. This poor performance raised two possibilities: either Ford of Britain might discontinue sales to the EEC and hope that Ford Germany could pick up a good proportion of these sales with its own products, or Ford of Britain could take advantage of lower EEC duties on KD parts and set up its own assembly plant within the EEC to assemble British KD cars[161].

Ford of Britain already successfully used Amsterdam as a Continental assembly plant for its truck operations (though the economics of the truck industry were very different), and they spent considerable time exploring the issue

of Continental car assembly. Continental assembly would undoubtedly improve profitability, but the full rewards would only come from increasing levels of local content, and there were major obstacles to this because it was unlikely that much of the distinctively British powertrain could be sourced locally. Ford Germany argued that the costs of assembling British cars within Genk would be prohibitive for these reasons[162].

The British approach to these issues was curiously indecisive, perhaps not unconnected to Hennessy's retirement at this time. His successor, Allen Barke, did not mobilise his forces behind a strong line. Ford International noted that: "Our impression has been that Ford of Britain, who stands to benefit most from any assembly on the continent to date has not displayed a very aggressive position with respect to resolving the matter." They observed "evidence of some confusion within Britain concerning their interest in EEC assembly". While some were pushing for a Continental assembly plant, others simply preferred to continue selling built-up cars in the EEC, drawing on temporary subsidies from Ford International to help them preserve the market, and hope that UK entry to the EEC would happen sooner rather than later[163]. Ford International staff were also uncertain about their own preferences. Some favoured the withdrawal of British products from the EEC, others favoured a wait and see policy[164].

One option, however, briefly seemed to have achieved consensus during 1965. Ford Germany had initially shown no enthusiasm for the "*Anglia* replacement" C-car (later to be the 1968 *Escort*). It did not believe that it fitted German requirements. Accordingly, Ford Germany was open to a proposal to assemble 40,000 *Escorts* (shipped KD from Britain) at Cologne for sale in Germany and EEC markets as the *10M*. This could enlarge British EEC sales from a current wobbly 70,000 per year to a fairly confident 100,000 and help secure a reasonably profitable EEC base for British exports in the short-term[165].

However, Ford Germany soon revised its position. In the light of new marketing studies and strategic considerations, it decided that it would be better off joining the *Escort* programme, but pushing for a more differentiated Germanized version of the *Escort* for Germany[166]. Ironically, German agreement to participate in what had hitherto been a wholly British-led project effectively closed off a potential substantial German outlet for British-built *Escorts* and undercut the British position in European exports, now confined to a downward curve on its older products. Germany now estimated that it could sell 100,000 "German" *Escorts* per year, and on this basis, its requirements for additional capacity by the end of the decade, previously below 100,000 (which did not

justify a full-scale plant) rose to 200,000 and became an effective basis for a claim for a third German assembly plant[167]. Up to this point, Ford International had preferred to explore the option of putting a fifth European assembly plant in France, to guard their flank against incursions by GM and Chrysler and help re-establish themselves in that market. But they had considerable reservations about French government policies and national political resistance to their entry[168]. With some relief, they could now focus on a new factory at Saarlouis, where the economic and political context was much more predictable[169]. The implication for Ford of Britain was significant. Without major *Escort* exports through German assembly, its capacity requirements fell well short of that needed for a third British plant. Instead, Ford focused on a major new engine investment of some $90 million to make Dagenham the biggest and most modern engine plant in Europe[170].

Without any major confrontation, the balance of power in Ford's European manufacturing had shifted dramatically, even before the creation of Ford of Europe. Ford of Britain, partly through its own indecisiveness, had failed to find an escape route from a cul de sac of declining sales in the EEC, providing an opportunity for Ford Germany to move ahead. By obtaining the dominant share of Ford's European capacity, Ford Germany, with its three plants was poised to take advantage of EEC growth. In 1966, the prospects of a further expansion of Ford of Britain's capacity remained open, and there was preliminary discussion of further body and assembly capacity expansion from 1968-1970. But as I show in Chapter 5, when the next round of European expansion came up, new issues and new products were on the agenda, leading to a dramatic new expansion into Spain, and the prospect of major new capacity in Britain disappeared[171].

G. The era of "indirect competition"

The 1960s and 1970s were the apogee of Ford's market share and profitability in Britain. But, in other respects, it was a comfortable and even complacent period for Ford. In the 1950s and early 1960s, Ford settled into a comfortable second place to market leaders BMC, with these two leading companies accounting for 65% of all British sales between them. From 1955 to 1970, Ford held between 25-30% of the market, relying for up to 80% of its sales on the *Cortina* and the *Anglia/Escort* (see Appendix Table 4b, page 118). Its big cars and the niche Capri then boosted profits with their premium prices. A pattern described by Karel Williams (*et alii*) as "indirect competition" prevailed between the two market leaders. Ford and Austin-Morris essentially sold

different products into distinct market segments. BMC and British Leyland Motor Corporation (BLMC), its successor company, sold small front wheel drive cars primarily to private buyers and, as a result, during the 1970s, it bore the brunt of intense competition from foreign imports that targeted this sector of the market and increased their market share from 5-30% between 1965 and 1975. In contrast, Ford sold medium-sized conventional rear-wheel drive saloons to fleet buyers and more affluent middle class purchasers and its grip on its segment was never seriously contested by its rivals before the 1980s. The other producers (Rootes and Vauxhall) had limited capacity and aspirations and only occasionally troubled the majors with a particular "hot" product (most notably the *Viva* and the *Imp*). Under pressure from imports in its smaller cars, Austin-Morris tried to enter Ford's medium-sized car segment in the 1970s by launching the *Marina* to compete directly against the *Cortina* and *Escort*. But it was a poorly conceived and executed car that failed to mount a serious challenge[172].

But Ford was complacent. After the *Cortina* it introduced no real innovations in the market until the *Fiesta* in 1976, and even this was a successful effort to catch-up with rivals who had already pioneered this B-car (super-mini) segment. It relied on BMC/BLMC weaknesses. At times, Ford planners seemed to take a fierce pride in their avoidance of technical innovation and their focus on refining a stable and well-developed product package. Cost control was the priority and "every added feature, every deviation from the package, and every concession to the stylist will have to be subjected to the closest scrutiny"[173]. Finance staff questioned "the true impact of 'innovation' as compared to the more straightforward appeal of 'value for money'". Planners noted, almost with satisfaction, that cars like the *Mini* or *Imp* might be "an ad-man's dream as far as innovation was concerned", but that they were often outsold by cars that were "about as technically uninteresting as a new vehicle could get". BMC's noted innovations seemed to have earned it little in sales and damaged its profits, while Dagenham's "barges" sailed profitably ahead[174]. The literature for technical analysts and enthusiasts consistently describes the *Ford* cars of this era as conventional, "unexceptional", "adequate", "fairly limited", or "an extremely cost-conscious compromise design job"[175]. The cars were resolutely focused on the British market.

There were two major sources of deviation from this pattern. The first derived from the ingenuity of Dagenham engineers in reworking and refreshing existing packages and using existing parts bins in creative ways. From the late 1960s, they became particularly adept at spinning off estate cars, variants and sporty derivatives, with relatively little extra content, that could be sold at premium prices, the so-called "dress-up" options. Beyond that, the *Capri*, a very effective car in

opening up a new niche in the market, was a cleverly reskinned and repackaged version of essentially already existing platform and parts[176]. The second source of deviation was more controversial. The influx of US managers in the 1960s created pressures for more American styling. Roy Brown, designer of the 1958 *Edsel*, became head of design at Ford of Britain in 1961. But Hennessy and Dagenham objected to many of his transatlantic ideas and forced him into design compromises in the early 1960s[177]. As Hennessy's control faded, the American influence advanced: in particular, from 1963, Harley Copp, as director of Engineering for Ford of Britain, pushed forward a combination of transatlantic styling and new technical features. His insistence on independent rear supspension (to reproduce the more luxurious softness of American "ride") in the *Mark IV* series introduced unaccustomed design complexity and untried engineering. His initiatives disturbed the carefully controlled balance of the series and made them overweight and poor in their steering. It also moved the product in the opposite direction to the lithe and youthful "junior executive" *Triumph 2000* and *Rover 2000* that quickly outsold them[178]. His attempts to tamper with the package made Copp a notorious figure for Dagenham engineers.

For all its limitations, the basic production configuration on which Dagenham relied was closely aligned with the needs of one part of the UK market in the 1960s, solid middle-class and executive transport (particularly buttressed by fleet car sales as we shall see below). But this was not an expanding segment of the market, and by 1970, Ford's market position was coming under pressure from new British rivals in its core segments (the *Marina*), and, more effectively, from imported cars either in this segment (like the *Datsun Sunny*) or "pushing up from below" with higher specification smaller cars like the European super-minis (see Appendix Tables 4b, 6, page 118). In the early 1970s (even discounting the strike hit year of 1971), Ford lost market share even as its old-established rival BLMC went into crisis. As BLMC's market share fell from 40 to 31% between 1969 and 1975, Ford's market share also fell, from 27 to 22%, while the share of imports increased from 10 to 33% (see Appendix Table 4b, page 118). It was only the additional volume of the *Fiesta* in the late 1970s that restored Ford of Britain to its traditional share of close to 30% (see Appendix Table 3a, page 118).

H. Foundations of success: Ford and the company car market, 1960-1980s

Between the 1960s and the 1980s, the foundation stone for Ford's sales was its rock solid domination of company car (fleet car) sales. The company car market has been of peculiar importance in postwar Britain. In the 1940s and 1950s, perhaps half of all new car sales were to registered companies[179], and

although this share diminished in the late 1950s and early 1960s, government pay freezes in the late 1960s and 1970s gave new impetus to fleet sales. During wage restraint, companies sought to evade controls by offering rewards to workers other than formal pay increases, and the company car was the most popular of these benefits. Tax concessions made such cars highly attractive. Firms could set the cost of cars against corporation tax and government was slow to tax such "perks" of the private users.

Estimates of the size of this crucial market segment have often been misleading. Figures cited in the literature for the share of the fleet market in total car sales in the late 1970s and early 1980s range from a high of 70%[180], to 60%[181], to "over 50%"[182] and to 40%[183]. Nearly all sources agree that Ford took over 60% of this segment. But simple mathematics suggests that there is something odd about such numbers. If fleet sales were the median estimate of 50% of the 1980 total market, it would amount to 755,000 cars, and if Ford took 60% of those sales, that would amount to 453,000. Yet Ford's total UK sales in 1980 were only 465,000. The widely cited figures are clearly either exaggerated or else use such a wide a definition of "company cars" as to be almost meaningless. Strictly speaking, fleet sales cover fleets of cars operated by companies for their salesmen or executives, the vehicles used by driving schools or rental fleets, and cars given to employees as perks. Cars that are privately owned but run partly on business expenses by professional and managerial people are not strictly "company cars". A strict definition of the "fleet" market used by the Monopolies & Merger Commission in the 1990s focused on sales of twenty-five or more vehicles to a single buyer and estimated that such sales made up approximately 30% of the total British market in 1980, and then grew twice as fast as the total market, rising to 52% of all new car sales by 1990[184]. It was on this part of the fleet market that Ford concentrated its attention most intensively.

In the 1970s, Ford held approximately 75% of the fleet market defined in this way, and its fleet sales to such buyers accounted for almost half of its total car sales (see Appendix Tables 5, 3b, page 118). Ford made the reliable, economical and easy to service cars that confirmed the status of executives, provided decent comfort and big boots for travelling sales representatives, and filled the needs of the car rental companies. The Ford company car became a ubiquitous icon for the businessman, famously satirised by the onetime poet laureate, John Betjeman, in his poem *The Executive* (1974):

"*I am a young executive, no cuffs than mine are cleaner,*
I have a slim-line briefcase and I use the firm's Cortina."

Ford understood the culture of this market, filled with status hierarchies and changing requirements for gadgets and accessory items. Its marketing department constantly filled out its range with carefully differentiated packages that supposedly included an appropriate level of trim for every management grade (starting from Base and working up through L, XL, GT, and GXL, all in 2-door and 4-door versions with different option packages)[185]. At times this produced gratuitous over-differentiation that drove both dealers and production planners to distraction. In the mid-1970s, for example, there were thirty-four different derivatives of the *Cortina* on offer. But it was a highly profitable trade since the top of the range car sold for up to 80% more than the base car price with relatively little additional cost[186].

Ford embraced these lucrative customers (some of the biggest were the car rental firms, Hertz, Avis and Godfrey Davis; and the big sales representative fleets of Imperial Tobacco or Express Newspapers), and focused the development of its distribution network to serve them. They built up larger dealerships together with numerous specialised dealers focused on volume sales. In contrast, BMC/BLMC and its successor company British Leyland (BL), either sold through a multitude of small retailers or relied on large motor trading groups who handled their cars with limited dedicated effort. In 1977, *Ford* dealers averaged annual sales of 302 cars and light vans per year compared to 143 for British Leyland[187]. Ford's larger dealerships could invest in facilities, inventory and after-sales service to support the business market, and its dealers were widely regarded as the elite of the industry[188]. This sales and service armoury set up huge barriers against rivals trying to enter this market[189].

Other invisible barriers helped police Ford's flanks. Until the 1980s, fleet buyers believed that they would face public hostility if they bought "foreign" cars and therefore confined their choices to cars that were (at least apparently) built in Britain. Until Nissan opened its Sunderland plant in the late 1980s, they strictly avoided imported Japanese cars (see Appendix Table 5, page 118). Since Vauxhall was a small player before 1980, this limited choice largely to Ford and the companies that came to make up British Leyland. Fleet buyers generally wanted cars that were more spacious than the typical small private car, and prioritised low running costs and simple conventional designs that were cheap to maintain. These were exactly the qualities that *Ford* cars offered. Since Austin and Morris had their great strengths in smaller cars and produced some notoriously poor models in the medium-sized car segment (*Allegro*, *Marina* etc.), Ford faced a relatively weak competitive challenge in this sector.

Conclusion

In 1977, Ford regained market leadership in Britain for the first time since 1920. (see Appendix Tables 4a and 4b). It had established itself in a powerful position in Britain. It was by far the most profitable company, it had a huge and uncontested strength in the fleet market, and could turn to unmatched support and resources from its US parent for strategic development. Its competitors for the moment were weak (BL and Chrysler) or half-hearted (GM/Vauxhall). There were some weaknesses just below the surface, notably its weak position in the big European market and the growing preponderance of Germany within Ford of Europe. But as yet it was unclear how this would develop. Its strength was based on its close adaptation to certain needs of the British market. "Indirect competition" enabled it to focus on a few large volume models, sold to carefully defined markets. Ford was highly skilled in designing for these markets and sold to them in large volumes. Given these favourable conditions, Ford preferred to avoid costly technical innovation and pursue profits rather than market share. It was the most efficient producer and had the best marketing organization in Britain. Yet, as we shall see in the next chapter, this apparent position of strength was to prove vulnerable. Curiously, Ford's multinational strategy had shaped Ford of Britain into a peculiarly "national" market leader, and locked it into the peculiarities of the British market rather than orienting it to wider international markets. Ford's conspicuously strong "British" image perhaps reflected this. It also perhaps pointed to important sources of weakness as the competitive and strategic contexts began to change.

Acknowledgements and note on sources:

The main primary sources are the archives of Ford and its European subsidiaries contained in the Ford Industrial Archives (FIA) and the Henry Ford Museum (HFM), both in Dearborn MI. I am grateful to Elizabeth Adkins (Archivist), Jamie Myler (Access Review Officer), Darleen Flaherty (Records Manager), and Cathleen Latendresse (Access Services HFM) for valuable assistance in accessing Ford Motor Company records. Research for this chapter benefited from funding from the Leverhulme Trust (Grant F/122/AN) and from the Research Support Fund of the School of History, University of Leeds.

NOTES

1. Mira Wilkins & Frank Hill, *American Business Abroad: Ford on Six Continents*, Detroit, Wayne State University Press, 1964, pages 22-23.

2. David Burgess-Wise, *Ford at Dagenham: the rise and fall of Detroit in Europe*, Derby, Breedon Books, 2001, pages 10-11.

3. David Burgess-Wise, "Percival Perry" in David Jeremy ed., *Dictionary of Business Biography*, London, Butterworths, 1985, pages 639-643.

4. Burgess-Wise, "Perry", page 639.

5. Sam Roberts, *Ford Model Y: Henry's car for Europe*, Dorchester, Veloce Publishing, 2001, page 11.

6. Wilkins & Hill, *American Business Abroad*, page 25. Roberts, *Model Y*, page 10.

7. Percival Perry to Henry Ford, 15 April 1909, HFM Acc 2 Box 30

8. Wilkins & Hill, *American Business Abroad*, page 39; on Canada, see the chapter by Tolliday on "Ford of Europe" in this book.

9. Wilkins & Hill, *American Business Abroad*, page 47.

10. "Memorandum pertaining to establishment of branches, 1915", HFM Acc. 96, Box 9. The first section of moving assembly line for chassis was installed at Highland Park in February 1914 and the full chassis assembly line was running in April 1914 (Horace L. Arnold & Fay L. Faurote, *Ford Methods and the Ford Shops*, Engineering Magazine Co., New York, 1916, pages 135-140). The powered chassis assembly line at Trafford Park was installed between April and August 1914 (*Ford Times*, September 1914, pages 47-49); Ian McIntosh, *Ford at Trafford Park: "an Americanised corner of old jog trot England"*, University of Manchester, Dept. of Sociology, Occasional Paper No. 30, 1991, pages 15-17.

11. Perry, Interview with Nevins & Hill, 26 March 1952, HFM Acc 834 Box 1

12. Perry, Interview.

13. Allan Nevins & Frank E. Hill, *Ford: expansion and challenge, 1915-1933*, New York, Charles Scribner's Sons, 1957, pages 362-363.

14. James M. Laux, *In First Gear: The French Automobile Industry to 1914*, Liverpool University Press, 1976, page 199.

15. As part of this, he had engaged fully in a project to develop a plant in Cork, Ireland, to supply vitally needed tractors for the war effort. This had been a project that Henry Ford had supported with the utmost enthusiasm. But Detroit had failed to deliver the support that was needed to get the plant up and running in short order, and before it was completed, the British government's priorities had shifted from food production to aircraft production, and the project remained unfulfilled. On the tractor project see: Wilkins & Hill, *American Business Abroad*, pages 68-74.

16. Perry to Frank Klingensmith, 19 April 1918, HFM Acc 6 Box 243

17. See the chapter by Tolliday on "Ford of Europe" in this book.

18. Perry to Klingensmith, 19 April 1918.

19. Klingensmith, Cable to Edsel Ford, 5 February 1919, HFM Select File.

20. Knudsen to Klingensmith, 4 and 15 March 1919, HFM Acc 334 Box 1.

21. On the Southampton scheme, see the chapter by Tolliday, “Ford of Europe” in this book.

22. Once recovered, he devoted himself for several years to the development of the Slough Trading Estate, but in 1922, after considerable success, his health broke down, and for the next five years he lived in semi-retirement on an estate on Herm in the Channel Islands.

23. Perry, Interview [William S. Knudsen, “Report dealing with establishment of foreign branches and development of foreign business”, 1 October 1919, HFM Acc 6 Box 243].

24. Nevins & Hill, *Expansion and Challenge*, page 364; “Ford knifes bunch of British agents”, *Automobile Topics*, September 1919.

25. William S. Knudsen, “Report dealing with establishment of foreign branches and development of foreign business”, 1 October 1919, HFM Acc 6 Box 243.

26. Perry to Charles E. Sorensen, 30 September 1919. HFM Acc 328 Box 1; Perry to MacGregor, 28 April 1919, HFM Acc. 6, Box 260.

27. E. G. Liebold to Warren Anderson, 20 December 1920; Anderson to Liebold, 3 January 1921, HFM Acc 6 Box 30.

28. Anderson to Edsel Ford, 22 February 1921, Acc 6 Box 30.

29. Nevins & Hill, *Expansion and challenge*, page 169.

30. William Klann, *Reminiscences*, HFM Oral Histories; Sorensen to W. E. Davis, 25 April 1923; Davis to Sorensen 12 April 1923, HFM Acc 6 Box 243.

31. Edsel to Gould, 17 March 1923, Acc 6 Box 243.

32. Sorensen to Edsel Ford, 3 January 1921, HFM Acc 328 Box 1; Acc 38 Box 108.

33. “Sacrificed again”, *Motor Trader*, 9 May 1923.

34. Roland Phillip to Sorensen, 16 March 1923, HFM Acc 572 Box 18.

35. Sorensen to Phillip, 9 April 1923, HFM Acc 572 Box 18: see Appendix Table 1a page 118.

36. For full details see the chapter by Tolliday, “Ford of Europe” in this book.

37. Wilkins & Hill, *American Business Abroad*, page 97.

38. Klann and Theodore F. Gehle to Ernest C. Kanzler, 10 and 15 December 1923, HFM Acc 572 Box 18.

39. Wilkins & Hill, *American Business Abroad*, page 141.

40. Klann, *Reminiscences.*

41. Tom Gehle. *Reminiscences; Klann, Reminiscences* HFM Oral Histories.

42. Gehle to Russell Gnau, 8 February 1924, HFM Acc 38 Box 111.

43. Klann to Kanzler, 31 December 1923, HFM Acc 572 Box 18.

44. *Ibidem*, 7 January 1924.

45. Klann, *Reminiscences*

46. H.S. Jenkins to Edsel Ford, 22 February 1926, HFM Acc 6 Box 446.

47. Klann, *Reminiscences.*

48. Wilkins and Hill, *American Business Abroad*, page 111.

49. Ed Grace to Edsel Ford, 10 July 1923, HFM Acc 572 Box 18.

50. Sorensen to Perry, 20 January 1923, HFM Acc 572 Box 18.

51. Edsel To Gould, 17 March 1923, HFM Acc 6 Box 243.

52. "Report on Foreign Branches by W. S. Carnegie", n.d. 1925, HFM Acc. 157, Box 266.

53. Gehle, *Reminiscences.*

54. E. Kanzler, quoted by Nevins & Hill, *Expansion and Challenge*, page 410.

55. Bruce W. McCalley, *Model T Ford. The car that changed the world*, Iola WI, Krause Publications, 1994.

56. For full details on the 1928 Plan and Europe, see the chapter by Tolliday, "Ford of Europe" in this book.

57. Bert Morley (vice-president Kelsey-Hayes) to Perry, 22 November 1929, HFM Acc 38 Box 1.

58. Partly to provide Dagenham with some desperately needed output to cover its overheads in the early days Perry to Sorensen, 23 March 1932, HFM Acc 572 Box 18.

59. Steven Tolliday, "The diffusion and transformation of Fordism: Britain and Japan compared" in Robert Boyer, Elsie Charron, Ulrich Jurgens & Steven Tolliday eds., *Between imitation and innovation: the transfer and hybridization of productive models in the international automobile industry*, Oxford University Press, 1998, pages 66-67.

60. Perry to Edsel Ford, 2 December 1931, HFM Acc 572 Box 18.

61. Perry to A. Rowland Smith, 12 December 1930, HFM Acc 38 Box 5.

62. Perry to Sorensen, 5 October 1932, HFM Acc 572 Box 18.

63. Wilkins & Hill, *American Business Abroad*, page 237.

64. Eugene Gregorie, *Reminiscences*, HFM Oral Histories.

65. Dave Turner, *Ford Popular and the Small Sidevalves*, London, Osprey, 1984, page 15. Wilkins & Hill, *American Business Abroad*, page 237.

66. Laurence Sheldrick, *Reminiscences*, HFM Oral Histories.

67. Clay modelling had been pioneered by Harley Earl at GM for the 1927 La Salle; for details on the development of the *Model Y* see: Henry Dominguez, *Edsel Ford and E. T. Gregorie: the remarkable design team and their classic Fords of the 1930s and 1940s*, Warrendale PA, Society of Automotive Engineers, 1999; Gregorie, *Reminiscences*; Eugene Farkas, *Reminiscences*, HFM Oral Histories; also photographs of the *Model Y* in development held at the Henry Ford Museum.

68. Perry to Sorensen, 26 April 1932; Sorensen to A. R. Smith, 26 April 1932, HFM Acc 38 Box 71.

69. Cable from Sorensen to Smith, 26 April 1932, HFM Acc 38 Box 71.

70. Perry to Sorensen, 1 July 1932, HFM Acc 572 Box 18.

71. Perry to Sorensen, 21 March 1933, HFM Acc 572 Box 18.

72. Perry to Sorensen, 12 December 1932; Sorensen to A. R. Smith, 8 February 1933; Sorensen, "Memo", 10 April 1933, HFM Acc 572 Box 18.

73. Sorensen to A. R. Smith, 11 August 1932; Smith to Sorensen, 9 September 1932, HFM Acc 572 Box 18.

74. Perry to Sorensen, 30 August 1932; Mr. Cowling (Dearborn Sales Dept), Circular to European companies, 26 Aug 1932; Perry to Sorensen, 5 Octobre 1932, HFM Acc 572 Box 18.

75. Hennessy specifically posed the question: "Can we apply the methods which you use for your American suppliers to the British equivalents?", Patrick Hennessy to A. M. Wibel (Dearborn purchasing director), 21 September 1934, HFM Acc 157 Box 201.

76. A. R. Smith to Sorensen, 9 September 1932, HFM Acc 572 Box 18; Ford engineers from Dearborn, for example, planned the extensive use of conveyor belts in seat and cushion make-up and door panel assembly to replace Briggs' old bench methods in 1937. "Report on Mr. Siminick's visit to Briggs Motor Bodies Ltd, Dagenham", 13 September 1937, HFM Acc 38 Box 36.

77. Perry to Walter Briggs, 3 October 1935, HFM Acc 38 Box 27.

78. "Sales of vehicles showing costs and profits", June 1937, HFM Acc 38 Box 36.

79. Perry to Sorensen, 15 May 1929, HFM Acc 572 Box 18.

80. Perry to Sorensen, 5 December 1932 and 13 December 1932, HFM Acc 572 Box 18.

81. One accountant spiced his reports on time studies and operations with gossip on Perry's alleged narcotics habits and cronyism. "Mr. Klopsic's report on progress at Dagenham", 13 February 1933, HFM Acc 572 Box 18.

82. Perry to Edsel Ford, 21 November 1933, HFM Acc 38 Box 13.

83. As Sorensen told Perry, "Right now we are unable to interest Mr. Ford to go any further with this small bore job". Sorensen to Perry, 26 April 1934, HFM Acc 38 Box 21.

84. At one stage, Perry seemed to accept the demand, writing to Edsel that "the *Y* will be dropped as soon as sales experience proves that it does not make an independent appeal apart from the *Model C*", Perry to Edsel Ford, 6 November 1934, HFM Acc 38 Box 21.

85. Hennessy, Notes on interview with Mira Wilkins, 12, 19 and 26 August 1960, HFM.

86. Turner, *Ford popular*, page 42.

87. Perry to Sorensen, 8 May 1934, HFM Acc 38 Box 21.

88. Sorensen to Perry, 28 June 34; Perry to Sorensen, 8 May 1934, 27 July 1934, HFM Acc 38 Box 21.

89. R. I. Roberge to F. S. Thornhill Cooper, 29 July 1936, HFM Acc 38 Box 31.

90. Perry to Sorensen, 26 Nov. 1934, HFM Acc 38 Box 21; Perry to Sorensen, 14 April 1937, HFM Acc 38 Box 36; Turner, *Ford Popular*, page 94.

91. Perry to Edsel Ford, 21 June 1938, HFM Acc 38 Box 39.

92. Burgess-Wise, *Ford at Dagenham*, pages 66-96.

93. A. R. Smith to Roberge, 12 August 1947, FIA AR 65-71 Box 25.

94. Burgess-Wise, *Ford at Dagenham*, page 97.

95. V. Y. Tallberg, "Memo on telephone conversation re: new English car models", 20 May 1948; Hennessy to Tallberg, 14 May 1948, HFM Acc 480 Box 11.

96. "1200/1500/2250cc engines: report on Conference", 29 June 1948, HFM Acc 480 Box 11.

97. Burgess-Wise, *Ford at Dagenham,* page 109.

98. Tallberg, "Design of English car", 16 July 1948; E. Page to Hennessy, 3 September 1948; Hennessy to Dean Robinson (president Briggs Manufacturing, Detroit), 6 January 1949 HFM Acc 480 Box 11.

99. Michael Allen, *Consul, Zephyr, Zodiac Executive. The Big Fifties Fords,* Motor Racing Publications Ltd., 1983; second edition, 1990), pages 11-18. Burgess-Wise, *Ford at Dagenham,* pages 121-122.

100. Allen, *Consul, Zephyr, Zodiac,* pages 11-18, 60-61, 104-112.

101. Turner, *Ford Popular,* pages 55-63.

102. Prices in the second-hand market were close to or above the prices of the new cars in the late 1940s.

103. The *Anglia/Prefect* share of the domestic market fell from 33% to 21% and of the export market from 31% to 13%. T.O. Yntema, "Dagenham's project request for development and production of a new light car and van", 12 February 1953, FIA AR 65-71 Box 29; Turner, *Ford Popular,* pages 42, 53-63, 87, 104.

104. Ford commissioned alternative designs from Briggs UK but decided to use their own in-house work. W. D. Appel to Arthur Wieland, 13 June 1951; "A program for a light passenger car for FMC Ltd., Dagenham", June 1951, FIA AR 75-62-616 Box 71.

105. The mechanicals were radically improved, including new clutch, syncromesh gears, new rear suspension and hydraulic brakes for the first time. Turner, *Ford Popular,* page 107.

106. T. O. Yntema, "Dagenham's project request".

107. Appel to Olle Schjolin (Ford-Dagenham chief engineer), 7 August 1951, FIA AR 75-62-616 Box 71; E. L. G. Robbins, "Estimated capital expenditure for the new small car", 9 September 1951, FIA AR 65-71 Box 29; Turner, *Ford Popular,* page 153. The new cars used 524 existing machine-tools and required only 252 new ones.

108. R. A. Winter to P. F. A. Prance, 12 January 1953, FIA AR 75-62-616 Box 71.

109. Appel to Wieland, 30 October 1951, FIA AR 75-62-616 Box 71.

110. All the items deleted from the obsolete *Anglia* were available as optional extras to bring the Popular back up to the old *Anglia* standard of equipment. (EG: no traffic indicators (2.75 extra; ashtrays 38p; interior light 42p etc). Turner, *Ford Popular,* page 68.

111. Burgess-Wise, *Ford at Dagenham,* page 125; Martin Rawbone, *Ford in Britain: a history of the company and the cars,* Haynes Publishing, 2001, page 49; Turner, *Ford Popular*, page 68.

112. George Maxcy and Aubrey Silberston, *The Motor Industry*, London, George Allen & Unwin, 1959, pages 117, 178.

113. Henry Ford II and Graeme Howard, "Report on European Trip, February to March 1948", 5 April 1948, II, 2 FIA AR 65-71 Box 25.

114. Stanford Cooper to Ernest Breech (written in longhand not dictated), 1 January 1951, AR65-71 Box 28.

115. For further detail see the chapter by Tolliday, "Ford of Europe" in this book.

116. J. J. Welker to Wieland, 8 May 1956, FIA AR 78-13 Box 2.

117. G. E. Altmansberger (director Budget & Costs) to Breech, 18 March 1949; "Comparative Cost Exhibits" FIA AR 65-71 Box 28; Wieland to Hennessy, 25 March 1953, FIA AR 75-62-616 Box 71.

118. Hennessy to Wieland, 30 April 1953, FIA AR 75-62-616 Box 71.

119. Rawbone, *Ford in Britain*, pages 54-57; Jonathan Wood, *The Ford Cortina*, Osprey, 1984, page 22.

120. Breech to Wieland, 27 December 1950, AR 65-71 Box 28; Wieland to Breech, 5 January 1951, AR 78-13 Box 2.

121. Breech to Wieland, 10 July 1950, AR 65-71 Box 28; Wieland to Breech, 10 November 1950, AR 78-13 Box 2.

122. Wieland to Hennessy, 20 December 1956, AR 78-13 Box 2.

123. G. W. Malone to Tom Lilley, 6 April 1959, AR 67-7 Box 4.

124. There is no space in this chapter to examine the important implications of this decision for labour relations at Dagenham: see Steven Tolliday, "Ford and 'Fordism' in Post-War Britain: Enterprise Management and the Control of Labour, 1937-1987", in Steven Tolliday & Jonathan Zeitlin eds., *The Power To Manage? Employers and industrial relations in comparative-historical perspective*, London, Routledge, 1991.

125. J. J. Welker to Wieland, 8 May 1956, FIA AR 78-13 Box 2; Rawbone, *Ford in Britain*, pages 62-65; Burgess-Wise, *Ford at Dagenham*, page 132-137

126. J. Wilner Sundelson to Tom Lilley, 26 November 1956, FIA AR 75-63-430 Box 67.

127. Sundelson, "Review of Dagenham presentation materials", 12 June 1957, FIA AR 75-63-430 Box 67.

128. Sundelson to John Andrews, 28 March 1957, FIA AR 75-63-430 Box 67.

129. Sundelson to John M. A. Smith (Assistant Managing Director, Dagenham), 4 December 1956, FIA AR 78-13 Box 2; C. Thacker to Wieland, 13 December 1956, FIA AR 65-71 Box 29; Wieland to Henry Ford II and Breech, 13 December 1956, FIA AR 78-13 Box 2; Sundelson to Andrews, 28 March 1957, FIA AR 75-63-430 Box 67.

130. Sundelson to Andrews, 19 March 1957, FIA AR 75-63-430 Box 65.

131. Elements of the thinking on the "dream car" resurfaced, though in a rather different guise, in the Cardinal project.

132. Wood, *Cortina*, page 22.

133. See the chapter by Tolliday on "Ford of Europe" in this book for fuller details. When the *Cardinal* was under review, Dagenham argued that, if the front wheel drive PonyPac proved too costly, it could engineer a rear wheel drive *Cardinal* based on Dagenham's technology as a fall-back position. *Cardinal* Program Project Officers, "Ford Germany C-car report", 25 April 1960, FIA AR 67-14 Bx 2; Wood, *Cortina*, pages 56-57.

134. Dagenham Product Staff, "'Archbishop' car study", July 1960, FIA AR 67-14 Box 2; Wood, *Cortina*, page 32.

135. For further details, see the chapter by Tolliday on "Ford of Europe" in this book.

136. See the diagrams reproduced in Wood, *Cortina*, page 35, from the Product Planning Committee Document, January 1961.

137. Dagenham accepted that this would make its recently launched standard D Class car (the *Consul Classic*) almost immediately obsolete. Wood, *Cortinas*, pages 39, 94, 45, 22; Michael Allen, *British family cars of the early Sixties*, London, Guild Publishing, 1989, pages 72-75.

138. The name, drawn from the 1960 Italian Winter Olympics Village, captured a frisson of European fashion-ability.

139. Beckett quoted in Wood, *Cortina*, pages 60-62; Michael Sedgwick, *Cars of the Fifties and Sixties* (Gothenberg, Nordbok, 1983, pages 50, 205.

140. The *1100* outsold the *Cortina* in the UK, but the *Cortina* did better in exports. Kenneth Ullyett, *The 1100 Companion*, London, Stanley Paul & Co., 1967.

141. H. E. Lewis (product timing manager Ford-Division) "Review of Ford-England timing plans", 27 December 1960, FIA AR 67-14 Box 2.

142. Dagenham Product Staff, "'Archbishop' car study", July 1960, AR 67-14 Box 2; Wood, *Cortina*, page 39, shows diagrams comparing *Cortina* and *Classic* bodies; Allen, *Family cars*, page 89.

143. See the chapters by Tolliday on "Ford of Europe" and Thomes, "Germany" in this book for details; see also Hanns-Peter Rosellen, *Ford-Schritte: der wiederaufstieg der Ford Werke Köln von 1945 bis 1970*, Frankfurt, Zyklam Verlag, 1988.

144. Wood, *Cortina*, pages 8, 73.

145. Box 3 J. M. A. Smith to Tom Lilley (vice-president and general manager Ford International), 17 April 1959, FIA AR 68-5.

146. V. S. Menger, "Rootes group survey", 24 April 1959, FIA AR 68-5 Box 3; see Appendix Table 4b page 118 for market shares.

147. "Report on Rootes Motors Ltd negotiations", 16 April 1959, FIA AR 67-7 Box 4; see also Stephen Young & Neil Hood, *Chrysler UK: A Corporation in Transition*, New York, Praeger, 1977; John Bullock, *The Rootes Brothers. Story of a motoring empire*, Yeovil, Patrick Stephens Ltd., 1993.

148. "Report on Rootes Motors Ltd negotiations"; Smith to Lilley, 17 April 1959.

149. Tolliday, "Ford and 'Fordism'".

150. V. S. Menger, "Rootes group survey" .

151. Burgess-Wise, *Ford at Dagenham*, page 166; in the light of later developments, it is also interesting to note that Ford also considered a bid for Jaguar at this time, but stock market activity on rumours pushed the share price far above reasonable levels. Tom Lilley, "Possible acquisition of the Scooter Company", 9 April 1959; J. M. A. Smith to Lilley, 17 April 1959, FIA AR 68-5 Box 3.

152. Rawbone, *Ford in Britain*, pages 67, 70; Burgess-Wise, *Ford at Dagenham*, page 150.

153. Rawbone, *Ford in Britain*, page 69; Burgess-Wise, *Ford at Dagenham*, page 165; Peter Scott, "The worst of both worlds: British regional policy, 1951-1964", *Business History*, 38, 4, 1996, pages 54-55.

154. "Ford of England expansion program", 23 March 1960, FIA AR 65-71 Box 29; Ford-Dagenham Policy Planning Office, "Location of future development", 22 February 1960, FIA AR 67-14 Box 2.

155. *Ibidem*.

156. Ford-Dagenham Policy Planning Office, "Location of future development", 22 February 1960, FIA AR 67-14 Box 2.

157. "Ford of England expansion program", 23 March 1960, FIA AR 65-71 Box 29; J. S. Bugas, "Expansion program of Ford England", 20 May 1960, FIA AR 65-71.

158. Stephen Rosevear, "Balancing business and the regions: British distribution of industry policy and the Board of Trade, 1945-1951", *Business History*, 40, 1, January 1998, pages 86-88.

159. For the standard narrative of these matters, see, for example the case of Linwood: Stephen Wilks, *Industrial Policy and the Motor Industry*, Manchester UP, 1984, page 76; Young & Hood, *Chrysler UK*.

160. One set of numbers from Ford International Finance Staff reported that in 1964 Ford of Britain exported 200,000 vehicles and made profits of $1.3 million on them. But on the 58,000 sold in the EEC it lost $3.3million. G. W. Malone to J. N. R. Barber (director of finance UK), 6 November 1964, FIA AR 89-204107.

161. P. B. Woods to Malone, 29 October 1964; Malone to J. N. R. Barber, 6 November 1964, FIA AR 89-204107.

162. C. F. Levy, "Program for study of European assembly", 1 November 1964, FIA AR 89-204107.

163. Woods to Levy, 4 November 1964; John S. Bugas to J. Allen Barke, 15 February 1965, FIA AR 89-204107.

164. "Report of the US manufacturing study team under the direction of T. R. Diegel on Ford of Britain's 1968-1970 capacity extension program: Phase 1: Present capacity and study assumptions", 23 October 1964, FIA AR 89-204107.

165. Web McDonald (Ford International finance staff), "European Planning Study", 27 June 1965, FIA AR 89-204107.

166. "Request for direction regarding proposed production and facilities program", 15 February 1965, FIA AR 89-204107.

167. "Long-range product and merchandising plan: Europe", 16 September 1965, FIA AR 89-204107.

168. They had considered possible sites at Nantes, Nancy, Calais or St. Etienne. See Ford Germany, "Capacity planning", 26 October 1964. C. F. Levy, "European assembly plans and studies", 23 September 1964, FIA AR 89-204107. For the French context see, Jean-Louis Loubet, *Histoire de l'automobile francaise*, Paris, Éditions du Seuil, 2001, pages 321-322.

169. Ford of Germany, "Report on site investigations", 12 May 1965, FIA AR 70-20 Box 1.

170. "Forward passenger car engine program", November 1965, AR 89-204107; Rawbone, *Ford in Britain*, page 152.

171. See the chapter by Tolliday on "Ford of Europe" in this book.

172. Karel Williams, John Williams & Dennis Thomas, *Why are the British Bad at Manufacturing*, London, Routledge and Kegan Paul, 1983, page 240; Jeff Daniels, *British Leyland. The Truth Behind the Cars*, London, Osprey Press, 1978; Timothy R. Whisler, *The British Motor Industry, 1945-1994: a case study in industrial decline*, Oxford, Oxford University Press, 1999.

173. Product review for Arjay Miller (1968 *Anglia* Program), 11 July 1964, FIA AR 89-204107.

174. "Notes by Finance Staff on 1968 Model Year Program", August 1964, FIA AR 89-204107.

175. See comments on *Escort Mk1*, *Cortina MkII*, *Consul/Zephyr MkIII*, *Consul/Granada*, *Escort MkII*, by Rawbone, *Ford in Britain;* Jeremy Walton, *Escort. Marks I, II, III and IV. The development and competition history*, Yeovil, Foulis, 1985, second edition, 1990); and Burgess-Wise, *Ford at Dagenham* quoting magazines such as *Car.*

176. Rawbone, *Ford in Britain*; Jeremy Walton, *Capri. The development and competition history of Ford's European GT Car*, second edition, Yeovil, Foulis, 1987.

177. Rawbone, *Ford in Britain*, page 74.

178. Rawbone, *Ford in Britain*, pages 113-4.

179. Central Statistical Office, *National Income Statistics* (HMSO, 1956), page 125.

180. Peter Waymark, *The Car Industry*, London, Sewells, 1983.

181. Harbridge House Europe, *Ford of Europe. A Strategic Profile, 1984*, London Harbridge House, 1984, pages VII-36.

182. Peter N. C. Cooke, *The Company Car. Its allocation, acquisition and administration*, Gower, 1975, page 1.

183. Karel Williams, John Williams & Colin Haslam, *The Breakdown of Austin Rover. A Case Study in the Failure of Business Strategy and Industrial Policy*, New York, Berg Press, 1987, page 73. Williams (*et alii*), *Why are the British bad at manufacturing*, page 235. James Foreman-Peck, Sue Bowden & Alan McKinlay, *The British Motor Industry*, Manchester, Manchester University Press, 1995, page 142. Krish N. Bhaskar with Garel Rhys, *The Future of the British Motor Industry*, London, Kogan Page, 1979, page 106.

184. Monopolies & Merger Commission, *A report on the supply of new motor cars within the United Kingdom*, HMSO, 1992, page 26.

185. Even the British counter-culture could savour these gratuitous distinctions. The Tom Robinson Band song "Grey Cortina" included the chorus:
"*Wish I had a grey* Cortina
Whiplash aerial, racing trim.
Cortina *owner – no one meaner,*
Wish that I could be like him".
("Power in the Darkness" album, 1977).

186. Graham Robson, *Cortina: the story of Ford's best seller*, Dorchester, Veloce Publishing, 1998, page 104.

187. Bhaskar, *Future of the British motor industry*, page 353.

188. Harbridge House, *Ford of Europe*, page VII-32.

189. This core fleet trade also had important implications for Ford's wider retail trade and dealerships. Since companies generally bought new cars and traded them in for new vehicles every two or three years (and car hire firms usually replaced their fleets annually), this created a wide pool of top quality used cars that Ford dealers could sell on to private buyers. The "nearly new" *Cortina* became widely available to entry level buyers, but its very ubiquity made it not very exciting for private buyers.

***Model B* 1905, in London**