The Development of Japanese Industrial Design through the 20th Century

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INTRODUCTION

Japanese design evokes two simultaneous images; one is of traditional craft objects such as laquerwork and ceramics, the other is of mass produced high-technology artefacts such as hi-fi and cameras. Each is an expression of the same tradition.

A tradition which has matured rather than subsided under a barrage of Western influences. Contemporary Japanese design evolves around dichotomies - the familiar and the provocative, the traditional and the radical, the ascetic and the deluxe, the indigenous and the foreign - all coexisting and inbreeding producing a very unique but distinctly Japanese phenomenon. A whole new design identity. An identity which is an amalgamation of sophisticated technology, aesthetics and marketing resulting in a market leader envied throughout the world.

Yet not so long ago Japanese goods were considered inferior, cheap, disposable copies.

This dissertation will analyse this evolution and will begin at the fundamentals of Japanese life and briefly outline the cultural differences and diversities of such a society and investigate the influences on such an aesthetic orientated people, and how these aesthetics and culture have influenced modern design.

The industrialization of Japan since it was opened to the world in the mid nineteenth century will be examined

and how the influences of the West were accommodated and thus created a land of dualisms, the austere and the exuberant existing side by side.

Through examining the history of the people this discourse will explore the meaning design has taken on in the contemporary manufacturing environments. An investigation into such themes as national identity, anonymity of the designer and the growing relationship and emphasis between design and marketing will be attempted.

This will be achieved by looking at the area of industrial design but more specifically in the areas of electronic and electrical goods showing post war progress but with emphasis on the products of the last twenty years. Transport is briefly 'touched' upon to emphasise particular details however this area gives rise to a whole new specific essay too vast for detailed analysis within.

It is hoped this dissertation will provide understanding of the peculiarities of Japanese design and give an insight into the fascinating Japanese post war economic miracle.

CHAPTER I. A SENSE OF DESIGN.

A Japanese sense of design starts with a respect towards centuries - old folks arts - pottery, woodworking, papermaking and other crafts. But is also includes adventurous exploration of new technologies. Influenced in part by the Buddhist religious teachings and a traditional feeling of closeness to nature, Japanese design had always been more practical then speculative. Artists and craftsmen are trained to a thorough understanding of texture and character of their materials, the objective to reveal the essence of a product in whatever is being created. Harmony, an ideal that is sought in so much Japanese life, is also important. Designers generally strive to avoid tension between a consumer and an object by making products relatively east to use.

Perhaps, one of the strongest and earliest influences on Japanese traditional aesthetic values had been Buddhism. Introduced in the sixth century from China, the religion brought with it a more philosophical approach to life with a strong affiliation to both morality and aesthetics. Buddhist ways evolved about the idea of 'economy of means'. Poverty, austerity and simplicity were a means to contemplation and spirituality.

Traditional Japanese Art pays reverent attention to the changing seasons, the shapes of mountains and flowing tides, similarly, modern Japanese design is enraptured with

fundamentals. Such everyday objects as stacking food trays to space saving appliances for small homes, for example, clearly illustrates the aesthetic code followed.

Made of wood and constructed with a pillar and beam method, symbolizing the temporary shelter provided by a branch of a tree, the house is a small, simple space with a minimal amount of furniture within it. (fig 1)

The main floor area is large and emphasized and this is where both the eating and sleeping takes place, separations provided by movable paper screens giving a flexibility and openness within the space. An emergence of compactness, portability, rectilinearly, selectively and minimalism is clearly evident and can be directly related to contemporary designs.

Essentially the most important features of the Japanese home is an emphasis on modularity which stems from the use of multiple floor mats - 'tatami'. The side of each room is described by the number of mats within it. Evidently, the size and proportions of the house are determined by the repetition of this module in the wall panels. This emphasis of living and focusing on the single unit first and then on the outer shell has created a particular Japanese way of comprehension and understanding. An understanding moving from inside to out - from detail to the whole. A method of seeing and perceiving with direct significance to multi-component contemporary artifacts such as hi-fi's and automobiles. Control knobs of the hi-fi's

and the chrome trim on the side of the car door panel are instigative points of aesthetic appreciation, not the metal form or box which surrounds them.

Ironically many of the characteristics of modern Japanese Design have not been taken directly from an appreciation of traditional aesthetics, but at second hand through the intervention of European and American culture. An association of the West's influence on Japan from the 1930's is really a means of Japan realigning itself with its traditional culture in an international context.

Despite this Western influence and hybridization within Japanese culture, many traditional Japanese aesthetic concepts have carried through, providing a link with the past and strong sense of cultural continuity. As J.V. Earle had written 'Modern Japan is a unique example of the way in which a sophisticated urban culture had adapted Western methods to make and outstrip the West in terms of trade, industry and the like and yet, to a remarkable degree, had retained its distinctive character'[1].

In the 1850's on opening its doors to foreign trade after 250 year period of rule of total isolation, the shock concentration with the West had two immediate effects for subsequent Japanese developments. On the one hand was the careful preservation of all traditions and traditional aesthetic tastes evolved to that time, achieved through strict control of the life style of the Japanese majority.

And on the other hand was the encouragement of the totally new, highly flamboyant life style of the West. But as of yet both the austere and exuberant exist side by side in Japanese culture. The austere expressed in the traditional culture; the exuberant in the more popular aspects of contemporary Japanese urban life, as of more recently, the fast food restaurants and rock'n roll from the storehouse of American pop culture.

However, to say contemporary Japanese design still depends on traditional aesthetics does not mean that there is only one 'backward, traditional style' visable today.

Japan has been able to accommodate two highly contrasting styles, the one, in the words of J. V. Earle 'colourful, decorative, exuberant and inventive and the other 'monochrome, linear, refined and austere'[2]. Japan is a country of dualisms - a co-existance of Western and Eastern ideas and of decoration and austerity. And it is because Japanese culture accumulates and retains cultural values, rather than letting one replace another.

Having taken from abroad, Japan is used to absorbing foreign influences and making them, its own : there is an alocation for each within Japanese culture itself. The fundamental belief in the changes brought about by the cycles of the seasons encourage its highly flexible attitude towards cultural variance.

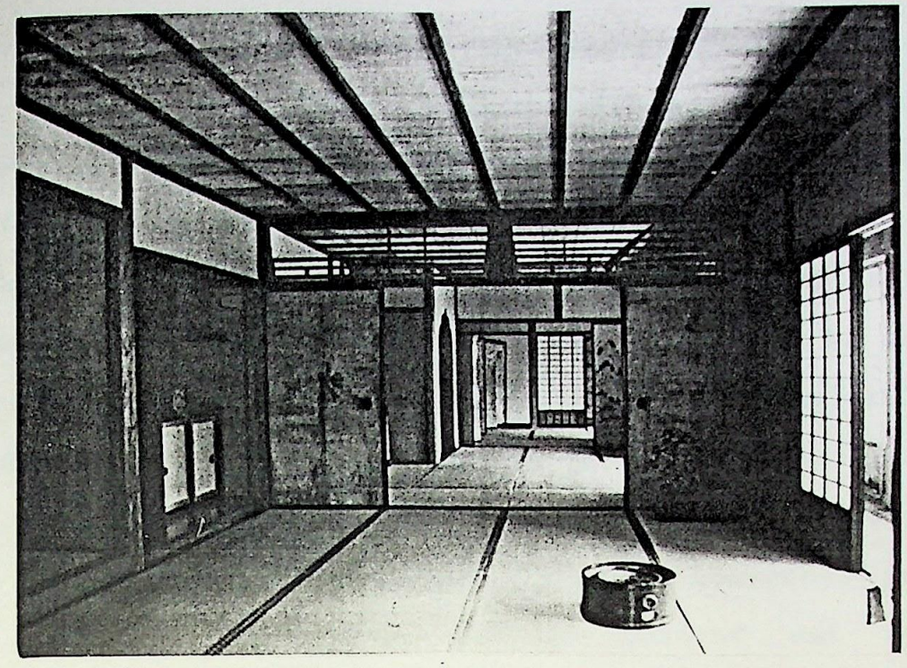


Figure 1 - Traditional Japanese home - emphasis openness, selectively and minimalism.

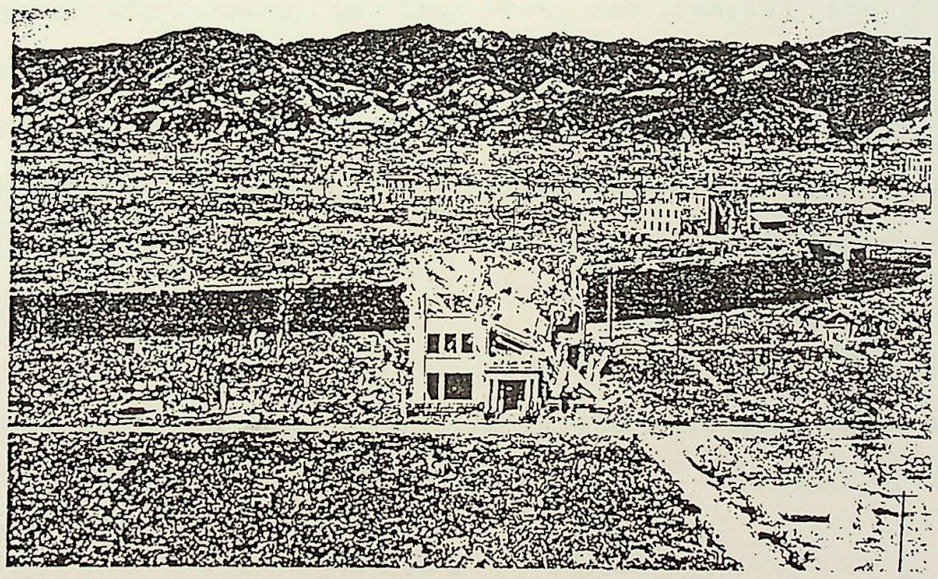


Figure 2 - Hiroshima 1946 - a state of mass destruction, confusion and isolation but later 'to rise from the ashes'.

CHAPTER 2. THE BIRTH OF A NATION

At the turn of the century Japan was frowned upon as a rather primitive country. However within, this highly developed aesthetic culture, was beginning a transformation into one of the worlds leading industrial powers.

Japan began this dramatic transformation soon after it had opened its boundaries to trade with the U.S.A. and Europe in the 1850's. For 250 years, under 'shogun' rule the country experienced a period of total isolation, exempt to outside developments and influences. Although steady and significant domestic commercial progress had taken place, trading with foreign nations was not permitted. For two and a half centuries Japan lay dormant, turning a blind eye to the advantages of scientific, technological and industrial break-throughs been discovered in Europe at the time. Those years of isolation, therefore consolidated Japan's traditional areas of production where as the West was reaping the full benefits of an industrial revolution. However, with the acceleration of international trading and development of steamships, Japan finally opened its doors to change in the year 1854 with the signing of a trade agreement with the U.S.A.

In the following decades, Japan was an area of intense modernisation but also fanatical Westernization. Japan was now dominated by both its impact on the West and by its

borrowing from the West in areas of modern technology and industry. The West now became a representation of progress and images of the West penetrated the country. Western style, images, clothing etc., now became an elitest fashion.

Susceptible, ordinary people demanded 'enlightened' novel goods imported from the industrialized countries. However, the traditional life and culture, which had now grown to maturity and refinement over the previous 250 years, was not so powerless nor so lacking in practical value as to be easily swept away by this tide of 'civilization and enlightenment' and 'high class' imports. The result was a dichotomy - a see-saw which oscillated between the opposed phenomena of tradition and progress, Japanese and Western.

Such dichotomies have, of course, been experienced in the West also, but here a continuous and homogeneous historical process gave a choice of maintenance or rejection of traditions. This historical continuity does not exist in Japan, and so a conflict between modernism and traditionalism has tended to be equated with two quite different historical experiences, that of the West - and that of Japan.

The resulting, peculiarly Japanese brand of dualism had invaded every aspect of their lives from clothes, food and houses of art, industry and culture in general.

During this period of rapid modernisation, opportunities for entrepreneurs to set up businesses were enormous. Many took advantage of them, profiting from new technology that was suddenly available.

Among some of the manufacturing companies established were some modest organisations which were to become giants of the consumer goods industry following the Second World War. What later became the Seiko group was originally established by Kutaro Halfori concentrating on the production of precision machinery.

Similarly the Toyota Company formed in 1897 to manufacture automatic wooden looms. In the 1930's the company diversified its production into motor cars with the formation of the Toyota division.

Tokujio Hayakawa formed a small metal works business in 1912, by the 1920's it was producing radios. Later it was to change its name to Sharp after a propelling pencil it had started to manufacture in 1915.

However, the West still looked upon Japan as a primitive nation wrapped in traditionalist values, and this image was both 'hyped' and projected by the Japanese and indeed exploited with the export of patterned kimonos, laquerwork, screens and fans full of colour and rich in exoticism. The aesthetic contrast violently with the true essential values of ordinary Japan. Manufactures soon benefited from the export of the Oriental and in the second

half of the 19th century, production of highly decorated goods and the exportation of such items occurred in vast numbers. Europe now accepted and absorbed a Japanese style which itself influenced a new sense of modern decoration and exoticism of the time.

Apart from the development of Japanese industry, the 20th century held in store for the Japanese two World Wars.

Although both wars played significant roles in the industrial development of Japan, World War 1 provided time for the Japanese industries to catch up which other nations who were occupied primarily with arms manufacture.

The depression following the 1st World War forced Japanese businesses to modernise their organisation structures and to up grade the quality of employees.

Employers recruited new young personnel, who had just left school and began to train them in specialist skills. Though the course of training and relatively easy adaptation to modernisation emphasis was placed on loyalty to company and company polices. A uniquely Japanese type of employer - worker relationship was formulated, based on the traditional doctrine of loyalty and hard work.

Although Japan was dominated by economic depression in the 1920's and 1930's the automobile industry was born but its only clients, at that time were the government and the army.

However, the 1930'S in Japan are described as the decade of the 'dark valley'. 1937 saw Japan war with China and then, four years later, the Pacific War erupted.

The war came to abrupt and violent ending with the bombing of Hiroshiima and Nagaski, (fig 2). Japan was now in a state of massive destruction, confusion and isolation. But soon Japan was to 'rise from the ashes' and take up where it had let off. Japan had now truly entered the world race of modernisation. Dramatic changes occurred. Within a decade a transformation had taken place, on economic, social, technological and cultural fronts simultaneously, which changed Japan from a war weary country with nothing to a country with one of the most powerful manufacturing forces in the world.

But what could cause such a dramatic resurgence? Inevitably, solutions are long and complex but some of the primary reasons are the following :

The presence of American troops in Japan after the war and U.S. government funding of Japan, in an effort to fight Communism had a enormous impact on both culture and economics. With the soldiers came ideas of democracy, patriotism and freedom and with tough restraints on the Japanese government, placed by the U.S. authorities meant new finances could be invested in the manufacturing sector. This was complimented by the Japanese government's awareness to develop a strong export market based on a

sound domestic market.

The early years of the allied occupation followed a strict programme of reform and retribution, however foreign trade was allowed to resume. By 1950 Japan was now sociably and economically stable and was geared to increase production and enhance prosperity.

This phenomenal growth and rapid expansion was also helped by cultural factors as well as economic. A mutual commitment materialised between individual workers and their employers, a loyalty over and above a personal interest. A 'life-time contract' manifested itself expressed by the wearing of company uniforms, saying company songs, and widespread use of company slogans.

Ideas of company management imported from abroad and deliberate policy decisions were just as important in the growth. Most important was the 'quality control circle', borrowed from the U.S. Companies encouraged employees to set up and participate in 'work circles' to quality control the goods it produced and make suggestions of improvement. This of course improved manufacturing standards and provided a sense of involvement for employees.

The Japanese government also developed an important role with its awareness of a need to export goods becoming an economic imperative. And it believed if goods of adequate quality are produced and were competitively priced, they would inevitably find a market. Especially when the war had developed a pent-up demand for goods and

services. The government invested and assisted in subsidising companies, trade agreements, establishing new firms and assisting in research and development.

The success of Japanese exports depended also on the home market, and this society transformed itself relative to the industrial expansion. A dramatic social revolution originated and a process of Westernizatin characterised the era. A transition from rural to urban occurred. People flooded into the reconstructed cities in search of work in the 50's and 60's. A demand for new luxurious products originated - TV sets, refrigerators,washing machines. Electrical gadgets became essentials rather than luxuries by a new, affluent, young consumers.

This readiness of both domestic and export market to buy Japanese consumer goods developed a manufacturing precedent in availability, adequate quality, efficient technology and price. However as manufacturers increased so too did the competition of goods. A sellers market became a buyers one. Appearance and quality now too became significant features to be reasoned with. Manufacturers became aware of the need to ally design with the industrial manufacturing process. Design was to find a new imputus. The following years saw the formation of institutes and societies of design in Japan. All were concerned with the need for professionalism in design and recognition to the designers status.

This was an initiative to develop a design commune in

a bid for a national identity. Design now matured as a key element in the production, marketing and consumption of Japanese technical goods. Awareness of design had become an intrinsic element in Japan's bid for international cultural recognition.

Throughout the 1950's and 1960's the promotion of design took a whole new initiative and enthusiasm. However, Japanese products still held an air of cheapness and inferiority. The term 'made in Japan' was synonymous with cheap products, imitative and shoddy, better known for technical reliability and their competitive prices than for their design. The cliche - 'The Japanese excel at imitating and improving the inventions of others but lack creativity' - originated. [This imitation will be looked at in more detail in the following chapter.] But can it be said imitation was a fault of Japanese design - and should have been avoided at the very earliest.

Japan had entered the race for modernization as a late starter and thus the country took the shortest route possible in order to catch up with the leaders, the U.S. and Europe, by purchasing superior information and technology from them. Translating such new, non-traditional high technology goods imported in conjunction with foreign materials and techniques, into a traditional Japanese aesthetic concept was enormous and one which manufacturers wished to side step rather than confront head

on. This resulted in the consequent difficulty in finding a Japanese style. Manufacturers became 'involved in a process called leap frogging'[3], that is, of emulating foreign models and the improving on them.

Also, the Japanese competed within a market which was clearly defined and greatly influenced by its European counterparts, who had the extra resources and marketing planners and developers actually in the market place. A niche had to be found in this market and the only way in was to imitate the products already in existence, but once this was found and established products could then be developed and experimented in. 'So if the Japanese have progressed by imitating and improving, it has been because they simply did not have the extra time and resources necessary for original creation. It was a reality that could not be helped'[4].

Another reason why imitating was so strong was that many companies did not employ designers. 'Design' was a simplistic extra of the engineering and production departments. The most familiar image of Japanese goods abroad was the one associated with the 'technological look'. This aesthetic was common to motor cycles, camera and audio equipment and when it did not simply emulate competition, it reflected a crude collection of technologies involved. Some exceptions did exist and by the 1950's some companies such as Honda and Sony were

conscious of the need for an in-house design team to create identities for their products.

Design in Japan has come through a complete transformation since the post-war years. From a stylistic imitation of foreign examples, design had, by the 1970's and 1980's, evolved to become an integrated process within technological research and manufacture and an increasingly essential in marketing. Companies were now forced to define their design policies quite specifically. The status of design became inseparable from the country's industrial expansion and its particular industrial policies and strategies. While individuals and institutions promoting design in the 1950's had adopted a highly idealistic European - based theory, the manufacturers themselves took a much different view, defining the design process and designers role within their control and conforming to an overall corporate philosophy. Design became an industrial activity, the product of a team rather then an individual single vision. 'Product style' became, as a result, part of the role of Japanese goods in the world economy. By the 1980's, Japanese product designers had made a huge impact on markets both home and abroad and had added electronic goods and transport to a long held reputation for aesthetic quality. Japan had now become the home for modern technology but also of modern design.

CHAPTER 3. A REJUVENATED MOMENTUM

In the years after the Second World War, Japan strided and achieved a re-development and an industrial output envied throughout the world. Vast numbers of electrical and electronic products rolled off the assembly lines which actually owed their existence to this re-development and new modern technology. The huge technological advances of the post war years and a rapid emergence of a domestic market were opportunities gained by the electrical industry and a concept of 'advanced technology' was both produced and marketed.

Post war manufacturers of consumer products tended to concentrate on precision optical and acoustic instruments - namely watches, cameras, radios and record players. Being of a small ideal size these goods could be exported in vast numbers and they also belonged to an expanding world market benefiting directly from the new technology.

With the advancement of technology came the first television broadcasts in Japan and manufacturers quickly diversified into television sets and through the 1950's and 1960's, and as markets emerged, more and more domestic appliances were produced.

Complementary to Japans advances in the economy came a surge of affluence. Inevitably Japanese life and living conditions were to change. Labour saving devices now became affordable. 'Gadgetry' became common in homes of

previous austere interiors and these electrical goods soon essentials rather then luxuries. Individual comfort and 'life-styles' began to evolve. A growing individualism characterised a changing social pattern and the traditional Japanese society of the 1940's had all but disappeared.

By the 1950's it had become an urgent requirement to develop and expand further the export trade. Following some aggressive marketing Japanese companies found niches for their products in both American and European market places.

A wedge had been forced into the market and Japanese products tried to emulate the appearance of foreign models but also improved upon them technically and financially. Typical of this were radios which we enclosed in wooden cabinets with fretwork on their fronts in Gothic or art deco styles. (fig 3)

Another example of this 'adapted style' were television sets surrounded by wood veneered cabinets, following a particularly Western approach based on furniture traditions that influenced the design of early European and American domestic electric goods. (fig 4)

The first Japanese cameras were also careful copies of German counterparts, then considered the most advanced camera designers in the world. Although Nikon equipment had been produced since 1917, the emergence of Japanese cameras on foreign markets was certainly a product of U.S.

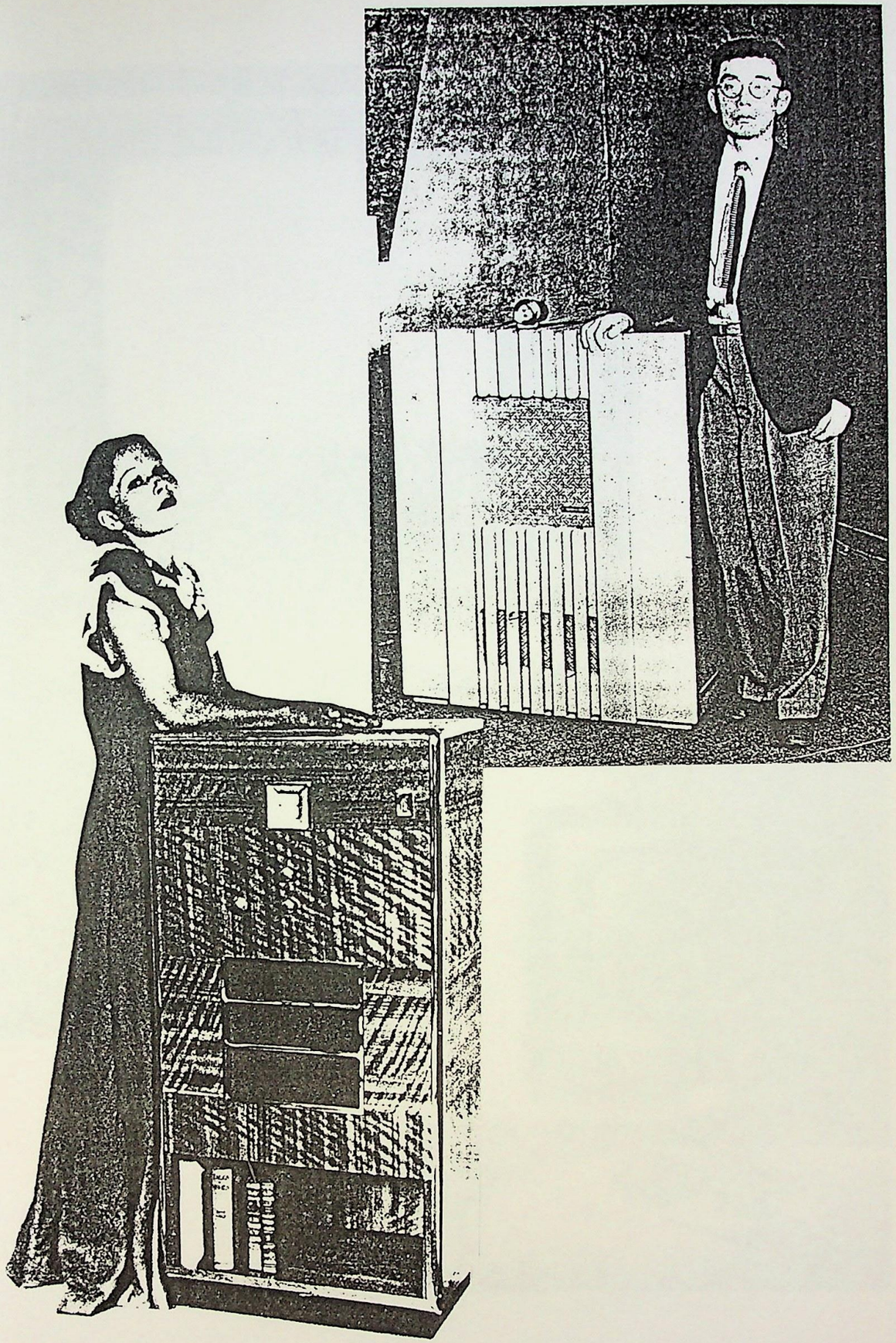
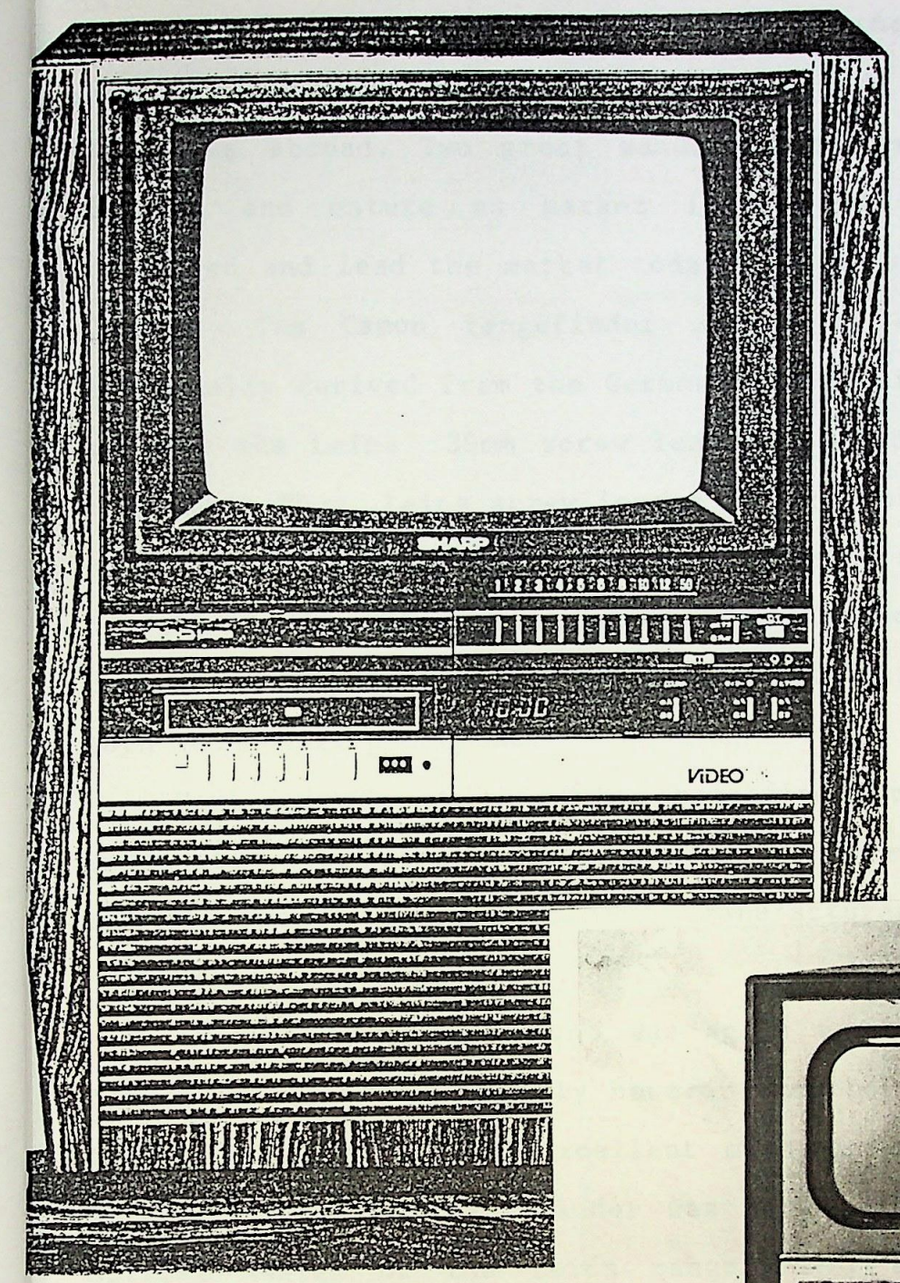


Figure 3 - Radios enclosed in Gothic styled wooden cabinets (late 40's).



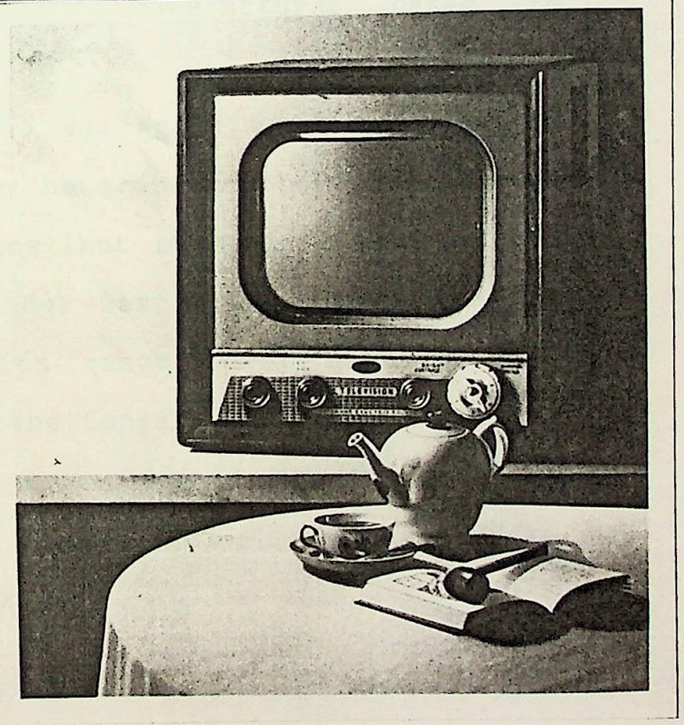


Figure 4 - Western design influences resulted in televisions enclosed in wood veneered cabinets adhering to the 'furniture' image.

investment and occupation. It was American photo-journalists and soldiers who discovered the quality of post-war Japanese cameras and lenses, and spread their qualities abroad. Two great manufacturers names were to develop and mature as market leaders which are both respected and lead the market today. These are Nikon and Canon. The Canon rangefinder series of cameras were essentially derived from the German Leica design, (fig 5), and use the Leica 39mm screw lens mount and rangefinder coupling. Thus, Leica screw lenses fit and couple to Canon rangefinder bodies and vice versa. Virtually a direct copy of the Leica, Canon competed directly for the same consumer, but once established began emulating Leica in both technology and price.

Early models of the Nikon rangefinder cameras were, externally very similar to the post-war Zeiss Contax II, another great German camera manufacturer based in Stuttgart. (fig 6)

An identical lens mount was again used with similar characteristics. Internally however they bore resemblance to the Leica for their excellent mechanical and optical design. The Nikon rangefinder was based directly on the optical design of the Leica rangefinder, but with the benefit of the exterior of the Contax; and Nikon shutters, like those in the Leica range, were of cloth, and travelled horizontal, instead of being metal and travelling vertically, as in the Contax.

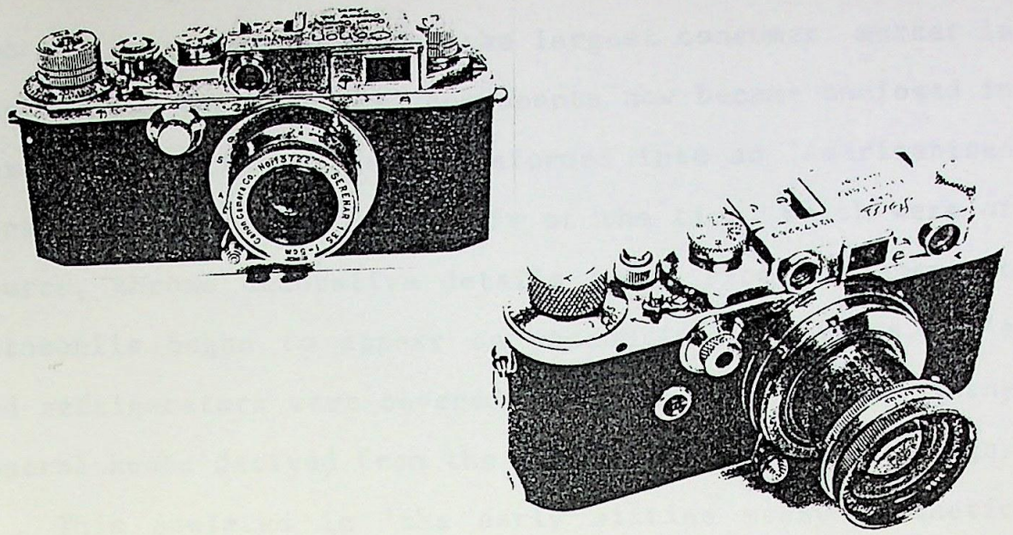


Figure 5 - Japanese 'adoption' is clearly evident from this Canon II camera and its corresponding German Luica IIIA.

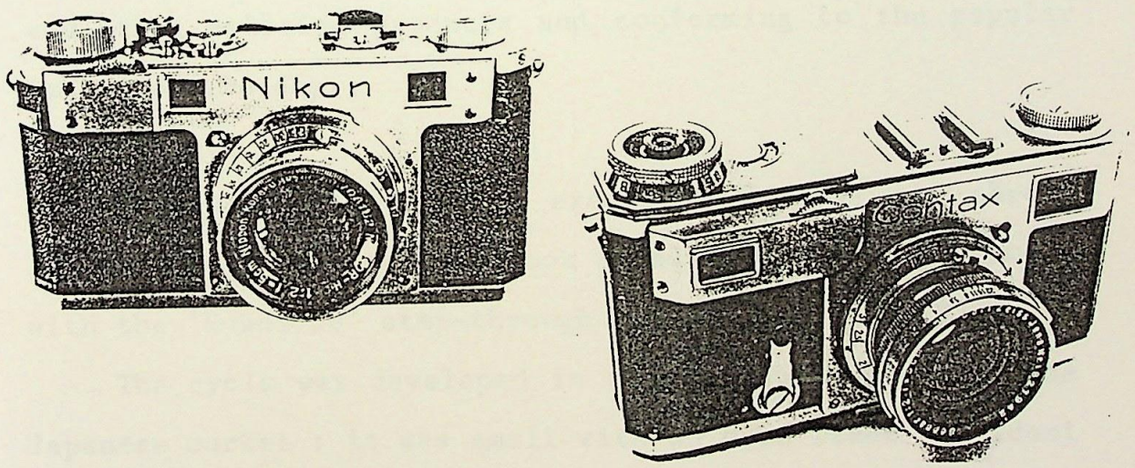


Figure 6 - The Nikon S (1951) is clearly derived from this Zeiss Contax II design (1945).

The Japanese now began to imitate other products on the American market, by far the largest consumer market in the world. Technological components now became enclosed in boxes, the surfaces been transformed into an 'Americanised look'. Popular American motifs of the time, which were of course, chrome decorative details taken from the American automobile began to appear on productions. Radios, TV's and refrigerators were covered with chrome trim with shiny control knobs derived from the 'Cadillac' school of design.

This emulated in 'the early sixties messy aesthetic which relied for its strength on a symbolic expression of technological supremacy'[5]. Thus TV's hi-fi's etc. were covered in large shiny knobs and dials (fig 7) and other popular artefacts such as motorbikes were made to look deliberately complex and aggressive. (fig 8)

A market had been established with definite parameters by Japanese counterpart companies in the U.S. and Europe which had done the market research ground work. The Japanese manufacturers adopted a crude form of marketing emulating existing products and conforming to the popular tastes of the day.

In the midst of these exaggerated forms and chrome details, the Honda company took an adventurous step forward with the 'Honda 50' step-through motor cycle. (fig 9)

The cycle was developed in a form appropriate for the Japanese market : it was small with an open frame and ideal

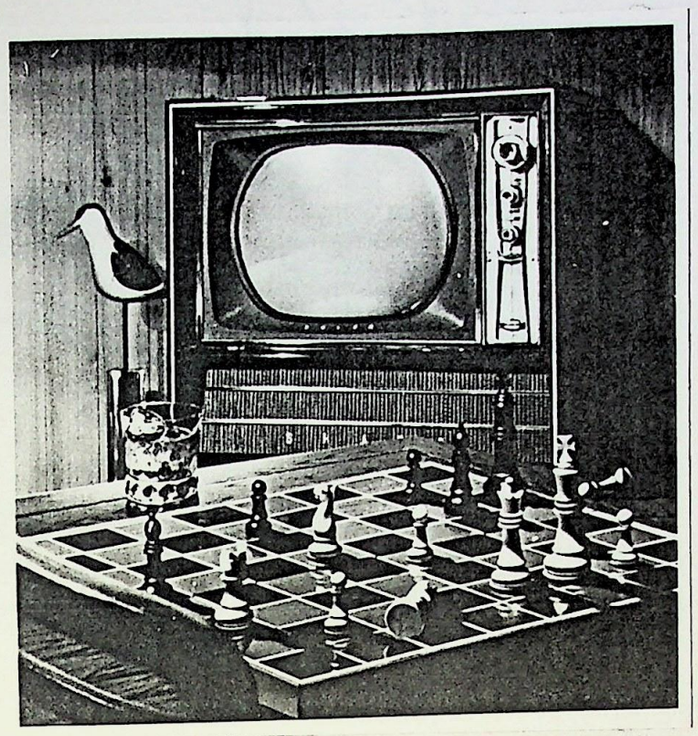


Figure 7 - Sharp's T.V's of the 60's were dictated by American automotive styling as evident in the chrome details of the control panel.

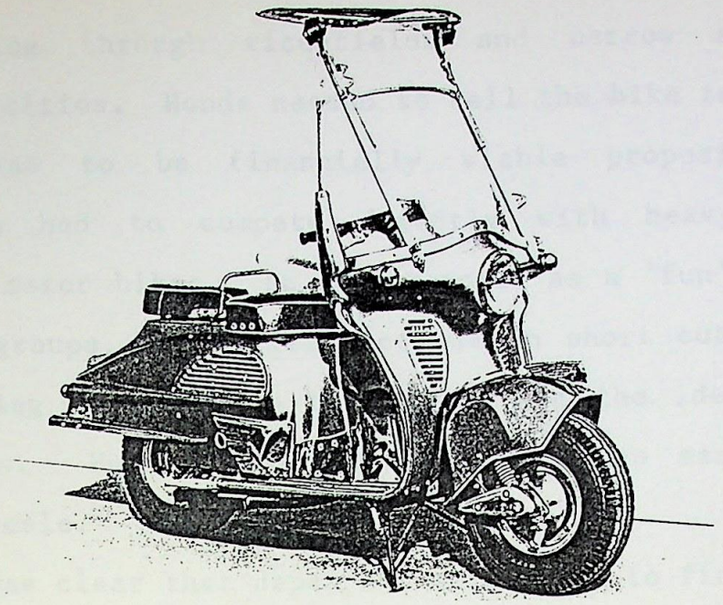


Figure 8 - The Honda 'Juno' motor scooter - Honda first attempt of a scooter resulted in a strange exaggerated mass of Chrome combining American styling with Italian design.

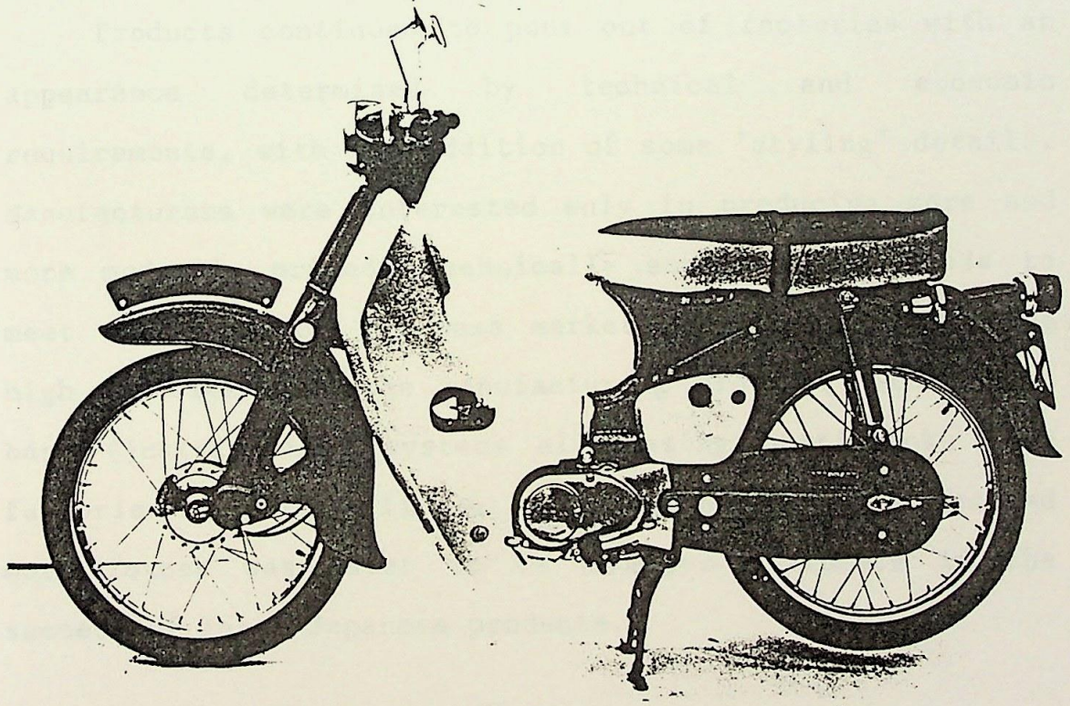


Figure 9 - Honda 50 - like so many of early post war designs the appearance of this motor cycle was dictated by its function. The results was this low priced, light manoeuvrable bike with a small but powerful engine.

for riding through rice-fields and narrow alleys in Japanese cities. Honda needed to sell the bike to the U.S. if it was to be financially viable proposition and therefore had to compete directly with heavy chromed American motor bikes. It was promoted as a 'fun' bike for all age groups, appropriate for use on short outings such as shopping or going to the beach, and the idea quickly caught on. Honda broke into the American market on a massive scale.

It was clear that Japan not merely had to find a style for her products but she also had to market them aggressively if she was to find the much needed intentional outlets for them. From the late fifties onwards, therefore, design became an intrinsic aspect of both the mass production and the mass marketing of Japanese products.

Products continued to pour out of factories with an appearance determined by technical and economic requirements, with the addition of some 'styling' details. Manufacturers were interested only in producing more and more modestly priced, technically sophisticated goods to meet the needs of the mass market. And also 'achieving high efficiency in the manufacturing process, the 'kan-ban' (just-in-time) systems eliminating bottlenecks from factories'[6]. This efficient organisation of factories and work forces was later to be a major influence in the success of later Japanese products.

However, the exhaustive number of products produced all carried a certain crudeness of line, detail and finish. An overall appearance of technical sophistication was evident, influenced heavily by technology but this in turn appealed to the market.

This look was soon to evolve into a new 'high-tech' look which, by the 1970'S, had become a hallmark of Japan and was finding a national identity in an international market. This look became part of cameras, audio equipment and watches, and was to become to 'represent the late-twentieth century aesthetic for high - technology goods'. (fig 17)

But it was probably the automobile industry with the introduction of the Honda Civic in 1972, (fig 10) which asserted this new maturing in design. From the beginning - the early 30's - Japanese auto design consistently imitated Western models, resulting in economic expediency rather than expertise.

The Civic was the first Japanese small car to make an impact on the Western markets. It was designed with more attention to visual detail than most of the Japanese contemporaries and for the first time caused the West to see Japan as a source of design - as well as technological expertise, emphasised by the various design awards for the car styling and design, culminating in 1984 when the civic three door model won the British Industry's

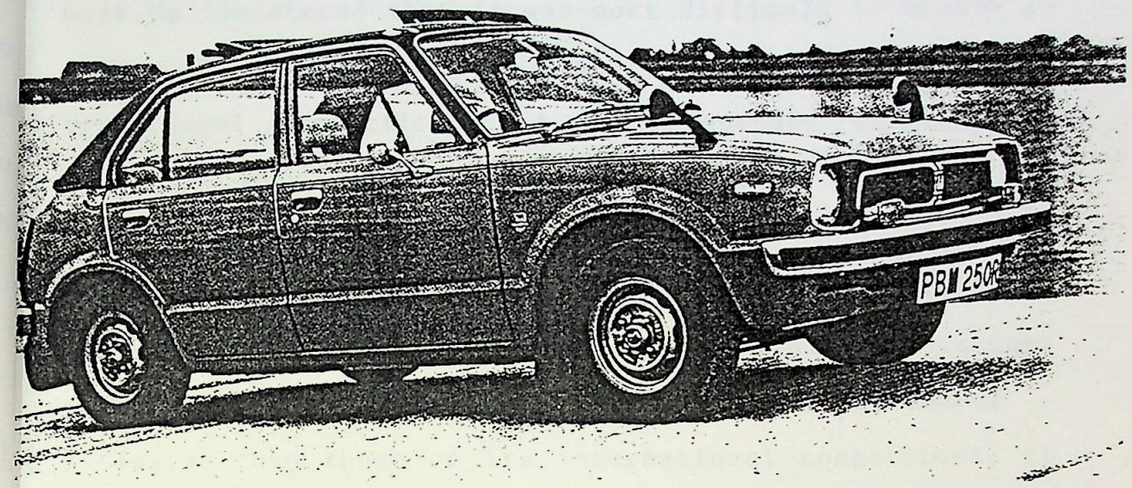


Figure 10 - Honda Civic - the first of a kind to make an impact on Western markets.

Grand Design prize, the first such award to a Japanese motor manufacturer.

In no other area of contemporary production had Japan achieved a greater reputation for its manufacturing ability, low costing, and advanced technology than that of automobiles. However on the basis of aesthetic values it must be remembered that it was most difficult to relate to cultural values and bears little affinity to Japanese traditional aesthetics, and thus depended entirely on American and European inspiration and employed the 'copying' principal indiscriminately.

Emphasis was placed on the internal management of the industry with developments in new systems of factory organisation and production which were less labour - intensive than those of its international competitors; it managed at the same time to maintain high levels of manufacturing accuracy and flexibility in adapting to market requirements.

The Japanese car industry now compete on world wide markets on price efficiency and technical extras. The Honda Civic was the first inclination that they also have started to compete in design too.

CHAPTER 4. TOWARDS A NEW MODERNIZATION

Smaller and increasingly multi-functinal domestic electronic products became a major characteristic of Japanese design after the war proving both design and technology were working together. The emphasis was placed on miniaturization and thus the more sophisticated the technological achievement of the product, then inevitably the more integrated its form and function.

Forerunners in this drive of 'miniaturization' affiliated with a high self-conscious approach to design was Sony. From its foundation, Sony clearly combined technological innovation with a high level of visual sophistication. Committed from the outset to the concept of new audio products which could be categorized as pieces of equipment rather then furniture. Although in its early days, Sony's engineers were responsible for both the products interiors and exteriors, it was in 1951 Sony was the first to seek the advice of trained illustrators and painters in the design if the 'G' tape recorder (fig 11) which was marketed in 1952 - 53. In 1954, Sony hired its first full time in house designer and by 1961 it had 17 designers on the staff. By the 1980's Sony employed 130 designers centrally located in its Product Planning Centre. This reflects the changing roles of the designer once thought to perform a superficial task to becoming product innovators integrated in the processes of manufacturing and

marketing .

In 1951 Sony fitted the tape-recorder into a suitcase thereby turning it into a portable model for domestic use. Again in transistor radios. Sony were leaders producing a 'miniaturized' radio to fit one's pocket - the Sony TR610, (fig 12). It is quite evident this item owes much of its appearance to American styling of the time. The technology is enclosed in a box, the surface of which has been embellished with a shiny gold trim, and 'block' pieces of chrome. Exaggerations of a 50's American automobile head lamp is evident also. Interestingly, the name Sony actually appears prominently on the product, whose scripted style has never changed since, and which today appears a modern logo. It is now a name associated with 'good design' because of its excellent technical qualities, qualities which the Sony corporation had been dedicated towards since its foundations. The Sony script had never become dated because Sony products have never fallen out of fashion and are fore-runners in the audio-market. The Sony logo is understood throughout the world to represent technical sophistication, quality and style.

Miniaturization began a whole new chain reaction. Sony followed its pocket radio with the worlds first all transistor television set, featuring an eight-inch screen and weighing only thirteen pounds in 1959, (fig 13) requirements to integrate the most sophisticated electronic technology both with a need to export as large a quantity

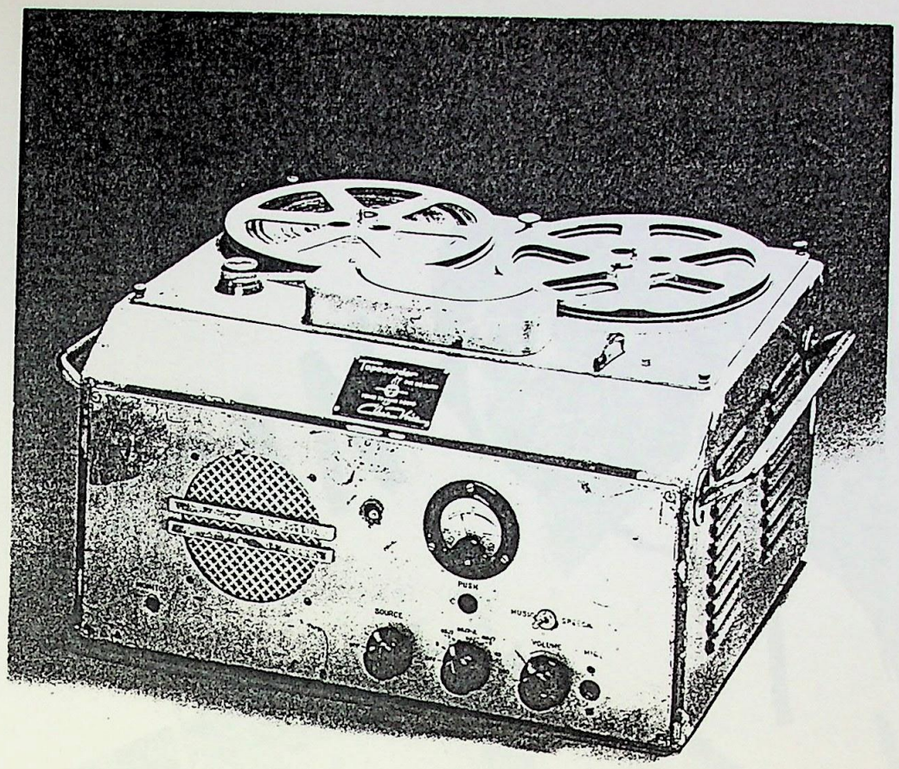


Figure 11 - Sony 'G' tape recorder - the first Japanese tape recorder owed much to war-time technology.

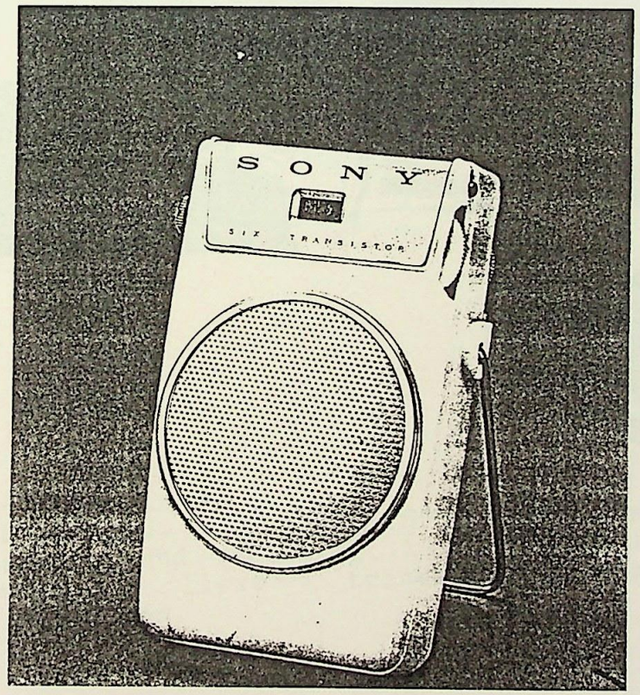


Figure 12. - Sony TR 610 (1958) - the first 'Pocket' miniature radio and the beginning of a Japanese hallmark.



Figure 13. - Sony TV8 301 - an 8 inch screen and weighing 13 pounds, the worlds first transistor sized television.

of miniaturized goods as possible, now reached new peaks.

Also at the forefront in the evolution of miniaturization was the 'Sharp' corporation. Sharp's all - transistor electronic, desktop calculator, (fig 14) was the first example of its kind in the world. Even this bulky form were further transformed with the advancement of electronics and its move towards miniaturization. Sharp's design philosophy was 'priority on easy operation'. In the area of high technology goods it is important that the products both looked usable to the uneducated public and were usable by them. This is very evident in the Sharp calculators. (fig 15)

The model which incorporates a liquid crystal display, was produced in 1973. Lines are clean and sharp which emphasises the logical set-up of the product. It is this display of electronic wizardry which brings to a logical and a strand of post war Japanese production design which stressed the subservience of aesthetics to technological audacity.

Sharp continued to produce and miniaturise calculators as a mark of its technical competence. With even ever decreasing electronic components the width has become wafer thin and now can be fitted into a wrist watch. The following models in figure 16 emplify this. Although reduced to a minimum, their small size exhibit a more technical sophistication. The 'high-tec' appearance is emphasised by the clean cut, unobtrusive lines and

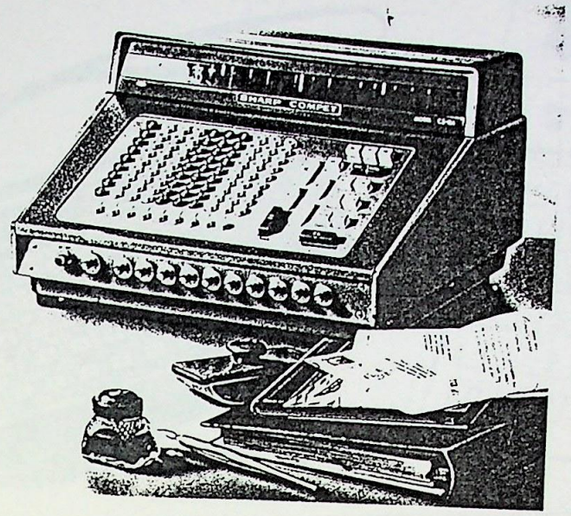
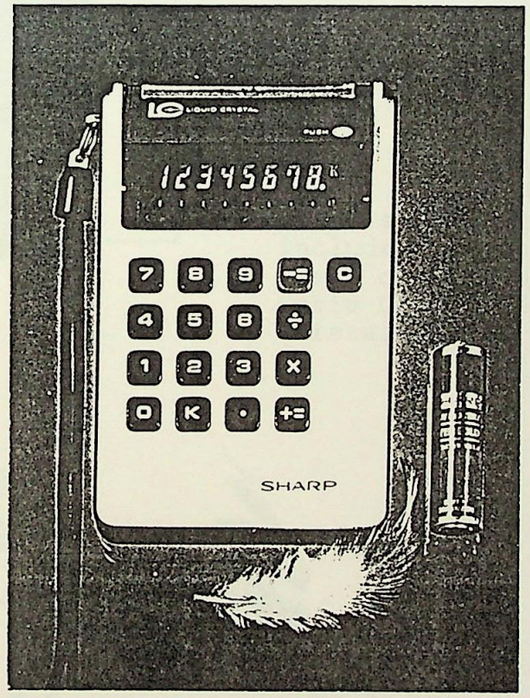
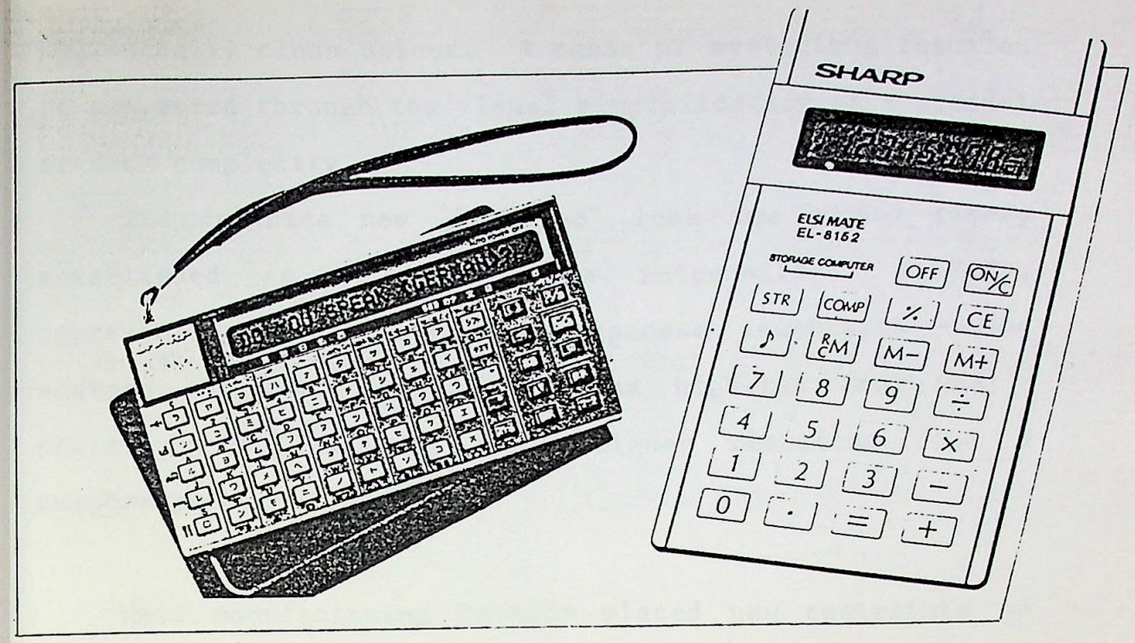


Figure 14. - Sharp's all transistor electronic desk-top calculator of 1946 was soon to be transformed to hand held piece of equipment by the 70's.
Figure 15 below.





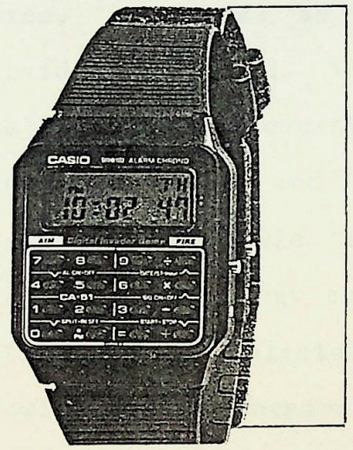
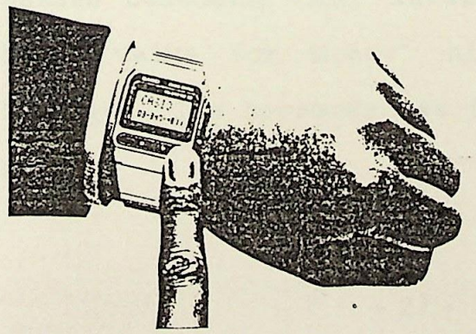


Figure 16. - Continued reduction in size of such equipment amplifies a more technical sophistication.
- included are Sharp calculators
- Casio calculator wristwatch
- Casio DB-1000-Data bank Digital wristwatch.



To input data, write on the glass face with a finger

hygienically clean colour. A sense of mysterious function is suggested through the visual simplification of a product of such complexity.

The Japanese new 'high-tec' look now became firmly established as a hallmark on international markets, representing both aspects of Japanese aesthetics - the austere and the flamboyant. The high-tec look was a philosophy followed by the designer resulting from a complex problem. (fig 17)

Mass manufacturing methods placed new restraints on products resulting in complex technical components in metal boxes. This was an area where the designer needed to provide a visional interest to anonymous boxes and this was achieved by focussing on the design details of control knobs and dials, and by adding graphics to tape systems, hi-fi's and portable radios.

High-technology companies made deliberate attempts to define design policies and in turn form a basis of a growing design movement. An unusual development was the adoption of a more complex look rather than a more user-friendly simple to use appearance. Marketing departments persuaded consumers only intelligent people could operate such a 'value for money' highly complicated piece of technology. The consumer was flattered and sales began to rocket.

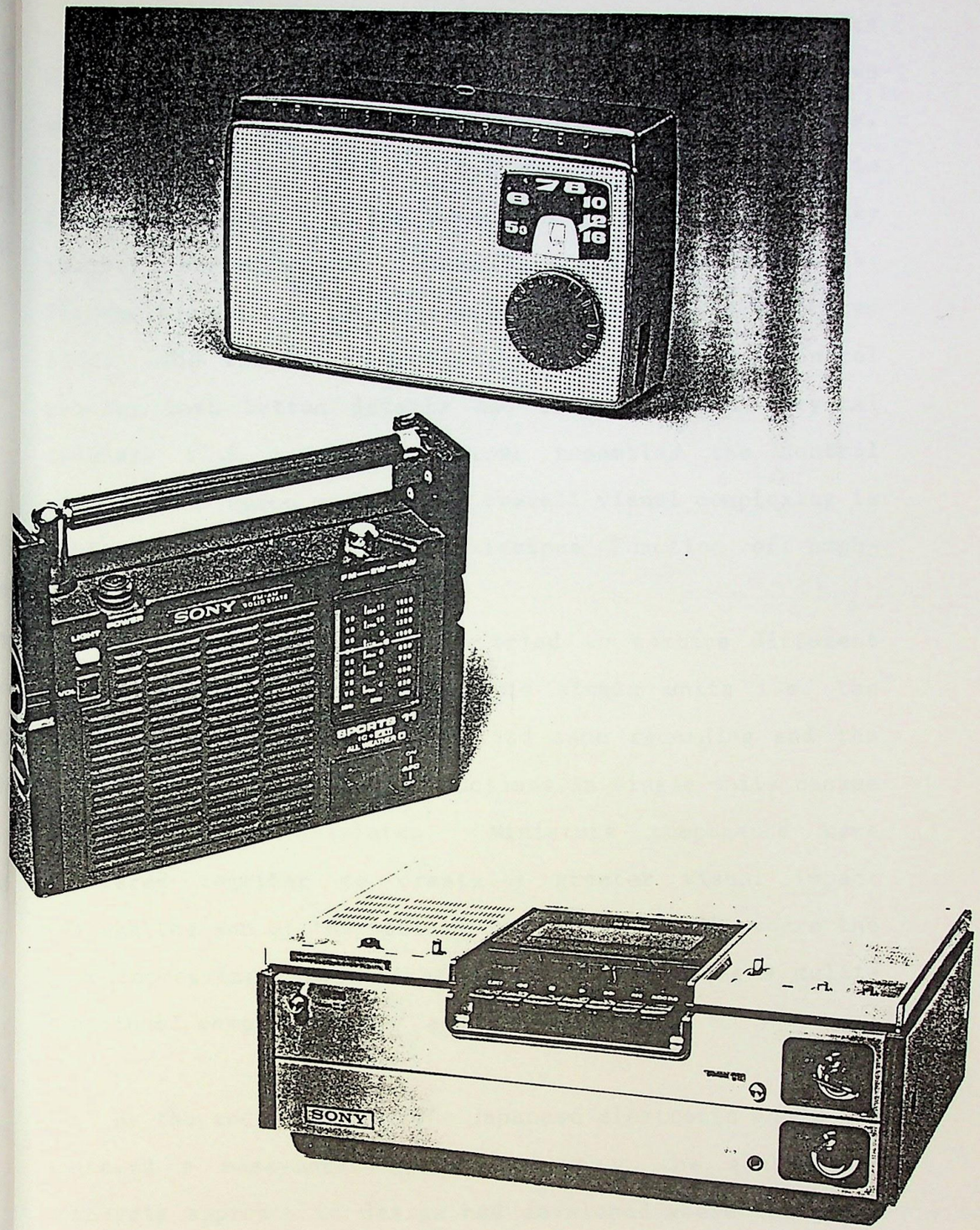
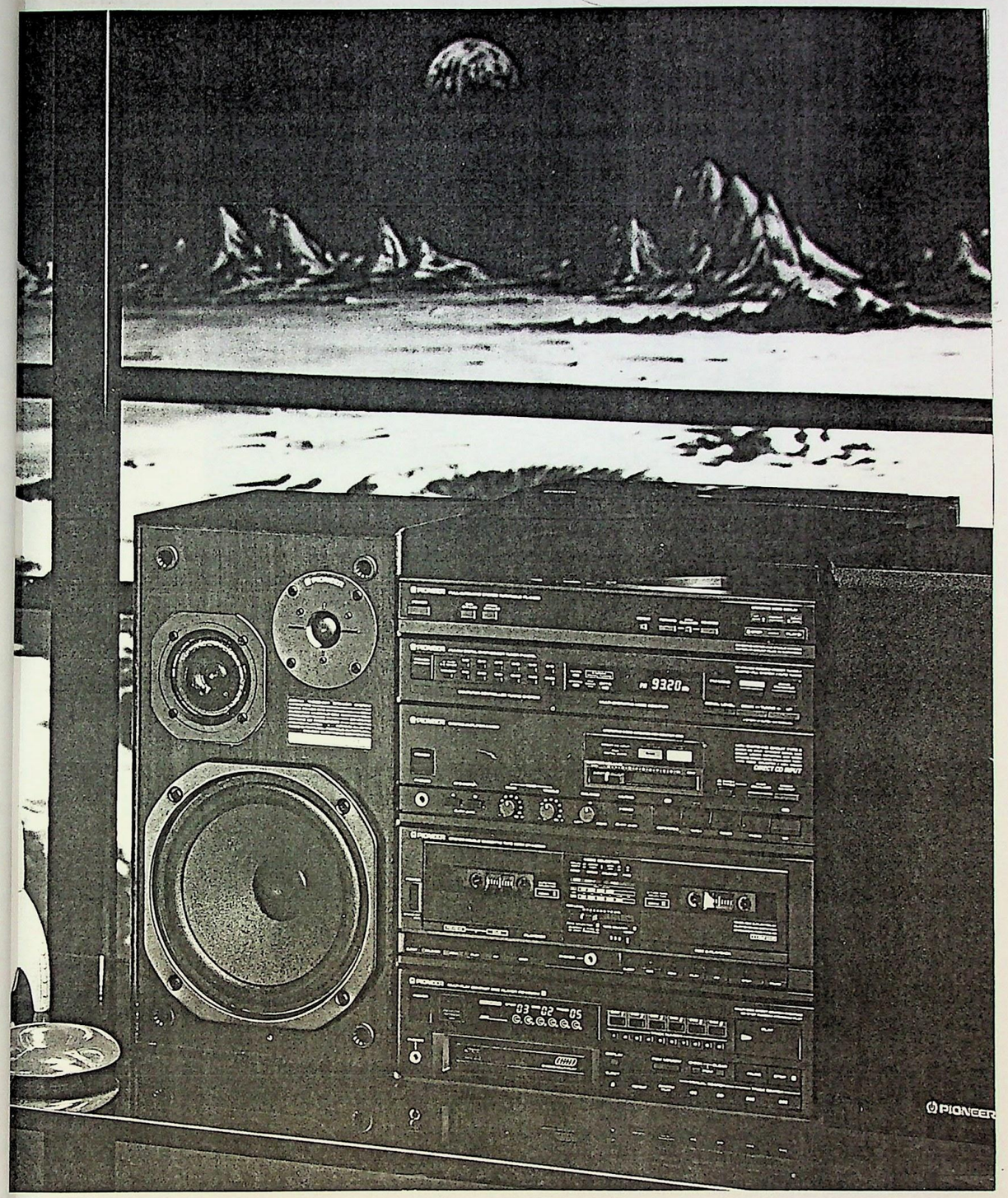


Figure 17. - A new 'high tech' appearance emphasised by clean cut unobtrusive lines demonstrate Sony's development of a crisp technological styling of the 70's. Above include TR55 Radio (1955), the ICF-111 radio (1970) and SL-7300 Betamax video cassette recorder (1975).

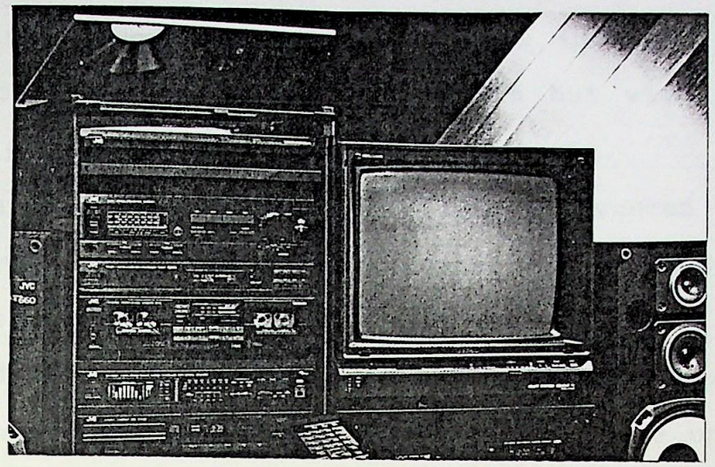
Design teams worked alongside market departments working to their requirements. Liquid crystal display and electro-flashing points increased the sophisticated look. Audio and video equipment took a more complicated satin finish appearance. A new dimension of space and military imagery characterized 'modern' domestic environments. Figure 18 optimizes the aggressive, sophisticated, high-tec look. The all black hi-fi system with complex control panels, push button details and flashing liquid crystal displays with graphic equalizer resembles the control console of a space rocket. An overall visual complexity is achieved emphasizing the mysterious function of high-technology.

Increasingly, designers tried to combine different functions of audio products into single units i.e. the integration of record playing and tape recording and the tendency to house discrete functions in single units became more and more obsolete. Miniature components were clustered together to create a greater visual impact through the sum of the parts. Such is figure 19, where the ever increasing miniaturization of 'cogs' became a multi-functional complex 'wheel' assembly.

By the end of the 1970's Japanese electronic goods had achieved a mass-market presence around the globe. A corporate approach to design had developed where designers worked as a team within a company. Designers reflected a



Figúre 18. - The black complex control panel reflects a new dimension of mysterious 'modern' space imagery.



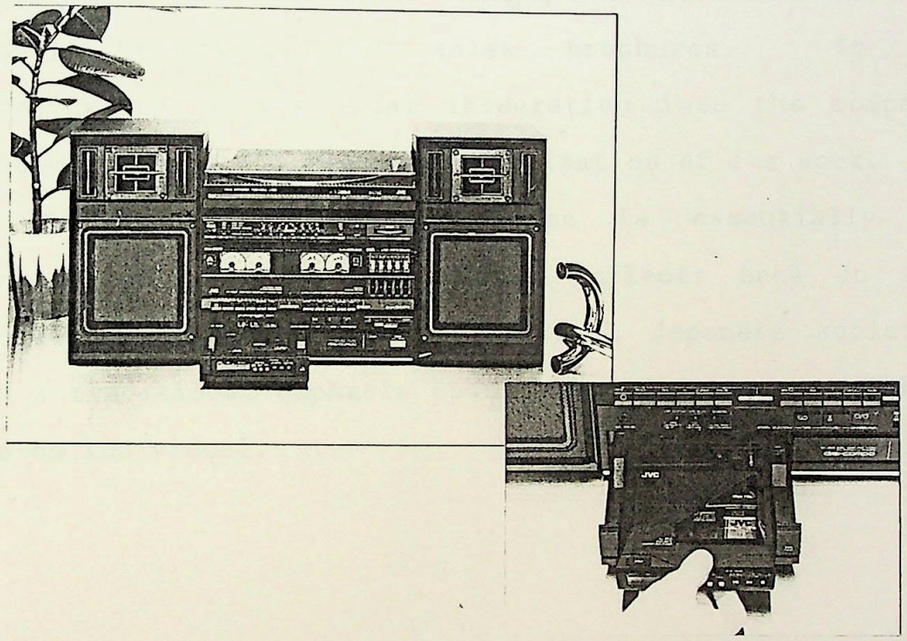


Figure 19. - Different functions became massed together creating a greater visual impact.

changing role from early stylists to product innovators and increasingly integrated in the process of manufacturing and marketing. Many leading Japanese high-technology manufacturing companies employed large design teams, located within the marketing departments but with direct links with production engineers.

The manufacturers approach to design, favoured the in house anonymous individual, or teams, who received no personal credit or recognition for their work. In corporate design the company name was much more important than the name of the individual designer. Made up of a group of professional trained, anonymous company men, the design team within a Japanese manufacturing company is responsible for the firms image, in addition to the products packaging and sales brochures. It is characterised by its total integration into the company structure and by the rigorous organisation of its work.

The designers role in Japan is essentially an anonymous one. Of course, this reflects back on the homogeneous nature of the traditional Japanese society, with a traditional emphasis upon the social groups, rather than on individual.

CHAPTER 5. THE 80's PERSPECTIVE

The concept of 'cultural variation' has been recognised with increasing emphasis in recent years within product design. A new awareness of design as a variable, responsible primarily for linking a particular product with a particular market, or with one sector of it, as identified. Manufacturing processes now moved from a system of mass production to providing variations in smaller numbers with the increased use of automatic techniques in the production stage.

Product variation evolved to a maximum in the early 1980's with the emergence of a youth market. A youth market who wanted artefacts to reflect their youth, fun and happy life style in general, with technological complexity, mystification, seriousness and sophistication non-conjusive to such a market, figure 20. A more widespread use of plastics instead of metal, helped to produce a rounded look and a greater range of colours reflecting the character and potential of plastic processes. Bright colours of red and green and subsequently pastel shades served to dilute the highly mechanistic imagery of earlier products. Again the inspiration for such a change was borrowed from abroad - by the avant-garde Italian designers. Numerous Japanese manufacturers enthusiastically produced new 'life-style' goods, highly fashionable items appealing to the young.

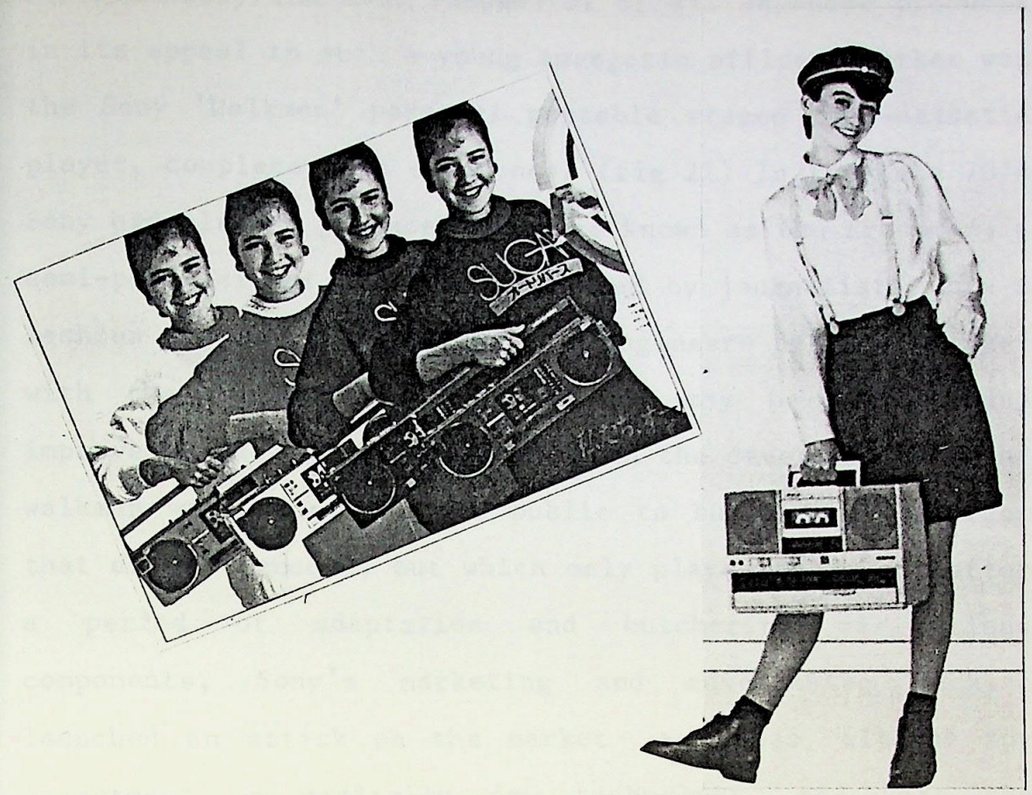


Figure 20. - A youth market create a demand for products which reflected their 'youth, playful happy lifestyle'.



Figure 21. - The Sony Walkman - one of the most successful cult objects of all time.

Probably the most successful of all Japanese products in its appeal to such a young energetic affluent market was the Sony 'Walkman' personal portable stereo tape-cassette player, complete with earphones. (fig 21) In the late 70's Sony had already produced a device known as the Pressman, a semi-professional tape recorder used by journalists. In a fashion typical of the company, engineers began to tinker with the equipment to see how it may be adapted and improved. The crucial innovation in the development of the walkman was persuading the public to buy a tape recorder that did not record, but which only played back. So after a period of adaptation and butchering of various components, Sony's marketing and advertising machine launched an attack on the market and thus, without any investment in radically new technology, and with the practical decision to save space by printing on both sides of the circuit board, Sony had given itself a product that advertised its expertise in both high-quality sound reproduction, miniaturization and perhaps, most important, its ability to find vacant slots in the market.

It was not fully suspected just what an astonishing international success the walkman was to become and in a sense give them the lead to a whole new market : personal stereo.

This ability to satisfy the informal tastes of the young at their leisure created a whole new demand for this combination of high-technology and design flair. Sony had

treated this item of sophistication as a piece of jewellery, meant to be worn conspicuously, with tactile controls and spongy orange head controls.

'Sony's triumph lay in its ability to package the walkman in a form that was not only capable of being carried around strapped to the body, but which also looked at home when it was'[7].

The walkman was to become one of the most successful cult objects of all time selling two million units with 18 months of its launch. Very quickly these machines were also to shrink even less and produce many different model changes. Probably the most adventurous of the walkman 'sets' is the sport version (fig 22) whose yellow casing, clearly intended to signal 'waterproof' diver's equipment, and implying that anything a diver may do 20 fathoms down is not only tough and sporty but glamorous too. However the small print on the box reveals it will withstand a gentle splashing and no more. Sony's aggressive marketing machine had mastered the process of manipulation by persuading the public to their own advantage.

Since then all Sony's competitors have entered 'the race' once the market had been confirmed with each making alternative cosmetic graphic additions. Toshiba have gone further than most, frankly turning their version into a fashion accessory (fig 23), coming in a choice of nursery colours, with decorative shapes for controls. A full range

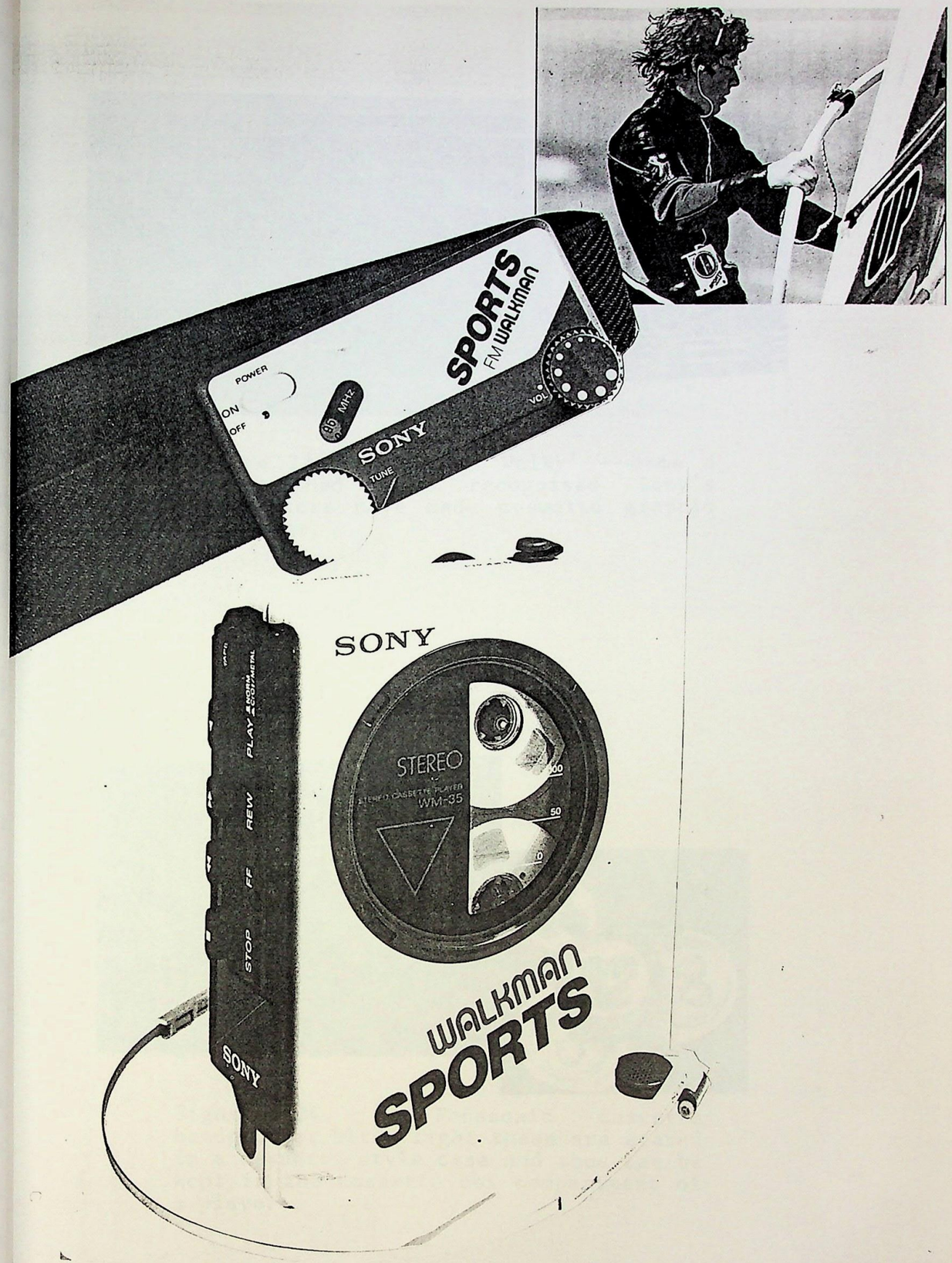


Figure 22. - Sony 'Sport' - 'with characteristic ingenuity Sony had continually introduced new models of the 'Walkman'. Each new feature and even more of the allure of professionalism of its predecessors. Not a single segment of the market has been left unexplored'[8]

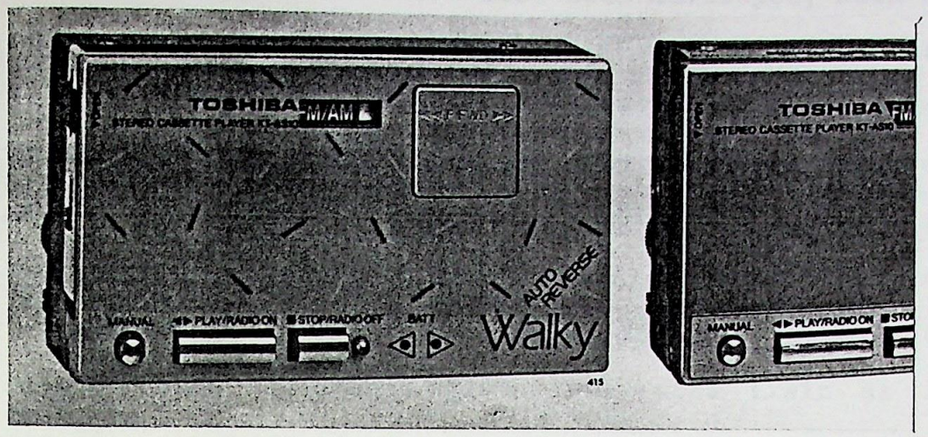


Figure 23. - Toshiba 'Walky' - once a market had been recognised Sony's competitors have made cosmetic graphic additions.

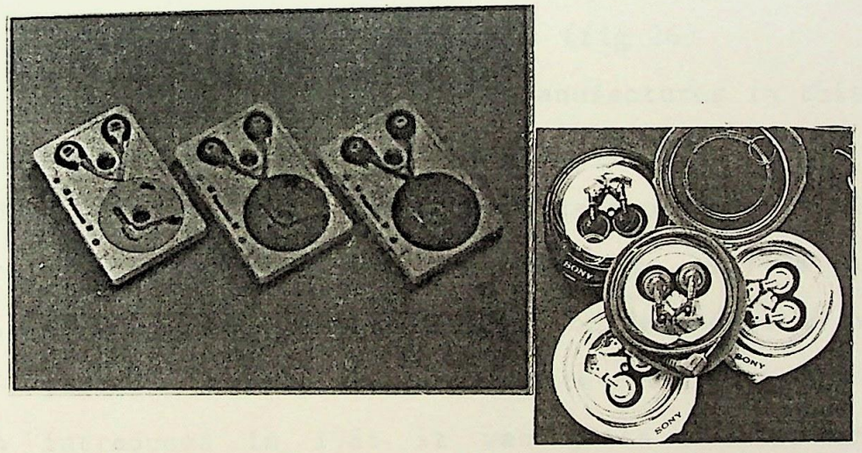
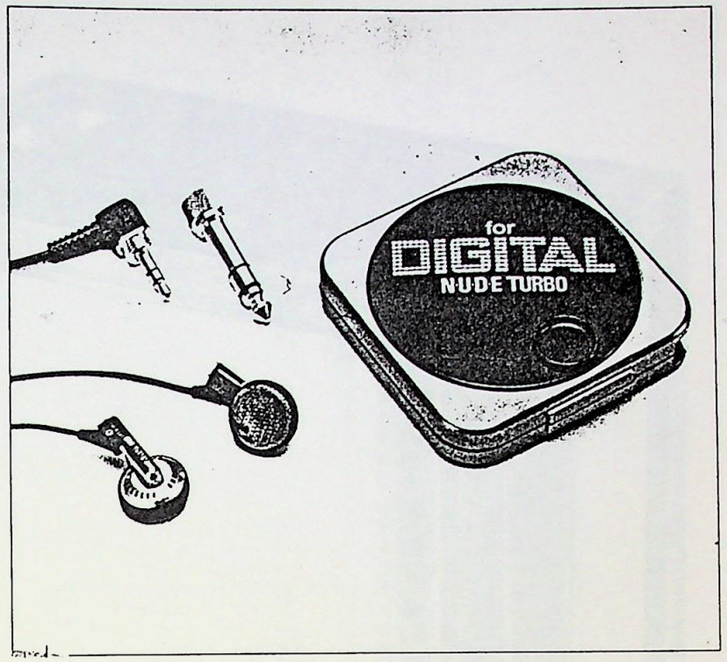


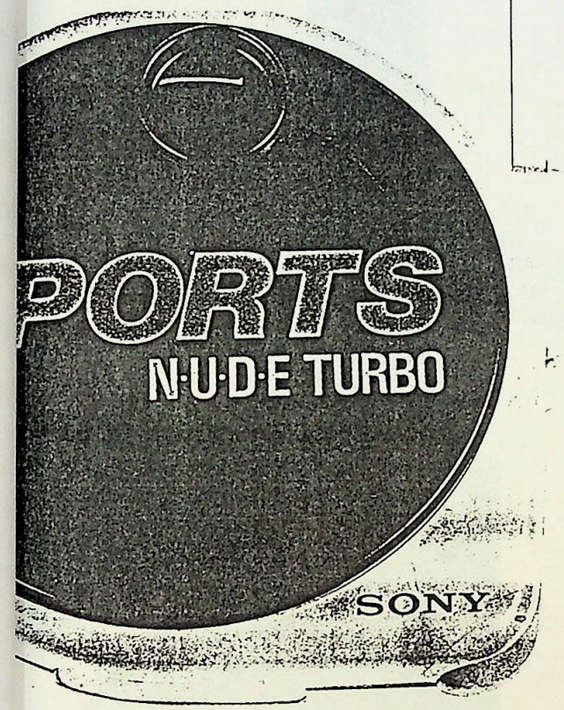
Figure 24. - Panasonic cassette headphones. Ultra light these are stored in a cassette style case and thus can be kept in the cassette box compartment of a player.

of innovative accessories have also been developed, such as the ultra-light headphones (fig 24) stored in a cassette style case. They can be kept in a cassette box compartment of a recorder when not in use and also come in a range of colours. Words such as 'Turbo'; 'Digital' and 'Sports' became crucial talismanic words, no longer found solely on the backs of car but transferred to the context of miniature audio equipment, giving an extra flair as in figure 25.

Conventionally however, 'Sony had resisted moving away from the 'classical' aesthetic it developed in the late 1970's and many of its 1980'S products retained the familiar black and chrome look. It has remained, essentially, conservative in its design approach, concentrating its efforts on technological research and pioneering such innovative products'[9] as the 'Watchman' portable and 'Profeel' televisions. (fig 26)

In contrast, numerous other manufactures in this area leapt enthusiastically into the area of 'life-style' goods producing ranges of fashionable goods appealing to all the young - some learning valuable marketing ploys along the way. Such was the case with Sharp on introduction of its QT50 portable stereo radio-cassette-recorder (fig 27). When introduced in 1984 it was quite radical in its appearance in relation to similar products. It employed neo-fifties imagery remmiscent of functional stream lining, and using 'borax' a formal cliche used by American stylists





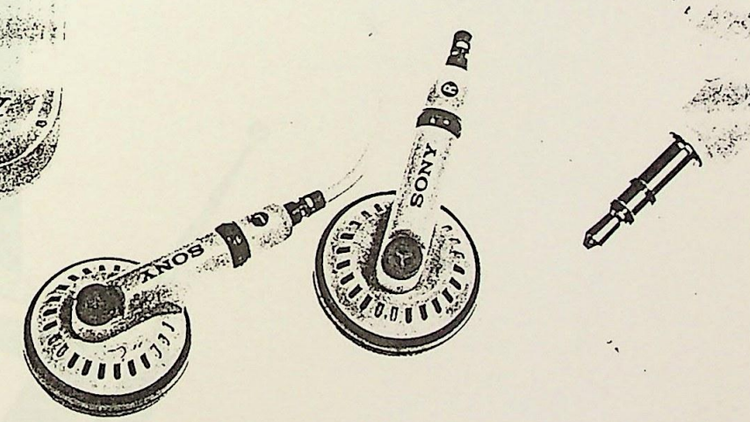


Figure 25. - Audio equipment becomes more 'macho' with such talismanic words as 'Turbo', 'Digital' and 'Sports'.

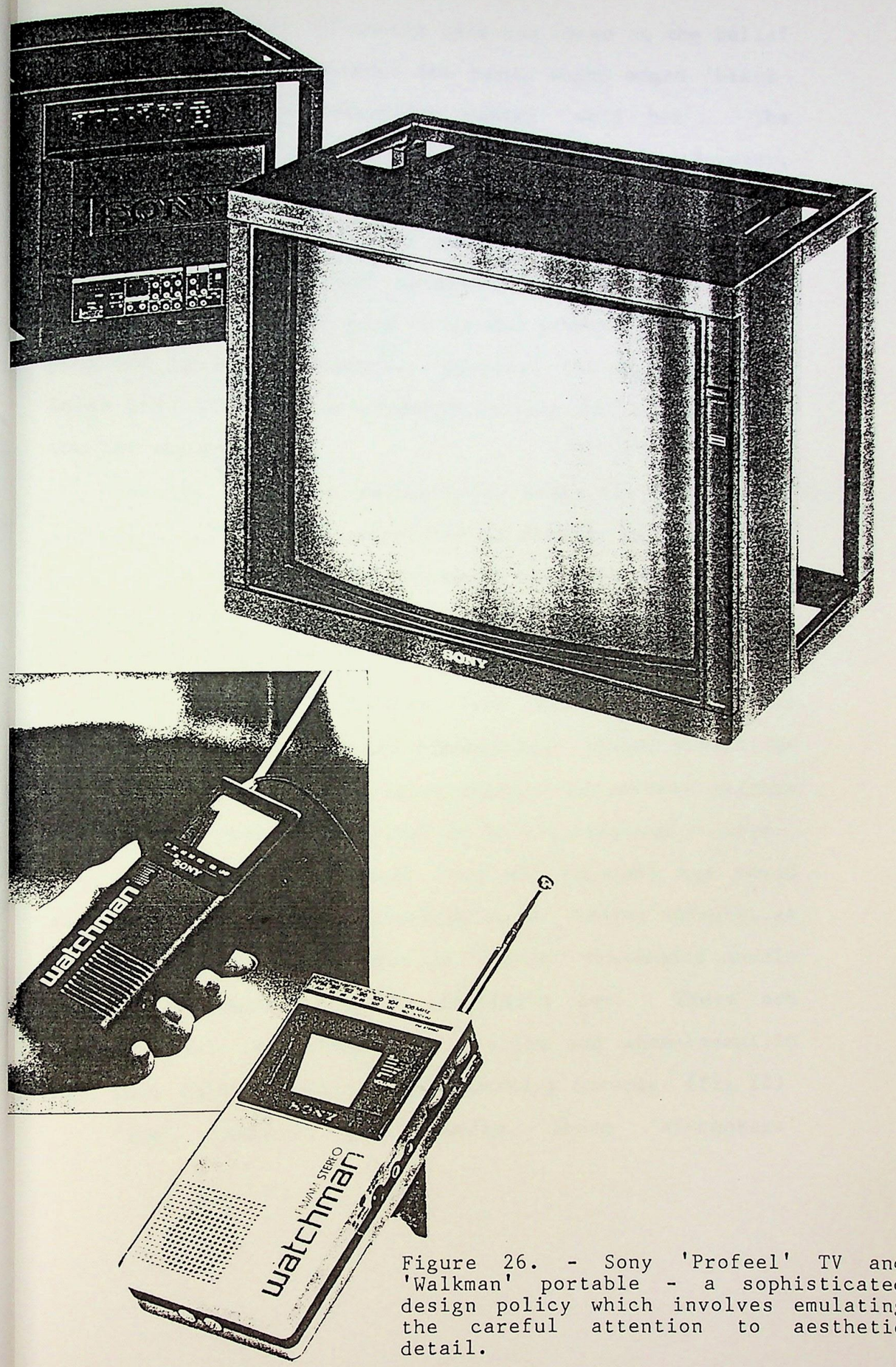


Figure 26. - Sony 'Profeel' TV and 'Walkman' portable - a sophisticated design policy which involves emulating the careful attention to aesthetic detail.

during the forties. Of course this was based on the belief the public no longer needed the hard, sharp edged 'black-box' and wanted a friendlier pastel 'soft box'. The product was a failure and the product withdrawn. However, later Sharp introduced a similarly styled mono cassette plater,the QT 212E (fig 27), which was more successful. A smaller asymmetrical and initially coloured differently (red instead of pastel pink or green) product it was later produced in pastel colours. However, the QT 212 had an image less alien to contemporary society and is the reason for its success.

Perhaps it is the evolutionary stage the QT50 missed and as yet could be re-introduced as already in Japan there is a flood of 'copy-cat' coloured and sculptured 'life-style' products.

Now domestic appliances from washing machines to television sets have become symbolically linked with life-style simply through the appropriation of certain colours and a strong stylistic revival of 1950's American culture.

Even cameras, the most confined artefact had moved away from black sharp sophistication to bright objects, as illustrated by Canon's range of 'snappy' instamatic models making the camera into a simplistic toy. These are combined with technological innovation and advancement,in this case fully automatic self-focussing cameras. (fig 28)

'Toy' cameras, pink radios, Sharp 'hi-cookers'

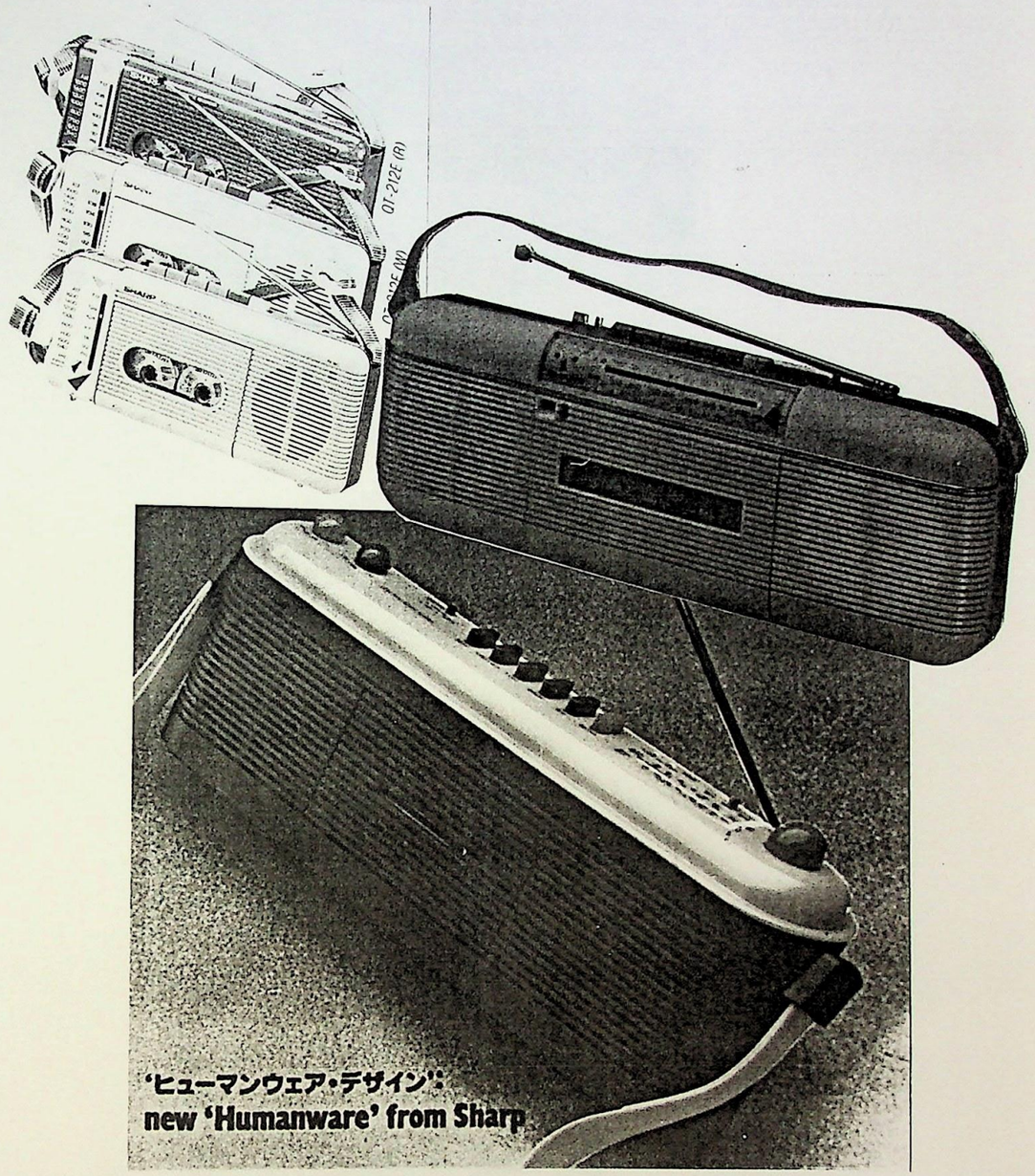


Figure 27. - Sharp QT 212 revitalises the 50's look - clockwise QT 212, QT 50, and Sharps latest addition, QT F40.

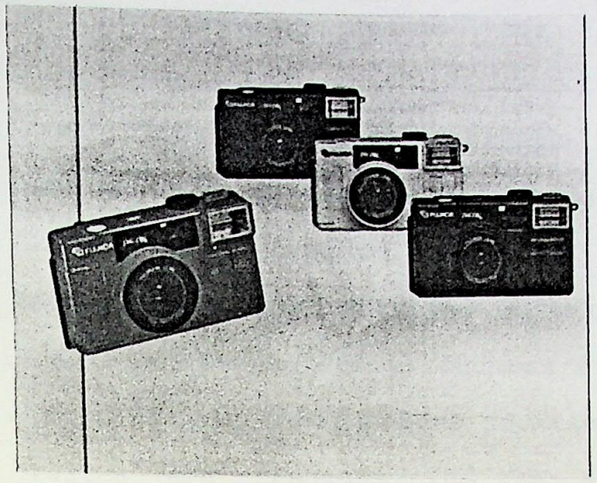


Figure 28. - Canon 'Snappy' - the underlying message is of a sufficient confidence in the product to take the performance of high technology equipment for granted and secure enough to decorate in toy like colours yet safe enough that no one will take it for a toy.

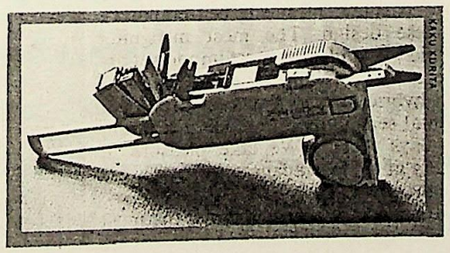


Figure 29. - The Factory.

(manufactured in white, pink, yellow , turquoise and burgundy), Sanyo baby blue 'Taro' vacuum cleaners, and Toshiba's pastel-coloured alarm clocks and hair driers all became part of a growing demand for life-style accoutrements.

Providing such life-style goods through production variation has come quite easily to the mass manufacture of goods since Japan are leaders in the automated manufacturing technology, experimentation in such an area was very possible. The technological success of Japanese manufacturers contributed to their unique position to cater for changing tastes and fashions in the styling of electrical goods. And thus, not surprisingly Japan is the first country to experiment commercially with a post-modern approach to product design.

Japan is now calling the tune where design is concerned in a number of areas and is one of the strongest forces behind the contemporary 'international style'. Japan is no longer following but is actually leading the way in the design of a number of products. Designers are now looking at the simple applications of every day life and developing it into a viable consumer product. Yet while simplicity is appreciated Japanese consumers are now demanding gadgets 'Two tendencies which sometimes end in conflict, with well meaning products suffering from the weight of good intentions. Example: a jackknife - style

set of scissors for the office that unfolds to reveal a small arsenal of handy, if somewhat superfluous, desktop tools'[10].

The factory (fig 29) made its appearance in December 1986 - for non desk workers, is clearly inspired by the Swiss army knife. Instead of containing a bottle opener, saw etc., it integrates all the desk top accessories into a pen knife case. Folded away and released by little buttons, are a 1m tape, a roll of tape, a scissors, lens, blade, staple remover and a stapler.

Plus manufacturer of the 'Factory' have emphasised their hold on the market of small scale miniature stationary by also produciing a popular fashion conscious stationary kit. This brings together a range of miniature desk tools - scissors, glue, ruler, cutter, tape and a stapler all in a little elegant packaged box, Team-Demi : figure 30. It is a simple idea, pleasinly executed, and so far 5 million have been sold. The idea was soon pirated by the Tiwanese companies and now the kit is freely available to the markets of U.S. and Europe.

Plus have succeeded in establishing an identity as a manufacturer of very distinctive products for a particular distinctive market - free lance yuppies - products which are very Japanese in their neatness and diminutive scale slightly quirky and marginal, yet strong enough conceptually to sell by the hundreds of thousands. Another product asserting this is the companys 'copy jack', (fig

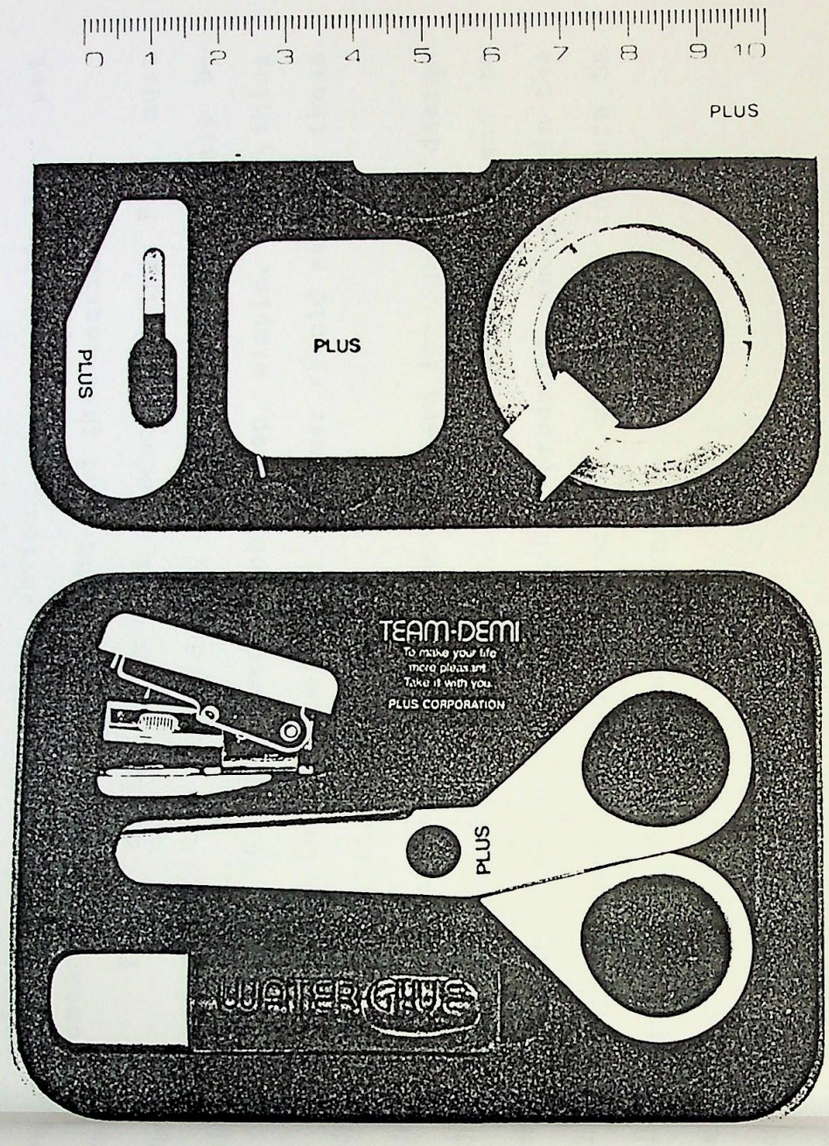


Figure 30. - Team Demi Stationary Kit.

31), which is 'a better pair of scissors', a simpler and more convenient way of amassing newpaper clippings. The portable photocopier bears a strong resemblance of the classic Olympus XA pocket camera, (fig 31), a camera which is descreet and almost invisible offering the owner more private pleasures than obvious show off display, yet somehow manages to flatter the hand that carries it.

Every design idea and product leaving Plus must conform to the firms design policy. 'This can only be summed up in three words : chic, pop, simple. Everything we produce for the individual consumer should express these three qualities'[11].

Again proving that the way forward for Japanese design is to take individual application to daily life and to develop them into viable consumer products, and thus in the process create a whole new product which will in turn be imitated by other manufacturers.

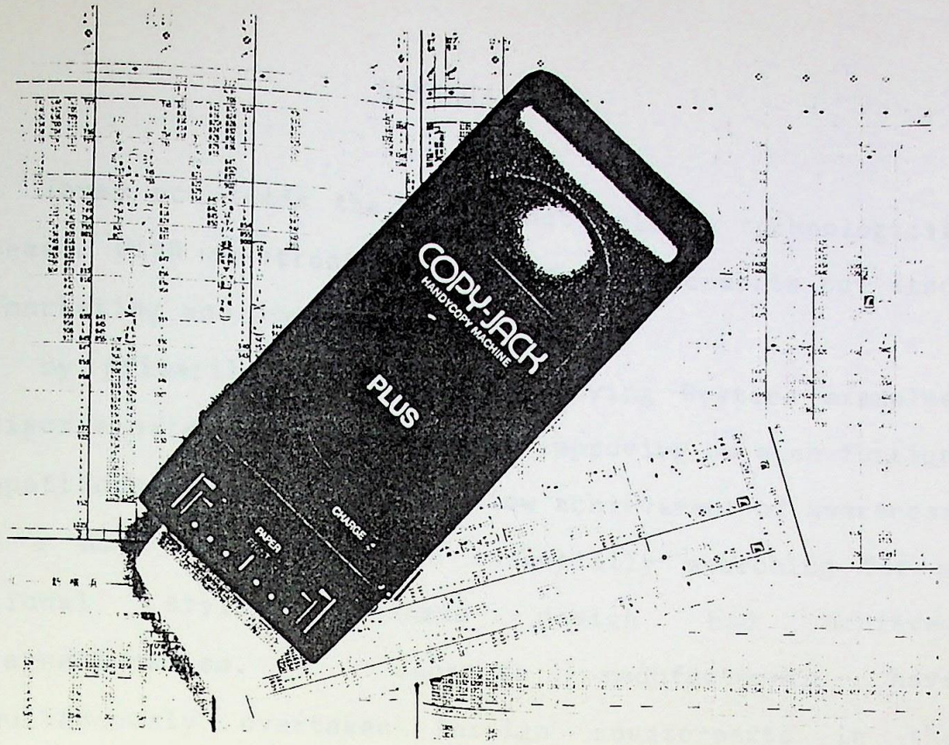


Figure 31. - The Copy Jack and the Olympus XA pocket camera.

CONCLUSION

Japan now leads the world, not only in technological research with electronic and robotic advancements but also in marketing and product design.

By primarily imitating and copying Western examples indiscriminately and subsequently improving on such foreign competitors coinciding with a slow achievement of awareness and a hold on markets,when essentially searching for a national style, Japanese design had achieved internationalism. Japanese manufacturers have simultaneously overtaken foreign counterparts in the manufacture of electrical and electronic goods,and have enthusiastically produced objects for the cultural variety of the 'post modernist' society on an even wider scale than those countries in which it originated. 'The red Canon camera and pink Sharp radio are merely the tip of the iceberg'[12].

The production of enormous amounts of high technology products is now a Japanese trait whose level of sophistication is better than Western counterparts. From an objective point of view it is difficult to observe links with Japanese cultural values and all important aesthetic traditions. However these links do exist. Though continued inclination for electicism ; its continued ability to take from the West without necessarily getting absorbed in it, its ability to embrace change and foreign

influences but simultaneously to relate these influences to its cultural past and its obsessive interest in quality, whether of technology or design.

Today, 'life-style' is triumphant in Japan. Aesthetics coincide with the self-image of the roller skating teenager from clothes and music to food and products. Manufacturers have succeeded in their abilities to satisfy this informal taste of the young, exploiting this trend, producing goods with a strong 'life style' orientation coinciding with extensive marketing programmes.

Japan has created its own concept of design which represents a complete amalgamation of design from technology and innovation to marketing and an aesthetic awareness demonstrated in a range of styles from minimal to decorative, from modern to post modern.

It is a style borrowed from elsewhere, related back to cultural traditions and then in turn formed into a whole unique phenomenon - distinctly Japanese concluding in a design of cultural richness and visual excitement and which has undoubtedly been a key factor of Japan's economic success.

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