THE NATIONAL COLLEGE OF ART AND DESIGN

'TELEVISION RECEIVER DESIGN'

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BY

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"TELEVISION RECEIVER DESIGN."

Frontispiece illustration: MAX MANIA.

The 'computer generated' talk show host, MAX HEADROOM, appearing on a 1954 PHILCO 'Predicta' free standing television receiver, with Matt Frewer (left), his human counterpart, and Peter Wagg, one of his creators.

'TELEVISION RECEIVER DESIGN'

CONTENTS

LIST OF ILLUSTRATIONS:

ILL. 17 HALLICRAFTERS television receiver designed by Raymond Loewy, 1948.

ILL. 18 MURPHY television designed by R.D. Russell, 1949.

ILL. 19 MURPHY V134 designed by Eden Minns, 1949.

ILL. 20 COSSOR 932 AC, 1953.

ILL. 21 FERGUSON 996, 1953.

ILL. 22 HMV 1824, 1953

ILL. 23 BUSH TV12, 1949.

ILL. 24 EKCO TMB 272 9inch portable, 1955.

ILL. 25 Table of Manufacturers and Tradenames used.

ILL. 26 MURPHY television receiver designed by Robin Day, 1956.

ILL. 27 KOLSTER BRANDES New Queen Receiver, 1957.

ILL. 28 The ULTRA range of televisions, 1960.

ILL. 29 Side elevation of the ULTRA television set.

ILL. 30 ULTRA's television only model (left) and television and radio model (right), designed by Eric Marshall.

ILL. 31 RV126 Movision designed by Pier Luigi Spandoline, 1954.

ILL. 32 17/18 PHONOLA designed by Berizzi, Butte and Montagni, 1956.

ILL. 33 Gino Valle's television designed for Zanussi in 1959.

ILL. 34 PHILCOS 'Predicta', 1954.

ILL. 35 FERGUSON 2000 Colourstar receiver 1967. Price £363 (about £1800 in 1987).

ILL. 36 MURPHY V1913 19-inch black and white receiver, 1968, available in orange, blue or bright green.

ILL. 37 SONY TV-8-301 8-inch portable television, 1959. The world's first fully transistorized television.

ILL. 38 PERDIO 'PORTARAMA' 9-inch portable, 1964.

ILL. 39 BRIONVEGA 'DONEY' television. Europe's first fully transistorized television designed by Richard Sapper and Marco Zanusg in 1962.

ILL. 40 BRIONVEGA 'ALGOL 11' television designed by Richard Sapper and Marco Zanuso in 1962.

ILL. 41 BRIONVEGA 'Black 12' television designed by Richard Sapper and Marco Zanuso in 1969. The logical conclusion to the 'efficiency style'.

ILL. 42 RCA French Provincial television receiver designed by Thomas Green in the late 60's.

ILL. 43 RCA Victor cabinet television receiver designed by Thomas Green.

ILL. 44 RCA Victor portable design by Bernard Radtke in the late 60's.

ILL. 45 A prediction of how televisions would look in the 1980's.

ILL. 46 PHILIPS 26-inch television, 1970.

ILL. 47 SONY KV1320 17-inch colour receiver. Costing just under £200 when introduction in 1971.

ILL. 48 BRIONVEGA 'ASTER' 20-inch television designed by Mario Bellini in 1970.

ILL. 49 French portable television from the early 70's with unusual fish-eye front.

ILL. 50 UP/1 24-inch television with disappearing screen design by Macchi Cassia in 1971.

ILL. 51 Voxson 'Oyster 1228' portable television designed by Rodolfo Bonetto in 1975.

ILL. 52 SONY 'JACKAL' commando television in the late 70's.

ILL. 53 BRIONVEGA 'ALTA FEDELTA' designed by Mario Bellini in 1979.

ILL. 54 SINCLAIR RADIONICS "MICROVISION" pocket television design by John Pemberton and the Sinclair Radionics design team in 1978.

ILL. 55 SONY 'PROFEEL' component television system designed by Sony's Product Planning Centre in 1980.

ILL. 56 TRINITRON cathode-ray-tube.

ILL. 57 SONY 'PALMVISION' and 'FLAT TV', 1982.

ILL. 58 FLAT cathode-ray-tube.

ILL. 59 SONY 'WATCHMAN I' and 'WATCHMAN II' 1983.

ILL. 60 SINCLAIR RESEARCH 'FLAT SCREEN POCKET TV', 1984.

ILL. 61 AUTOVOX 'AX-16' shock resistant television, designed by Cesare Casati and Emanuel Ponzio in 1981.

ILL. 62 BRIONVEGA 'MEMPHIS' television, 1981.

ILL. 63 'HI-FI' television designed by Michele de Lucchi for Memphis in 1981.

ILL. 64 ZANOTTA 'TELEVISION TERMINALS' designed by Ugo La Pietra in 1982.

ILL. 65 BANG AND OLUFSEN 'BEOVISION MX2000' 20 inch colour receiver, 1986.

ILL. 66 SONY 'TRINITRON KV2212", 1986.

ILL. 67 FERGUSON "TX", 1986.

ILL. 68 Television designed by Winfried Scheuer in the Royal College of Art in 1981.

ILL. 69 Television system designed by a post-graduate student of industrial design at the Royal College of Art.

ILL. 70 Chris Barlow's 'KNEELING MAN TV" from the Royal College of Art 1984.

PREFACE :

As we now live in an age of consumerism, our methods of communciation with each other are increasingly mass produced. Along with the telephone and radio, television has transformed the world into a 'global village'. In a relatively short space of time, television has entered the lives of practically every individual in the developed, and to an extent, the undeveloped world. Although performing the same basic function, displaying transmitted images, the television receiver, since its inception, has been subjected to the strangest amalgam of shapes, styles and designs by manufacturers, engineers and designers. The following traces the development of television receiver design from its rudimentary beginnings up to the highly sophisticated home entertainment system it has now become.■

INTRODUCTION :

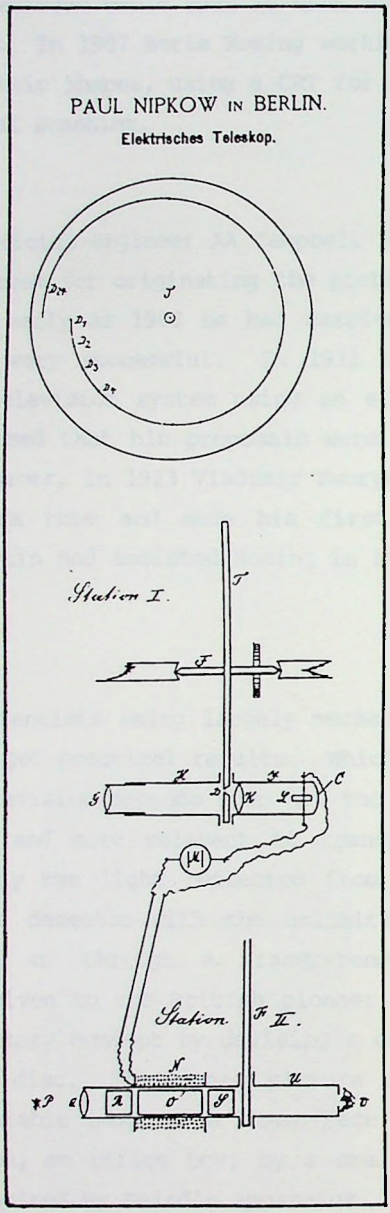
INVENTION AND TRANSMISSION

It is unlikely that anyone in the pioneering days of television could have had any idea of the success that lay ahead for the 'futureless device which could send only shadows!'. In the 19th century electricity was increasingly used as a means of communication. But while sound could be transmitted, the technology for seeing by electricity remained elusive. The 'Electric Distant Vision Apparatus' or television as it became known began in the last quarter of the 19th century, when it was discovered how to scan, analyse, a picture with a photocell and then transmit via a telegraph wire.

The invention of the telephone in 1876 aroused the expectation that soon it would also be possible to 'see by electricity', by making use of the recent discovery that when light shone upon the element selenium its electricial conductivity increased markedly. This was the beginning of the photocell.

The 1880's brought a number of allegedly practical proposals. In some, a seperate wire was to convey each and every point in the picture; in others, more realistically, the picture would be scanned along closed spread lines to reduced it to a single stream of information. But with existing technology none of the schemes was practicable. One of them however, patented by an obscure German inventor, Paul Nipkow used a technique that was to re-emerge 40 years later when the beginning of broadcasting awakened interest in 'seeing by wireless'(ILL. 1).

The 1900's brought another proposals, also beyond existing technology but more significant, as they pointed the way to high definition. They were based on the recently invented cathode-ray tube



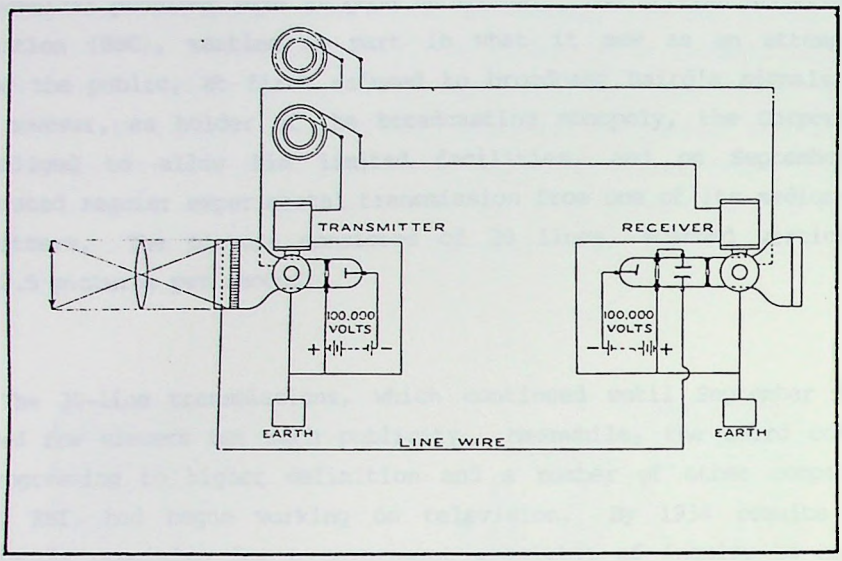
ILL. 1 Nipkow's German patent of 1884.

(CRT) whose beams of electrons could scan at much higher speeds than were attainable mechanically. In 1907 Boris Rosing working in Russia achieved crude outlines of geometric shapes, using a CRT for display but generated his signals by mechanical scanning.

The British electricial engineer AA Campbell Swinton was the first to produce an electron beam for originating the picture signal as well as for displaying it. As early as 1903 he had carried out experiments in this area but was not very successful. In 1911 he described in some detail a hypothetical television system using an electronic camera tube (ILL. 2). Swinton realised that his proposals were not yet feasible and did not pursue them. However, in 1923 Vladimir Zworykin took out a patent for an electronic camera tube and made his first experimental model. Working in America Zworykin had assisted Rosing in his experiments when a student in Russia.

But it was the scientists using largely mechanical methods who, in the mid 1920's began to get practical results. Which of them is credited with first achieving television depends upon how the word is defined. It is both more difficult and more relevant to transmit the image of an actual object, using only the light reflected from it into a detector, than it is to flood the detector with the unlimited light that can be shone past a silhoutte or through a transparency. Accordingly, the distinction is usually given to the British pioneer John Logie Baird who had refined the 19th century concept by devising a crude photo-mechnaical scanner with a rotating disc. The moving picture transmission produced was a crude but recognisiable image of a human face (ILL. 3). Baird had persuaded William Taynton, an office boy, by a small bribe to withstand the intense lighting required by Baird's apparatus. The transmission was certainly rudimentary - but television was born.

Over the next few years Baird made considerable progress and, through skillfully managed press publicity, promoted the impression that



ILL. 2 AA Campbell Swinton's proposal for a television system in 1911.

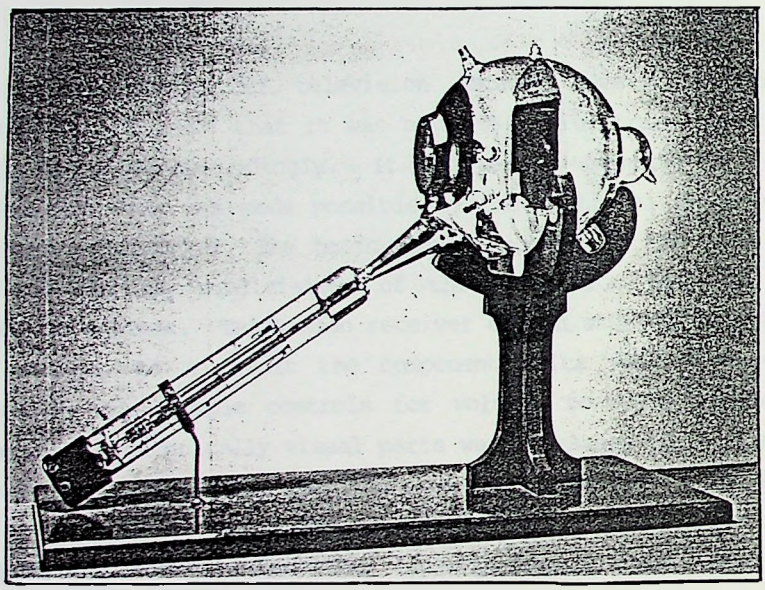
ILL. 3 Image on Baird's 'televisor', 1930.

the technical problems were as good as solved. The British Broadcasting Corporation (BBC), wanting no part in what it saw as an attempt to mislead the public, at first refused to broadcast Baird's signals. In 1929, however, as holder of the broadcasting monopoly, the Corporation was obliged to allow him limited facilities, and on September 30 inaugerated regular experimental transmission from one of its medium-wave transmitters. The picture consisted of 30 lines, scanned vertically, with 12.5 pictures per second.

The 30-line transmissions, which continued until September 1935, achieved few viewers but much publicity. Meanwhile, the Baird company was progressing to higher definition and a number of other companies, notably EMI, had begun working on television. By 1934 results were sufficiently promising for a government committee of inquiry to be set up, and its report, published in 1935, recommended that the BBC should operate a public service. A minimum definition of 240 lines was specified, just within the capabilities of Baird's mechanical techniques, but EMI, armed with an all-electronic system based on their 'Emitron' camera tube (ILL. 4), calculated that they could attain a higher definition and courageously undertook to provide 405 line transmission. High-definition signals could be transmitted only on frequencies much higher than were in general use, demanding radically new transmitters and aerials. Marconi's had the relevant expertise, and the two companies formed a joint subsidiary, Marconi-EMI Television Ltd.

On November 2, 1936 the BBC opened the world's first regular service of high-definition television. Its range was 35 miles although only 25 had been predicted. For a trial period, the 405-line Marconi-EMI system and Baird's 240-line system were used during alternate weeks. Unfortunately for Baird, his Television Development Company's success was short-lived; the all-electronic system soon made his photo-mechanical process obsolete. Baird's engineers were experimenting with an electronic camera of American design but it never became operational.

The system depended mainly upon a process whereby film ran straight from a one camera into development and fixing tanks, to be transmitted, still wet, 54 seconds after exposure. The apparatus was unreliable, and its pictures and sound quality uncertain. Moreover, the camera was confined to the studio and could not even move within it, other that to pan or tilt, whereas the rival Emitron camera was totally mobile. It quickly became obvious that the Baird system was outclassed, and within 3 months it was dropped. ■



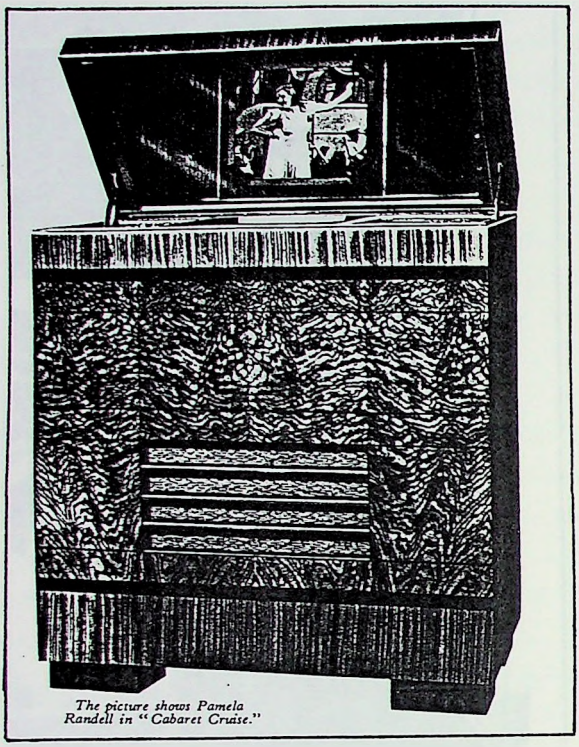
ILL. 4 'Emitron' camera tube.

EARLY TELEVISION RECEIVER DESIGN (1936 - 1939)

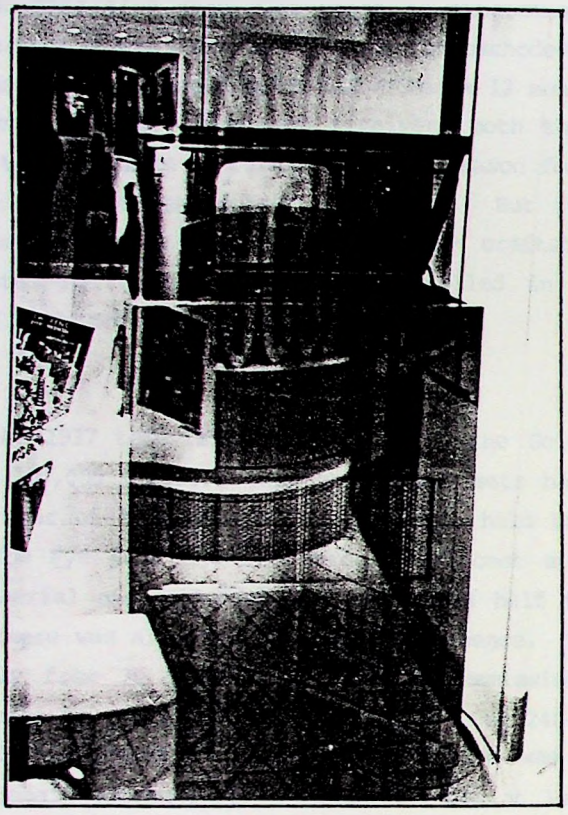
The high-definition television receiver of 1936 was the most complex electronic product yet offered to the public. Its cathode-ray tube, only just emerging from the laboratory, demanded a supply of several thousand volts; the signal were transmitted at outlandishly high frequencies and the receiver circuits had to perform processes unknown to sound broadcasting. To add to their problems television receivers had initially to be switched between the 405 and the 240 - line standards.

In the early days of television receiver design, styling was dominated by the attitude that it was a piece of furniture for the home and should be styled accordingly. It had yet no identity of its own. Styling followed what was made possible by the technical development of materials and electronics. The basic design policy of the 30's was to integrate the various subdivisions of the television receiver into a single box - a cabinet. Television receiver design started as television 'cabinet' design. As a result the component units were grouped in a unified casing with simple controls for volume, tone and tuning. The concealing of the technically visual parts was necessary for the styling requirements of television as furniture. This was achieved by camoflaging the box in a series of geometric and decorative designs resulting in the television receiver looking like a chest or a typical piece of furniture for the sitting room.

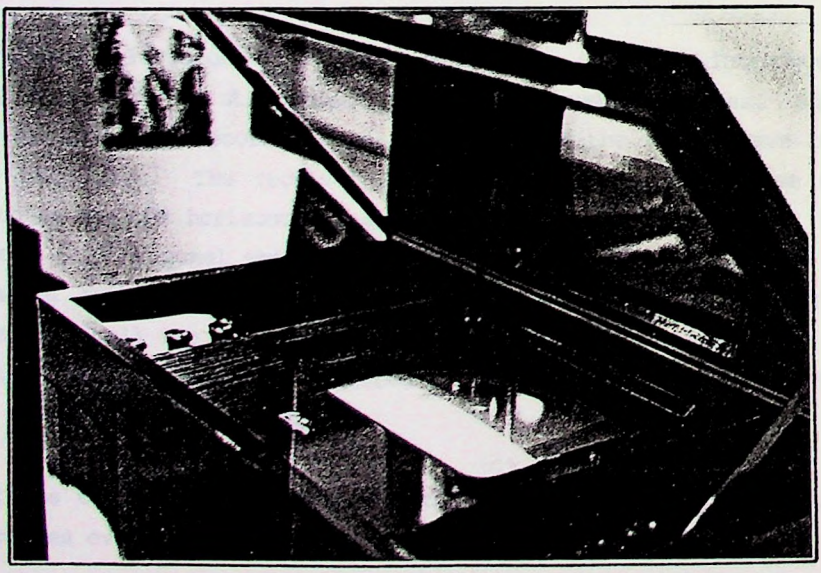
The main element of the television receiver was and still is - the cathode-ray tube. The early crts were almost 3 feet long, causing designers some difficulty. In the Pye television model 4045 (ILL. 5) and the Marconiphone 702 (ILL. 6), the tubes were mounted upright. The lid of the units contained a mirror, its surface silvered to prevent doubling, onto which the image was projected. The mirror was a practical solution to the problem of the crt being simply too long to be horizontally mounted. The picture on the end of the tube was inverted, and had to be reversed before it could be deciphered. But this solution also gave the feeling of mystery and magic. The receiver guarded its secret inside a tall and bulky cabinet with only the mirrored lid (ILL. 7), permitting the viewer to observe the mystery within indirectly.



ILL. 5 PYE teleceiver model 4045, 1937.



ILL. 6 MARCONIPHONE 702, 1937.



ILL. 7 Mirrored lid and cathode ray tube of the Marconiphone 702, 1937.

The crts used at this time were also prone to exploding so most early sets had heavy armour plate glass to 'protect the cathode-ray tube' or so the early brochures said. A good set would offer a 12 month guarantee on the tube. Typical of early television receivers both the Pye 4045 and the Marconi 702 took the form of furniture. One reason for this was that they had to blend in with the surrounding items. But it must also be noted that industry in the 30's was still very craftsman orientated. This was reflected in the use of cabinets panelled in figured walnut embellished with bands of straight-grained walnut.

Although the 1937 television exhibition in the Science Museum in London attracted 250,000 visitors only about 2000 sets had been sold in the BBC's first year of transmission. Sales were held back principally by high cost. The Pye 4045 and the Marconi 702 cost about 80 guineas each, including aerial and installation, which was half the price of a small car. But there was also the fear of obsolescence. Televisions had progressed rapidly from 30 line to 405 line transmission. The public expected the process to continue. The dropping of the 240-line standards did little to dispel these misgivings although it was promised that standards would remain substantially unchanged until at least the end of 1938, then just 22 months away.

The Pye television - radiogram model 836 (ILL. 8) introduced in 1938 was one of the first complete home entertainment packages. Beneath the lid was a 78 rpm record player, controls for the medium-wave radio, and the television. The receiver shows that the crt had become small enough to be mounted horizontally so it could be viewed directly. There was also a sliding panel which covered the screen when not in use. The shape again took the form of furniture emphasised even more by the concealment of all the electronic elements. The cabinet itself was less ornate than previous models - veneered in a grained walnut. Rubber-tyred castors added the touch of mobility.

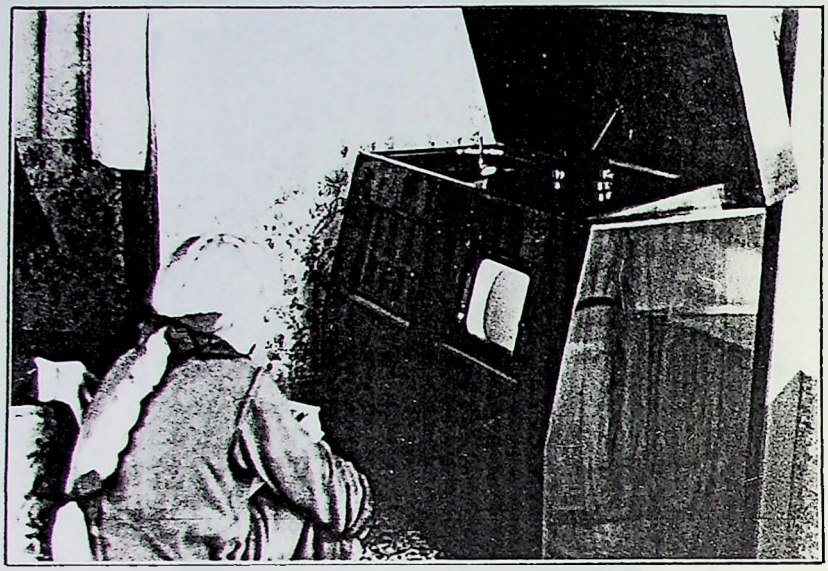
Prices of receivers fell significantly between 1936 and 1939. To reduce prices even more manufacturers introduced models with smaller

screens. By cutting down the screen size to 9 inches, as in the Ultra T22 (ILL. 9) or even 7 and 5 inches, it was possible to make savings on cabinets, tube voltage and scanning power as well as on the tube itself. Although this cabinet had a good layout of controls, screen and speaker, its very flat, angular form reflected the limited manufacturing processes available. Even cheaper were the 'vision only' models such as the Ekco TA701 (ILL. 10). Several manufacturers offered models without sound amplifiers and loudspeakers. Viewers had to connect the 'add-on vision unit' to there radio receivers. The Ekco TA701 cost £23 in 1939 compared with £27 for the model with sound.

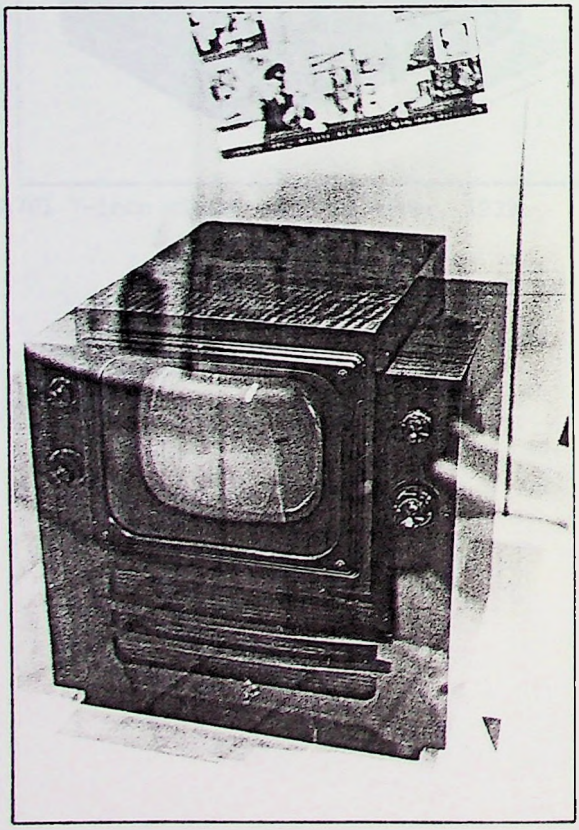
The use of small screens in large cabinets also served to emphasise the wonder of the new technology, whereby the lumbering box laboured to bring forth an image which was as small as 5 inches. The technical reason for using such large cabinets was that they had to house there own mains transformer.

By 1939 television services had also opened up in America and Germany. In America NBC inaugerated a service in New York in May of that year and started a television boom. The RCA - Victor console model (ILL. 11), from 1939 , was America's first popular television receiver and its bulky and clumsy cabinet displayed the 'streamline' curves favoured by contemporary consumers. As in Britain, television receivers took the form of furniture although they were now beginning to follow design trends. American designers were caught in depression and needed an extra quality to add to their products, in this case 'streamlining'.

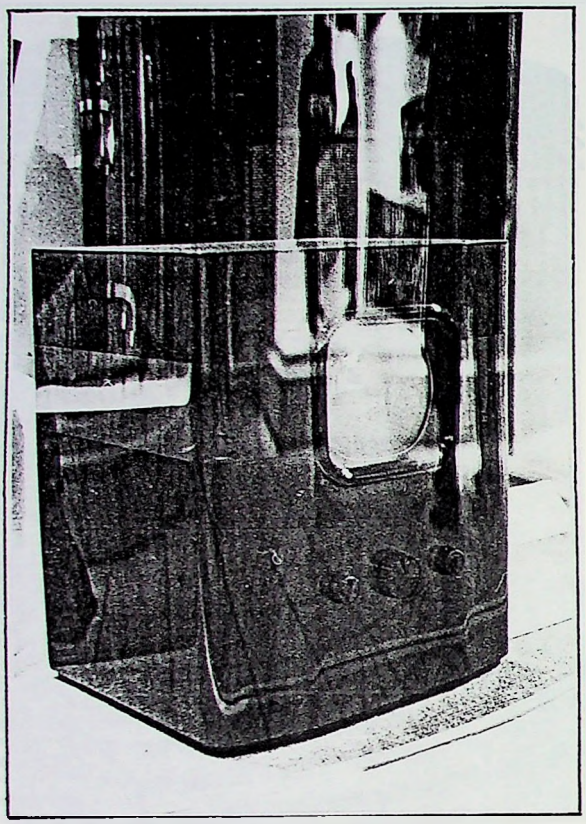
By the time the BBC went off the air in 1939 (for fear of acting as a beacon for German bombers), about 20,000 cabinets were in use. This meant that about 1 person in every 600 living within the service area had a set. Prices had continued to fall, the Ekco TS 701 7inch receiver (ILL. 12), 'a modest table-top model', cost 21 guineas. Large screen projection televisions like the Philips 1939 model (ILL. 13) were also



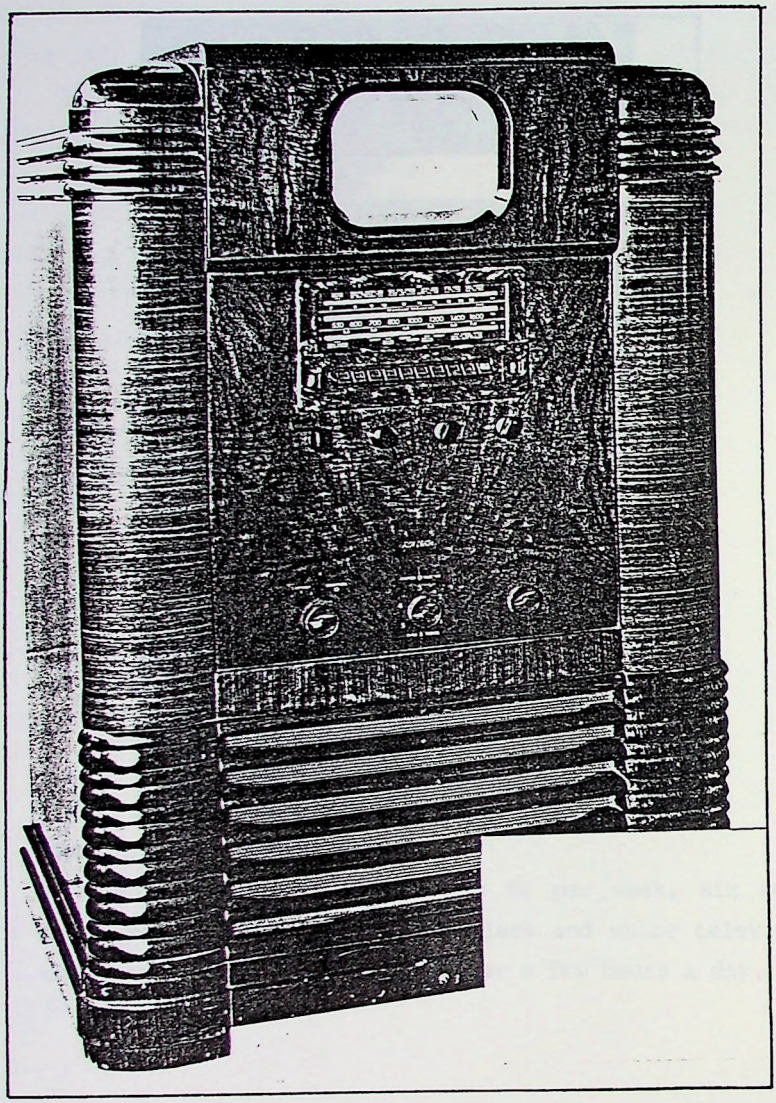
ILL. 8 PYE television - radiogram model 836, 1938.



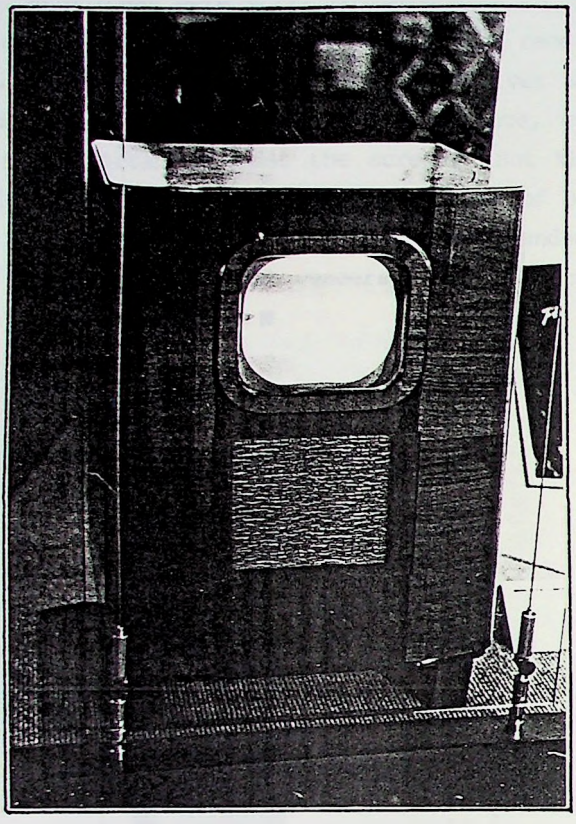
ILL. 9 ULTRA T22 9-inch receiver 1939
About 100 of this particular model were sold.



ILL. 10 EKCO TA701 7-inch vision only receiver, 1939.



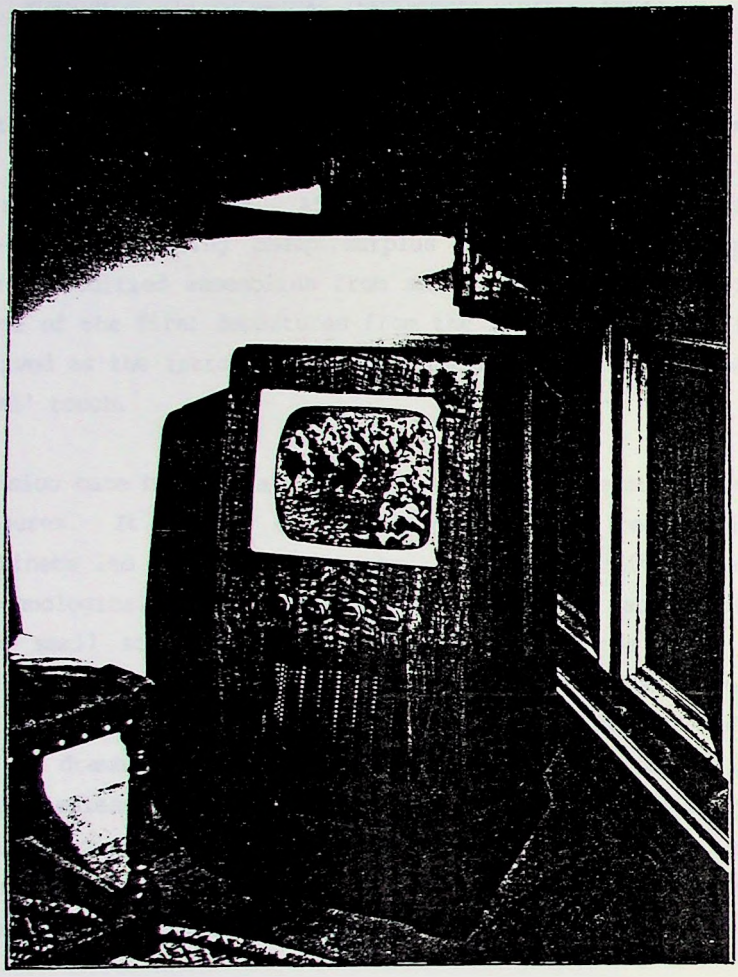
ILL. 11 RCA Victor console model, 1939.



ILL. 12 EKCO TS701 Receiver, 1939.
At a time when a good wage was £4 per week, six weeks wages still seem a lot to pay for a black and white television which could only receive one channel for a few hours a day.

available but at 120 guineas were still too expensive to become popular. Also at the top of the market were the 14 and 15inch receivers like the HMV 1802 (ILL. 14). This walnut-veneered 14" receiver was typical of 1939 console cabinet design. The controls: brilliance, contrast, focus and volume were neatly arranged under the screen. But the 40inch high cabinet was still considered in the highest tradition of British cabinet craftsmanship. Television receivers were still handsome furniture pieces, finished in highly polished veneers which happen to, just by chance, contain a television screen. ■

ILL. 13 PHILIPS 1939 projection television.



ILL. 14 HMV model 1802, 1939.

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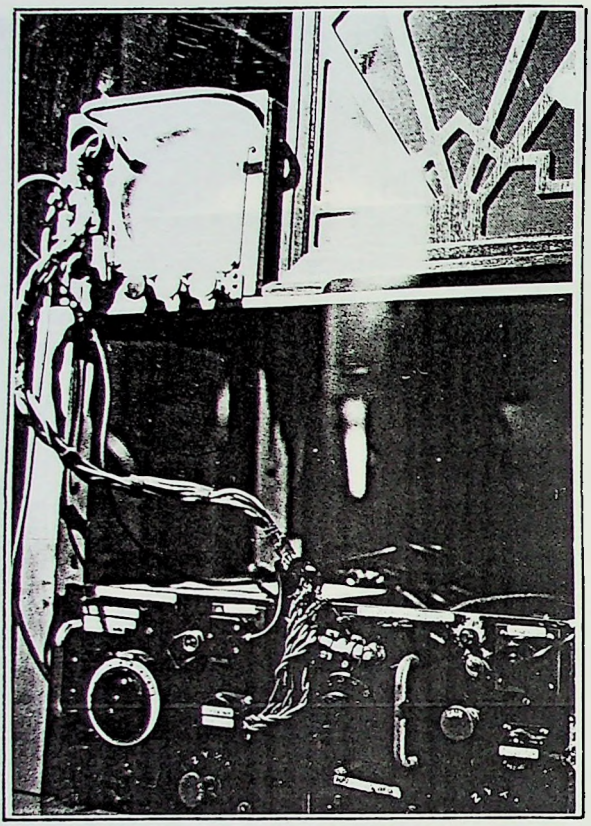
FURNITURE V'S TECHNICAL INSTURMENT (1945 - 1954)

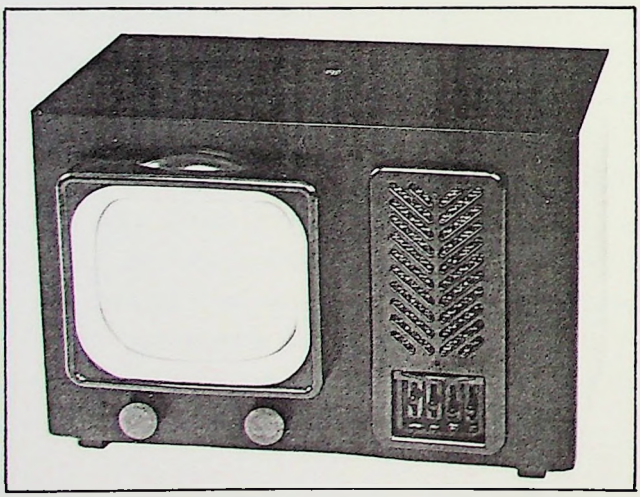
Due to the wartime shutdown of the BBC some 20,000 sets became redundant. Many BBC technicians soon found employment working with radar which had many similiarities. After the war knowledgable enthusiasts built home-made sets using cheap surplus radio and radar equipment. Although using modified assemblies from an airborne radar set (ILL. 15) it marked one of the first departures from the furniture image. But this was short lived as the introduction of cabinets for later kits added the 'professional' touch.

Television came back on air in June 1946 with prewar equipment and audience figures. It rapidly expanded and a further reduction in the price of cabinets led to wider audiences. Post-war receivers benefitted from the technological advances that radar had brought about, but large cabinets and small screens were still the order of the day. The Pye Company of Cambridge had been closely involved with radar development. After the war they used their experience to improve television receivers. A dramatice reduction in size and weight came with their B16T 'transformerless' receiver in 1946 (ILL. 16). It was the first British set to derive the crt's high voltage supply from the line scanning circuity rather than from a massive mains transformer. This technique was soon adopted by all television manufacturers.

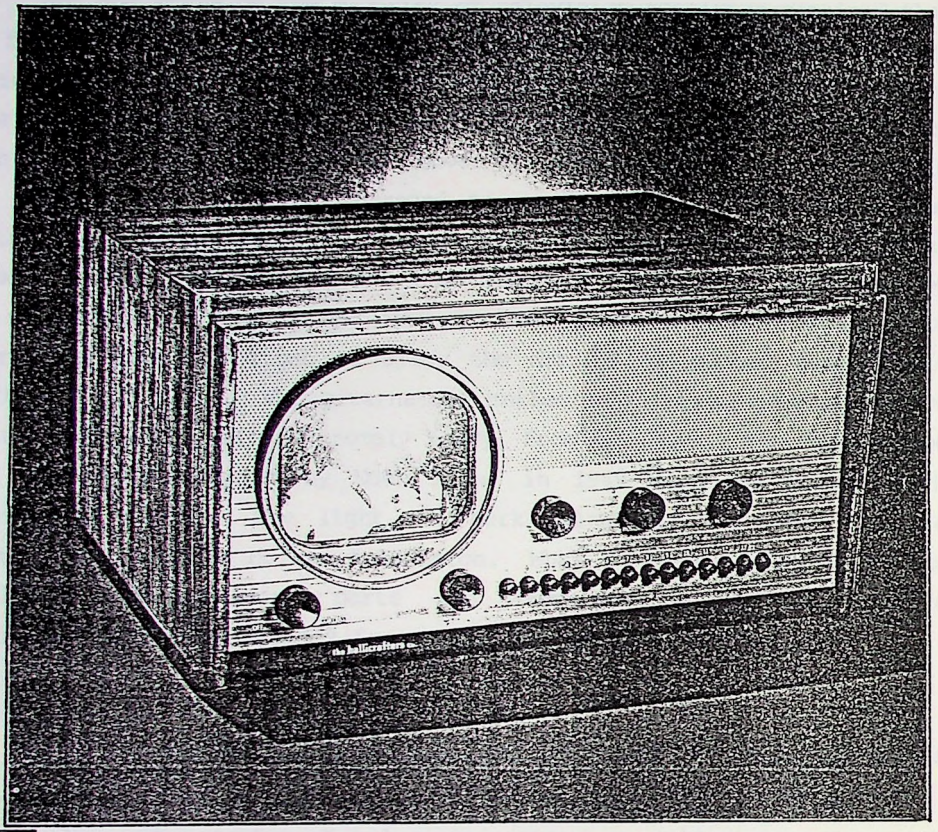
Because of this the Pye B16T was one of the first production television receiver to break away form the furniture image. It was a small table top model, its 9inch screen off-set to the left with the speaker on the right. The screen and speaker along with the controls emerged from the walnut veneered box. They had started to become individual elements in television receiver design. In America, Raymond Loewy used a similar idea when asked to design a television for Hallicrafters (ILL. 17) in 1948. His television receiver was technologically remarkable for its time. Instead of enclosing it in a gaudy ornamented walnut cabinet, with gold fabric speaker grills, he tried to express the television qualities in a direct manner. A strict organisation of knobs, legible graphics, and rigid formal division of the cabinets elements resulted in commercially successful and mechanically convincing television receivers.



ILL. 15 Television receiver constructed from modified radar assemblies.



ILL. 16 PYE B16T 9 inch receiver, 1946.

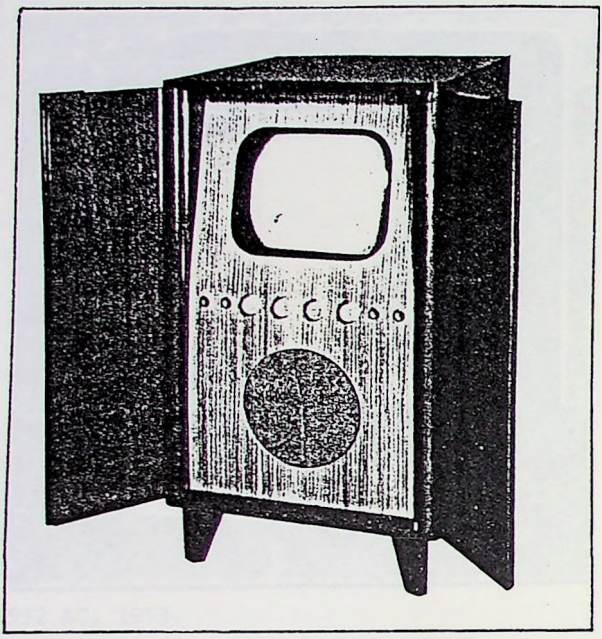


ILL. 17 HALLICRAFTERS television receiver designed by Raymond Loewy, 1948.

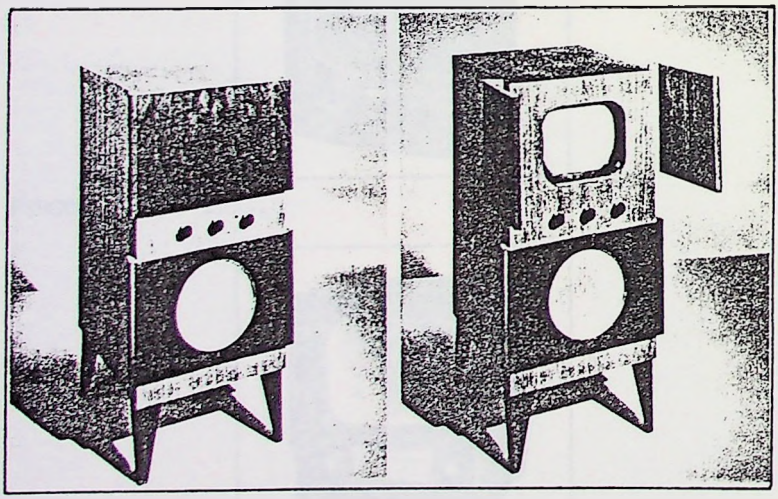
But the style of the majority of television receivers remained that of furniture. Professor R.D. Russel, brother of Gordon the furniture designer, designed mass production television cabinets for the Murphy Television Company. His 1949 model (ILL. 18) was constructed in mahogany with an elm control panel. Doors cover the screen when the set is not in use and form an exterior surround to isolate the visual focus from distraction around the set. The doors were also used for technical reasons. They protected the crt from dust and covered the joint between the removeable front panel and cabinet. The whole instrument panel could be removed from the front to allow the crt to be placed easily into position in the set. The alternative method would have been to remove the whole chassis, which extremely heavy, from the back. The Murphy Type V134 (ILL. 19) designed by Eden Minns in 1949 also had doors which covered the screen. The light and dark walnut careers were used to identify the elements of the television. What is also noticeable is the similarity in component parts and component arrangements. This particular layout was typical for console models of the time.

Table top models had basically become rectangular wooden boxes (a few were in plastic) with fibre backs. By the early 50's it became obvious that the majority of television sets - or cabinets as they were still known-were contrived and not designed. There were essentially only slight differences between one year's model and the previous year's. To cheer them up designers used cross-banded veneers, beading and colour woven fabric. The Cossor 932 AC (ILL. 20) had a layout typical of 1953 table top television cabinets. The mahogony housing had a removeable polystyrene front cover to facilitate the cleaning of the tube without exposing the electronic parts. (Due to the heat from the valves, hot air circulated dust around the set which tended to settle on the tube). A slight improvement was noticeable in that beech, natural walnut and sycamore appeared on the picture surround or inside it; though the rest of the cabinet remained hideously dark and shiny.

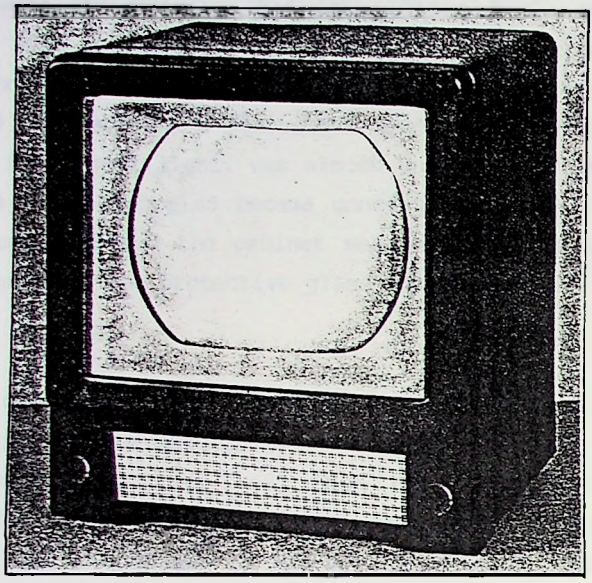
Because the layout for these models were almost identical it was very difficult to identify the different manufacturer's models in a television showroom. It would have taken a trained eye to spot the



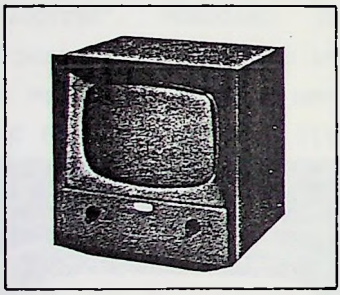
ILL. 18 MURPHY television designed by R.D. Russell, 1949.



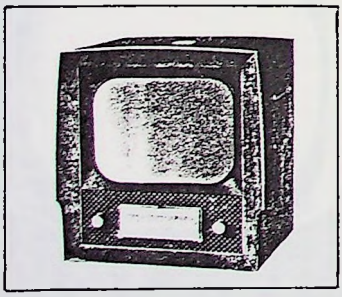
ILL. 19 MURPHY V134 designed by Eden Minns, 1949.



ILL. 20 COSSOR 932 AC, 1953.



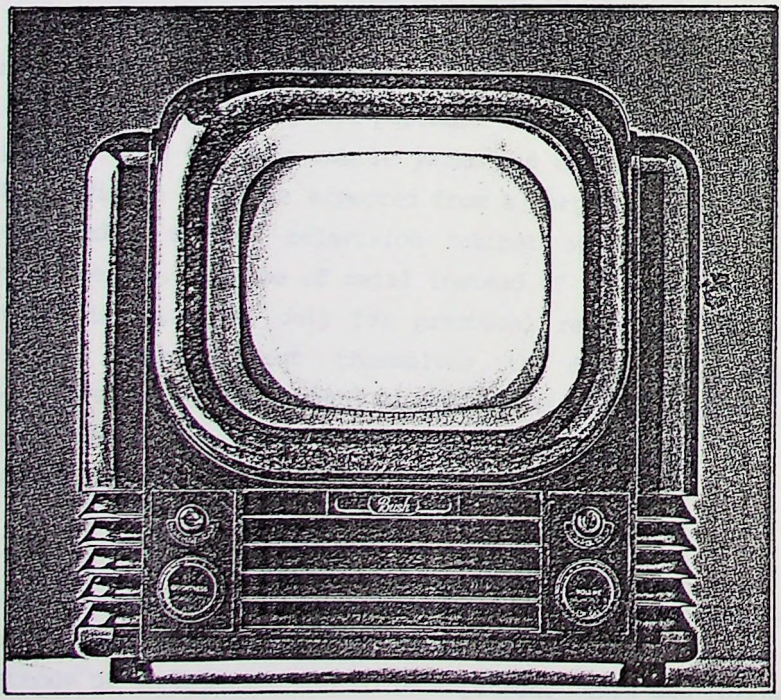
ILL. 21 FERGUSON 996, 1953.



ILL. 22 HMV 1824, 1953

differences between the Ferguson 996 (ILL. 21) and the HMV 1824 (ILL. 22). The early 50's had brought the introduction of rectangular screens and a wider scanning angle which brought bigger pictures for a given size of cabinet. The dark screen, a functional device to increase contrast in the presence of incidental light, was almost universally used. Doors had become expensive items and also became unnecessary. Instead the detail where the tube surround met the cabinet was gaining more attention from designers, as was where the protective glass met the picture surround.

Although designers were clinging tightly to the furniture tradition, the use of new materials, especially plastics, allowed them more scope to experiment. In 1949, Bush introduced their TV12 table television set (ILL. 23). A classic of the period it was quite ahead of its time in its form, layout and in its use of material. The screen area was clearly defined by a generous radiied frame and the speaker was emphasized by the 'loovred' moulding detail. Moulded in Phenolic-Bakelite it could pass for an Art Deco beehive. It was only at this stage that television was being given a new identity. It started looking less like a piece of furniture and more like a consumer product.



ILL. 23 BUSH TV12, 1949.

THE TELEVISON BOOM (1955 - 1963)

The commercial age reached the United Kingdom in September 1955 when ITV ended the BBC's monopoly. Commercial television gave audiences a choice of viewing and saw the start of the television boom. But as yet there was no established tradition in cabinet design for television receivers.

The apparent need for annual model changes had forced designers to think up an endless succession of gimmicks to ensure that one year's model looked different form the last year's model. Overshadowing any company's design policy was the apparent need to produce something new for the Radio Show. The strong tie with this annual show had inevitably prevented the evolution of a more positive tradition of cabinet design.

Portability was one of many gimmicks used by television designers in the mid 50s. The Ekco TMB 272 9inch portable was introduced in 1955 into a period which saw the development of mass travel (ILL. 24). Despite weighing as much as many non-portable models, this mains/battery set became popular with the more mobile yacht and car owning viewers. A few hours of television could be expected from a large battery. Although it still resembled a typical television cabinet of the time, with a handle stuck on the top, its use of metal instead of veneered wood in its construction was important if only for practical reasons. The smaller size meant the cabinets lent themselves to different types of manufacturing processes. Sheet metal was also used for durability and weight reasons. The fabric covered front panel was a smaller version of that of a standard cabinet.

Apart from the burden that this absurd hunt for novelty imposed on the designers' inventive skills, it also meant that limited and uneconomic methods of manufacture had to be employed. This was further

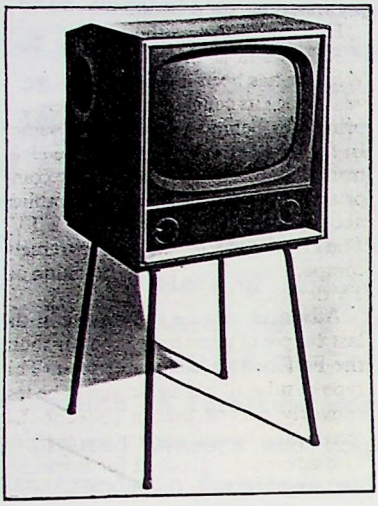
ILL. 24 EKCO TMB 272 9inch portable, 1955.

emphasized by the multitude of different models that were produced under individual trade names (ILL. 25). The relatively small production runs that resulted often prevented the designers from using new materials, such as plastics with high tool costs and low material costs. Designers were left with little alternative than to select items such as knobs, scales and handles from those standard designs currently available in the component makers' brochure. Since most of these items competed for attention with those from other firms, it is hardly surprising that they seemed to be engaged in a race to produce the most glitter.

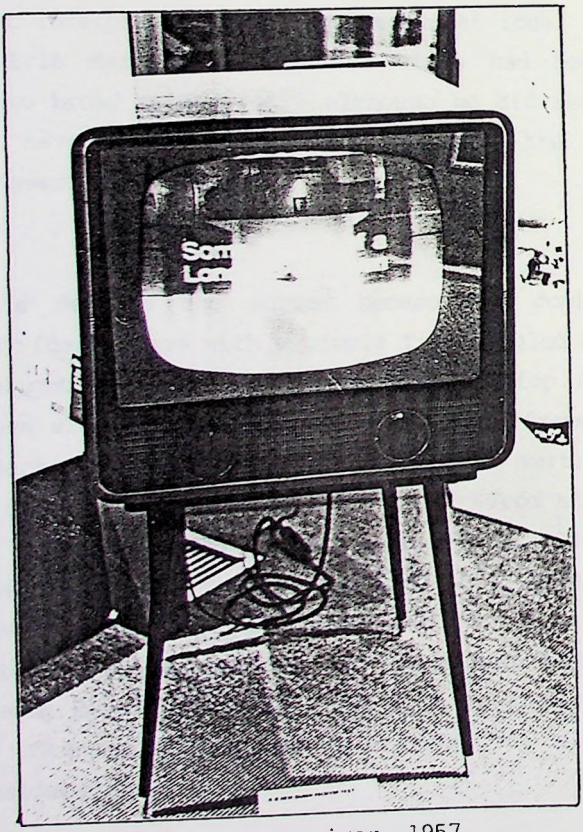
In order to keep satisfying the demand for new designs the industry had to have a well developed design organisation. Fresh talent was seldom sought from outside, most firms had their own staff designers and often used staff of independent cabinet makers. Yet on the rare occasion when this process had been adopted the results had been stimulating and successful from the design point of view. Already mentioned was Raymond Loew y's work for Hallicrafters (ILL. 17) and Prof R.D. Russel's work for Murphy Television Company (ILL. 18). Pye had occasionally commissioned Robin Day to design various models. His 17 inch television set of 1956 (ILL. 26), which won a Design Council award (1957), was well ahead of its time. He created a strong visual identity for the television receiver which was to influence other television manufacturers. The front panel was uncomplicated with the screen taking priority. The large on-off/volume and channel controls were situated beneath. Day tackled the problem of integrating the television cabinet with the stand very successfully by using tubular metal legs. His solution reflected his work in contemporary furniture design. In 1957 Kolster Brande's company introduced a receiver which was remarkably similar in layout and appearance to Robin Day's model. With their New Queen Receiver (ILL. 27) Kolster Brandes had pioneered a new method of cabinet construction which gave many sets of the period their distinctive appearance. Instead of labourously - joined flat pieces of wood, they rolled a single plywood sheet into a square tube with round edges. The bent plywood and spindly legs were typical of 50's furniture style in Britain.

MAIN GROUPS AND MANUFACTURERS	TRADING NAMES
THORN (British Radio Corporation)	FERGUSON PHILCO PILOT ULTRA HMV MARCONIPHONE
PYE - EKCO (British Electronics Industry)	PYE EKCO FERRANTI DYNATRON INVICTA PAM
PHILIPS	PHILIPS COSSOR STELLA PETO-SCOTT
LLOYDS PACKING WAREHOUSE	REGENTONE RGD ARGOSY
GECo (Radio and Allied Industries)	GEC McMICHAEL SOBELL
STANDARD TELEPHONE AND CABLES	K-B
RANK	BUSH
MURPHY	MURPHY
RCA	RCA

ILL. 25 Table of Manufacturers and Tradenames used.



ILL. 26 MURPHY television receiver designed by Robin Day, 1956.

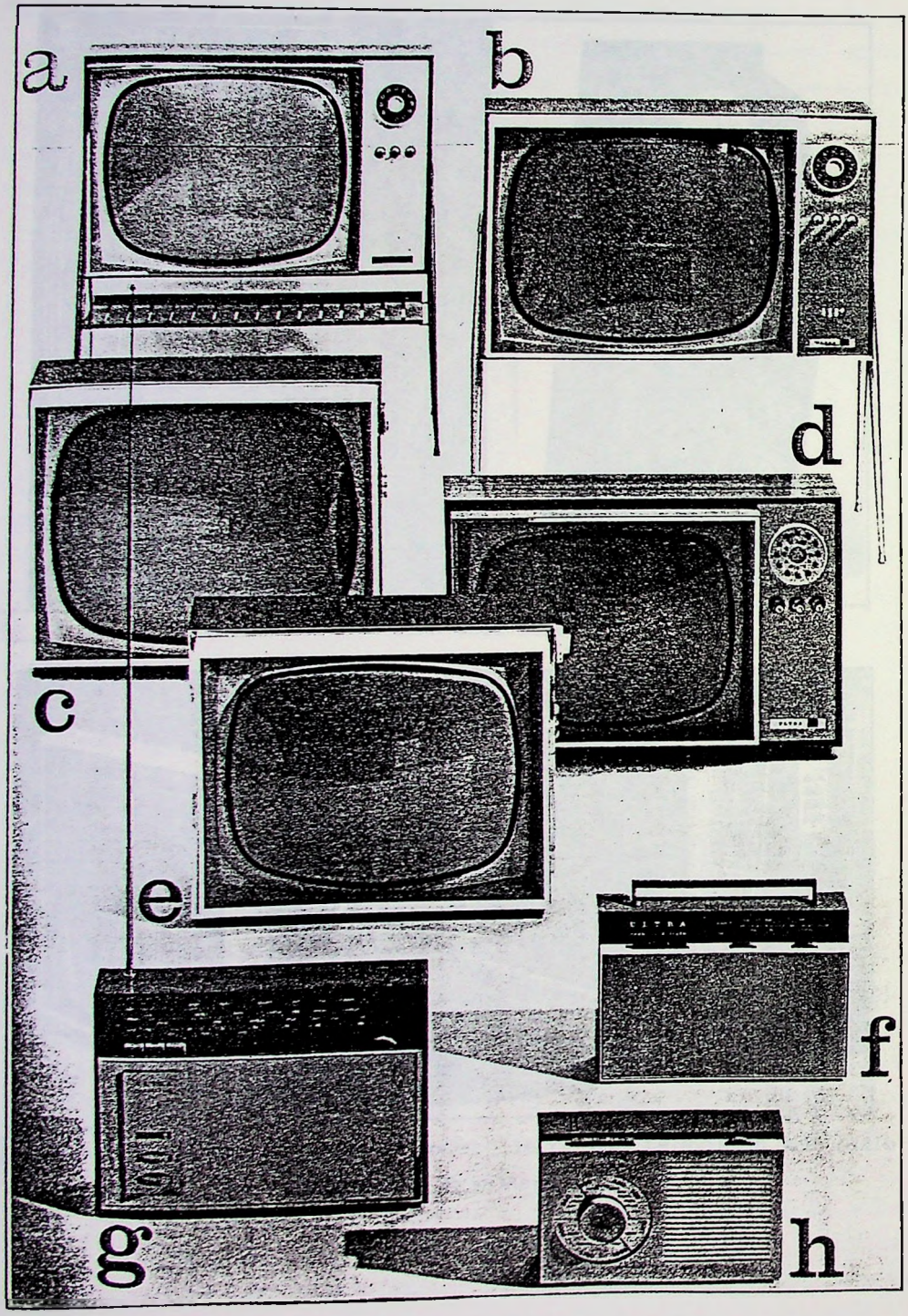


ILL. 27 KOLSTER BRANDES New Queen Receiver, 1957.

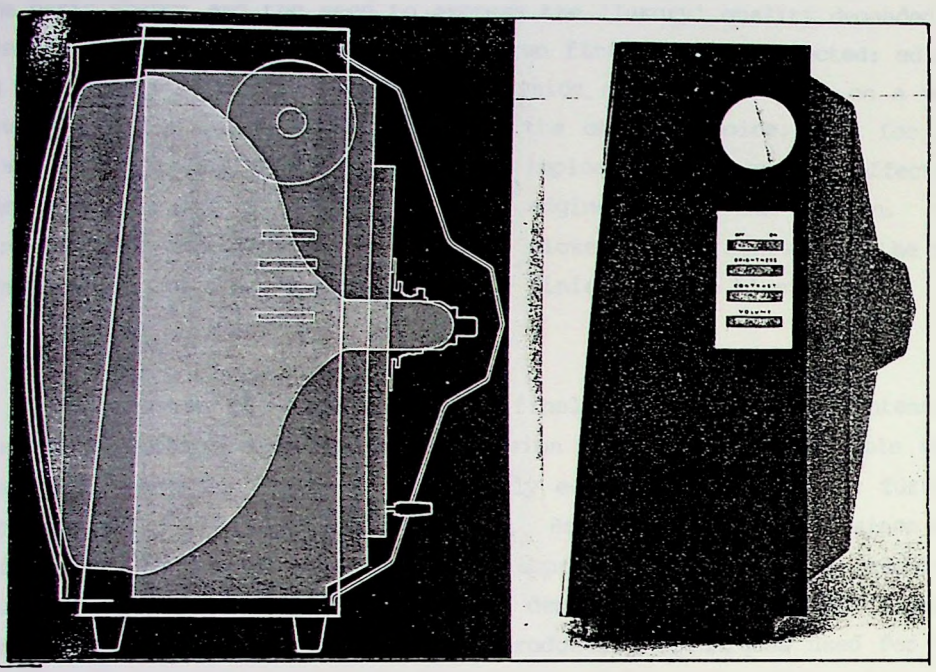
Yet seldom, until Eric Marshall's appointment to Ultra television in 1959, had a designer of high calibre been brought in from outside to design a whole range of a firm's products. The Ultra range of televisions (ILL. 28) in 1960 were one of the more enlightened approaches to television design and also one of the first successful attempts to evolve a 'product' house style. Traditionally there were two distinct and mutually antipathetic schools of thought in television design. One saw the television set purely as a piece of furniture while the other saw it essentially as an instrument which had a character of its own. Although many sets had a 'vague' furniture look about them they were not in line with current developments in furniture design in the early 60's. The high gloss finishes, figured veneers and complicated forms were in direct contrast to the main trends in furniture which had been developing steadily over the past few years. The industry had not wholeheartedly attempted an honest interpretation of the instrument idea. It is perhaps significant that Eric Marshall's work for Ultra had been within the second for these two broad catagories - although he did realise that the television must, nevertheless, fit happily into the normal, i.e. rectilinear, environment.

In Marshall's designs the screen became the dominating visual feature. The early ideas began with a simple frame angled at the back to provide a base, slightly wider, in profile than the top (ILL. 29). By enclosing the screen with a seperate frame, the main frame at the front could be angled back keeping the rear vertical. A vertical front was visually unstable as it appeared to fall forwards. From this basic shape two different but clearly related designs emerged (ILL. 30). The first, the combined television and VHF model, consisted of a large main frame to accommodate the motorized tuner. The other was the television only set, whose face was taken up almost entirely by the screen. The back of the set, so often a loose floppy appendage, was also given special attention by the designer. Standard components were used for all the models, reducing costs considerably.

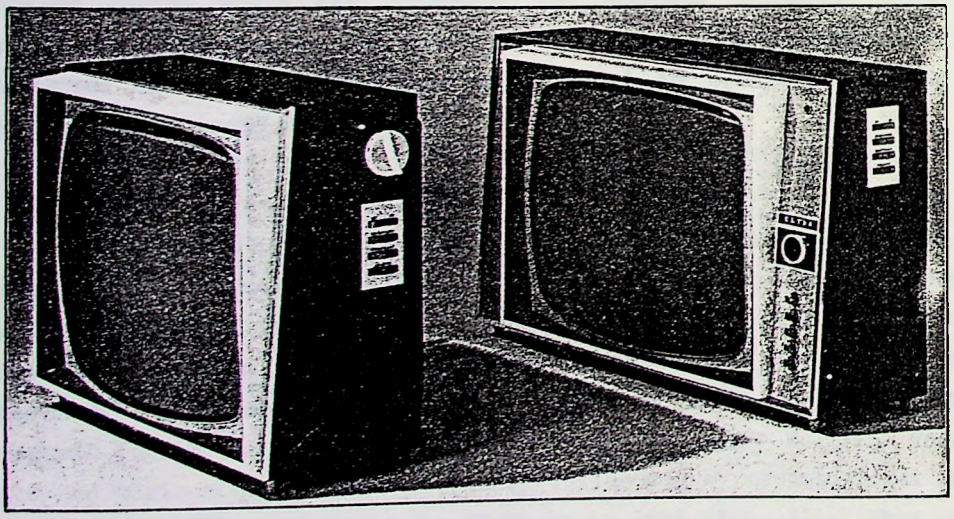
Two main considerations governed the choice of materials and finishes : the need to maintain the family appearance already inheret in



ILL. 28 The ULTRA range of televisions, 1960.



ILL. 29 Side elevation of the ULTRA television set.

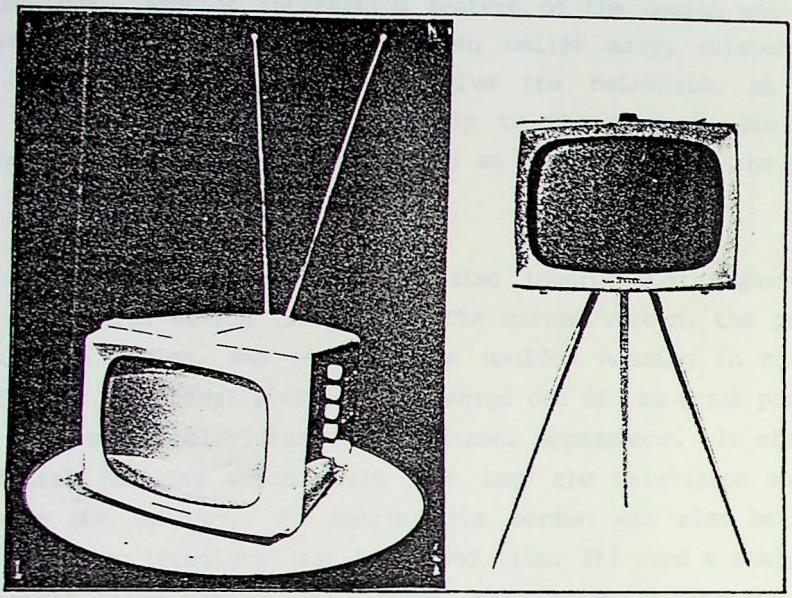


ILL. 30 ULTRA's television only model (left) and television and radio model (right), designed by Eric Marshall.

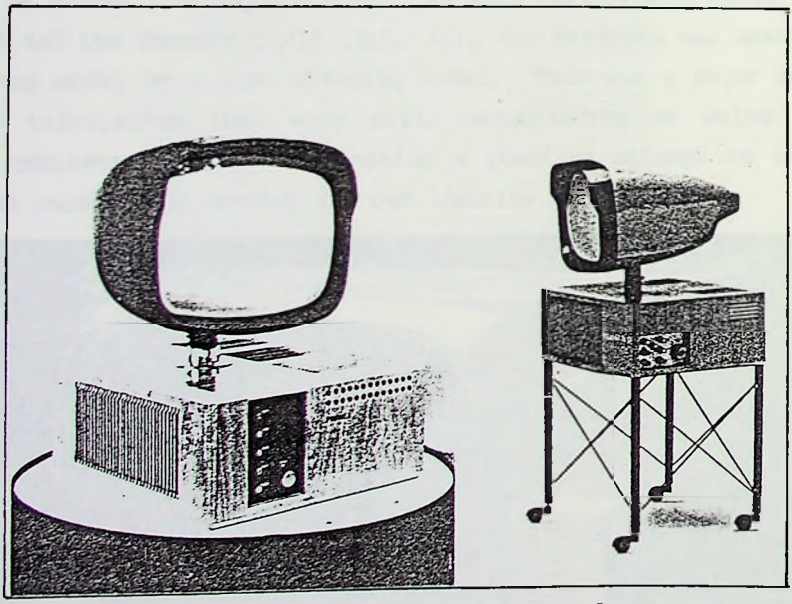
the basic shape; and the need to express the 'luxury' quality demanded in the design brief. For the main frame two finishes were selected: edinam 'a lively wood with good grain'; and vynide in red, and blue on a wood frame. For the screen frame metal was the obvious choice, both for its frame strength (for holding the Perspex implosion guard and for effective dust sealing) and to achieve a thin edging around the screen. Two finishes were selected for the metal: a nickelex gold finish for the red Vynide sets; and a stove enamelled white finish for the blue sets.

The success of Ultra's venture finally disproved the contention that an adventurous approach to television design was incompatible with commercial success. Marshall had clearly established a case for further exploration for the instrument approach. But Italian designers since the mid 1950's had been pursuing this approach to television receiver design. The visual source for Italian design was contemporary 'organic sculpture and this combined with new production techniques used for the new metal and plastics, created a unique aesthetic and led to the first coherent design style for consumers and consumer products, such as televisions. Designs emerged as an element in marketing policies which emphasized exclusiveness and the 'good life' in products aimed at a wealthy international market.

In 1954 Pier Luigi Spandolini designed the RV126 Movision 17inch portable for Radiomarelli (ILL. 31). It was not, as with early portables, designed as a gimmick. The Movision, with its metal body and screw-on legs, was the first decisive step towards dismounting the 'japanned wood' cabinets with gilt sections that constituted the principal fetish in Italian homes of the 50's. Sergio Berizzi, Cesare Butte and Dario Montagni were certainly influenced by organic forms when designing the 17/18 television for Phonola in 1956 (ILL. 32). They used an organic form to enclose the screen which had become a seperate element. The electronics and controls of the receiver were housed below the screen. The screen could be rotated so the picture could be viewed from various positions without moving the rest of the set. The organic form of the screen contrasted starkly with the rigid geometric shape of



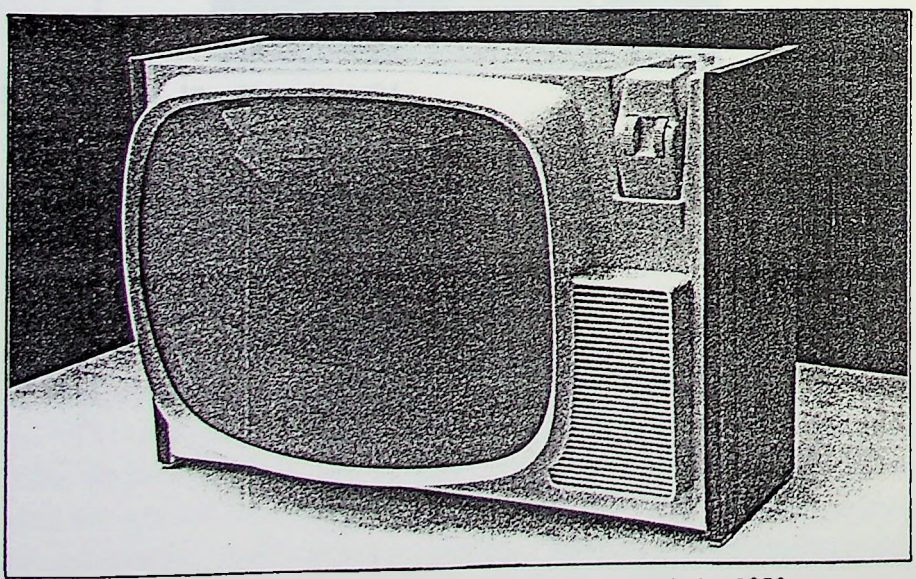
ILL. 31 RV126 Movision designed by Pier Luigi Spandoline, 1954.



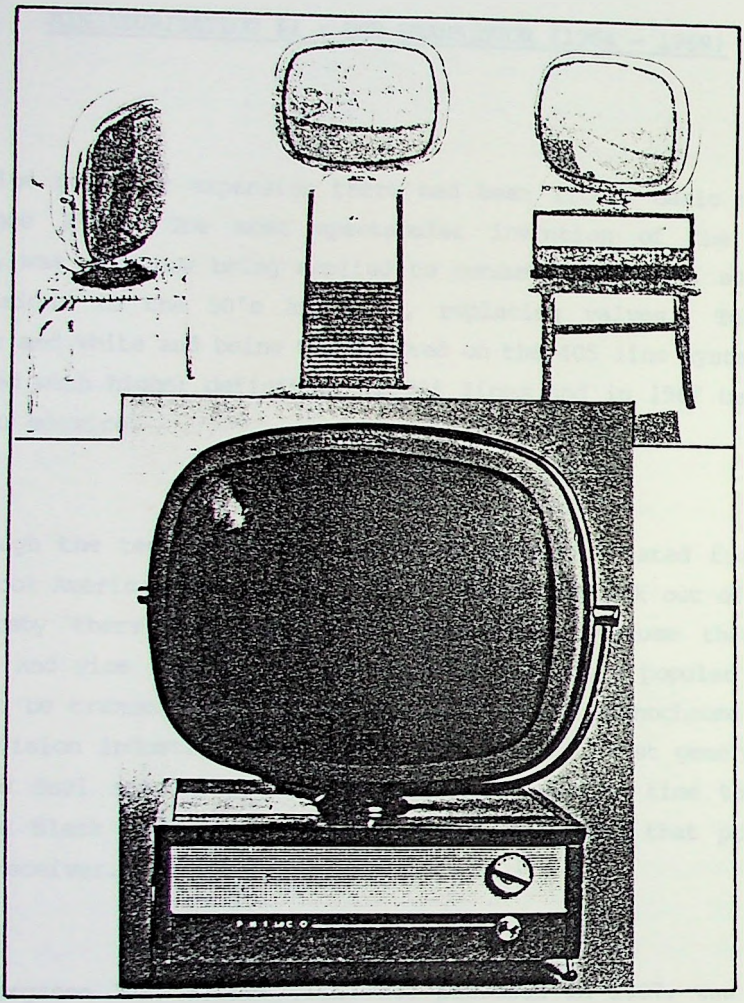
ILL. 32 17/18 PHONOLA designed by Berizzi, Butte and Montagni, 1956.

the control box. Another interesting feature of the design was the use of a television stand with castors which, unlike many, related to the overall design and which seemed to give the television an animate quality, which communicated more directly to the viewer. The castors became the feet; the control box the body; as the tube became the head.

Gino Valle working with Zanussi also incorporated organic forms into his television design (ILL. 33). The curved screen, the principal element of the design, was housed in a moulded housing in black and white. The crt was actually allowed to emerge out of the front panel in order to give the television a much slimmer appearance. It also had a remote control facility which could slot into the television above the speaker when not in use. In America the screen was also being give priority. Philcos 'Predicta' set from 1959 (ILL. 34) used a similar idea to the Phonola 17/18 model. The screen again became a seperate element to the receiver electronics. It could not only rotate but also pivot so it could be viewed form any position. As with the Movision RV126 (ILL. 31) and the Phonola 17/18 (ILL. 32), the Predicta was available in a table top model or a free standing model. This was a major departure from the televisions that were still masquerading as walnut or oak cocktail cabinets. Philco were making a positive attempt to allow the television receiver to develop its own identity.■



ILL. 33 Gino Valle's television designed for Zanussi in 1959.



ILL. 34 PHILCOS 'Predicta', 1954.

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MINIATURIZATION #1 : THE TRANSISTOR (1964 - 1969)

Despite post war expansion there had been little basic technological change since 1936. The most spectacular invention of the 1940's, the transistor, was only now being applied to consumer products, such as radios and televisions in the 50's and 60's, replacing valves. Television was still black and white and being transmitted on the 405 line system. In 1964 BBC 2 opened with higher definition in 625 lines and in 1967 began Europe's first colour service.

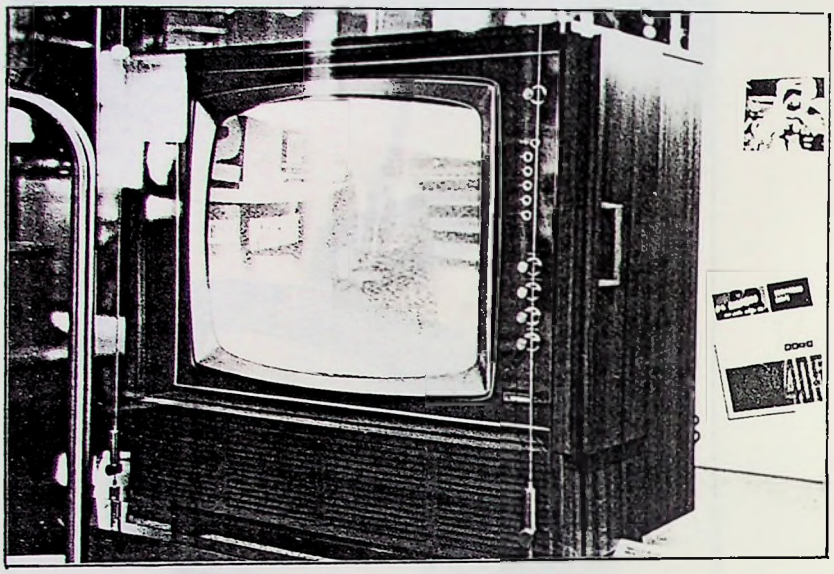
Although the technology for colour television existed from the early 1950's it took American networks almost a decade to break out of the vicious circle whereby there were few colour programmes because there were few colour sets and vice versa. BBC 1 and ITV, still more popular than BBC 2, continued to be transmitted only on 405 lines and in monochrome until 1969. So the television industry was forced to design its first generation colour receivers to dual standards, knowing that most of the time they would be displaying a black and white picture less bright than that produced by a monochrome receiver.

The Ferguson 2000 series (ILL. 35) produced in 1967, was the world's first full-size colour receiver to use transistors throughout. Transistors were vastly superior to the vacuum tubes-valves-in processing electronic signals. Consuming only a quarter of the power of valve receivers, it ran cooler and so was more reliable. It operated on 405-line black and white standard as well as the 625 line colour. Its 84 transistors were on 12 plug in boards, enabling repairers, for the first time, to find faults by substituting new boards, rather than by labourously testing individual valves. But where the design falls down was in its use of a wooden box cabinet. It reverted back completely to the furniture approach to television design. Teak had become one of the more popular styling materials of the 60's, following the example of the Scandanavians who employed it widely. Used here the cabinet, complete with swinging doors to cover the screen, was disguised as in early television receivers as a piece of furniture. Opening the doors the buyer could just as easily find cut-glass decanters and glasses of a drinks cabinet.

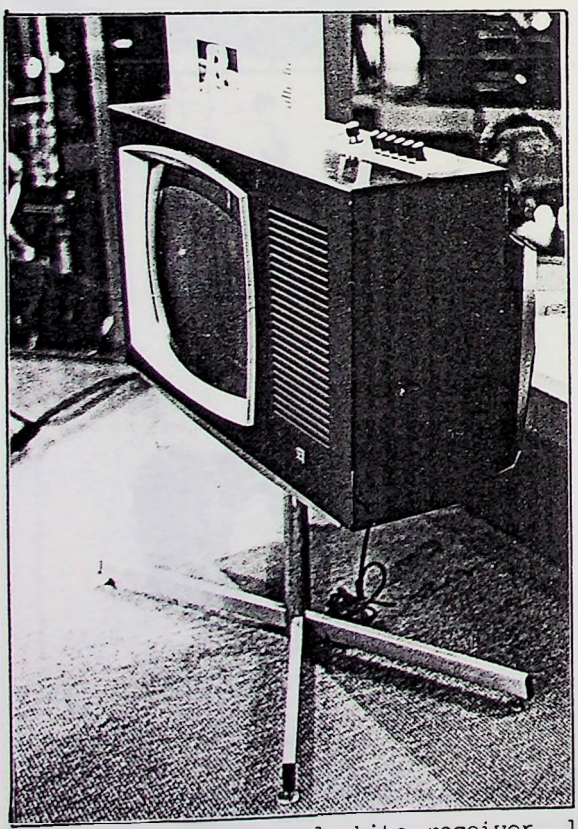
Murphy's V1913 19inch set (ILL. 36) was, in appearance, typical of black and white receivers of 1968. The set provided a novel solution to the problem of relating the stand to the television. The Murphy designers also used the plastic moulded housing to novel effect. Monochrome sets cost about one third the price of a colour set as they still do. So if viewers could not afford a colour set they could buy this model in a variety of colours including orange, blue or bright green.

The development of the transistor by Bell laboratories in 1947 also led to rapid miniaturization in the 60's. Sony had introduced the world's first fully transistorized television in 1959. The TV-8-301 (ILL. 37) was also the world's first truly portable television. Sony got a foothold in Western television markets by producing and selling small sets at a time when people generally were saying they wanted bigger televisions. The TV-8-301 challenged the international television industry to complete in areas of miniaturization and technology in addition to cabinet design and marketing. Its immediate popularity drew attention to the standards of quality and technological achievement of Japanese industry. Reduced to essentials of tube and battery pack tightly sheeted in a metal cabinet, with handle, knobs, antenna and stand arranged as functionally dictated, the boldly reduced 8inch model was at the time considered amazingly light, weighting only 13.5 pounds. It became a cult object used, as the papers and magazines often remarked, by the Pope and President Kennedy.

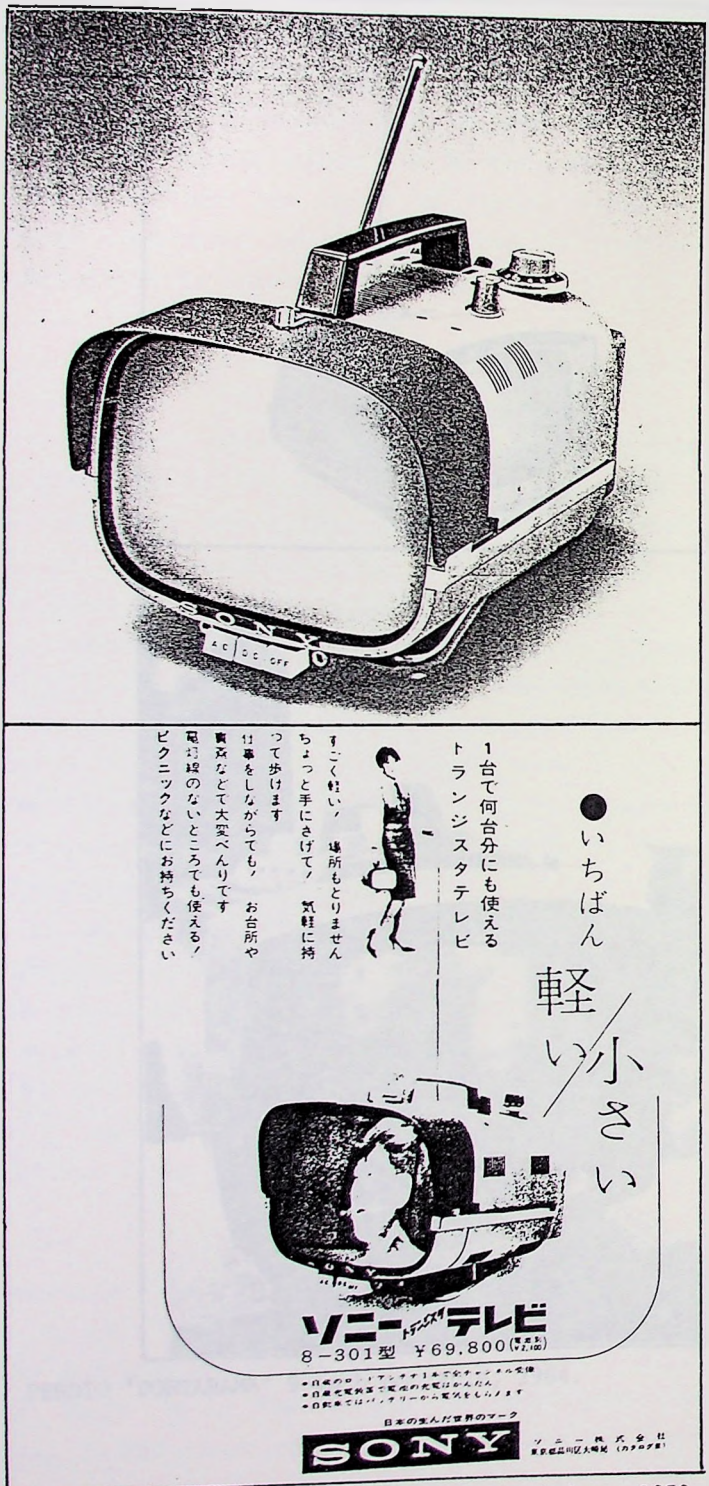
The Perdio Electronic company pioneered the portable transistorized television in the UK with their Portarama (ILL. 38) in 1964. It's design was remarkably similar to Sonys TV-8-301, but instead of using a metal housing, the Portarama opted for plastic mouldings. Although initially developed for use in the restricted space of Japanese homes, when introduced into the West, portables were used in the kitchen, the bedroom, the bathroom, indoors or out of doors in boats or caravans. By virtue of its own portability, with no plugs or wires to tie the viewer down, portable televisions became so popular that they were being used increasingly as a second television.



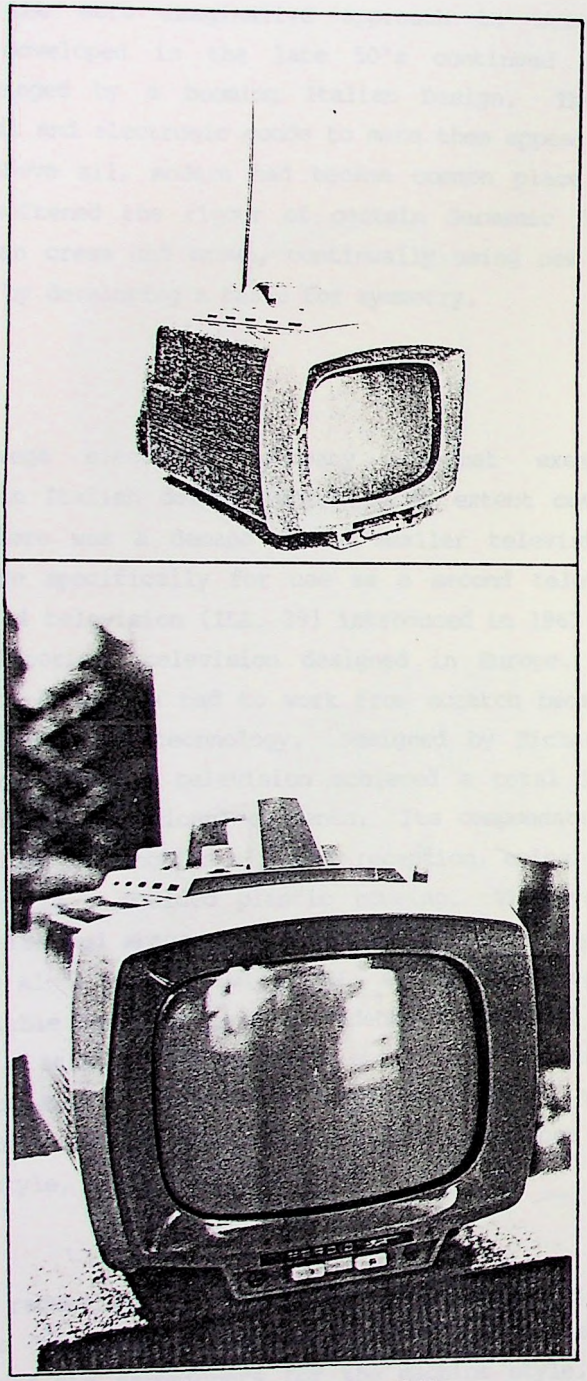
ILL. 35 FERGUSON 2000 Colourstar receiver 1967. Price £363 (about £1800 in 1987)



ILL. 36 MURPHY V1913 19-inch black and white receiver, 1968, available in orange, blue or bright green.



ILL. 37 SONY TV-8-301 8-inch portable television, 1959. The world's first fully transistorized television.

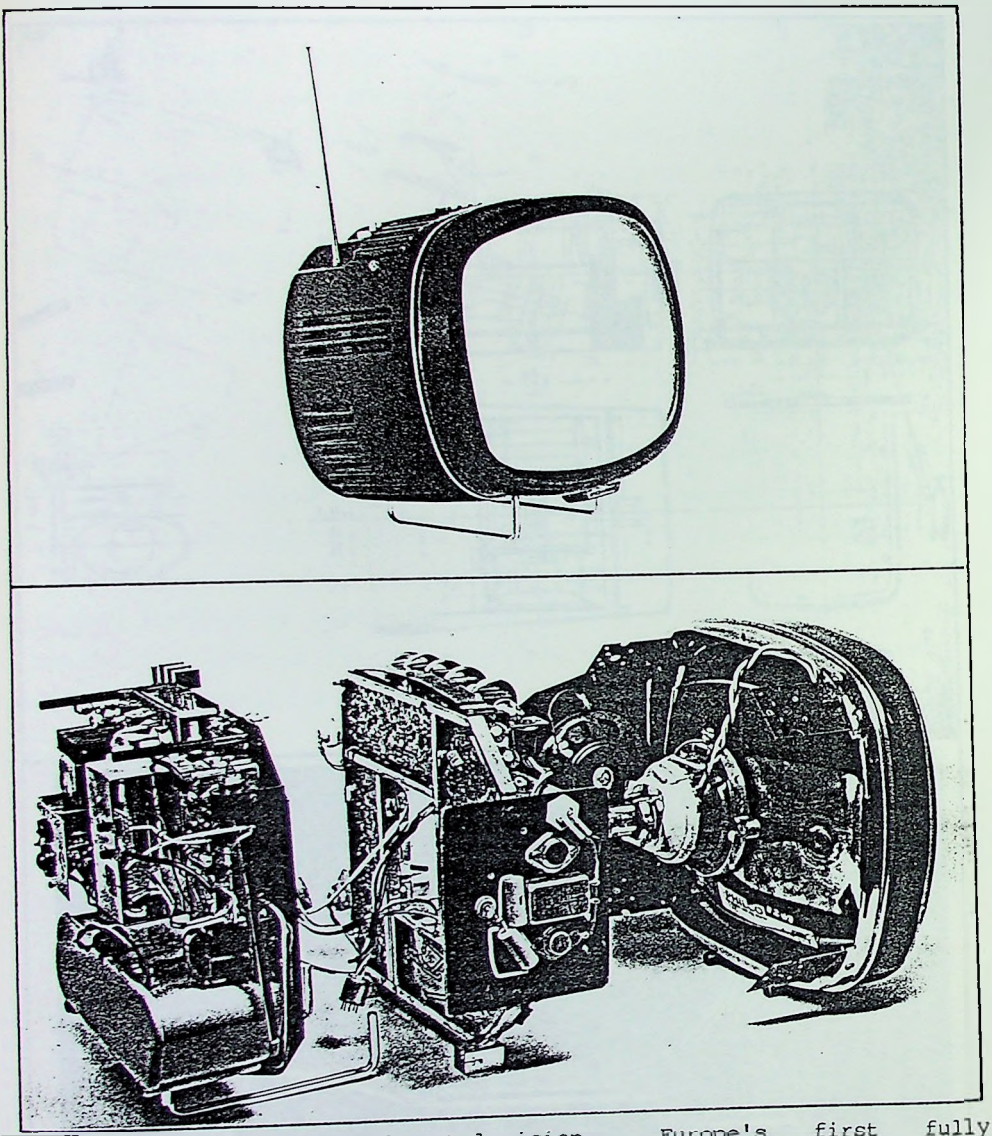


ILL. 38 PERDIO 'PORTARAMA' 9-inch portable, 1964.

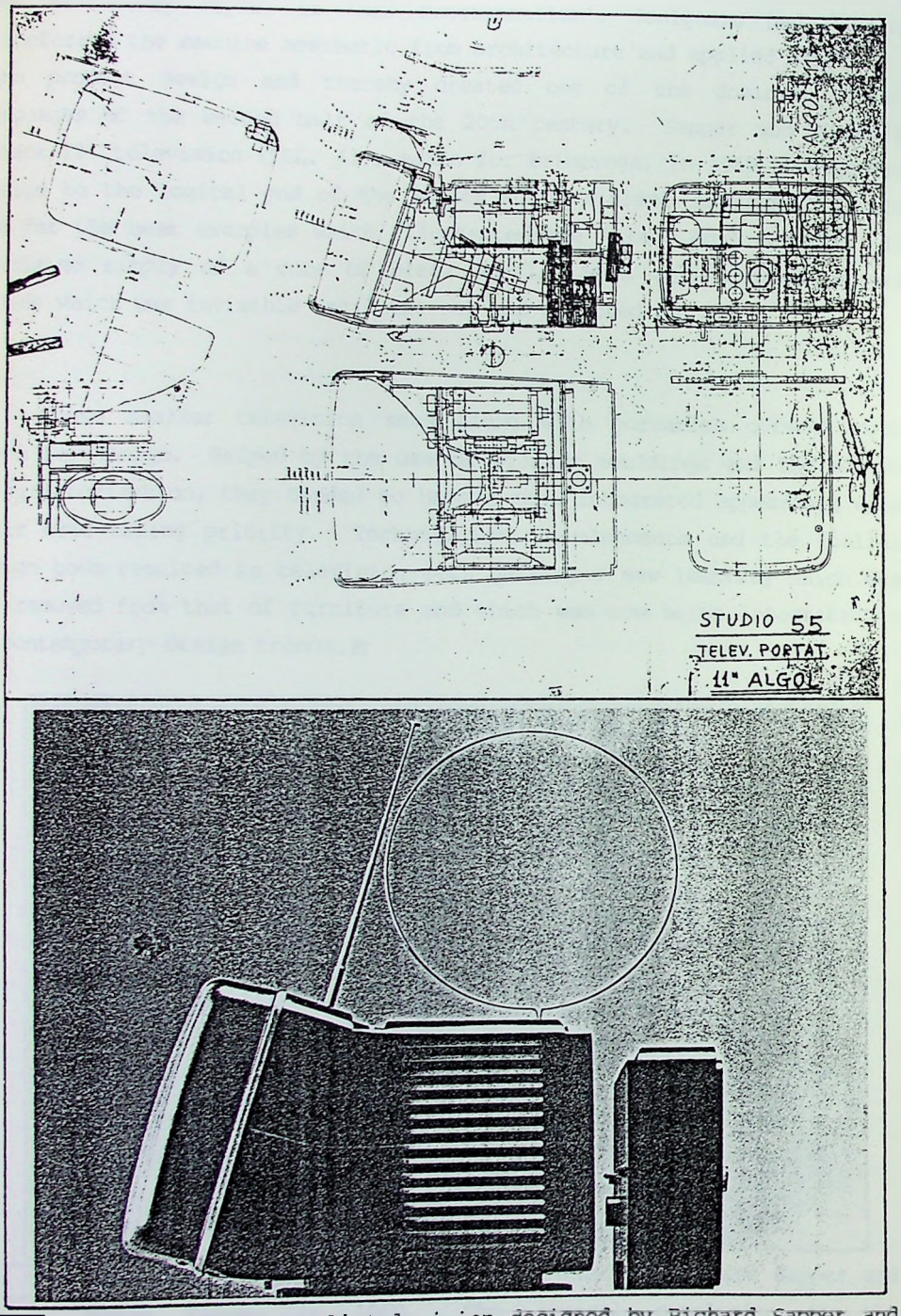
In Italy the more imaginative approach to television design introduced and developed in the late 50's continued into the 60's especially encouraged by a booming Italian Design. The practice of styling mechanical and electronic goods to make them appear clean, crisp, geometric and, above all, modern had became common place by the 60's. Italian design softened the rigour of certain Germanic forms by using colours other than cream and brown, continually using new materials and inspirations and by developing a taste for symmetry.

The Brionvega electronic company somewhat exemplifies this important phase in Italian design, which to an extent continues today. They saw that there was a demand for a smaller television, not just portable, but more specifically for use as a second television in the home. The Doney 14 television (ILL. 39) introduced in 1962 was the first completely transistorized television designed in Europe. As with the Sony TV-8-301, the designers had to work from scratch because they were working with entirely new technology. Designed by Richard Sapper and Marco Zanuso, the Doney 14 television achieved a total integration of formal, structural and functional elements. Its components were grouped in 4 parts according to function : power, reception, emission and screen; and were enclosed in a moulded plastic housing. The overall form is governed by the size and shape of the picture screen. Sapper and Zanuso also designed the Algol 11 television (ILL. 40) for Brionvega in the same year. The remarkable sense of form and identity, governed by the angled screen, achieved a strong presence while still being minimial. Initially designed to be put away easily, out of sight, when not in use, the Algol 11 became so popular that it remained in open view, almost as an exhibit of High Italian style, whether in use or not.

Successive reductions of detail created an anonymity that was, in fact, a curious reversal of the expressive principles which had originally inspired the campaigners for the machine style. In the late 60's and early 70's, the design of electronic goods was moving increasingly in the direction of the simple black and white box. Dubbed



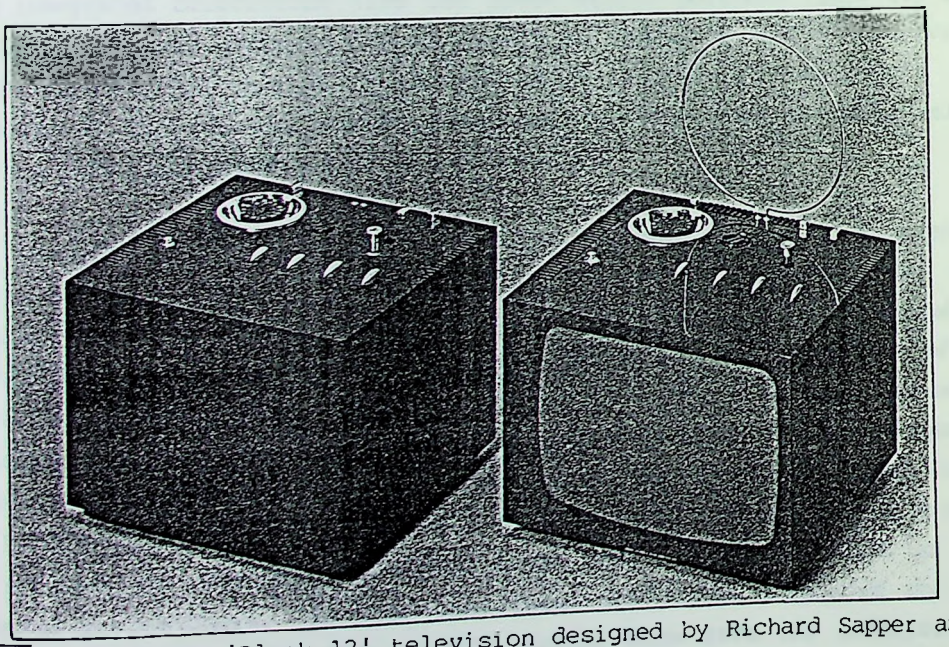
ILL. 39 BRIONVEGA 'DONEY' television. Europe's first fully transistorized television designed by Richard Sapper and Marco Zanuso in 1962.



ILL. 40 BRIONVEGA 'ALGOL 11' television designed by Richard Sapper and Marco Zanuso in 1962.

the 'efficiency style' or 'New Functionalism', designers had finally transferred the machine aesthetic from architecture and applied arts into product design and thereby created one of the dominant visual languages of the second half of the 20th century. Sapper and Zanuso's 'Black 12' television (ILL. 41), again for Brionvega, in 1969 took modern design to the logical end of the search for a minimal language. It was one for the best examples which illustrated the 'Black Box' concept. It consisted simply of a cube of black acrylic with a television screen inside which was invisible until the set was switched on.

These smaller television sets along with portables offered more scope for design. Helped by the use of plastic mouldings and the advent of miniaturization, they tended to have a more integrated appearance with their crts taking priority. Technological developments and the Italian design boom resulted in television sets gaining a new identity which was far removed from that of furniture and which was now being integrated in to contemporary design trends. ■



ILL. 41 BRIONVEGA 'Black 12' television designed by Richard Sapper and Marco Zanuso in 1969. The logical conclusion to the 'efficiency style'.

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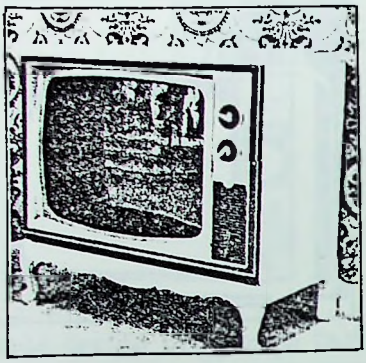
MINIATURIZATION #2 : INTEGRATED CIRCUIT (1970 - 1979)

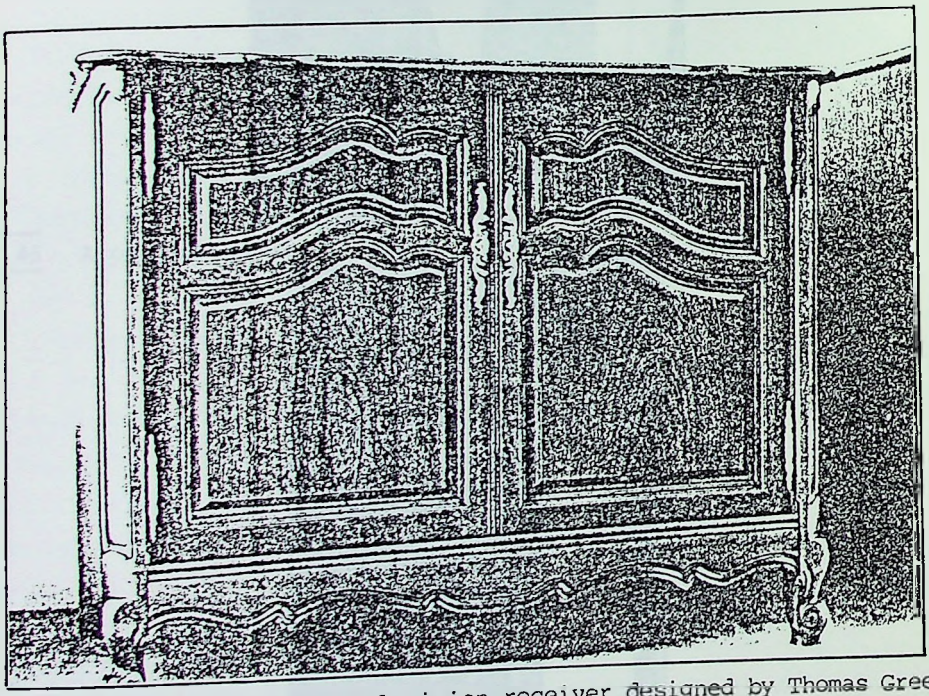
In the late 60's and early 70's there remained the division between television as a piece of furniture or as a technical instrument. This resulted, particularly in America, in a proliferation of hybrid 'period' designs that filled television showrooms and viewers homes. Good modern design was still the exception rather than the rule.

RCA, who had developed the first colour crt, had divided its industrial design department into two sections : furniture styling and instrument styling. Thomas Green of furniture styling was responsible for televisions such as the French Provincial (ILL. 42) and Victor cabinet model (ILL. 43). The carved detailing on the legs of the French Provincial set was carried through to the doors covering the screen and the ornate hinges and handles on the Victor model. The overall effect was that of a heavily ornamented fruitwood cabinet that completely disguised the contents. At the same time in the instrument styling section Bernard Radtke was designing more integrated televisions like the sleek Victor portable (ILL. 44) which displayed a closer application of functional design : that the appearance should express the precise qualities of an electronic instrument. The treatment of its plastic housing and metal controls were remarkably simple and free from unnnecessary trim and decoration.

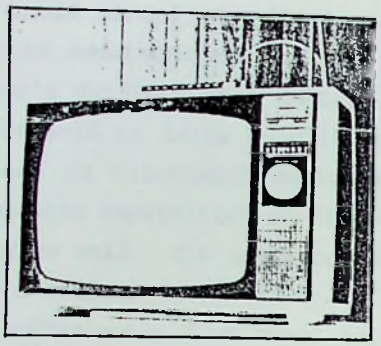
Meanwhile in Europe television designers were caught up in trend of designing for the future. Due to this televisions became larger, more clinical and more organic - resulting in even more ridiculously shaped televisions. One particularly anonymous manufacturer's prediction of how televisions in the 1980's would look consisted of a large screen enclosed in a flowing organic frame sitting on a single stem (ILL. 45). The squatted appearance of the Philips 26" television from 1970 (ILL. 46) seems due to the large bulbous screen and the well radiied wedge shaped plastic housing. The solution for the support worked quite well as it was often an area neglected by designers. In this case furniture design trends of the time influenced the solution. The organic single stem gave the television an integrated, but somewhat unstable, appearance promoting future imagery. But the problem of the final product not fitting in with the average householders' homes remained.



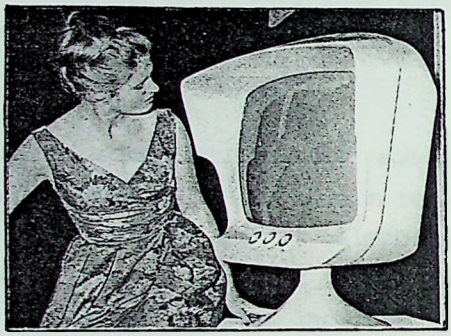
ILL. 42 RCA French Provincial television receiver designed by Thomas Green in the late 60's.



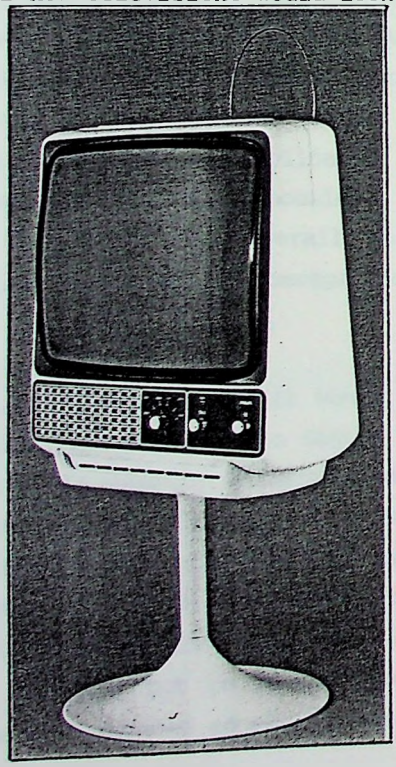
ILL. 43 RCA Victor cabinet television receiver designed by Thomas Green.



ILL. 44 RCA Victor portable design by Bernard Radtke in the late 60's.



ILL. 45 A prediction of how televisions would look in the 1980's.

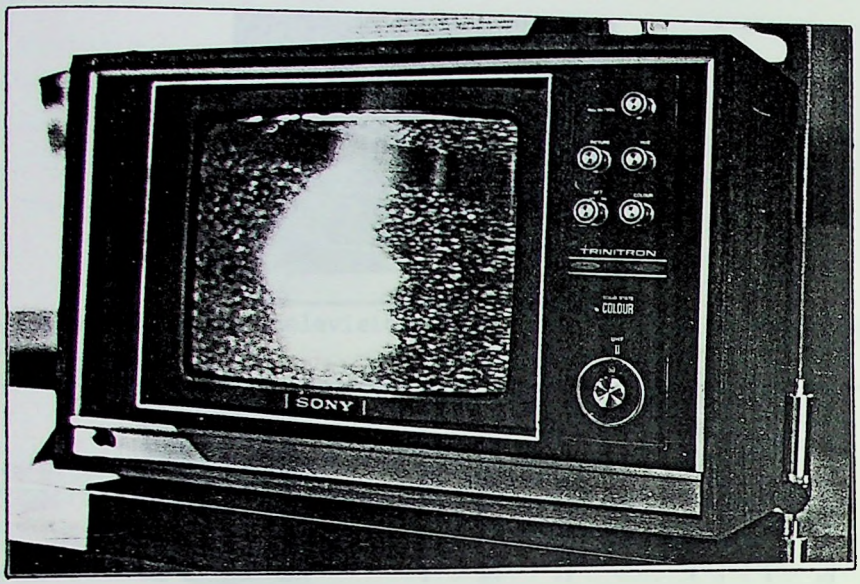


ILL. 46 PHILIPS 26-inch television, 1970.

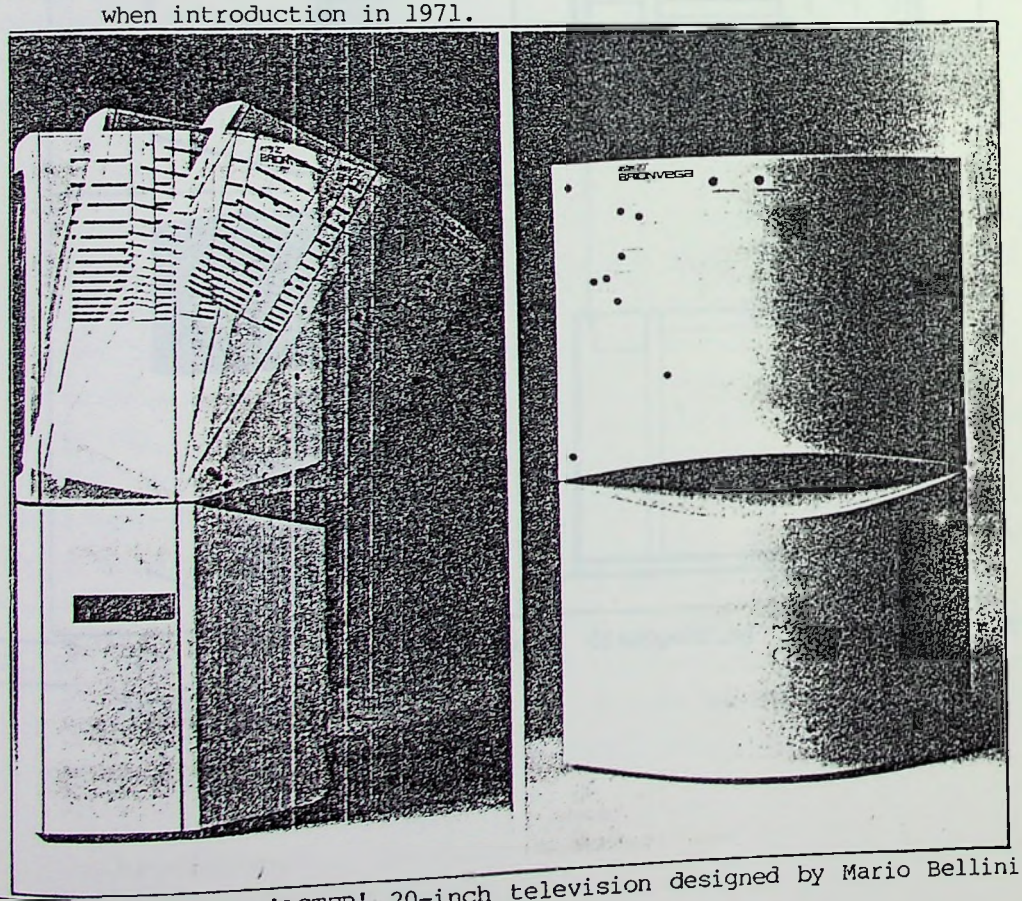
Many householders could afford more than one television set and so offered a growing market to manufacturers who included Japanese companies for the first time. Sony's KV1320 17inch colour receiver was the first Japanese colour set to be sold in large quantities in Europe (ILL. 47). The Scandanavian influence in television design had eventually reached Japan. The Japanese companies capitalized on it as it was still the most popular of television styles sold. The electronics and crt were enclosed in a teak housing with a moulded front cover. Introduced in 1971 its Trinitron tube differed sufficiently from other colour tubes to avoid the restrictions of patents held by RCA. Sony were able to produce cheaper sets, in this case just under £200 (about £1000 today).

Italian designers were now using black and white in their more flamboyant and imaginative designs for television receivers. In 1970 Brionvega produced a new concept for a television that inclined to achieve better viewing angles. Designed by Mario Bellini, the 20 inch Aster television (ILL. 48), was divided into two main parts. The top section housed the screen and electronics which pivoted on the base which contained an extra speaker. The speaker unit was detachable allowing the set to be both portable and to have better acoustics in the home. Bellini use the vent and speaker slots and the controls as graphic decoration to contrast with the uncomplicated form of the white Acrylo-nitrile Butadiene Styrene (ABS) housing, extending late 60's neo-functionalism into the 70's. The overall form denoted technical purism and the high quality finish of a Brionvega product.

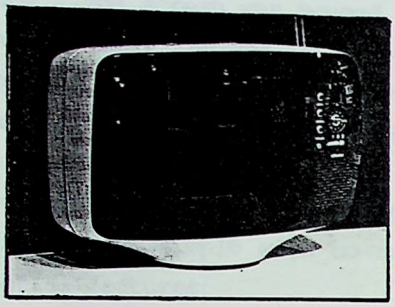
The idea of disguising the screen so it would not be visible to the viewer until the television is in use, as in Sapper and Zanuso's Black 12 television (ILL. 41) was again used by television designers in the early 70's. In France one particular manufacturer introduced a television with a fish-eye front panel through which the controls emerged. Slots for the speaker were also included in the tinted acrylic panel (ILL. 49). But Macchi Cassia's 24inch UP/1 television (ILL. 50) in 1971, reflected the 'efficiency style' more directly but on a much larger scale. The set consisted of a white cube with rounded edges, big enough to become a



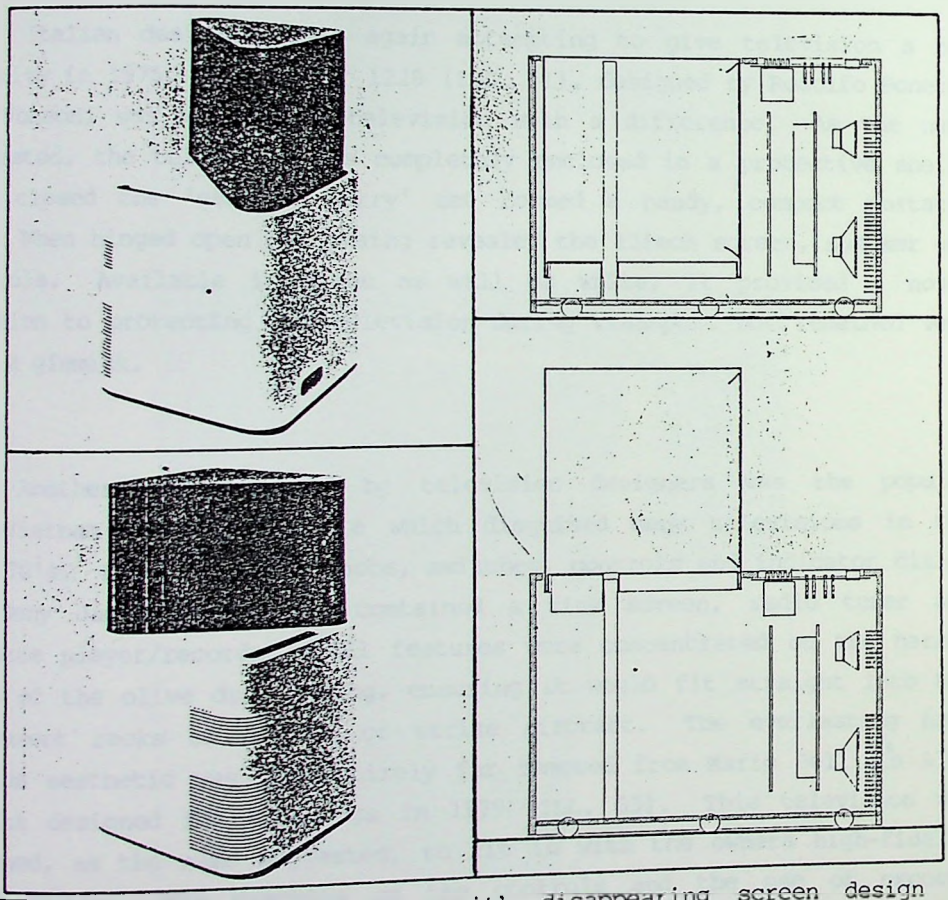
ILL. 47 SONY KV1320 17-inch colour receiver. Costing just under £200 when introduction in 1971.



ILL. 48 BRIONVEGA 'ASTER' 20-inch television designed by Mario Bellini in 1970.



ILL. 49 French portable television from the early 70's with unusual fish-eye front.

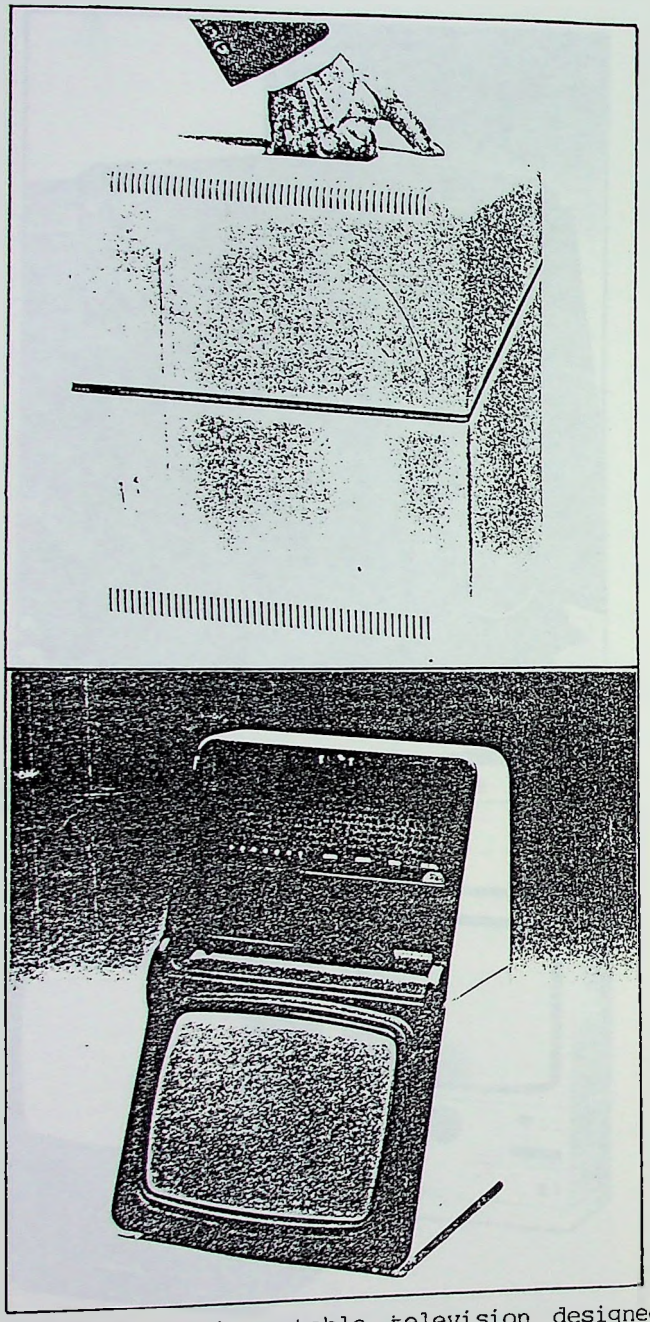


ILL. 50 UP/1 24-inch television with disappearing screen design by Macchi Cassia in 1971.

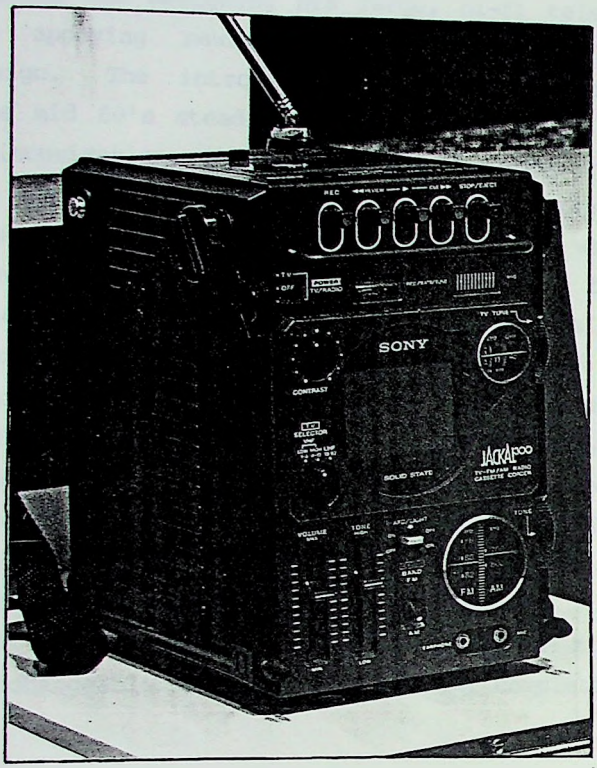
sculptural piece in a room. The screen was housed in a completely opaque smoked methacrylate cover. When the set was switched on the screen complete with smoked cover rose out of the cube which contained the electronics, controls and speaker. Only then was the screen visible. The screen unit disappeared back into the cube when the set was no longer in use. The form was an exercise in harmonious composition and geometric simplicity. Cassia kept the form simple with no extraneous detail added to the television's essential features.

Italian designers were again attempting to give television a new identity in 1975. The Oyster 1228 (ILL. 51), designed by Rodolfo Bonetto for Voxson, was a portable television with a difference. As the name suggested, the television was completely enclosed in a protective shell. When closed the 'easy to carry' set formed a handy, compact portable box. When hinged open the casing revealed the 12inch screen, speaker and controls. Available in green as well as white, it provided a novel solution to protecting the television during transport but remained very much a gimmick.

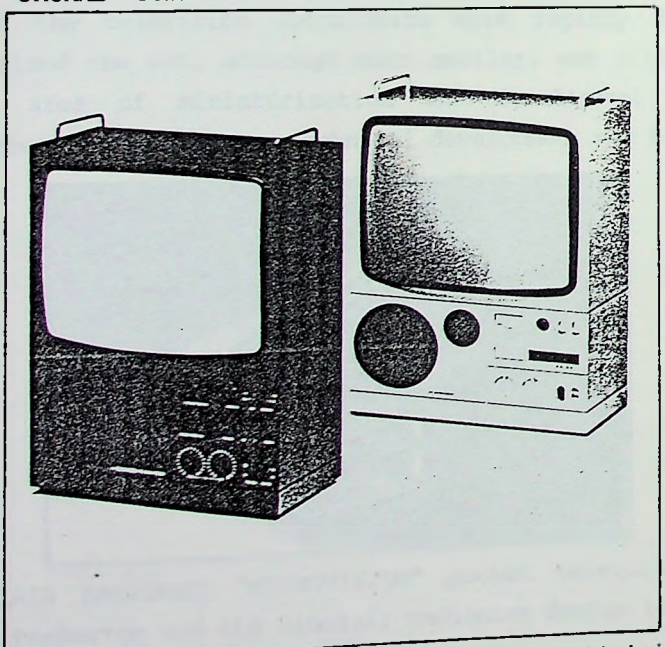
Another gimmick used by television designers was the popular post-Vietnam 'commando' style which disguised many televisions in the late 70's. Bristling with knobs, switches, controls and indicator dials, the Sony Jackal (ILL. 52) contained a tiny screen, radio tuner and cassette player/recorder. All features were concentrated on the narrow front of the olive drab casing, ensuring it would fit straight into the instrument racks of a tank or strike aircraft. The everlasting army surplus aesthetic was not entirely far removed from Mario Bellini's Alta Fedelta designed for Brionvega in 1979 (ILL. 53). This television was designed, as the name suggested, to fit in with the owners high-fidelty sound system. The graphics on the controls and the use of exposed speakers in the rectangular form related to hi-fi system design of the time. The handles on top of the television seem to suggest that it too belonged on a rack among other hi-fi electronic components.



ILL. 51 Voxson 'Oyster 1228' portable television designed by Rodolfo Bonetto in 1975.



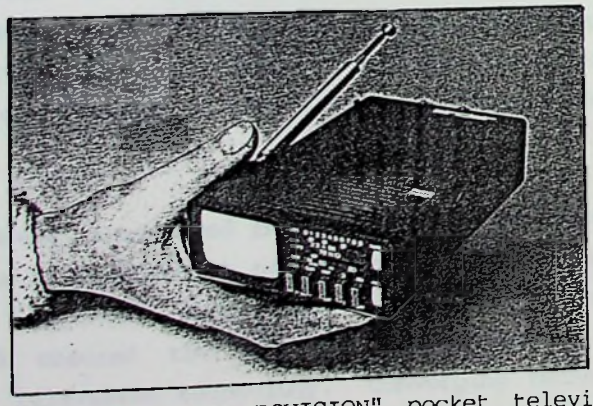
ILL. 52 SONY 'JACKAL' commando television in the late 70's.



ILL. 53 BRIONVEGA 'ALTA FEDELTA' designed by Mario Bellini in 1979.

While Bellini was designing his large, hi-fi television, Sinclair Research were applying newly acquired technology into miniature television design. The introduction and development of integrated circuits in the mid 60's steadily replaced transistors leading to even more rapid miniaturization. After 12 years of research and development John Pemberton and the Sinclair Radionics design team introduced the Microvision pocket television in 1978 (ILL. 54). It was a totally new concept in television design - the first truly personal television - made possible by technological advances. Because Sinclair Research was dealing with completely new technology it was designed from the inside out by the engineers. This only left John Pemberton with the task of providing a suitable cover. The form used was suitably enough that of hi-tech black box. The simple black plastic housing enclosed the 2inch crt, electronics and speaker. The front moulded panel included controls and appropriately technical graphics on the buttons and dials. Built to withstand vibrations and rough handling, the set had two built-in antennas, a mode switch that allowed signal reception almost anywhere in the world and rechargeable internal batteries for complete mobility.

Although the television electronics were rapidly developing and being miniaturized the crt, although much smaller, was still in use. It was in this area of miniaturization and development of 'personal televisions' that the next major technical development was to take place.



ILL. 54 SINCLAIR RADIONICS "MICROVISION" pocket television design by John Pemberton and the Sinclair Radionics design team in 1978.

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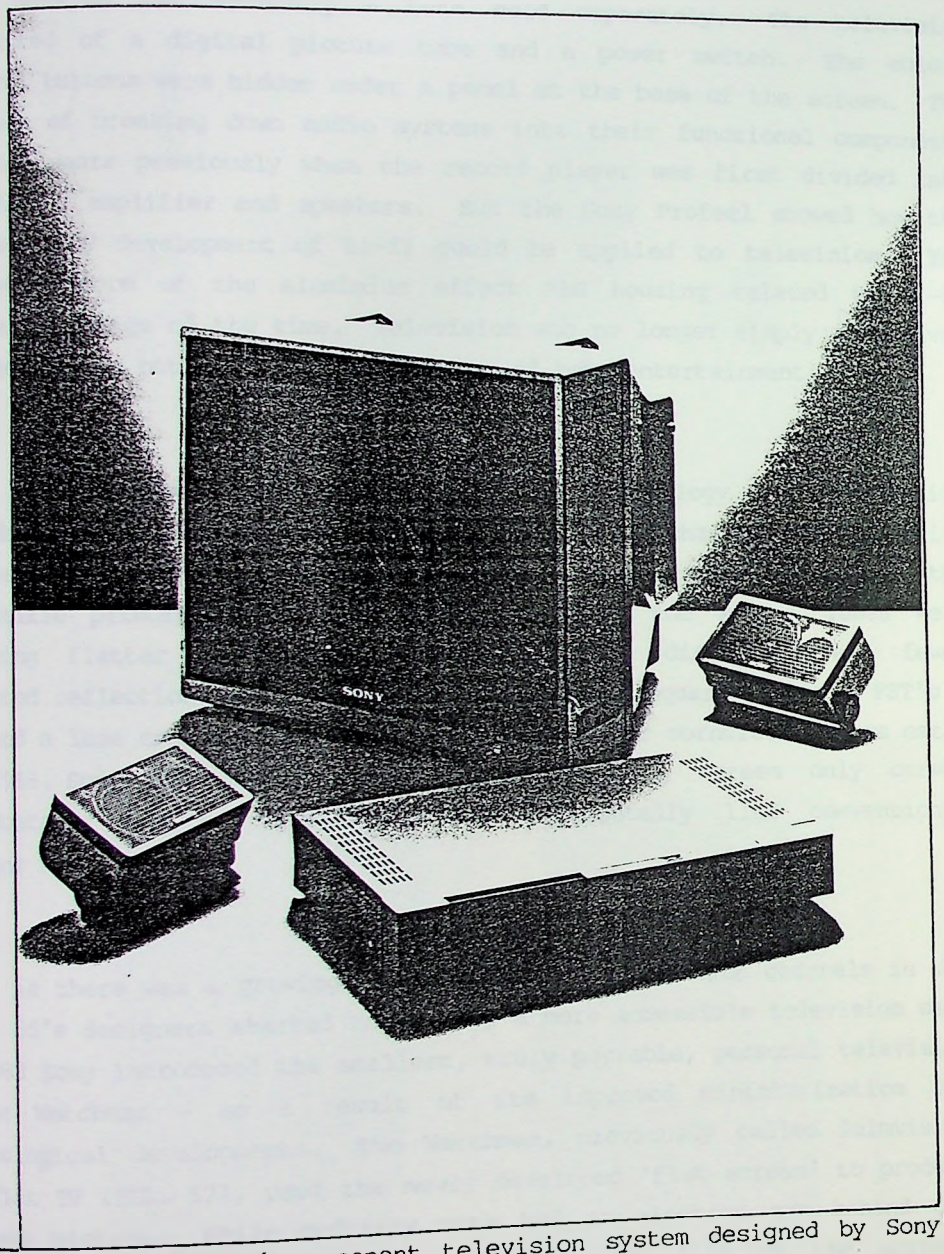
HI-FI; HI-TECH; HI TV (1980 - 1986)

By the 1980's television had almost become an integral and necessary part of everyday life, providing the viewer with visual information and a form of entertainment. More ambitious programming included daily live transmissions form around the world and a rapidly growing number of television channels. Programme makers were becoming increasingly aware of the enormous impact television was having on its audiences. The television set itself had found on additional role in the provision of Teletex services, as a video monitor, a computer terminal and a receiver for satellite transmissions.

Developments in digital electronics were setting the pace for television design. It represented a totally new technology which was comparible to the change from black and white to colour television. Digitial electronics transform all the information, the audio and visual signals, into numbers. The information is transmitted more accurately converting back into pictures and sound on the television screen. Using digitized signals, television's circuitry can take a wide range of inputs including video, cable and satellite. It is also possible to modify the output with such facilities as windowing onto other channels, freeze-frame, zooming into the picture or super-imposing messages on-screen. Digital television allowed manufacturers to keep up with new innovations and developments in television broadcasting and technology.

Sony's Profeel, introduced in 1980 (ILL. 55), not only used digital technology but also indicated a new direction in television design: the concept of a component television system. This offered greater flexibility and ensured the Profeel could keep up with any new developments in television technology. Converging technologies and the brain child of Mr. Sony, Akio Morita, transformed the television set into a system. It was not a television in the conventional sense. The television had no tuner. To operate it an independent tuner or video

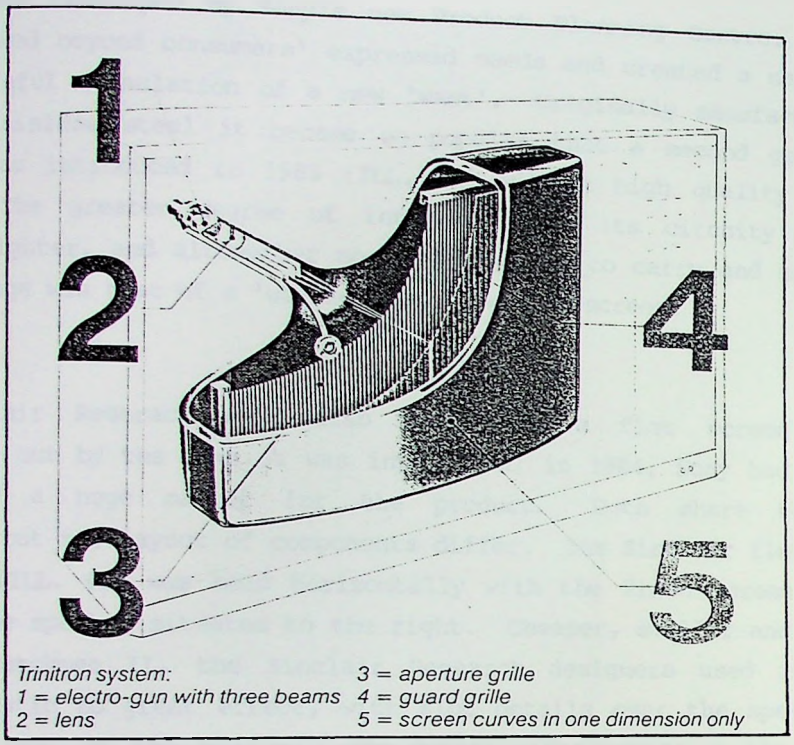


ILL. 55 SONY 'PROFEEL' component television system designed by Sony's Product Planning Centre in 1980.

tape machine was necessary - both sold seperately. The television consisted of a digital picture tube and a power switch. The colour control buttons were hidden under a panel at the base of the screen. The process of breaking down audio systems into their functional components started years previously when the record player was first divided into turntable, amplifier and speakers. But the Sony Profeel showed how the evolutionary development of hi-fi could be applied to television. The geometric form of the aluminium effect ABS housing related to hi-fi component design of the time. Television was no longer simply a receiver for broadcasts but was a legitimate part of home entertainment.

In spite of the development in the technology and electronics inside the television set, the heart of the TV had changed little. While it had been modified during the years since its conception, the scientific principles behind the crt remained the same. Tubes were becoming flatter and squarer, providing less distortion and fewer unwanted reflections on the screen. The flatter squarer tubes - FST's - allowed a less convexly curved screen with squarer corners. But as early as 1968 Sony had flatter crts. The Trinitron screen only curves horizontally and not vertically and horizontally like conventional screens (ILL. 56).

As there was a growing proliferation of television channels in the early 80's designers started to develop a more accessible television set. In 1982 Sony introduced the smallest, truly portable, personal television - the Watchman - as a result of its improved miniaturization and technological developments. The Watchman, previously called Palmvision and Flat TV (ILL. 57), used the newly developed 'flat screen' to produce a 2inch picture. While ordinary crts had an electron gun behind the screen, Sony's was mounted below and to one side of the screen. Electrons were bent almost 90 degrees into the paddle shaped display (ILL. 58). The shape was determined by the technology involved and also because it was to be used as a hand-held television. The Watchman consisted of a flat screen, speaker, electronics, and telescopic antenna in a hand-held unit with a wrist strap. As with the Profeel, the



Trinitron system:
1 = electro-gun with three beams
2 = lens
3 = aperture grille
4 = guard grille
5 = screen curves in one dimension only

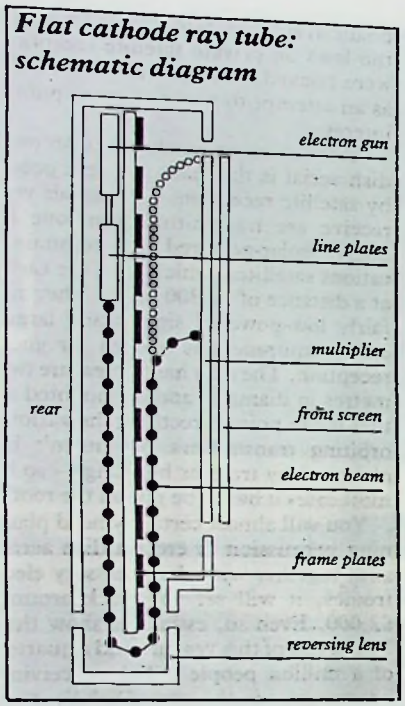
ILL. 56 TRINITRON cathode-ray-tube.

ILL. 57 SONY 'PALMVISION' and 'FLAT TV', 1982.

Watchman was developed by Sony's new Product Planning Centre. The PP Centre looked beyond consumers' expressed needs and created a new market by the careful stimulation of a new 'want'. Originally manufactured in brushed stainless steel it became so popular that a second generation Watchman was introduced in 1983 (ILL. 59) with a high quality plastic housing. The greater degree of integration of its circuity made it smaller, lighter, and altogether more comfortable to carry and use. The overall image was that of a 'walkie talkie' with a screen.

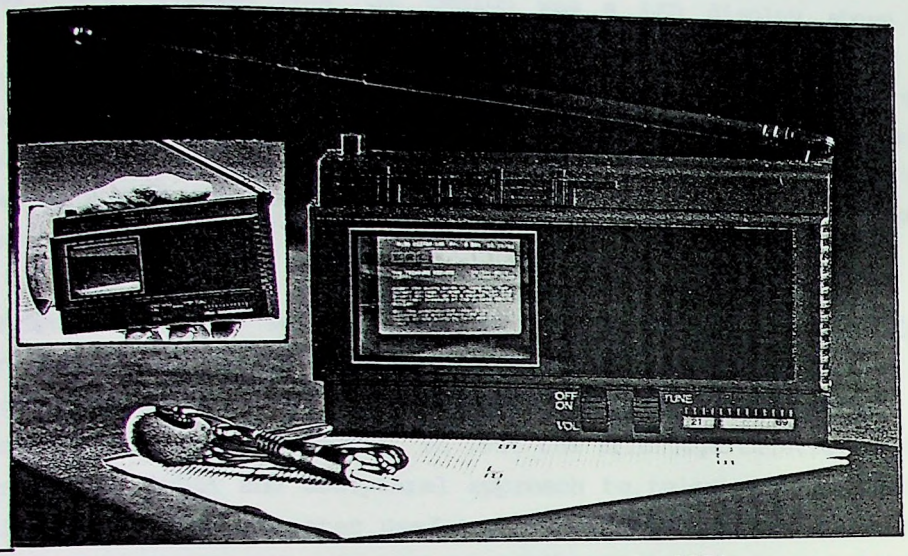
Sinclair Reserach were also developing a flat screen pocket television, but by the time it was introduced, in 1984, Sony had already established a huge market for the product. Both share the same technology but the layout of components differ. The Sinclair flat screen pocket tv (ILL. 60) was held horizontally with the 2inch screen on the left and the speaker situated to the right. Cheaper, smaller and lighter than the Watchman II, the Sinclair Research designers used injection moulded plastic to great effect, with slot details over the speaker and the raised logo, on the housing. The detail and graphics on the housing were simple and in conjunction with the colour black established the hi-tech, black box image.

The 'bigger' portables were still providing opportunity for new ideas, using new technology, but especially, new materials. In 1981 two Italian designers, Cesare Casati and Emanuel Ponzio, incorporated a new feature into Autovoz's AX-16 colour portable (ILL. 61). A shock resistant polyurethane foam was used for the housing to protect the screen and the electronic components from damage during transport. It had 16 channels with electronic selection of the desired transmitters and their memory storage on the selected channel. The infra-red remote control could be stored in a specifically provided slot on the housing when not in use. This solved the problem of integration between the now widely used remote control devices and the television set itself, although this solution appeared as early as 1959 in Gino Valles television for Zanussi (ILL. 33). The unit could be used either built into the television as an ordinary operating panel or removed for remote

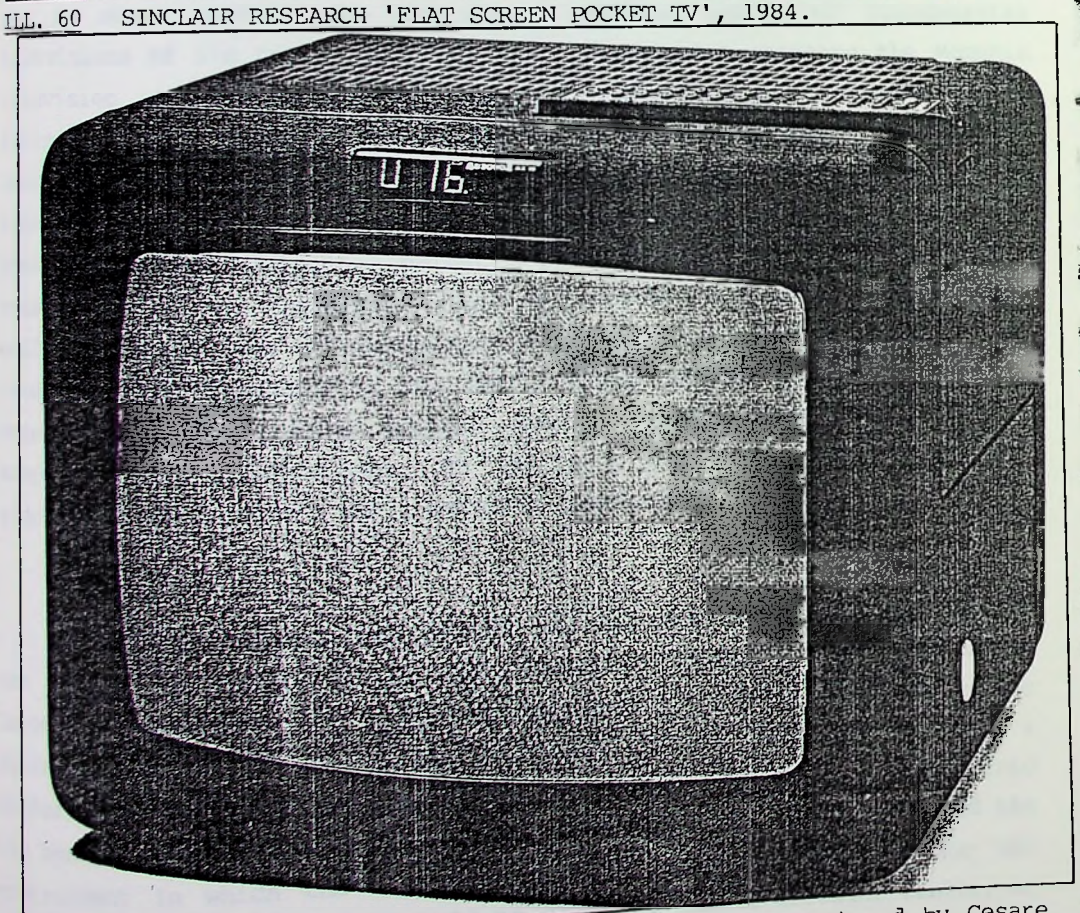


ILL. 58 FLAT cathode-ray-tube.

ILL. 59 SONY 'WATCHMAN I' and 'WATCHMAN II' 1983.



ILL. 60 SINCLAIR RESEARCH 'FLAT SCREEN POCKET TV', 1984.

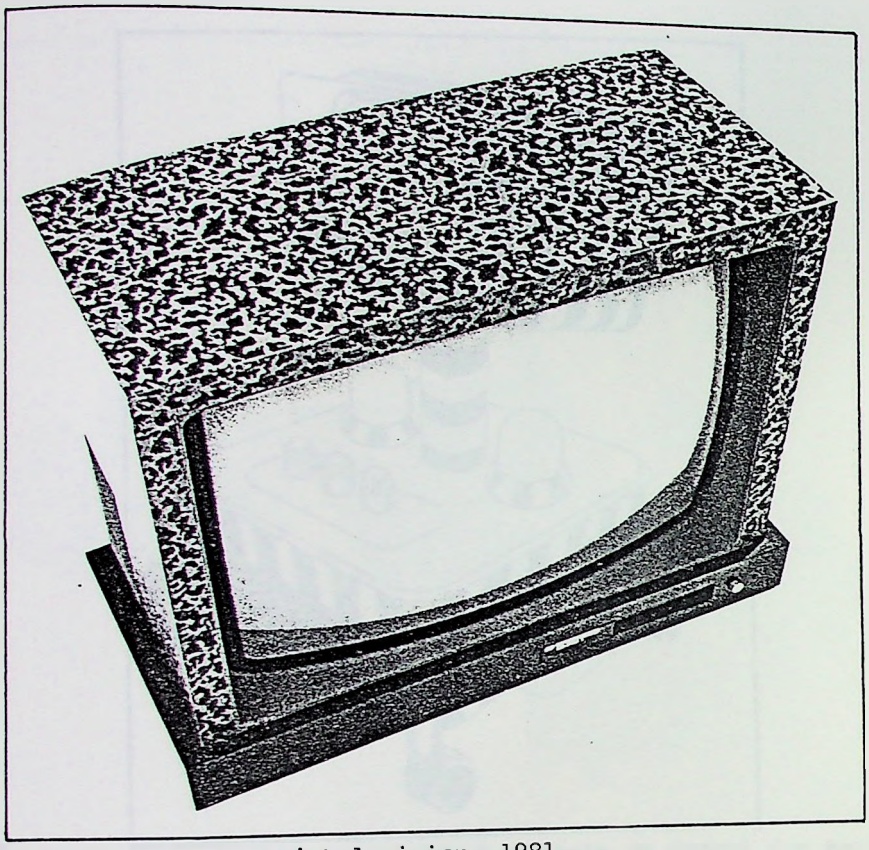


ILL. 61 AUTOVOX 'AX-16' shock resistant television, designed by Cesare Casati and Emanuel Ponzio in 1981.

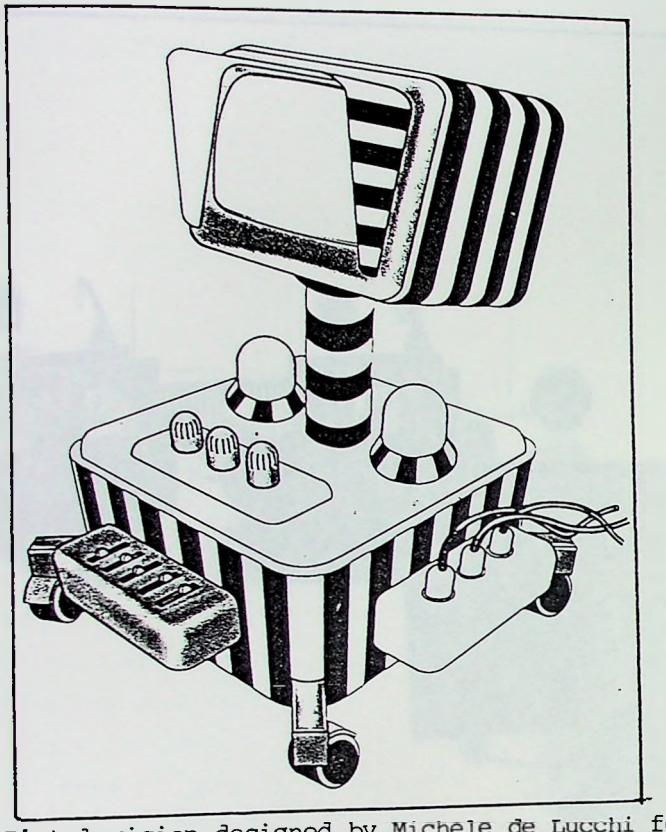
control. Also included into the design was a LED display above the screen indicating the channel and frequency it was being received on. The soft form was dictated by the screen and also by the material used for the housing. Although Casati and Ponzio had produced an interesting new idea for a portable television it was quite conventional when compared to what a certain group of Italian designers were producing at the same time.

Memphis designers were challenging the ideas that design had to concern itself exclusively with the infinite series in production, and were questionning the machine aesthetic that had accompanied the programme of the Modern Movement. In 1981 the Brionvega television (ILL. 62) was a more visual and sculptural approach to television set design. The brightly coloured laminates used to cover its flat geometric housing was in sharp contrast to the almost endless supply of Scandanavian televisions of the time. Although using standard components the Memphis television - the cheapest of the 1981 Memphis range - provided an interesting and refreshing alternative to hi-tech imagery. Michele de Lucchi's hi-fi design (ILL. 63) also for Memphis in 1981 broke the Braun tradition of serious, reliable-looking minimalized products by using cheerful pastel colours, naivety and eclecticism. The invisible electronics of the television were not hidden away in a miniaturized self-erasing box, but on the contrary were give an eyecatching, frivolous exterior which demanded to be used. While technological developments were increasingly tending towards dematerialization, through invisible energy and miniaturization, De Lucchi's television demystified the electronics and stressed their material presence.

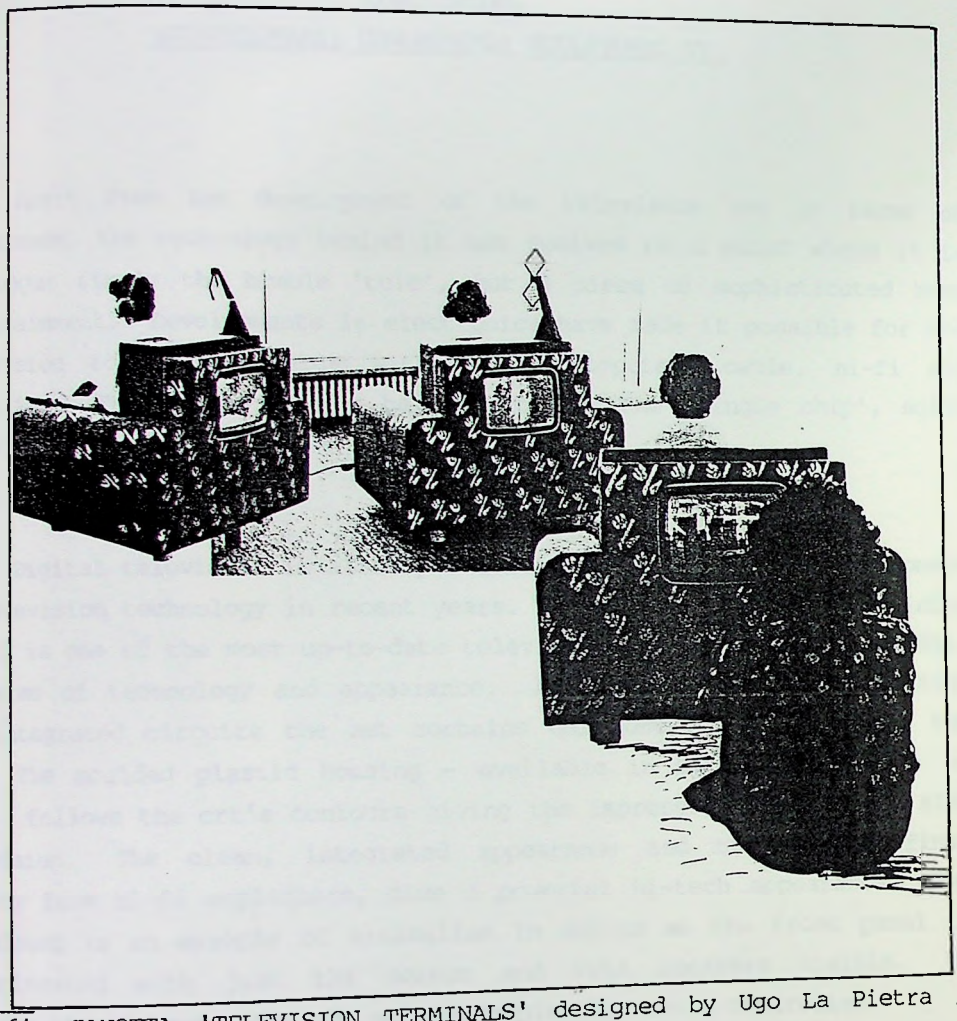
By 1982 television set design was becoming even more diverse, to the extent of reintroducing the furniture aesthetic more directly. Zanotta reintroduced the furniture approach into television design for different reasons to the early television cabinet designers and with a different result. Ugo La Pietra had integrated a television screen into the back of an easy chair (ILL. 64) so that the chair itself provided the environment in which the viewer watched television. Designed for the television house, the chairs could be arranged into a circular finite, or linear infinite system for increased comfort.■



ILL. 62 BRIONVEGA 'MEMPHIS' television, 1981.



ILL. 63 'HI-FI' television designed by Michele de Lucchi for Memphis in 1981.



ILL. 64 ZANOTTA 'TELEVISION TERMINALS' designed by Ugo La Pietra in 1982.

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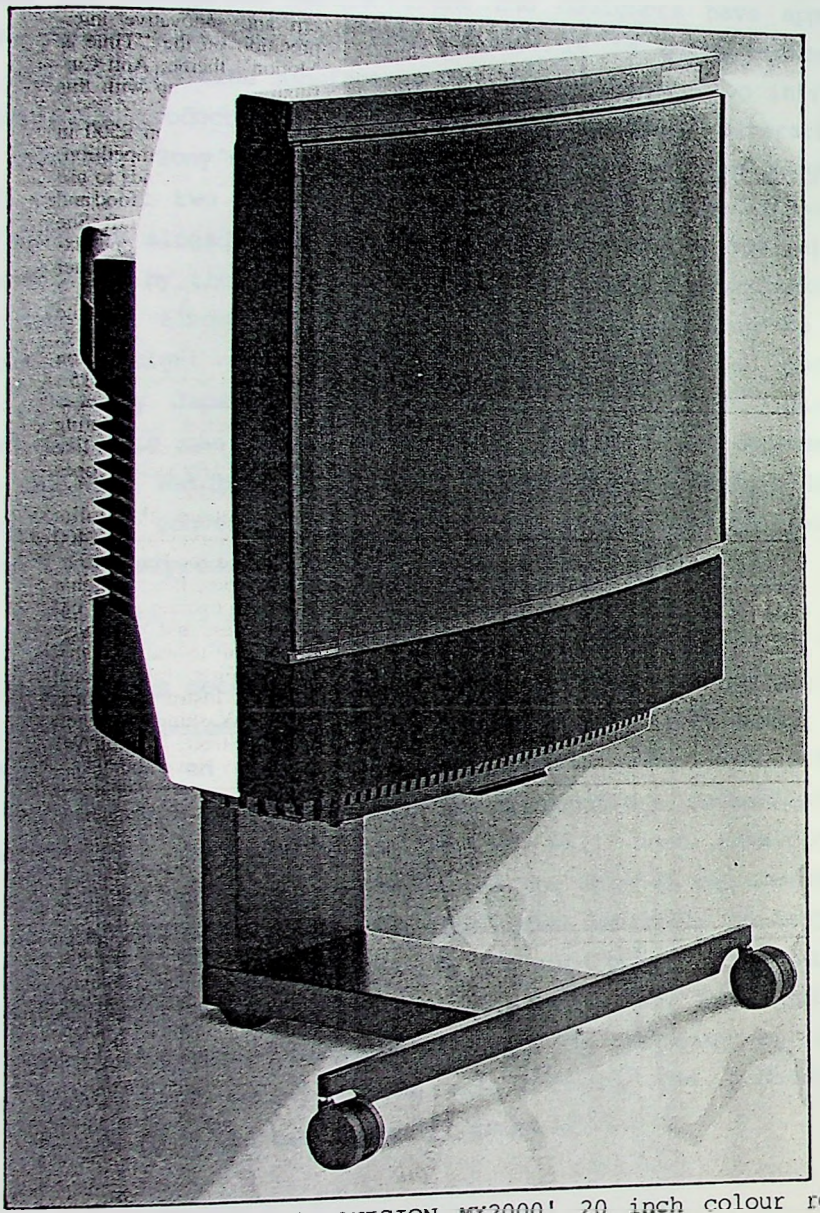
CONCLUSION:
EVOLUTIONARY; CONCEPTUAL; SCULPTURAL TV.

Apart from the development of the television set in terms of appearance, the technology behind it has evolved to a point where it is no longer simply the humble 'tele', but a piece of sophisticated home entertainment. Developments in electronics have made it possible for the television to be compatible with video, computer, cable, hi-fi and satellite. Television is over halfway towards the 'single chip', solid state television.

Digital television is already the most important recent development in television technology in recent years. The Bang and Olufsen Beovision MX2000 is one of the most up-to-date televisions on the market (ILL. 65), in terms of technology and appearance. As a result of miniaturization and integrated circuits the set contains only one bulky component, the crt. The moulded plastic housing - available in white, red, black or grey - follows the crt's contours giving the impression of a rather slim television. The clean, integrated appearance and the moulded fins, imagery from hi-fi amplifiers, give a powerful hi-tech appearance. The television is an example of minimalism in design as the front panel is uncomplicated with just the screen and twin speakers visible. To complete the hi-tech image the set is completely remote controlled.

Manufacturers are already developing higher definition television receivers with 1125 lines rather than the 625 line standard already used. But the most immediate development in television is an extension of flat screen technology. Sinclair Reserach is already looking forward to producing a 125cm screen version of its flat screen pocket tv (ILL. 60). The integration of a computer and digitial technology now make Liquid Crystal Displays possible. Within 5 years LCD technology will provide the viewer with sharp images on a television that hangs on the wall.

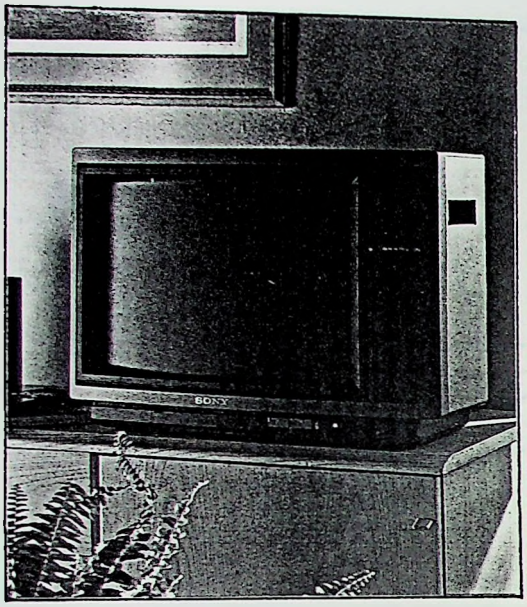


ILL. 65 BANG AND OLUFSEN 'BEOVISION MX2000' 20 inch colour receiver, 1986.

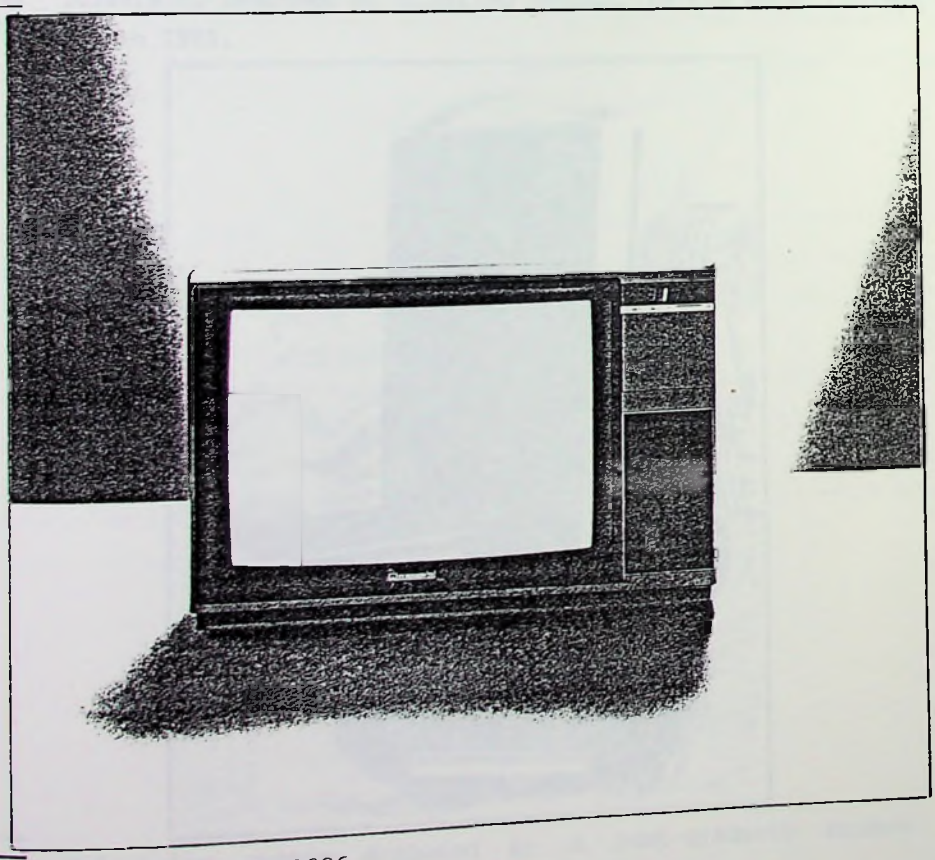
Since its conception manufacturers and designers have approached television design from two main directions. It is quite evident that European and US television manufacturers have concentrated on introducing 'an evolutionary product' which confines them to minor alterations to existing designs. Sony's Trinitron KV2212 (ILL. 66) and the Ferguson TX (ILL. 67) are just two of many examples of television design which is based on what has already been successful. They also show how television design is stifled by the big manufacturers. Although technologically up to date; they are almost identical in their layout of elements and in their housing design. The other approach is that of a 'conceptual product'. Already Japanese manufacturers have show that introducing conceptual products can create new markets and be very successful in doing so the Sony Watchman (ILL. 59). The old style product is being transformed by the convergence of technologies leaving the designer freer to develop a more expressive approach to television design.

Television has become a fashion item, now that the tyranny of the furniturized large-screen set is at an end. Television model changes have almost become an annual event as the designers must anticipate fashion trends. Due to this, stylistic features are reshuffled within fixed parameters. But television design will need something more definite to rely on than fashion trends and the whim of the consumer. As more and more technical functions are provided invisibly on tiny chips, designers will have to explain visually how much better their television is, technically, when compared to the competition's. By exploring new ideas in form, following design trends and by creating new markets, designers can create not just one new identity for television but numerous, depending on its use and environment.

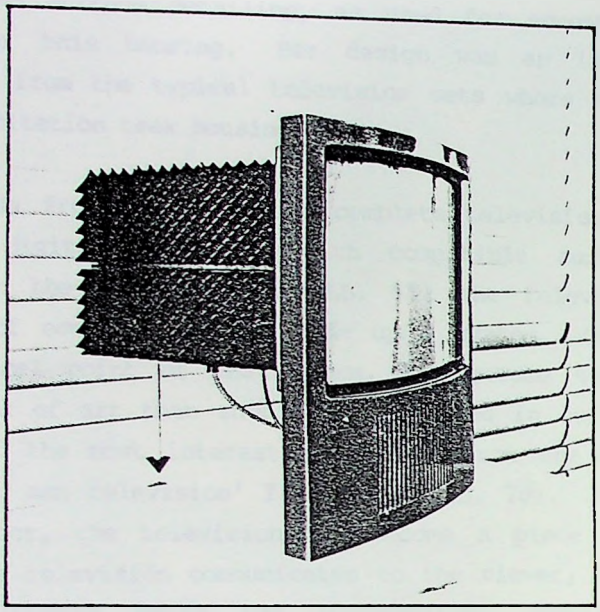
Already design students from the Royal Collete of Art see that the television needs to be completely rethought. Using existing technology Winfried Scheuer's television in 1981 took a new, more expressive approach (ILL. 68). The set had a remarkably slim appearance. The front panel contained the screen and the speaker, and was seperated visually from the housing which contained the electronics and the remainder of the



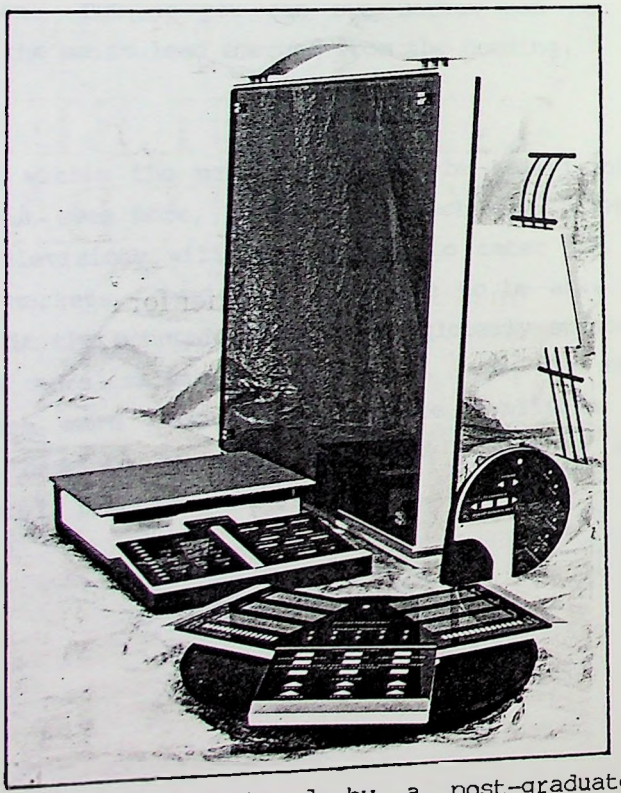
ILL. 66 SONY 'TRINITRON KV2212", 1986.



ILL. 67 FERGUSON "TX", 1986.



ILL. 68 Television designed by Winfried Scheuer in the Royal College of Art in 1981.

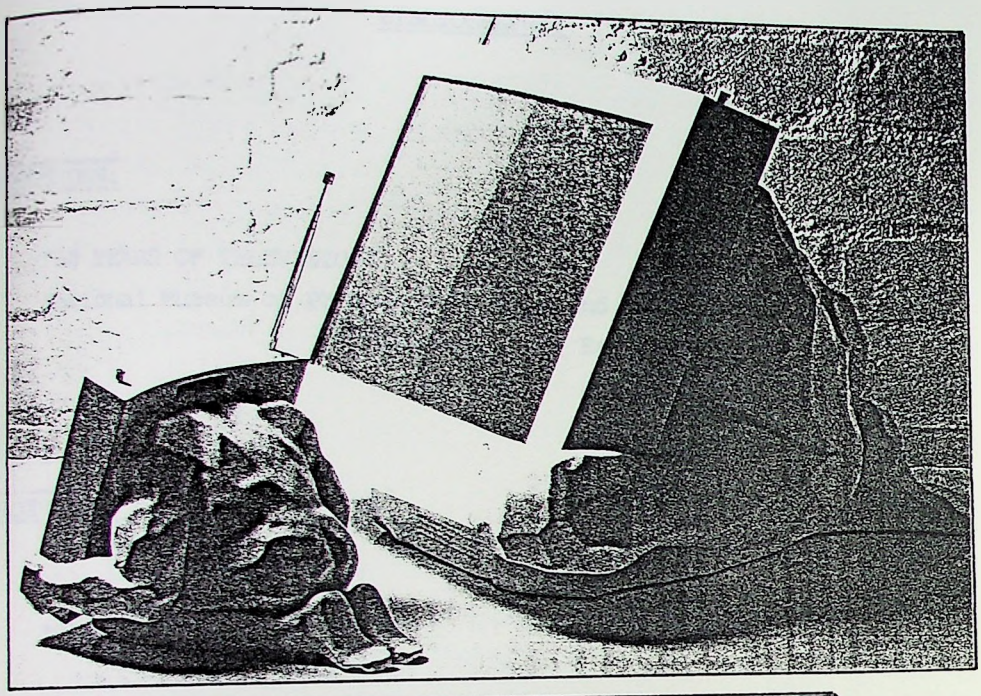


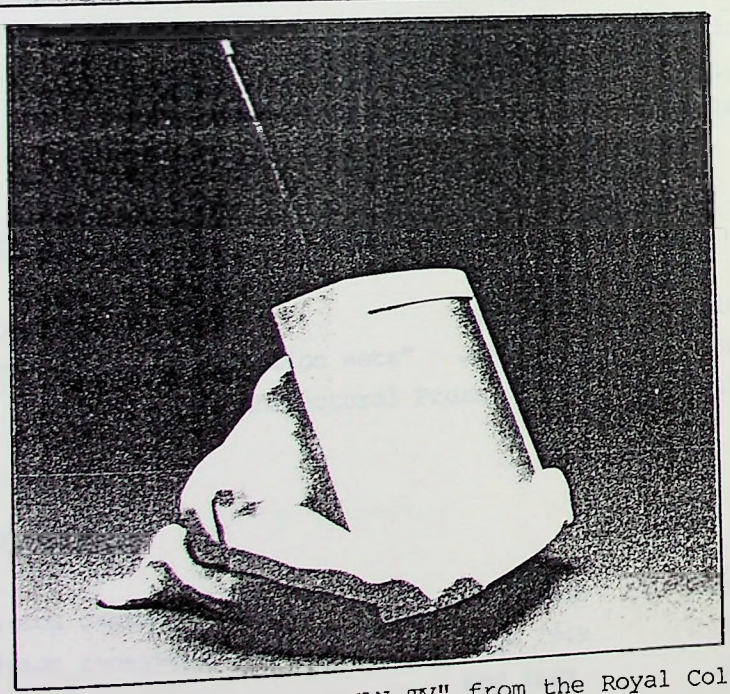
ILL. 69 Television system designed by a post-graduate student of industrial design at the Royal College of Art.

crt. Scheuer used surface detailing, as used for acoustics in sound studios, to cover this housing. Her design was an interesting and radical departure from the typical television sets where everything was enclosed in an immitation teak housing.

More recently from the RCA was a complete television system using up-to-the-minute digital technology with compatible audio and video equipment. As in the Sony Profeel (ILL. 55) the television set had become a series of components which made up a system. The TV monitor (ILL. 69) the focal point of the system, had become very sculptural almost like a work of art that should be displayed in full view in the home. But one of the most interesting designs from the RCA was Chris Barlow's 'kneeling man television' from 1984 (ILL. 70). Intended to be placed on the floor, the television had become a piece of electronic sculpture. As the television communicates to the viewer, Barlow made it humanoid. The housing which was blow-moulded contained existing hardware. The body's head could almost emerge out of the screen when the set was turned on. But as you can see Barlow had not resolved the problem of where the mains lead emerged from the housing.

Undoubtedly within the next few years the television market will change and fragment even more, resulting in much more diverse electronic products. New televisions will be designed to cater for new and even smaller minority markets. Designers will have to be able to spot these in order to exploit the economic benefits of globally standard components to develop even more saleable televisions. As the new developing technology becomes more invisible and more available to all, new televisions will have to be sold, explained and given a value which transcends the merely practical.■





ILL. 70 Chris Barlow's 'KNEELING MAN TV" from the Royal College of Art 1984.

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