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From Caves to Computers,

A History of the airbrush from its origin to present day.

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INTRODUCTION

'There is a great difference between painting a green cat in order to appear original and painting it green because it is the most appropriate colour for communicating the artists' message'.
(Vero, 1985 p.13).

The above quote has a very important relevance to the airbrush and the many paintings it helped to produce. The airbrush has in its history been used, not because it was the most appropriate tool, but because of the effect it produced. This misuse of the airbrush is especially apparent during its second phase of popularity , from the late 1960s through to the mid 1980s.

In my thesis, as well as giving a complete history of the airbrush, its invention and its first use, I intend to find out why it was used to produce so many terrible illustrations, and why does it have such a bad name today among the fine art world. I will show how similar its development was to the development of computer graphics, and will consider what the future holds for the airbrush.

CHAPTER 1.

History of the Airbrush

The invention of the airbrush as we know it today is generally accredited to the American water colour artist Charles L. Burdick (fig 1). The basic design has changed little since its emergence on the market in 1893 (fig. 2). The shape has become more like a fountain pen and the mechancial workings of it more refined and precise due to advances in engeneering technology (fig. 3).

Although Burdick is accredited as being the inventor of the airbrush, his title has not gone without controversy. There exists a U.S. patent for an airbrush dated 1888, taken out by Jens A. Paasche, a Norwegian who was living in America at the time. The Paasche airbrush company still exists today and produces a model of airbrush, the Paasche AB Turbo which is the most advanced and controllable model made to date (fig. 4). Burdick's model, however, was the first produced and by far the most influential and popular model.

Burdick set up his first company in 1893 calling it The Fountain Brush Company, and the airbrush he manufactured was the 'Aerograph', (so popular was his early model that airbrushes came to be known as Aerographs) while Burdick's Company was being set up in England, an American doctor, Allen De Vilbiss, set up the Devilbiss Company in America. This company manufactured atomisers, designed to be used to apply liquid medication to patients with throat ailments. Other forms of atomizers were also produced, perfume appliers being one example. This company had a subisdiary in England and in 1931 the branch merged with the Aerograph Company. Devilbiss is now a worldwide concern with factories both in England and in America.

Burdick first invented the airbrush as an aid to watercolour painting. He saw the difficulty in laying flat washes of colour over an already painted surface without the hairs of the brush lifting the paint and smudging it, the airbrush combated this problem as the airbrush never actually touched the the surfact to be painted. When he came up

fig.1.

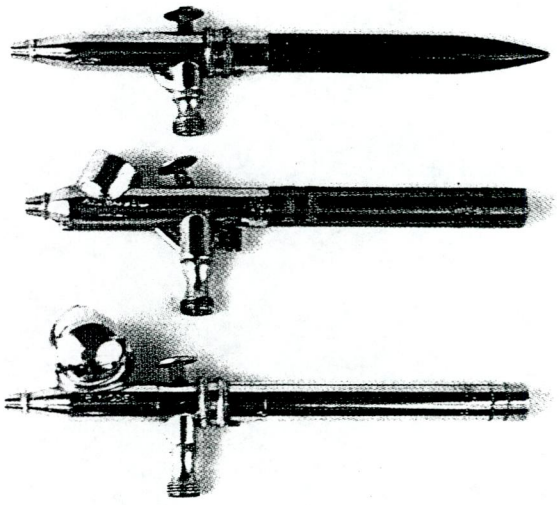


fig.2.

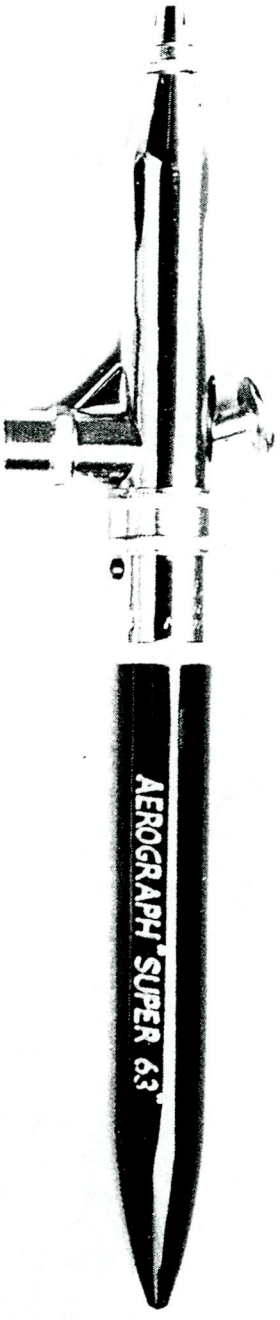


fig.3.

fig.4.

with the solution to this problem, Burdick also created a new painting tool, which had its own unique characteristics. He developed from using the airbrush simply as an aid to watercolour painting and used his airbrushes to complete entire paintings. In fact, Burdick became so competent at using his airbrush that one of his freehand airbrushed portraits fooled the Royal Photographic society into-thinking that it was a photograph. This comparison between airbrushed image and photograph has lasted up until present day. There seems to be a rivalry between the camera and the airbrush as to which one can produce a more life-like impression of a person or scene.

This rivalry is a shame, really, because as a result of this many people overlook the unique qualities of airbrushing and merley see it as an imitator of photography. This less than favourable view of the airbrush has not been helped by those group of artists who call themselves the "Photorealists" and who spend their time slavishly copying photographs trying to impress with their technical achievement rather than their artistic endeavour.

Even in its early days of use, airbrushing was frowned upon, as Charles Burdick found out when the Royal academy in London rejected his work when he asked to have it exhibited in its very important and influential Annual exhibition.

Although airbrushing as we know it today has only been around for just under a century, the technique of applying paint by atomizing or spraying is, in fact, thousands of years old. One of the earliest examples known of painting in any form is an image of a hand which has been sprayed onto a cave wall (fig. 5). This outline image of a hand was found on a cave wall at Puente Viesgo in Spain. This cave painting dates from around 15,000 B.C.

The image was made by blowing pigment through a hollowed stick or bone using the hand as a mask. This image has also been found at other locations such as the caves at Lascaux in France. The purpose of these marks is uncertain, they may have been test pieces for other, larger sprayed paintings or they may have been just a sort of signature. Other

fig.5.

evidence suggests that they may have been of some magical significance.

Other evidence exists to suggest that the use of sprayed paint began as far back as 35,000 years ago.

The next recorded incident of experimentation with the sprayed image occured in 17th Century Japan, where the artists tried to find a technique of applying paint or ink to achieve soft graduations. Unfortunatley, little else is know of their experiments. It is intersting to note, however, that some of the most competent airbrush exponents are Japanese (fig. 6). They were also responsible for helping to lower the price of airbrushes in the 1970s by introducing cheaper models onto the market (although of high quality) which forced competitors to match their prices. The Olympus HP100 is one example of a high quality but reasonably priced model (fig 7).

During the 1840s, a style or method of painting called 'Theorem painting' was developed which used a series of stencils to control the application of paint. The paint, a thick water-colour the consistency of cream was applied to white or off white velvet. The paint was applied to the surface using a stiff stencilling brush.There was no drawing involved in this process, rather the image was built up by using a variety of precut stencils (part of the skill was to be able to build up an image from the basic shapes of the bought stencils). The tiny dots produced by the stiff hairs of the stencilling brush (further diffused by the pile of the velvet) gave a very soft tonal effect. This method allowed very subtle modulations of tone which were very similar to the airbrush. This method which was one of the recognised accomplishments of women during the 1840s was an early form of the sophisticated masking techniques which were to follow in later airbrushed images.

The first serious exponents of the airbrush were the German group of artists and designers that made up the Bauhaus school of design. The fact that the airbrush was a mechanical paint applicator, a sophisticated mechanical object, made it attractive to the Bauhaus artists who sough to create a fusion between art and technology. The Bauhaus designers and artists who were both very influential and innovative in art and design introduced the airbrush to this circle of operations. Although

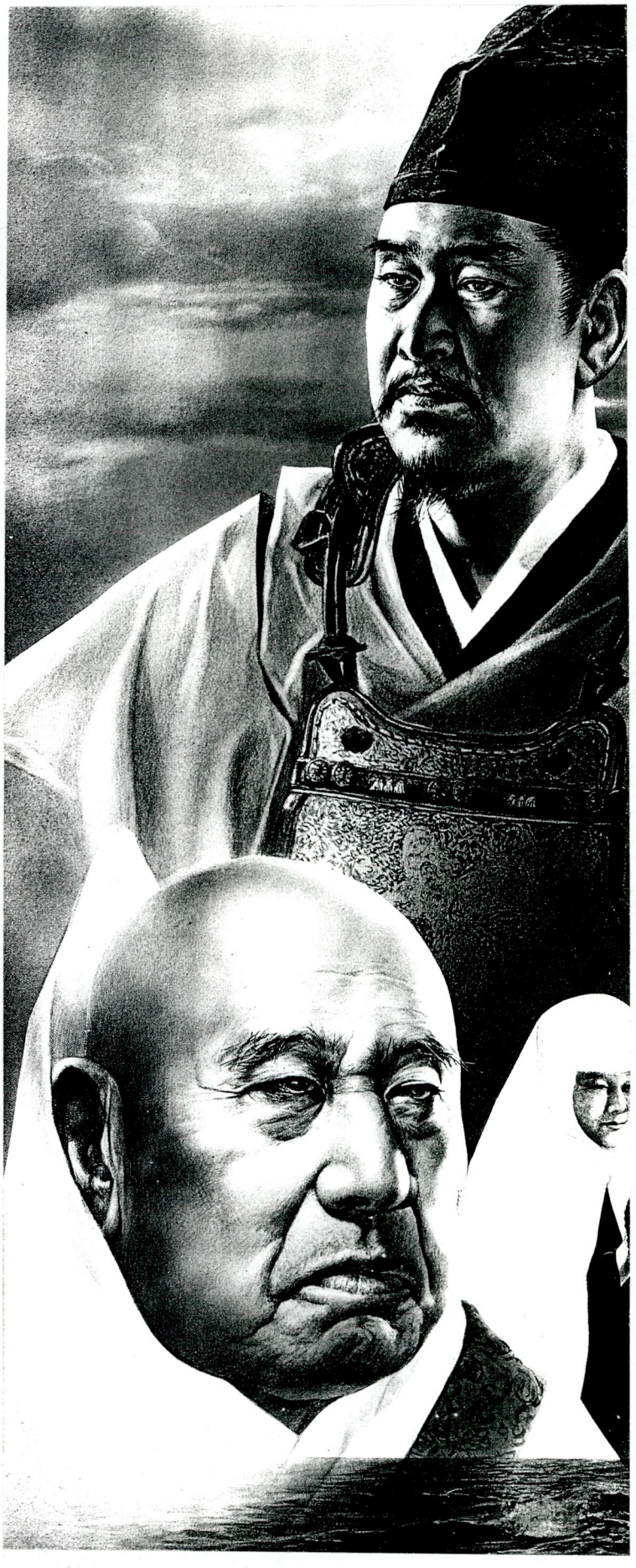
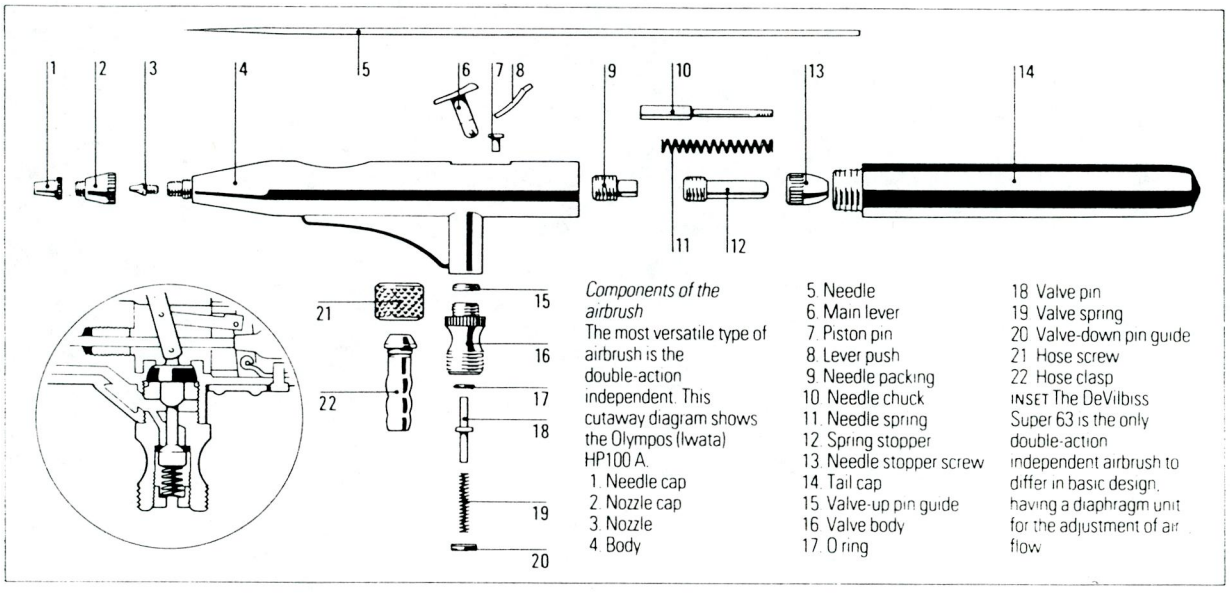


fig.6.



Components of the airbrush
The most versatile type of airbrush is the double-action independent. This cutaway diagram shows the Olympos (Iwata) HP100 A.

1. Needle cap
2. Nozzle cap
3. Nozzle
4. Body
5. Needle
6. Main lever
7. Piston pin
8. Lever push
9. Needle packing
10. Needle chuck
11. Needle spring
12. Spring stopper
13. Needle stopper screw
14. Tail cap
15. Valve-up pin guide
16. Valve body
17. O ring
18. Valve pin
19. Valve spring
20. Valve-down pin guide
21. Hose screw
22. Hose clasp

INSET The DeVilbiss Super 63 is the only double-action independent airbrush to differ in basic design, having a diaphragm unit for the adjustment of air flow

fig.7.

the airbrush was greeted with open-arms it was not in any way treated above any other tool. The Bauhaus saw its potential and capabilities and used it freely without any prejudice or hesitation. One of the most important exponents of the Bauhaus methods was Herbert Bayer who used the airbrush extensively in his work.

Herbert Bayer (b.1900) joined the Bauhaus in Dessau, which ran from 1925-28. He trained as an architect and then spent some years travelling, painting and accumulating the knowledge which he then put to use when he joined the Bauhaus as a member of staff, teaching advertising, layout and typography. Bayer's training as an architect laid the foundations for his simple direct approach to graphic design. He was not, however, content to simply teach and design; he constantly questioned the set down conventions of graphic design; he even questioned written language itself. Although he questioned the conventions of design, his own work was clear and direct. Bayer believed that the best way of communicating a message was in a simple uncomplicated way that attracted the viewer's eye immediately. Bayer was particularly interested in the two-dimensional representation of space. He often used hugely enlarged images in his designs, one example being his use of a stylized face for a hoarding advertisement. He also placed tiny figures in vast areas of space. Bayer's style suited the airbrush and this can be seen very clearly in an illustration he created for The Wonder of life magazine in 1935 (fig.8). The illustration titled "The Function of the eye" is a very clearly stated graphical image showing in simple terms how the eye functions. The eye was rendered using a variety of airbrush techniques. The shadowed areas around the eye were worked freehand. The eye sprayed using a hard mask such as acetate. Details like the eyebrow and highlights in the eye were painted using a brush. The result of this is a clear, informative, well defined illustration which conforms well to the Bauhaus philosophy of having no division between art and technology.

Although the Bauhaus artists and designers explored the technical possibilities of new media and tools, they did not place any emphasis on one technique above another. As a result of this the

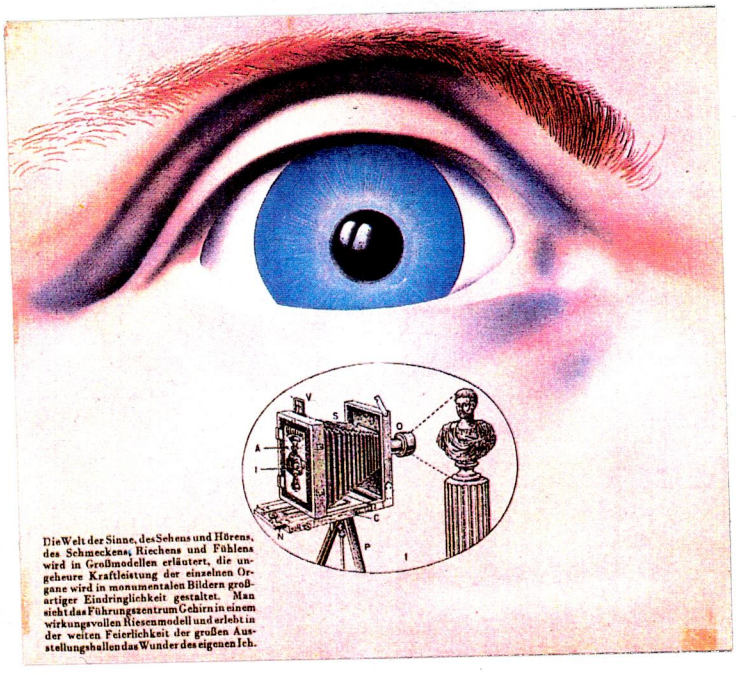

Die Welt der Sinne, des Sehens und Hörens, des Schmeckens, Riechens und Fühlens wird in Großmodellen erläutert, die ungeheure Kraftleistung der einzelnen Organe wird in monumentalen Bildern großartiger Eindringlichkeit gestaltet. Man sieht das Führungszentrum Gehirn in einem wirkungsvollen Riesenmodell und erlebt in der weiten Feierlichkeit der großen Ausstellungshallen das Wunder des eigenen Ich.

fig.8.

airbrush was widely used without any prejudice; it was treated the way it should always have been. It was quite simply another way of applying paint, no more or less important than a conventional brush or palette knife.

Shown here are two examples of how the airbrush was used to enhance an image already created by conventional techniques (fig. 9,10). The first one in a poster created in the 1930s to advertise Imperial Airways. The bold graphical style of the poster is softened somewhat by the airbrush cloud shapes. The airbrushing in this Bauhaus-influenced poster is minimal yet adds greatly to the image. It is a very striking poster and without the cloud forms to soften it, it could have been too harsh and cold. The airhostess is separated from the seat by spraying the white outlinge of the seat. Without this, the seat and hostess would merge into one incoherent abstract shape. The second example is a design for the periodical Die Neue Linie dated 1932. The image was created using simple masking and spraying techniques which were applied over photographs. The result is a very striking image which is not over stated.

These two examples show how the airbrush can be used to enhance an image. Unfortunately though, the airbrush has not always been used in this way, particularly during the 1970s where the airbrush was grossly overused.

Herbert Bayer's constant research into the possibilities of technology and new techniques led him to experiment with photography and photomontage, he used the airbrush extensively to enhance his photographic images. Originally the airbrush was used to remove joinings between the photographs in the montage. As the technique developed, the airbrush was used directly on the image, either adding colour or changing a detail. Bayer, along with Moholy Nagy, set up and developed the photographic facilities in the Bauhaus. Montage and retouching were widely experimented with here.

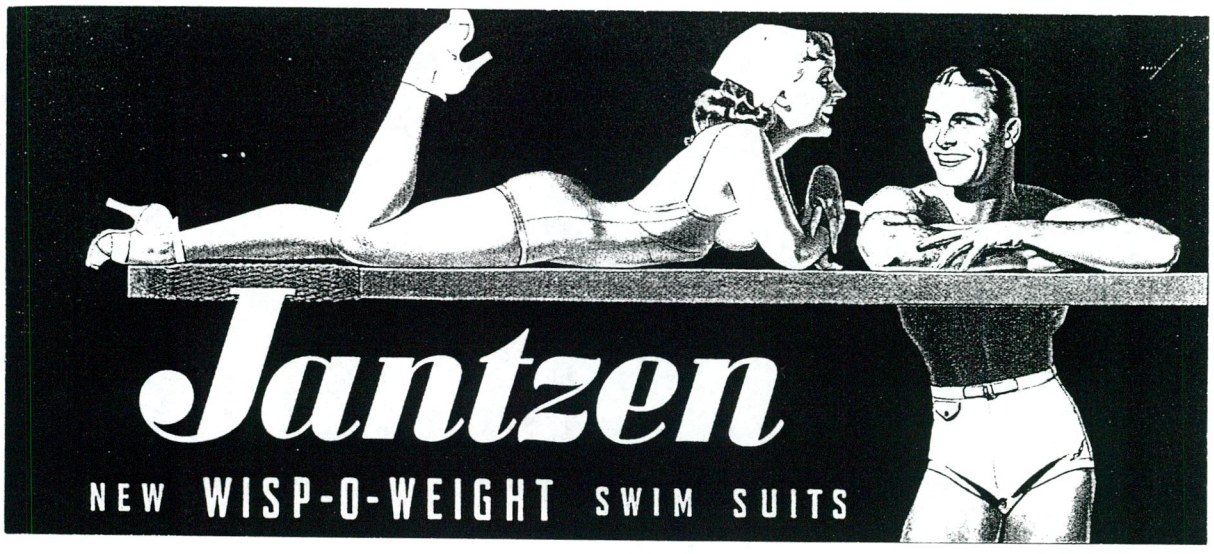
This example of Bayer's experiments with photomontage was created in 1931 (fig. 11). The image was made by combining two photographs together, one of a clouded sky and another of a woman


STEPH CAVALLERO
BY AIR IN COMFORT
TO EUROPE
AFRICA
ASIA
BY
IMPERIAL AIRWAYS
PRINTED IN GREAT BRITAIN

fig.9.

fig.10.

fig.11.


Jantzen
NEW WISP-O-WEIGHT SWIM SUITS

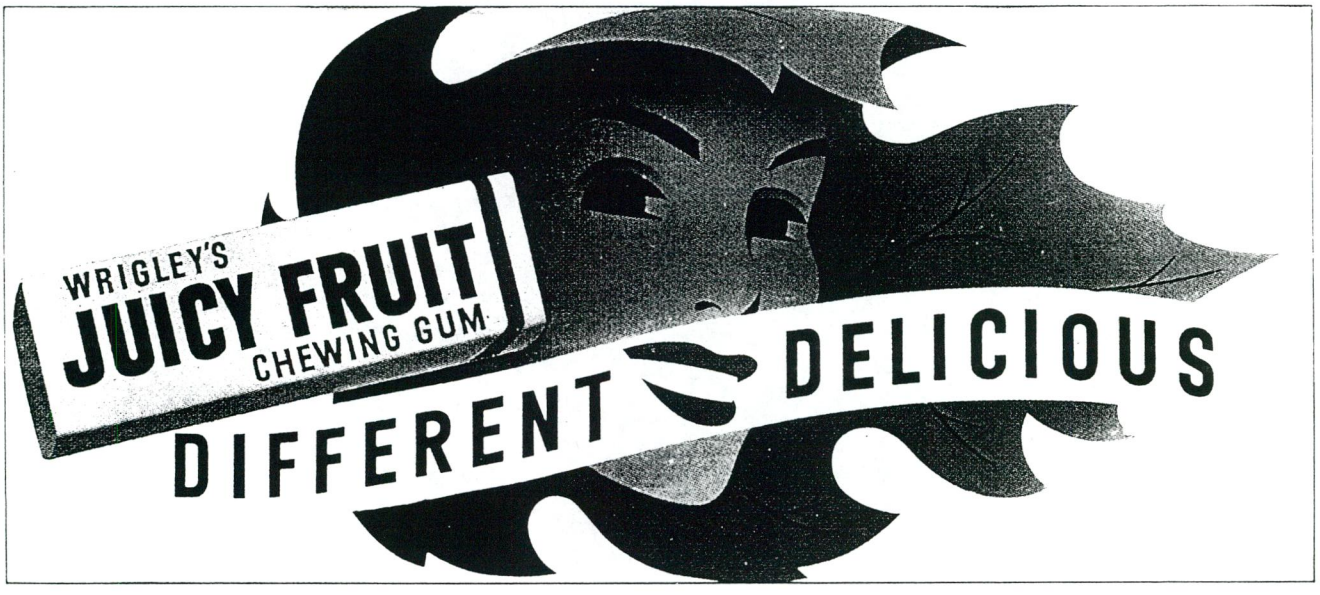

WRIGLEY'S
JUICY FRUIT
CHEWING GUM
DIFFERENT DELICIOUS

fig.13.

holding a card or letter. The airbrush was used in this image , not to add to it directly, but rather to remove any visible joinings. The image was first put together, photographed and then touched up, ensuring near flawless finish. Although this image now looks very dated and unremarkable, it would have been seen as a major break through when it was first produced.

As photography and airbrushing developed around the same time, they were used together quite frequently. Airbrushing was originally applied to photographs to combat the technical shortcomings of the camera rather than to create new images. The most obvious limitation of the early camera was the fact that it could not produce colour images. The airbrush was used to tint black and white prints, and, because there was a big demand for coloured prints, the airbrush enjoyed a very busy period. With the advent of photojournalism, photography became more widley used to record information and news. Photographic images were used in magazines, books and were widley seen in exhibitions. Again, the limitations of the camera at-this stage of developement meant that the photographs produced were often inadequate and required touching up. This meant that the airbrush became an essential tool in the photographer's studio, being used in all fields of photography.

As photography developed it was used more widely, the most important field being graphic design and advertising. It was here that both photography and airbrushing really flourished as companies competed for attention with more creative adverts.

Airbrushing enjoyed a vast popularity from the late 1920s up until the mid 1940s being used to illustrate everything from swimwear to chewing gum (fig. 13). Although the airbrush gained wide popularity in the commercial world it was shunned by the fine art world. In the ongoing rivalry between the commerical art and the fine art world, the airbrush firmly took the side of commercialism, (although not necessarily voluntarily). The fine artist felt that the airbrush was too impersonal. The fact that it never touched the surface to be painted meant that it removed the direct control that conventional brushes gave,

that conventional brushes gave, away from the artist. Not only that but it also needed an outside power source as well, an electrically powered air compressor, which was totally unacceptable. These "draw backs" coupled with the fact that it was used openly and widely by commercial illustrators meant that it was pushed away from fine art and more onto the commercial side.

CHAPTER 2. THE WAR YEARS.

Abram Games and the Varga girls.

The first period of popularity of the airbrush came to an end, or rather went into dormancy in the mid-'forties. The end of the Second World War marked the end of an era in terms of the airbrush (Martin. 1984 p. 102). The war period, however, produced several airbrush artists of note. On the American side, the work of the little Peruvian, Alberto Vargas has become synonymous with the Second World War, especially in the eyes of the troops who fought in it. On the British side, the award winning posters of Abram Games are associated with the war time propaganda of the British Government. (fig. 14).

Games's father trained as a photographer in Latvia and also in the Russian army before moving to Hackney in England in 1904. He set up a studio in Lower Clapton Road specialising in portraiture and commerical photography. It was here that Games got his first taste of the airbrush that he was to use so extensively in his work in latter years. Games's job primarily was developing film and washing negatives. He quickly moved on to using the airbrush to touch up photographs, adding colour and enhancing tones. Games experimentation with the airbrush later earned him his first job.

Although he spent time at St Martin's School of Art, Games's real inspiration came from public poster hoardings. This form of visual education proved to be more fruitful than his stint in art school. The posters that fed Games's appetite came from a golden age of poster design. The designers employed by the Post Office and companies like Shell and the Orient Line and, of course, London Transport were at a high point of creative achievement. They motivated Games by showing him what posters could achieve.

Games knew exactly what he wanted to achieve and armed with the knowledge he gained around him it was only a matter of time before he was working on posters commissioned by the companies that first inspired him. His design philosophy was quite similar to Herbert

fig.14.

Bayers; he sought a simple, uncomplicated yet eye catching style.

> **'I wanted to create posters with forceful, compact design, memorable and direct, with a minimum of lettering and test.'**
> *(Spencer, 1991.p36).*

By the time he was called up to join the British army, Games had produced 24 posters. So, when in June 1940 he was ordered to report to the War Office in Whitehall, he was both enthusiastic and well prepared to carry out the job given to him. Games was commissioned as the official poster artist for the war. It was accidental that his career got this jump start, for the only reason that he was picked was because his name was the first in alphabetical order on a list of soldiers with the relevant qualifications for the job.

Games proceeded with his job and produced many classic posters visualising the ideas fed to him by the British propaganda machine. Some of the posters Games produced were either banned or withdrawn for being to effective in a sense. One such example is a poster he produced for and ATS recruitment scheme (fig. 15). The poster design came about when one day a pretty, blond girl asked Games to design a poster for the War Office Dramatic Society. Games refused, saying that his job was not to promote amateur dramatics. He changed his mind, providing that she would pose as the model for the ATS poster illustration. The girl agreed and the result was a stylised image of a head in profile, rendered using a combination of wax resist and airbrushing. The poster, however, was objected to by Mrs Thelma Cazalet MP. Mrs Cazalet thought that the poster was to glamorous and was misleading. The press took up the debate and it was finally withdrawn. The story does not end here, though, for last year Games, along with the girl who posed for the poster, went along to see it being auctioned as a prize lot. The poster fetched £3,000, a record price for a living poster designer.

Games used the airbrush extensively in his work. He did not, however, allow the airbrush to influence his technique. He relied on the strength of visual rhetoric to convey his messages, using the

fig.15.

airbrush mainly to add colour to his work. Games's early years of photo retouching had obviously influenced his technique.

One of the first examples of his use of rhetoric to convey a message is a poster Games produced in 1942 urging the British public to grow their own food, rather than rely on imports (fig. 16). The juxtaposition of a ship and a spade, together with the type, produced a very informative poster, conveying a lot of meaning with minimum clutter. His use of the airbrush here is very minimal, yet, it enhances the image. He enhances the ship by forming a sort of halo around it. This effect was achieved by masking off the image and spraying a light, transparent blue around the outside of the painting, gradually working in towards the ship, lightening the colour as he got nearer to it, leaving a white haze around the ship. This had the effect of making the ship stand out even more. In fig. 17, Games reverses the process in his poster promoting the use of airmail. This time, he masked off a white space in the shape of an envolope and sprayed around it, to create a negative shape in the form of the envelope. This poster is another example of Games's ability to cleverly combine images. The airbrush work here is very simple, suggesting the blue sky which enhances the message, promoting the use of airmail.

Games's airbrush work was by no means complicated, he relied on the power of his images coupled with clear simple airbrush work to convey his message. It is interesting to note that although during the 1970s airbrushing became a very complex process, using numerous masking techniques couple with minute hand finished details (fig. 18), on retrospect, the work of Games has achieved more aesthetically, (that is to say that Games's work is still impressive whereas the work of the 1970's looks dated and cliched.

During the time that Games was working in Britain, another artist was hard as work in America. Although some people may find his work distasteful or immoral, one thing is for sure, the work of the Peruvian, Alberto Vargas will go down in history as being synonomous with the Second World War. His constant battles to find work and recognition went on for the greater part of his life, and it was only


USE SPADES NOT SHIPS
GROW YOUR OWN FOOD
AND SUPPLY YOUR OWN COOKHOUSE

fig.16.

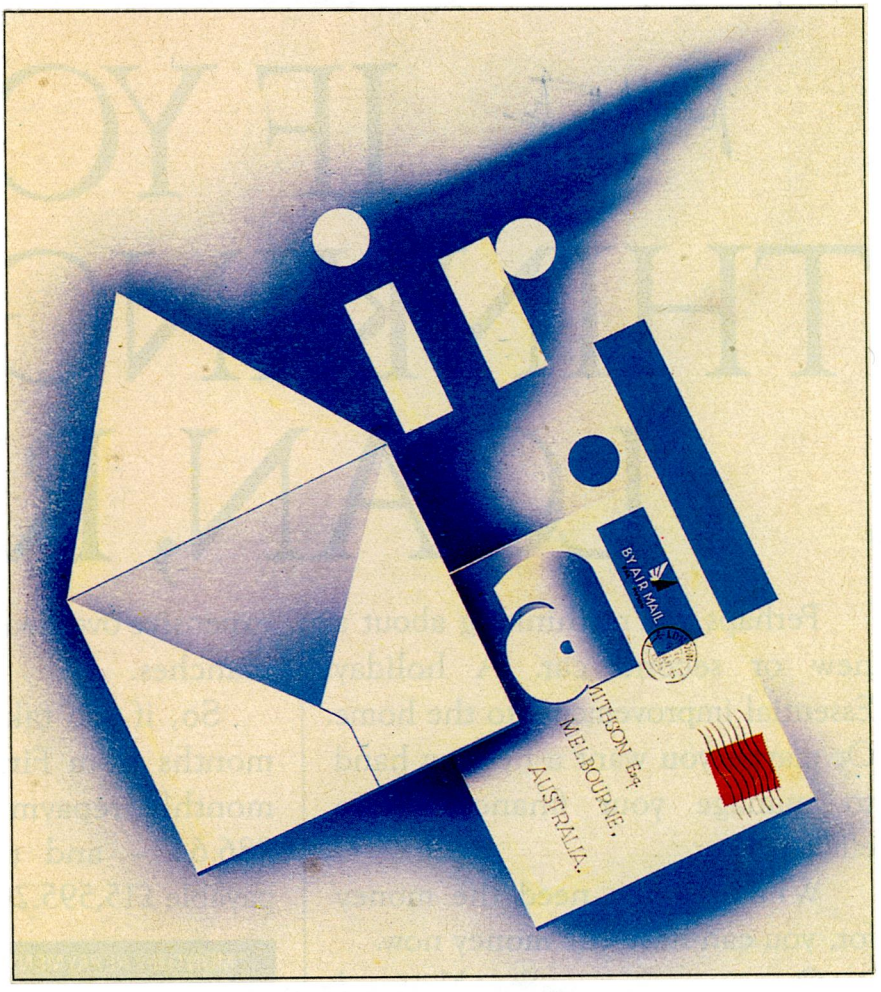


fig.17.

fig.18.

through total dedication that he achieved his goal, which was to have his paintings of women recognised worldwide as the Varga girls*

Vargas

Vargas (born 1896), like Games, was involved with the war. His role, however was not to inform the viewer but to entertain and raise the morale of the soldiers with his prortraits of scantily clad women (fig. 19). Vargas was an illustrator for Esquire magazine. Like, Games, he started his career working in his father's photographic studio, and it was here that he first learnt how to use the airbrush. It was during this time that he also found a passion for painting, a passion that was, later on, to dominate both his life and career. Vargas spent many years working in a number of various studios before he eventually ended up with Esquire magazine, producing scores of paintings. It was in the Esquire studios that the Varga girl was born.

**See Bibliography for further information on the life of Alberto Vargas.*

His life as an artist was by no means as easy as Games's. Vargas spent at least as much time looking for work as he did carrying it out. Early on in his career he spent a lot of time travelling between Chicago and New York seeking work. He finally settled in New York where he was to spend the rest of his life, painting portraits of women, both real and fantasy (fig. 20). Vargas even married one of his models, Anna Mae, after falling in love with her during the many times that she posed for him.

Vargas's life and the complications he encountered were as full and varied as the work he produced. At one time he was under pressure from Esquire magazine to produce every week at least one large painting and many roughs for other. This pressure went on for a number of years, working up to eighteen hours a day, every day. This pressure showed in some of Vargas's work (fig. 21) where he accidentally added in an extra finger to the hand of the model in haste.

fig.19.

fig.20.

fig.21.

On a more positive note, the work that he produced brought both watercolour and airbrush painting to new heights of achievement. Like Games, Vargas's use of the airbrush was not overstated. He only used it to finish of colour to smooth out the flesh of the women, giving a flawless utopian look to their bodies. The renderings of the amply proportioned women were so sensitive that they went far beyond the capabilities of the camera. Vargas's paintings were often compared to photographs, which in my opinion is an invalid comparison because most of the poses that Vargas used were anatomically impossible (fig. 22) also, the renderings went above and beyond the camera's capabilities. The camera can only record what is there, where as Vargas created fantasies from his head based on what he saw.

These paintings of scantily cland women with legs that were too long and slender to be real, were described as having 'raised the morale' (Reid 1987,p.6) of the military men during World War II. Another description (probably more accurate in practical terms) says that

> **' The effect of these pictures, if not their intention, was to make horny youths far from home, hornier- to what end we can only speculate. The most famous of all the morale raisers, aside from photographs of motion picture stars, are in the book, are the work of a Peruvian immigrant to the United States, Alberto Vargas.'**
> *(Reid. 1987,p.6.).*

Whatever effect the paintings had on either the morale or the hormones of the American soldiers, one thing is for sure, they had a major influence on airbrushing. His techniques and sensitivity with the airbrush had previously been unmatched. Vargas had, by the late 1930s achieved a technical competance and sensitivity with the airbrush that I believe has very rarley been surpassed or even matched ever since.

Although Vargas used the airbrush extensively, he by no means relied on it for effect. He used it only in the finishing stages of his paintings. In an interview he gave on his techniques, this is what he had to say on the airbrush;

fig.22.

> **Insofar as the airbrush is concerned, there is little technical advice I can offer. You simply have to experiment with it, and above all don't let it rule you. The danger is in going hog-wild. It should only be used when a painting can be considered three-quarters finished.** *(Austin, 1978 p126).*

Little more can be said to add to these very wise and modest words from one of the greatest exponents of the airbrush. Alberto Vargas died in 1982.

* By the end of the Second World War the first period of dominance of the airbrush had begun to dwindle. Airbrushed images went out of style and were simply no longer used. Apart from changing styles and fashions that occur anyway, the public did not want to associate with any images or styles that reminded them of their horriffic World War. The general move was to rebuild the world in all fields after its major blow. They wanted to forget about the war and all of its memories. Because of this, the airbursh was temporarily shelved and its posters forgotten about. The whole graphics and illustration style changed and the airbrush was quietly forgotten about. The airbrush lay dormant to a great extent until the late 1960s.

The airbrush was once again picked up and for some, at least, it was a new tool with which to experiment. The late 1960s produced a different manner than their predecessors. As a result of this, the late 1960s, all of the 1970s and the early 1980s have been dubbed as the period of the reign of the airbrush.

**Martin (p. 102)*

CHAPTER 3. The 1970s

The 1970s were an unusual time for the airbrush and its development. On the one hand it reached its pinnacle of popularity, being used by the fine art and the commercial art world, though more so by the latter of the two. On the other hand, this decade (along with the late 1960s and early 1980s) saw some of the worst uses of the airbrush since its invention. The ability of the airbrush to lay totally flat colour and perfectly smooth tonal graduations was being almost flogged to death. Airbrushed images were appearing on everything from skate boards to birthday cakes, from curtains to t-shirts (fig.25). One book on airbrushing tells how an airbrush was used during an operation on a person's brain. The brain surgeon needed a way to wash a small part of the brain in preparation for surgery. As wiping it was not effective enough, someone suggested an airbrush loaded with clean water would be the best way. The surgeon agreed, and the airbrush was used successfully.

It is difficult to know exactly what happened and how the airbrush suffered at the hands of the artists and designers who used it and the critics who viewed it. I personally believe that the root of the problem which began in the late 1960s was the accessability of the airbursh, both of the Instrument itself and of the work it produced. This, along with the cultural revolution that begun in the late 1960s meant that the airbrush became popular once again. The 1960s posters were where fine art and commercial art met.'It was a great time - it meant breaking all the rules'. (Stanley Mouse to the San Franciso Chronicle April 9, 1987). The attitude of the 1970s was one of freedom; the barriers between 'high' and 'mass' culture were being torn down. The youth pronounced its rights and freedom to do as it pleased. In Britain, Malcolm McLaren showed (or tried to show us) that you didn't have to be a trained musician, or have a melodic voice to be in a band. Although this idea was nothing new, his invention of 'Punk Music' ripped our ideas of music apart and rebuilt them in the guise of the Sex Pistols and Sid

fig.25.

Viscious among others. In America, it was the age of the psychedelic explosion. The clean image of the 1950s rock n' rollers gave way, first to the Beatniks and then to the hippies. The influx of British music in America provoked a reaction, everywhere, now American bands sprang up. Youth culture exploded all over America, everyone was experimenting with music and drugs, this was the age of the 'trippy hippie'. With the emergence of these new bands, the need for posters promoting their concerts emerged. At first the posters and hand bills were hand drawn, using hand drawn lettering (fig.24) to evoke the psychedelic feeling of the music. Bands operated on a tight budget so they were restricted with their use of colour on posters. As they got more popular, they began to use full colour, this is when the airbrush came to be used once more. Two designers who used the airbrush extensively were Stanley Mouse and Alton Kelly. They designed many album covers for bands such as the Greatful Dead, Journey and the Steve Miller Band. The work they produced may look dated today but it worked well enough during the 1970s to make them two of the most sought after designers.

The 1976 album cover produced for the Steve Miller Band titled, Book of dreams is a fine example of their work (fig. 26).. The method of illustration here, like so much of their other work (fig. 27,28,29), consists mainly of hand painted details applied over an airbrushed background. The background with its smooth tonal graduations, the sky area behind the horse and some highlights and colouring on the wings of the horse have been airbrushed. The lettering, the details on the circle and the horse have been hand painted. The reason that this album cover has stood the test of time is that it is a clear, relatively simple illustration and design. They chose a classical layout with the illustration and the type centred. They did not allow the 1970s typography style influence them too much (fig. 30). They realised that an album cover design would still be in record shops many years later from the date it was first released.As a result of this the album cover still looks like a 1970s design but it holds up well against todays designs.

As people began to re-discover the potential of the airbrush, its use spread, advertisers saw its potential and decided to use it to

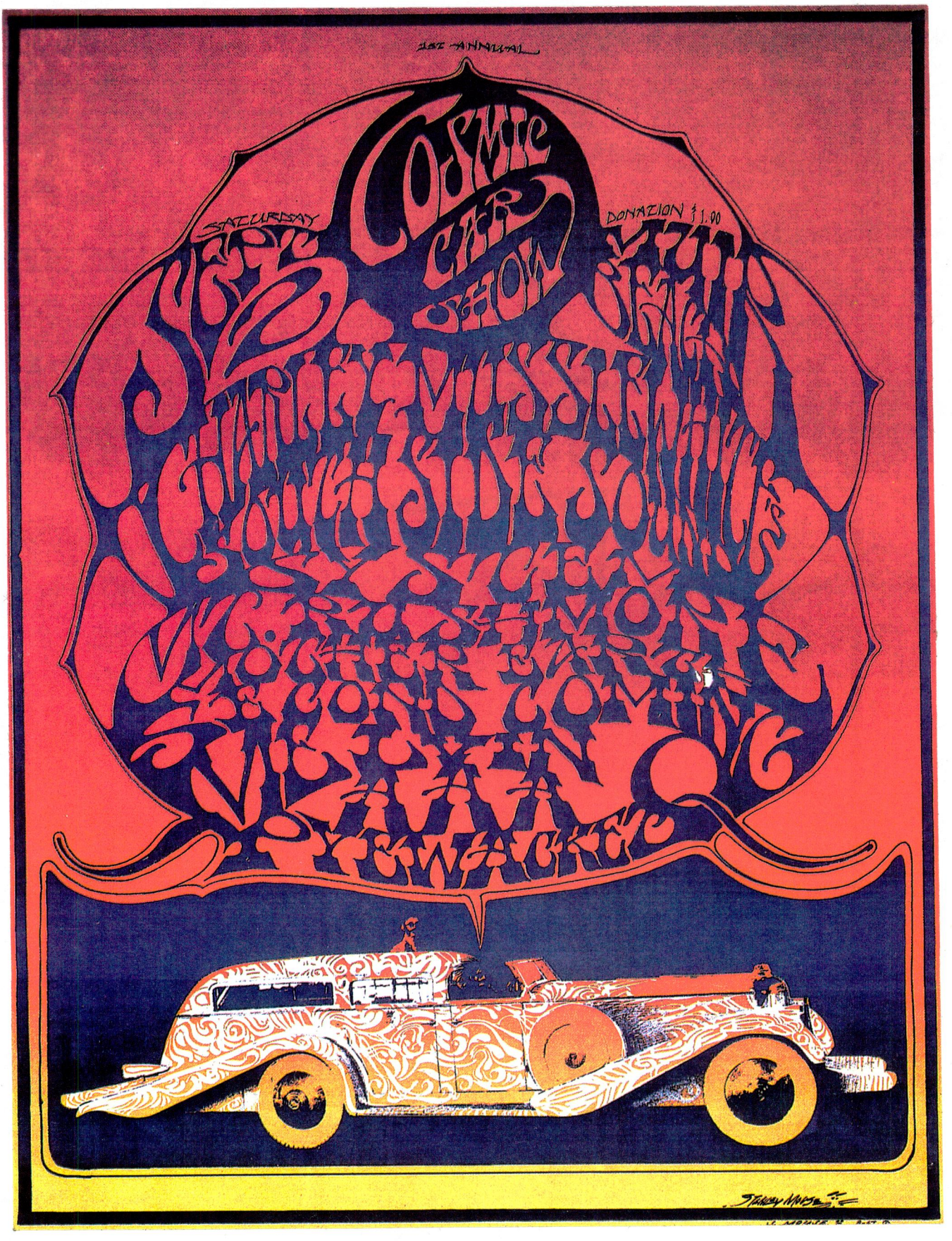


fig.24.

fig.26.

26

fig.27.

fig.28.

fig.29.


AUG 19
AUG 20
PRESENT
GRATEFUL DEAD
SOPWITH CAMEL
NIGHTS BY BILL GRAHAM
AVALON BALLROOM
SUTTER at VAN NESS SAN FRANCISCO
TICKET OUTLETS: SAN FRANCISCO
BERKELEY

fig.30.

illustrate their adverts (fig. 32,33). The airbrush was once again in vogue. There was a major difference this time however, the airbrush was a much more accessable tool in the 1970s than in the 1930s. This was to do with advances in engineering technology which had more to do with the power source of the airbrush rather than the airbrush itself.

The basic shape of the airbrush stayed the same since its invention in 1893 although some minor changes were made to refine it and make it easier to hold. The price of it dropped considerably during the 1970s when the Japanese introduced budget models to the market. Although they were cheaper, they still maintained a high quality which forced other companies to revise their prices.

The changes made to make the airbrush more accessable during the 1970s were relatively minor compared to the advances made to the power source, the air compressor. The first compressors to be used were very clumsy, manually operated devices (fig. 34). An airtank was filled by a foot pump which the person using the airbrush had to keep pumping in order to maintain the high pressure needed to use the airbrush. This method although widely used had its obvious drawbacks. Firstly, it was quite a tiresome task to keep one foot pumping while at the same time trying to operate the airbrush. Not only was it tiresome, it was also a major distraction. Operating the airbrush is a difficult enough task without having the added distraction of maintaining air pressure with your foot. Secondly, the foot pump was not the most reliable air source. The air pressure in the tank tended to drop as it emptied out. This had the effect of changing the texture of the spray, making it slightly coarser, which in turn affected the artwork unless the artist worked very hard to keep up the air pressure.

In order to produce high quality airbrush work, the air supply must be free of moisture, dust and be of constant pressure. The foot pump was adequate in the begining but it was only a matter of time before an electric compressor was developed. The first compressors to be used really only saved the artist from having to work a foot pump. The problems of fluctuating air pressure still existed because the motors could only operate at a pressure slightly higher than the foot pump.

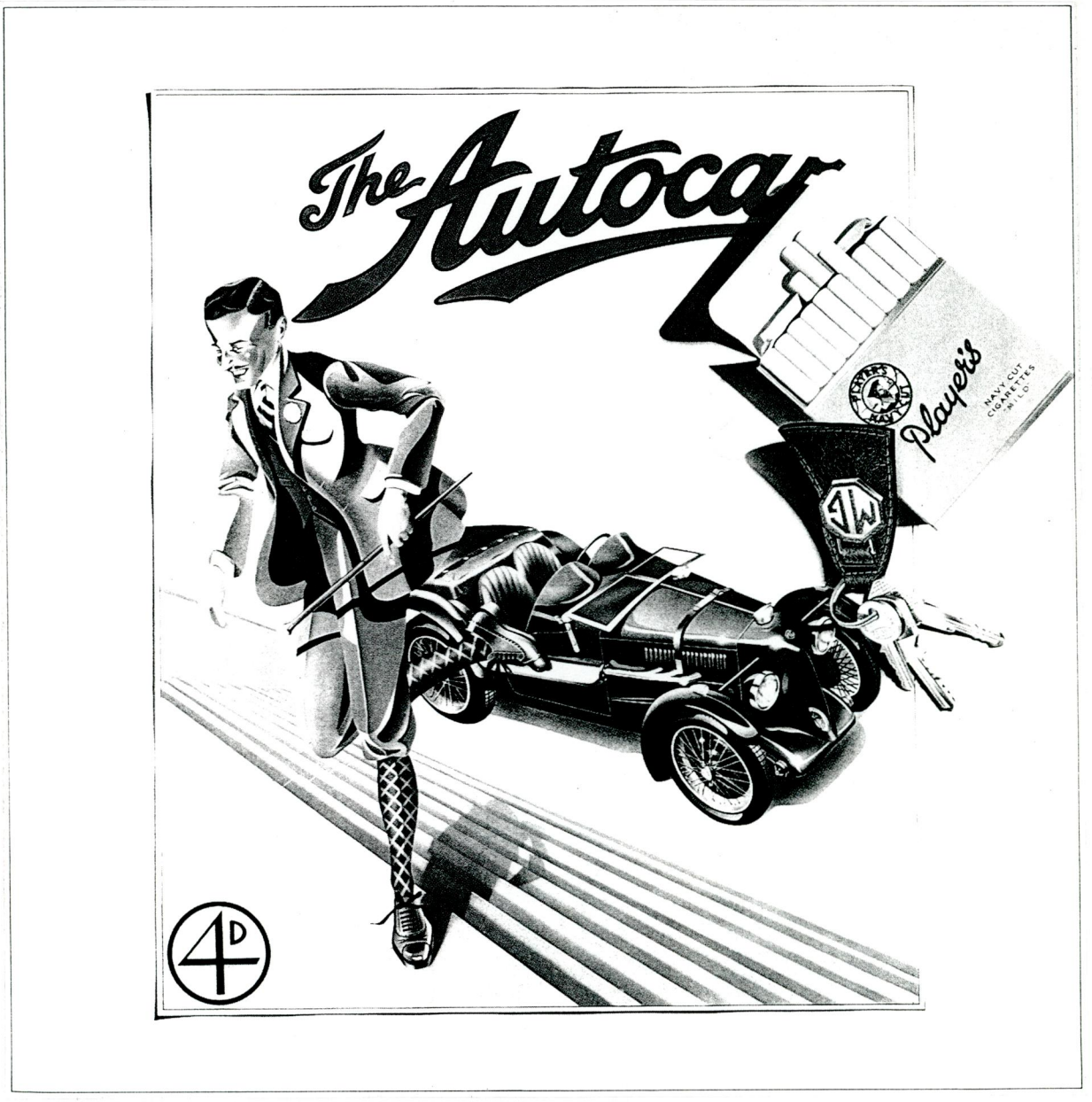


fig.32.

fig.33.

fig.34.

Although the compressors saved the artist from using the foot pump, they still had their own drawbacks. They were very large, noisey and expensive some large models used to 'walk' across the room when they were switched on if they were not secured to the floor. The vibrations caused by the motor used to shake the compressor so much that it would move across the studio floor. These drawbacks meant that their use was limited to larger commericial studios where the compressor was housed in a separate room and ran several airbrushes at once. The compressor acted as an air bank with several hoses running to it do draw air.

Housing the compressor in a separate room solved the nosie problem; the cost of this solution was high though. The actual compressor itself was expensive enough but housing the compressor in a separate room and installing air pipes to carry the air around the studio added to the cost. It seemed that with each new development came another problem, be it cost or inconvenience.

For years the only people who used the airbrush to any great amount were those who worked in large studios, either design or photographic. It was used mostly by photographic studios in its early years by retouchers. The 1970s saw a major change in this. The compressor went from being a large, noisey, expensive and inefficient machine to a small, compact, efficient, quiet one. Developments, both in electronics and mechanics totally revolutionised air compressor design. Stronger motors meant that the pressure in the air tank could be increased to about 120 p.s.i, and because the airbrush operates at around 40 p.s.i, the pressure running through it never dropped or fluctuated. This was due to the high volume of compressed air held in the air tank. Automatic pressure switches meant that when the pressure in the air tank dropped to around 80 p.s.i the motor switched on and filled the tank back up to 120 p.s.i. This meant that the artist could switch on the compressor at the commencement of work and forget about it, being left totally free to use the airbrush. This development was not, however, without its drawbacks. When air is pressurised, its temperature drops. This, in turn, causes condensation to form. This started to happen in the compressor air tanks. The problem was that the moisture that formed in the air tank was making its way up the airhose, into the airbrush and

eventually on to the artwork. This could have had the obvious consequence of destroying artwork (not to mention the corrosion of the inside of the air tank). To combat this problem two modifications were made. Firstly, a screw -off valve was put on the bottom of the air tank. This meant that moisture could be drained out, both to stop the air tank from corroding and to help decrease the amount of moisture from travelling to the airbrush. The next development was a moisture trap. This was a filter system which was designed to trap the moisture and remove it from the air (fig. 35). This filter system is made from a hollow brass cylinder which is permeated with millions of microscopic holes. The brass is housed inside a plastic bowl which has a small valve at the bottom (this is to allow the trapped moisture to be drained off). The air passes into the bowl, through the brass cylinder and on to the airbrush. This system also incorporates an air regulator which allows the air pressure to be controlled, giving a range of spray textures from a very fine to very coarse.

By the early 1970s the compressor had become much more refined. It had gone from being a noisey, bulky, awkward machine to a refined, controllable, compact one. This in turn made the airbrush more accessable. The airbrush could be brough into a studio for a relatively minor cost and no inconvenience.

The new found accessibility of the airbrush, coupled with the attitude of the 1970s meant that airbrush art really flourished both in the commerical art world and the fine art world. One example of a fine artist who used the airbrush is the German artist Paul Wunderlich. His surreal paintings are rendered using a vast amount of airbrush work. This painting (fig. 36) called "Sphinx and Death in Studio", is a large work measuring 3.3 metres long. Although it is a very large work, Wunderlich still manages to maintain the delicacy that is required for such an image. He uses all of the main airbrushing techniques to produce his mythical, almost surreal images. The softly vignetted background provide an ambiguous background which could have been anywhere . The 'other world' feeling he achieves in his paintings could not have been achieved by any other medium or painting tool as effectively. The fact that the airbrush never touches the painting adds to the anonymity of it.

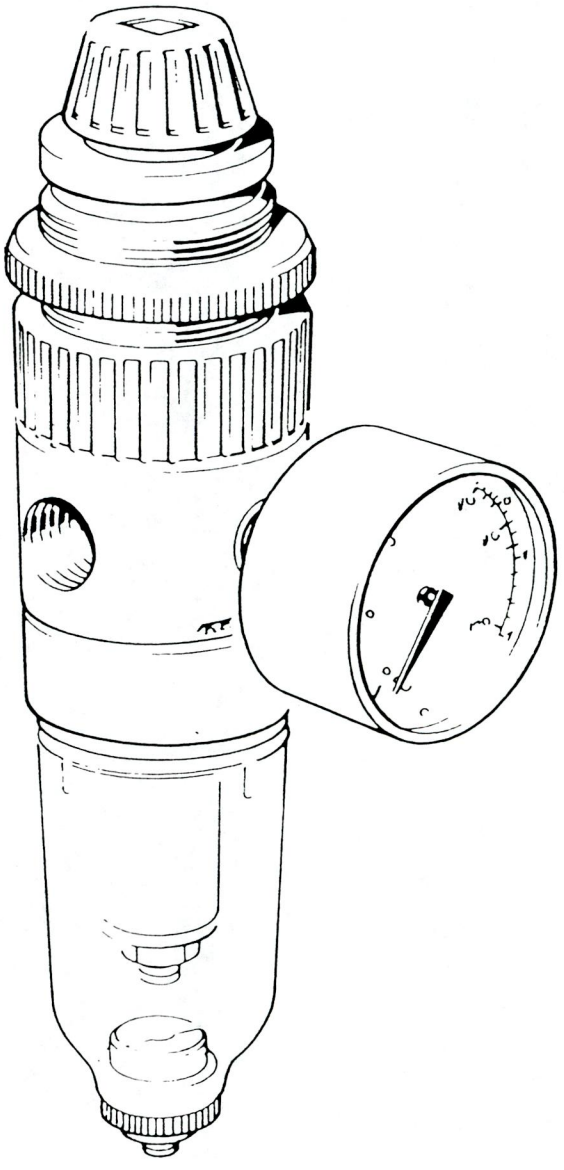


fig.35.

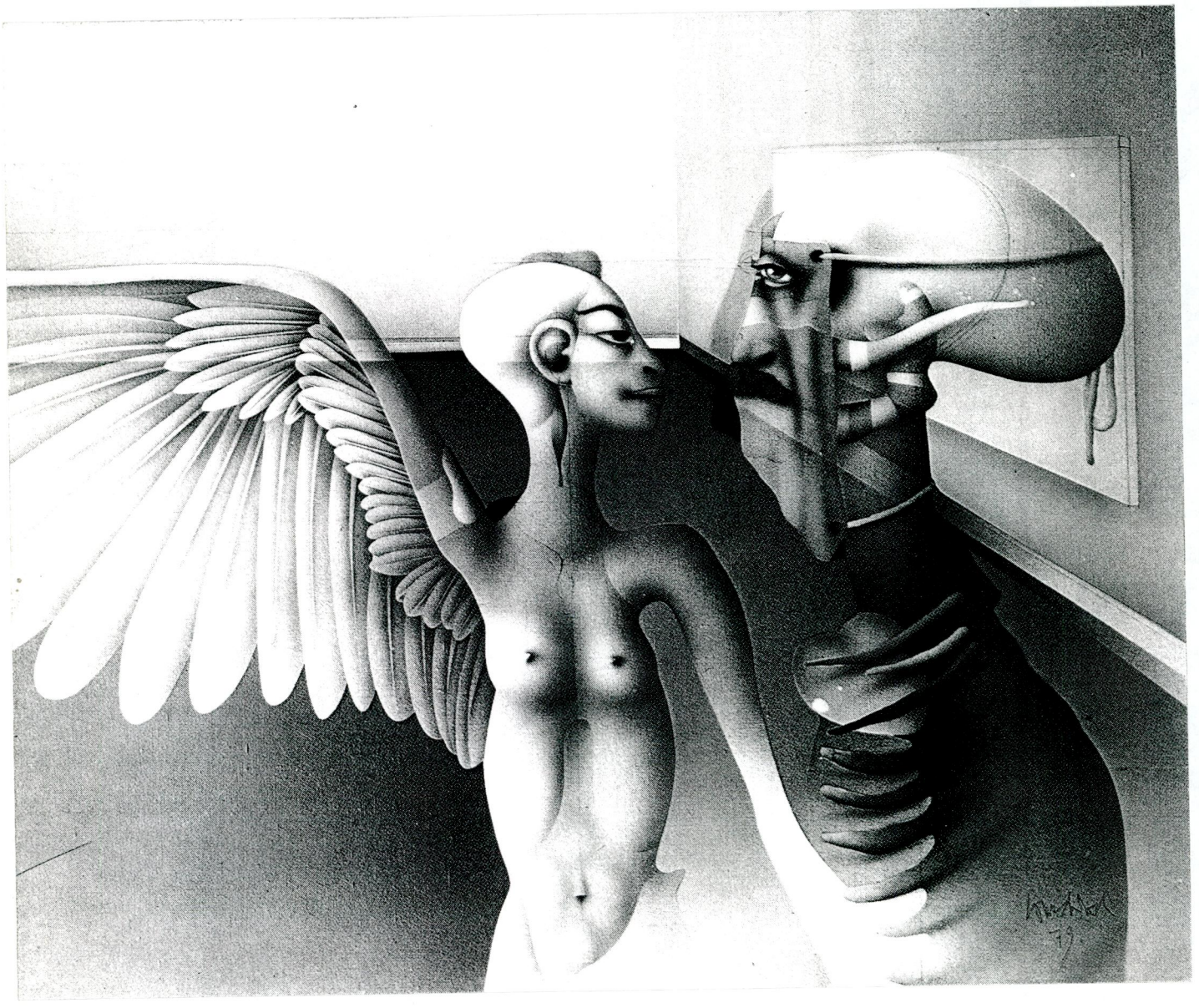


fig.36.

Not all artists used the airbrush wisely however, and Mick Hagerty, British born airbrush artist said this of the amateurs,

> **'The airbrush is like a gun.... in the hands of an amateur it's a deadly weapon;**

Unfortunately, the airbrush work produced during the 1970s was not all good, in fact vast majority of work was cheap, tacky and worthless. Artists like Michael English produced a number of poorley executed illustrations of strawberries and ice cream, coke bottles and shiny robots among others (fig. 37). This illustration (fig. 38) is one such example of a poorly executed airbrush rendering. It was commisioned for a Ricard brochure and was airbrushed by Nick Farmer. The illustration has no life in it; the vast majority of it has been airbrushed using the most obvious and basic techniques. The jacket lying on the sand has no three dimensional qualities about it. The only reason it looks like a jacket is because its shape roughly looks like one; it is badly drawn and the airbrushed highlights and shadows look more like rippley in water than the material of a jacket.The umbrella also seems flat. The complete lack of highlights and minimal shadows gives it a dull lifeless appearance. The shadows cast by the bottles and glasses show that the light is being cast from the top right side of the painting yet the sun is shining (rather weakly for such a clear sky) on the left side.

This painting is unfortunately only one of many more equally bad and sometimes worse paintings that hailed from the 1960s, all of the 1970s and the early 1980s. By the time the airbrush came to the end of this phase the work produced did more to harm the reputation of the airbrush than do it good. Designers and artists left the airbrush to go to photography and the newley developed computer graphics.

fig.37.

fig.38.

CHAPTER 4.
The Computer and the Airbrush

The airbrush reigned during the the 1930s and the 1970s. . Today and in the future it looks as if the computer will take over and dominate the commercial art world. Some people would agree with this statment and it appears to be true on a cerain level. I don't think, however, that the computer will replace conventional techniques (at least not in my life time anyway). I believe that the computer will add to conventional techniques, not take over. It is interesting to note that the development of the computer as a graphic tool seems to be developing along the same tracks as the airbrush did.

In the early 1980s, Quantel along with the help of Martin Holbrook developed the video paintbox (Fig. 39), This unit was designed primarily for use on television. The most widely know aspect of early computer graphics were the illustrations used for weather maps, news and current affairs programmes. Martin Holbrook, a graphic designer himself helped Quantel to turn the paintbox into a user friendly design tool.

First intended as an aid to television graphics the Quantel paintbox was quickly developed for use in printing. The paintbox was given it first public demonstration on British Television. Artists such as David Hockney, Sir Sidney Nolan Larry Rivers and Howard Hodgkin were asked to use it and give a running commentary on it as they created their first computer generated 'paintings'.

With these new developments came the obvious scepticism and criticism that was given to the airbrush at the beginning of the century. Dan Fern, Senior tutor at the RCA, has said,

> **' in illustration, for example, using charcoal, you are physically involved with the materials. The ambience of computing is alien and you are not close to the material at all'**

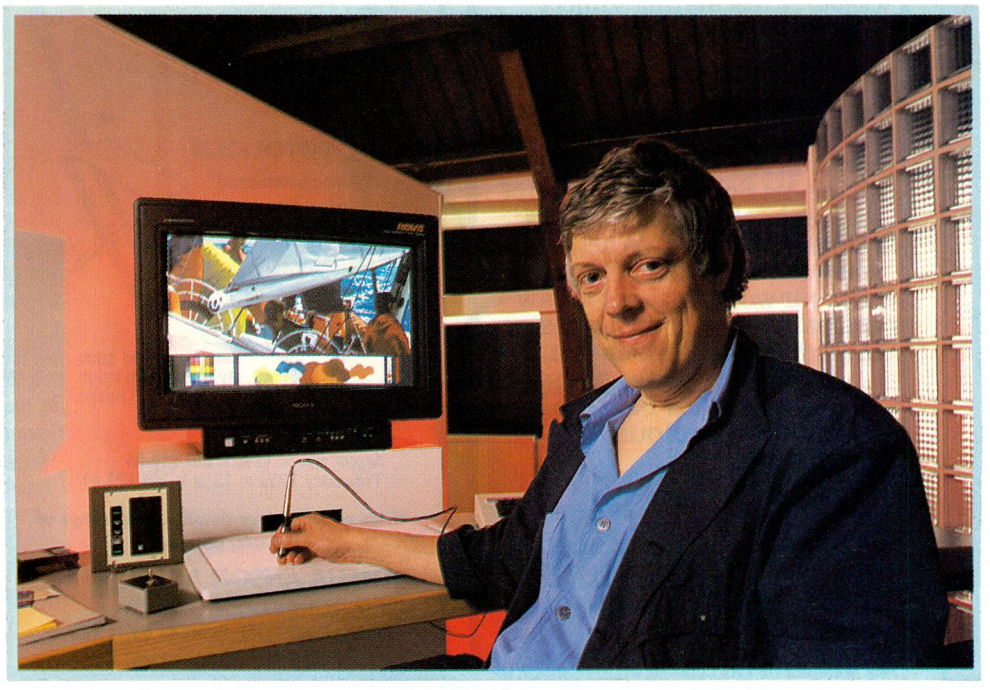


fig.39.

My reaction to Dan Fern on his statement about the computer would be, so what. How could a computer, possibley be compared to a stick of charcoal. The Quantel paintbox was designed to do a certain job in a certain way. Of course it does not feel like any conventional medium, its not supposed to. Criticising the computer because it does not feel like or do something its not supposed to do is invalid. Howard Hodgkin said this in the same technophobic frame of mind I think.

> **'There is not tactile sense. No matter what mark you make, you are still gripping that little ball point. And it is difficult to get used to watching the image form on a screen instead of under the hand'.**

I find these criticisms most unfortunate, they don't really say anything. Of course it would be more difficult to watch an image form on a screen instead of under the hand. One must remember that it takes a very long time to get used to a new medium, these artists juged the computer after only hours of use. I saw the television programme that showed the artists using the paintbox and I think the reason that they did not enjoy the experience was because they tried as hard as they could to emulate their own painting techniques using the computer, which was a pointless exercise. They should have exploited it as a new medium, not as a copy of, or a replacement of old medium.

The criticisms that were put to the computer were all put before the airbrush during its time of invention. It was seen as being too mechanical and impersonal. The fact that it never touched the painting removed it from the work. The tool is always blamed. It is seen as trying to imitate or take the place of conventional media. It is unfortunate that when new aides like the airbrush and the computer are introduced, artists and designers feel threatened by them rather than realising their liberating capabilities. The problem, I feel, is the attitude of the users. Paul Brown, the head of the National Centre for Computer Aided and Design, said,

> **'Look at television graphics anywhere in the world and they are all copies of the same thing. The problem is stagnation. There is no innovative work. No one is using the computer as a new medium."**

The same could have been said about the airbrush, particularly during the 1970s. Martin Holbrook as one of the developers of the paintbox is very enthusiastic about it, but views it sensibly as exactly what it is, a design 'tool'. The computer just helps designers to realise their ideas in one way. It can't and won't fully replace conventional methods, just as the airbrush cannot. It quite simply adds to the long list of media already available to the artist and designer.

CONCLUSION

The future of the airbrush

I don't believe that the airbrush will be as dominant as it was in the 1970s, although I don't believe that it will fade away. As I have already said, it will remain to do the job it was designed to do. The airbrush had, in my opinion, earned its less than favourable reputation, not by any fault of the tool itself, but through misuse by countless artists and designers. Because it is used mainly by commercial illustrators who are usually anonymus, the blame for the poor work has fallen on the airbrush itself. However, there are illustrators working today who use the airbursh to great effect, namely Bill Sienkiewicz and H.R. Giger. Sienkiewicz is a graphic novel illustrator who uses the airbrush purely freehand to add effect to his illustrations (fig.40). Here Sienkiewicz completed the entire painting in gouache before adding the highlights around the windows to increase the effect of the light shining in. The airbrush work here is very minimal yet helps to make the image more powerful. H.R. Giger has been using the airbrush since the 1960s. His work probes the dark side of the human imagination. Giger started using the airbursh for free hand 'airbrushed drawings' as he called them, using diluted indian ink to paint pictures taken from the dark side of his imagination(fig.41). He went on to design the whole stage set for the films 'Alien' and its sequal 'Aliens' (fig.42.) Giger's work combined highly complex and detailed scenes, coupled with sombre colouring and hazy airbrush work to create his very disturbing paintings (fig.43).

The airbrush has also been used in conjunction with the computer to create a printing process caled ink jet printing. There are two different types of ink jet printing. The first one has a single nozzle activated by a computer that oscillates over a sheet the way an electron beam produces an image on a TV screen. This system is called the AB Dick Videoject system. It is used for coding and addressing materials while they are being printed. The second type of ink jet printer uses a

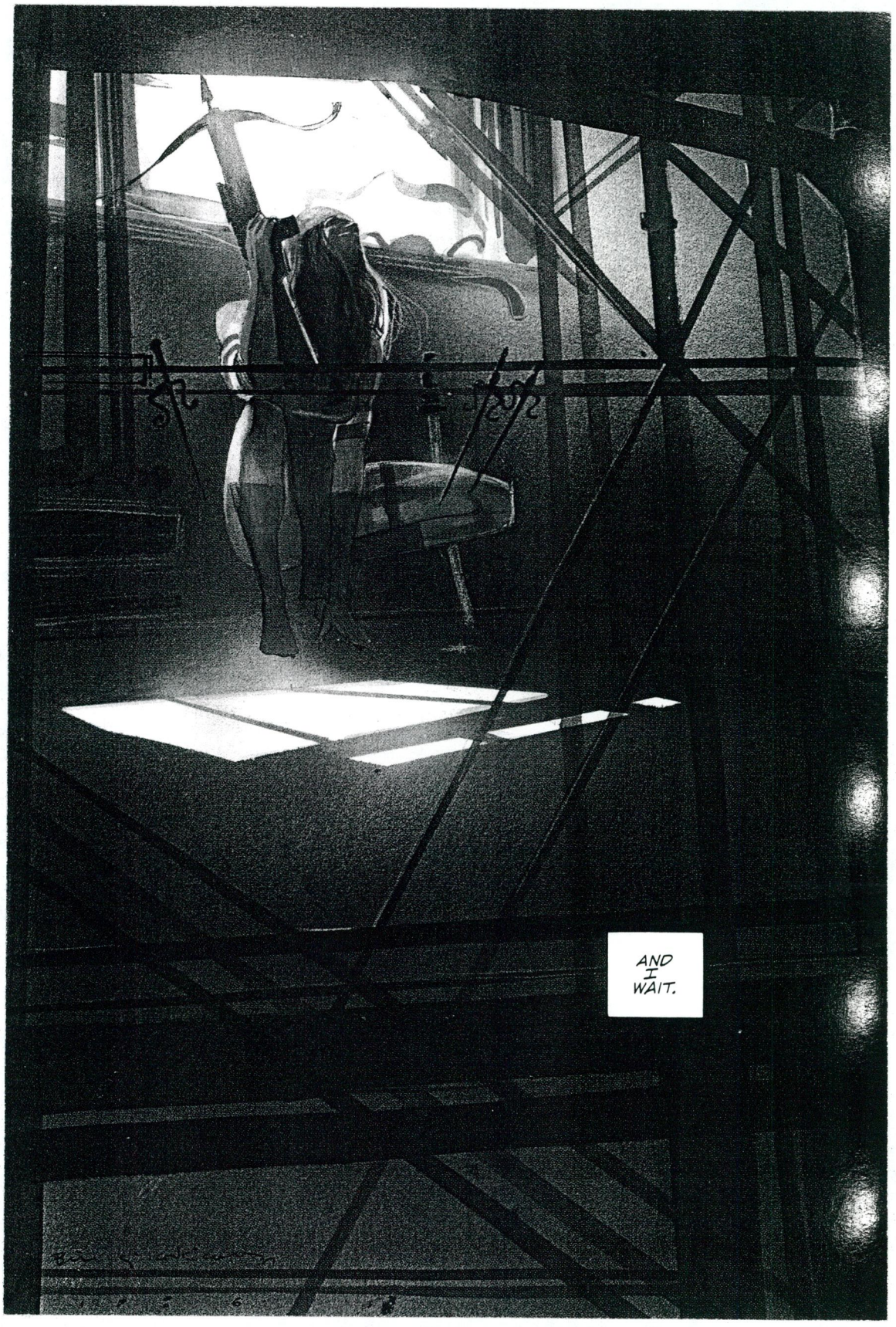


fig.40.

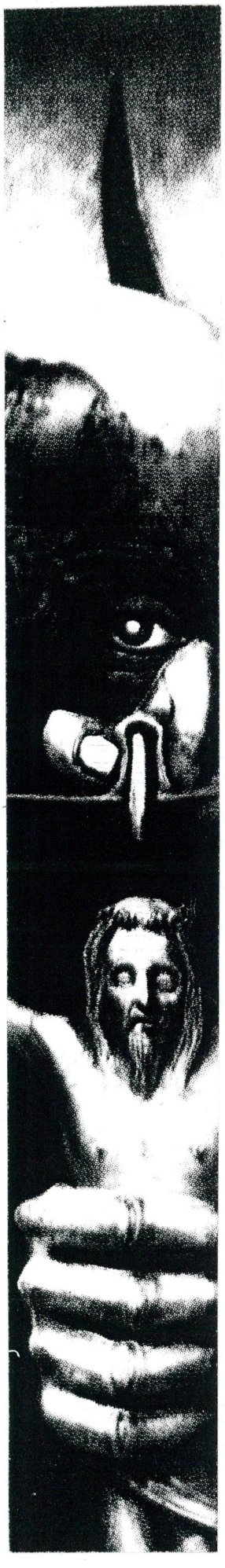


fig.41.

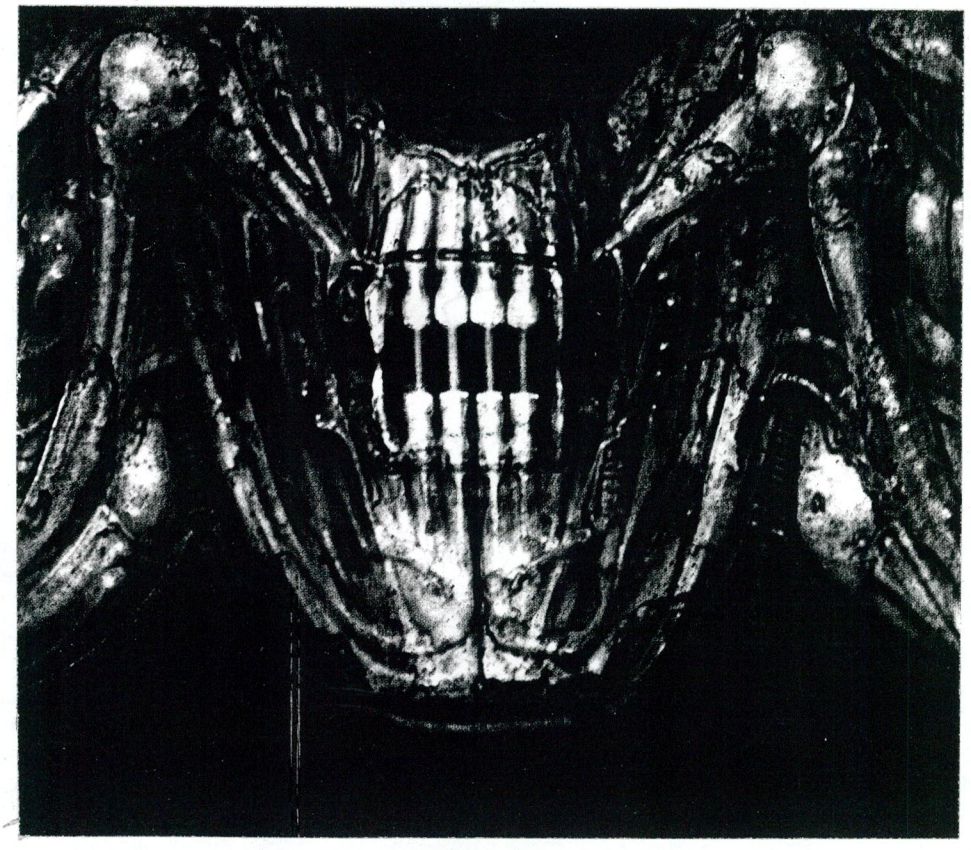


fig.42.

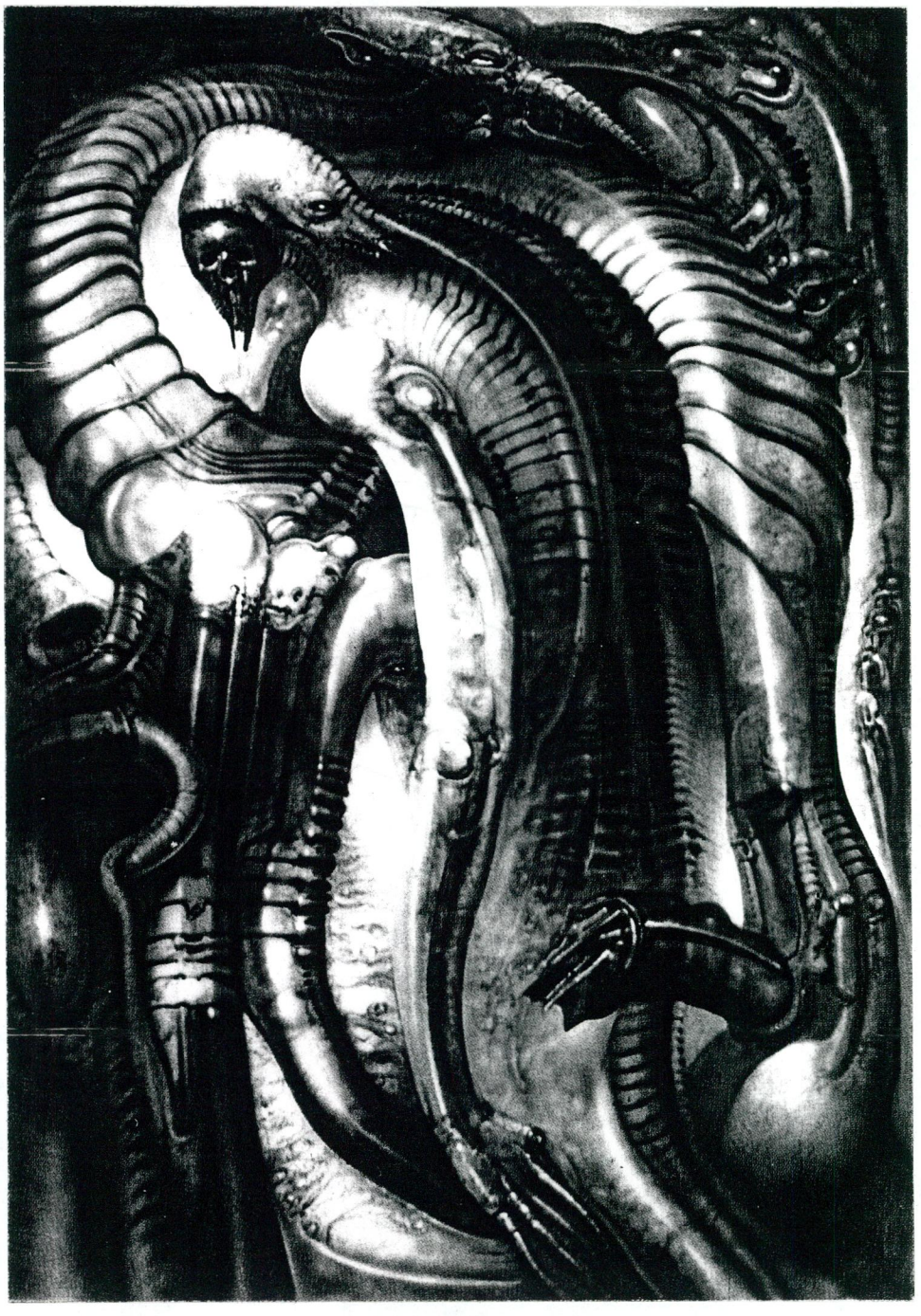


fig.43.

bank of nozzles, each of which is controlled by a computer. Up to 200 to 300 jets per inch are used, that can give up to 50,000 characters per second or 70,00 newspapers lines of type per minute. This principle is called the mead Digit system. Developments such as this ensure the airbrush's (or development of it) place in the future of graphic design.

In this Thesis I have looked at the airbrush in its many forms through its history (and in its pre-invention). As an airbursh user myself I feel that the instrument has fallen foul to much criticism, which, in my opinion is a little unfair. I think that the criticisms which have been thrown at the airbrush should be re-directed towards the people who have used them. After all, the airbrush can only do what the user makes it do, nothing more and nothing less. I have tried to de-mystify the whole world of the airbrush. It is, after all, only a tool with which to apply paint. It may be a complicated device but in the end, it is as difficult or as easy to use as a sable haired paintbrush. I hope that I have been fair in my analysis of airbrush work, both good and bad, and also hope that it has brought some points to light that may otherwise have been overlooked.

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