Available Online at www.e-iph.co.uk
Indexed in Clarivate Analytics WoS, and ScienceOPEN

E-B Environment - Behaviour Proceedings Journal

MEE 2.0: ICLT2022
International Virtual Colloquium on Multi-Disciplinary Research Impact (3rd Series)
International Conference of Logistics and Transportation
Best Western i-City Shah Alam, Selangor, Malaysia, 05-06 Oct2022

e-IPH e-International Publishing House Ltd., United Kingdom

Adapting Visual Representation of '*Harimau Malaya*' through Line Drawing Artwork for Widebody Aircraft Livery Design

Verly Veto Vermol [1], Mohamed Razeef Abdul Razak[2], Rusmadiah Anwar [3], Zuraidy Abd Rahim [4]

[1,3,4] National Design Centre, College of Creative Arts, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia
[2] Islamic Research in Art, Design & Humanities (IRADAH), Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia

email: verly@uitm.edu.my, rusma935@uitm.edu.my, razeef080@uitm.edu.my, zuraidy@uitm.edu.my
Tel: 010-9666759

Abstract
An aircraft livery design comprises comprehensive insignia that include colour, visual, and typographic identifiers. Stagecoaches, railroad trains, and steamships all appeared, and the term "livery" came to refer to the interior design of these vehicles. Parts of airline liveries have become increasingly intertwined with ground transportation, advertising, exclusive airport furnishings, airline promotional materials, and aircrew uniforms since the 1950s. These features began to appear on airline websites in the 1990s. This collection of idealistic livery designs is influenced by many elements set in a specific aesthetic; typographic designers precisely specify it as a logotype. This research aims to describe how an artwork painting of a Harimau Malaya subject is styled and adapted as a visual representation for an aircraft livery design.

Keywords: Aircraft, Livery; Design, Art; Harimau Malaya

DOI: https://doi.org/10.21834/ebpj.v7iSI9.4249

1.0 Introduction

Airlines' aircraft liveries and logos are used to provide distinctive branding for corporate and commercial purposes. They must also combine powerful symbols of national identity while remaining marketable on a global scale. An aircraft livery is a comprehensive set of insignia that includes colour, graphic, and typographic identifiers that operators (airlines, governments, air forces, and occasionally private and corporate owners) apply to their aircraft. As aircraft liveries evolved in the years following WWII, they became a leading subset of the emerging disciplines of corporate identity and branding and one of the most visible examples of fashion. They have served as a platform for the work of notable designers and prominent laypeople such as Raymond Loewy (1986), Alexander Girard (1993), and Jacqueline Kennedy Onassis (1994). The title of the airline is usually written in a specific style. As a logotype, this is precisely defined by typographic designers. The specification includes typeface (either a commercially available typeface or a specially designed and copyrighted custom typeface); type size; type case (capitals or "uppercase," upper and lowercase, lowercase only); cut (Romans or upright letters, italics or slanted letters, regular/condensed/expanded type); weight (bold, medium, light); proportion (defined as units of tight or loose setting, plus amount and degree of type kern. The size of a fleet member varies; the larger the aircraft, the larger the titling. Because the style is intended to be read from a flat surface, the airline livery type is frequently modified to fit curved aircraft surfaces. The specifications result in a logotype: a type of cliché with constant characteristics.

Graphic designers define the airline's monogram or emblem in terms of geometry, and the resulting specification is called a logo. Logos are also altered to fit curved surfaces and appear the same from different viewing angles. According to Aero Magazine Boeing in January

eISSN: 2398-4287© 2022. The Authors. Published for AMER ABRA cE-Bs by e-International Publishing House, Ltd., UK. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/). Peer–review under responsibility of AMER (Association of Malaysian Environment-Behaviour Researchers), ABRA (Association of Behavioural Researchers on Asians/Africans/Arabians) and cE-Bs (Centre for Environment-Behaviour Studies), Faculty of Architecture, Planning & Surveying, Universiti Teknologi MARA, Malaysia.
DOI: https://doi.org/10.21834/ebpj.v7iSI9.4249

1999, Color matching and standardisation systems such as Pantone or Federal Standard 595 are used to specify the colour. The resulting specification is referred to as a colourway. Individual aircraft types frequently have designed liveries that appear identical but differ from those applied to other aircraft types operated by the same airline. By the 1950s and 1960s, uniform liveries were widely used. Previously, individual airlines, most notably Aeroflot and some US carriers such as Delta Air Lines, used custom liveries designed for each aircraft type. Aeroflot stopped the practice in 1974 when it adopted a uniform livery for its entire fleet.

2.0 Standard liveries Design Reviews

2.1 Bare metal

Until after WWII, the "standard solution" for aircraft livery design was to leave the aircraft exterior unpainted and decorated only with the airline's title and possibly an emblem or monogram. The sleekness of the world's first all-metal airliners, such as the Boeing 247, Douglas DC-2, and Douglas DC-3, provided an imaginative canvas for livery design when they entered service in the 1930s, as mentioned in Aero Magazine of Boeing in January 1999. The paint was expensive, heavy, had poor adherence to metal, and was prone to early bleaching, mechanical and chemical damage at the time, so leaving the aircraft skin largely unpainted made sense.

2.2 Cheatline

The cheatline was one of the first recognisable elements of aircraft liveries. A cheatline is a decorative horizontal stripe that is applied to the sides of a plane's fuselage. The term's etymology derives from "cheating the eye," as the first cheatlines aimed to visually streamline aircraft by reducing the staccato impact of their cabin windows. Cheatlines can have a single ("rules") or multiple ("tramlines") band, and they can be one or more colours (Adams, F. M. and Osgood; C. E., 1973). Cheatlines moved below or occasionally above the window line.

2.3 All-over color

The all-over colour represents an aircraft with a fully painted body. The final design involved painting the entire fuselage of the aircraft in one of several single bright colourways. "Braniff International" was logotype in custom-designed italic capitals, with the initials pasted across airliner tail fins. The livery was part of a more extensive corporate identity overhaul that included dedicated airport lounges and a fleeting "space helmet" headgear for cabin crew.

2.4 Jelly Bean

The Braniff 1967 livery, also known as "Jellybean." Jellybean liveries include a variety of colour schemes in which entire aircraft or parts of them are decorated. A Jellybean variant involved decorating tail fins in various designs, as exemplified by Air India Express, which displayed different Indian culture and heritage on its tail, Alaska Airline's 1972 brand refresh livery, Frontier Airlines with images of different animals and birds on its tail, JetBlue Airways, Mexicana, Pakistan International Airlines' "ethnic tails," and PLUNA. British Airways ethnic liveries from 1997 were celebrated Jellybean examples.

Fig. 1: Example of liveries design (source was taken from https://en.wikipedia.org/wiki/Aircraft_livery)

3.0 Design Issue

The exterior of the widebody aircraft was transformed to visually represent the two national icons by integrating the red stripes of the Malaysian flag with the majestic '*Harimau Malaya'* emblem, which symbolises the collaboration, strength and unity between the brands. The design represents the MOU between the Football Association of Malaysia (FAM) and Malaysia Airlines Berhad. Malaysia Airlines is the nation's flag bearer worldwide, while Harimau Malaya (Malaysian Football Team) transcends race, religion, age, and cultural differences in supporting the country. This design signifies that when two national brands converge, the sky is the limit and it also shows the commitment towards building the nation.

Fig. 2: Visual study on local context and identity that represents Malaysia Airlines and Football Association of Malaysia (HARIMAU MALAYA)

3.1 Aircraft livery

The term is derived from the word livery, which refers to the uniform-style clothing worn by servants of wealthy families and government representatives until the early/mid-twentieth century. The term "livery" was applied to the decoration of stagecoaches, railway trains, and steamships. Since the 1950s, elements of airline liveries have been increasingly integrated into ground vehicles, advertising, proprietary airport furniture, airline promotional materials, and aircrew uniforms, eventually spreading to airline websites in the 1990s.

3.2 Aircraft Livery Application

Painting in multiple layers has changed for applying a basecoat-clearcoat system, improving gloss and colour retention and allowing for faster drying; it can double coating life and be up to 30% lighter, as paint weighs up to 1,000 lb (450 kg) per aircraft. (Source: "Solving The Elusive Element To Paint Advancement". Inside MRO. Aviation Week, August 11, 2016. Decals or stickers are used for geometrically difficult elements such as titles and logos.

3.3 Aircraft Livery Elements

Individual elements of airline liveries are fixed. The title of the airline is usually written in a specific style. As a logotype, this is precisely defined by typographic designers. The specification addresses: the typeface (either a commercially available typeface or a specially designed and copyrighted custom typeface). The aircraft size varies depending on the fleet member; the more significant the aircraft, the larger the titling. Because the type is typically read from a flat surface, the airline livery type is frequently modified to fit curved aircraft surfaces. The specifications yield a logotype. Graphic designers define the airline's monogram or emblem in terms of geometry. The resulting specification is referred to as a logo. Logos are also altered to fit curved surfaces and appear the same from different viewing angles.

4.0 Research Methodology

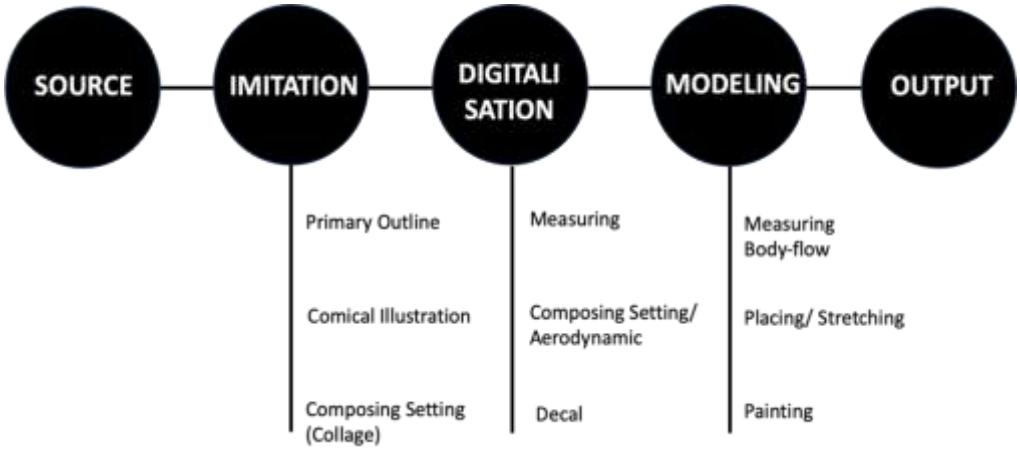

Fig. 2: Methodology approach in sourcing traditional art process to digital art.

The process of creating hand-drawn art begins with drawing on paper, canvas, or any other surface. Thanks to technological advancements, artists can now turn their handmade sketches and art into digital versions of original works. This study employs specific types of sampling (four different types of liveries design), the differences between which will be revealed during visual design analysis. All of the design reviews contribute to a better understanding of what determines the intended investigation for this research as the first phase in this design framework. The early stage of imitation includes a variety of processes in design experimentation that may require a primary outline to produce a comical illustration.

Later, it identifies the best way to think of it (Harimau Malaya as subject matter) in terms of composition and curation. Several compositional techniques are used in the masterpiece, including one-point perspective and capturing fluidity and movement. The intuitive taught play rules as 'trolled spontaneous have an infinite number of elements and starting points, so it is very much a trial and error process to see how elements, attributes, proportion, and composition bring values that can work and fit within the proposed concept. Digitalisation identifies specific measuring-related methods, processes, and approaches. It ensures comprehension of composing setting activities involving aerodynamics, primarily focusing on providing the decal (acts as a prototype pattern on plane model). The modelling will be formed based on the factor analysis from the early phase, and precise measuring of body flow will allow for the proper placement and sketching of decals. Several modelling pilot studies were conducted on a single sample as a pre-test to investigate the performance of composition setting, time setting, and painting method. Several profiles will be chosen based on the results of the categorical analysis. The chosen metaphorical element profiles will reveal the relationship with the local context and identity that represent Malaysia Airlines and the Malaysian Football Association.

4.1 Composing Illustration Line Drawing Ideation Artwork

Fig. 3: Few sketches works of 'Harimau Malaya' as a line art illustration subject we're being composed through collage task and template plotting. (source was taken from - https://en.artassociation.asia/master/verlyvetovermol/

LINE refers to shape boundaries and the relationships between lines and spaces. Line beauty refers to the harmony of intersecting lines or the unique quality imparted by special treatment. NOTAN is a Japanese word that means "dark, light." It refers to the amount of light reflected or the massing of tones of different values. Notan-beauty refers to the harmony created by the combination of dark and light spaces, whether coloured or not, in buildings, paintings, or nature (Arthur Dow, 2014). These three structural components are inextricably linked. Good colour depends on good notan, which is dependent on good spacing. The first stage of ideation should begin with a line. Reflecting on sketch works produced by Fig. 3 represents three core composition principles: Transition, Subordination, and Repetition. The arrangement so designated goes beyond the opposition. Multiple lines and dots intersecting in opposing directions create an impression of abruptness, severity, or even violence, emphasizing the difference in movement. The opposition is softened and an effect

of unity and completeness is produced by adding volume and thickness, as shown in the sketches in Fig. 3. This combination exemplifies beauty, which has been defined as elements of difference balanced by elements of unity. On the other hand, the principle of subordination is an excellent constructive idea not only in the space arts but in all fine arts: To form a complete group, the parts are attached or related to a single dominating element that determines the character of the whole. The artwork exemplified the principle of subordination, with all of its components linked by delicate adjustments and balance of proportions, forms, and colour. The clustering of many lines causes the line to melt into tone. Composition in two values—the simplest form of Notan—is the starting point for the direct study of tone intervals. There are several ways to begin: blotting ink or charcoal on paper or copying the darks and lights from photographs of scales and volumes in the lining.

4.2 Digitalization and Livery Setting Process

Digital visual art is made up of either 2D visual information displayed on an electronic visual display or information mathematically translated into 3D information and viewed on an electronic visual display through perspective projection. The most basic is 2D computer graphics, which mimic how you draw with a pencil and paper. However, in this case, the image is on the computer screen, and the tool you use to draw it could be a tablet stylus or a mouse. What appears on your screen may appear to have been drawn with a pencil, pen, or paintbrush. The second type is 3D computer graphics, in which the screen is transformed into a window into a virtual environment in which objects are arranged to be "photographed" by the computer. 2D computer graphics typically use raster graphics as their primary source data representations, whereas 3D computer graphics use vector graphics to create immersive virtual reality installations. A third possibility is to create art in 2D or 3D entirely by executing algorithms coded into computer programmes. This is the computer's native art form, and an introduction to its history can be found in an interview with computer art pioneer Frieder Nake (2019). Figure 4 depicts the livery anatomy of the area where artwork design is being used. The illustration of Harimau Malaya is presented in jet black to represent the bold outline characterised by line art digitalisation; then blended within yellow halftone colour that references the Football Association of Malaysia (FAM) synergising within Malaysia Jalur Gemilang as Malaysia Airlines Berhad existing livery design. In the form of abstracted stylisations of kinetic effects, one essential semiotic resource is the balancing of cultural symbolism and perceptual iconicity (Thurlow, A. and Aiello; G. 2007)

Fig. 4: Adapting Digital Livery Design to small scale model 1:50

4.0 Results and discussion

Malaysia Airlines and the Malaysian Football Association unveiled the Harimau Malaya livery as the airline's official partner for the Football Association of Malaysia (FAM). Malaysia Airlines (MAS) unveiled a special livery bearing the Harimau Malaya emblem on the airline's Airbus 330-300 aircraft. The exterior of the widebody aircraft was transformed to visually represent the two national icons by combining the red stripes of the Malaysian flag with the majestic Harimau Malaya emblem, which represents the brands' collaboration, strength, and unity. The symbolic design honours both brands' strong relationship; this is the airline's identity, as mentioned by Lovegove, K. (2000). The design of the special-edition Harimau Malaya aircraft livery is part of MAS's unified commitment to Fly Malaysia across destinations and borders proudly. As the flag (designed stream over the body) represents the bearers of Malaysia, it is the responsibility of both MAS and FAM to play a role in representing Malaysia at the highest level in terms of safety, discipline, and commitment to excellence. The Harimau Malaya aircraft livery design can be seen as a semiotic upgrade in the partnership between two major national brands. The auspicious design also serves as a source of inspiration for the team as they prepare for the new tournament and competition, in which the nation hopes to make the country proud; it is more than a sentimental but symbolic value.

Fig. 5: Actual Aircraft Livery Design of Harimau Malaya
(source was taken from https://www.thevibes.com/articles/sports/53802/msia-airlines-takes-its-support-for-harimau-malaya-sky-high

5.0 Conclusion and Recommendation

Design analysis is closely related to cognitive and the approach to new cognitive thinking (Lawson, 2006). In the context of livery design composition, the intuitive design thinking approach enabling the form creations in crafting livery setting process. The approach of intuitive form structure is on the product appearance of physical components (tangible), such as body curve, wings, and the empennage. As mentioned by Anwar et al. (2016), these processes known as a design creation (form) that involves both process-oriented and content-oriented analyses, combining both function and structure to perform an ergonomic requirement. The design demonstrated that the design process criteria of particular procedure featuring different "leaps of thought" and were generalize into one specific character that reflects unclear types of thinking contributed to the design gap (branding integration of MAS and FAM). In future works, this research will explore of design composition through the digitalization of a new product and the integration criteria represents the product design construction process and the process of formulating an operating system toward the research goal. Hubka and Eder (1996) refer to this approach as "the intuitive concept" related to the concern factor. It is also known as methodology, system, design plan, or structure.

Acknowledgements

The authors would like to express their gratitude to the Football Association of Malaysia (FAM) and Malaysia Airlines (MAS) for entrusting the task to design the majestic 'Harimau Malaya Livery', which symbolizes the MOU collaboration, strength and unity between the two brands. The authors would also like to say thank you to the College of Creative Arts, Universiti Teknologi MARA Shah Alam, Selangor; as well as Research Nexus UiTM (ReNeU) for the publication incentive of PYPB.

References

Abidin, S. Z., Bjelland, H. V., & Øritsland, T. A. (2008). The embodied mind in relation to thinking about form development. Proceedings of NordDesign 2008 Conference (pp. 265-274). Tallin: Design Society.

Adams, F. M. and Osgood, C. E. (1973) A cross-cultural study of the affective meaning of colour. Journal of Cross-Cultural Psychology 4(2) 135-156

Ernst Eder, W.(2010) 'Engineering design science and theory of technical systems: legacy of VladimirHubka', Journal of Engineering Design,, First published on: 19 November 2010

Lawson, B. (2006). How Designers Think: The Design Process Demystified (4th ed.). Oxford; Burlington, MA: Elsevier/ Architectural Press.

Lovegove, K. (2000) Airline Identity, Design, and Culture. London, Laurence King.

"Painting versus Polishing of Airplane Exterior Surfaces". Aero Magazine. Boeing. January 1999

Anwar, R., Abidin, S. Z., & Hassan, O. H. (2016). In-vitro design protocol: Artificial situation strategy uses to comprehend designers' thought. In EDP Sciences: MATEC Web of Conferences, Vol. 52.

Smith, Glenn (2019). "An Interview with Frieder Nake". Arts. 8 (2): 69. doi:10.3390/arts8020069.

Thurlow, A. and Aiello, G. (2007) National pride, global capital: a social semiotic analysis of transnational visual branding in the airline industry Visual Communication 6(3) 305-344.

Verly Veto Vermol (2021, September 2). *"Verly Veto Vermol, Malaysian Painter".* Asian Art Association Singapore. - https://en.artassociation.asia/master/verlyvetovermol/

Yarwood, A. 2000. British Airways World Images Farewell Airliners 13(6) 25- 43