

Test Articles

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Borbera

Borbera	
Origin	Monte Chiappo, Ligurian Alps
Mouth	The Scrivia at Vignole Borbera (Province of Alessandria) in the frazione Precipiano
Basin countries	Italy
Length	38 km
Source elevation	c. 1,700 m
Mouth elevation	226 m
Avg. discharge	6.5 m ³ /s
Basin area	212 km ²

The **Borbera** (*Borbaja* in Piedmontese) is a major *torrente* (a stream whose flow is marked by a high degree of seasonal variation) of the Province of Alessandria in the Italian region Piedmont. It is born at an elevation of 1,700 m on Monte Chiappo and runs a course of 38 km before flowing into the Scrivia as its major right tributary at Vignole Borbera.

The river passes through the territories of the following communes: Cabella Ligure, Albera Ligure, Rocchetta Ligure, Cantalupo Ligure, Borghetto di Borbera, Vignole Borbera, Stazzano, Arquata Scrivia, Serravalle Scrivia.

References

- *This article was initially summarized from the article in the Italian-language Wikipedia « » , specifically from this version.*

Experimental Assembly of Structures in EVA and Assembly Concept for Construction of Erectable Space Structures

The **Experimental Assembly of Structures in EVA** and the **Assembly Concept for Construction of Erectable Space Structures**, or **EASE/ACCESS**, were a pair of Space Shuttle flight experiments which were performed on STS-61-B, on November 29 and December 1, 1985. The purpose of the experiments was to study how quickly astronauts would become proficient at assembling space structures during extravehicular activity, and how quickly they would become fatigued, and to explore various construction and maintenance techniques. In particular, researchers studied the applied moments arising in the manual assembly of a large space structure.^{[1] [2]}

EASE was a project of NASA's Marshall Space Flight Center and the Space Systems Laboratory at MIT (later at the University of Maryland). ACCESS was developed by NASA's Langley Research Center.^[3]

Experiment and EVAs

Astronauts Jerry L. Ross and Sherwood C. Spring repeatedly assembled a 3.6 meter tetrahedral truss (EASE) and a triangular column truss (ACCESS) during two EVAs. The first EVA was devoted to studying human performance in assembly techniques, while the second was dedicated to supplementary experiments, including alternative construction techniques and maintenance scenarios.^[4]



Astronauts assemble the EASE structure during STS-61B



Astronaut Jerry L. Ross, secured to the RMS, approaches the ACCESS structure during STS-61B

The EASE structure consisted of 6 identical aluminum beams, each 12 feet (Expected end of text (at char 11), (line:1, col:12) m) long and weighing 64 pounds, connected by four nodal joints. ACCESS consisted of 93 tubular aluminum struts, each 1-inch (mm) in diameter—thirty-three 4.5 ft (m) struts, and sixty 6 ft (m) struts—connected by thirty-three nodal joints.^[5]

While assembling the EASE structure, the astronauts moved about the structure under their own power. For the assembly of the ACCESS structure, the astronauts were secured to a mobile platform on the Remote Manipulator System, which was guided by astronaut Mary L. Cleave.^[6]

A stereoscopic camera system recorded the movements of the structural beams during assembly. Taking into account the effects of inertia, drag, and virtual mass, researchers used this data to reconstruct the applied moments. The structure was also assembled in neutral buoyancy simulation, and the two environments were compared.



Astronauts assemble the ACCESS structure in neutral buoyancy training

The EVAs were also recorded by an IMAX camera mounted in the shuttle cargo bay.

Results

Applied moments during EVA were found to be on the order of 2.0 N·m. In neutral buoyancy simulation, the applied moments were around five times greater than those during EVA.^[7] Assembly time during EVA was around 20% less than in neutral buoyancy simulation. The learning curve was on the order of 78%, and was unaffected by the strength, coordination, or size of the astronaut, or the fit of the space suit.^[8] In both environments, moments were applied as short impulses, interspersed by several seconds of coasting.

Conclusion

The EASE/ACCESS experiments were deemed to be successful. The information gathered provided a basis for planning future manually assembled space structures, and in the process, NASA accrued valuable EVA assembly experience. The team responsible for the EASE project was awarded a NASA Group Achievement Award.^[9]

See also

- List of spacewalks and moonwalks
- Space Shuttle program
- Human factors


References

- [2] Neal, Valerie; McMahan, Tracy and Dooling, Dave. Chapter 9 - Testing New Technology.. *NP-119 Science in Orbit: The Shuttle & Spacelab Experience, 1981-1986*. Retrieved on 2006-12-26.
- [3] von Ofenheim, Bill (March 10, 2003). Space Shuttle Atlantis ACCESS EVA. *NASA Langley Research Center - Multimedia Repository*. NASA. Retrieved on 2006-12-26.
- [4] NASA (November 1985). "Space Shuttle Mission STS-61B". Press release. Retrieved on 2006-12-28.
- [5] Harkins, Wil (December 1, 1994). Public Lessons Learned Entry: 0833. NASA. Retrieved on 2006-12-26.
- [6] National Research Council (2001). Biographical Sketches of Committee Members. *Laying the Foundation for Space Solar Power: An Assessment of NASA's Space Solar Power Investment Strategy*. The National Academies Press. Retrieved on 2006-12-26.

External links

- NASA Oral History Project - Bryan D. O'Connor (PDF)

Flag of Armenia

	
Use	National flag. փոփ
Proportion	1:2
Adopted	August 24, 1990
Design	A horizontal tricolour of red, blue, and orange

The national **flag of Armenia**, the **Armenian Tricolour** (known in Armenian as երազույն, *erraguyn*), consists of three horizontal bands of equal width, red on the top, blue in the middle, and orange on the bottom. The Armenian Supreme Soviet adopted the current flag on August 24, 1990. On June 15, 2006, the Law on the National Flag of Armenia, governing its usage, was passed by the National Assembly of Armenia.

Throughout history, there have been many variations of the Armenian flag. In ancient times, Armenian dynasties were represented by different symbolic animals displayed on their flags.^[1] In the twentieth century, various Soviet flags represented the Armenian nation.

Symbolism



The meanings of the colors have been interpreted in many different ways. For example, red has stood for the blood shed by Armenian soldiers in war, blue for the Armenian sky, and orange represents the fertile lands of Armenia and the workers who work them.^[2]

The official definition of the colors, as stated in the Constitution of the Republic of Armenia, is:

“ Red symbolizes the Armenian Highland, the Armenian people's continued struggle for survival, maintenance of the Christian faith, Armenia's independence and freedom. Blue symbolizes the will of the people of Armenia to live beneath peaceful skies. Orange symbolizes the creative talent and hard-working nature of the people of Armenia.^[3] ”

Design

Since the Armenian government does not specify the exact shades of red, blue, and orange, two different versions of the flag are in common use. The more common version consists of brighter shades, whereas the colors of the less common version are more muted. The following table gives the approximate RGB values of the colors used in those two versions:^[4]

	More common version	Less common version
		
Red	255-0-0	216-28-63
Blue	0-0-170	85-117-196
Orange	255-153-0	239-107-0

History

List of Armenian flags

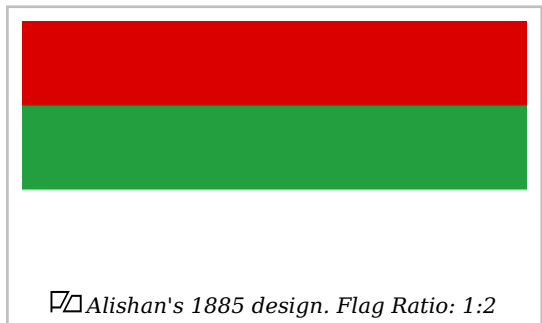
Today's tricolor flag bears little resemblance to the earliest Armenian 'flags'; in ancient times, armies went into battle behind carvings mounted on poles. The carvings might represent a dragon, an eagle, a lion or "some mysterious object of the gods."^[5] With the advent of Christianity, the Armenian empire adopted many different flags representing various dynasties. The Artaxiad Dynasty's flag, for instance, consisted of a red cloth displaying two eagles gazing at each other, separated by a flower.



☐☐ Artaxiad Dynasty 189 BC - 1 AD

19th century

After Armenia was split between the Persian and Ottoman Empires, the idea of an Armenian flag ceased to exist for some time. The Armenian Catholic priest Father Ghevont Alishan created a new flag for Armenia in 1885, after the Armenian Students Association of Paris requested one for the funeral of the French writer Victor Hugo. Alishan's first design was very similar to today's Armenian flag: a horizontal tricolor. However, it looks more like an upside-down variation of the current flag of Bulgaria. The top band was red, symbolizing the first Sunday of Easter (called "Red" Sunday), followed by a green band to represent the "Green" Sunday of Easter, and finally an arbitrary color, white, was chosen to complete the combination.^[6]



☐☐ Alishan's 1885 design. Flag Ratio: 1:2

While in France, Alishan also designed a second flag, identified today as the "Nationalist Armenian Flag." It too was a tricolor, but unlike the previous design, this one was a vertical tricolor similar to the French flag. Its colors were red, green, and blue, from left to right, representing the rainbow that Noah saw after landing on Mount Ararat.^[7]

Transcaucasian Democratic Federative Republic

In 1828, Persian Armenia was annexed to the Russian Empire after the last Russo-Persian War, and became known as Russian Armenia. When the Russian Empire collapsed, Russian Armenia declared its independence and joined the short-lived Transcaucasian Democratic Federative Republic, together with Georgia and Azerbaijan.

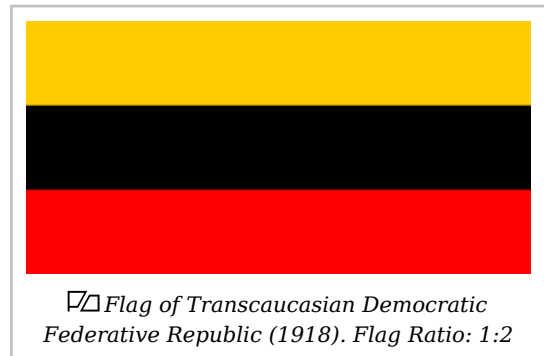
This unified state hardly lasted a year and was soon dissolved. Since the Republic was short-lived, it did

not use any flags or symbols. Nevertheless, some historians consider a horizontal gold,

black, and red tricolor, similar to that of the German flag but arranged differently, to have been flag of Transcaucasia.^[8] The federation was dissolved on May 26, 1918, when Georgia

declared its independence as the Democratic Republic of Georgia. Both Armenia and

Azerbaijan declared their independence two days later, on May 28, 1918, as the Democratic Republic of Armenia (DRA) and the Azerbaijan Democratic Republic (ADR), respectively.



Democratic Republic of Armenia

After gaining independence, the Democratic Republic of Armenia adopted the modern Armenian tricolor. Upon Stepan Malkhasyan's appearance in the Armenian National Council,^[9] the independent Armenian government selected the colors used during the last period of Rubenid Dynasty, red, blue and yellow. They chose to replace the yellow with orange "because it merged better with the other two colors, presenting a more pleasing composition."^[10] The flag of independent Armenia then had a ratio of 2:3, but on August 24, 1990, when the Armenian Supreme Soviet adopted it as the flag of the Republic of Armenia, the ratio was changed to 1:2.^[11] An earlier prototype, which was eventually rejected, was a rainbow flag. This prototype can be seen at the Martiros Saryan House Museum in Yerevan, Armenia.



Early Soviet Armenia and the Transcaucasian SFSR

