Vantage Airship Manufacturing Co., Ltd. (Vantage)

Peter Lobner, updated 8 March 2022

1. Introduction

Vantage has been working in Shanghai, China in the airship field for nearly 30 years, primarily developing and manufacturing non-rigid manned airships, remote-controlled non-rigid airships and tethered aerostats. Non-rigid airships currently in production are the CA-80, CA-150, CA-180 and CA-300 manned airships and a variety of remotely controlled blimps. In addition, Vantage is developing designs for two large hybrid "transportation airships." The Vantage website is here: http://www.vantageship.com/en/

2. Hybrid airships

Vantage is developing designs for two large hybrid ("combined loading") transportation airships, the CA-60T and the CA-200T.

Concept graphic, CA-60T / CA-200T airship. Source: Vantage

Technical parameters for these hybrid airships are summarized below.

Parameter	CA-60T	CA-200T
Length	165 meters (514 ft)	220 meters (722 ft)
Width	80 meters (262 ft)	113.8 meters (373 ft)
Height	48 meters (157 ft)	66 meters (217 ft)
Envelope volume	180,000 m^3 (6,356,640 ft^3)	600,000 m^3 (21,188,800 ft^3)
Ballonet volume ratio	26%	26%
Payload	60 metric ton (66 short ton)	200 metric ton (220 short ton)
Cabin dimensions	30 L x 8 W x 4 H meters (98.4 x 26.2 x 13.1 ft)	60 L x 12 W x 8 H meters (196.9 x 39.4 x 26.2 ft)
Speed, cruise	120 kph (75 mph)	120 kph (75 mph)
Speed, max	150 kph (93 mph)	160 kph (99 mph)
Range	3,000 km (1,864 miles)	3,000 km(1,864 miles)
Practical ceiling	3,000 meters (9,843 ft)	3,000 meters (9,843 ft)

The general configuration of the Vantage hybrid airship appears to be similar to the Airlander 10 and 50 being developed in the UK by Hybrid Air Vehicles (HAV) and the Lockheed Martin LMH-1 being developed in the US.

It has been reported that Vantage intends to pursue development of these hybrid airships with international partners. The schedule for development and first flight of a Vantage hybrid airship has not been announced.

Renderings of the Vantage CA-200T.
Source, both graphics: Vantage

3. Manned blimps

Non-rigid manned airships currently in production are the CA-80, CA-150, CA-180 and CA-300. Technical parameters are listed below.

Parameter	CA-80	CA-150	CA-180	CA-300
Length	42 m	48 m	55 m	65 m
Diameter	11 m	12.6 m	13.75 m	16.25 m
Envelope volume	2,533 m^3	3,923 m^3	5,445 m^3 estimate	8,987 m^3 estimate
Ballonet volume ratio	25%	25%	25%	25%
Empty weight	1,850 kg	2,450 kg	3,000 kg	3,800 kg
Static lift	2,570 kg	3,982 kg	5,258 kg	8,700 kg estimate
Max load	652 kg	1,433 kg	1,953 kg	4,800 kg
Max TO weight	2,502 kg	3,883 kg	5,358 kg	8,600 kg
Crew, min	1	1	1 + 1	1 + 1
Passengers	4	8	9	19
Max speed	85 kph	80 kph	90 kph	90 kph
Cruise speed	66 kph	70 kph estimate	70 kph	70 kph
Practical ceiling	1,500 m	2,745 m	3,000 m	3,000 m
Max range	713 km	666 km	1,750 km	1,400 km

CA-80 blimp with large advertising panel. Source: Vantage

CA-150 and gondola closeup. Source, both photos: Vantage

4. Remote controlled LTA drones

Vantage also produces a variety of remotely controlled blimps: CA-20R, CA-24R, CA-25R, CA-30R, CA-32R, CA-36R and CA-38R. The number refers to the approximate length of the gas envelope in meters. All have a remote control radius of 5 km (3.1 miles). All are capable of carrying advertising panels and can be adapted for other roles, such as aerial survey, photography, and surveillance missions.

The smaller LTA drones have small gondolas that are not equipped with controls for an onboard pilot. The largest LTA drones, such as the CA-36R and CA-38R, are equipped as pilot-optional vehicles and can be flown by a pilot or remotely controlled.

Parameter	**CA-24R**	**CA-25R**	**CA-30R**	**CA-32R**	**CA-36R**
Length	24 m	25.7 m	30 m	32.3 m	36 m
Diameter, max	6.2 m	6.4 m	7.5 m	8.1 m	9 m
Height, overall	8 m	8.4 m	10 m	11 m	12 m
Envelope volume	471 m^3	530 m^3	856 m^3	1,068 m^3	1,480 m^3
Ballonet vol. ratio	20%	20%	26%	26%	46%
Empty weight	330 kg	370 kg	600 kg	650 kg	661 kg
Engine power	2 x 20 hp	2 x 20 hp	2 x 50 hp	2 x 50 hp	2 x 50 hp
Cruise speed @ 300 m	50 kph	50 kph	55 kph	49 kph	47 kph
Payload to 300 m	136 kg	155 kg	247 kg	152 kg	140 kg
Practical ceiling	1,000 m	2,000 m	2,000 m	3,000 m	5,000 m
Endurance	6 hrs	5 hrs	5 hrs	5 hrs	5 hrs

The small CA-20R solar-powered LTA drone. Source: Vantage

A larger LTA drone model, CA-24R. Source: Vantage

Ground handling a CA-25R LTA drone. Note the shadow of the forward ballonet on the envelope. Source: Vantage.

The CA-38R pilot-optional LTA drone seems similar in scale to a CA-150 manned blimp. Source: Vantage

5. For more information

Other *Modern Airships* articles

- *Modern Airships - Part 1*: https://lynceans.org/all-posts/modern-airships-part-1/
    - AVIC AS-800 blimp
- *Modern Airships - Part 2*: https://lynceans.org/all-posts/modern-airships-part-2/
- *Modern Airships - Part 3*: https://lynceans.org/all-posts/modern-airships-part-3/