



ATLA
Acquisition, Technology &
Logistics Agency

Integrated Mast UNICORN on 30FFM



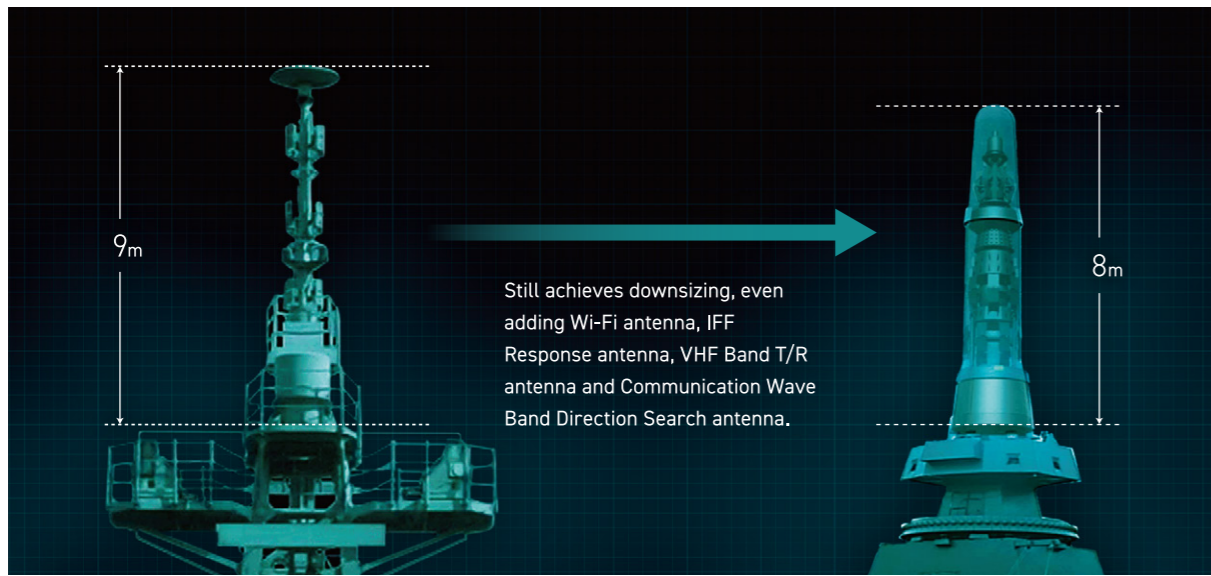
INCLUDES
PAPER CRAFT

Features of Shipboard UNICORN

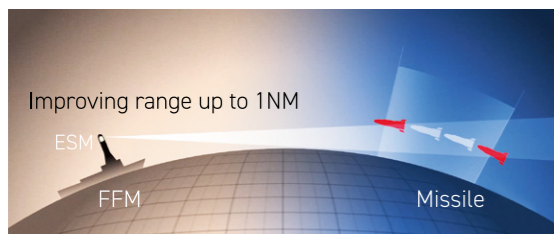
UNified COMplex Radio antenna



Integrates and Downsizes the Antennae on the Top of the Mast

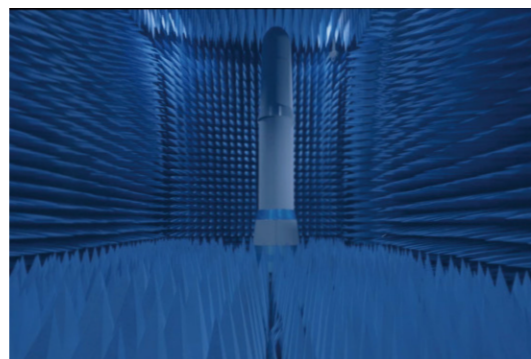


Installed the Detection Antenna on the Top



Able to detect radar waves and communication waves that are around quickly by relocating the TACAN on the bottom and installing the detection antenna on the top.

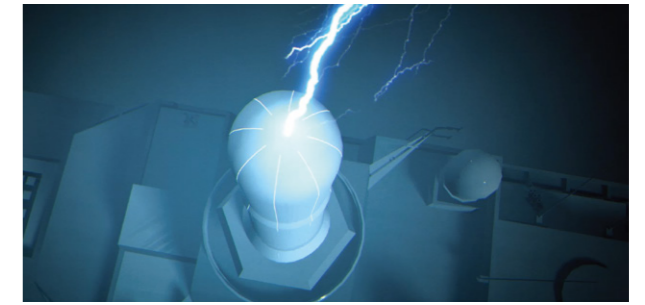
RCS Measure



Achieves Low RCS in antennae, radome and the prop etc.

With request, able to customize onboard antennae.
By interference, the optimal placement of existing antennae can be achieved.

Lightning Protection that Will Keep away from a Lightning Rod



A lightning protection strip that is installed on a surface of the radome, protects the antennae from a surge current when the lightning hits.

Radar Wave Band Omnidirectional Detection Antenna

Communication Wave Band Direction Search Antenna

Wi-Fi Band Antenna

LINK-16 Antenna

UHF Band T/R Antennae

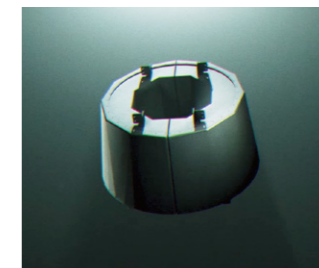
IFF Response Antenna

UHF Band/ VHF Band T/R Antenna

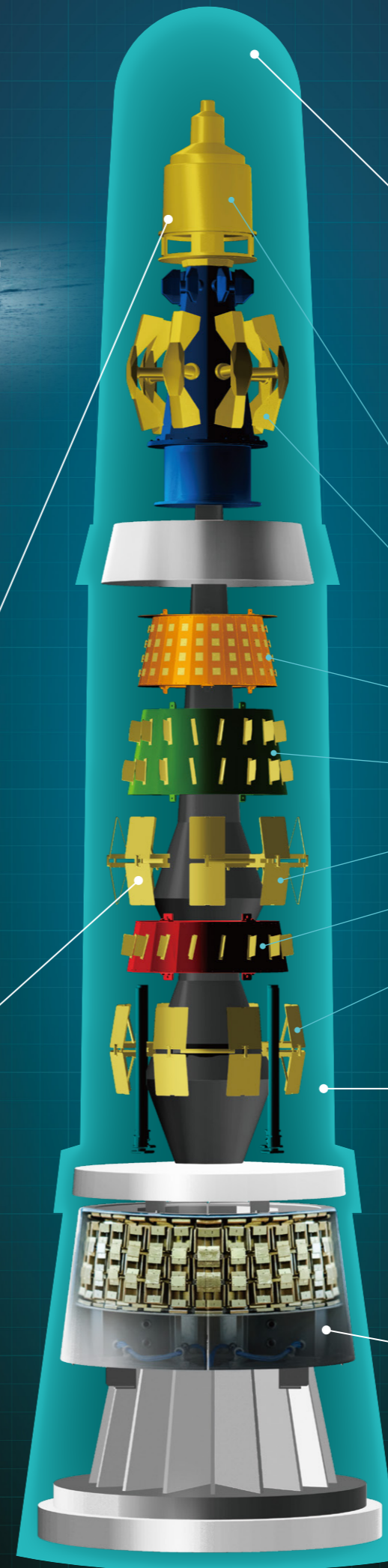
Omnidirectional

All antennae that will be installed securing full visibility and eliminates blind direction by installing on the top.

New Design of TACAN Antenna



The new design of TACAN antenna have been changed to a hollow shape, which improves the flexibility of antenna placement and attachment.
Easy replacement in case of module failure.

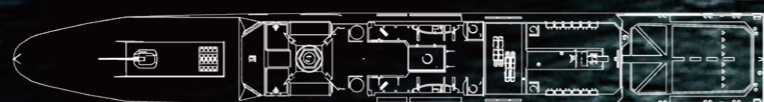
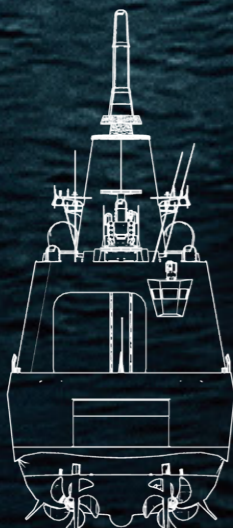
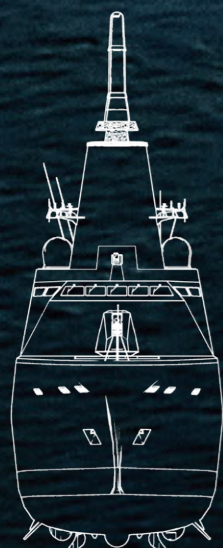
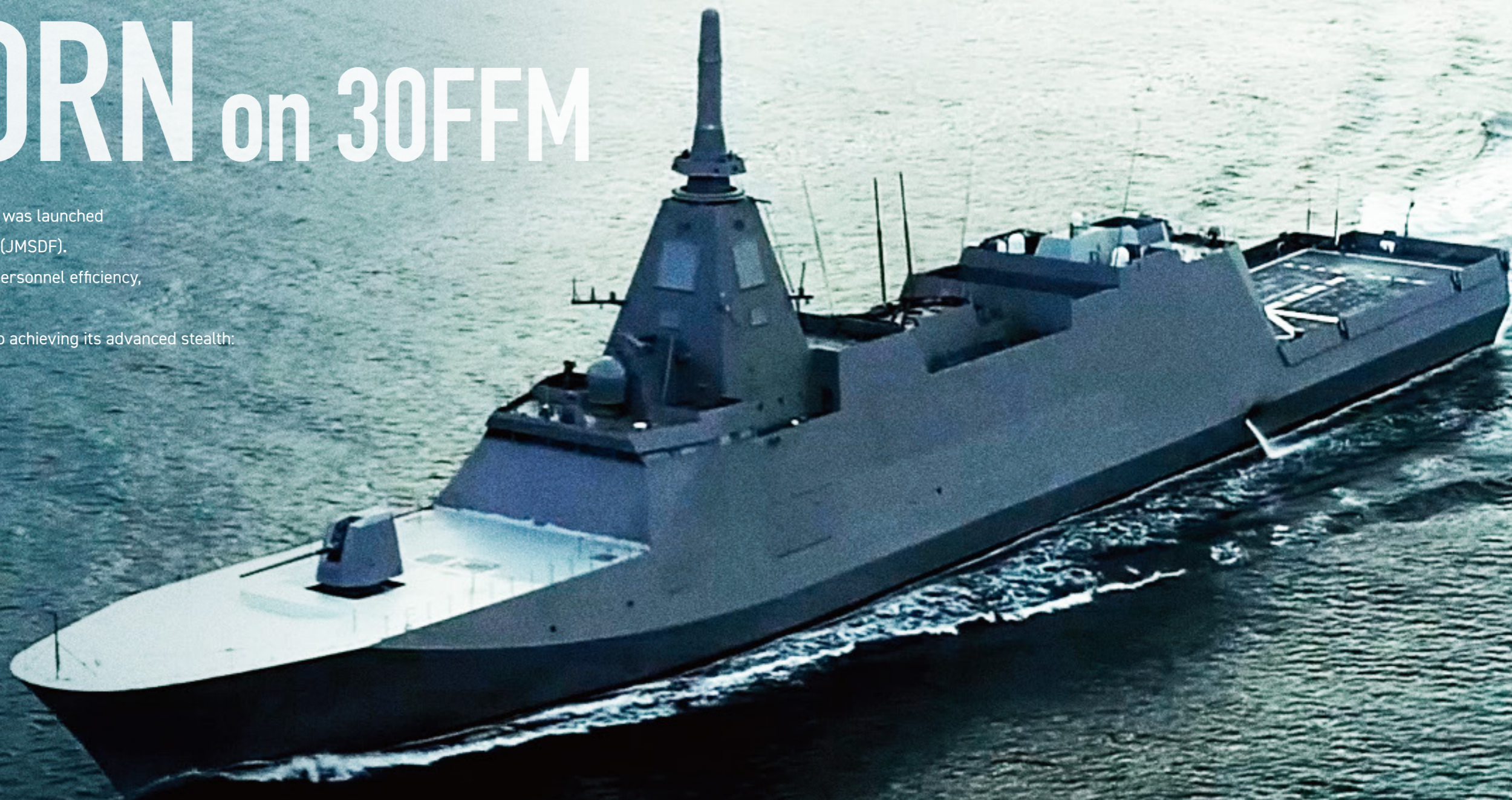


Integrated Mast UNICORN on 30FFM

In 2022, a brand new 3900-ton type frigate was launched for the Japan Maritime Self-Defense Force (JMSDF).

This vessel, the 30FFM, boasts increased personnel efficiency, versatility and advanced stealth.

Towering at its peak is one of the secrets to achieving its advanced stealth: the Integrated Mast UNICORN.



PRINCIPAL PARTICULARS OF 30FFM

Type of Ship ——— 3,900 ton Type Frigate

Speed ——— over 30 knots

Dimensions

Length ——— 132.5m
Breadth ——— Max.16m
Depth ——— 9m

Equipments

5inch/62caliber Gun ——— 1
SeaRAM ——— 1
Surface to Surface Missile System ——— 2
Anti-Submarine Warfare System ——— 1
Anti-Mine Warfare System

Propulsion System

CODAG
Gas Turbine ——— 1
Diesel ——— 2

Traditional Japanese Colors

30FFM is the new frigate type produced by manufacturing powerhouse Japan.

It is made from the same technical craftsmanship that is alive and well in Japan's traditional culture.

This 30FFM paper craft conveys the feel of lacquer coating and turmeric dye, keeping Japanese traditional colors in mind.

Japanese symbolic icons like Mount Fuji, cherry blossoms, cranes, samurai, Japanese traditional patterns and so on have been carefully arranged in its design.

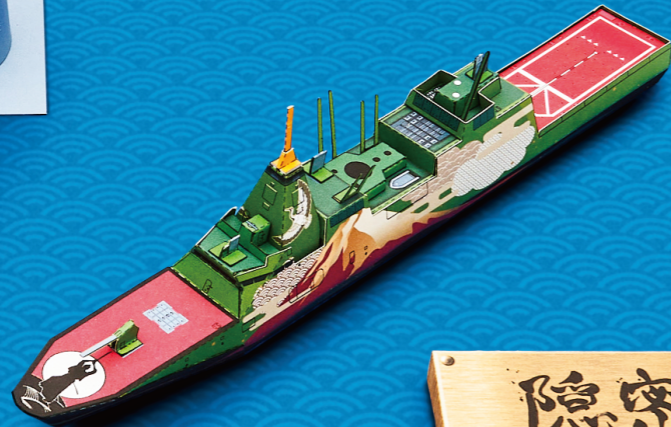
It was designed with the hope that the Integrated Mast UNICORN will reach countries all throughout the world.



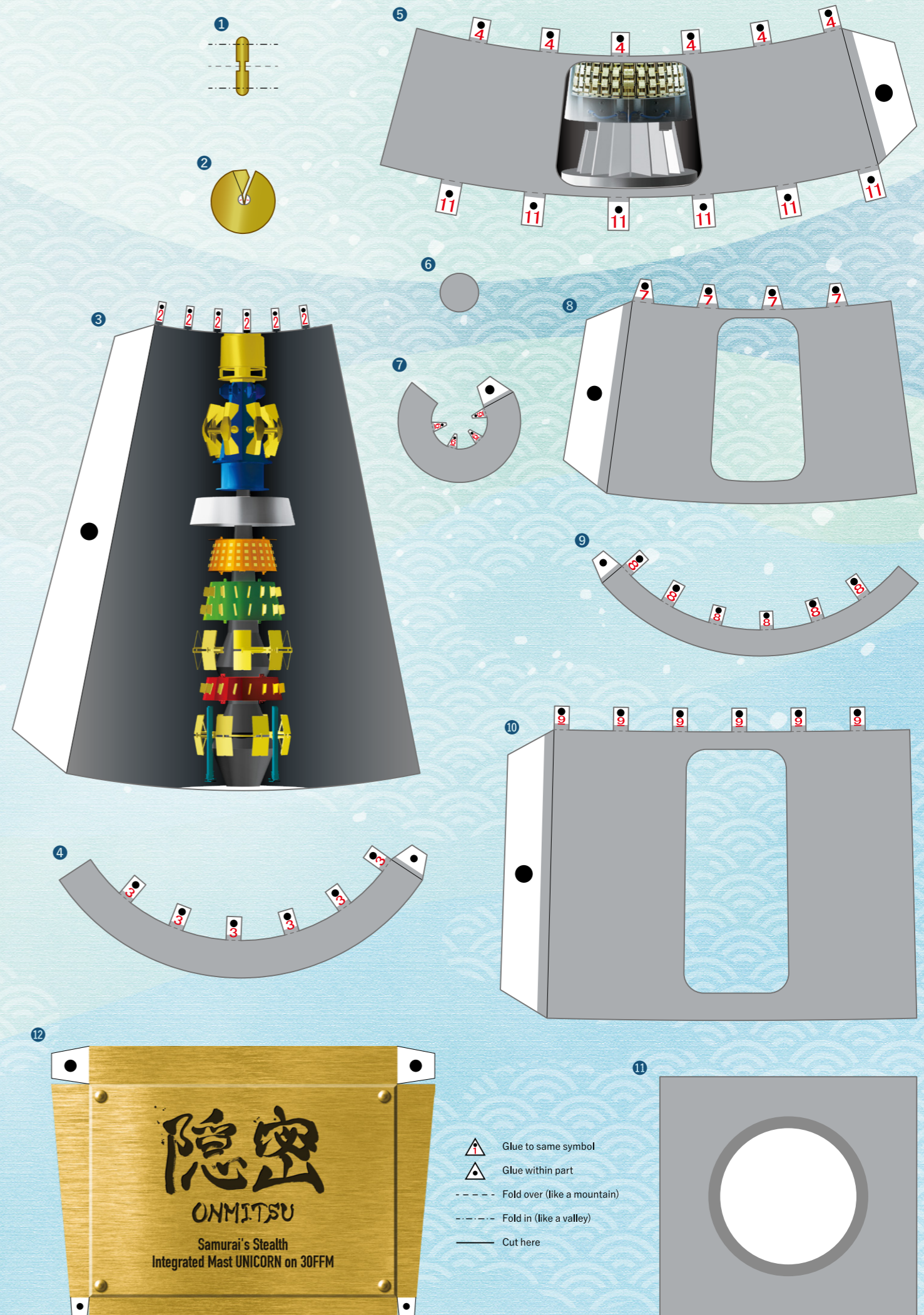
UNICORN & 30FFM ORIGINAL PAPER CRAFT



- UHF Band/ VHF Band T/R Antenna
- IFF Response Antenna
- UHF Band T/R Antennae
- LINK-16 Antenna
- Wi-Fi Band Antenna
- Communication Wave Band Direction Search Antenna
- Radar Wave Band Omnidirectional Detection Antenna

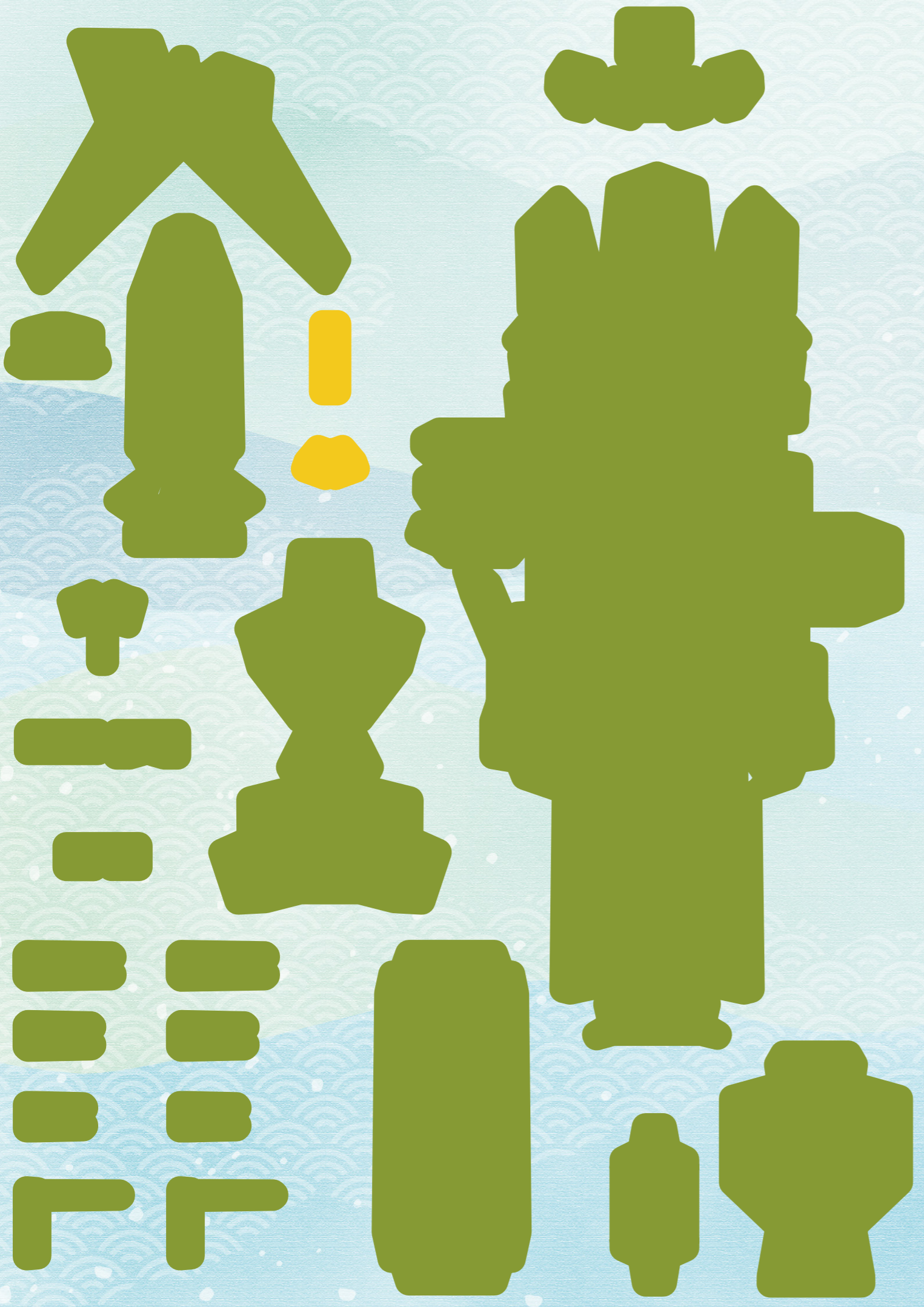


UNICORN: Completed Model, 1:52 Scale / 30FFM: Completed Model, 1:700 Scale



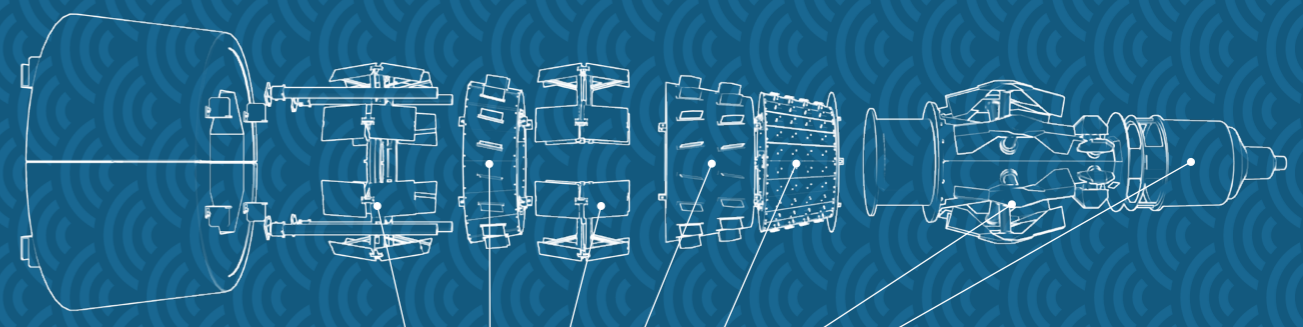
- Glue to same symbol
- Glue within part
- Fold over (like a mountain)
- Fold in (like a valley)
- Cut here





Cut ▾

Cut ▾



UHF Band/ VHF Band T/R Antenna

IFF Response Antenna

UHF Band T/R Antennae

LINK-16 Antenna

Wi-Fi Band Antenna

Communication Wave Band Direction Search Antenna

Radar Wave Band Omnidirectional Detection Antenna

The other side of this page is a sea-motif paper mat for your UNICORN and 30FFM paper craft.
Detach along the inner dotted line to use.

Cut

UNICORN HOW TO MAKE ORIGINAL PAPER CRAFT

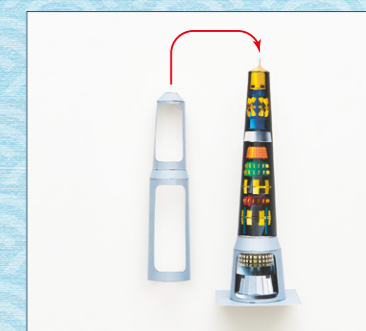
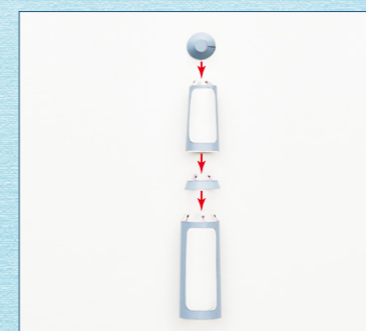
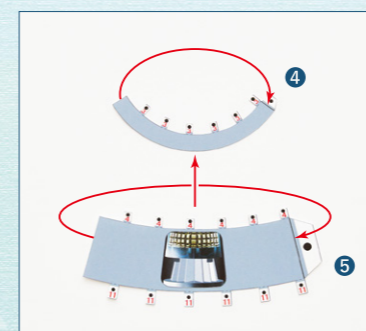
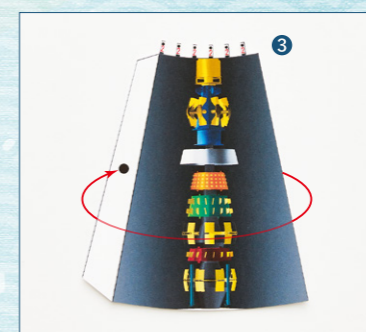
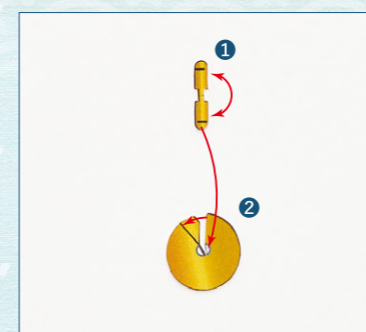
Required tools

- Adhesive: Cemedine C, quick-drying wood glue, etc.
- Knife/scissors: 45-degree art knife recommended. Regular box cutter OK.
- Cutting mat: Use to cut parts out from paper with your cutting tool.
- Ruler: Use when cutting or tracing with a needle.
- Needle: Use to make creases to fold along.
Use a file or other such tool to round off the end of the needle so that it does not cut the paper.
You can also use an empty mechanical pencil or a dry ballpoint pen.



Before assembling, use a needle or other appropriate tool to trace creases to fold along.


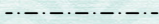

Fold over (like a mountain) - - - - - Fold in (like a valley) - - - - - Cut here _____

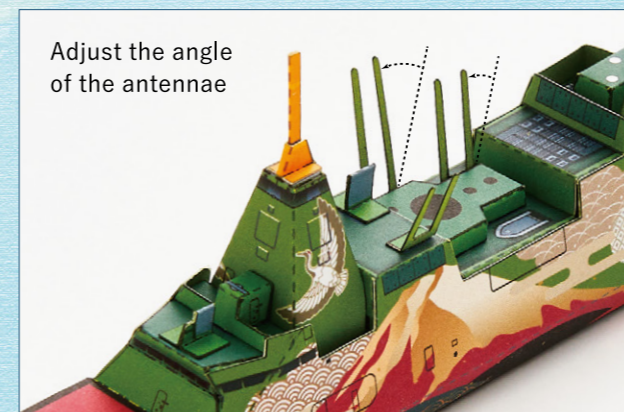
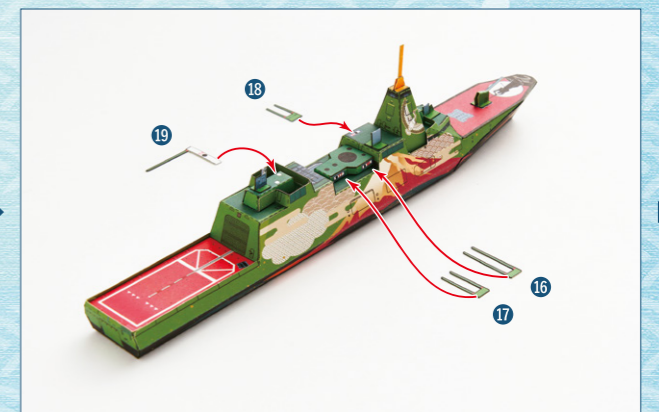
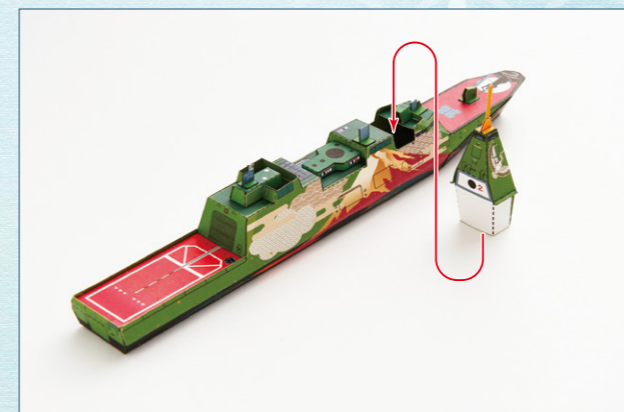
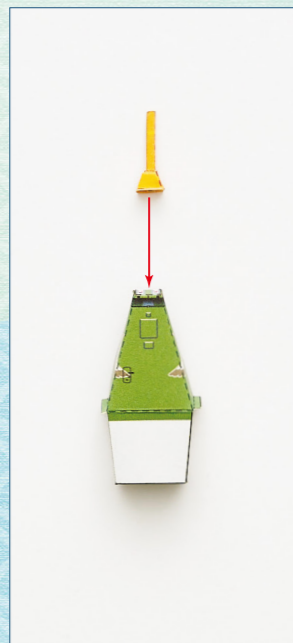
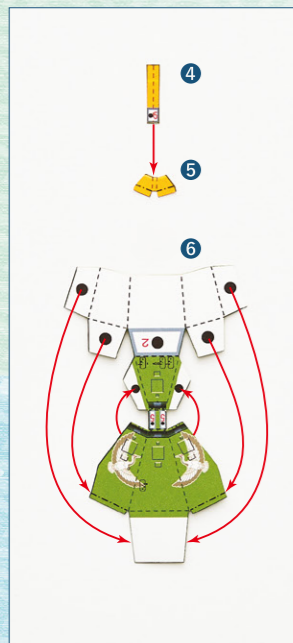
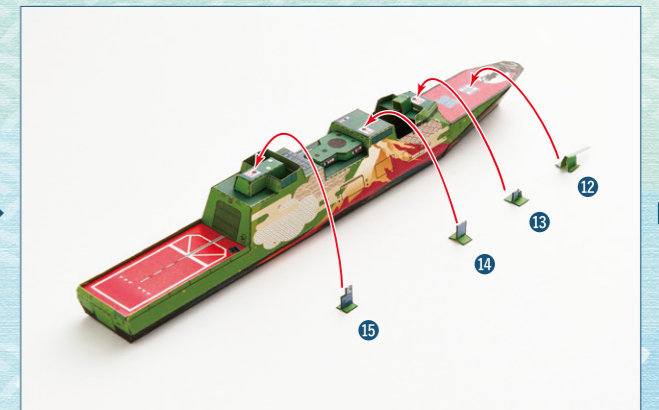
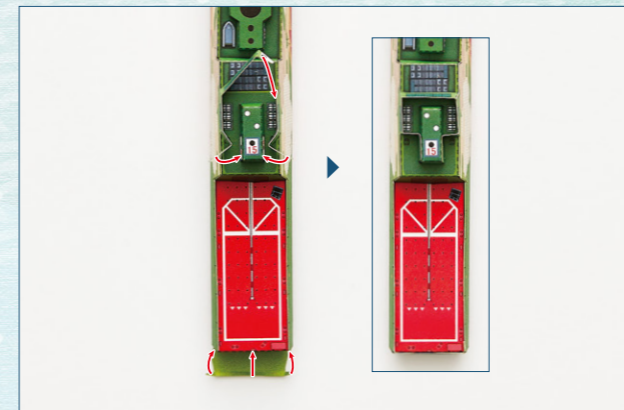
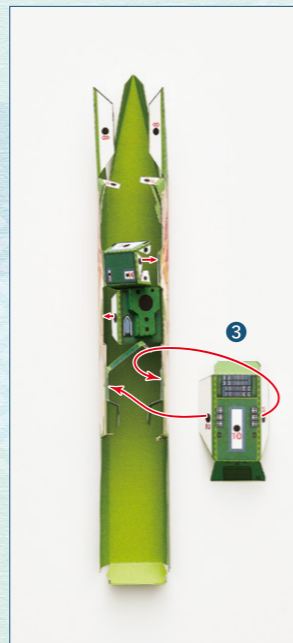
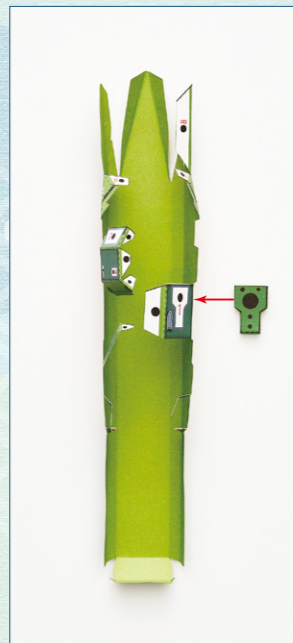
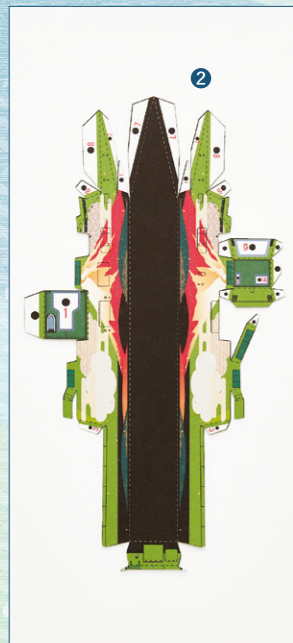
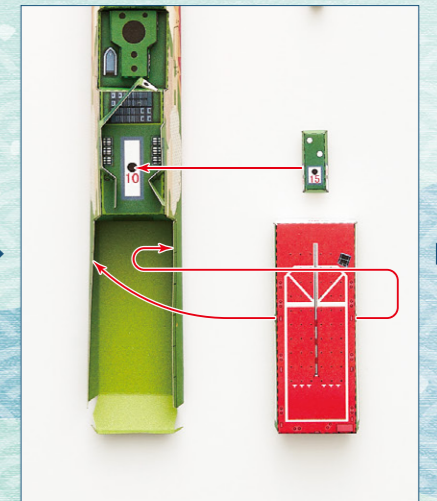
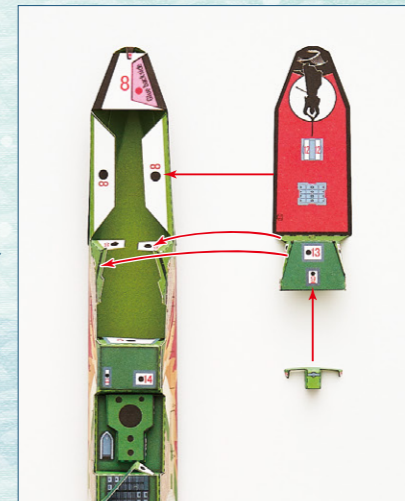
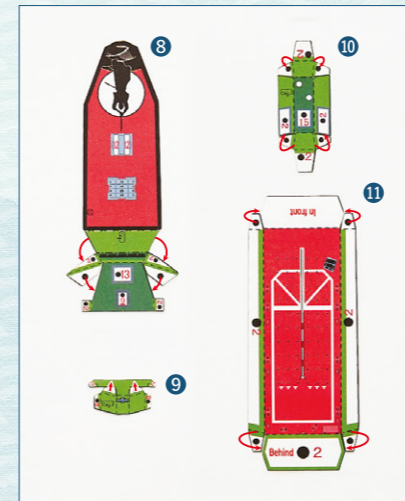
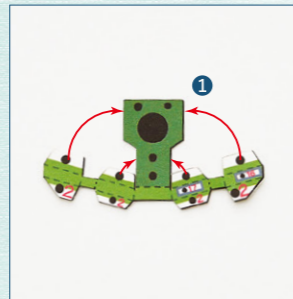


Cut

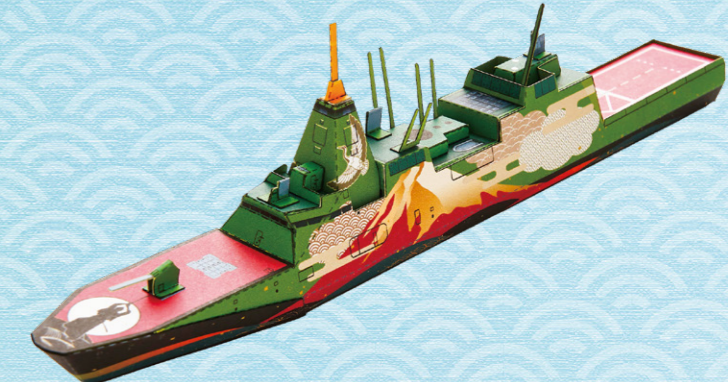
3OFFM HOW TO MAKE ORIGINAL PAPER CRAFT

Before assembling, use a needle or other appropriate tool to trace creases to fold along.

Fold over (like a mountain) 
 Fold in (like a valley) 
 Cut here 



Adjust the angle of the antennae



stealth ONMITSU

In the 2010s, the Japan Ministry of Defense was considering the concept for a new frigate, the FFM.

This vessel would achieve increased personnel efficiency, versatility and advanced stealth. It would be cutting edge and avant-garde in its design.

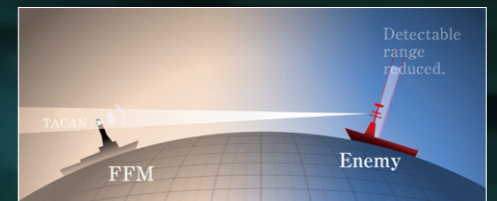
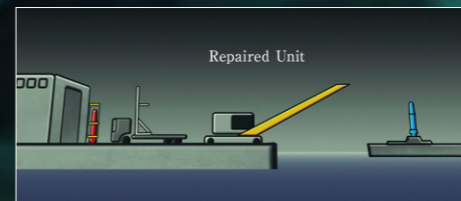
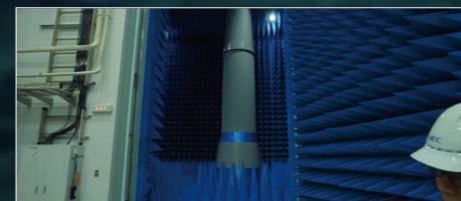
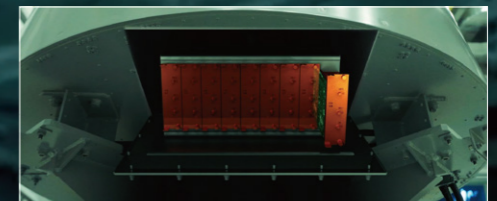
However, JMOD had no definite plans for the antennae at that time.

No existing antenna designs would provide the FFM the necessary stealth.

Then, the developers began to pioneer one that had never been seen before due to harnessing their passion. Inside an advanced stealth radome, they arranged eight antennae in a way that avoids radio interference.

Further, they took the TACAN from the top of the mast and moved it to the bottom.

This allowed them to place the ESM in the newly created space at the top, significantly increasing its range to detect threats.



QR code will direct you to the ATLA official channel on YouTube.

With its unprecedented stealth, the UNICORN embarks on the high seas.

幕の内 MAKUNOUCHI

A bonus video showing the ease of transporting, hoisting and installing the advanced-stealth UNICORN.

