

[별지 제2호(영문)]

Company and Offset Item/Skill Specification Report

☐ **Corporate overview**

Divison	Contents		
Company scale	small and medium-sized business[✓] medium enterprise[] major company[]		
Stock Listing	Listed on the exchange[] Listed on KOSDAQ[] Non-listed[✓]		
Research institute	Company-affiliated research institute[✓] Possess a dedicated R&D department[] Not held[]		
Number of regular workers	154 people	Number of regular research personnel	122 people

☐ **Company history**

Month/year	Contents
January 2013	Founded ANH STRUCTURE, signed an Engineering contract with AIRBUS in the UK
February 2014	Acquired AS9100 REV.C certification
March 2016	Expanded AS9100 manufacturing field certification
Febryary 2019	Acquired NADCAP certification-GTAW (Gas Tungsten Arc Welding)
June 2019	Acquired KOLAS international accredited testing agency certification
May 2019	Civil aircraft seat test/mass production and launch vehicle propellant tank cryogenic test/fabrication completion
July 2020	EASA DOA 21J 692 certification acquired (aircraft structure design part)

☐ **Sales and Investment (recent 3 years) [million KRW]**

Divison	2018	2019	2020	2021
Domestic amount	6,997	7,044	7,556	11,459
Export amount	0	0	0	0
R&D investment	959	433	298	1,073

☐ **Domestic/Foreign Major Vendors (major 2 companies)**

Divison	Customer name	Transaction amount(2021)	Customer Name	Transaction amount(2021)
Domestic	Korea Aerospace Industry, Ltd.	11,319	Hanwha System, Ltd.	1,012
Oversea	None			


☐ **Company Competitiveness (concretely)**




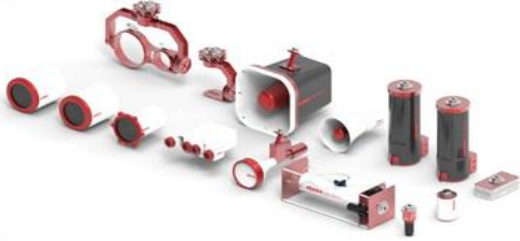
Since its founding in 2013, ANH STRUCTURE has been making great efforts to secure core engineering technologies in the aerospace field. Currently, it has 140 engineers, and various aviation business (Korean fighter development business (fuselage design/analysis), KFX external fuel tank/pilon development business (structural part), military aircraft identification friend or foe equipment in progress in Korea. Renovation business). Recently, we have begun advancing into the civil aviation and space sectors, such as the development of civil aircraft seats and space launch vehicle composite propellant tanks, and acquired the European Aviation Safety Administration's design organization certification (EASA DOA Part21J) for the first time in Korea.

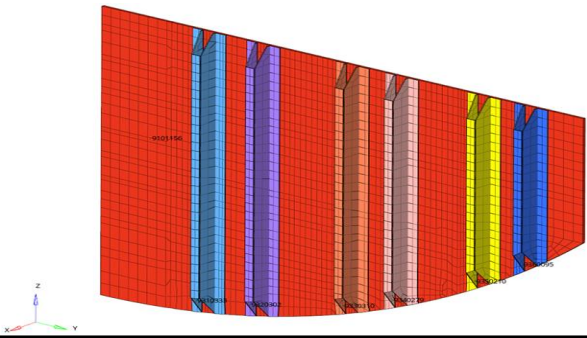



Picture 1. View of ANH Structure Co, Ltd. Headquarter

● Major national R&D projects in progress

No.	Major Contents			
1	Business name (A dedicated agency)	Aircraft equipment/parts manufacturing/maintenance certification technology development business (Ministry of Land, Infrastructure and Transport)		
	Project Title	Aircraft landing gear winglet repair process technology and certification system development		
	develop period	2018.05.15.~2022.12.31.	Total project cost (one million won)	11,221
	R&D details	<ul style="list-style-type: none"> • Civil aircraft composite parts repair equipment development • Civil aircraft composite parts surface treatment equipment development • Acquired European Aviation Safety Administration Design Organization Certification (EASA DOA) • Obtained civil aviation MRO related maintenance organization certification (AMO, EASA MOA)  <p>▲ Scarfling Process (Step) ▲ Scarfling Patch (Taper)</p> <p>▲ Scarfling Machine</p>		

2	Business name (A dedicated agency)	Space Focus Technology Development Project (Ministry of Science and Technology Information and Communication)		
	Project Title	Optimal design and fabrication of composite propellant tank and room temperature/cryogenic structural test evaluation		
	develop period	2018.07.10.~2021.06.30.	Total project cost (one million won)	7,897
	R&D details	<ul style="list-style-type: none"> Optimal design/structural analysis and fabrication of composite propellant tanks that are more than 20% lighter than conventional metal materials   <p>▲ KSLV-II Composite Propulsion Tank</p>		
3	Business name (A dedicated agency)	Specialized mission equipment technology development project (Ministry of Trade, Industry and Energy)		
	Project Title	Development of specialized mission equipment technology for multicopter unmanned aerial vehicles for disaster relief		
	develop period	2017.06.01.~2020.08.31.	Total project cost (one million won)	9,994
	R&D details	<ul style="list-style-type: none"> Development of special mission equipment for multicopter unmanned aerial vehicles for disaster relief that can be used in land/sea disasters and security environments  		

4	Business name (A dedicated agency)	Aerospace parts technology development project (Ministry of Trade, Industry and Energy)		
	Project Title	Development of a part structure of the Aft Wheel Well Bulkhead based on thermoplastic composite material for single-aisle aircraft		
	develop period	2019.01.01.~2021.12.31.	Total project cost (one million won)	4,514
	R&D details	<ul style="list-style-type: none"> Development of parts for rear bulkheads of civil aircraft fuselage based on thermoplastic materials 		
5	Business name (A dedicated agency)	Material parts technology development project (Ministry of Trade, Industry and Energy)		
	Project Title	Localized development of economy class composite lightweight seats for large civil aircraft		
	develop period	2019.06.01.~2022.12.31.	Total project cost (one million won)	3,608
	R&D details	<ul style="list-style-type: none"> Localization through the development and performance certification of lightweight composite economy class seats with a weight reduction of more than 20% (12kg/pax or less) compared to the existing economy class seats of large civil aircraft 		

● Major certification acquisition status

1) Recognized as KOLAS (International Authorized Testing Institution) (Certification No.: KT851 / 01.010 Mechanical testing of plastics and related products)

2) NADCAP (GTAW_Gas Tungsten Arc Welding Division) Certification (Certificate No. 16147196578)

3) AS9100 REV.D certification (Structural design/interpretation/manufacturing of aircraft components)

4) Acquired AIRBUS Qualification

(Tip cap welding a'ssy automated mass production process and quality procedure using 6-axis automatic welding machine)

5) EASA DOA 21J 692 acquisition (aircraft structure design part)





APPROVAL CERTIFICATE
EASA.21J.692

Pursuant to Regulations (EU) 2018/1139 and (EU) 748/2012 and
subject to the conditions specified below, the Agency hereby
certifies

ANH Structure Co., Ltd.
2, Beomgol-ro, 54beon-gil
Jinju-si
Gyeongsangnam-do
Republic of Korea

as a DESIGN ORGANISATION

approved according to Part 21, Section A, Subpart J.

CONDITIONS :

1. The approval is limited to that specified in the enclosed Terms of Approval, and
2. This approval requires compliance with the procedures specified in the Design Organisation Handbook, reference ANHDO_GLOB_EASA_001, in the latest revision, and
3. This approval is valid whilst the approved Design Organisation remains in compliance with Part 21, Section A, Subpart J.
4. Subject to compliance with the foregoing conditions, this approval shall remain valid until surrendered or revoked.

For the European Union Aviation Safety Agency,
Date of issue: 03/07/2020


 Hans LUNDSTRÖM
 Senior DOA Team Leader



TE DOA 00030-0050 European Union Aviation Safety Agency. All rights reserved. ISO9001 Certified.
Proprietary document. Copies are not controlled. Confirm revision status with request to EASA-Items at /B/track-its.

Page 1 of 1

● Major facilities and equipment status

In the area of Sabong-myeon, Jinju-si, Gyeongsangnam-do, we built a facility for testing/mass production of civil aircraft seats, production of space launch vehicle composite propellant tanks, and cryogenic tests.(Completion in May 2020)



Picture 2. View of ANH Structure Co, Ltd. production and testing facilities

[보유 장비 리스트]

Clean room



- area : 10.0 x 15.0 x h4.0 (m)
- cleanliness : 10,000 class

Low temperature warehouse



- area : 5.0 x 7.5 x h4.0 (m)
- Settable temperature: Min. -30°C

Room temperature warehouse



- area : 5.0 x 7.5 x h4.0 (m)

Laser projection



- Laser Location Positioning
- 3D Shape Measurement

NC-Ply cutting machine



- cutting : 2.0 x 3.5 (m)
- cutting, Marking, Printing

Thermoplastic composite winding equipment



- Thermoplastics Slit Tape private use
- L x D : Max. 2.0 x 0.15 (m)
- Heat Temp. : Max.400 °C

Small dry oven



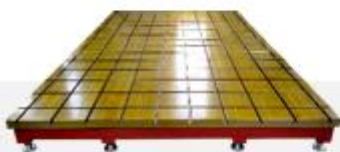
- Inner area : 20x20xh20(m)
- Heat Temp : Max 200°C

25ton static fatigue tester



- Maximum load: 250kN
- Test type: static fatigue test
- Production company : MTS

Test board



- size : 3.0 x 5.0 (m)
- Static load test

Large dry oven



- Inner area : 30x70xh35(m)
- Heat Temp : Max 400°C

Specimen process machine



- cutting : 3.0 x 5.0 (m)

TIPCAP Auto welding machine



2.5ton static fatigue tester

- Maximum load: 25kN
- Test type: static fatigue test
- Production company : JKS



Sled Test devices

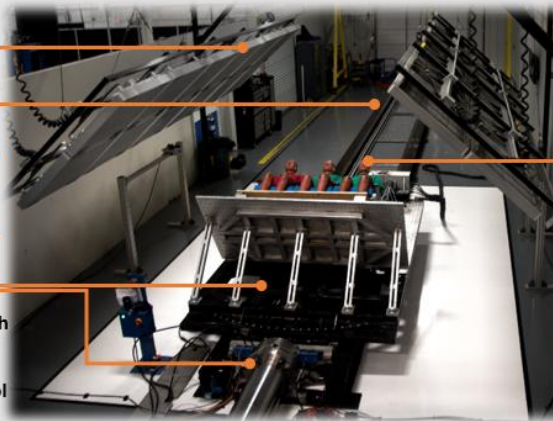
Light Banks

Rail System

Sled Carriage

Thrust Column

- Compressor room for high pressure separately
- Operating a device control room



Dummy (FAA Hybrid III 50th Male)

Performance of pneumatic Sled devices

Maximum Force	500 kN
Maximum Stroke	1,200 mm
Maximum Velocity	80 km/h
Maximum Acceleration	100 G
Maximum Payload	2,000 kg
Maximum Jerk	10 G/ms

Downside 14g Crash Test



Forward 16g Crash Test

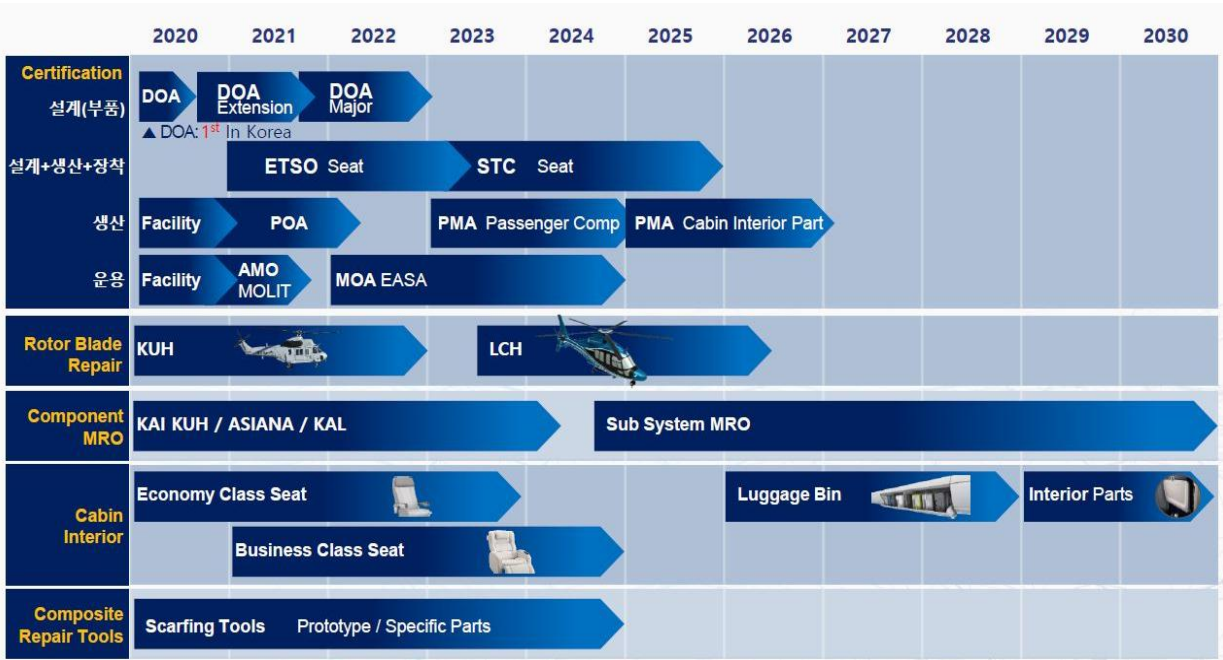


Strain analysis



Starting with EASA DOA, we have established plans to acquire various certifications including production and maintenance, and are planning to develop and produce various in-flight interior parts in addition to the civil aircraft seats currently under development.

[Mid- to long-term roadmap in the interior of civil aircraft cabin]



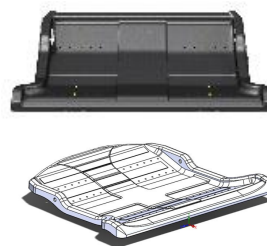
□ Item/Skill Specification (concretely)

Application target name	Manufacture and export of seat parts for civil aircraft		
Application target sales (2019Y)	—	Application target sales (2019Y)	—
Current localization rate (Price basis)	40%	Share of SMEs among target costs	40%

Photo 1. Seat Back



Photo 1. Seat Pan

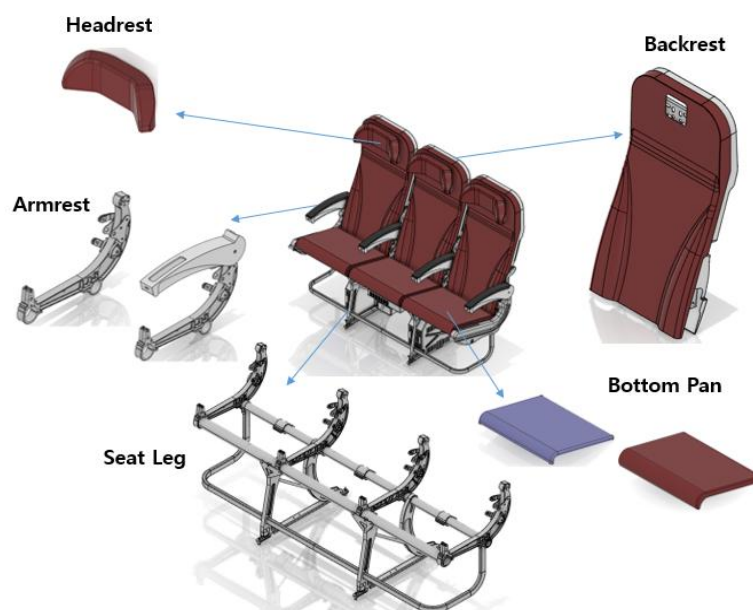


- Economy Seat Back
- H : 47.7" / IFE : 13.3" Screen
- Weight about 1.8LBS
- ETSO Meet standards
- Carbon composite material application

- Economy Seat Pan
- Weight about 0.8LBS
- ETSO Meet standards
- Carbon composite material application

1. Usage

- Seat Back : A structure to provide comfort by supporting the passengers' back
 - Seat Pan : Structure that supports most of the passenger's own weight
- Developed by introducing an ergonomic design concept for increased comfort



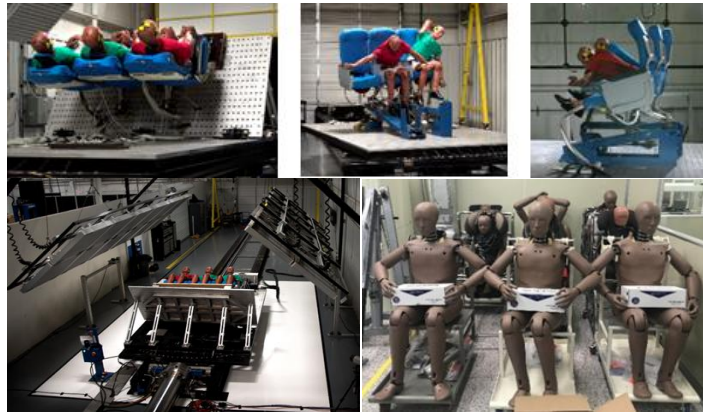
2. Lightweight interior seats/parts for civil aircraft: Increased fuel economy by reducing the overall weight of the aircraft

3. In the case of interior parts, it can be used after remodeling the previously developed parts to other similar aircraft types.

Details of production and test evaluation facilities related to this subject

1. Sled Testing Facility Seats Assembly Line

SLED TEST test facility and dummy for civil aircraft seat test



2. Press System for Thermoplastic Composite Part



Main Specifications

- Thermoplastic composite press equipment
- model name: LZT-OK-400-SO
- Press pressure: 400ton
- Additional equipment: preliminary operation system, heating device
- Preheating system: up to 400°C

3. Establishment of testing and manufacturing facilities (Jinju Plant 2, completed in May 2020)



Figure 3. View of ANH Structure's production and testing facilities

[Export competitiveness of this target]

1. Civil aircraft composite seats/parts are being introduced by global airlines due to weight reduction.
2. It is currently being launched by advanced airline companies such as Europe, but the price is high.
3. It has price competitiveness compared to overseas products and is lighter than overseas products.

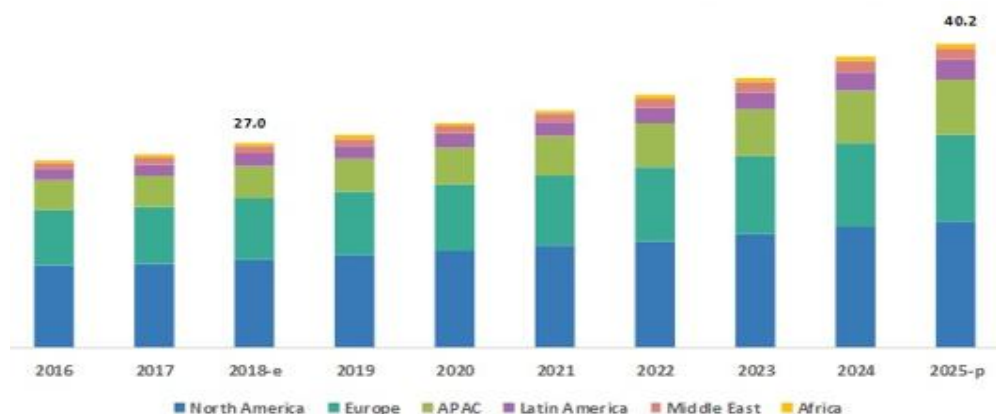
[Domestic and overseas certification acquisition performance]

- AS9100 REV.D certification (Structural design/interpretation/manufacturing of aircraft components)
- NADCAP(GTAW_Gas Tungsten Arc Welding sector) certification (Certification Number 16147196578)
- EASA DOA (Design certification, Acquired July 2020)
- KOLAS(International accredited testing institution)Recognition (Certification Number : KT851 / 01.010 Mechanical testing of plastics and related products)
- ilac-MRA / KOLAS In the process of expanding the scope of recognition



[Export expansion strategy through OFF-SET]

The in-flight interior industry is estimated to be worth KRW 17 trillion in 2015, and it is expected to grow every year thereafter to about KRW 17 trillion in 2020.



Source: Markets and Markets, Aircraft Cabin Interior Market by Product, Aircraft Type, Fit & Geography – Global Forecast to 2020, 2015. 10

Among the in-flight interior business, the seat sector accounts for more than half of the total sales of the aircraft interior industry, and the growth potential is even higher because both general airlines and low-cost airlines are highly interested. According to the Aircraft Interior Market Research Service Report 2019, aircraft seats accounted for about \$73.2 billion in 2017, accounting for the largest share of 28% of the system components, and grew by 10.13% on an annual average, reaching about \$11.8 billion by 2022, was expected to grow into.

<Table1> Aircraft Seat Annual Average Growth Rate

(unit: Million dollars, %)

division	2017	2018	2019	2020	2021	2022	CAGR
Seating	7,324.7	8,066.7	8,883.8	9,783.8	10,774.9	11,867.8	10.13%

Source: Aircraft Cabin Interior Market – Global Forecast 2022 , Markets and Markets(2018)

Currently, domestic aviation technology is a simple processing order for aircraft parts received from overseas companies, and since 2005, starting with the international joint development of Boeing's 787 aircraft, it has entered the global civil aviation market in earnest, but the main core technology is still the original manufacturer. It is owned by Airbus or Boeing.

<Table2> Aircraft domestic and overseas seat market size

(unit: Million dollars, %)

division	Current market size(2020Y)	Estimated Market Size(2022Y)
World market scale	9,783.8	11,867.8
Domestic market scale	—	—

Source: Aircraft Cabin Interior Market – Global Forecast 2022 , Markets and Markets(2018)

Accordingly, our company aims to localize major parts of mid- to large-sized airline seats with weight and price competitiveness compared to the existing ones, and seeks to succeed in securing related nuclear technology and advancing into overseas markets through compromised trade with overseas aircraft manufacturers and seat specialists.

