The Fifth Meeting of the Aerodromes Operations and Planning Sub-Group (AOP/SG/5)

Video Teleconference, 29 June to 2 July 2021

Agenda Item 4: Provision of AOP in the Asia/Pacific Region

THE INTRODUCTION OF CHINESE DEVELOPED REGIONAL AIRCRAFT

(Presented by China)

SUMMARY

The short-medium range turbofan regional aircraft, ARJ21, is one of the commercial aircraft projects of the main vehicle program in implementing large passenger aircraft of China. ARJ21 is now operating in China and will be going into the global market. Good airport compatibility is the prerequisites of successful operation. This Information Paper intends to introduce key information and characteristics of ARJ21 to the airports in Asia/Pacific Region for future planning and operation.

1. INTRODUCTION

1.1 With the steady development of aviation industry, China has started the programs of the main vehicle in implementing large passenger aircraft. Commercial Aircraft Corporation of China, Ltd. (COMAC) functions as mandating with the overall planning of developing trunk liner and regional jet programs and realizing the industrialization of civil aircraft. COMAC is engaged in the research, manufacture and flight tests of civil aircraft and related products, as well as marketing, servicing, leasing and operations of civil aircraft. To deliver safer, cost-effective, comfortable and environment-friendly commercial aircraft is our vision.

2. DISCUSSION

2.1 General information

2.1.1 ARJ21, the first short-medium range turbofan regional aircraft developed by China in accordance with international civil aviation regulations, it owns independent intellectual property right. ARJ21 aircraft has a layout of 78 to 90 seats, and a range of 2,225 to 3,700 kilometers. ARJ21-700 aircraft obtained the Type Certificate (TC) from Civil Aviation Administration of China (CAAC) on December 30th, 2014 and the Production Certificate (PC) from CAAC on July 9th, 2017. So far, A total of 616 orders have been obtained from 23 customers, including leasing companies who intend to lease ARJ21 to operators in Southeast Asia. The Verified Type Certificate (VTC) of ARJ21 in several countries of Southeast Asia is undergoing.

2.2 Operation status

2.2.1 53 ARJ21-700 aircraft have been entered into route operation since 2016. It has operated safely over 78,000 hours and 49,000 cycles, and has carried more than 2.7 million passengers,

190 routes and 91 navigable airports, including Vladivostok, has been covered.

Figure 1: ARJ21-700 photo

2.3 General characteristics for airport planning

2.3.1 ARJ21-700 has the layout of five seats for each row, a fuselage in the shape of two circular plane sections, low wings, two Short Duct Separation Flow power plants mounted at the tail of the fuselage, a high horizontal tail and tricycle retractable landing gear. The cockpit is designed for a two-member crew. The avionics system features bus technology and LCD panel with integrated display capability. The flight control system is an electrical system controlled through electrical signals and actuated by hydraulic power or electromechanics, with international advanced technology. Supercritical wings with larger sweepback angle and integrated winglets are used to obtain higher cruise lift-drag ratio, so as to reduce cruise drag and improve operation economy.

2.3.2 The general dimensions shows in Figure 2. The interior arrangement of 78-Seat mixed class shows in Figure 3.

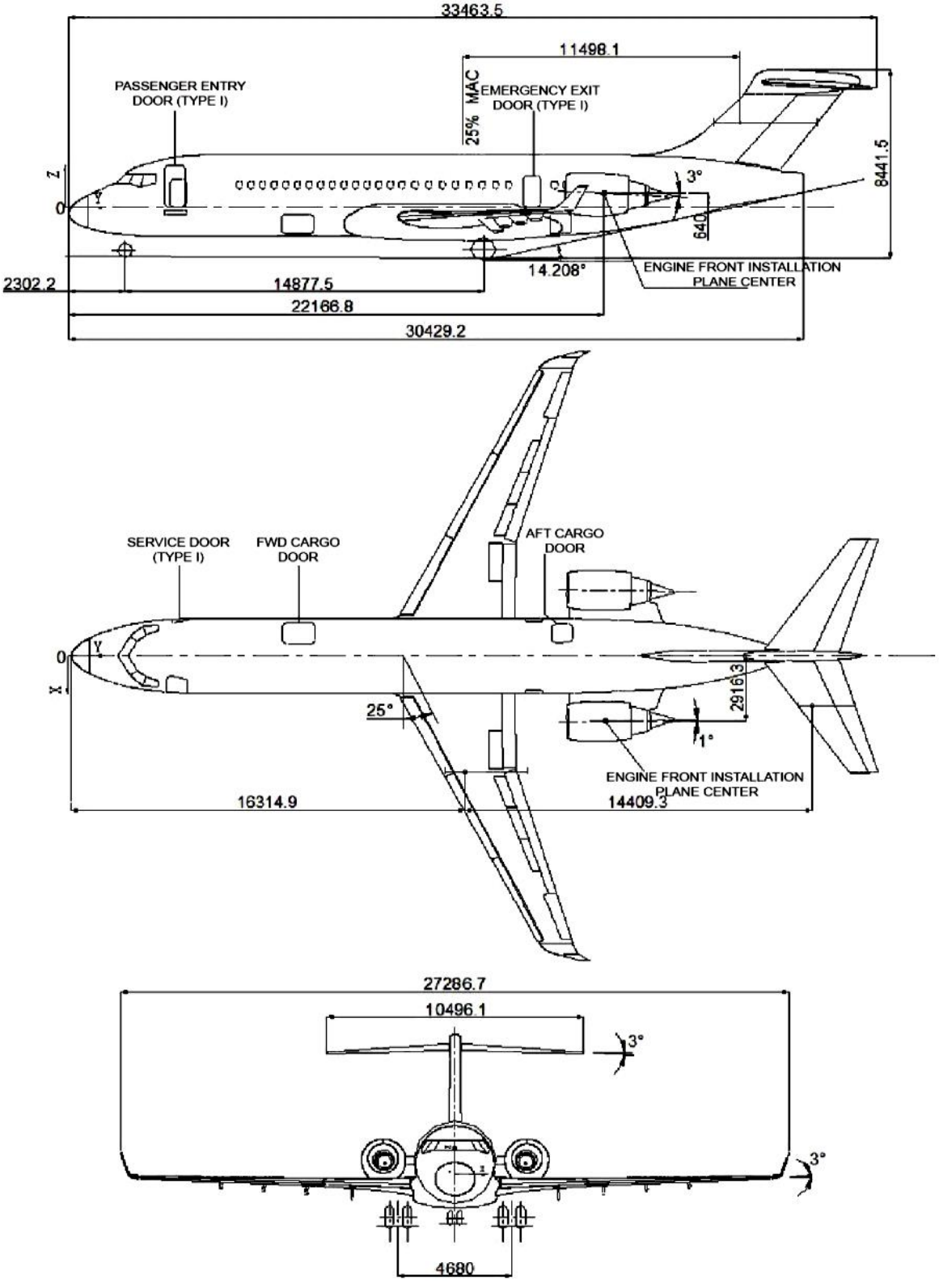
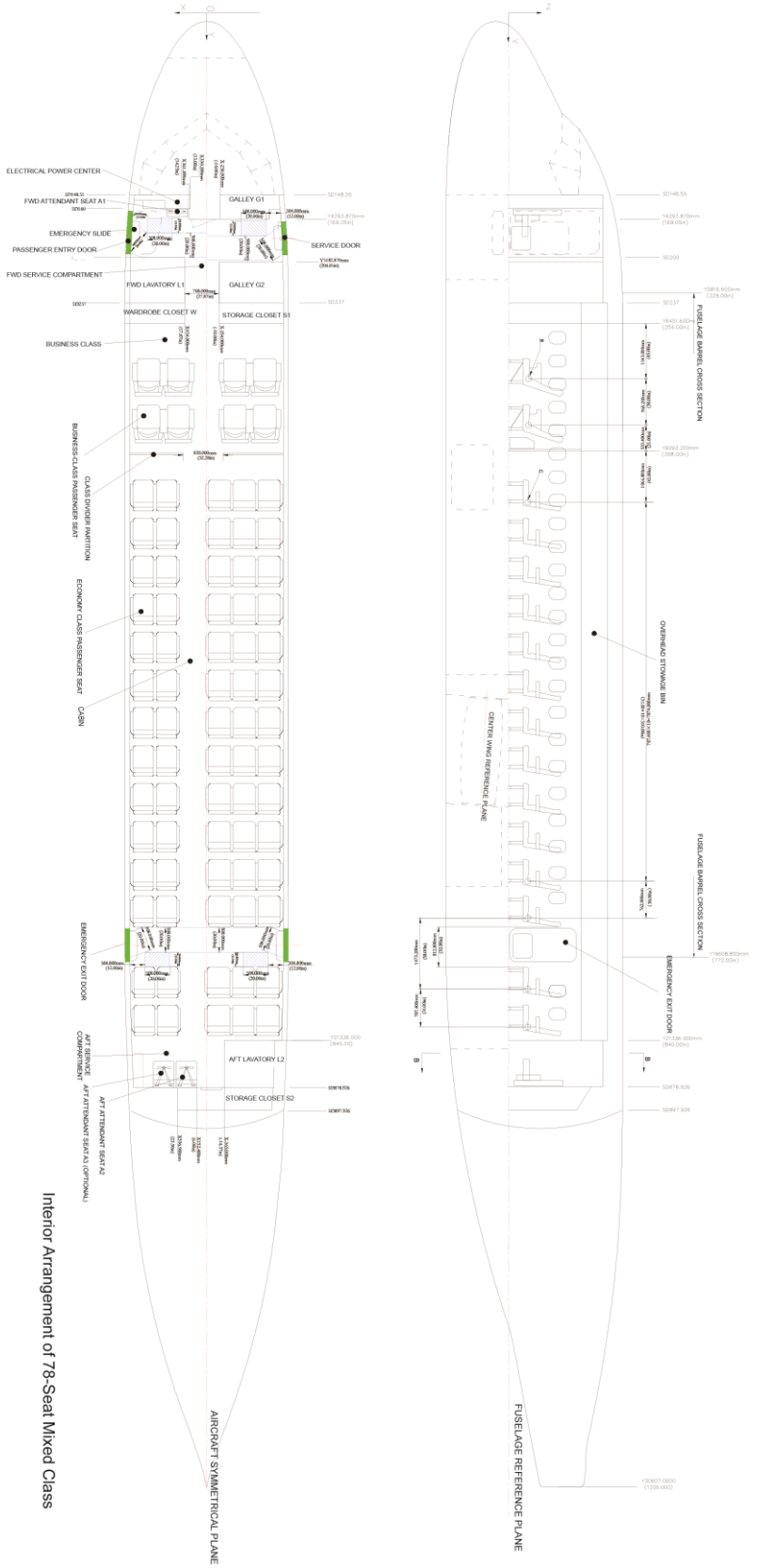


Figure 2: Three-View Drawing of ARJ21 (mm)



Interior Arrangement of 78-Seat Mixed Class

Figure 3: Interior Arrangement of ARJ21-700 78-Seat Mixed Class

2.3.3 The maximum take-off and landing weight of ARJ21-700 is 43,500 kg and 40,455 kg respectively. The take-off field length (MTOW, SL, ISA) is 1900 m and the landing field length (MLW, SL, ISA) is 1650 m.

2.3.4 ARJ21-700 has the outstanding plateau performance in its class. After the test flight in Daocheng (ZCY/ZUDC) in 2020, TO&LD altitude has achieved 14,472 ft / 4,411 m, covering all high plateau airports in China.

2.3.5 The passenger door height of the ARJ21-700 in the empty state is 2385 (-40℃) ~2461 (15℃) mm above ground, which is 2254 (forward limit of center of gravity, -40℃) ~2356 (rear limit of center of gravity, 15℃) mm above the ground in maximum taxiing weight state.

2.3.6 The Aircraft Servicing Arrangement of ARJ21-700 please see Figure 4.

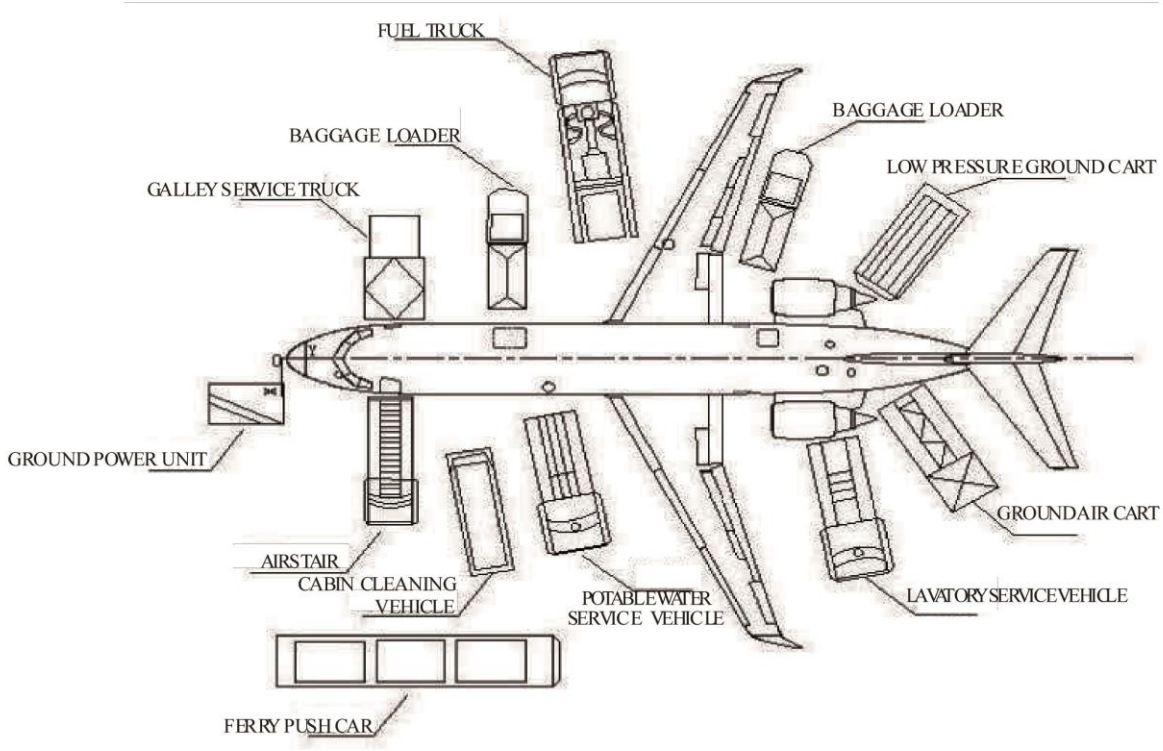


Figure 4: Aircraft Servicing Arrangement of ARJ21-700

2.3.7 The mooring ground anchor area of ARJ21-700 which COMAC provided to customers improves the mooring compatibility in airport greatly. The Available Mooring Ground Anchor Area Diagram shows in Figure 5.

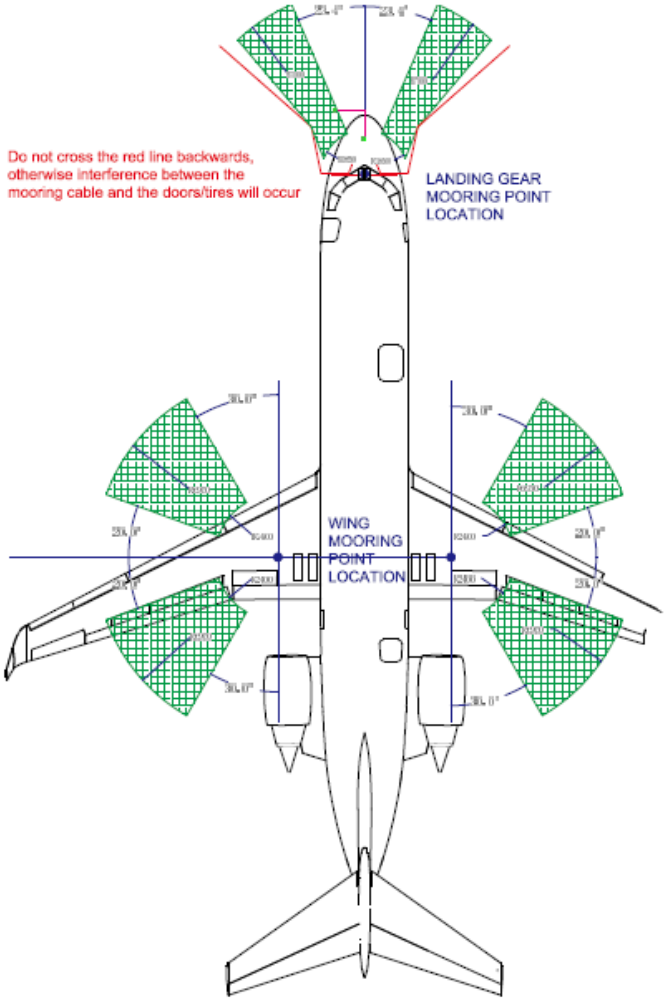


Figure 5: Available Mooring Ground Anchor Area Diagram (Unit: mm)

2.4 During the operation, ARJ21-700 has met a lot of unpredicted conditions in airport, such as the height of passenger boarding steps and mooring anchor layout, so COMAC keeps taking actions to promote the airport compatibility of ARJ21-700. Along with the increasing of ARJ21-700 fleet size in certain regions and the world, it is expected that airports can take the operation requirements of ARJ21-700 into consideration while constructing airports or reconstructing airport facilities and ground support equipment. More information and characteristics of ARJ21-700 can be obtained from Aircraft Characteristics for Airport Planning (ACAP), which can be downloaded on COMAC website.

Web link: http://english.comac.cc/Galleries/Technical/.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper.

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