BOLIVARIAN REPUBLIC OF VENEZUELA
MINISTRY OF THE POPULAR POWER FOR TRANSPORT AND PUBLIC WORKS
NATIONAL INSTITUTE OF CIVIL AERONAUTICS
ADMINSITRATIVE RULING No. PRE-CJU-1645-16
CARACAS, DECEMBER 06TH 2016
206, 157 & 17

THE PRESIDENT OF THE NATIONAL INSTITUTE OF CIVIL AERONAUTICS, BY VIRTUE OF THE POWERS VESTED IN HIM BY ARTICLES 5 AND 9 OF THE LAW OF CIVIL AERONAUTICS, PUBLISHED IN THE OFFICIAL GAZETTE OF THE BOLIVARIAN REPUBLIC OF VENEZUELA Nº 39.140, OF MARCH 17TH, 2009, ACCORDING TO NUMERALS 1 AND 5 OF ARTICLE 7, AS WELL AS NUMERALS 1, 3 AND 15 (C) OF ARTICLE 13 OF THE LAW FOR THE NATIONAL INSTITUTE OF CIVIL AERONAUTICS, PUBLISHED IN THE OFFICIAL GAZETTE OF THE BOLIVARIAN REPUBLIC OF VENEZUELA Nº 38.333, OF DECEMBER 12TH, 2005,

DOES HEREBY ISSUE

THE FOLLOWING

VENEZUELAN AERONAUTICAL REGULATION No. 21 (RAV 21)
PROCEDURES FOR CERTIFICATION OF PRODUCTS AND COMPONENTS

CHAPTER A
GENERALITIES

SECTION 21.1 – APPLICABILITY

(a) This Regulation establishes:
  (1) The requirements related to the procedures for:
    (i) Acceptance of type certificates issued by the Aeronautical Authorities of the States of Design, signatories of the Convention on International Civil Aviation.
    (ii) Acceptance of supplemental type certificates issued by the Aeronautical Authorities of the State of Design, signatories of the Convention on International Civil Aviation.
    (iii) Request and approval of engineering orders for the incorporation of supplemental type certificates or field approvals issued by the Aeronautical Authority.
    (iv) Request and issuance of Airworthiness Certificates and airworthiness approvals for exportation.
    (v) Acceptance of materials, parts and components (PMA).
    (vi) Acceptance of authorizations of technical standard orders (TSO).

(vii) Request and issuance of authorizations to Engineering Organizations for the study and design of modifications and repairs of aeronautical products.

(2) The rules governing holders of any certificate or authorization specified under paragraph (a) (1) of this section.
(3) The requisites for the classification, approval and registry of major repairs and modifications over aeronautical products; and
(4) The airworthiness standards accepted by the Aeronautical Authority.
(5) The requisites for the issuance of approvals regarding aircraft spare parts, engines and propellers.

SECTION 21.2 - DEFINITIONS

For the purposes of this Regulation,

The term **Acceptance of a Type Certificate** means a process followed by the Aeronautical Authority for the acknowledgement and direct technical acceptance of the type certification made by a State of Design, in order to guarantee maintenance of the continuing airworthiness of the aircraft. The Aeronautical Authority shall issue a letter of acceptance addressed to the owner of the type certificate and to the State of Design.

The term **Aircraft** means any machine that can derive support in the atmosphere from the reactions of the air other than the reactions or the air against the earth's surface.

The term **Airworthiness** means the quality that indicates that an aeronautical product coincides with the specifications under its type certificate, and also that it is in safe conditions for its operation.

The term **Experimental Aircraft** refers to aircrafts destined to be used in investigation and development activities, demonstrations of compliance with the regulations, exhibitions, marketing, air racing, training on new technologies, as well as those aircrafts built by amateurs or assembled from a kit supplied by a holder of a production certificate.

The term **Remotely Piloted Aircraft (RPA)** means an unmanned aircraft which is piloted from a Remote Pilot Station. Its use may be whether recreational, private or commercial according to its granted permissions and authorizations.

The term **Field Approval** means an approval regarding a major modification or repair granted by the Aeronautical Authority for a unique aeronautical product, which is made by one or more of the following methods, as may be appropriate:

(a) Review of exclusively acceptable technical data applicable to a product.
(b) Physical inspection, demonstration, tests, etc. over a product.
(c) Review of previously approved technical data to be applicable to another identical product, e.g. an Engineering Order approved for a unique product.

The term **Parts Manufacturing Approval (PMA)** means the approval of materials, parts, processes and devices manufactured for replacement of a spare part or modifications destined to be sold, for installation on aircrafts, aircrafts engines or propellers holding a Type Certificate

The term **Aeronautical Authority** means the Venezuelan National Institute of Civil Aeronautics (INAC, in the Spanish language).

When the term **Aircrafts Categories** is used in reference to the type certification of aircrafts, it means a classification thereon, taking into consideration their use and/or limitations of operation. They include:

(a) **Normal category**: aircrafts limited to non-acrobatic operations. This kind of operations include:
(1) Aircrafts:
(i) Any maneuver that may affect normal flight.
(ii) Stall, except during whip stalls and lazy eight maneuver, chandell maneuver and turns or maneuvers in which the bank angle does not exceed 60 grades.
(iii) Regarding helicopters, it refers to those with an equal or inferior maximum weight of 3175 kg (7000 pounds) or to an equal or inferior seat capacity of nine (09) passenger seats.

(b) **Utility category**: it is limited to aircrafts with a nine (09) or less seat configuration, excluding pilot seats, a maximum certificated take-off weight of 5700 kg (12500 pounds) or less and which are pretended to be used in limited acrobatic operations. This type of aircrafts may be used in any operation of a normal category aircraft, but limited to any of the following operations:
(1) Spins,
(2) Eight lazy maneuver
(3) Chandell and
(4) Similar turns or maneuvers in which the bank angle is over 60 grades but under 90 grades.

(c) **Acrobatic category**: it is limited to aircrafts with a nine (09) or less seat configuration, excluding pilot seats, a maximum certificated take-off weight of 5700 kg (12500 pounds) or less and which are pretended to be used without any other restrictions than those which could not demonstrate as a result of testing flights during its type design certification.

(d) **Commuter category**: multi-engine aircrafts with propellers, with an equal or less configuration of nineteen (19) passenger seats, excluding pilot seats and a maximum certificated take-off weight equal or less than 8618 kg. (19000 pounds). Commuter aircrafts are limited to any maneuver that impacts on

normal flight, stall, except whip stalls and turns on which the bank angle does not exceed 60 grades.

(e) **Multiple category**: aircrafts certified in more than one category, except commuter category, if requirements regarding each category are fulfilled.

(f) **Transport category**: applicable to big aircrafts over 5700 kg. (12500 pounds) of maximum certified take-off weight, normally destined to commercial air transport.

(g) **Primary category**: aircrafts with the following characteristics:
(1) It is powered by a single, naturally aspirated engine with a maximum 61-knot Vso stall speed or is a helicopter with a 6-pound per square foot main rotor disk loading limitation, under sea level standard day conditions.
(2) A maximum take-off weight of 1225 kg (2700 pounds) and a maximum seating capacity of four seats, including pilot.
(3) Unpressurized cabin.

(h) **Restricted category**: type certificated aircrafts to be operated under the limitations prescribed for its intended use, but no limited to: aircrafts to be used in agricultural activities, aerial photography, aerial advertising, patrolling, inspection and surveillance, forest and wildlife conservation, external cargo and aero ambulance.

(i) **Limited category**: refers to a particular aircraft holding a type certificate which, after evaluation by the State of Design and/or State of Registry, restrictions and conditions has been applied for its safe operation.

Certification of Airworthiness Revision: it is a certificate issued by the Aeronautical Authority as testimony of validity of the standard airworthiness certificate.

Airworthiness Certificate: public document granted by the Aeronautical Authority which certifies that the aircraft mentioned therein is in airworthy conditions.

Type Certificate: it is granted for a product by the Aeronautical Authority of the State of Design, when it has been determined the compliance with all airworthiness conditions and operations prescribed for such product. Each type certificate includes the technical specifications (design and operation characteristics) related to the aircraft, engine or propeller under which they have been certificated. Such specifications shall not be changed, unless such changes are approved by the Aeronautical Authority of the State of Design.

Supplemental Type Certificate (STC): it is a document issued and approved by the Aeronautical Authority of the State of Design, regarding a major alteration performed on an aeronautical product, which implies a modification in the conditions of its original type design, but which do not require the issuance of a new type certificate.

Production Certificate: It is the approval granted by the Aeronautical Authority of the State of Design for the mass production of an aeronautical product, which has an approved type design.

Airworthiness Condition: state of an aircraft, engine, propeller or part that is adjusted to the corresponding approved design and which operates in safe conditions.

Conformity: it is a term used to refer that a product meets the specified conditions of its approved Type Design.

Approved Technical Data: it refers to all technical documentation that may be used to perform major alterations or repairs, such as:

(a) Technical documentation approved by the Aeronautical Authority of the State of Design, which is accepted by the Aeronautical Authority, among others:
  (1) Type Certificate (TC) with its data sheets.
  (2) Supplemental Type Certificate (STC).
  (3) Airworthiness Directives (ADs).
  (4) Technical information from manufacturers duly approved by the corresponding Aeronautical Authority of the State of Design or State of Manufacturer.
(b) Documents regarding major repairs or alterations previously approved by the Aeronautical Authority, provided that they shall be considered as applicable to the requested repair or alteration by the before mentioned Authority.

Acceptable Technical Data: general data that may be used as a base for the development and approval of particular data, without the need of any additional verifications. These data can be found in documents such as:

(a) Repair manuals issued by the manufacturer
(b) Maintenance manuals issued by the manufacturer
(c) Documents issued by the manufacturer regarding specific repairs of its products.
(d) Service bulletins or similar documents.

Type Design: it refers to description of all characteristics related to an aeronautical product, including design, plans, limitations and instructions on maintenance, which determine its airworthy conditions.

State of Design means the State or jurisdiction having regulatory authority over the organization responsible for the type design.

State of Registry: means the State in which the aircraft is registered.

Adequate Airworthiness Requirements: Airworthiness codes, full and detailed, established, adopted and accepted by a Contracting State, in relation to the type of aircraft, engine and propeller in concern.

Mandatory information regarding airworthiness maintenance: all information published by the Aeronautical Authority or by the State of Design, including the mandatory requisites for modification, alteration of parts or inspection of an aeronautical product and amendments to procedures and operating limitations. Examples of this information are Airworthiness Directives (ADs) and airworthiness limitations.

Instructions for Continued Airworthiness (ICAs): group of descriptive data and instructions for the planning and compliance with the maintenance program, developed by the holder of a design approval, according to the terms of the aeronautical product certification. ICAs provide air operators with necessary information to develop their maintenance program as well as approved maintenance organizations with the provisions for the establishment of compliance instructions.

Maintenance: means the performance of the required work to guarantee airworthiness maintenance of the aircraft, including one of more of the following actions: reconditioning, inspection, replacement of parts, defect rectification, modification or repair.

Airworthiness Maintenance: procedures that allow guaranteeing that an aircraft, engine, propeller or part complies with the applicable airworthiness requisites and that it is in safe conditions to operate during its whole life cycle.

Flight Manual: document approved by the Aeronautical Authority of the State of Design during the type certification, which is related to the airworthiness certificate and contains the limitations within such aircraft shall be consider airworthy, as well as the necessary information and instructions for the members of the flight crew to safely operate the aircraft.

Changes: an alteration to the type design of an aeronautical product which is not considered a repair.

Minor Change: an alteration that is not considered a major change.

Major Chance: an alteration in type design which is not listed in the aeronautical product specifications, and which may appreciably affect weight and balance, structural strength, reliability (performance), powerplant operation, flight characteristics or other characteristics affecting airworthiness of such product or environmental conditions; or that is not made according to standard practices or cannot be made by elementary maintenance operations.

Holder of Certificate: it refers to the natural o judicial person who complies with the established requisites and functions for the competency and safety levels required by the State to perform an activity related to aviation, for which this person has been certified, authorized and/or approved to execute.

Airworthiness limitations: a section developed and approved by the Aeronautical Authority of the State of Design for a product, contained in the Instructions for Continued Airworthiness (ICAs), which indicates replacement periods, structural inspection intervals, as well as other mandatory related work. This section can also be used to define the threshold for inspections related to fatigue and corrosion control.

Engineering order: it is a document approved by the Aeronautical Authority to support and register the performance of a major change or repair to be made on the product. This document may content approved and acceptable technical data or a group of them, adequately structured so that it develops a comprehensive procedure to perform a major change or repair. This order may include, among others, electrical diagrams, stress analysis and services bulletins.

Technical Standard Order (TSO): it is a detailed airworthiness specification issued by the Aeronautical Authority of the State of Design, which authorized the manufacturing of a part that is required for the installation in a type certificated aircraft and constitutes a minimum operating standard for specific products.

Standard Part: it means a part manufactured according to an established industry specification and accepted by the Aeronautical Authorities of ICAO member States. This acceptance considers different aspects such as: design, manufacturing and uniform identification requirements. The specification must include all necessary information to produce and approve the part. Examples: National Aerospace Standard (NAS), Army-Navy Aeronautical Standard (AN), Society of Automotive Engineers (SAE), SAE Sematec, and American National Standards Institute (ANSI), ITINTEC, IRAM. etc.

Special Flight Permit: it is an authorization issued by the Aeronautical Authority to an aircraft that does not currently meet applicable airworthiness requirements but that is capable to perform a safe flight, prior issuance of the limitations that may be necessary for its safe operation.

Product means an aircraft, an aircraft engine or a propeller.

Aeronautical Product: any aircraft, aircraft engine, aircraft propeller or any part that shall be installed on it.

Repair: The restoration of an aircraft component to its previous airworthiness state to guarantee that it continues satisfying design aspects that correspond to the airworthiness requisites that were applied for the issuance of its original type certificate, when it has suffered any damages or fatigue for use. Repairs are classified into:

1) **Major Repair:** a repair of an aeronautical product which may appreciably affect weight and balance, structural strength, reliability (performance), powerplant operation, flight characteristics or other characteristics affecting airworthiness or environmental conditions; or that is not made according to standard practices or cannot be made by elementary maintenance operations.
2) **Minor Repair**: a repair that is not considered a major repair.

Remotely Piloted Aircrafts System (RPAS): unmanned aircraft, its related remote pilot station or stations, all required command and control links and any other component as specified in its type design.

Holder of Type Certificate: it refers to the natural o judicial person who complies with the established requisites and functions for the competency and safety levels required by the State to perform an activity related to aviation, for which this person has been certified, authorized and/or approved to execute.

Note: for purposes of this Regulation, the terms "mass and centering" and "weight and balance" are synonyms.

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CHAPTER K

REMOTELY PILOTED AIRCRAFTS (RPA)

SECTION 21.90 – APPLICABILITY

This chapter establishes:

(a) Classification of Remotely Piloted Aircrafts (RPA).
(b) Requirements for declaration of general design characteristics, according to RPA classification.
(c) Minimum requirements of RPA design.
(d) Requirements for issuance, request and validity of the airworthiness conformity according to RPA classification.

SECTION 21.91 - RPA CLASSIFICATION:

For the purposes of this Regulation, RPA are classified as follows:

(a) Mini RPA - Class 1: a weight less than 03 kg. (6.613 pounds).
(b) Very Lightweight RPA - Class 2: weight from 03 kg. (6.613 pounds) to 25 kg. (55.11 pounds).
(c) Lightweight RPA - Class 3: a weight over 25 kg. (55.11 pounds) but up to 150 kg. (330.69 pounds).
(d) Heavy RPA - Class 4: a weight greater than 150 kg. (330.69 pounds).

SECTION 21.92 – DECLARATION OF GENERAL CHARACTERISTICS FOR THE DESIGN OF RPA

(a) The owner of a remotely piloted aircraft, classes 1 and 2, intended for recreational, commercial or private use, shall submit a declaration indicating the general characteristics regarding the RPA design, in the way and manner as established by the Aeronautical Authority, as well as provide the following documentation, if applicable:
(1) General description of the remotely piloted aircraft (RPA).

(2) Manufacturer, model and serial number of RPA, engine, propellers, payload support and payload, automatic pilot, control transmitters and any other associated component.
(3) Plans or diagrams with RPA dimensions and photography in 3 different angles.
(4) List of components and equipment.
(5) RPA unladen mass and maximum take-off mass, including payload and fuel.
(6) Description of the automatic pilot and the navigation system.
(7) Description of the power supply system or the fuel one.
(8) Batteries capacity
(9) Description of the propulsion system (power expressed in kW).
(10) Description of the radio link of the command and control system and the payload system. Used frequencies. Maximum range of the command and control system. Transmitter output power.
(11) Payload description.
(12) Support payload description.
(13) Description of the flight termination system.
(14) Control station description.
(15) Description of installed lights and paint scheme.
(16) RPA performance and limitations.
(17) Operational and flight range.
(18) Maximum flight altitude.
(19) Normal and maximum operating speed.
(20) Normal and maximum climb speed.
(21) Normal and maximum descent speed.
(22) Limitations related to wind direction and speed, rainfalls, ice formation, maximum operating temperatures, any other RPA limitation.
(23) Radio communications with ATC, alternative means, communications between the RPA pilot and any other personnel engaged in the operation.
(24) Any other characteristic that is relevant due to the RPA design.
(25) An operation manual containing the technical requirements that shall be fulfilled (approved band frequencies, maximum power transmission, etc.).

(b) The owner of a remotely piloted aircraft, class 3, intended for recreational, commercial or private use, shall submit a declaration indicating the general characteristics regarding the RPA design, in the way and manner as established by the Aeronautical Authority, as well as provide the following documentation, if applicable:
(1) Description containing design details.
(2) RPA plans in 03 angles, including RPA general geometry related to aerofoil, general dimensions, flight over control surfaces, minimum turn range on ground, as well as any other information that may be consider applicable.

(3) Outline drawings and detailed parts. This shall be submitted using a standard drawing system according to recognized rules (SAE, DIN or ISO). This applies to overview and cutting plans.
(4) System for the administration of engineering documentation.
(5) Structural calculation:
(i) Dynamic analysis
(ii) Static analysis
(6) Aerodynamic technical specifications. Stability and control.
(7) Operations specifications.
(i) Efficiency
(ii) Operating limitations
(8) RPA operating instructions, structured as a flight manual or equivalent document, which shall include:
(i) RPA description, its systems and control station.
(ii) Normal operating procedures
(iii) Emergency procedures
(iv) Demonstrated efficiency
(v) Operating limitations
(9) RPA maintenance and inspection procedures, structured as a maintenance manual or continued airworthiness instructions (ICA), which shall at least include:
(i) RPA description, its systems and control station.
(ii) Inspection program.
(iii) Assembling and disassembling procedures of systems to perform maintenance.
(iv) List of parts, which may be provided as an illustrated part catalog.
(v) Inspections and services of the propulsion system. In case it is not indicated in the before mentioned manual, there must be a reference to the corresponding manufacturer document regarding the power plant or engine.
(vi) Electric wiring diagram, if applicable.
(vii) Identification of parts, indicating its useful lifetime, if applicable.

(c) Requirements of literals (a) and (b) are not applicable to those RPA holding an issued Type Certificate. Therefore, they shall comply with requirements of Chapter B in this Regulation.
(d) RPA class 4 shall comply with requirements mentioned in Chapter B of this Regulation.
(e) If the Aeronautical Authority determines that the RPA design characteristics do not comply with the established requisites of this Chapter, necessary or additional technical requisites may be imposed to reach a safety level equivalent to the applicable norms of Annex 8 of the Convention on International Civil Aviation or ICAO Doc 10019.
(f) Additional technical requirements shall be issued by the Aeronautical Authority and shall contain safety norms or standards for RPA that may be consider

necessary to establish an equivalent safety level as set up in the applicable airworthiness standards.

(g) The Aeronautical Authority reserves the right to accept or reject an RPA design, if it does not comply with the technical requisites mentioned in this Chapter, and those technical requisites that may deem necessary to benefit operational safety.

SECTION 21.93 – MINIMUM DESIGN REQUISITES

(a) Owners of an RPA class 2 shall demonstrate compliance with the following minimum design requisites:

(1) Its propellers or rotors shall not be metallic.

(2) RPA shall be equipped with:

(i) an automatic pilot system, not intended for autonomous flight, but to assist the RPA pilot or operator, to facilitate stability or to recover the disposal, in case it is necessary.

(ii) a GPS system.

(iii) a launch and recovery equipment in normal operating conditions, e.g. Landing gear, airbag, parachute, net or any other device that complies with such function, and

(iv) a flight safety system, e.g. “return to home” in case of emergency, a “fail-safe function” in case of engine or propeller failure, or any other system that complies or improve flight safety conditions.

(3) A remote pilot station (RPS) that allows RPA control through radio during all its flight phases and provide information related to its operating conditions (altitude, heading, speed, flight attitude, distance from operator, flight monitoring capacity, battery monitoring and link state, etc.).

(b) The Aeronautical Authority may require the compliance with special airworthiness requisites due to the design characteristics that may be deemed dangerous or unusual for operation.

SECTION 21.94 – CHANGES RELATED TO DESIGN CHARACTERISTICS

(a) Declared changes in the characteristics of design of RPA shall be notified to the Aeronautical Authority by submitting the compliance records and a detailed report on the nature of the change and the new capacities of the system.

(b) For RPA class 3, once changes in the characteristics of its design have been incorporated, but before the next flight, the owner or operator shall request the Aeronautical Authority, the issuance of a certificate of compliance regarding its airworthy condition, according to the provisions established in this Chapter.

SECTION 21.95 - ISSUANCE OF A CERTIFICATE OF COMPLIANCE REGARDING THE RPA AIRWORTHY CONDITION

This section establishes the requisites for the issuance of a certificate of compliance regarding the RPA airworthy condition.

(a) An RPA class 1, intended for recreational or private use does not require the issuance of a certificate of compliance regarding its airworthy condition.
(b) An RPA class 1, intended for commercial use does not require the issuance of a certificate of compliance regarding its airworthy condition. Nonetheless, the owner or operator shall declare the safe operating conditions and compliance with the original design.
(c) RPA, class 2 and 3, intended for recreational, commercial or private use, require the issuance of a certificate of compliance regarding its airworthy condition, in the way and manner as may be established by the Aeronautical Authority.
(d) RPA, class 4, require the issuance of an Airworthiness Certificate, in the way and manner as may be established by the Aeronautical Authority.

SECTION 21.96 – VALIDITY OF THE CERTIFICATE OF COMPLIANCE REGARDING AN RPA AIRWORTHY CONDITION

The certificate of compliance regarding an RPA airworthy condition shall be valid for three (03) years, and it may be suspended or revoked by the Aeronautical Authority if the aircraft is not in safe operating conditions and if it has not been maintained and operated according to the applicable requirements.

SECTION 21.97 – REQUEST OF A CERTIFICATE OF COMPLIANCE REGARDING AN RPA AIRWORTHY CONDITION

(a) The owner or operator of a RPA is responsible for the request of the certificate of compliance with the airworthy condition, in the way and manner as the may be established by the Aeronautical Authority, and shall annex to the request the following documentation:
    (1) Declaration of the aircraft design characteristics according to section 21.92.
    (2) A photograph of the aircraft identification plate.
    (3) An aircraft photograph.
    (4) Copy of the registry control number of the aircraft granted by the Aeronautical Authority.
    (5) Continued airworthiness maintenance control according to the manufacturer specifications.
    (6) Control of installed parts according to the provisions specified by the manufacturer (e.g. servos, receivers, flight stabilization systems, batteries, engines).
    (7) Records on verification of RPA parts, components and systems condition based on the operational reliance and ground tests.
    (8) Copy of the applicable insurance policy.

(b) The Aeronautical Authority may ask for or require the applicant to be subjected to the appropriate inspections or tests, as may be deem necessary to verify the safe operation of the aircraft.

REPEALING AND FINAL PROVISIONS

FIRST: all that has not been herein this Venezuelan Aeronautical Regulation provided shall be resolved by the Aeronautical Authority.

SECOND: the Venezuelan Aeronautical Regulation number 21 (RAV 21) "Procedures for certification of products and components", issued by the Venezuelan National Institute of Civil Aeronautics under the Administrative Ruling number PRE-CJU-093-11 dated August 10th 2011, published in the Official Gazette of the Bolivarian Republic of Venezuela number 39.836, dated January 05th 2012, is repealed in its entirety.

THIRD: This Administrative Ruling shall enter into force on the date of its publication on the Official Gazette of the Bolivarian Republic of Venezuela.

Be this communicated and published,

(Illegible signature / wet seal)

JORGE LUIS MONTENEGRO CARRILLO
President of the National Institute of Civil Aeronautics (INAC)
Decree No. 1800, dated June 03th 2015
Official Gazette No. 40.674, dated June 03th 2015