ANNEX 7e **Germany**

Agenda Item 12.9 b)

Pylon Add a New Class

ANNEX 5Y
CLASS F3T – PYLON RACING MODELS

5.Y.1 Definition of Radio Control Pylon Racing Model Aircraft:

See 5.2.1

5.Y.2 Technical Specifications of Pylon Racing Model Aircraft

See 5.2.2

a.) The model aircraft must be of conventional design with forward wing and with the general lines of a full scale pylon racer and shall be recognizable replica of full-scale, human-carrying, propeller-driven aircraft, that either raced in or were built for close course or cross country racing or a speed record attempt. To clarify that such a full scale pylon racer did exist, each pilot has to document three side views or photos.

5.Y.3 Weight

Weight, less fuel but including all equipment necessary for flight, shall be at least 1800 g and not more than 2200 g. If ballast is used it must be permanently and safely affixed.

5.Y.4 Fuselage

5.Y.4.1. Depth and width

The fuselage shall have a minimum height of 127 mm and a minimum width of 76 mm, the measurement to be of the fuselage body and are to exclude any fins, attachments or spacers. Both minimum dimensions must occur at the same cross section location. The fuselage at this point will have a minimum cross sectional area of 80 cm^2 excluding fillets and competitors shall provide templates to prove this. Fillets are not considered part of the fuselage or lifting surfaces.

5.Y.4.2 Cockpit

A cockpit or canopy must be evident and capable of enclosing a dummy pilots head 32 mm from the chin to the top of the head. The cockpit need not to be transparent and a dummy pilot´s head need not be fitted.

5.Y.5 Lifting Surfaces

5.Y.5.1. Area of Surfaces

Total projected area of the lifting surfaces (wing and horizontal tail combined) shall be a minimum of 25 dm^2. No delta or flying wing type aircraft are permitted

5.Y.5.2 Wing Span

The maximum wing span shall be 1420 mm.

5.Y.5.3 Wing Thickness

Wing thickness of the root shall be at least 22 mm. Wing thickness shall decrease in a straight line taper from root to tip as viewed from the leading or trailing edge

Note : Root shall be defined as the innermost wing section, not counting fillets that may be measured without removing wing from fuselage.

5.Y.6 Engine(s)

Engine(s) must be of the single cylinder reciprocating piston type, with a maximum total swept volume of 6.60 cm^3. Propellers must rotate at the speed of the crankshaft. Engine shall have only one front intake and one side exhaust. Only commercially available engines are allowed of which a minimum number of 25 were built. Engine air intake cross sectional area is limited to 114.0 mm^2 (12 mm diameter).

5.Y.7 Exhaust system:

(a) General description: The engine shall be equipped with an expansion chamber muffler, zero-boost muffler, or tuned muffler as provided by the manufacturer for the engine being used, and having a single exhaust outlet with a maximum outlet area of 40.2 square millimetres (equivalent to the area of a round hole measuring 7.15 mm diameter).

(b) Inner configuration or tuned mufflers: A tuned muffler used in this event shall have only one internal part, a straight tube or extractor of the type commonly known as a “mini-pipe”. The mini-pipe shall have a constant, circular cross section and constant inside and outside diameter, with the following exception: the sidewall of the tube may be thickened not to exceed 2 mm wall thickness, within 12.7 mm of the front end of the mini-pipe where it attaches to the header.

(c) Outside dimensions: The distance from the centre of the piston to the centreline of the muffler shall not exceed 70 mm. The overall length of the muffler shall not exceed 185 mm, measured from the front of the header to the back of the exhaust outlet. The outside diameter shall not exceed 45 mm and both the inside and outside diameter of the outside shell of the muffler shall remain constant for at least 75 mm.

(d) Modifications: No modifications to the muffler, as provided by the manufacturer, are permitted except that the muffler may be tapped for a pressure fitting to supply pressure to the fuel system.

5.Y.8 Fuel pressure

If the tank is pressurized, only the pressure from the silencer is permitted.

5.Y.9 Propellers and spinners`

Only fixed propellers which are commercially available shall be used.

Two bladed propellers shall either be of a chopped fibre filled injection moulded type or wood.

Composite resin continuous fibre construction propellers are not allowed.

The propeller shall have a minimum diameter of 7.4” (188 mm).

Wood propellers may be modified from a commercial product or can be home made .

For injection moulded propellers the type and dimensions must be indicated on the propeller by the manufacturer. The recommended rpm limit for this type as given by the manufacturer must not be exceeded during flights.

For injection moulded propellers changes to the propeller blades are not permitted, except for:

a. blade may be sanded on the top (front) side only for balancing.

b. One side of the hub may be sanded for balancing.

c. The shaft hole may be enlarged, but only as much as necessary to fit the engine crankshaft. The enlarged hole shall be concentric with the original hole.

d. Edges and tips may be sanded, but only as much as necessary to remove sharp moulding flash.

A rounded nose spinner of at least 25 mm diameter, with a nose radius of not less than 5 mm (ABR B.19.4) must be fitted. The spinner shall be made of metal only.

5.Y.10 Undercarriage

The undercarriage may have a two or three wheel design with the two main wheels having a minimum track of 100 mm, fixed on the outside of the fuselage or main wing. The diameter of the two main wheels shall be not less than 57.0 mm. Only non retractable landing gears are permitted. Nose or tail wheels, if used, may be streamlined. A tail skid may be used in lieu of a tail wheel. A positive means of steering on the ground shall be provided; rudder control is acceptable. The undercarriage shall resemble that of the full scale aircraft as to location on the airframe

5.Y.11 Shut-off

See 5.2.9

5.Y.12 Fuel

See 5.2.15

5.Y.13 Technical checks and safety requirements

See 5.2.11

5.Y.14 Competitors

See 5.2.12

5.Y.15 Helmets

See 5.2.13

5.Y.16 Transmitter and frequency check

See 5.2.14

5.Y.17 Race Course, Distance and Number of Rounds

See 5.2.16

5.Y.18 Race from Start to Finish

See 5.2.17

5.Y.19 Timekeeping and Judging

See 5.2.18

5.Y.20 Infringements and Penalties

See 5.2.19

5.Y.21 Scoring and Classification

See 5.2.20

Note: 5.2.20.2 does not apply to F3T.

Annexes

The following F3D annexes also apply to F3T

ANNEX 5Q - GUIDELINES FOR AIRFIELD LAY-OUT,

ANNEX 5R - GUIDELINES FOR DUTIES OF PERSONNEL

ANNEX 5S - GUIDELINES FOR TECHNICAL EQUIPMENT

ANNEX 5T - GUIDELINES FOR DRAW OF RACES

ANNEX 5U - GUIDELINES FOR PRACTICE FLYING

ANNEX 5V - GUIDELINES FOR ORGANISERS

Note: Within the annexes, references to World and Continental Championships do not apply to F3T.

Reason: This pylon class – originally named Q 40 (Quarter 40) – has been introduced in Germany in 2008. It had been adopted from US. Engines, propellers and fuel are standard to be purchased from various sources. The Q 40 pylon class is very successful in the US. Contests there are supported by more than 50 pilots each. Beside of a growing community in Germany, races are now being organised in Italy, United Kingdom, France and Czech Republic. Since three years, the number of pilots in whole Europe is permanently increasing, while F3D stagnates. Because of its simplicity, attractive appearance and its value for money the class is qualified to become very popular.

cont/… "F3T as a Multi Formula Class

ANNEX 5.Y.A1

F3T As a Multi Formula Class

F3T is defined here by a standardised model and the way a competition is held. The power plant including its silencer, propeller, fuel (5.Y.6 – 11) can be specified differently from the standard rules by the organizer of a competition if he wants to do so.

This makes it possible to make the class flexible for local preference, different requirements in pilots' ability, airfield or noise constraints etc. The organizer shall publish these rules, either by specification or by the class identification code (see below) or by publishing the deviation of the standard F3T rules in the invitation to the contest.

A few examples are given here which could be used independently or in combination;

1. A requirement to use only (unmodified) engines from a selected list with their standard exhaust system and an appropriate propeller definition.
2. New pilots may be attracted by adding a price limit in order to create a local or national class which uses cheap engines that are easily available locally, even with a slightly different cubic capacity.
3. Replace the 114.0 mm2 (12.05mm diameter) venturi - 80/20 fuel combination by a 64.0 mm2 (9 mm diameter) venturi - 15% Nitro fuel combination for easier engine characteristics.
4. An internal tube in the exhaust system is not allowed, in order to reduce the tuning effect in order to reduce engine power.
5. A different propeller definition, e.g. a minimum diameter of 188 mm or only certain propellers to be selected from a list of commercially available props can be chosen in order to limit speed/ rpm and/or noise.
6. An electric powered class with electric motors allowed from a list of commercially available motors in combination with a kind of limiter or a governor for rpm control (e.g. 20.000 rpm) in combination with some standard propeller.
7. Composite wings and/or fuselages not allowed in order to reduce cost and to avoid high tech planes. This may help to create a national class that attracts young pilots.
8. Add a noise limit .

Deviation from the standard rules should not compromise safety.

Since variations to the standard formula are usually for national competitions to create a "beginner friendly" or locally popular racing class, it is recommended to give a such a national class a unique code consisting of F3X, the national identification and a class identification, for example F3X-GER-E1, for a German F3R class for a formula with electric motors or F3X-NED-86dB for a Dutch class with an 86 dB(A) @ 3meter noise limit.

For classes that have formulae that give substantially lower speeds than the standard F3X class, the distance from the base pylons to the top pylon between the pylons and the distance between the safety line and the course may be reduced accordingly.

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End of proposal