New economy tasks adapted to the proposed new fuelling procedures

These tasks are part of proposals 39 and 40. Tasks Highlighted in green in the scoring formulae are the optional use of the bodyweight index in proposal 40.

Annex 4, Part 3

3.B6 Cat's Cradle navigation

This task is for use in tasks based on weight of fuel used in flight.

Objective
Fly around as many given waypoints as possible whilst achieving the best possible fuel consumption (litres/hour) in proportion to bodyweight.

Description
Time limit (for instance 2 hours) with penalties for being late (for instance 50%).
The task either scores on the number of waypoints visited or the distance flown.
500 points for the distance part.
500 points for the economy part.
Pilots can carry as much fuel as they wish.
Time starts from launch (or start gate) and ends on landing (or finish gate).

Penalty for landing outside field (100%)
Penalty for landing outside deck (50% on economy part)

Scoring
(500 x NBp / Nbmax) + (500 x FCmin / FCp)

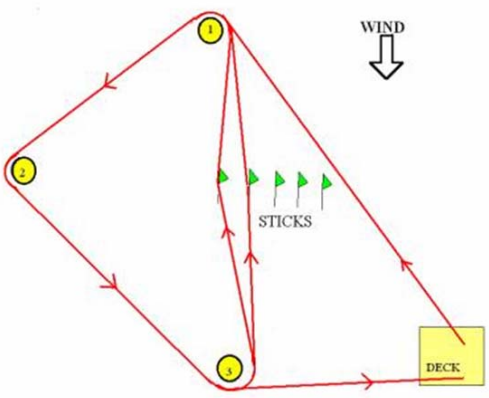
Where:
NBp = The number of waypoints a pilot collects in the task (or the distance flown)
NBmax = The maximum number of waypoints scored or (maximum distance flown)
FCp = The fuel consumption of a pilot (litres/hour) divided by his/her bodyweight index as an option
FCmin = Best fuel consumption or optionally the minimum ratio of fuel consumption to bodyweight index

3.B7 ECONOMY & DISTANCE

This task is for use in tasks based on weight of fuel used in flight.

Objective
Fly a given number of laps, ideally at least 40km total distance (for instance 20 x 2km laps) then return to the deck by using as little fuel as possible.

Special rules
No height limit but each lap must be validated by kicking one stick on the upwind leg.
Only one attempt at kicking a stick per lap.
There are several sticks available to kick to avoid congestion but some of the sticks are positioned in such a way as to increase the lap distance.
Time starts from launch and ends on landing back on the deck.
Reversed championship order is preferable.
Pilots can carry as much fuel as they wish.



Penalty for landing outside the deck (50%)
Penalty for landing outside the field (100%)
Penalty for not flying the minimum required number

of laps (100%)
No penalty for flying more laps than the required number

Scoring
(1000 x FUmin / FUp)
Where:
FUp = The amount of fuel used by a pilot to fly the task optionally divided by his/her bodyweight index
FUmin = The minimum amount of fuel used or optionally the minimum ratio of amount of fuel used to bodyweight index

Note: By not imposing a maximum height, we can make this task much safer, even in windy conditions. Loggers should be used. Laps should be big enough to cater for many pilots, now able to fly the whole task. Overtaking would be easier and much safer with more height and the bigger laps. Keeping track of the number of laps flown is a skill in itself and if pilots have doubts, then they may have to fly more laps to avoid penalties.
Marshals would only have to take a note of pilots failing to kick a stick with a view to void those laps.
This task is still primarily a pure economy task but the kicking sticks, the climbing back to a safe height, the keeping count, the improved overtaking and the full participation of every pilot have the potential to make this task real fun, much safer and a great spectacle for the public.

3.B8 PURE ECONOMY

This task is for use in tasks based on weight of fuel used in flight.

Objective
Get airborne for at least one hour and achieve the best possible fuel consumption (litres/hour) in proportion to bodyweight.

Special rules
Pilots are timed for their duration, from launch to landing. The amount of fuel used, divided by the duration gives the fuel consumption (litres/hour), then optionally is divided by the bodyweight index.
Penalty for flying less than one hour (50%)
Penalty for landing outside the deck (50%)
Penalty for landing outside field (100%)
There is a land-by time with penalty thereafter (100%)
Pilots can carry as much fuel as they wish.

Example of formula:
(1000 x FCmin / FCp)
Where:
FCp = The fuel consumption of a pilot (litres/hour) optionally divided by his/her bodyweight index
FCmin = The minimum fuel consumption or optionally the minimum ratio of fuel consumption to bodyweight index

The only incentive for a pilot to stay airborne for much longer than one hour is to improve on the overall fuel consumption, by using outside energy such as thermals.

3.B8 SPEED TRIANGLE AND OUT AND RETURN

This task is for use in tasks based on weight of fuel used in flight.

Objective
Fly around a circuit (for instance a triangle) in the shortest possible time and then fly as far as possible in the direction of the pilot's choice before returning to the deck, whilst achieving the best possible fuel range (km/litre) for the whole flight.

Special rules
The fuel range is calculated as the whole flight distance divided by the quantity of fuel used optionally multiplied by the bodyweight index.

There should be an elapsed time limit.
Penalty for landing outside the deck (50% of range score)
Penalty for landing outside the field (100% of range score)
Penalty for exceeding time limit (50% of range score)

Scoring
(500 x Tmin / Tp) + (500 x FRp / FRmax)

Where:
Tp = The pilot's time in the speed section
Tmin = The fastest time in the speed section
FRp = The fuel range achieved by a pilot (Km/litre) for the whole flight optionally multiplied by his/her bodyweight index
FRmax = The maximum fuel range or optionally the maximum product of full range by bodyweight index