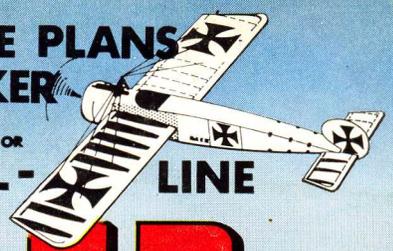


# AERO MODELLER

FULL-SIZE PLANS  
22" FOKKER  
ELECTRIC or  
CONTROL-LINE



JANUARY 1964

TWO SHILLINGS

U.S.A. & CANADA 40 Cents



CHAMPION'S STORY by ERNO FRIGYES

# TALTOS

(Pegasus)

## by Ernő Frigyes



Note: All dimensions in M.M.

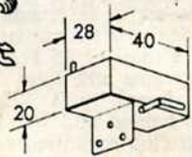
### WING INBOARD PANELS

- L.E. 3 x 10 m.m. spruce top
- 3 x 10 m.m. balsa bottom
- Spars 3 x 10 m.m. spruce
- T.E. sheet 1.5 m.m. balsa

### WING OUTBOARD PANELS

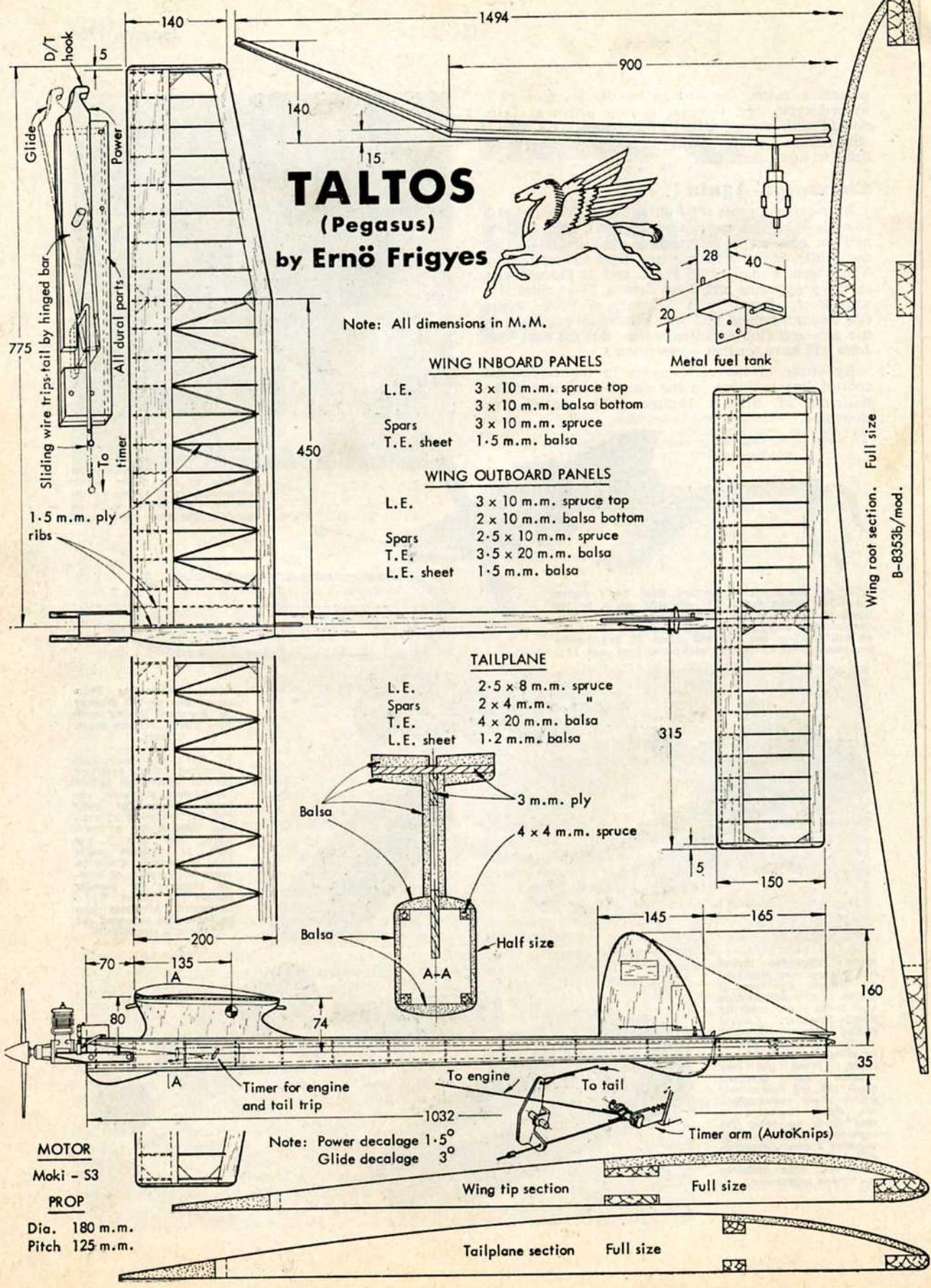
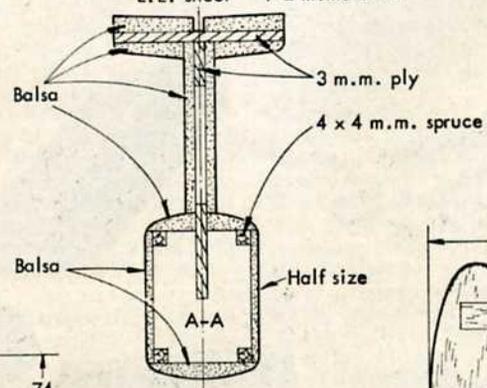
- L.E. 3 x 10 m.m. spruce top
- 2 x 10 m.m. balsa bottom
- Spars 2.5 x 10 m.m. spruce
- T.E. 3.5 x 20 m.m. balsa
- L.E. sheet 1.5 m.m. balsa

### Metal fuel tank



### TAILPLANE

- L.E. 2.5 x 8 m.m. spruce
- Spars 2 x 4 m.m. "
- T.E. 4 x 20 m.m. balsa
- L.E. sheet 1.2 m.m. balsa



**MOTOR**  
Moki - S3

**PROP**  
Dia. 180 m.m.  
Pitch 125 m.m.

Note: Power decalage 1.5°  
Glide decalage 3°



Wing tip section

Full size

Tailplane section

Full size

Wing root section. Full size

B-8353b/mod.

# TALTOS II



IT WILL BE A SURPRISE to many that Erno Frigyes designed FM-70 Taltos II early in 1963 and completed construction only two weeks before the World Championships. He certainly made good use of experience with his Championship winning FM-58, together with the original Taltos (FM-67).

It is well known to all those who deal with free flight models that a satisfactory solution of the two aspects of power flight is not an easy task. In the interests of obtaining a fast climb it seems advisable to use slightly cambered airfoils which are set at small angles of incidence. The disadvantage of this is the faster descent. Better gliding calls for a higher curved section and higher incidence angle. But in such conditions the climbing speed deteriorates, consequently one has to be content with a moderate altitude of climb.

In earlier contests when a power time of 15 secs. was permitted, the use of such compromise sections seemed satisfactory. Erno succeeded in improving the capability of his models to over four minutes average. In January 1961 the power run of the engine was reduced to 10 secs. and it had an immediate result of diminishing of the possible average efficiency. The official flight time of 3 min. was only possible for those models which had sections of highest efficiency, trimmed with great care, and using high power engines.

Analysing power and gliding flight of free flight models with a view to further improvements of efficiency it seemed best to Erno to establish separate optimum conditions. That is to say, to make power flight with a small incidence angle so that drag is less and the model can reach a higher speed; and in the glide a larger incidence angle is applied which results in a better descent. On this basis Erno made long tests and succeeded in producing a simple mechanism which made possible any difference of incidence angle between the wing and the tailplane at any time. (Based on V. Hajek's Czech system).

At the 1961 World Championship in Leutkirch each Hungarian competitor's model was furnished with the angle setting mechanism. In this contest—beside helping to win the Team Championship for the 3rd time Erno won second place with Taltos FM-67, using a Moki S-1 glow-plug engine.

In the Autumn of 1962 he had the possibility of making accurate measurements of altitude with Taltos FM-67. The measurement was made in good atmospheric circumstances at sunset by sportplane with a sensitive altimeter. In three launches the average altitude reached was 460 ft. with 9.5 secs. power run.

The gliding measurements took place early next morning, weather was fine this time, too and six launches were made. Power flight time discounted, the duration was 245-250 secs. Supposing the altitude obtained was the same as the previous day, the descending speed of the model about 1.9 feet/sec.

## Model on the Cover!

Story of the World's No. 1\* power modeller Erno Frigyes of Hungary and his latest design

### ★ WORLD CHAMPIONSHIPS PERFORMANCE

1958 1st: 1959 No contest: 1960  
Equal 1st (technical 8th in fly-off): 1961  
2nd: 1962. No contest: 1963. 1st  
(after three fly-off rounds).

In earlier models Erno used the original B-8353b section. This gives good effect under conventional conditions. Its only sensitive point is the tapering depth of the rear portion, where—especially in case of a balsa rib, the frame of the wing can easily crack and deform near the trailing edge. Because of this and for theoretical reasons the upper part of the section was modified. The highest camber point was moved backwards and this made possible the use of a thicker tailing edge.

Gliding properties of the experimental wing having the modified section improved slightly. One could not notice any deterioration. The wing of the new Taltos II was built with this modified section, at the same time its surface was increased with area taken from the tail.

Test flying took place a week before the Championship in Austria. Trim was established during four days in changing weather conditions over nearly sixty flights using the new powerful glow plug Moki S-3 engine. On flights made early in the morning, times of 270-280 secs. were made. Two days before departure, the team held a test contest for training. This time Erno succeeded in reaching 900 secs. in five successive flights, repeated of course in the Champs.

### Technical description

The model was produced mainly out of balsa, only the strongly stressed parts are of spruce or plywood. The right wing has slight wash-in. Covering is Japanese tissue. The wings weigh just under 8 oz., the tailplane 1½ oz., and the fuselage, with engine, 17½ oz.

The incidence angle mechanism is built in the end of the fuselage. This mechanism—together with the rudder and motorstop—is operated by an Autoknips. During power flight the angular difference of the wing and tailplane is 1.5 deg. this increases to 3 deg. for the glide. At the extreme tail there is a 'sandwich' of dural. The centre plate is hinged and incorporates the lower (or fuselage) tail retaining hook. A sliding wire which comes from the timer to a slot in the outer halves of the 'sandwich,' will hold the centre plate in its 'neutral' position. When pulled forward, the centre plate is free to drop at the front, and it does because of the rubber band tension on the rear hooks and the d/t band at the front of the tail. Thus the tail is controlled to give two positions by timer action.

Assembly of the engine to the fuselage is resolved in an almost superficial manner by dural side plates. A gravity feed tank serves the carburettor without pressure. Propeller diameter is 7½ in. and pitch 5 in. The fuel formula is nitro methane 45 per cent, Methyl alcohol 25 per cent, Castor oil 20 per cent, nitro benzine 10 per cent.