American Dragon exudes the character of the '20s and early 1930s.

Latest in a series of models from aeronuttical history – by Peter Miller!

The American

The most exciting and innovative period for aviation was the late '20s and early '30s in the U.S.A. Barnstorming was in full swing, air shows and flying circuses abounded and air racing was booming. Companies started up which have since become household names while individuals built their own aircraft in the hope of winning major prizes or starting yet another company – and all this in the great depression!

The sweet smell of success?

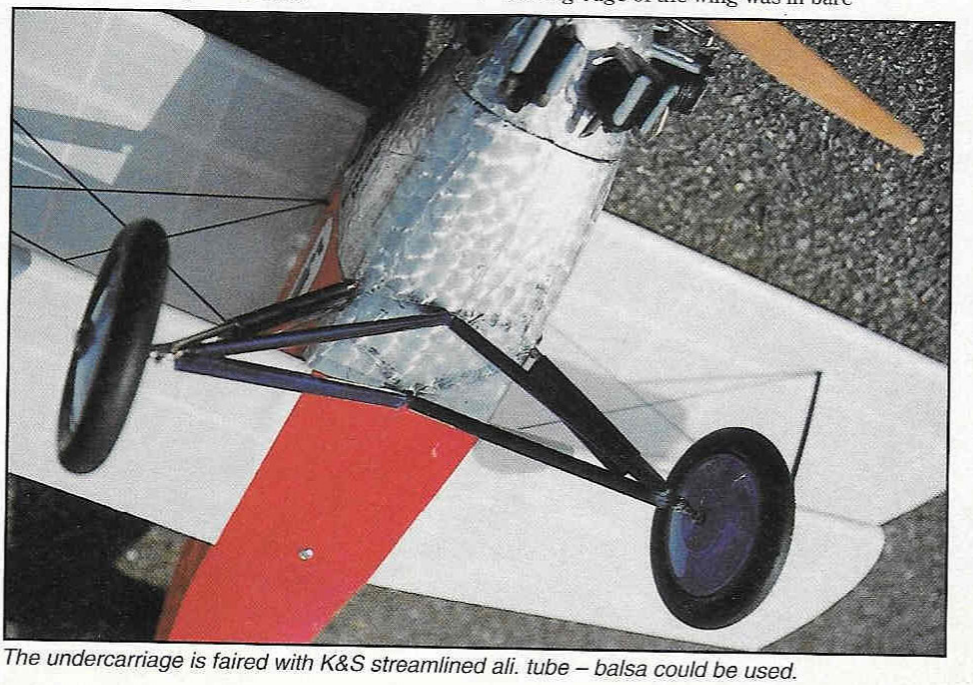
Skunk Magee was a barnstormer. He got his name when he landed in a Texas pasture and he and his aircraft were well sprayed by a family of skunks. For weeks afterwards Skunk would fly through every rain storm in an effort to wash the smell off as it made the customers puke before they even got near to the aircraft. No customers, no money. Skunk had to cut several new notches in his belt before the smell faded from totally nauseating to merely revolting. It was said that Skunk's leather jacket still gave off a faint aroma years later.

While Skunk was being ostracised by customers and fellow barnstormers he had time to think. He realised that the old Jenny was just about played out as a barnstorming aircraft but there was money to be made from stunting, dropping parachutists, spot landing competitions and even in some of the smaller air races. Combine all this with a better aircraft for carrying passengers and one would have the ultimate barnstorming machine.

Skunk drew up his idea on the fabric of his Jenny wing while he was parked at the down-wind end of an airfield and later built his aircraft with the help of some friends. Actually, *they* built most of it because they wouldn't let him work on the machine at the same time as they did. Skunk called it the "Magee Universal" but all the other pilots called it 'Skunk's Stinker', which was unjustified because it was very successful.

The aircraft was a cabin biplane, or rather sesquiplane since the bottom wing was much smaller than the top wing. It was powered by a Lamprey and Butlin seven cylinder radial engine.

Colour scheme was red fuselage with a white trim stripe down each side, white wings and tail surfaces with blue struts and undercarriage. The complete nose back to the leading edge of the wing was in bare



The undercarriage is faired with K&S streamlined ali. tube – balsa could be used.

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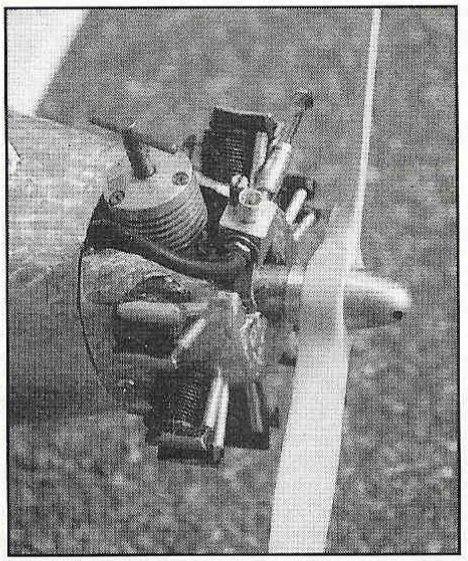
American Dragon

American Dragon features sesquiplane layout, a rare but not unique configuration.



Dummy engine is made from Williams Bros. 1/12th scale cylinders and scrap materials. Self-adhesive foil is used for panels but chrome Fiba-Film could be employed.

aluminium. The registration was NX70 carried on the top wing and each side of the rudder. The name 'Magee Universal' appeared on each side of the fin.

The 'Universal' could carry two passengers and the pilot and, being fully enclosed, the customers liked it. Skunk adopted the slogan, 'Just like flying in your own parlour'. The plane was aerobatic, very controllable for spot landings and fast enough to place in a few small races. It also featured a hatch in the floor for the easy egress of a parachutist and this was quite useful for dropping bootleg hooch when Skunk made the odd foray over the border...

A limp blimp

Skunk campaigned the plane around the mid-West for some time, going as far South as Mexico and North to Canada. Eventually he arrived at the National Air Races where he was booked to do an aerobatic routine and drop a parachutist; he also entered the reliability trials and the spot landing competition.

'Fearless' Brooks, who was going to do the parachute jump, was a movie fanatic. He would spend hours in the cinema and it was not unknown for him to spend a full day going from cinema to cinema subsisting on candy bars and popcorn.

On the day that he was supposed to make the jump Fearless was watching *Captain Skull, scourge of the Spanish Main.* As a result he only arrived at the airfield with three minutes to spare before Skunk was due to take off. Fearless jumped into the plane and Skunk climbed to the planned height while being regaled with the story of the pirates.

At the right time and in the right place Fearless dropped through the hatch in the floor of the 'Universal'. He thought that he had got through rather more easily than in the rehearsals but put it down to practice, until he reached for the ripcord. It wasn't there.! He had forgotten to attach the parachute harness.

Now a parachute jump without a parachute creates quite an impression on the spectators, an even bigger impression on the ground but most of all on the jumper. Fearless shut his eyes and waited for the impact and was most surprised to make a beautifully soft landing. He opened his eyes and saw that he was lying on a huge silver cloud; he looked round for the harp that he was sure must be near him and then realised that he was not dead but that he had landed right on top of a Navy blimp.

His next problem was how to get down and here Fearless' love of the movies came to his aid. Only that afternoon he had been watching pirates sticking knives into sails and sliding down them so, without any hesitation, he pulled out his clasp knife, drove it into the envelope and slid down the balloon.

There was much hissing of escaping gas and the balloon sagged to the ground and Fearless walked away while the irate Navy crewmen struggled out from under the collapsed envelope. Later the rip was sewn up but that blimp always had a slight bend and would never fly straight again.

Wings for a warlord

Skunk decided that it might be a good idea to depart to pastures new for a time. He had read an article about the Chinese warlords who were constantly fighting each other. He came up with the idea of selling a plane to one of these warlords – it would then be certain that the others would want their own aircraft!

Skunk teamed up with another pilot called 'Struts' Diamond and they shipped the plane to China. Here they renamed it 'American Dragon' which was painted on the aluminium panels behind the engine. They hired an interpreter called Foo Ching, whom they always referred to as Phooey, and set off up country.

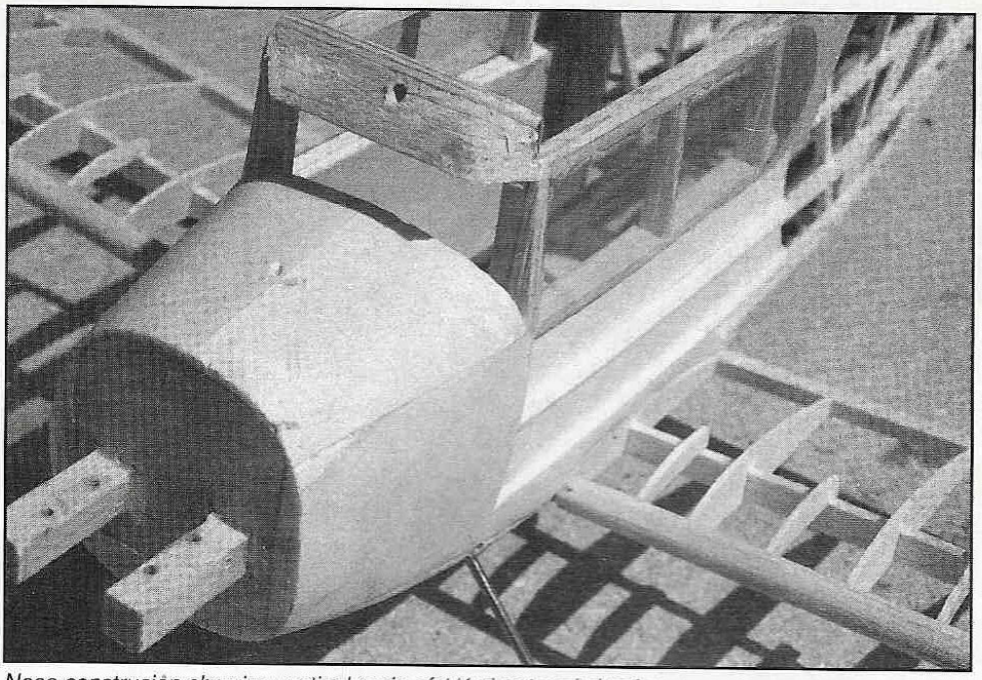
Eventually they heard of a warlord called Hoo Flung Dat who was being besieged on a mountain top and they set off to find him. The mountain was a flat topped pinnacle with one narrow path up the only sloping side. They made a safe landing and were immediately captured and accused of being spies.

Through Phooey they managed to convince Dat that they could overcome the besiegers with their aircraft. Dat agreed to give them a chance and appointed two villainous looking brothers called Wun Floo Low and Wun Wing Low to guard them.

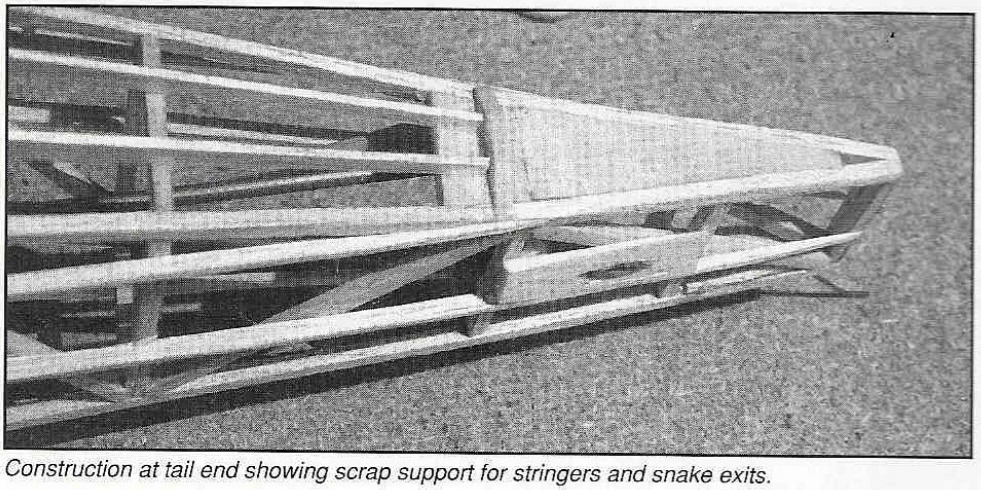
To cut a long story short the idea was not too successful. The attackers simply hid in the rocks while the aircraft flew past and then carried on as before. One mission was flown to drop hand grenades on the opposing warlord's stronghold but this seemed to have little effect.

Fuel was obtained by flying to the nearest town. One of the pilots was always kept as a hostage for the other's safe return while one of the guards accompanied the aircraft.

Eventually Dat's patience wore out; he announced that the two pilots would be beheaded the next morning but that he would give them one last night of pleasure so that



Nose construcion showing vertical grain of 1/4 sheet and shaping.



Construction at tail end showing scrap support for stringers and snake exits.

they would die happy as it was considered bad luck to have unhappy ghosts around the place.

The two doomed men were taken to the village where they were entertained by two young ladies. Skunk's companion for the night was a voluptuous girl called Cha.

Dangling temptation

In the morning, as they were being taken to the place of execution, Struts began singing a suitable song for the occasion. Skunk listened and then suddenly gave a yell of delight. He insisted on being taken before the warlord where he explained that he now had a plan which would deliver Dat's enemies into his hands. Dat agreed to give them one last chance.

They obtained a rope ladder and had young Cha brought to the aircraft. They explained the plan to her and she readily agreed. Skunk took off with Wun Floo and Cha in the Dragon; the hatch was opened and Cha was lowered down on the end of the rope ladder. She was dressed in a few bits of silk.

Now picture the scene on the ground. The enemy had been laying siege on a cold mountainside for six months. They had become so deprived of companionship that even the Yaks were beginning to look good to them. The only entertainment that they had had was a juggler. Suddenly, floating along a few feet above their heads was this beautiful young girl who was busy ripping off bits of silk and tossing them into the air.

As one man the invaders raced down the slope after Cha. The aircraft out-distanced the runners and then turned back – the aircraft had to climb back up the mountain side and so was flying even slower. Cha had removed her last piece of silk and all her charms were on display to the horde below.

Those at the front of the throng turned to chase the aircraft back up the hill where those at the back were still coming down. Several men were trampled to death in the confusion. The effort of trying to keep up with the aircraft made the men throw away their equipment and weapons. The mob arrived back at the top of the hill, their tongues hanging out, their eyes bulging and fighting to get to the front of the rabble. Dat's men were waiting and the whole army was captured.

Hoo Flung Dat was so pleased that he allowed the two pilots to leave. Skunk didn't even stop the engine, Struts and Phooey piled into the plane and they took off. Phooey didn't make it because the hatch was still open but he didn't mind since he was considered to have been part of the team and was given Cha's hand in marriage.

Skunk took the American Dragon back to the U.S.A. where he teamed up with a striptease artist and made a small fortune recreating that last flight for stag parties.

One last footnote. The song that Struts was singing that gave Skunk his idea – 'Swing Low Sweet Cha: Riot!'

The model

The model is based on drawings of the original aircraft which now hangs from the ceiling of the "Longhorn Club" in Scorpion Sting, Arizona. The rope ladder still hangs down from the hatch and every Saturday night a striptease artist performs her act on this for the assembled patrons.

I chose the PAW 80 Classic engine to power the model and this is adequate if an 8x4 prop is used. A 1cc engine would provide sparkling performance and is advised if the weight exceeds that of the prototype which weighed 1lb 3 ounces with Fleet micro radio and a 150 mAh nicad.

The controls are: rudder, elevator and throttle. Ailerons could be added to the top wing which would make the model quite aerobatic with the larger size of engine.

Construction

Construction of the model is very simple; anyone who can build a vintage model can build American Dragon so I shall concentrate on the areas which differ from the average model – such things as the front end, the cowling and dummy engine, the undercarriage and the struts and rigging.

Fuselage

The fuselage is the standard two sides joined by formers. Pulling the nose in to meet F-1 needs some care if the former is to be accurately fitted at right angles to the centreline in both planes.

The 1/4 sheet on the outside of the sides between F-1 and F-2 is very soft and the grain is vertical to allow the wood to bend to fit the sides. Contact adhesive is used for this; roughly

shaping the material also helps it to bend.

The cowl is made from laminations of 1/2in sheet plus two laminations of 3/16th at the front, it is hollowed out to fit closely round the engine and the bearers. Two pieces of dowel, 1/4 or 5/16ths, are inserted in the sides to take the screws which hold the cowl to the bearers.

The cylinders are Williams Bros 1/12 scale units, the heads are made from a disc of 1/16th ply with the rockerboxes glued on. Aluminium tubes are used for the pushrod covers. The exhaust stacks are made from the gold coloured outers of Kavan snakes, or are they Graupner?

The main landing gear is bound to the former with copper wire and soldered. Use wire about the size of 30amp fuse wire, not the really fine stuff.

The other struts are soldered on after covering. The streamlining wad done with small pieces of K&S streamlined ali tube which is slid onto the wire then soft balsa is rammed into the tubes and cyano run down inside the strut. This works fine but the old way of fairing with balsa will work just as well.

The aluminium skinning was done, after covering, with some old stocks of self-adhesive aluminium that I had. Cooking foil stuck down with contact adhesive would also work but the easiest material to use would be aluminium or chrome Fibafilm but I am not sure if you could do the engine turning effect on this material.

The engine turning is done with a small pad of servo tape stuck to a large headed 'clout nail' with small discs of 'Wet and Dry' paper stuck on. This assembly is used on a mini drill. Use oil to lubricate the disc when doing the turning.

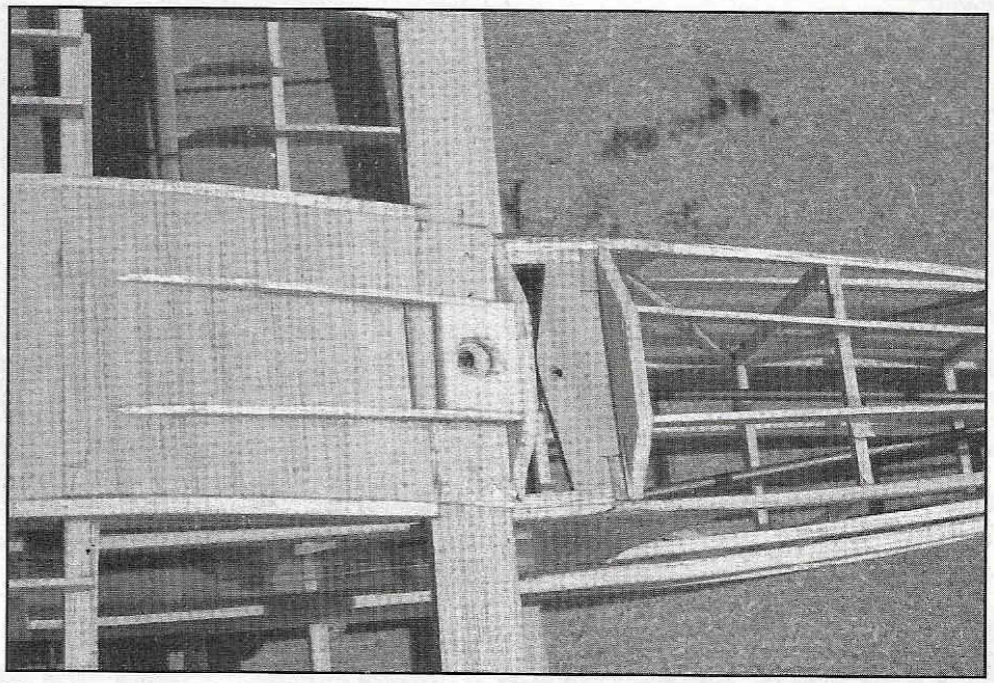
Wings

The wings are extremely basic. The only area that is a little different is the assembly sequence. The centre sections are built and sheeted before joining the main panels on to them. The strut mounts are simply little blocks of balsa with a small piece of 1/64th ply to stop the strut going right through.

The struts are made from more snake outer. Assemble the uncovered model, making sure that the wings are true. Now, using a piece of sharpened tube, made the holes for the struts in the blocks.

Fit the main struts into the holes – they can be a bit over length at this stage. Check everything is true and then glue the diagonal struts on with cyano. DO NOT let the glue run into the strut mount holes – it is best to use the thicker CA for this job. Allow to set overnight as the joint is exposed to the air and will not set instantly.

Trim the ends of the struts so that they do not protrude beyond the blocks and glue the ply plates inside the wing. Rigging is simplicity itself. Shirring elastic is threaded through the struts and tied to form a loop joining both sets of struts. This is done with both front and rear struts. The lower part of the loops are passed over the top of the fuselage and the top part below. Where they cross the fuselage a small notch in the wing mount keeps them in place. The struts can be popped into place after the wings have been fitted and the result looks very neat.



Top wing fixing with fairing is shown in this view.

Covering

The model was covered in Fibafilm which adds rigidity to the structure and gives a nice gloss finish. Trim and lettering was applied with Solartrim and the name and small letters on the fin were applied with rub down decals. All joints and lettering were sealed with fuel proofer.

Installation

The radio fitted was one of my Fleet micro radios with a 150mAh battery. The battery sits just in front of the lower wing with the Rx above it. The three servos are mounted on 1/4 square bearers across the fuselage. The rudder and elevator servos are mounted from the bottom but the throttle servo is mounted upright on top of the bearers as this simplifies all the control runs.

Lightweight snakes are used for the rudder and elevator runs and the throttle is operated by an 18 swg pushrod running in a length of snake outer. There is room to fit larger radio outfits although the battery should be the same size and the Rx may have to sit right up in the cabin area. The weight increase would mean that a 1cc engine would be essential.

Control horns are made from 1/16 paxolin epoxied into slots in the rudder and elevator, although small nylon horns could be used.

Ready for flight

Check that the CG is on the top spar and that the struts are in place. NOTE: It is vital to check that the struts are properly located before every flight because if they have popped out of their sockets it can twist the wing and then you have problems.

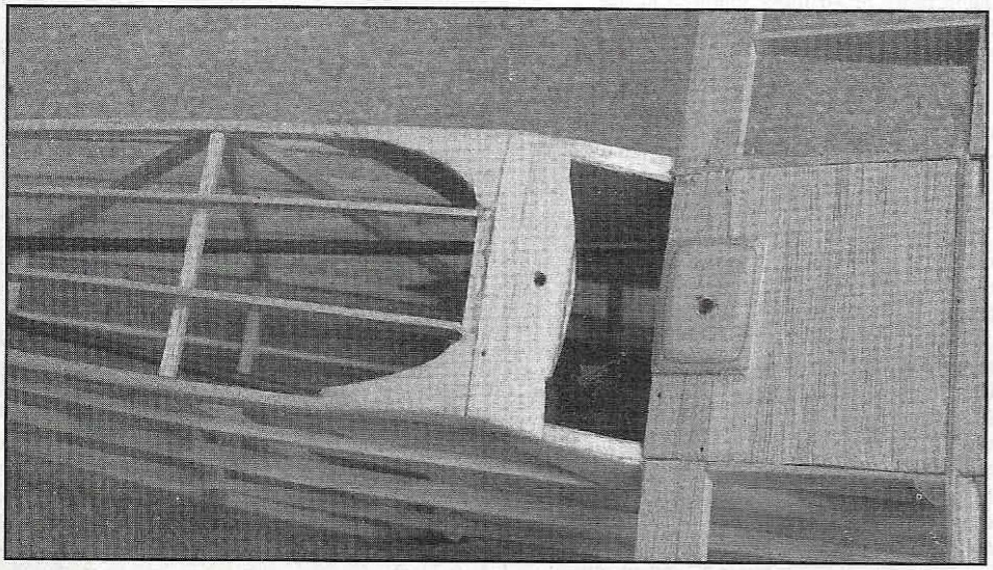
With a PAW 80 Classic the model will fly very realistically; it is quite fast, even on slow throttle. Controls are positive and loops are quite easy but the model is reluctant to roll. The model is neutrally stable, i.e. if you put it into a turn it will stay in the turn until you do something about it. Low fly pasts are nice but the model will get very small if flown too far away.

With the throws shown on the plan the model is not aerobatic apart from loops; increased throws would allow for flick rolls and possibly rudder/elevator rolls but the long period of windy weather and an approaching deadline have prevented any in-depth exploration of the full potential of the model.

Finally

This is a great little 'fun' model that could fool anyone into thinking it was scale; it flies well and is cheap to build.

I am sure that if anyone scaled it up to about 45in span and fitted ailerons they would have a sensational model. I will just add that if anyone thinks of kitting it at any size they could contact me first...



The fixing for the lower wing showing scrap fill-in and fairings.