

Building the Avro Arrow ...again

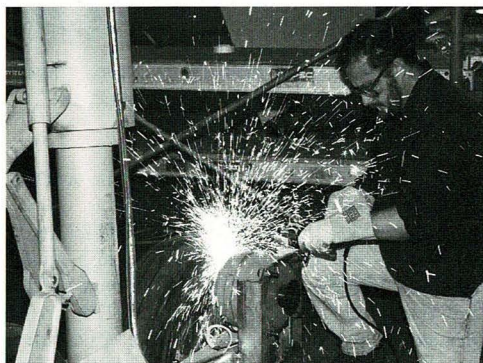


Construction of the Avro Arrow replica took place at the Winnipeg International Airport during the month of June 1996. Using the original wooden and steel framework, the film set construction crew led by Ernie Friesen completed the movie Avro Arrow by building outerwing panels and tail surfaces. As the sheet aluminium panels were attached, the model Arrow began to look the part. Due to the low ceiling height of the Esso hangar that "The Arrow" production utilised, the tail section was assembled last and could only be fitted in between ceiling girders.

On October 4, 1957, the same day as Sputnik I was revealed to the world, another important event was taking place in Canada at the Avro Canada plant in Malton, Ontario. After years of design and construction, the Avro CF-105 Arrow fighter made its roll-out in front of an estimated 12,000 visitors and guests who had joined the Avro employees who had built the aircraft. Almost 40 years later, an Avro Arrow is again on centre stage in front of the people who brought it to life this time, a life size replica of the Arrow is being used as its stand-in for a film shot in Winnipeg, Manitoba.

Scheduled for release in February, 1997, The Arrow will be a four-hour Canadian Broadcasting Corporation (CBC) TV mini-series, starring Dan Aykroyd as the combative CEO of Avro Canada. According to the CBC, "... the screenplay by award winner Keith Ross Leckie,

Movie models come alive



Construction supervisor, David Melrose, works on the AC motors that would make the model Arrow taxi.

depicts a brilliant design team's race against time to build the Avro Arrow, a radical, home grown warplane, to defend against the Soviet nuclear threat."

Along with Aykroyd, The Arrow will also feature Christopher Plummer, Michael Ironside, Michael Moriarty and Canadian television stars, Sarah Botsford of E.N.G., Ron White (Kissinger and Nixon) and Aidan Devine of Net Worth and The Boys of St. Vincent. At an estimated \$7 million budget, the mini-series will also showcase a dozen other principal actors and use an estimat-

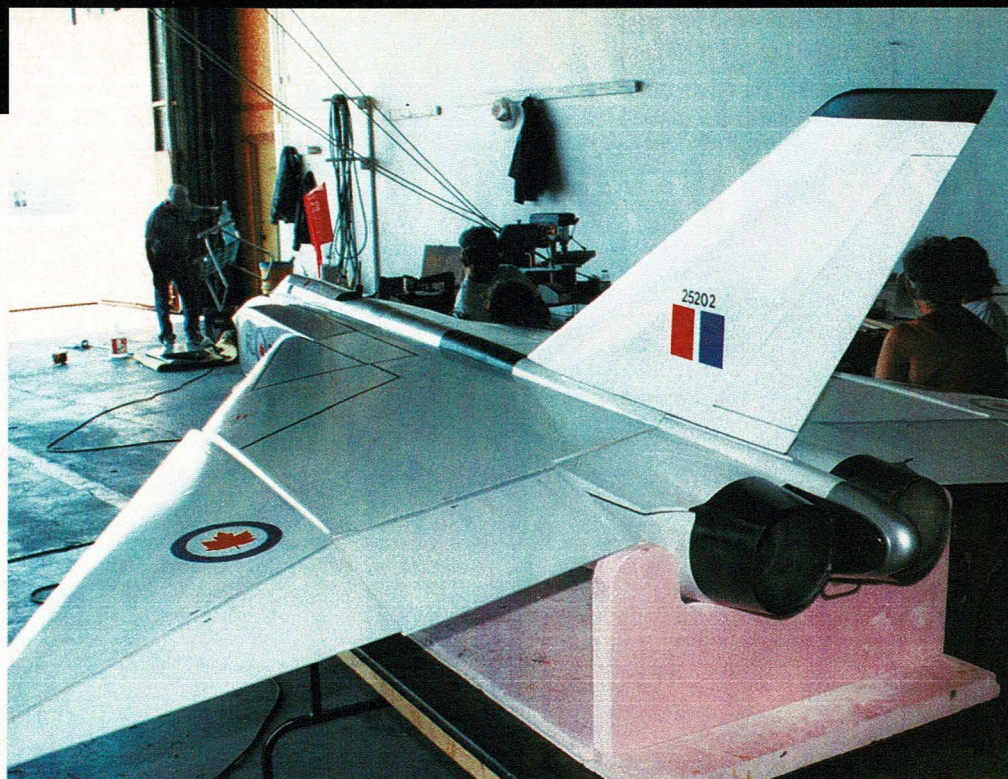


Dan Aykroyd portrayed Avro Canada CEO Crawford Gordon in the Arrow mini-series. In this photograph, Aykroyd is seen relaxing during a break during filming.

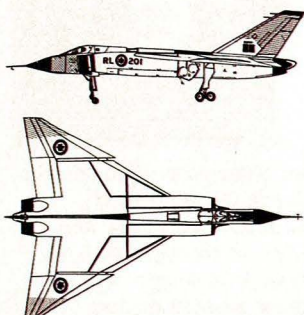
The finished Avro Arrow model in RL-201 scheme is moved to the Manitoba Government Air Services Hangar for the roll-out ceremony filming.



All the flying scenes in the mini series were made with RC models. The Avro Arrow model was an accurate replica in 1/8 scale.



Philip Soden is seen working on one of the CF-100 fighter models that were used as chase planes in the aerial scenes.



Model maker Allan Jackson was also present for the roll-out scene.

The Avro CF-105 Arrow was one of the world's most advanced fighter aircraft during the 1950s. The developed Arrow Mk. II powered by Canadian-designed Iroquois engines would have been capable of Mach 2.4 speeds- remarkable for 1959! The first series using Pratt and Whitney J-75's, complex "fly-by-wire" control, advanced weapons system and remote ground-controlled operation, made the Arrow arguably, the most advanced fighter interceptor of its day. A change in governments and a sudden re-evaluation of Canadian defence needs in the light of Sputnik led to the cancellation of the Avro Arrow program and the eventual dismissal of almost all of the Avro Canada team. For many people, the resulting flight of scientists and engineers meant the end of Canada's aviation industry.

The five completed Arrow prototypes and even partially completed aircraft on the assem-

ed 300 extras, making it the largest film production ever shot in Winnipeg.

Straight Arrow Productions which is a joint production unit of Winnipeg's John Aaron Productions along with Tapestry Films and The Film Works of Toronto, will produce The Arrow mini-series. It brings together some of Canada's finest feature film production and technical expertise. Toronto director Don McBrearty, award-winning director of the acclaimed Butterbox Babies (1992) is teamed with Toronto producers, Mary Young Leckie and Paul Stephens, and Winnipeg producer Aaron Kim Johnston whose credits include The Last Winter (1989) and For the Moment (1995). Along with this talented quartet are numerous other nationally and locally known film makers, swelling the ranks of the production crew to approximately 150 people.

The mini-series is being produced in association with the CBC and with the participation of Telefilm Canada, Manitoba Film and Sound and WIC Western International Communications Ltd.





The model Avro Arrows were constructed in a modular fashion. Here production supervisor Time Bider (left) and Jerry Fingler (right), model maker assemble one of the models for a test flight.

bly line were ordered destroyed by the Canadian government. Further demands were that all evidence of the CF-105's existence be eliminated, including tools, dyes, drawings and photographs. The Avro Company completed the destruction but not surprisingly, the Arrow still remains alive in people's memories- reaching a near mythic stature.

The Arrow features a full-scale working model of the real aircraft. The origins of this scale replica had an unusual beginning. It had come from the workshop of Allan Jackson, a 59 year-old sales estimator working in the steel industry in Wetaskawin, Alberta. Beginning a long-term project of building an accurate replica of the Avro Arrow became a passion for Jackson. He had completed a wooden mock-up of the nose section by 1993 and had envisioned its final completion for the year 2000 until the intervention of the film crew.

Jackson had been building an exacting model, creating a wood and metal framework that was accurate to within inches of the original aircraft's dimensions. When Jackson was approached with a proposal to use the model in the film, an arrangement was made to complete



Many scale models were constructed- this group was used to portray the real life" scale models that were launched from a Nike rocket.



At Gimli airport, a helicopter crew using the "Skycam" camera filmed aerial scenes that involved the large-scale RC jet-fan models.

the model for the mini-series and then transport it back to Wetaskawin.

Allan Jackson's dream was now about to come true. The completed model is destined for a museum display in the future, but for now, it plays an important leading role in the story of the Avro Arrow.

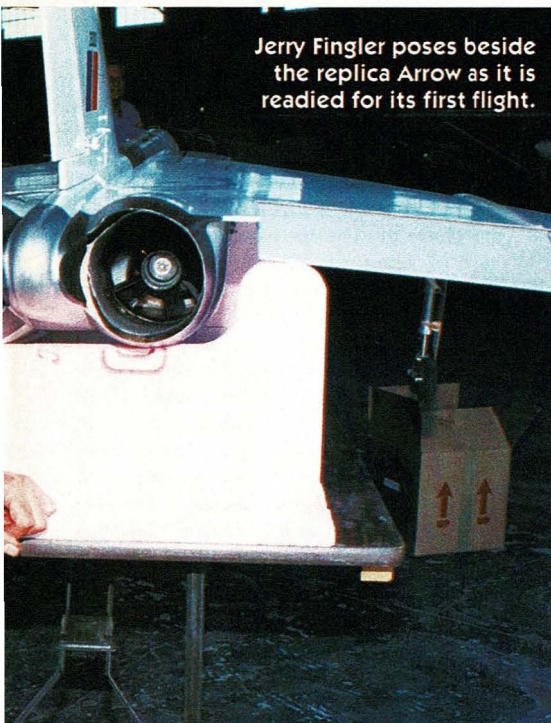
After the skeletal framework arrived in Winnipeg where principal shooting was to take place, it became the job for David Melrose, construction supervisor, to make it the movie Avro Arrow. The model had to be finished by the end of June, 1996, roughly 3 weeks time, in order to be featured in exterior shooting that would take place at the Winnipeg International Airport. The nearly 90 foot long fuselage of the aircraft was assembled with the slightly longer than 45 foot wingspan delta wings next to be attached.

Melrose, was faced with a daunting project. The aircraft model had to look like the Avro Arrow but not to the point of being an exact reproduction- "it's



The RC models that were constructed in Calgary arrived in July for filming at the Gimli airport.

The model makers are bringing out a CF-100 model out for a flight.



Jerry Fingler poses beside the replica Arrow as it is readied for its first flight.



Barry Berlin (centre) and Doug Hyslip (right) prepare a CF-100 model for flight.



The model CF-100 looked impressive in the sky.

movie magic.. all illusion, nothing is real" explained Melrose. With the need to get things done in a hurry, the 39 year-old supervisor worked with a mix of 10 carpenters and craftsmen- all able to produce the parts needed to a deadline.

With the arrival of star Dan Aykroyd on June 12, came a flurry of publicity for the movie and the Arrow model was finally shown to the press. Still resembling a skeleton, the model began to take on a more finished appearance as thin white aluminium sheets were fastened to the frame. With the aircraft sitting on its spindly landing gear, the next step was taken- to make the 7 1/2 ton Arrow model actually move. Melrose had devised a set of DC powered motors for each of the main wheels.

A day ahead of schedule, the Avro Arrow model was ready to move from one side of the hangar to the other. As production publicist, Ches Yetman and production manager, Anna Marie Boquist, watched the operation, they noted that the aircraft was covered in dust and as the motors were started, the model shook the dust off. As it moved slowly ahead, Anna Marie said "it looked like it was coming to life..."



Rough landings and problems with the ducted fan engines of the RC models slowed the F/X filming.

In the recreated Avro plant on the other side of the hangar, the model finally received its tail and final details. In the colours of the first prototype, RL-201, the Avro Arrow model was ready for filming. For a period of approximately two months, this replica recreated the original aircraft's short life span including the roll-out ceremony, taxiing and static shots on the ground. The full-scale Arrow model could do almost everything but fly. Other specialised models were needed to show the Arrow in the air.

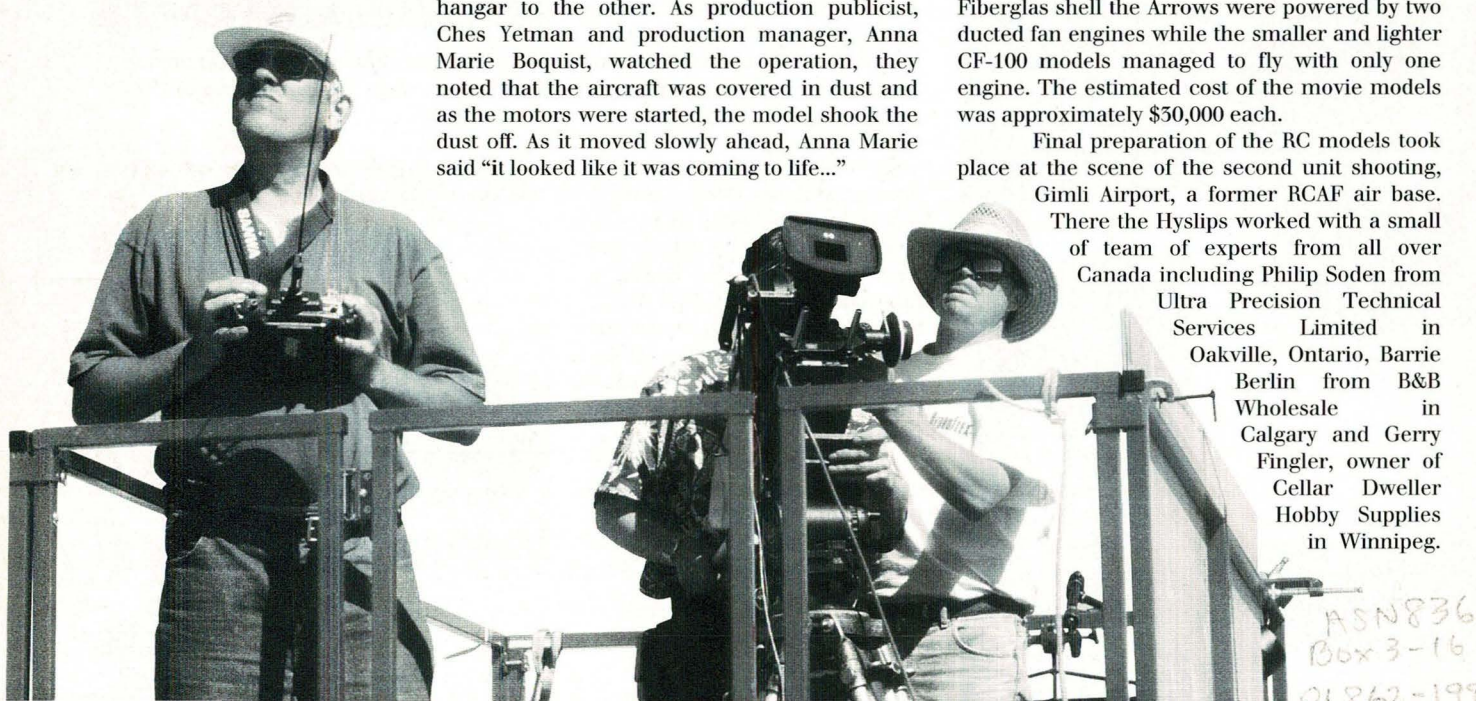
Farther away, in Calgary, Alberta, a series of remote control models was being prepared by Doug and Donette Hyslip, owners and operators of RC Hangar Hobby Shop. Straight Arrow Productions had contacted the Hyslips after their success in building a wireline model Beech Super King Air for the ABC Movie of the Week Angel Flight Down. 2 large scale model (1/8 scale) Avro Arrows with a length of 10 feet along with 2 CF-100 chase planes would be used for realistic flying scenes.

The movie models had to be completed in an amazingly short 90 days. Working from blueprints still stamped "Top Secret", Doug Hyslip managed to meet the deadline with a series of state of the art RC models. Using a Fibreglas shell the Arrows were powered by two ducted fan engines while the smaller and lighter CF-100 models managed to fly with only one engine. The estimated cost of the movie models was approximately \$50,000 each.

Final preparation of the RC models took place at the scene of the second unit shooting, Gimli Airport, a former RCAF air base.

There the Hyslips worked with a small of team of experts from all over Canada including Philip Soden from Ultra Precision Technical Services Limited in Oakville, Ontario, Barrie Berlin from B&B Wholesale in Calgary and Gerry Fingler, owner of Cellar Dweller Hobby Supplies in Winnipeg.

Philip Soden manoeuvred the models in the air while Berlin flew the landings and takeoffs. Here the raised camera platform was used by the F/X team lead by F/X director Tom Turnbull.



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Soden and Fingler made minor adjustments to the retracting gear but soon a major problem in the ducted fan "pipes" cropped up. Berlin found that not enough air was flowing over the exhaust pipes and they were burning out. A modification of this area eventually solved the problem.

Tom Turnbull, the F/X (Special Effects) Director of The Arrow co-ordinated the shooting schedule of the RC models at the Gimli Airport. Some of the aerial scenes utilised a helicopter and a "SpaceCam" camera unit while other filming was from a raised tower. For over a week, the CF-100 RC models were flown by a team of operators including Soden who controlled the aerial manoeuvres and Barrie Berlin of Calgary, Alberta who handled the take-offs and landings.

The RC models were precise replicas that not only looked the part but also "flew like the real thing". With over 100 mph speeds, the model Avro Arrows and CF-100 chase planes performed a sequence of high-speed flights that matched the test flights of the Arrow. The aerial shots were spectacular and according to Turnbull, were more effective than other simulations because the models flew so much like aircraft. In the sky, the Hyslips marvelled at the way the flying models looked like the original aircraft.

The majority of the F/X shooting took place in Gimli, Manitoba but when some hard landings took out the CF-100s (a transmitter failure led to the loss of one of the CF100s) and one of the Arrows, the remainder of the filming was completed in Calgary with a new Arrow model and the remaining back-up. Using a helicopter platform, Doug Hyslip controlled the aerial scenes while Berlin again managed the take-offs and landings.

As a result of their interest in the Avro Arrow, the Hyslips are also involved in another interesting flying model- the Arrow 2000 Project. A group of enthusiasts based in Alberta will be constructing an exacting 1/4 scale model that will fly with an Allison J20 gas turbine.

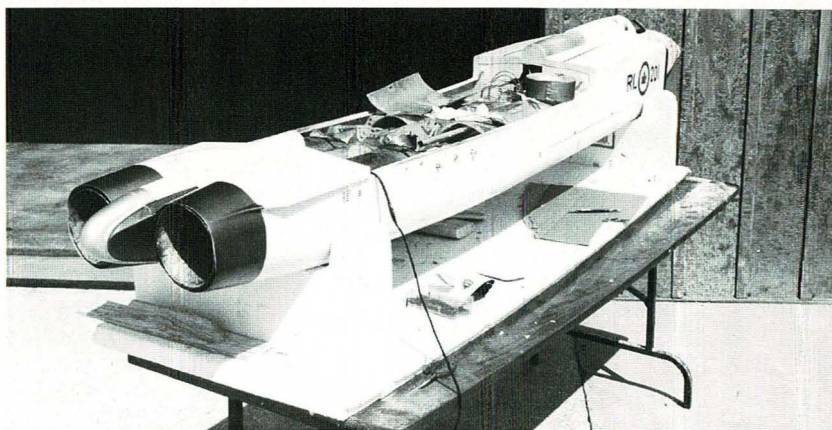
The shooting schedule of The Arrow continued into August, 1996 with more scenes being filmed in Winnipeg using the full-size model. At the end of the summer, this model was disassembled and loaded onto truck trailers to go back to Allan Jackson in Alberta where it will join the other movie models. Look for the Arrow as a CBC TV mini-series in Canada and for future international release as a video in 1997.

Bill Zuk is an amateur aviation historian and writer whose interest in the Avro Arrow is long-standing. he is currently a Teacher-Librarian in St. Vital School Division in Winnipeg.

BILL ZUK

Avro Arrow - A post script

Philip Soden of Ultra Precision Technical Services Ltd sent us this after seeing the last issue..

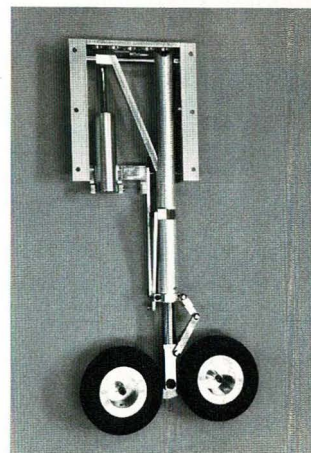
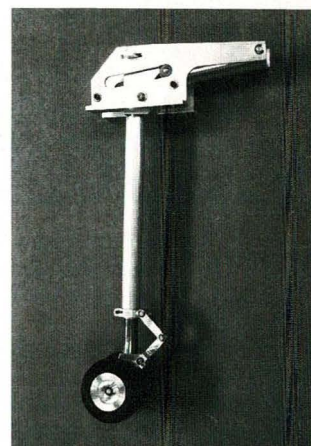


The scale RC models were exact replicas of the real thing.

I see from the 'Coming Next Issue' section in the December/January Jet International that you will be publishing an article on the Avro Arrow story. I am not aware of what is in the article, so I thought I would let you know of my involvement in the Avro film project.

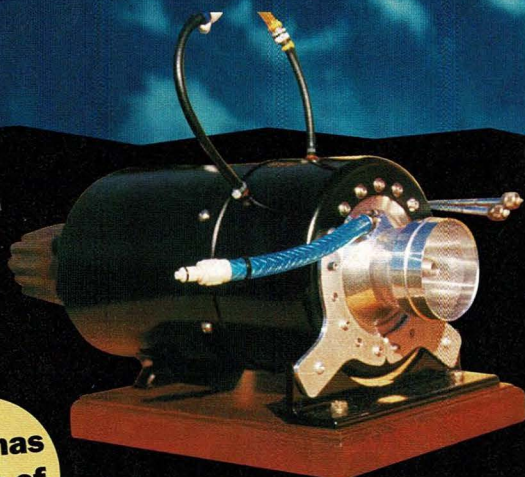
I (Ultra Precision) was contacted in May to see if we could make some special undercarriages for the models, the challenge being to produce a retract to fit into a wing one inch thick, but to have a thirteen inch leg with twin wheels. We of course we said, yes we can do it and tried to figure out how after. We made three sets of gears for them which we used in the models

What we did not expect was to be involved in the flying of the models. I had a call to go out to Gimley and jumped at the chance to fly. Evidently Doug Hyslip and company had been working so hard that they felt that they would be too tired to do the test flying. I test flew the first CF105 and the CF100's (see photos enclosed). The most enjoyable part was flying air to air from a helicopter with my feet out on the skids: much to my surprise it didn't scare me.

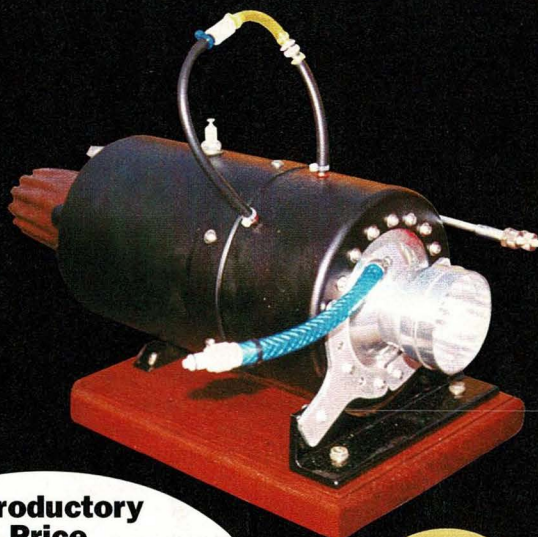


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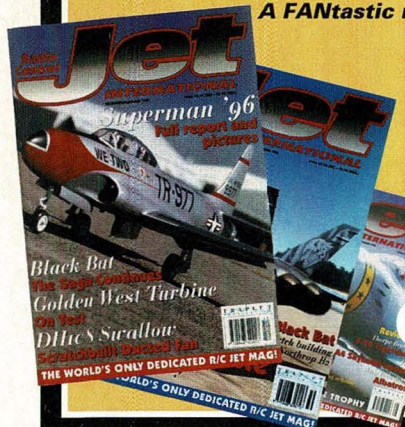
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