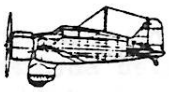
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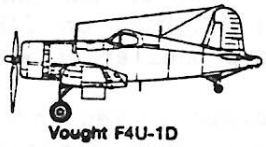
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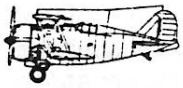
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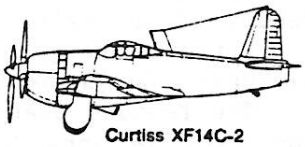
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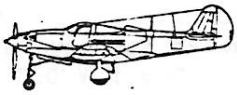
Grumman F3F-1

MAX-FAX


Bell F2L-1K

THE NEWSLETTER OF THE D.C. MAXECUTERS
SEPT/OCT 1985

MEMBERSHIP

Dues for membershp in the D.C. Maxecuters is $10.00 per year for residents of the U.S.A., Canada, and Mexico, and $11.00 for all other countries. Your mailing label indicates the year and month of the last issue of MAX-FAX for your current membership. A red mark in the box below is a reminder that your current membership is nearing its end. Send a check, payable to D.C. Maxecuters, to the Treasurer.

DUES REMINDER ☐

MEETINGS

The D.C. Maxecuters hold meetings on the first Wednesday of every month at the College Park Airport, the oldest continuously operating airport in the world.

PRESIDENT
TOM SCHMITT
11014 Marcliff Road
Rockville, MD 20852

SECRETARY
BILL POOLE
9301 Lynmont Dr.
Adelphia MD. 20783

TREASURER AND
NEWSLETTER EDITOR
ALLAN SCHANZLE
20008 Spur Hill Dr.
Gaithersburg, MD 20879

UPCOMING EVENTS

SEPT 7: Summer Fun Fly at COMSAT. See flyer in this issue.

SEPT 29: FAC Contest at Naval Air Development Center, Warminster, PA. Contact Walt Eggert, (215) 947-4387

OCT 5: FAC Contest at Columbia, SC. Contact Dave Smith, 3013 Sigmund Circle, Columbia, SC 29205.

NOV 16: Patuxent NAS Indoor Contest. Contact Claude Powell, Box 454, Ridge, MD 20680, (301) 872-4105.

MARCH 8: Patuxent NAS Indoor Contest

CLUB NEWS
Allan Schanzle

In the last issue of MAX-FAX, we featured a plan by Hoby Clay of the IAR 14, an obscure Romanian aircraft from the mid-1930's. Your editor was unable to find a 3-view, but some of you folks came to the rescue and supplied an abundance of IAR information. Dave Stott

contributed two 3-views and a writeup. Nick Ropar, our ex-Washingtonian and now resident of Albuquerque, NM, and Peter Mann, one of our Canadian contingents, also supplied substantial information relating to IAR aircraft. In addition, Tom Schmitt found documentation on another of Hoby's designs, the IAR 81, which appeared in the Jan/Feb 85 issue of MAX-FAX as result of a 3-view supplied by Dave Stott. The influx of all this material on IAR ha motivated a change in our usual format, so this issue is dedicated to propeller driven IAR aircraft. We thank these three individuals for their contribution.

The feature plan for this issue is the prototype of the Sopwith Tabloid by Ned Kragness, who said he drew the plans about 1946. In addition to the Tabloid, Mark Fineman has submitted another profile model, this one an obscure Russian aircraft. The final contribution for this issue is a crossword puzzle by Dave Stott, and this should keep you awake for several evenings.

The NOV/DEC issue of MAX-FAX will probably be late due to a business commitment for your editor. I'll be teaching in Munich, W. Germany (during Octoberfest!!) for a couple weeks and then stopping off to spend a fortnight in England to visit with our English subscribers, visit museums, and have a good time. Yea, I know, it's a dirty job, but someone has to do it!

The FAC CO-2 event will again be run under a trial set of rules. This time, we will use the FAC Handicap Representative Scale rules as they exist (including bonus points), but the bonus points will be added to the flight time, not the static score. A maximum of 82 1/2 flight points will still be enforced. This concept, an idea of Ralph Kuenz, seems appropriate for FAC power scale, since a large enough tank (or battery pack) eliminates the endurance aspect for these models. In essence, if everyone is willing to put enough energy into the engine to obtain a 2 minute flight, then the event becomes a static scale judging contest, without bonus points. The MAXECUTERS will continue to experiment with new ideas for this event until something is found that seems equitable, but still within the original philosophy of FAC. We welcome your suggestions.

PHOTO PAGES

Tom Schmitt, Bill Ceresa

1. A very pretty Jimmy Allan Bluebird by Bill Bell, seen at our June 16 Old-Timer Mass Launch.
2. Twin Scientific Whippets by Harold Howard and Don Srull.
3. Allan Schanzle and his latest CO_2, a neat rendition of the small Guillow FW 190.
4. Don's OC-2 heading for the wild blue yonder - a great flyer.
5. A Pottier 100TS by Jacques Delcroix, known as the French "LACEY". Seventy to eighty seconds not unusual. Photo courtesy of Alain Parmentier.
6. Another French aircraft, "LE TAUPIN", built by your photo editor from Emmanuel Fillon Plans. Tricky to trim.
7. Don Srull with his gallon-sized Heinkel.
8. Don's latest held by Hurst Bowers, his Missile Thrush for this year's NATS.
9. Ray Rakow shows his daughter how to launch his P-51.
10. Bryan Corwell with his Dad's "TWIN-FIN" P-30 at our contest on 14 July.
11. The winner of our mass launch P-30 contest, Marv Yoder and his "PINK LADY" - outflew the high performance machines but never was higher than about 20 feet. (Editor's Note: That sure looks like a Guillow "Arrow"!!)
12. Dan Driscoll demonstrates scientific trimming with his "UGLI" P-30.
13. Craig Lesekiewicz showed up with his Golden Age Heinkel 112. Allan lends a helping hand.
14. Winner of our hand launch glider contest, John Sites, with his "SHADDO".
15. Bill Weaver demonstrates that his 50-year old Gypsy Moth is a great flyer.
16. Rich Hensel likes them different - look at his great flying CO_2 original.
17. Frank Renaut always turns up with something different, even stooges. Here he is with an all balsa, pre-printed in colors, Spitfire. A good flyer from an old British kit.
18. Our final phot is from Bill Hannan - a bit of whimsy, his "CHEEZIE RACER", driven by "Stirling Mouse" and powered by a throbbing CO_2 motor.

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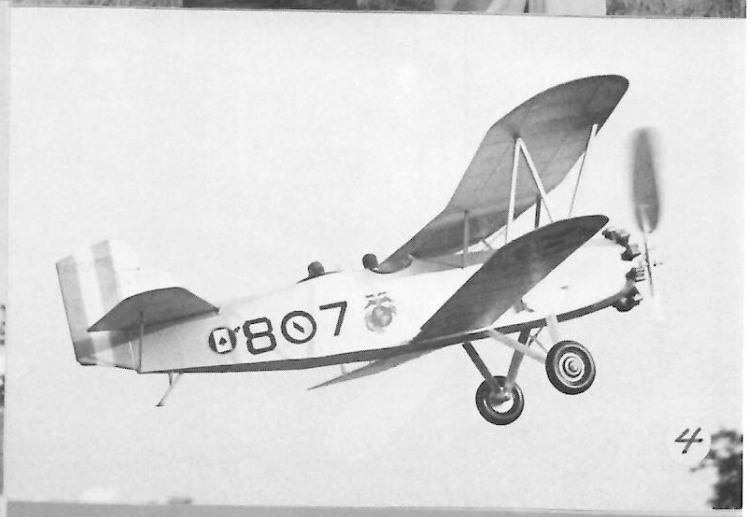

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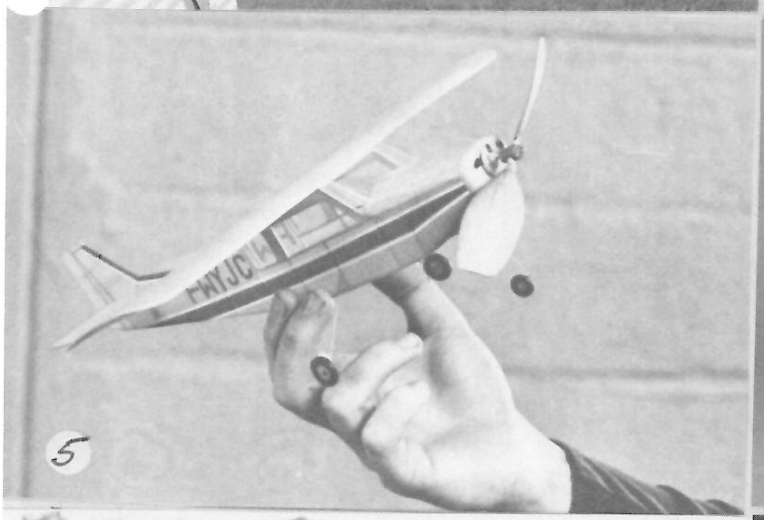

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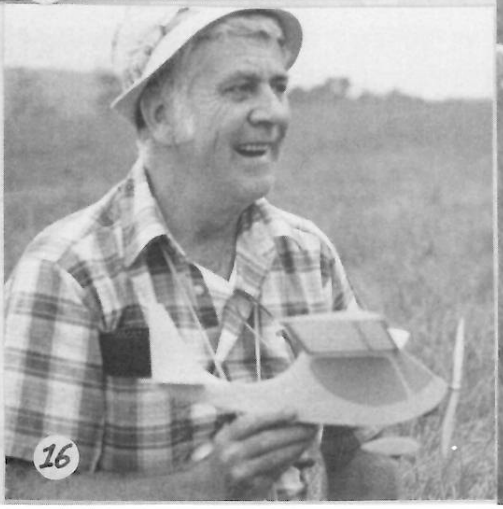
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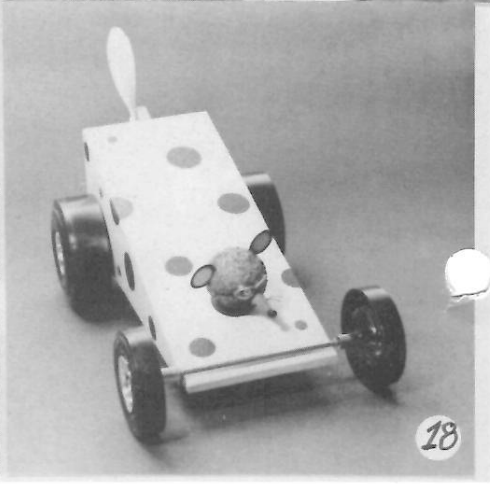
18

ON THE SHORES OF THE BLACK SEA

The IAR 80 and 81

by Alan Fleuret
translated by Drew Nix

Editor's note: This article first appeared in La Vitrine du Maquettiste, the publication of IPMS/France, in No. 14, 1982. Our thanks to IPMS/France for their permission to reprint this article, and special thanks to Olivier Bonnefoy for sending us the original photos, and to Drew Nix who kindly provided the English translation for us.

When Caption Dumitri "Pufi" Popescu took off in the new prototype IAR 80 from the factories of the Romanian Aeronautical Industries (or IAR) in April 1939, he was unaware that the world only had a few months of peace left!

In order not to fall behind the industrialized countries at the start of the 1930s, Romania's royal government was forced to likewise throw itself into the modernization of its air force. It should be noted, though, that this country was particularly behind in development; it was only able to display an inventory of barely twelve fighter groups on the eve of Operation Barbarossa: two groups of Heinkel 112s, one of Hurricanes, and the other nine flying in PZLs (built under license) which were already obsolete at the time.

In 1938 the IAR was nationalized, and construction commenced on a totally new factory. The factory, finished in 1939, covered 130,000 square meters and employed 7,000 people, which made it among the largest in the world.

A partnership with the Polish PZL firm and licensing agreements with Gnome and Rhone engine plants created, first of all the P.11f, of which 70 examples were built, and then an improved version (faster, better

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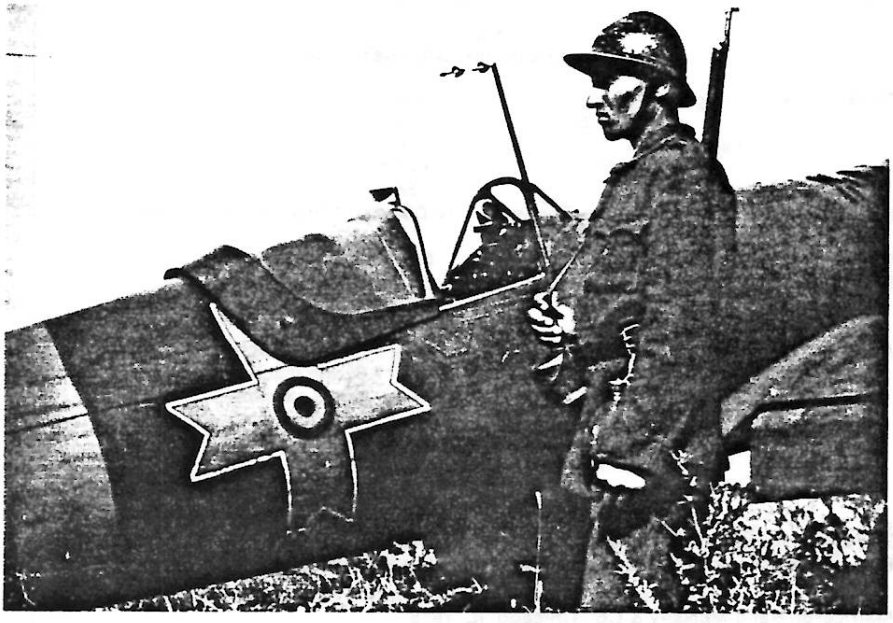


armed), the P.24E. Although beginning delivery of the new fighter to the Romanian Air Force, in October of 1937 IAR was beginning research on an even better fighter. In December of 1938, the IAR 80 was born, with its first flight coming in April of 1939.

At the end of March 1942, the first IAR 80s began to leave the factory at Brasov (the first reaching the front in June of that year). Through January 1943, the Romanian factory continued improving and enlarging the fighting power of its fighter. Four 7.92mm machine guns were installed in the Type 80, increased to six machine guns in the Type 80A, with two of these being replaced by two 13.2mm machine guns in the IAR 80B. Later, bomb racks were fitted under the fuselage and the wings; these versions became the IAR 81, 81A, and 81B. In a parallel development, drop tanks were added to the IAR 80B, 81 and 81B.

The last version developed before the factory switched to building the Messerschmitt Bf-109G-6 was the model 81C, equipped with four 7.92mm machine guns and two MG.151/20 20mm cannon.

Initially the IAR 80s were used in the protection of the petroleum fields with Eskadriles 59, 61, 62, 63, 64, 65, and 66. The IAR 80s and 81s of Eskadriles 11, 12, 13, and 14 of the First Air Corps joined the First Fliegerkorps of the Luftwaffe in the Ukraine at the end of 1942. While many of the air forces allied with Germany were used mostly for demonstrations for the "locals", the Romanians were chiefly used to carry out ground attack missions, nuisance bombings and tactical reconnaissance. At the time of the famous "Tidal Wave" mission of 1 August 1943 on the refineries at Ploesti, some IAR pilots claimed victories over the B-24 Liberators of the Fifteenth Air Force.

Following the great Soviet offensive of mid-August 1944, Romania changed sides and turned against Germany. On 21 September 1944, the FARR (Romanian Air Force) was engaged in combat using nine fighter squadrons and four fighter-bomber squadrons with IAR 80s and/or 81s.

At the end of the war, only Eskadriles 63, 64, 65, and 66 were left as first-line units. However, the IARs remained in units (along with "Romanian" Bf-109Gs) until 1949/50 when they were replaced by Lagg 7s and Yak 9s, which became the core of what was to become the Air Force of the People's Republic of Romania (or FR-RPR).

Some examples were transformed to training aircraft by the addition of an extra cockpit; this last version, designated IAR 80DC, served until the end of 1952.

If one refers to some of the existing photos, two types of camouflage seem to have been applied to the IAR 80s and 81s.

1942 to 1945: Camouflage in two relatively dark tones was applied on the upper surfaces, probably a green and a maroon; the undersides may have been light blue or light gray. It is practically impossible to be more precise because of the absence of official records. As the study of the photos of that era can very well lead to several different interpretations, the reader must pretty well judge for himself.

After 1945: During the immediate post-war period, the original camouflage patterns seem to have been kept. Afterwards, Romanian photos and documents indicate a single color on the upper surfaces (a greenish-brown) and gray or light blue undersides.

Markings consisted of six yellow Romanian crosses in the usual positions, with a blue/yellow/red roundel in the center. The engine cowling and the band circling the back of the fuselage were painted yellow (almost orange), probably to prevent German fighters and antiaircraft gunners from firing on an aircraft that was almost unknown to them (the Russians at that time flew a multitude of different types of aircraft).

The only indication of personal markings on the IARs were serial numbers painted in white on the tail. This number was surmounted by the type number in black and the emblem of the IAR firm in white.

After the alliance with the Soviet "liberators", the Romanian crosses were replaced by blue/yellow/red cockades (red on the outside) which was sometimes the pre-war insignia. The different markings were sometimes replaced by the same markings painted in white.

Unfortunately, very little documentation concerning this attractive little craft has reached Western Europe, and not one injection-molded kit of the IAR 80 exists in the marketplace. The Formaplane Company has had a vacuum-formed kit of the IAR 80 in 1/72 scale out for several years.

If by chance some members of IPMS/USA or foreign IPMS members have in their possession specifications or new documentation on the IAR 80 and 81, particularly concerning the photo captions in this article, please contact the author, Alain Fleuret, 25 rue des Reclous, Iteuil 86240 Liguge, France.

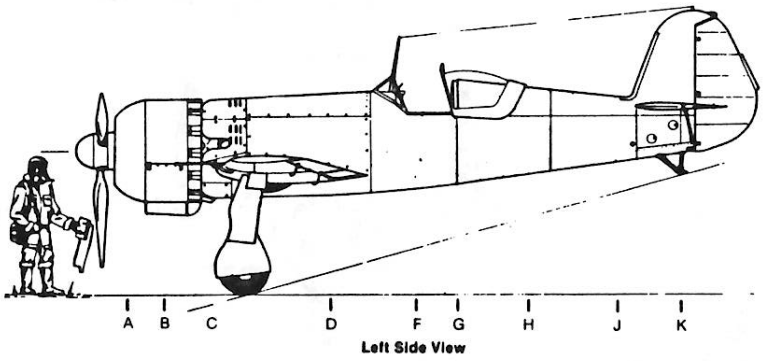
Table 1
Specifications for the IAR 80-81 Series

Dimensions:	Wingspan, 80A	10.5m*
	80B/81	11.0m*
	Length, 80A	8.9m*
	80B/81	8.97m*
	Height,	3.6m*
Powerplant:	One IAR Gnome-Rhone 14 K-IV C32 14-cylinder radial engine developing 1,000 hp.*	
Weight:	Max. Load	5,480 lbs.†
Performance:	Max Speed	317 mph @ 13,000 ft.†
	Range	590 mi.†
	Ceiling	34,500 ft.†
Armament:	IAR 80	Four - 7.62mm machine guns
	IAR 80A	Six - 7.62mm machine guns
	IAR 80B	Two - 20mm cannon, Four - 7.62mm machine guns
	IAR 81, 81A, 81B	Addition of bomb racks for 225 kg bombs
	IAR 81C	Two - MG.151/20 20mm cannon, Four - 7.62mm machine guns

* The above figures are from technical manuals on the IAR 80, dated 1943. It is assumed the larger dimensions are for the 80B/81 series, but this isn't confirmed.

† The above figures are taken from *World War II Airplanes, Vol. 1*, by E. Angelucci and P. Matricardi; Rand McNally & Co., Chicago, IL, 1978.

Figure 5: Logo of IAR - Industria Aeronautica Romana.



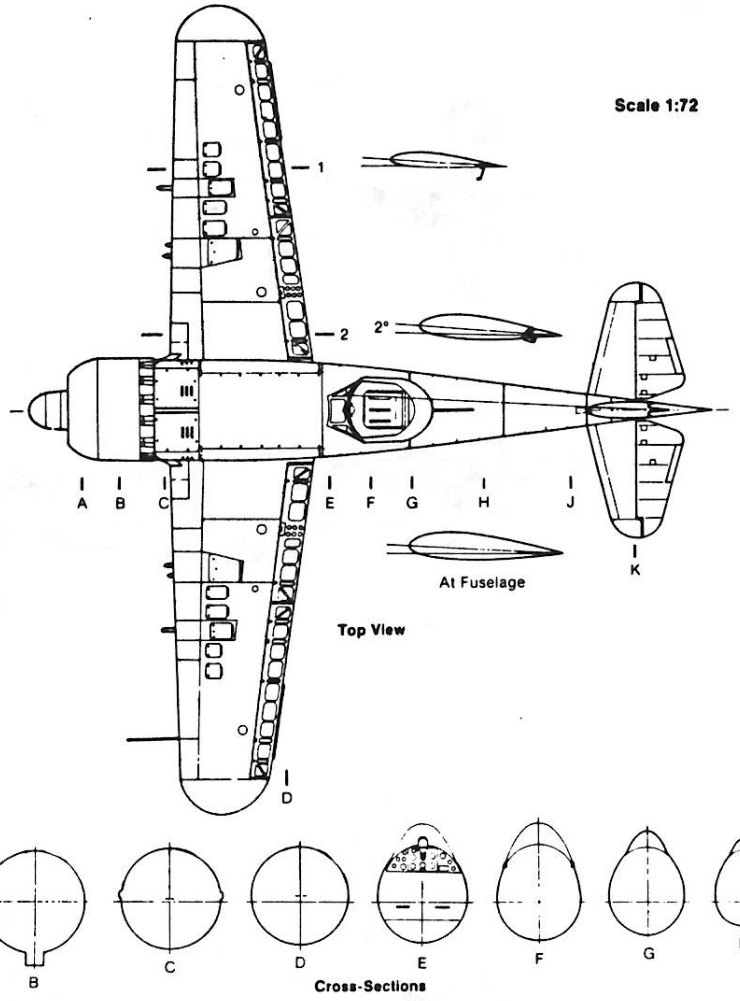
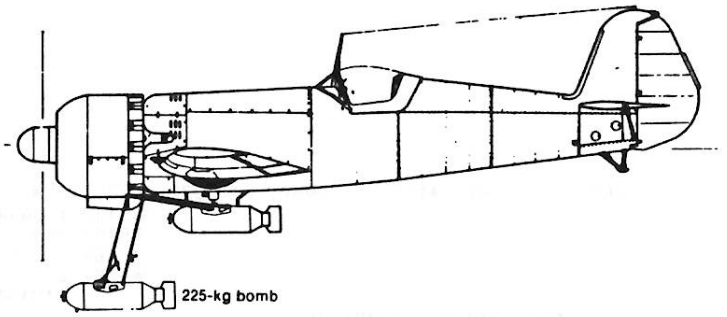


Figure 1: Plan, Profile, and Sections of the IAR 80 Fighter.



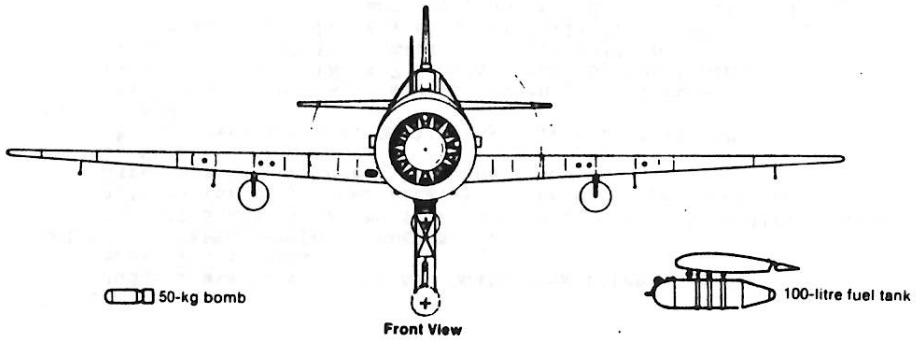
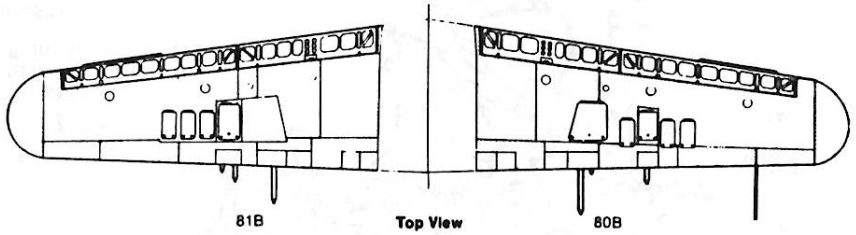


Figure 7: Two views of the IAR 81 fighter/bomber.



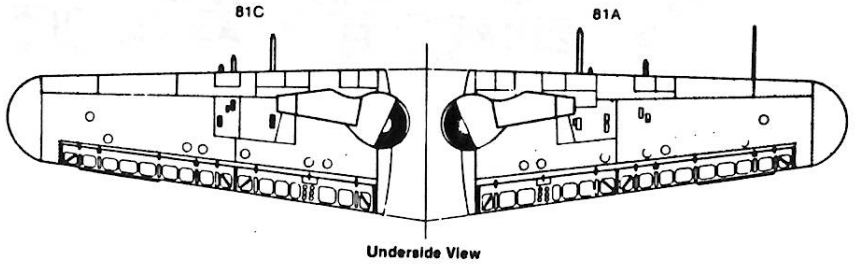


Figure 8: Four views showing the different armament of the IAR 80B, 81A, 81B, and 81C.

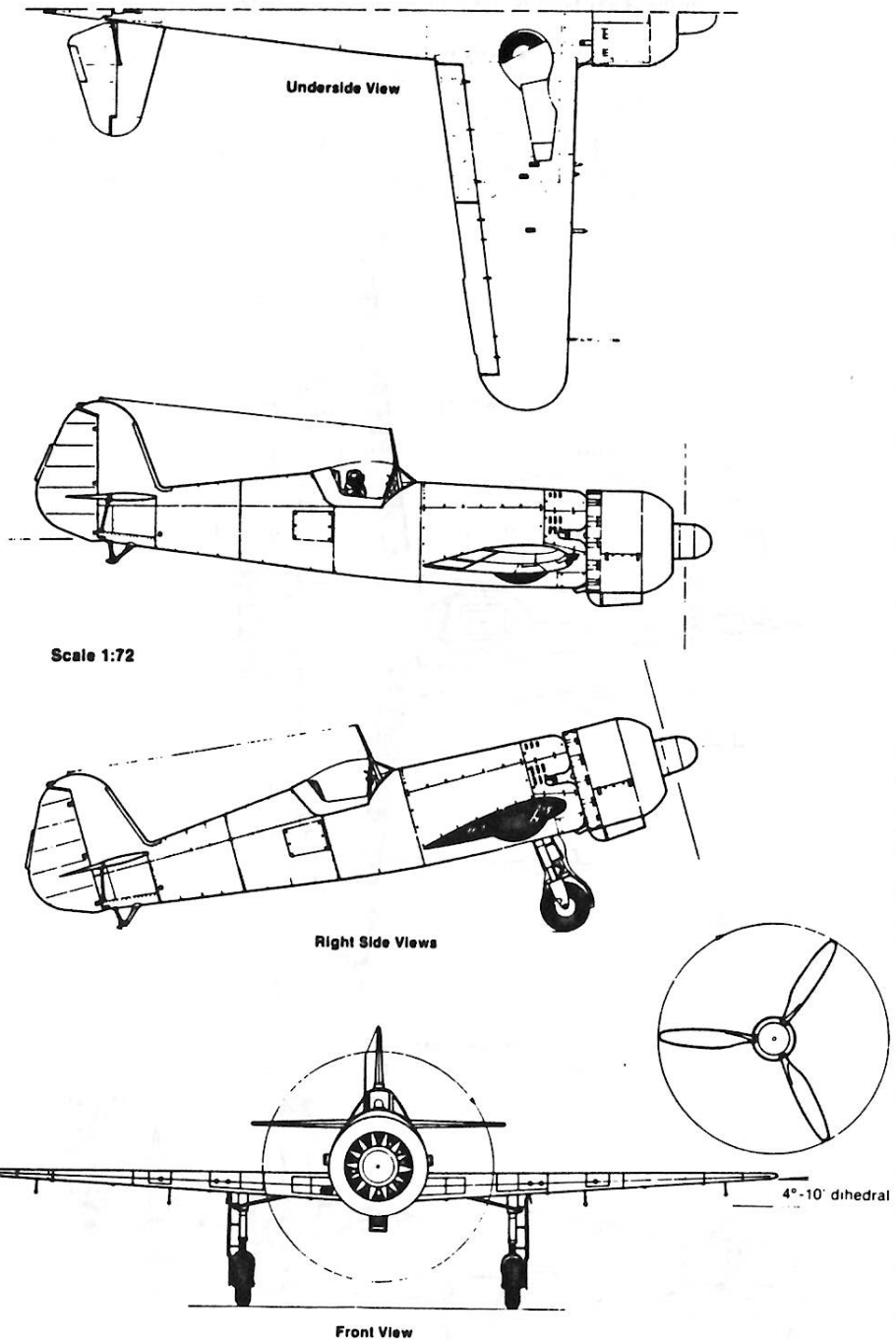


Figure 6: Four views of the IAR 80 series.

D.C. MAXECUTER'S 85 SUMMER FUN FLY

Sept 7

9⁰⁰ to 6⁰⁰

AMA SANCTION
1143

CONTEST DIRECTOR

ALLAN SCHANZLE
20008 SPUR HILL DR.
GAITHERSBURG MD. 20879

301 840-5884

EVENTS:

FAC SCALE:
Judging starts at 11:30 AM. Qualifying flight must be made by this time.

GOLDEN AGE REPRODUCTIONS COMMEMORATIVE:
For FAC Scale planes built from a Golden Age kit. Modifications allowed for prop, nose plug, and rear motor peg location. Structure may be added, but none removed.

FAC CO_2 SCALE:
No tank restrictions. Qualifying flight by 11:30 AM.

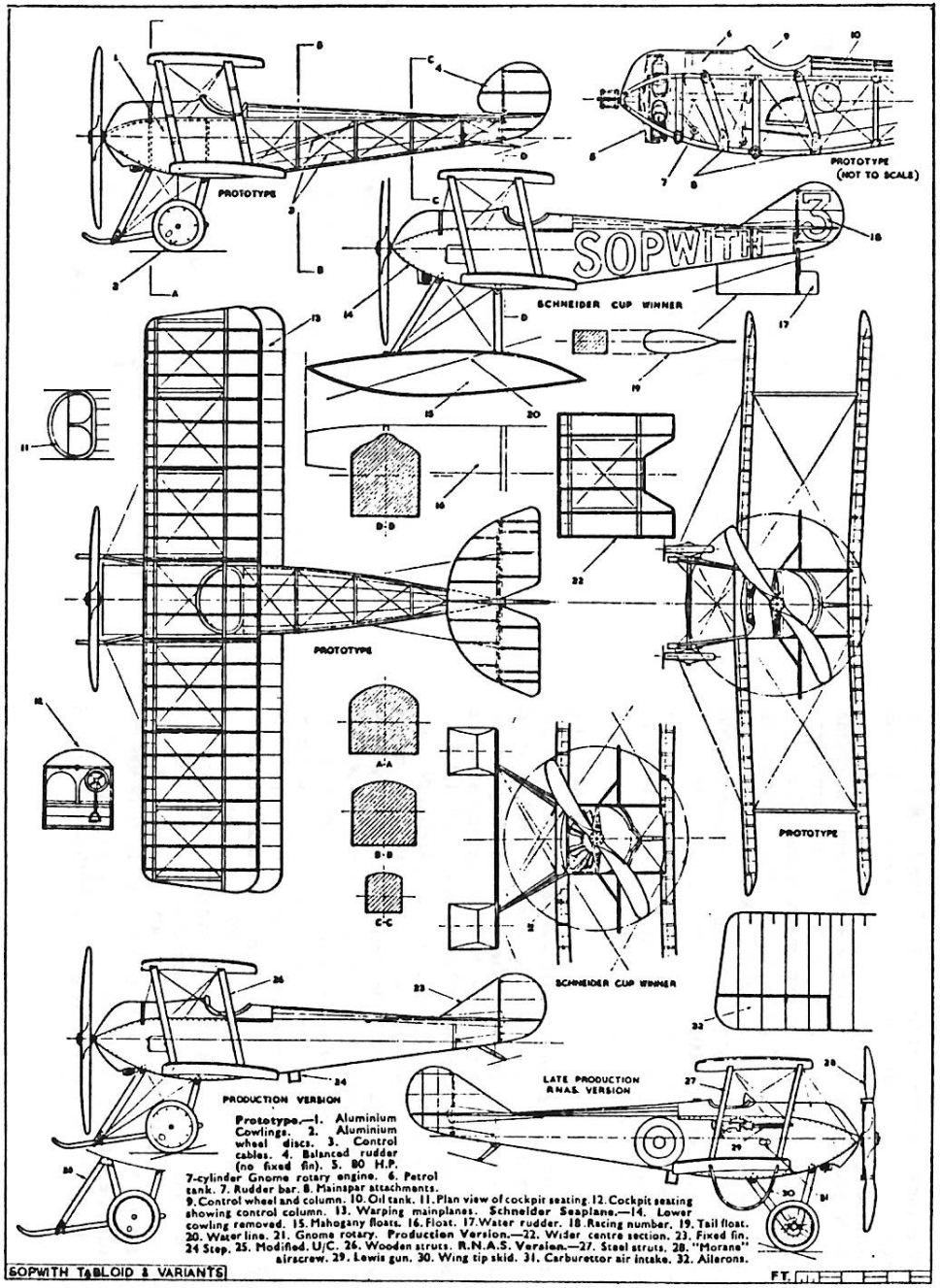
MASS LAUNCH:

The Races	1:00 PM.	A single launch for all racers.
WW I	2:00 PM.	A 7 second bonus for multi-wings.
WW II	3:00 PM.	Combat WW II aircraft only.
Golden Age	4:00 PM.	Any aircraft built from 1920 to 1935 and any plane not designed for military use from 1935 to 1940. Planes eligible for the races excluded.

EMBRYO:
FAC rules

H.L. GLIDER:
AMA rules

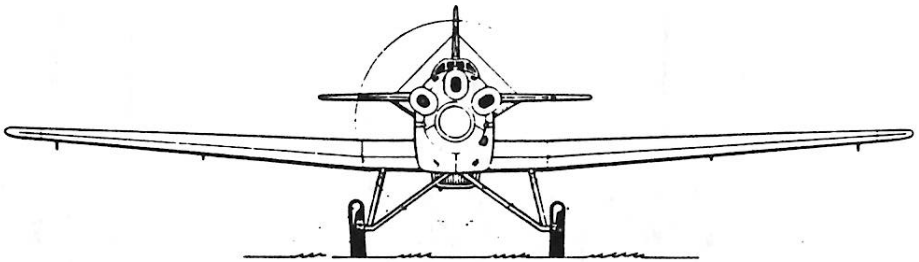
CATAPULT GLIDER:
Must use MAXECUTER launching pole. AMA H.L. rules.

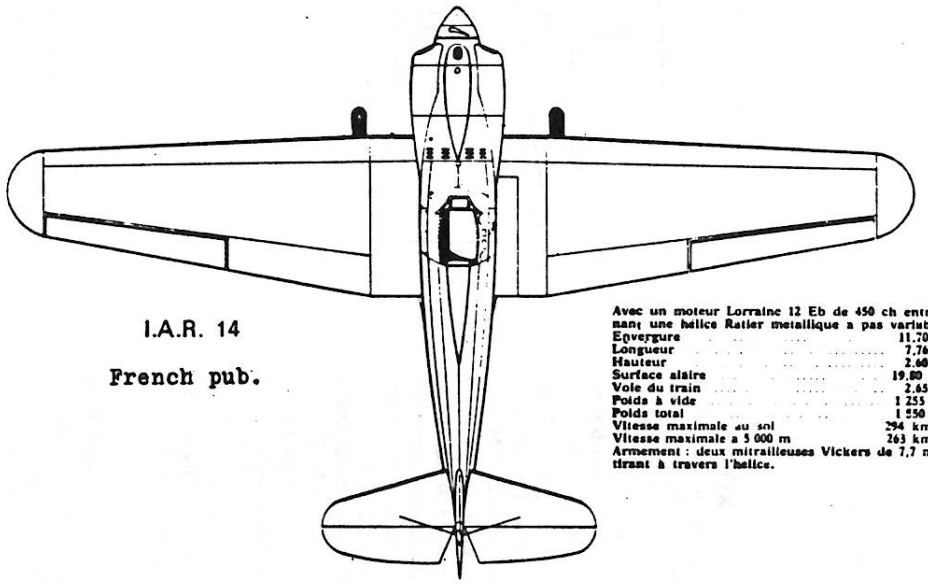


Prototype.—1. Aluminium Cowlings. 2. Aluminium wheel discs. 3. Control cables. 4. Balanced rudder (no fixed fin). 5. 80 H.P. 7-cylinder Gnome rotary engine. 6. Petrol tank. 7. Rudder bar. 8. Mainspar attachments. 9. Control wheel and column. 10. Oil tank. 11. Plan view of cockpit seating. 12. Cockpit seating showing control column. 13. Warping mainplanes. Schneider Seaplane.—14. Lower cowling removed. 15. Mahogany floats. 16. Float. 17. Water rudder. 18. Racing number. 19. Tail float. 20. Water line. 21. Gnome rotary. Production Version.—22. Wider centre section. 23. Fixed fin. 24 Step. 25. Modified. U/C. 26. Wooden struts. R.N.A.S. Version.—27. Steel struts. 28. "Morane" airscrew. 29. Lewis gun. 30. Wing tip skid. 31. Carburettor air intake. 32. Ailerons.

SOPWITH TABLOID & VARIANTS

FT.





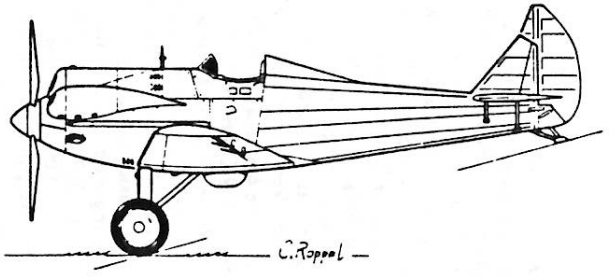
I.A.R. 14

French pub.

Avec un moteur Lorraine 12 Eb de 450 ch entraînant une hélice Ratier metallique a pas variable.

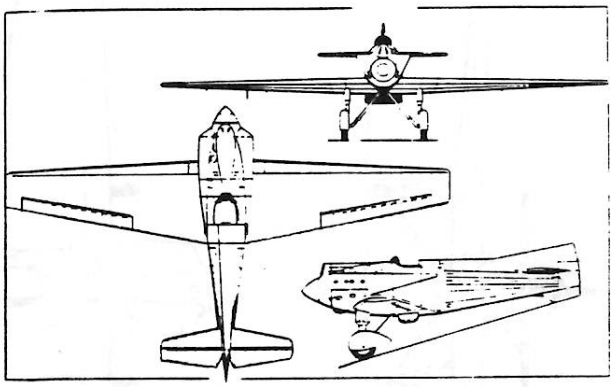
Envergure	11.70 m
Longueur	7.76 m
Hauteur	2.60 m
Surface alaire	19,80 m2
Voie du train	2.65 m
Poids à vide	1 255 kg
Poids total	1 550 kg
Vitesse maximale au sol	294 km/h
Vitesse maximale a 5 000 m	265 km/h

Armement : deux mitrailleuses Vickers de 7,7 mm tirant à travers l'helice.



I.A.R. CV-11 — ROMANIA

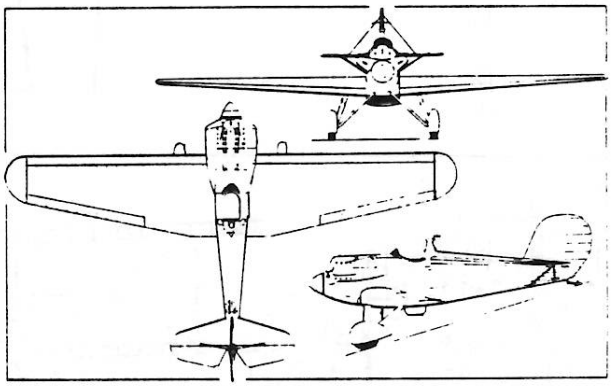
The first original aircraft design produced by the Industria Aeronautica Română (I.A.R.), established in 1925, was the CV-11 single-seat fighter completed and flown in 1930. Designed by Elie Carafoli and a French engineer M Virmoux, the CV-11 was of mixed construction and powered by a 600 hp 12-cylinder W-type Lorraine 12Fa Courlis engine, armament comprising two 7,7-mm Vickers machine guns. After completion of the initial flight test programme, the Lorraine engine was replaced by a 500 hp Hispano-Suiza 12Mc 12-cylinder Vee-type engine with which it was tested at Istres during the first quarter of 1931. It then returned to Romania, where, on 9 December 1931, the CV-11 made an attempt on the 500-km (310·7-mile) closed-circuit speed record, However, an engine failure necessitated a forced landing in which the pilot, Capt Romeo Popescu, was killed. Further development of the basic design by Carafoli led to the I.A.R.12. The following data relate to the HS-engined CV-11. Max speed, 204 mph (329 km/h) at 985 ft (300 m), 188 mph (302 km/h) at 16,405 ft (5 000 m). Time to 16,405 ft (5 000 m), 7·95 min. Empty weight, 2,425 lb (1 100 kg). Loaded weight, 3,329 lb (1 510 kg). Span, 37 ft 8¾ in (11,50 m). Length, 22 ft 10⅞ in (6,98 m). Height, 8 ft 0¼ in (2,46 m). Wing area, 195·9 sq ft (18,20 m²).



CV-11

I.A.R.12 — ROMANIA

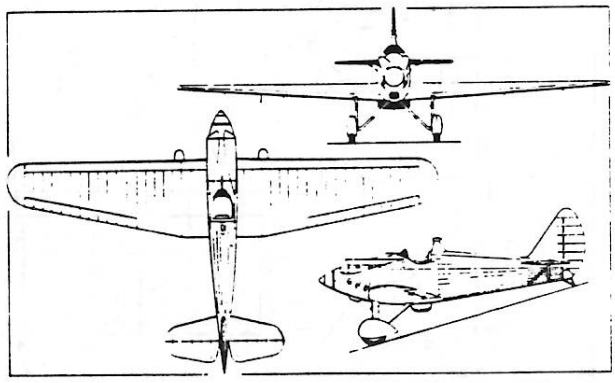
Owing much to experience gained with the CV-11 and of similar configuration and mixed construction, the I.A.R.12 designed by Elie Carafoli was aerodynamically more advanced than its predecessor, but was heavier and had a lower-powered engine. Flown for the first time in 1932, the I.A.R.12 had a mixed structure of duralumin and Romanian pine, the fuselage being covered by light alloy panels forward and fabric aft of the cockpit, the wings being fabric skinned. The engine was a 450 hp Lorraine 12Eb of W type and armament consisted of two 7,7-mm Vickers machine guns. Only one prototype of the I.A.R.12 was built, development continuing with an improved model, the I.A.R.13. Max speed, 183 mph (294 km/h) at sea level, 163 mph (263 km/h) at 16,405 ft (5 000 m). Time to 16,405 ft (5 000 m), 10·48 min. Empty weight, 2,535 lb (1 150 kg). Loaded weight, 3,395 lb (1 540 kg). Span, 38 ft 4⅔ in (11,70 m). Length, 23 ft 7⅔ in (7,20 m). Height, 11 ft 5¾ in (3,50 m). Wing area, 213·13 sq ft (19,80 m²).



I.A.R.12

I.A.R.13 — ROMANIA

Retaining the wings and horizontal tail surfaces of the I.A.R.12, the I.A.R.13, which made its début in 1933, achieved an aerodynamically cleaner fuselage by replacing the W-configuration Lorraine engine of the earlier prototype with a Vee-twelve type Hispano-Suiza 12Mc of 500 hp. The I.A.R.13 was of similar construction to preceding Carafoli-designed fighters, with a wooden fuselage and wing of mixed construction, and proved under test to have a very good performance. However, the Romanian *Aeronautica Militara* preferred the gulled shoulder-wing arrangement of the Polish P.11 fighter to the low-wing configuration of the I.A.R. fighters, and, in 1934, selected the former for the re-equipment of its fighter element, with licence manufacture to be undertaken by I.A.R. Nevertheless, the Romanian company persisted with its own line of fighter development, evolving the I.A.R.13 into the I.A.R.14. Max speed, 205 mph (330 km/h) at sea level, 190 mph (306 km/h) at 16,405 ft (5 000 m). Time to 16,405 ft (5 000 m), 8·0 min. Ceiling, 30,510 ft (9 300 m). Loaded weight, 3,373 lb (1 530 kg). Span, 38 ft 4⅔ in (11,70 m). Length, 24 ft 0⅝ in (7,34 m). Height, 11 ft 5¾ in (3,50 m). Wing area, 213·13 sq ft (19,80 m²).



I.A.R.13

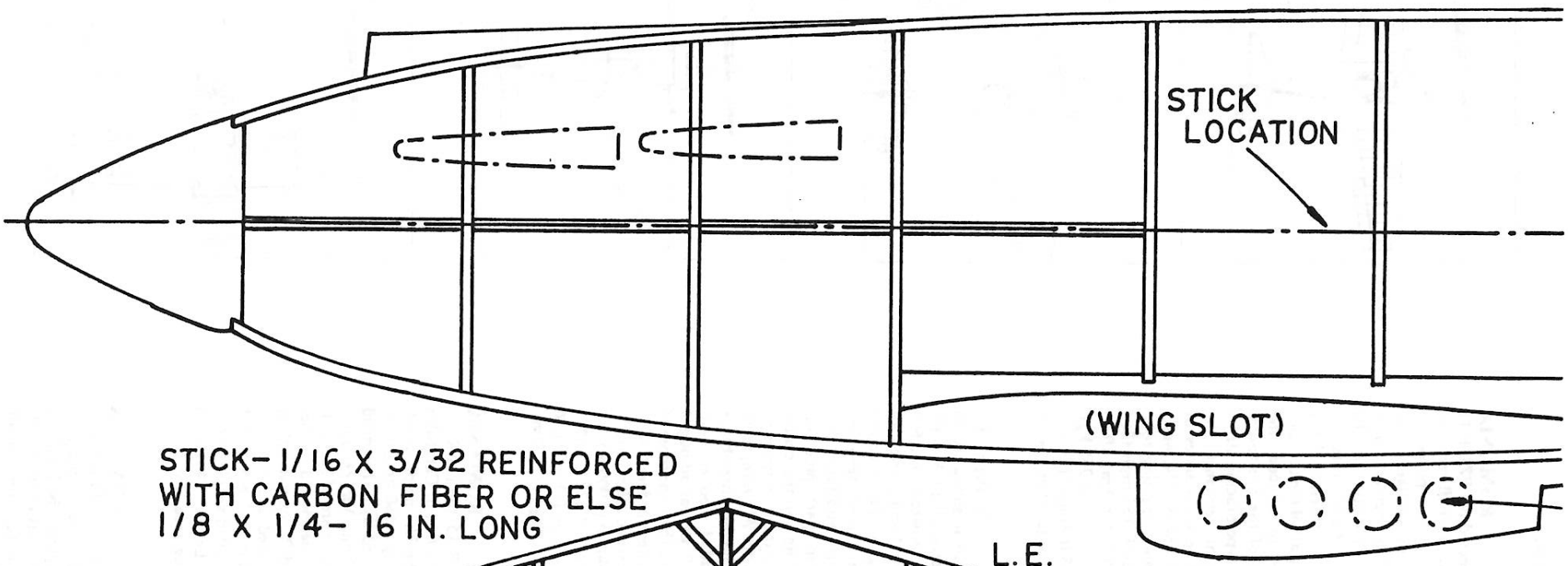
NO-CAL

TsAGI SK

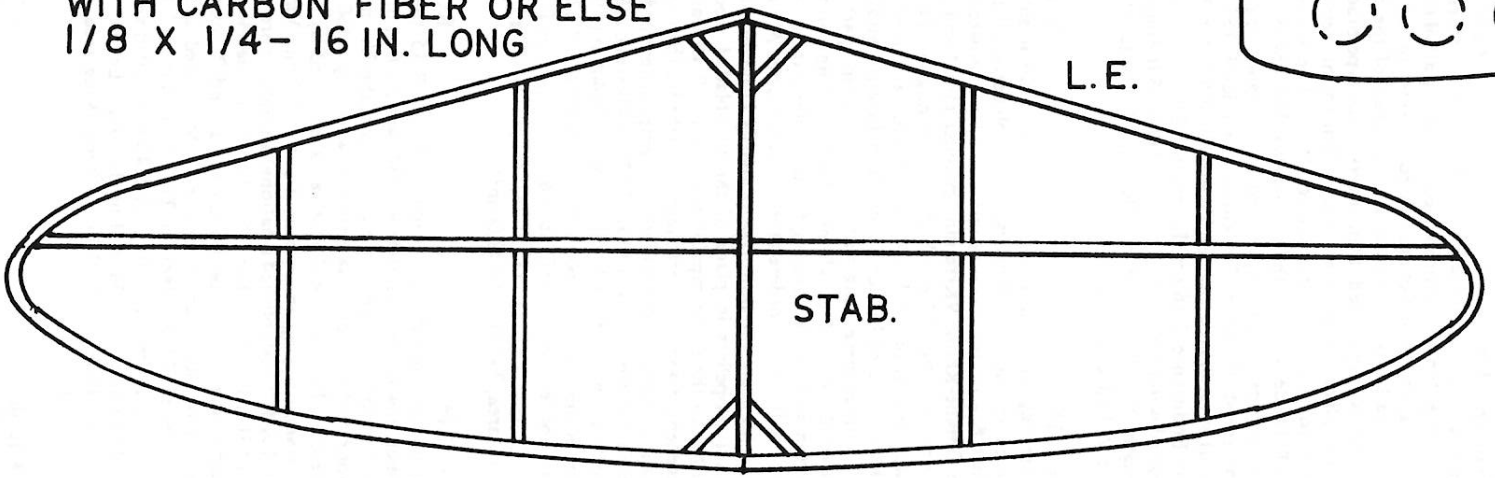
SOVIET RESEARCH AIRCRAFT

MARK FINEMAN- MAY 1985

7 IN. PROP

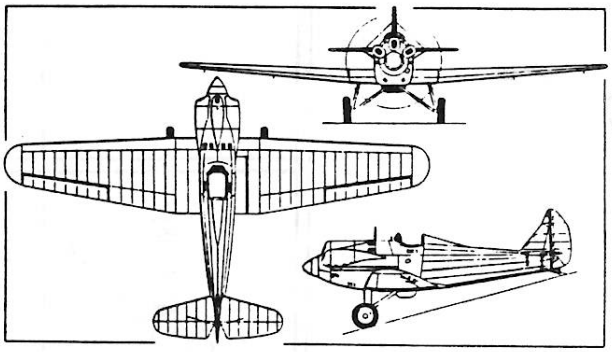


STICK- 1/16 X 3/32 REINFORCED
WITH CARBON FIBER OR ELSE
1/8 X 1/4- 16 IN. LONG



I.A.R.14 **ROMANIA**

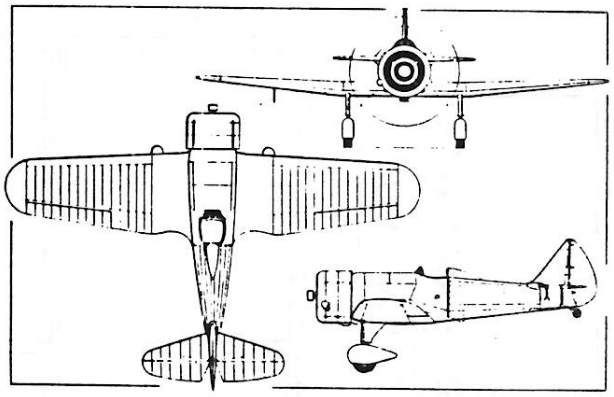
Although the *Aeronautica Militara* had selected the PZL P.11 for the re-equipment of its fighter element, a small series of I.A.R.14s was to be ordered in 1934 for evaluation purposes. Flown in 1933, the I.A.R.14 was essentially similar to the I.A.R.13 but reverted to the Lorraine 12Eb engine, which, while inferior to the HS 12Mc for fighter installation, had the advantage of being licence-built by I.A.R. Apart from the engine change, the fuselage of the I.A.R.14 was redesigned, the turnover pylon was incorporated in a fairing aft of the cockpit, shorter-span, broad-chord ailerons were introduced, the vertical tail was redesigned and the span of the horizontal surfaces was increased, their inverted-vee type bracing struts giving place to parallel struts. Armament remained the standard pair of 7,7-mm Vickers guns. The small series of I.A.R.14s delivered to the *Aeronautica Militara* in 1934, were, after service evaluation, utilised in the fighter training rôle. Max speed, 183 mph (294 km/h) at sea level, 163 mph (263 km/h) at 16,405 ft (5 000 m). Time to 16,405 ft (5 000 m), 10·45 min. Endurance, 2·16 hrs. Empty weight, 2,767 lb (1 255 kg). Loaded weight, 3,417 lb (1 550 kg). Span, 38 ft 4¾ in (11,70 m). Length, 25 ft 5½ in (7,76 m). Height, 8 ft 6 in (2,60 m). Wing area, 213·13 sq ft (19,80 m²).



I.A.R.14

I.A.R.15 **ROMANIA**

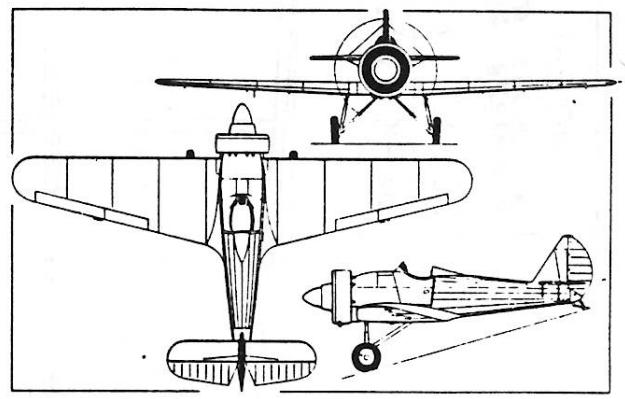
Possessing little more than a configurational similarity to preceding single-seat fighters of Carafoli design, the I.A.R.15, which flew for the first time late in 1933, was powered by a 600 hp Gnome-Rhône 9Krse nine-cylinder radial and carried an armament of two 7,7-mm Vickers machine guns. The structure followed that of the I.A.R.14 in having a welded steel-tube fuselage covered by duralumin sheet forward and fabric aft, and a three-piece wing with two duralumin spars, pine and plywood ribs and duralumin sheet skinning for the centre section with fabric covering for the outer panels. A series of five I.A.R.15s was ordered for the *Aeronautica Militara*, these differing from the prototype primarily in having three-blade metal propellers in place of the two-bladed wooden unit. Although the speed capability of the I.A.R.15 was adjudged excellent, it was considered inferior to the P.11b on the score of manoeuvrability, and no further examples were ordered. Max speed, 233 mph (375 km/h) at 13,125 ft (4 000 m), 230 mph (370 km/h) at 16,405 ft (5 000 m). Climb to 16,405 ft (5 000 m), 8·0 min. Range, 373 mls (600 km). Empty weight, 2,678 lb (1 215 kg). Loaded weight, 3,637 lb (1 650 kg). Span, 36 ft 1 in (11,00 m). Length, 25 ft 5½ in (7,76 m). Height, 8 ft 10¼ in (2,70 m). Wing area, 204·51 sq ft (19,00 m²).



I.A.R.15

I.A.R.16 **ROMANIA**

Although evolved in parallel with the I.A.R.15, the I.A.R.16, which flew for the first time in 1934, was the first of Carafoli's fighters to feature an all-metal structure, this having plywood, fabric and duralumin skinning. Powered by a 560 hp Bristol Mercury IVS.2 nine-cylinder radial enclosed by a Townend ring and carrying an armament of two 7,7-mm Vickers guns, the I.A.R.16 established a national altitude record of 38,156 ft (11 631 m) in 1935. The I.A.R.16 was not developed further than a single prototype, bringing to an end Romanian fighter design for more than a dozen years. Max speed, 212 mph (342 km/h at 16,405 ft (5 000 m). Time to 16,405 ft (5 000 m), 6·5 min. Empty weight, 2,698 lb (1 224 kg). Loaded weight, 3,637 lb (1 650 kg). Span, 38 ft 4¾ in (11,70 m). Length, 24 ft 2⅛ in (7,37 m). Height, 9 ft 2¼ in (2,80 m). Wing area, 218·5 sq ft (20,30 m³).

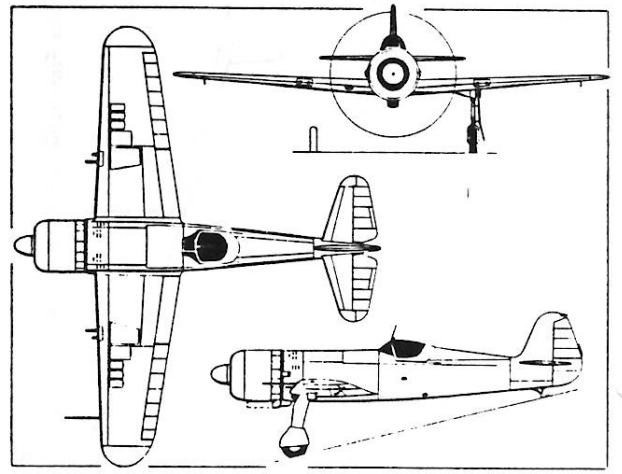


I.A.R.16

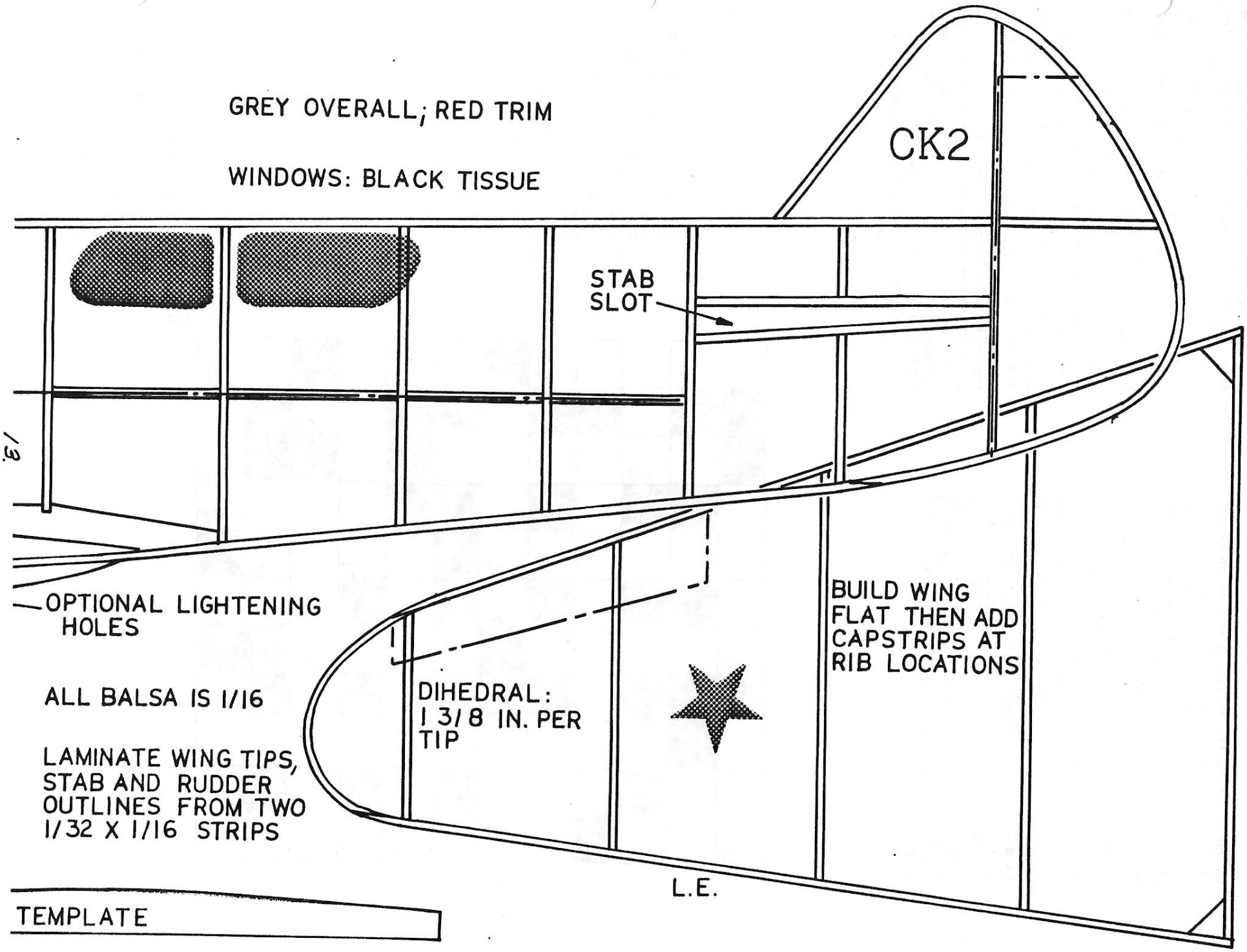
I.A.R.80 **ROMANIA**

In October 1937, the I.A.R. design team led by Prof Ion Grosu initiated work on a potential successor for the licence-built P.24E fighter. The prototype of the new fighter, the I.A.R.80, utilised, wherever possible, proven components of the P.24E, including the entire semi-monocoque rear fuselage. Of all-metal stressed-skin construction, the I.A.R.80 was powered by

(cont. pg 14.)



I.A.R.80


GREY OVERALL; RED TRIM
WINDOWS: BLACK TISSUE
CK2
STAB SLOT
OPTIONAL LIGHTENING HOLES
ALL BALSA IS 1/16
LAMINATE WING TIPS, STAB AND RUDDER OUTLINES FROM TWO 1/32 X 1/16 STRIPS
DIHEDRAL: 1 3/8 IN. PER TIP
BUILD WING FLAT THEN ADD CAPSTRIPS AT RIB LOCATIONS
L.E.
TEMPLATE

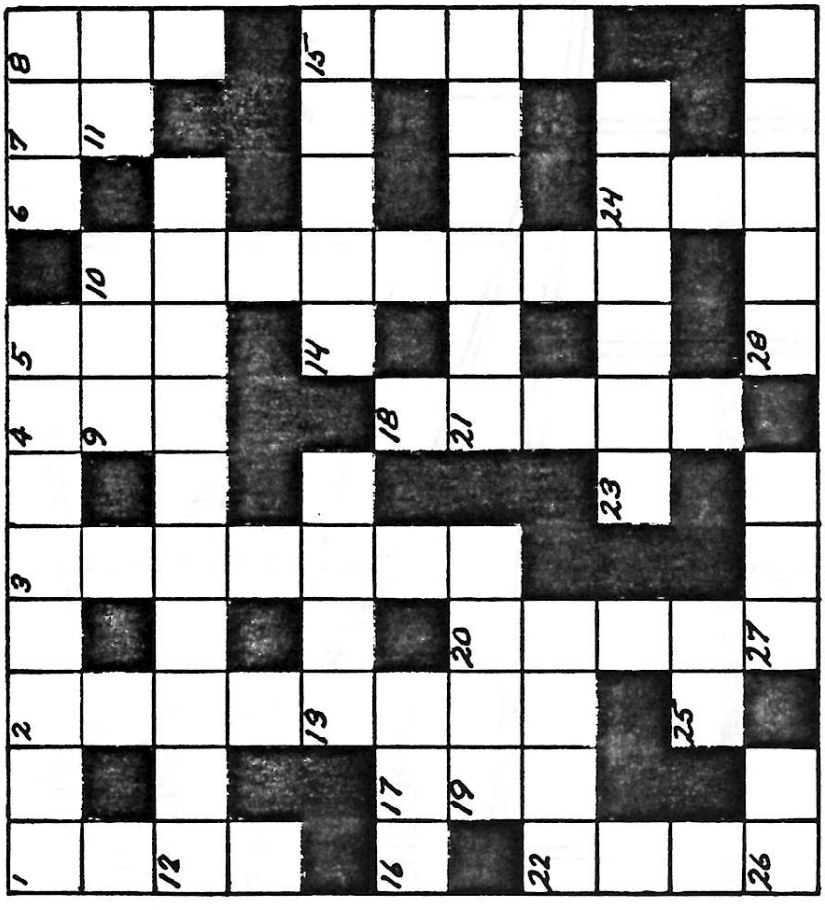
an I.A.R. K 14-III C36 14-cylinder radial based on the Gnome-Rhône 14K Mistral-Major rated at 900 hp for take-off. Production was initiated for the FARR *(Fortelor Aeriene Regal ale România)*, the first series I.A.R.80 being completed in the spring of 1940. This differed from the prototype primarily in having a 1,025 hp I.A.R. K 14-1000A engine, an enlarged wing, lengthened fuselage. an enclosed cockpit and the tailplane bracing struts deleted. Armament initially comprised four 7,92-mm FN-Browning guns, but after the completion of 50 aircraft, two additional 7,92-mm weapons were added (I.A.R.80A), a further 90 aircraft being built before two of the 7,9-mm guns gave place to guns of 13,2-mm calibre (I.A.R.80B). Production of the I.A.R.80 totalled 121 aircraft before it was supplanted by its derivative, the I.A.R.81. Max speed, 319 mph (514 km/h) at 13,025 ft (3 970 m), 342 mph (550 km/h) at 22,965 ft (7 000 m). Time to 14,765 ft (4 500 m), 5·67 min. Range, 584 mls (940 km) at 205 mph (330 km/h). Empty weight, 3,924 lb (1 780 kg). Loaded weight, 5,622 lb (2 550 kg). Span, 34 ft 5½ in (10,50 m). Length, 29 ft 2⅔ in (8,90 m). Height, 11 ft 9¾ in (3,60 m). Wing area, 171·9 sq ft (15,97 m²).

I.A.R.81 **ROMANIA**

Expansion of the operational versatility of the basic I.A.R.80 design to embrace the fighter-bomber and dive bombing missions resulted, in 1941, in appearance of a modified version of the fighter, the I.A.R.81 which was subsequently built on a parallel assembly line with the I.A.R.80 and eventually replaced the earlier model in 1942. Powered by a simil I.A.R. K 14-1000A engine to that of the I.A.R.80, the I.A.R.8 embodied some structural strengthening, featured a 7·87-in (20-cm) increase in wing span and had centreline and underwing racks for a 551-lb (250-kg) and two 110-lb (50-kg) bombs. The I.A.R.81 (50 built) and 81A (29 built) differed only in wing armament, this being similar to that of the I.A.R.80A and 80B respectively. The I.A.R.81A was dispersed on the line with the I.A.R.81B (50 built) long-range fighter with wet points in the wings for two drop tanks and an armament of two 20-mm MG FF cannon and four 7,92-mm machine guns. The final production model, the I.A.R.81C (38 built), differed from the 81B primarily in replacing the MG FF cannon with MG 151 cannon of similar calibre, deliveries terminating in January 1943. Performance data for the I.A.R.81 (in clean condition) was essentially similar to that for the I.A.R.80, and apart from the aforementioned increase in wing span, dimensions were similar.

WINGED WORDS

DAVE STOTT

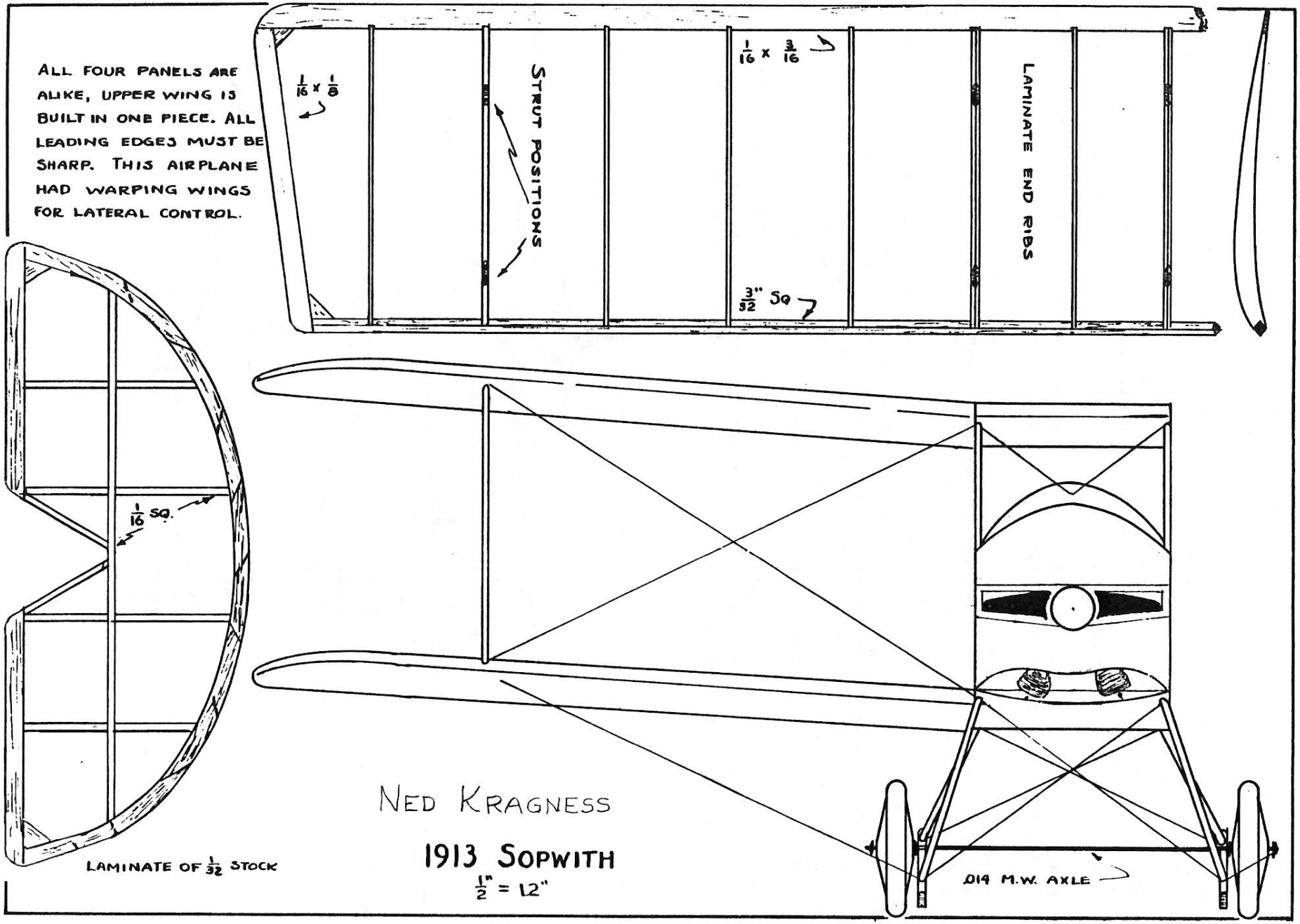


ACROSS

1. Famous plane maker of the 1930s
6. Famous model engine
9. Model organization
11. Mass launch command
12. British flying boat
13. FAC GHQ
14. Early model company
16. SE 5, Spitfire are this type plane
19. Italian airship
21. Hangar apron
22. Flyer's radio
23. Airplane machine gun
25. P-80 engine
26. Spy plane
27. M[illegible] 1 supplier
28. C[illegible]h aero engine

DOWN

1. Good wood for models
2. Fuselage member
3. Curtiss flying boat
4. Vin Fizz pilot, ___ Rogers
5. Model organization
7. Undercarriage (abr)
8. Airman's enemy
10. Wing angle
15. Famous bipe maker
17. Moment ___
18. Maxim's power plant
20. British plane maker
22. Vought built this
24. Taube designer, ___ Etrich


ALL FOUR PANELS ARE ALIKE, UPPER WING IS BUILT IN ONE PIECE. ALL LEADING EDGES MUST BE SHARP. THIS AIRPLANE HAD WARPING WINGS FOR LATERAL CONTROL.
1/16 x 1/8
STRUT POSITIONS
1/16 x 3/16
3/32 SQ
LAMINATE END RIBS
1/16 SQ.
LAMINATE OF 1/32 STOCK
.014 M.W. AXLE
NED KRAGNESS
1913 SOPWITH
1/2" = 1'2"

ROMANIAN IAR 14 ADDENDUM
Dave Stott

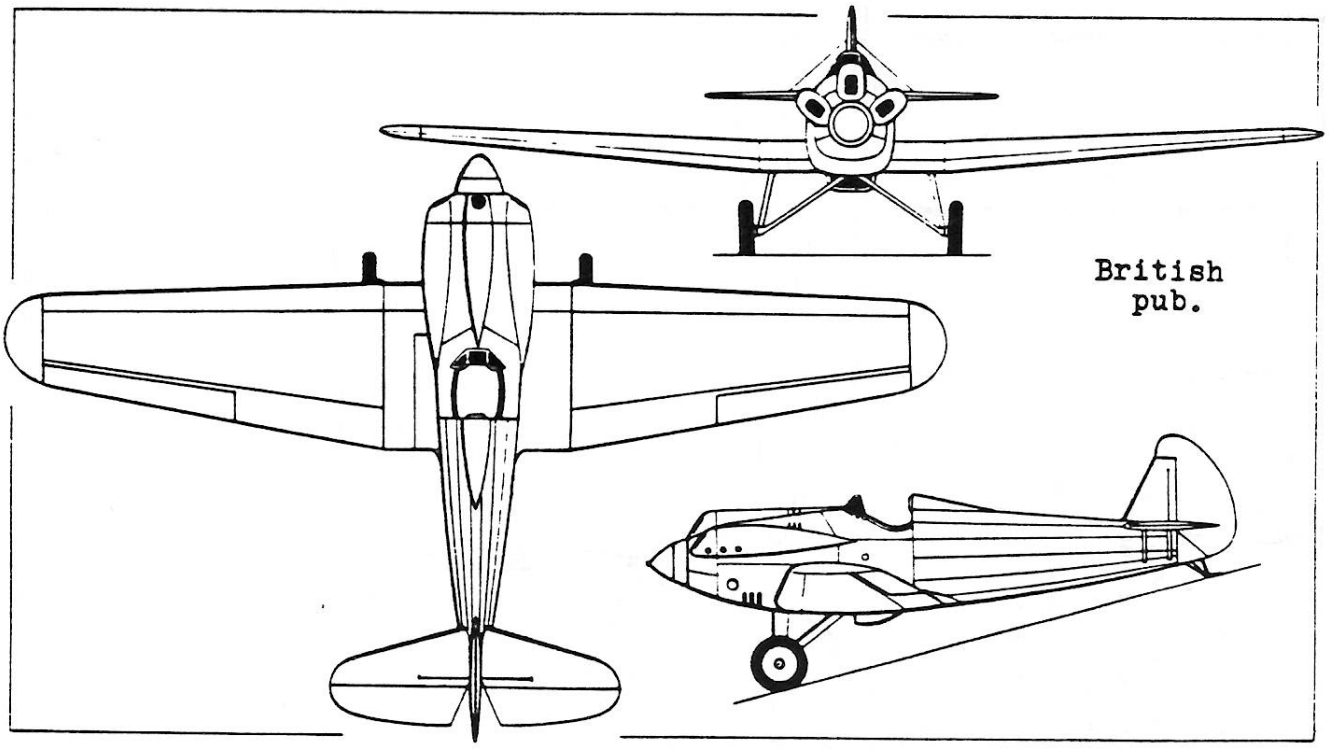
Sometimes it is best to leave well enough alone. This may well be one of those times. As a wee lad I recall my brother building a beautiful low wing open cockpit job with 5 cylinder banks that just might have been an IAR 14, as he called it the "Romanian Fighter". I thought it might have been from the Flying Aces plane of March 1936 that inspired Hoby Clay to draw up the Peanut plan in the last issue of MAX-FAX, but my brother seems to think it came from a plan in Popular Science, or Popular Mechanics, though many years have passed in the interim.

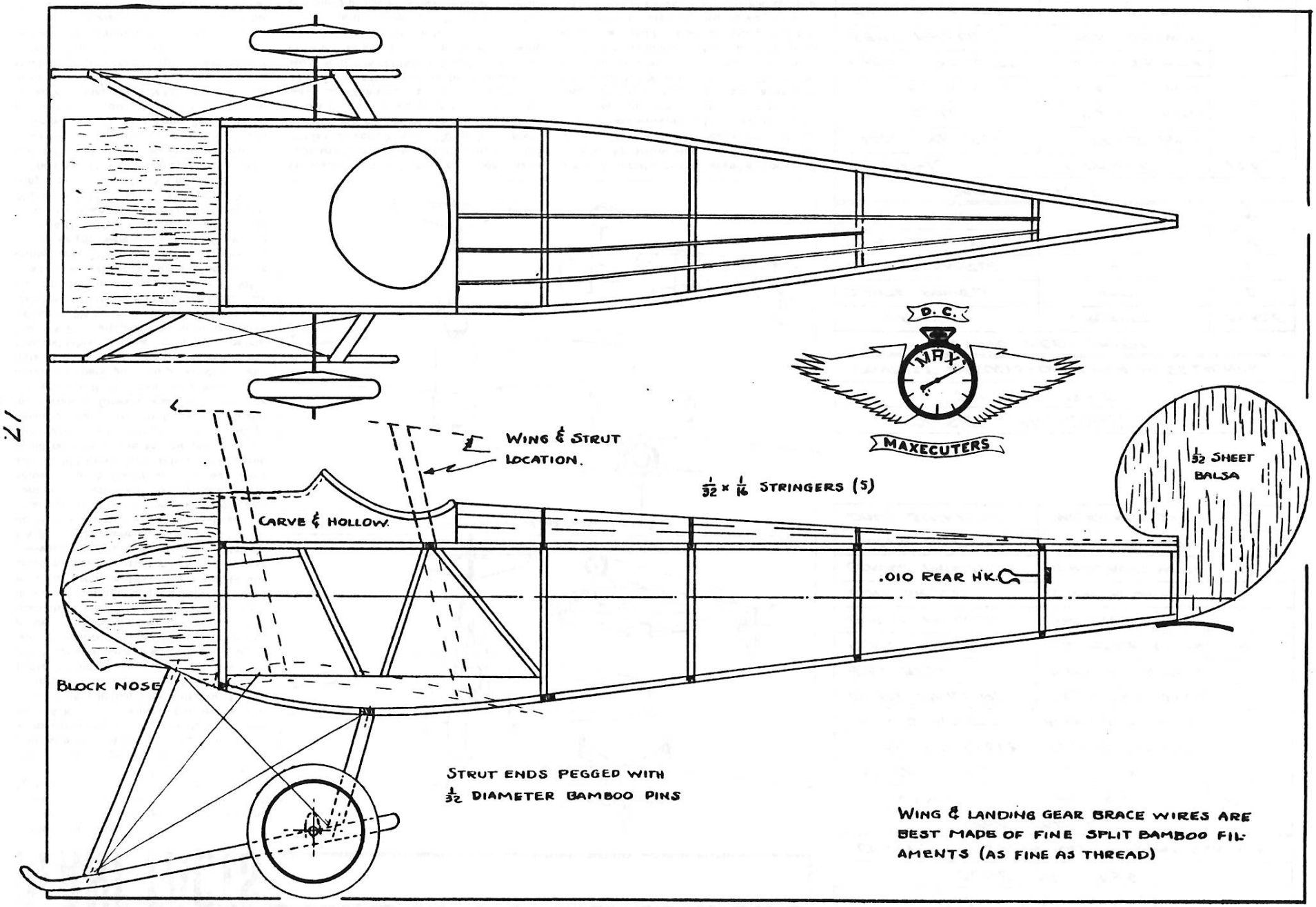
Two 3-views have been dug up. One French, the other British. As one might expect, they differ. Not only from one another, but from the model plans as well.

One Russian quality photo has been found in a Czech publication. In another Czech publication, color renditions of an IAR 13 and IAR 15 were found. The 13 was all over olive green with only rudder stripes as a national marking. The 15 was all over silver with only fuselage roundels as a national marking.

Now, in comparing the single photo with the two 3-views it is seen it resembles the French one best except that the horizontal tail seems like the one on the model plans! That is that it has a squarish shape with a balanced elevator. As for color and marking, it appears all silver with polished aluminum fuselage panels, cowl, spinner, and wheel discs. The rudder has three verticle stripes, probably like the -15 color rendition with insignia blue leading, yellow, and red. There is a number "15" (probably black) where the MAX-FAX cover art depicts a "4".

One can only wonder where Elbert Weathers, the designer of the Flying Aces IAR 14 got his info. And What of the model from "Popular Whatzis", did it exist? Who designed that one? Where did the info come from for that model?? Can any of you archivists shed any additional light on this?




WING & STRUT LOCATION.
1/32 x 1/16 STRINGERS (5)
CARVE & HOLLOW
.010 REAR HK.
1/32 SHEET BALSA
BLOCK NOSE
STRUT ENDS PEGGED WITH 1/32 DIAMETER BAMBOO PINS
WING & LANDING GEAR BRACE WIRES ARE BEST MADE OF FINE SPLIT BAMBOO FILAMENTS (AS FINE AS THREAD)
D. C.
MR. X
MAXECUTERS

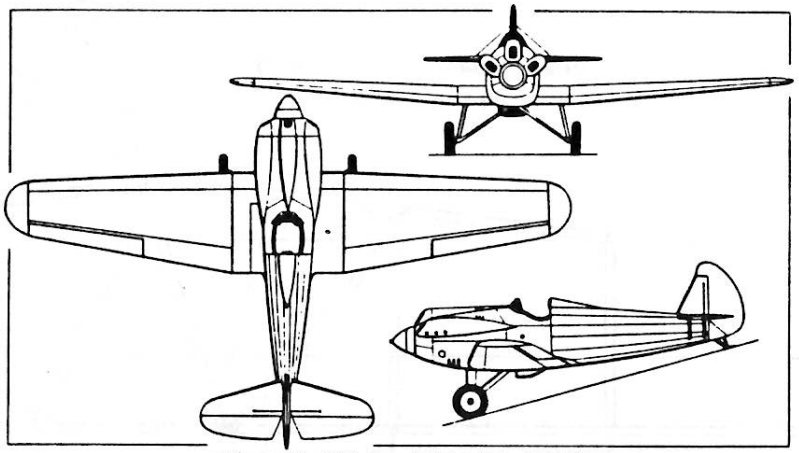
FROM AIR ENTHUSIAST, DEC. 1973

PLANE FACTS

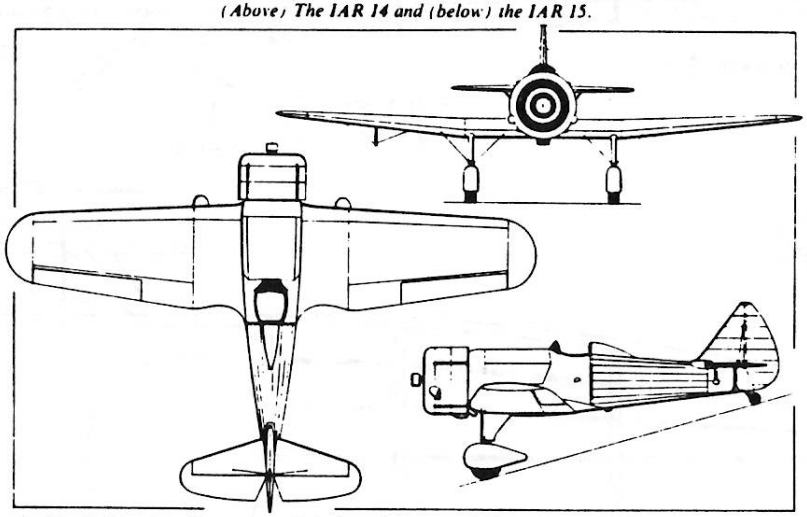
A Rumanian line

Can you please publish some information and drawings of the Rumanian I.A.R.14, 15 and 16 fighters of the 'thirties. Chuck Davis
Hawthorne, NJ 07506

The line of single-seat fighter monoplanes evolved by the I.A.R. (Industria Aeronautică Română) in the mid 'thirties stemmed from the I.A.R. CV-11 which, designed by Elie Carafoli in collaboration with the French engineer Virmoux, was the first Rumanian fighter of indigenous design. The I.A.R.14, which was built in small series for the Rumanian *Aeronautica Militara* and used primarily in the advanced training rôle, was evolved from the I.A.R.12 and I.A.R.13 prototypes developed during the period 1931-32, and made its début in 1933. The I.A.R.14 was aerodynamically a relatively clean cantilever low-wing monoplane powered by a 450 hp I.A.R.-built Lorraine-Dietrich 12Eb 12-cylinder W-type water-cooled engine and carrying an armament of two 7.7-mm Vickers machine guns in the fuselage with 500 rpg. A two-blade adjustable-pitch Ratier airscrew was fitted and the 50·6 Imp gal (230 l) fuselage fuel tank could be jettisoned in an emergency. Mixed construction was employed, the fuselage having a welded steel-tube frame with duralumin skinning forward and fabric skinning aft, and the three-section wing having two duralumin spars, pine and plywood ribs, and duralumin sheet skinning for the centre section and fabric covering for the outer panels. The I.A.R.14 attained maximum speeds of 183 mph (294 km/h) at sea level and 165 mph (265 km/h) at 16,405 ft (5 000 m). Endurance was 2 hr 10 min and an altitude of 16,405 ft (5 000 m) was reached in 10 min 27 sec, service ceiling being 25,920 ft (7 900 m). Empty and loaded weights were 2,535 lb (1 150 kg) and 3,395 lb (1 540 kg) respectively, and dimensions were: span, 38 ft 4¾ in (11,70 m), length, 24 ft 0¼ in (7,32 m), height, 8 ft 2½ in (2,50 m), wing area, 213·12 sq ft (19,8 m²).



(Above) The IAR 14 and (below) the IAR 15.



The I.A.R.15, which also appeared in 1933, and employed essentially similar constructional methods to those of the I.A.R.14, was powered by a 500 hp Gnôme-Rhône 9Krsd nine-cylinder radial air-cooled engine enclosed by a long-chord NACA cowling, and armament again comprised two 7.7-mm machine guns with 500 rpg. Fewer than a dozen I.A.R.15 fighters were delivered to the *Aeronautica Militara* as the capabilities of the type were adjudged inferior to those of the PZL P.11 which, in 1934, was selected as standard equipment with the fighter elements of the *Flotile aviatie*. The I.A.R.15 weighed 2,678 lb (1 215 kg) empty and 3,637 lb (1 650 kg) loaded, and performance included maximum speeds of 233 mph (375 km/h) at 13,125 ft (4 000 m) and 230 mph (370 km/h) at 16,405 ft (5 000 m). Maximum range was 373 miles (600 km), an altitude of 16,405 ft (5 000 m) was attained in 8 min, and service ceiling was 32,810 ft (10 000 m). Overall dimensions were: span, 36 ft 1 in (11,00 m), length, 25 ft 5½ in (7,76 m), height, 8 ft 10¼ in (2,70 m), wing area, 204·51 sq ft (19,0 m²).

The third fighter of the mid 'thirties developed by I.A.R., which brought the series to an end until original fighter design was resumed in 1938, was the I.A.R.16 which, similar in general concept to its predecessors, was of all-metal construction and was powered by a 560 hp Bristol Mercury IV S2 air-cooled radial. The I.A.R.16 appeared in 1934 but development was confined to a sole prototype, this eventually being used in 1935 by Alexandru Papană to establish a national altitude record of 38,156 ft (11 631 m). The I.A.R.16 achieved a maximum speed of 212 mph (342 km/h), climbed to 16,405 ft (5 000 m) in 6 min 5 sec, and had a service ceiling of 32,810 ft (10 000 m). Empty and loaded weights were 2,698 lb (1 224 kg) and 3,637 lb (1 650 kg), and dimensions were: span, 38 ft 4¾ in (11,70 m), length, 24 ft 2⅛ in (7,37 m), height, 9 ft 2¼ in (2,80 m), wing area, 218·5 sq ft (20,3 m²).

'81

COMSAT MINI-CONTEST
JUNE 16, 1985
CONTEST RESULTS - OLDTIMER MASS LAUNCH
FREE-FOR-ALL

NAME	AIRCRAFT	PLACE
DAN DRISCOLL	SPARKY	1
ALLAN SCHANZLE	FLYING ACES MOTH	3
TOM SCHMITT	FLYING ACES MOTH	
BERT PHILLIPS	PACIFIC ACE 20 INCH	
BILL BELL	JIMMY ALLEN BLUEBIRD	
FRANK RENAUT	PACIFIC ACE 30 INCH	4
EVELYN PHILLIPS	PACIFIC ACE 20 INCH	
DON SRULL	SCIENTIFIC WHIPPET	
CLAUDE POWELL	FLYING ACES MOTH	2
MARVIN YODER	FLYING ACES MOTH	
DOUG BUCHANAN	PACIFIC ACE 20 INCH	5

COMSAT MINI-CONTEST
JUNE 16, 1985
CONTEST RESULTS - OLD-TIMER MASS LAUNCH
FLYING ACES MOTH

NAME	AIRCRAFT	PLACE
CLAUDE POWELL	MOTH	2
ALLAN SCHANZLE	"	1
TOM SCHMITT	"	3
MARVIN YODER	"	4

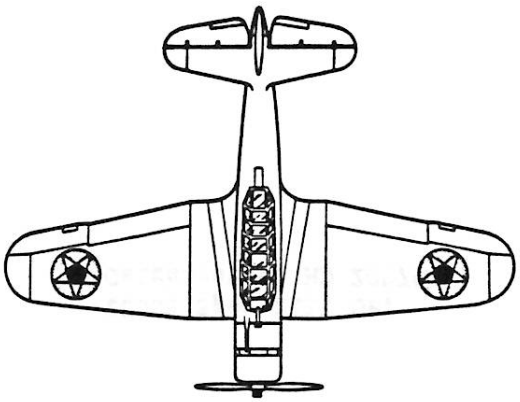
PACIFIC ACE

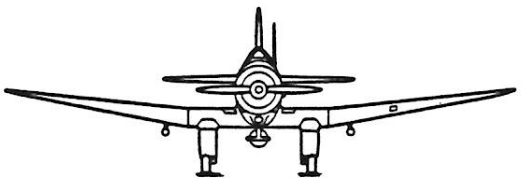
NAME	AIRCRAFT	PLACE
FRANK RENAUT	PA-30 INCH	3
BILL BELL	PA-30 INCH	
DOUG BUCHANAN	PA-20 INCH	1
EVELYN PHILLIPS	PA-20 INCH	
BERT PHILLIPS	PA-20 INCH	
TOM SCHMITT	PA-20 INCH	2

THE TS AGI SK IN NO-CAL

Mark Fineman

I've only flown this model a few times, but it has already put in flights in excess of 1 1/2 minutes. This is the first time I tried reinforcing a relatively thin motor stick with carbon fiber and it worked like a charm. Just two thin strips on the 1/16 side of a 1/16 x 3/32 stick produced an incredibly strong structure. The model has been powered by a loop of 1/8 FAI, about 17 inches long, and the stick doesn't even bend under full tension!

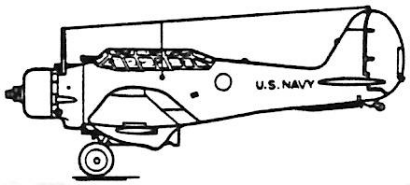




BT-1 SCOUT DIVE-BOMBER

DOUGLAS

Wing Area ..... 240 Sq. Ft.
Aileron Net Area Each ..... 7 Sq. Ft.
Dive-Flap Net Area Each ..... 9 Sq. Ft.
Horizontal Stabilizer Area ..... 38 Sq. Ft.
Elevator Area ..... 32 Sq. Ft.
Vertical Stabilizer Area ..... 11 Sq. Ft.
Rudder Area ..... 18 Sq. Ft.
Wingspan ..... 41½ Feet
Overall Length ..... 31½ Feet
Overall Height ..... 14 Feet
Topspeed (Maximum Gross) ..... 184 Knots
Cruising Speed (Maximum Gross) ..... 168 Knots
Range ..... 635 Miles
Fuel Capacity ..... 117 Gal.
Powered by ... Pratt-Whitney R-1535-94 ..... 825 HP
Service Ceiling ..... 22,500 Feet
Maximum Gross Weight ..... 7,000 Pounds



COMSAT MINI-CONTEST

JULY 14, 1985

CONTEST RESULTS FOR P-30 MASS LAUNCH

NAME	AIRCRAFT	PLACE
BRYAN CORWELL	TEACHER'S PET	4
NIALL CORWELL	TWIN FIN	2
DAN DRISCOLL	UGLI'	3
MARV YODER	PINK LADY	1

CONTEST RESULTS FOR HAND LAUNCH GLIDER

NAME/AIRCRAFT	1	2	3	4	5	6	TOTAL HIGH 3	PLACE
BRYAN CORWELL PINE 1	10	20	26	37	27	10	90	2
BRYAN CORWELL PINE 2	11	12	26	11	11	18	56	4
DAN DRISCOLL THERMO 18	12	30	38	20	19	12	88	3
JOHN STYES SHADOO	45	52	35	49	68	41	169	1

COMSAT MINI-CONTEST

AUGUST 11, 1985

CONTEST RESULTS FOR CO2 MASS LAUNCH

NAME	AIRCRAFT	PLACE
DAN DRISCOLL	ALCO SPORT	3
ROLFE GREGORY	LUSCOMBE PHANTOM	2
ALLAN SCHANZLE	FW 190 *	1
TOM SCHMITT	CLAUDE	4

* PROXY FLOWN BY STEW MEYERS

FIRST CLASS

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SEPT
OCT 1985