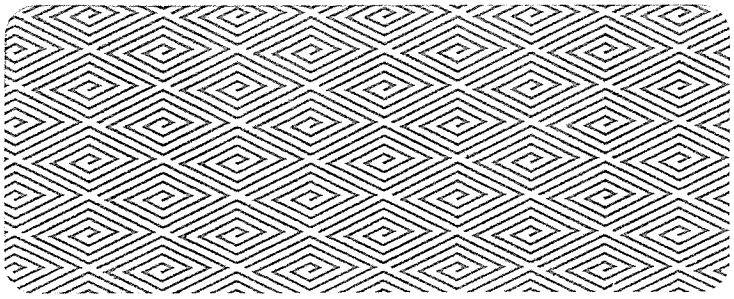
MATERIAL SUBMITTED TO PRODUCTIVITY COMMISSION IN LIEU / ADDITION TO ATTEND / ADDRESS THE PANEL @ MELB 9/4/14.



FOR ATTN. OF PRODUCTIVITY COMMISSION RE 'PUBLIC INFRASTRUCTURE' ENQUIRY. OPERATION HINGES ON 'ATOL' (ASSISTED TAKE OFF / LANDING) INFRASTRUCTURE WHICH UTILIZES A CABLE ARRAY POSITIONED (MOSTLY) OVER PUBLIC ROADS AND FACILITATES ACCESS AIR TO GROUND TO AIR WITHOUT NEEDING ANY REAL ESTATE OR USER DELAY, FAIL SAFE SILENT AND LOW COST - ACCESSIBLE AS A TOLL SYSTEM.

THE CURRENT EAST WEST LINK PROPONENT IS SEEKING A "NO COMPETITION / NO LOSS OF FUTURE INCOME OR GOVT TO MAKE UP ANY LOSS" OVER TUNNEL / TOLLWAY LIFE CLAUSE AS EMBODIED IN CITY LINK ACT

FOR AN EXAMPLE. THE TIME TO GO FROM A LOCATION AT THE END OF MELBOURNE GREATER METRO AREA TO THE FAR OTHER SIDE WOULD BE AROUND 10 MINUTES COMPARED TO A MEDIAN OF ½ TO 2 HRS BY ROAD ALONE (OR PLUS TUNNEL)

DEFENDING THE PUBLIC RIGHT TO THE BEST PRODUCT OR SERVICE AT THE BEST PRICE IS THE PRIME AIM OF COMPETITION POLICY AND UNDER IMMINENT THREAT

FOR FURTHER INFORMATION
PLEASE CONTACT.

AIRCAR INDUSTRY, ROSS NOLAN

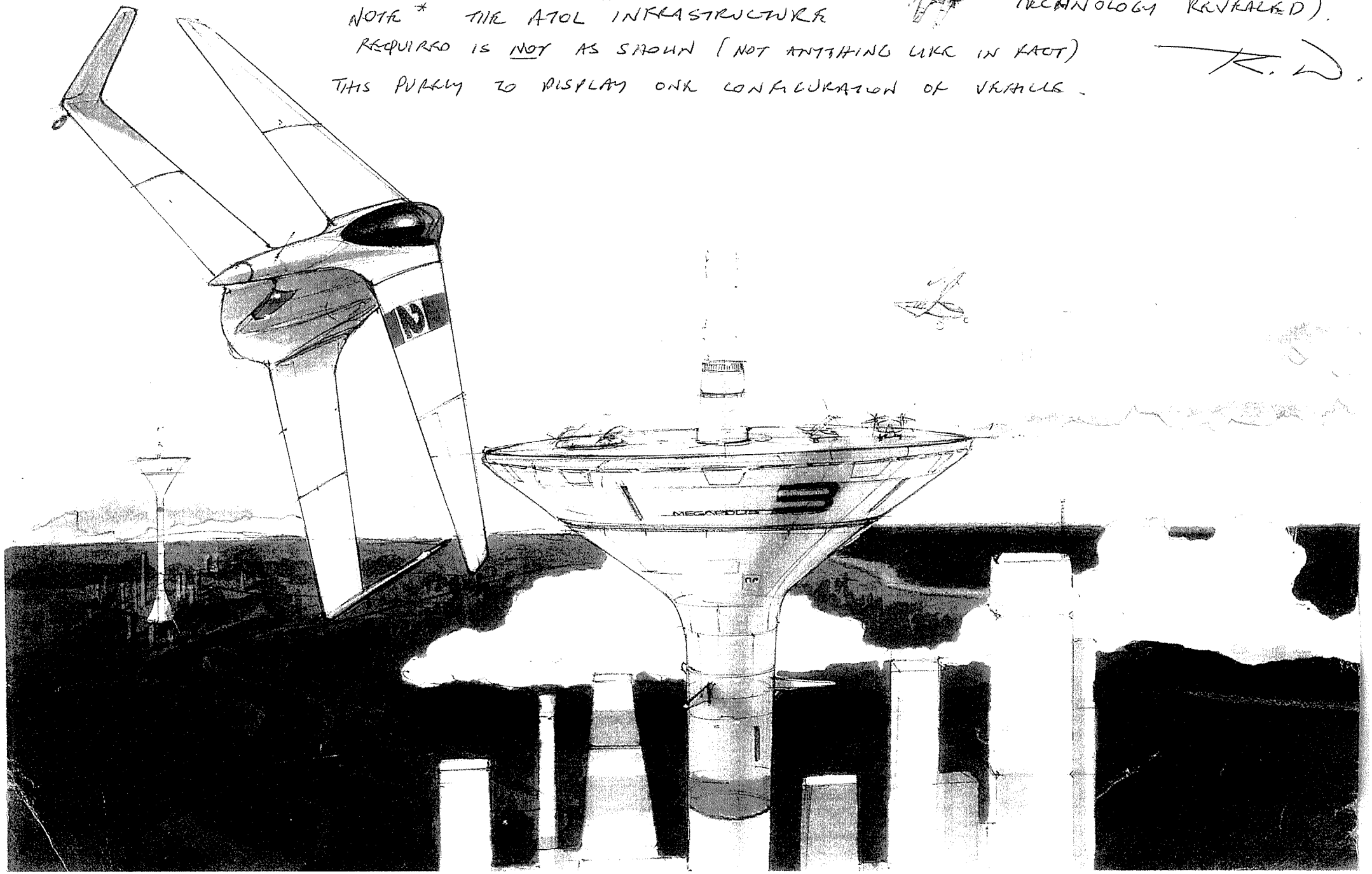
ARTWORK BY EX FORD DESIGNER

'AIRBIKE' FLYING MOTORCYCLE 1988.

(FOR SOME IDEA OF BACKGROUND ONLY — NO PROPRIETARY OR CURRENT TECHNOLOGY REVEALED).

R. D.

NOTE * THE ATOL INFRASTRUCTURE REQUIRED IS NOT AS SHOWN (NOT ANYTHING LIKE IN FACT) THIS PURELY TO DISPLAY ONE CONFIGURATION OF VEHICLE.



COVER SAFETY ONLY
- MUCH MORE ON PUBLIC ACCESS

Rationale for EPATS

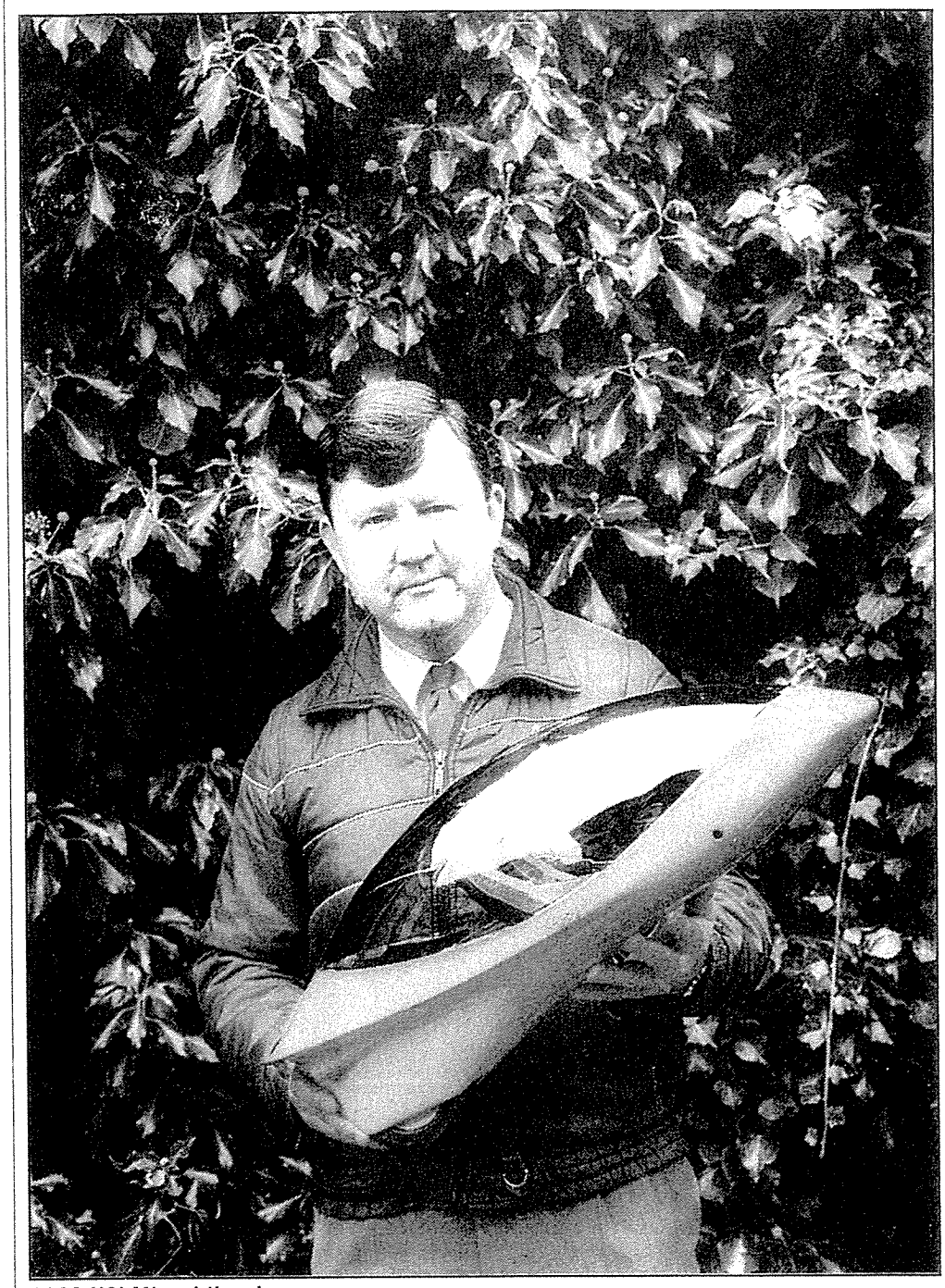
There is a tendency to think, that Personal Transport System or Personal Air vehicle is intended for rich men and wealthy countries only, like USA, and therefore do not represent a major business case at European level. It is true today for existing personal air vehicle like Falcon, Learjet or Gulfstream, for which the acquisition price surpasses 15 millions euros and flying costs are more than 10 thousands euros per hours. But it is not true any more, if we consider the future society needs for flexible and affordable air travel, and the possibility of development of both small aircrafts and infrastructures, with performances and operational costs that could be more than ten times lesser than today.

These potentials show a clear opportunity for developing a new small aircraft transport system which would support air transport future needs and would represent a strong opportunity for strengthening the European small aircraft transportation supply chain. If no Research & Development work is undertaken, the threat to the European ATS will be the deepening of the technological gap in this domain between Europe and America, and result in huge Personal Aircraft import with all its economic and industrial negative consequences for the European industry.

The need to travel within Europe is increasing rapidly, as can be derived from the statistics provided by the European Union. More especially the extension of Europe to 25 Member States will increase the demand for transportation within the European Union.

OLD PRESS ARTICLE (NOTE DATE)
PAPER TOO EMBARRASED TO PUBLISH ON SUBJECT
- EXCEPT IF A FOREIGN DESIGN

31 DECEMBER 1995



ROSS NOLAN and the air car

Mr Nolan is a former racing car designer for Bob Jane and an aeronautical engineer. While as yet not tested, he believes his "air car" is capable of travelling along the Eastern Freeway at 100kmh or at three times that speed 500 metres above it. It has a propellor and fold-up wings for use above ground, and wheels for hard surfaces. A prototype could be built within 12 months from extremely strong magnesium zirconium alloy and it would run on conventional fuel. **Pictures:** [redacted]

When necessity is the bother of invention

By [redacted]

IF YOU are sick of being a nine-to-five wage slave and believe you have a breakthrough invention that will make you a mil-

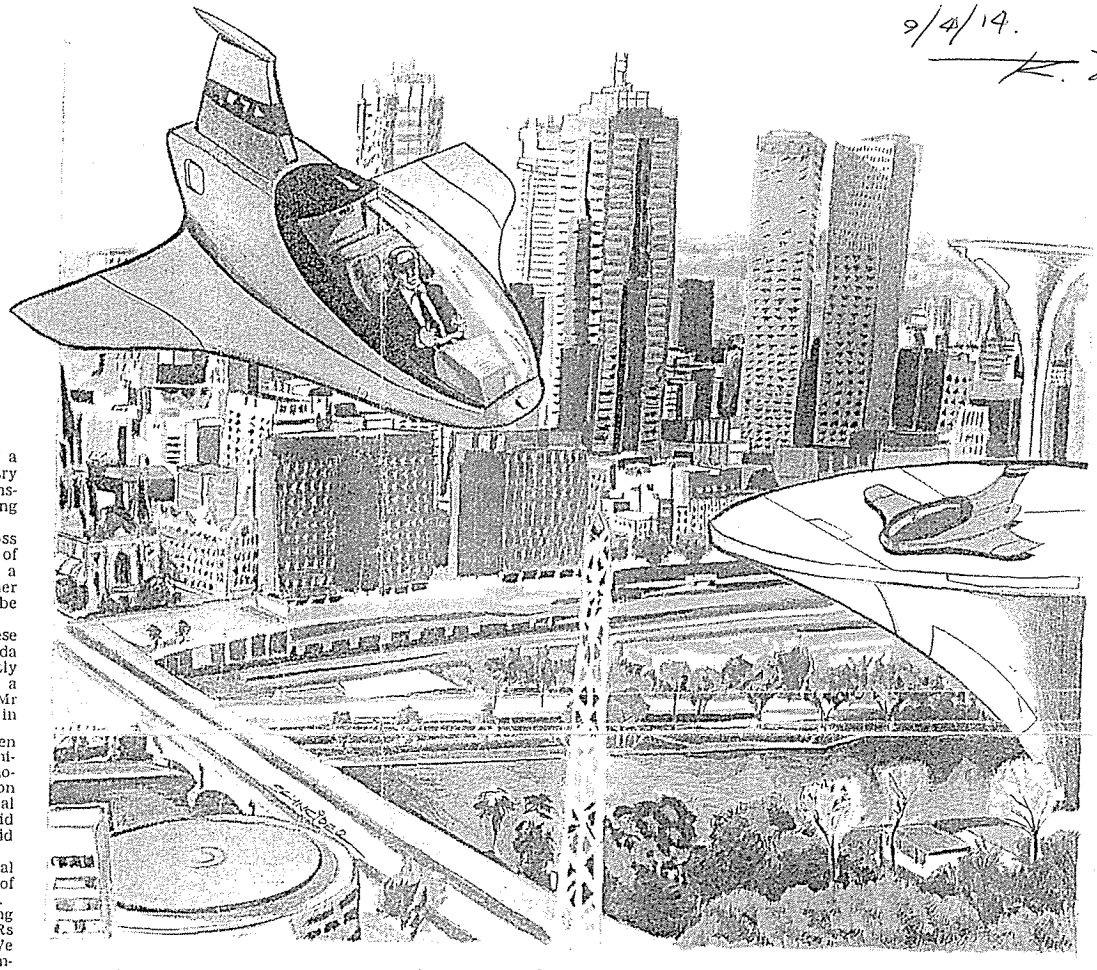
EU MYOPIA AND NASA SATS / PAV PROGRAMS SIMILAR LONG HAUL THIS
NASA CHIEF SCIENTIST DENNIS BUSHNELL PUBLISHED MARKET ESTIMATE @ $1 TRILLION
- GOOGLE FOR CONFIRMATION AND NASA TM (TECHNICAL MEMORANDUM).

Highways in the sky

ROSS NOLAN

9/4/14.

Flying cars? It seems improbable but the potential billion-dollar industry could help transport Australia out of recession, according to a Melbourne aircraft designer. [redacted] reports.



Commuting takes to the air: An artist's impression of 21st century transportation, with personal flying vehicles.

AUSTRALIA could be part of a $100 billion aviation industry when the next threshold of transportation is crossed and personal flying vehicles become a reality.

Melbourne aircraft designer Ross Nolan says the start of the next wave of transportation is inevitable within a decade — the only question is whether Australia will be part of what could be "a titanic $100 billion industry".

With plans for flying cars by Japanese automobile giants Toyota and Mazda already underway (Mazda recently changed its name from a car to a personal transportation company), Mr Nolan says there is huge opportunity in Australia.

"There is only one historically proven way to solve a recession of any magnitude and that is a revolutionary technology or an entirely new transportation system. Flying cars are the next logical step in personal transport — we got rid of the horse, now we're going to get rid of the road," he said.

Mr Nolan said industrial and social revolutions followed the introduction of steamships, railways and motor cars.

"We cannot succeed by reinventing someone else's wheel. We can't sell VCRs to the Japanese or thongs to Taiwan. We have to come up with something completely different," he said.

Mr Nolan has designed a prototype for a flying car, which would be largely made from a magnesium/zirconium alloy and would cost about the price of a family car, together with a system for guidance, take-off and landing.

He calls it the SMART system: the System for Mass Metropolitan Airborne Rapid Transit.

He claims it would be safer and cheaper than the present system of road transport, and is designed for mass production.

The technology for flying cars is not new — in fact it has been around since World War I and in people's imagination — at least since the time of Jules Verne — but no one has developed a feasible plan for it to work on a large scale.

"After it has been done it will be stunningly obvious how it could be done," Mr Nolan said.

"The technology is not mind-bending — it just hasn't been used in the right way."

Mr Nolan has worked in Germany and the US where he studied aeronautical design. In Australia he has also worked with Ford, Vulcan, Kambrook, Hawker de Havilland and Aerospace Technology.

He was the first person in the world to design and develop a moulded composite aircraft, known as the Opal but in 1975 he became embroiled in a dispute with the Department of Aviation which grounded the plane and later had it destroyed.

Mr Nolan said the fibreglass composite aircraft has become one of the most popular light planes in the United States and last year 2000 were sold, equivalent to about one third of the entire Australian fleet of private planes.

NOT surprisingly, Mr Nolan is highly critical of Australia's record as an innovator in aircraft design and manufacture.

"It's been a chain of failures — and publicly financed failures at that," he said. "Australia is scorched earth when it comes to aviation. There is no record of innovation — we're just copiers," he said.

"Restrictive regulation has killed aviation research in Australia."

He compares the "anti-design laws" in Australia with the Red Flag Act in Britain last century which, for 35 years, prohibited "self-propelled vehicles" travelling in excess of "four miles per hour on the open road".

Mr Nolan said: "That was a ploy by the railways and the canal operators to try and stop the automobile.

"There is a similar technical gerrymander in Australia today.

"And just as the Red Flag Act gave Germany and the United States a massive head-start in automobile design and manufacture, so too will Australia be left behind with sky cars."

Like many inventors, Mr Nolan has been frustrated by an inability to move from the concept stage to prototype and production.

IT COSTS a lot of money and requires a backer, either from government or from private industry.

In recession-scarred Australia, few people are willing to even contemplate such a venture, preferring to play it safe by refining and developing existing technology.

"It is incredible how everybody is calling for innovation but nobody is willing to be the first," said Mr Nolan, whose idea is breathtaking in its scope but shows that Australia is well-positioned to take advantage of what could be a gargantuan industry.

He says the manufacture of sky cars would use our over-abundance of magnesium and zirconium — the metals necessary for strong but light compact wings and engines.

"Australia has plenty of magnesium — on present consumption enough to last for at least a thousand years," he said. "All we are talking about at the moment is making ashtrays for cars out of magnesium."

Mr Nolan said the power for the processing of magnesium could at last use the tidal energy source in the Kimberleys in Western Australia — potentially 30 times larger than the Snowy Mountains Scheme — but which has so far been handicapped by its remoteness from a local manufacturing resource.

He said the magnesium could be extracted from the sea water near the tidal power system.

'BIG BIRDS' TO TAKE TO SKIES

ROSS Nolan describes the design of his flying car as "similar to a mechanical bird, unlike existing planes which are like dead birds with rigid wings".

The car plane has an unusual wing configuration, no longer than a Ford station wagon but slightly higher with a retractable 15-metre wingspan.

It would have "variable geometry" wings (similar to an F1-11 jet) which would tuck into the side of the car for road travel not unlike a bird's wing. The flying car would have an assisted take-off and landing similar to that used on an aircraft carrier, being catapaulted into the air from neighborhood "airbridges".

The transformation from a plane to a car would occur almost as soon as the plane lands with the wings contracting. It would change from propellor-power to wheel-power not unlike the change from 4WD to 2WD.

Airways 'safer than roads'

PEOPLES' first reaction to the idea of flying cars is the fear that it would cause chaos with mid-air crashes and debris falling out of the skies.

But according to US studies into air traffic and the new technology associated with flying cars, sky roads would be much safer than road transport and collisions could be practically eliminated.

Firstly, traffic numbers would be greatly reduced, with wider sky roads on multiple levels, more direct routes, and reduced travelling times.

Road widths would increase many times and extra layers would be created — so eight or even 10-lane highways would be replaced by highways of virtually unlimited lanes.

The director of Quality and Technical Resources at Vic Roads, Prof. Max Lay, has estimated that 20 per cent of city traffic is driving around looking for somewhere to park, and 70 per cent driving through the city to another destination.

Flying cars could be programmed using satellite navigation with the same global positioning systems as used by ocean-going yachts.

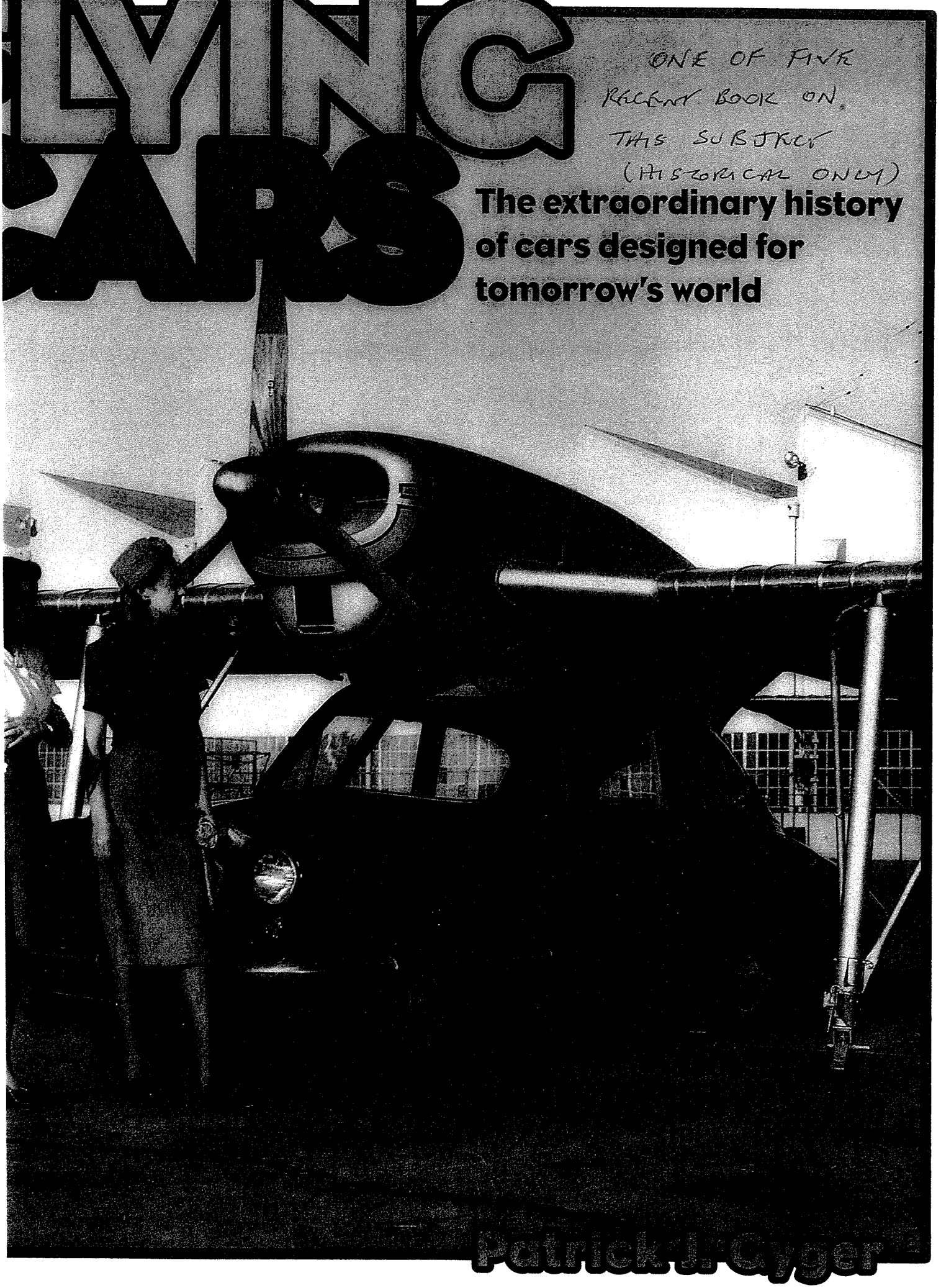
Road transport will still exist, with heavy transport staying on the ground, but obviously moving around quicker without the existing traffic congestion.

People would be able to park the car in the garage, drive to a neighborhood air bridge (no airports are necessary) and arrive at the office or factory within minutes.

FLYING CARS

ONE OF FIVE
RECENT BOOK ON
THIS SUBJECT
(HISTORICAL ONLY)

The extraordinary history of cars designed for tomorrow's world

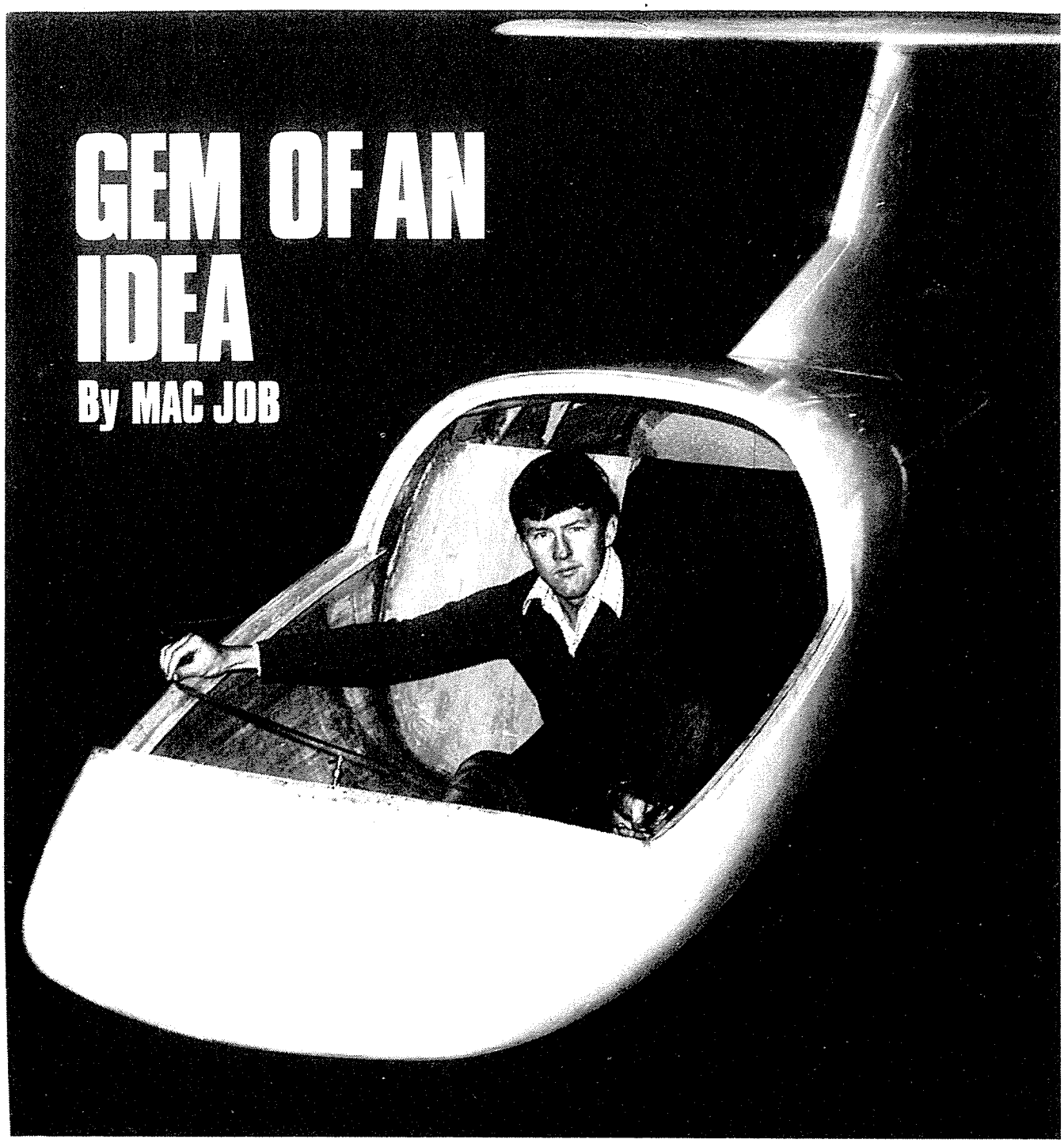


Patrick R. Foster

NOT A FLYING VEHICLE BUT MUCH EARLIER WORK

GEM OF AN IDEA

By MAC JOB



DESIGNER-builder Ross Nolan inside the shell of his Opal two-seater . . . "easier to justify an aircraft which does not use hundreds of horsepower."

ROSS NOLAN is an enthusiastic and creative young Australian aircraft technologist who, under the name of Slipstream Aviation, earns his living running a fibreglass sailplane and glider repair shop at Melbourne's Essendon Airport.

He is well qualified after having spent six months with Schempp-Hirth KG, in Germany, and a year with Bryan Aircraft in Ohio, U.S., gaining first-hand experience of the glass-reinforced plastic and plastic-foam-sandwich constructional techniques used in modern high-performance sailplanes.

While he is regarded as one of Australia's most skilled exponents of fibreglass aircraft structures (he also manufactures fibreglass panels and assemblies for conventional general aviation aircraft), it is as an aircraft designer that he hopes to specialise. His designs include both a high-performance sailplane and a single-seat ultralight powered aircraft intended to be operated under the Air Navigation Act exemptions provided by DoT's ANO 95.10.

His current project is the Opal, a design for a revolutionary, two-seater, single-engined, low-wing aeroplane which he claims could offer exceptionally high performance, economy of operation, a high level of safety and the ability to operate from unprepared landing areas.

Nolan's motivation for his Opal project developed from his experience as a glider pilot and engineer.

(He has been flying gliders and sailplanes since 1968 and has his "Gold C" Certificate with "Diamond" distance.)

"The design of today's light aircraft — typified by glider tugs — has basically changed little in 30 years, though the gliders have undergone enormous structural and aerodynamic advances," he says.

"The application of sailplane technology to a proper design formula would make today's typical light aircraft obsolete and create a demand for commercial production."

Nolan believes the reception of unconventional light aeroplanes, such as the Rutan Vari-Eze and the Taylor Mini Imp, demonstrates pilots' willingness to accept new and unorthodox trends and indicates the possible future design direction of production aircraft. The growing emphasis on fuel efficiency also will increasingly offer a serious challenge to present conventional designs.

Australia's necessarily small industry and local market means two to four-seater aircraft will remain the economic limit for manufacturing, he believes. The Opal has accordingly been designed as a two-seater with inherent capacity for "stretch" to a four-seater.

Most existing two-seaters are either training aircraft of modest performance or amateur-built types — very few are high-performance aircraft. As a result, with increasing experience and aircraft utilisation, private and business pilots tend to graduate to higher performance aircraft with more and more seats. But these aircraft are still mainly flown with no more than two people on board, particularly when operated by private owners.

For this reason the Opal is being aimed at pilot-owners who can either afford it purely for sport and recreation, or want a fast, economical personal transport — sometimes to remote areas with rough strips.

Nolan points out there is no aircraft in the world to be compared with the Opal. He believes its radical appearance and outstanding performance, and its quietness, comfort and handling, would justify its acceptance as an exclusive "Flying Porsche".

Further, hand-built production methods would avoid a big investment in factory space, mass production machinery and factory workers. All that would be necessary to produce the Opal would be a workshop and a small, talented and dedicated group of craftsmen. Nolan says this is the method of construction that has given Germany its present undisputed lead in sailplane manufacture.

THE immediate aims of the Opal project are to create the aircraft and the means for its economic quantity production; to certificate the design for sale overseas; to establish an aircraft composite-material production and repair workshop which, as well as producing the Opal, could capitalise on other aviation trends towards composite construction.

Various follow-up developments are possible, including an amphibious version, military trainer version and a turbo-fan installation.

Specified goals on the Opal design are —

Performance: 175-220 knot cruise, 1300 n.m. range, 50-55 knot stall, short-field capability and capacity to use gravel, grass, soft or rough surfaces.

Safety: Achieved by a tough, resilient structure designed to utility category specification; an aircraft configuration which is resistant to overturning or ground-looping during landings on unimproved surfaces; a glide ratio which allows the aircraft to return safely to its take-off point if the engine fails; airbrakes to further improve approach safety during emergency landings.

Aerobatic capability: Fully aerobatic for the sporting pilot.

Appearance: To appeal to the market for which it is designed, the aircraft needs to have a truly modern appearance with a luxury-car type interior.

Cockpit: Side-by-side seating with full dual controls, exceptionally low noise level, superb visibility, armchair comfort, easy entry and exit.

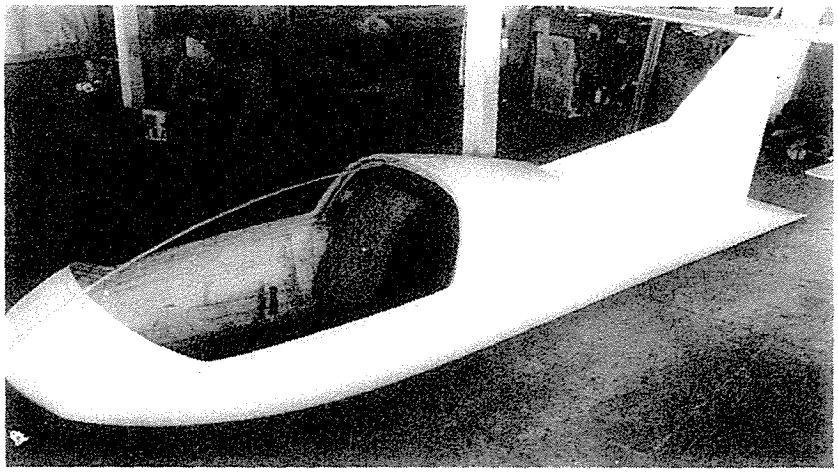
Luggage: Able to carry 200 lb. of bulky luggage. Easy to load and unload, with no effect on C of G position.

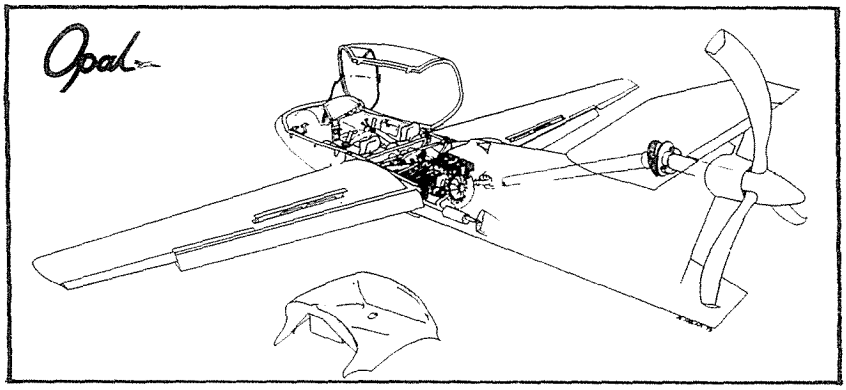
Low operating cost: Ensured by minimum size, weight and drag airframe, retractable undercarriage, high-aspect ratio wing, minimum size engine, and pusher configuration for slow-speed economy.

Low maintenance: Fibreglass airframe, simple mechanical systems, inherently protected aero-elastic propeller.

Repairability: Relatively minor damage incurred during use to be easily made good and the finish restored. Immune to corrosion.

The result of these requirements is a small, exceptionally clean fuselage, not unlike (except for length) that of a high-performance, side-by-side two-seater sailplane. With the occupants in semi-reclining seats beneath





TOP: The clean lines of the Nolan Opal — the application of sailplane technology to modern light aircraft design. ABOVE: An "exploded" view of the Opal, showing the drive mechanism philosophy, which still requires more detailed design work.

COVER SHEET. (24 PGS)
OVERVIEW DOC.

MAX-PLANCK-GESELLSCHAFT

Max-Planck-Institut
für biologische Kybernetik

What if we simply fly to work?

THIS IS A CURRENT EU PROGRAM
— ALL FEASIBILITY STUDIES HAVE BEEN PASSED (OPERATIONS)
— VEHICLE DESIGN IS NOT SPECIFIC TO THIS BRIEF. EU HAS ALREADY BEEN DOWN THE HIGH SPEED RAIL / AIRLINK AND AUTOBAHN ROUTE AND CONCLUDED THAT IT STILL NEEDS URBAN AND OTHER PERSONAL MOBILITY IMPROVEMENT — BY AIR.

http://www.mycopter.eu

myCopter – Enabling Technologies for Personal Aerial Transportation Systems

Prof. Dr. Heinrich H. Bülthoff
Max Planck Institute for Biological Cybernetics
Tübingen, Germany

mycopter

...European Union under the ... Framework Programme

IEAust News

IEAust, Victoria Division, Clunies Ross House, 191 Royal Parade, Parkville Vic 3052 Ph: (03) 347 1088 Fax: (03) 347 1208

I WAS IN CHARGE OF VT COMMODORE PRE PROTOTYPE CONSTRUCTION AT THIS TIME. GMH NOT ALLOWED BY HEAD OFFICE (DETROIT) TO VIEW MATL.

Road Safety Committee

Notice of General Public Meeting

Sponsored by RACV

Future Travel – Flying Cars and Intelligent Vehicle Highway Systems (IVHS)

Thursday, 25 November 1993

Clunies Ross House (Auditorium 1)
191 Royal Parade, Parkville
5.00pm for 5.30pm

* Light refreshments served from 5.00pm. Meeting starts 5.30pm

Opening Address by Mr Frank Green (Assistant Commissioner, Victoria Police)

Speakers:

Mr William Keramidas (Forensic Engineer and Accident Reconstructionist, Victoria Police)
Dr Max Lay (Director Major Projects, VicRoads and Vice President, IVHS Australia)
Mr Ross Nolan (Aircraft designer Principal, Aircar Industry)

Road transport as we know it is becoming less viable in major urban centres due to increasing congestion and environmental pollution.
What improvements in efficiency, safety, and environmental friendliness will Intelligent Vehicle Highway Systems (IVHS) offer?
Will aircars or flying cars be our next logical step in personal transport, and will Australia participate in their development?
Is there a changing role for the police?

Some of the issues the speakers will address are:
* Safety and personnel transport systems;
* IVHS developments in Australia and overseas;
* Urban airborne transportation.

Please circulate this newsletter around your office or place it on your notice board. This meeting will arouse considerable interest and so be early to register your intention to attend Tel: 347 1088 by Friday, 19 November 1993. Numbers are limited

Victorian
Competition & Efficiency
Commission

Inquiry into Managing Transport Congestion

Submission number: 22

Name of participant: Ross Nolan

Date received: 1 December 2005

Number of Earlier Submissions:

Number of Pages: 4

Attachments submitted with this Submission:

AVAILABLE ON WEBSITE.

+ OTHER SUBMISSIONS TO PREVIOUS AND SIMILAR TRANSPORT AND AUTOMOTIVE INDUSTRY RELATED ENQUIRIES / STUDIES.

To obtain copies of these attachments please call (03) 9651 2211

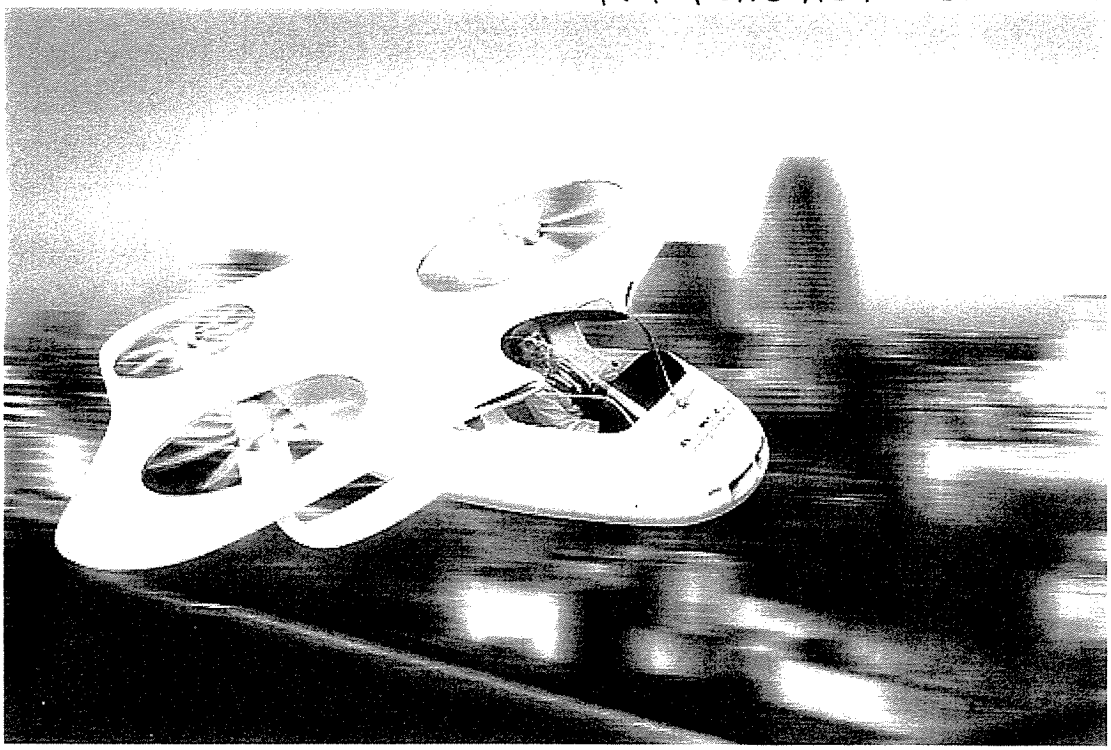
AIRCRAFT (/TAGS/AIRCRAFT) FLYING CARS (/TAGS/FLYING-CARS)

MyCopter project to prepare Europe for the age of the flying car

Evan Ackerman (/author/evan-ackerman)

Thursday, July 7, 2011 - 10:07am

— AUSTRALIA IS STILL IN THE 'RED FLAG ACT' STAGE . . .

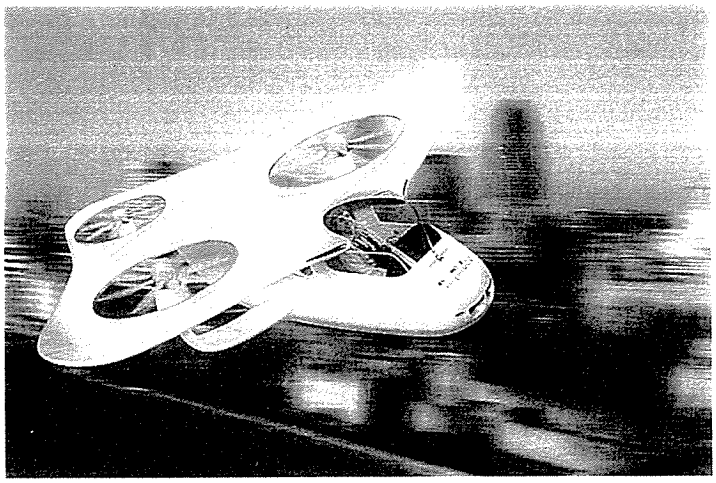


Everybody wants to know where their flying car (http://dvice.com/archives/2011/06/flying-cars-go.php) is, but let's just stop for a minute and think about what happens when everybody *gets* a flying car. All those terrible drivers will suddenly have the opportunity to crash directly into your house from above, and trust me, they will. The EU is trying to get a jump on the problem, with a project called myCopter.

myCopter project preps Europe for flying car generation

By Edwin Kee on 07/07/2011

Filed in Homepage > Uncategorized > eu > european union > flying car > mycopter > mycopter project



Flying cars have long been the fantasy of many people, as it certainly beats the crammed seats of an Economy Class flight, and yet solves the trouble of traffic jams. Unfortunately, there are still many other issues to think about – when driving on a road with lines to guide you still result in accidents because of bad or careless drivers, what happens when the same drivers take to the skies, without any lines or sense of orientation to guide them? I know, right? Total mayhem. The European Union is preparing for such a day with the myCopter project.

The whole idea behind myCopter is to set up a framework that even the most bumbling drivers can still get around in the air safely without harming anyone else or destroying public property. The only way to do that? Make sure such folks have a minimal a role in the operation of their vehicles – hence the EU's stance on making such flying cars as autonomous as possible.

Guess they had better start with owners of the [illegible]...

RELATED

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- [illegible]
- [illegible]
- [illegible]
- **Seen at:** [illegible]

TYPICAL REPORT TO VERIFY EXISTENCE OF EU 'FLYING CAR' R+D WORK – THIS PRESENTLY OUTLAWED IN AUSTRALIA AND IS UNDER TAKEN FROM 'REVENUE PROTECTION' CLAUSES IN CITY LINK CONTRACT AND SOUGHT FOR EAST WEST LINK. BOTH BREACH COMPETITION POLICY.

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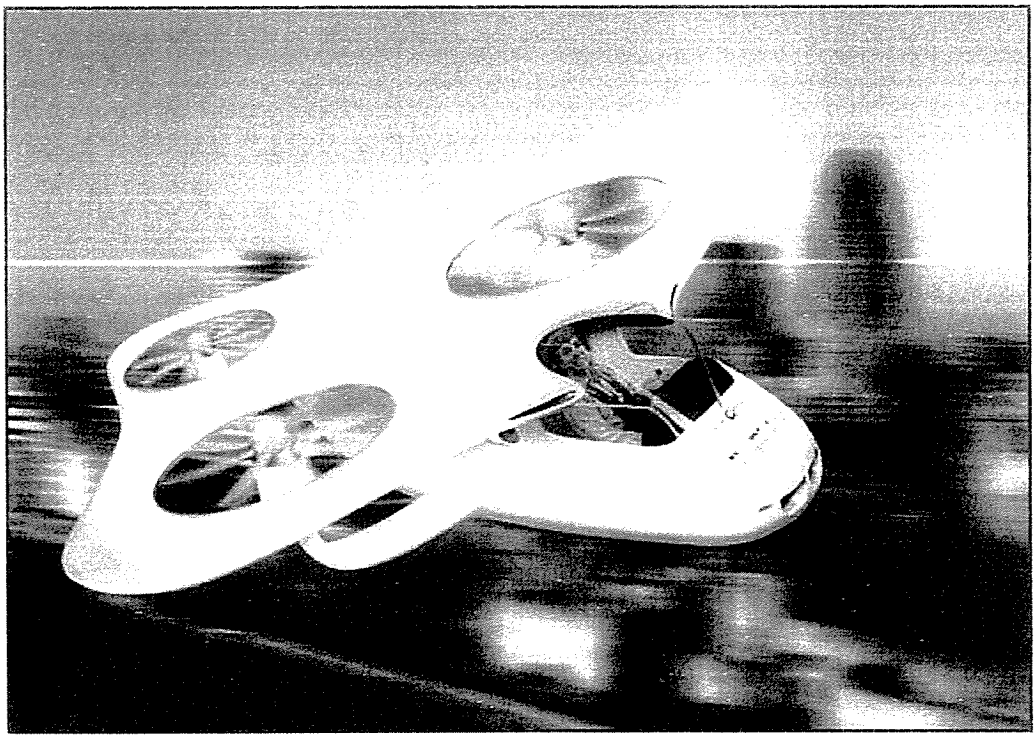
MORE GENERAL REPORTS ON EU FUTURE MOBILITY VIA FLYING VEHICLES (INCLUDING "ROADABLE" VERSIONS

EU Funded Project MyCopter set to Decongest Cities with Flying Cars

Richard Meryn | Jul 09, 2011 | Comments 1



EU project myCopter set to Decongest European cities with Flying Cars

European Cities like Copenhagen have, in the past, been pioneers of green transportation initiatives like wide-scale pedestrianisation and "bike-to-work". The world has now begun recognizing and implementing these as sustainable means of transport towards helping cut carbon emissions.

Now, the **European Union** is looking at more technologically advanced ways of decongesting European cities, with a project called myCopter that explores the possibility of using **Personal Aerial Vehicles (PAVs)** to solve congestion problems that currently exist in European cities.

The EU has set aside a €4.2 million (US$6.2m) for this project, which has resulted from a "unique integration of social investigations and technological advancements".

Personal Aerial Transportation Systems

JUST FOR THE RECORD.

Royal Melbourne Institute of Technology

124 LA TROBE STREET, MELBOURNE, VIC. 3000
BOX No. 2476V G.P.O. MELBOURNE, VIC. 3001
Telegraphic Address: "Meltech" Melbourne.
Telephone: 340234, Extension No.
In reply please quote

Letters should be addressed to the Principal.

11th April, 1973.

TO WHOM IT MAY CONCERN

This is to introduce Mr. Ross NOLAN, a former student of this Department, who is going to do further studies at Stuttgart University.

Rarely one meets a better and more motivated student than Mr. Nolan. He showed excellent results as a Dux of Mildura Technical College. His results at Form Six (Matriculation) were excellent.

Mr. Nolan is particularly interested in gliding and is a current gliding champion of Victoria. He is going to Germany especially to study sailplane and aircraft design at Stuttgart University.

Mr. Nolan has a pleasing personality and is thoroughly trustworthy.

[redacted], A.F.C.,M.M.,F.R.Ae.S.,
F.I.E. (Aust)
Former Chief Designer Victa Aviatron,
Senior Lecturer,
Aeronautics Department,
ROYAL MELBOURNE INSTITUTE OF TECHNOLOGY.

HKM/GW