TECHNICAL: DEFENC E

Israel tests thrust-

vectoring concepts
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nmanned aerial vehicles
(UAVs), including F-15 and
F-16 models, are being used by
Israeli technology institute
Technion to demonstrate post-
stall rapid nose-pointing and
shooting capabilities of thrust-
vectored fighters.
The short take-off and landing
benefits of thrust vectoring are
also being studied.
Professor Benjamin Gal Or,
head of the jet propulsion lab-
oratory of the institute, is in
charge of the project. Funding
has been provided by the US Air
Force, Teledyne, General Elec-
tric and General Dynamics. De-
tails of the work will be released

later this month in the USA.
The research team has been
flying yaw-pitch-roll thrust-vec-
tored UAVs since 1987. The
most recent of the eight UAVs to
have flown in the research pro-
gramme are models of the F-15
and F-16. Both have dem-
onstrated the Cobra manoeuvre
performed by the Sukhoi Su-27
Flanker during its flight displays,
and tested post-stall, super-
manceuvrability and , super-
controllability characteristics.
The F-15 and F-16 UAVs are
also equipped with conventional
control surfaces, and control can
be switched in flight to thrust
vectoring and vice-versa. The
UAVs involved in the research
are powered by ducted fans
producing cold j ets. •

Rockwell and Emerson in HeliTOW deal

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ockwell International Missile
Systems division and Emer-
son Electric have signed to de-
velop and market an integrated
HeliTOW-Hellfire system for
helicopter applications.
A prototype of the system,
HeliTOW-Hellfire is expected to
be completed and to enter testing
later during the second quarter
of this year.
The agreement covers three
areas of co-operation: proof of
concept for the integrated
system; development of a proto-
type system; and international
marketing of the equipment.
Proof of concept will dem-
onstrate that the laser designator
to be added to the HeliTOW
system is compatible with
Hellfire missiles. The prototype
development looks at integration
of the two systems, with captive
flight tests and firing demonstra-
tions, and marketing will focus
on selling the system as a "turn-
key" operation.
Rockwell, Hellfire developer
and prime contractor, will pro-
vide the missile, launcher and
missile control and test equip-
ment. Emerson, developer and

manufacturer of HeliTOW, is to
provide the •Helios/HeliTOW
system, which includes laser des-
ignator and test equipment.
Autonomous Hellfire capabil-
ity will be achieved through a
Litton laser designator mounted
in the HeliTOW sight unit.
9 Emerson Electric has also
awarded a $520,000 contract to
Rockwell International's Missile
Systems division for support
work on the Hellfire missile
demonstration programme. The
object of the 16-month ground-
launch/heavy technical feasibil-
ity programme, on which Rock-
well will provide integration and
testing support, is to dem-
onstrate the Hellfire operation
from an armoured vehicle. The
complete weapon system will
consist of eight Hellfire rounds,
under armour, mounted on an
M-113 armoured vehicle. It is
intended to fulfil the anti-armour
mission requirements by provid-
ing a high-rate-of-fire anti-
armour capability to armoured
mechanised round forces. It is
claimed to be adaptable to other
platforms including the Bradley
and LAV family of vehicles. D

Chinese trainer displays US cockpit technology

Western technology for Chinese K-8 Western equipment on show

in the cockpit mockup of
the Chinese Nanchang K-8 jet
trainer includes the Collins elec-
tronic flight information system,
Bendix UHF/VHF and TACAN.
The export version will also
sport tandem Martin-Baker Mk
10 zero-zero ejection seats and
will be powered by two Garrett
TFE731-2A turbofans unless US
trade embargoes force the use of
alternatives.
The trainer is being developed
jointly by CATIC, Nanchang and
Pakistan Aeronautical, and flight
trials are scheduled to begin in
May. An initial batch of 20 air-

craft is slated for production.
China is set to acquire more than
a 1,000 K-8 trainers, while the
Pakistan Government, which has
a 25% share in the programme,
requires up to 150 trainers.
Chinese Air Force aircraft will
be equipped with indigenous
avionics and other systems,
including the engine, which
would probably be the Lotarev/
ZVL DV-2 turbofan. ZVL of
Czechoslovakia has offered a co-
production deal on the engine.
An Allied-Signal environ-
mental control system will main-
tain pressurisation and cockpit
temperature above 7,800ft. D

SAKER 80's 1991 debut

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gypt will begin the produc-
tion of its locally-developed
SAKER 80 ground-to-ground
rocket next year. The rocket will
replace the Soviet-made FROG-7
in the Egyptian inventory.
The SAKER 80 is thought to be
a free-flying rocket with a war-
head delivery accuracy within

1,200m. It will be equipped
either with a general-purpose
high-explosive warhead or with a
cluster warhead.
The single-stage, solid-fuel
rocket will have a maximum
range of 80km and will be used
to engage second-line targets. It
will be launched from a mobile
launcher similar to the one used
for the FROG-7. D

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