DEFENCE

Stealthy Kiowa kits available from Bell
BY GRAHAM WARWICK
IN ATLANTA

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ell Helicopter Textron has
revealed the existence of a
stealthy OH-58D Kiowa Warrior.
The US Army modified 18 air-
craft for Operation Desert Storm
but the Gulf War ended before
they could be deployed.
Testing shows the modifica-
tion, to reduce overall radar
cross-section, "...works ex-
tremely well", says Jack Gal-
lagher, Bell's OH-58D pro-
gramme manager. The modified
helicopter "...performs [against
known threats] better than any-
thing out there", he says.

The modification was devel-
oped to meet a US Army require-
ment for a stealthy scout
helicopter and to demonstrate
that it is possible to reduce the
radar signature of an existing
aircraft, says Gallagher. The OH-
58D stealth modifications are
available as a $200,000 kit.
The nose is reshaped and
given a Bell-patented radar-
absorbent coating. The canopy is
coated to prevent radar energy
entering the cockpit. The en-
gine/gearbox cowling looks simi-
lar to the standard unit but is a
new item made from radar-
absorbing material (RAM).
RAM and shaping are com-

Helicopter survival work stepped up
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ew details have emerged of
advanced electronic-warfare
systems under development for
US Army helicopters. The serv-
ice has stepped up work on
aircraft survivability equipment
following the Gulf War.
The two major programmes,
now in advanced development,
are ITT Avionics' advanced-
threat radar jammer (ATRJ) and
Lockheed Sanders' advanced
threat infra-red countermeasures
(ATIRCM) system. Other new
programmes are the Hughes
ARV-2 laser-warning receiver,
now entering service on AH-64
Apaches and OH-58D Kiowa
Warriors, and the IBM APR-48
radar-frequency interferometer,
a target-acquisition device in en-
gineering development for use
on AH-64s and OH-58Ds.

The ATRJ is a single-box re-
placement for existing radar-
warning and electronic-counter-
measures systems and provides
self-protection against pulse,
pulse-Doppler and continuous-
wave radar-directed weapons.
The ATIRCM uses steerable la-
sers to blind heat-seeking mis-
siles and is a replacement for
current missile-approach warn-
ing and infra-red (IR) counter-
measures systems.
Both the ATRJ and ATIRCM

programmes are in the proof-of-
concept phase. ITT was awarded
the ATRJ advanced-development
contract in September 1990 and
flight tests, in a UH-60, are
planned for the end of 1992.
Engineering development is
scheduled to begin in 1993.
ITT says the programme is
"...going extremely well. It's on
schedule and on cost." The ATRJ
is intended to be a single box,
weighing less than 45kg, which
will detect, identify and counter
automatically, with chaff and
jamming, multiple, simultaneous
ground and airborne radar-
directed threats.
Lockheed Sanders won the
ATIRCM advanced-development
contract in October 1991 and is
building three proof-of-concept
systems for flight tests to be
completed in September 1994.
The system comprises dorsal
and ventral gimballed sensor/
laser turrets which detect and
counter IR missiles using flares
to decoy and lasers to dazzle
their seekers.
"This directable IRCM con-
cept is a major breakthrough in
IR self-protection," says Lock-
heed Sanders. The US Army
plans to install both the ATRJ
and the IRCM in the upgraded
AH-64D Longbow Apache. •

Stealthy Kiowa, too late for the Gulf War, but available now

bined in a "cuff concealing the
rotor mast and hub. The mast-
mounted sight receives a radar-
absorbing coating, as do the
main rotor blades — "...to re-
duce definition", says Gallagher.
RAM covers the skids, horizon-
tal stabiliser and a fairing over
the tail-rotor hub. New win-
dowless cabin doors are fitted.
Some of the stealth modifica-
tions are featured on the
OH-58D variant unveiled at the
recent US Army Aviation Associ-
ation of America show (Flight
International, 22-28 April). This
multi-role version of the Kiowa
Warrior has been developed pri-
vately by Bell for international
customers but incorporates De-
sert Storm lessons.

Recognising that international
customers might not be able to
afford the full-up OH-58D, Bell
has developed a cheaper, more-
versatile basic variant, with
cabin seats and cargo hook, to
which can be added later the
mast-mounted sight, advanced

avionics and weapons.
Performance improvements in
the OH-58D variant include ad-
ditional fuel, increasing endur-
ance from 2h to 3h, and a
modified ram-air inlet which
boosts engine power in forward
flight by 33kW (45shp), raising
speed from 119kt (220km/h) to
127kt. Avionics improvements
include a laser-gyro inertial-
navigation/global-positioning
system with lm accuracy, a
colour digital moving-map dis-
play, new high-frequency radio,
pilot night-vision sensor and
helmet-mounted displays for
both crew members.

The full-up OH-58D variant
costs $6.7 million and retains
the ability to carry passengers, as
the avionics which fill the cabin
of the $6 million US Army
aircraft have been relocated into
the baggage bay and extended
nose. "In the worst case, the
full-up OH-58D variant will
carry two additional people,"
says Gallagher. •

Search for UH-1 replacement stalls
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he US Army's effort to find
a replacement for its ageing
fleet of Bell UH-1 Iroquois heli-
copters has effectively ground to
a halt. More than six months
after the end of the Utility Air-
craft Requirements Study
(UTARS) the service has con-
cluded that it is unlikely that
any of the proposed replace-
ments are affordable.
Some officials are now look-
ing at the possibility of upgrad-
ing Bell OH-58A Kiowas to fill
at least the light end of the
utility requirement. More

Sikorsky UH-60 Black Hawks
could handle the heavier needs
but the Army believes that funds
are unlikely to be made available
to buy enough aircraft to solve
the problem.
Army acquisition chief
Stephen Conver says of UTARS:
"We're looking at some options
and trying to consider how to
best proceed with that, but any-
one who is looking at the pros-
pect of new business for a utility
helicopter replacement pro-
gramme is probably going to
have a long wait." •

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