High-flying U-2 takes its final bow

by John Bailey
at Edwards AFB

The last of the original Lock-
heed U-2 high-altitude recon-
naissance aircraft was retired by
NASA last week, but not before
it was finally allowed to demon-
strate publicly its extraordinary
performance.
The aircraft, a U-2C built in
1955 at Lockheed's "Skunk
Works" in Burbank, set 16 new
altitude and time-to-climb

records during its last two
operational flights from
NASA's Dryden Flight
Research Center.
Lockheed built approxi-
mately 60 U-2s during the late
1950s and early 1960s at the
height of the Cold War, (the Air
Force has never revealed the
precise number).
More than 40 of the original
fleet were lost through a combi-
nation of hostile fire and acci-

dents, according to British
journalist Chris Pocock, who is
about to publish a history of the
U-2. Of these, seven are
believed to have been shot
down, including Gary Powers'
aircraft over the Soviet Union in
May 1960. One was lost over
Cuba during the 1962 missile
crisis, and the remainder were
shot down over China while
operated by the Taiwanese,
Pocock says.

The U-2 's record-breaking performance is no longer obscured by classification

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The original U-2 was
acknowledged as a very difficult
aircraft to fly. At extreme alti-
tudes, the margin between the
stall and never-exceed speeds
was approximately 5kt, forcing
the pilot into a so-called "coffin
corner".
Several U-2s were lost as a
result of engine flameouts at
high altitude or through struc-
tural failure. Others were lost
on approach, where the U-2
required unusually precise
handling because of the small
margin between the approach
speed and the aerodynamic
stall. The U-2's bicycle landing
gear also required careful
balancing of the fuel in each
wing tank before landing.

Pilot-friendly U-2R
A larger and more pilot-friendly
version, the U-2R (approxi-
mately 40 per cent larger than
the original U-2 series), was
introduced by Lockheed in
the mid-1960s, although
production ceased in 1968.
It is believed that none of this
variant crashed.
In 1980 the USAF ordered a
new variant of the U-2R, known
as the TR-1. The airframe is
virtually identical, although it
carries a side-looking synthetic-
aperture radar, which enables it
to fulfil its battlefield surveil-
lance mission without over-
flying hostile territory.
Thirty-five were ordered, and
the last one will be rolled out by
Lockheed in September.
The U-2C retired last week
was the ninth built by Lock-
heed, and was transferred to
NASA in 1971 as an environ-
mental research aircraft.

The aircraft attempted
records in two take-off weight
categories, C-1F group III
(13,2271b to 19,8411b) and
C-1G group III (19,8411b to
26,4551b).
Among the records estab-
lished by the U-2C were: alti-
tude in horizontal flight
73,700ft, time to 3,000m
(9,937ft) of 52 seconds, and
time to 20,000m (66,247ft) of
12 min, 13 seconds. All of these
were achieved in the lighter of
the two weight categories, with
an actual take-off weight of
15,9891b. The U-2 took just
150ft of runway to get airborne.

Many of the records set last
week had previously been
achieved by the U-2 in oper-
ational service, but the nature of
its role prevented Lockheed
from publicising the fact.

24 FLIGHT INTERNATIONAL, 29 April 1989