HAVE DRILL/HAVE FERRY - EXPLOITATION OF THE SOVIET MiG-17F

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DETAILED THREAT KNOWLEDGE

- The heritage of Foreign Materiel Exploitation
- 1945 - Exploiting The ME-262
- The Problem with the Russians
A Dream Come True

- MiG-15bis flown by No Kum Sok defected on 21 September 1953
- Most important technical intelligence of the 1950s: Validated our methods
Testing the MiG-15

- MiG-15 flown at Wright Patterson, Eglin, PAX River
- Flew against B-47, B-36, F-84 and F-86
1969: The MiG-17F’s Turn
What We Had

- HAVE DRILL
- Instrumented
- Periscope
- SCAN FIX radar
- 172 sorties

- HAVE FERRY
- Back-up A/C
- No Periscope
- No radar
- 52 Sorties
Test Equipment
AFFTC personnel replaced the clock, airspeed indicator, altimeter, and accelerometer, plus installed a machmeter.

- Installed voice tape recorder in cockpit and photo recorder for instruments in the nose compartment.

- 14-channel oscillograph mounted in gun platform where ammo boxes were. It weighed 75 pounds.

- Recorded fuel flow/temperature, OAT, engine RPM, airspeed/altitude, control surface positions, attitude, roll-pitch-yaw rates, acceleration and the EVENT button.
14-channel Oscillograph
The MiG-17F cockpit

- Antiquated design
- Cramped for a man over 6 feet and the seat was not adjustable
  - Excellent periscope
MiG-17 Cockpit Modifications

- G meter
- Intervalometer
- Airspeed
- Altimeter
- Machmeter
- EGT/Tach
- Tape recorder
- UHF radio
- OSC/Event
Cockpit
Testing The MiG-17

- 300-350 KIAS - MiG’s best speed advantage, we couldn’t outturn it
- 450 KIAS+ Speed is Life
- No smoke trail
- SCAN FIX lit the AAA warning light
- Combat radius –
  115nm clean
  215nm w/tanks

Aircraft was extremely reliable!! 4-5 sorties a day
37mm/23mm Gun Tests
Don’t Get Hit By Them
Technical Test Lessons Learned

- Exploited SRD-1 SCAN FIX, SRO-2 IFF, VHF radio, SIRENA RWR – Learned a Lot!
- VK-1F engine
- Infrared/Acoustic/Radar Measurements
- Vulnerability Study
- Hydraulics – Who needs them?
- She’s hard to steer – differential braking
- 375 gallons internal fuel - 20-25 minutes
- Hard to see!! Little and clean
- Above 375 KIAS – Dutch Roll
HAVE FERRY
Good Stuff to Know

-Above Mach .85 control very heavy (2 hands)...8.0g limit

-In 224 flights, only 23 major discrepancies occurred and only two missions were lost

-They spun it once (fully developed) during flight test. Spun to the left, full right rudder did nothing for four turns..popped stick full forward (to white line)...recovered after 23 seconds/3,000 ft

-Controls did not have pitch, roll, or yaw stability augmentation and only the ailerons were hydraulically boosted. Rudder/elevator manual

-HAVE DRILL was Lim-5 serial number 1C-07-18, built in Poland in 1956-57. The LIS-5 engine was serial number 559128

<table>
<thead>
<tr>
<th>Aircraft</th>
<th>Arrival</th>
<th>First Flight</th>
<th>Total sorties</th>
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<tbody>
<tr>
<td>HAVE DRILL</td>
<td>27 Jan 69</td>
<td>17 Feb 69</td>
<td>172/131.3 hrs/55 days</td>
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<tr>
<td>HAVE FERRY</td>
<td>12 Mar 69</td>
<td>9 Apr 69</td>
<td>52/37.7 hrs/20 days</td>
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