

Three of No. 208 Squadron's Buccaneer S.2s over the North Sea (left to right XV869, XV341 and XN981), photographed from XV161

FLYING WITH THE R.A.F. TODAY—No. 14

## Buccaneer Strike

Report and photos by MALCOLM ENGLISH

AT R.A.F. HONINGTON, Suffolk, S/Ldr. Dave Ainge and his navigator, F/Lt. Alan Vincent, of No. 208 Squadron had just completed their pre-flight briefing when we were informed by R.A.F. Marham, Norfolk, that our Victor tanker would be delayed for 40 minutes. The tanker had been requested to provide air-to-air refuelling support for two of the four Buccaneers participating in our sortie. The mission, detailed by Dave Ainge and Alan Vincent, was for a four-ship formation to perform a low-level strike typical of the profile which would be flown by No. 208 Squadron in anger.

Basically, the sortie was for all four Buccaneers to rendezvous with a Victor tanker at Tow Line 5, a refuelling area over the North Sea, approximately 80 miles east of Cowden, and for two of the crews to practise dry and wet contacts. We were then to descend for a low-level transit across the North Yorkshire moors, through the Lake District and up to Spadeadam, Cumbria, for a simulated attack on Berry Hill.

During the "attack" we would be able to receive and, hopefully, identify audio and visual signals from the simu-

lated Russian radars at the Spadeadam range. On our return we were booked into the Cowden and Wainfleet ranges on the East Coast where the three accompanying aircraft would perform bunt laydown and toss bombing attacks with practice bombs before returning to Honington.

I had just completed strapping into Buccaneer S.2 XV161 "E" ten minutes before our revised take-off time when my pilot, S/Ldr. Bob Joy, informed me that there had been yet another delay. The tanker was held for a further 30 minutes. By now I was beginning to think I was fated never to fly in a Buccaneer.

### First attempt

Four weeks previously I had arrived at Honington for a similar sortie. On arrival I was given a brief medical and then whisked off to the equipment section for kitting out and briefing on survival equipment and the Martin Baker type 6 zero-zero rocket ejection seat.

The rest of the afternoon was spent in being acquainted with the instrument and control layout of the navigator's

cockpit. The essential switches to remember were on the fuel control panel. In addition, I was shown how to operate the Blue Parrot strike radar and the radar warning receiver (RWR) controls. Bob Joy also pointed out the identification friend or foe (IFF) panel and explained briefly how to select frequencies in the unlikely event that we would be asked to identify ourselves during the sortie.

My flight was scheduled for 11 a.m. the following day and I was asked to arrive at 9 a.m. to attend the 9.15 a.m. meteorological briefing. Leaving home at 6 a.m. in drizzling rain I had a puncture. This set the trend for the rest of the day. The Honington met. man forecast rain, low cloud and poor visibility moving over from the west and descending on Honington by lunch time. This would severely restrict our sortie so I took the advice of Bob Joy and elected to postpone my trip and wait for better weather.

As so often happens in Britain, the weather changed as the day progressed and by lunch time the sky was blue, the birds were singing and I was more than a little frustrated having watched the flight take off an hour earlier—without me!

However, the day was far from

AIR PICTORIAL

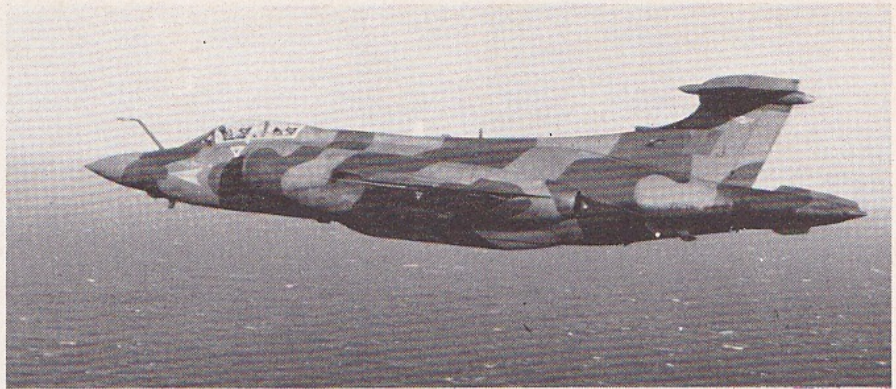
wasted. A crew from No. 208 Squadron who had flown their first Pave Spike sortie invited me to view the video recording taken during their mission over the North Sea. They had practised "illuminating" ships in the Bridlington Bay area and the Flamborough Head lighthouse with the laser designator pod. Although the build-up of salt on the front of the pod lens noticeably degraded the image quality when the camera was looking straight ahead, the overall sharpness and contrast were excellent. Also impressive was the apparent ease of acquiring a target and then tracking it while the aircraft was manoeuvred.

### Simulator training

I had just sufficient time to re-familiarise myself with the rear cockpit in the Redifon Buccaneer flight simulator when I was asked to vacate my seat for a crew who were to have their monthly simulator check "flight". The simulator plays an important role in system training, more so with the Buccaneer than certain other types of multi-seat aircraft because of the lack of dual controls which prohibits simulation of system malfunctions in flight.

The value of simulator training was dramatically demonstrated on a couple of occasions when student pilots suffered engine failures and successfully recovered their aircraft. Ironically, both events occurred on the day before my visits to Honington! The most recent incident involved a student pilot on his first Buccaneer sortie who lost an engine at the most critical time possible—on the approach. I bet there was some cool encouragement from the back seat instructor for a while.

The crew who were "flying" the simulator during my visit had been tasked to fly from Honington to R.A.F. Leeming in Yorkshire. An easy enough sortie you might think; but that is not allowing for the wile of the simulator operators. After the crew had completed their pre-take-off checks, the simulator was fed a tailplane flap failure to give asymmetric flap retraction after



Close-up of Buccaneer XN981 "J", flown by S/Ldr. Dave Ainge and F/Lt. Alan Vincent, during the return to Honington. Note CBLs on port underwing pylon

take-off. Cleaning up the aircraft on climb-out the crew spotted the failure warning, notified Honington control and stated that they were going to dump fuel and return. As this would have curtailed the mission, the simulator operators cancelled the failure and instructed the crew to resume their sortie.

A fuel transfer valve failure was then fed into the simulator. This wasn't particularly serious and was rapidly recognised by the crew who took the appropriate action, as per the flight reference card instructions. The operators wanted to simulate an oil pressure failure which necessitates an engine shut-down. However, as this could result in the sortie being aborted, they waited until the aircraft was entering a corridor to cross an airway. This stratagem had two purposes. It prevented the crew from turning back and, because the operators in the role of air traffic controllers were giving the crew constant corrections to their flight path for their entry into the corridor, they were diverted as much as possible from the low oil pressure warning. In spite of all these diversions the warning was seen, the engine shut down and a PAN (distress) call transmitted.

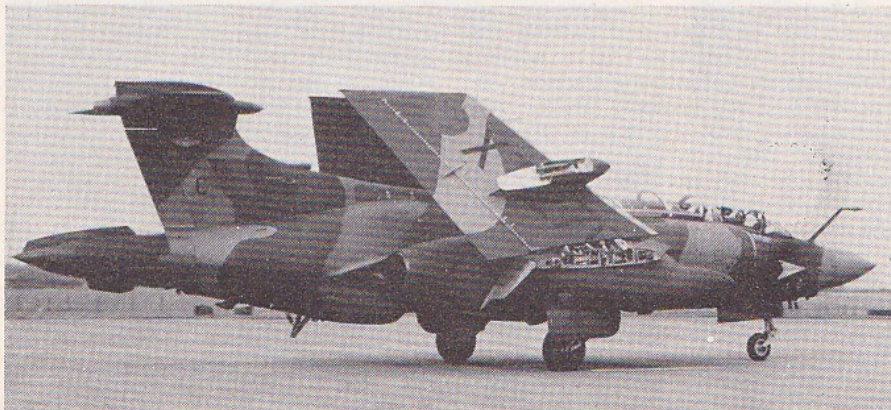
On arrival at Leeming, the crew configured the aircraft for a single-engine landing but on selecting undercarriage

down obtained a nosewheel failure to lower indication and were forced to overshoot.

This was a classic example in the art of simulator operation. The operators wanted to order an overshoot but were unable to do so because of the PAN call. To force the crew to carry out an overshoot, they fed in a nosewheel failure to lower. During the overshoot, the crew asked the control tower for a visual inspection. The tower (the simulator instructors) reported that the nosewheel undercarriage had not lowered, thus confirming that the warning light was not due to a faulty micro switch as sometimes happens. Having successfully lowered the nosewheel by selecting emergency pressure, the crew then completed a safe landing.

The realism of the sortie could be gauged by the perspiration-soaked flying suits as the crew emerged from the simulator. Crew performance in the simulator is included in their records. Most crews are proficient at reacting to system failures and the particular crew whose flight I witnessed were commended for the way in which they

Below: Another of No. 208's Buccaneers, XT270 "C", taxi-ing with wings folded at Honington and armed with CBLs on underwing pylons and in the bomb bay  
Right: The author kitted out for his flight in a Buccaneer from Honington





No. 208 Squadron Buccaneers XV341 "L" (Left) and XN981 "J" at 15,000 ft. in the Tow Line 5 area over the North Sea as they prepared to refuel from Victor K.2 XL233 of No. 55 Squadron which was trailing drogues from both wing fuelling pods

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kept the ground control authorities notified of all events and their intentions.

The remainder of the day was spent in the safety equipment section where I was given a detailed briefing on survival equipment and the Martin Baker type 6 MSB rocket ejection seat. Most of the survival equipment is contained in the personal survival pack (PSP). In addition, the skeletal torso harness includes a life jacket and contains a Sarbe beacon, mini flares and a few other pieces of emergency equipment.

The PSP normally contains provisions for survival in the areas overflown in regular Buccaneer operations. When necessary, special packs are substituted for use when deployed to more extreme climates such as those experienced at Nellis AFB, Nevada, and Cold Lake, Canada.

Most of the sorties performed by Buccaneers are flown at low level. Therefore, they have been fitted with Martin Baker rocket ejection seats capable of safely ejecting a crew member at zero speed and zero altitude. Ejection is initiated by pulling either the face blind or the seat pan firing handle. Initially the seat is ejected by a two-stage cartridge, the rocket pack ignites on withdrawal of a sear by a static line after the seat has travelled up the guide rails.

To prevent the seat from tumbling after leaving the guide rails, the thrust vector of the rocket motor must be adjusted for the weight of the crew member. This ensures that the thrust

vector passes through or close to the seat/crew member centre of gravity.

Modifications are currently in hand to incorporate miniature detonating cord (MDC) to both the pilot's and navigator's cockpit canopies. The MDC is ignited by pulling either the face blind or the seat pan handle and reduces the duration of the ejection sequence when even milliseconds may be priceless. The aircraft in which I flew, XV161, was partially modified in that MDC was fitted to the pilot's canopy.

## Airborne at last

At last, I was to get airborne! The Victor had taken off from Marham, and I was strapping into XV161. Rather than risk delaying our take-off while I fumbled with the straps, I climbed aboard 10 minutes before the rest of the crew. It was nicely timed, I was just removing and stowing the last of the five ejection seat and canopy ejection safety pins when Bob Joy arrived.

Bob performed the pre-start checks, tested our intercom and started the two Rolls-Royce Spey 101s while I dialled my weight into the ejection seat and stowed my cameras on the role panel which is at the rear of the port console. The engines were barely audible through my helmet and the noise was further muted when Bob slid the canopy closed.

Having completed the post-start checks and enquiring if I was O.K., he taxied out, following Dave Ainge and Alan Vincent in the lead aircraft, XN981 "J". It is standard procedure with No. 208 Squadron to fold the wings while taxi-ing away from the

flight line to minimise the risk of a collision with ground equipment.

As we taxied, I switched the radar set on to "standby" and took stock of the cockpit. Even though the seats were offset 2 in. either side of the aircraft centre-line, the view forward was severely restricted by the top of the pilot's ejection seat and the navigation instruments stowage board. In addition, there was a transparent wrap-around blast shield edged with an alloy strip which I was afraid would get in the way when taking photographs; in the event it created no problem at all.

This criticism aside, the navigator has sufficient forward visibility to assist the pilot in visually acquiring a target. To improve the rearward field of vision XV161 was fitted with trial installation wide-angle rear-view mirrors.

We positioned ourselves on the runway to the right of XN981 with the other two Buccaneers immediately behind us and at almost 1500 hr. on the dot, Bob Joy released the brakes. With a fuel load of 19,800 lb. the acceleration was brisk but not neck-snapping. Immediately after take-off I selected the overload tank switches "on" to transfer fuel from the wing slipper tanks. XN981 could be seen ahead spewing out two black exhaust trails against a light blue sky.

As briefed, we flew in an open battle formation at 420 kt., low-level, until we crossed the East Coast where we descended to about 250 ft. To enable me to take photographs, Bob obligingly formatted on XN981.

As we manoeuvred I was surprised at the rapid acceleration. Even with two

CBLs (carrier bomb light store), which we were carrying on underwing pylons, slipper tanks and a bomb bay tank, the Buccaneer is an aerodynamically clean aircraft even by today's standards.

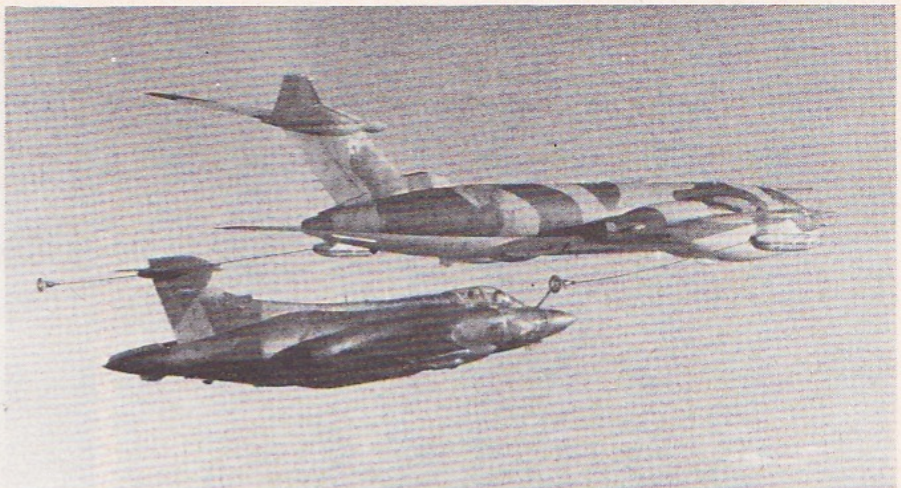
The large clamshell airbrakes were very effective in reducing airspeed and there was no doubt when they were selected. The deceleration was sufficient to throw me firmly forward against my shoulder straps.

#### Rendezvous with a Victor

After taking my photographs we reformed in battle formation with our aircraft on the starboard wing, descended to a "wave-skimming height" and accelerated to around 500 kt. To rendezvous with the tanker we climbed to FL 150 (15,000 ft.) which didn't take many minutes at 500 kt. and soon we had the Victor in sight.

Victor K.2 XL233 of No. 55 Squadron was trailing drogues from both wing refuelling pods and was in a gentle turn to port. Bob decelerated to 270 kt. and formed on the starboard side of the Victor while Dave Ainge practised a dry contact on the port drogue.

As Dave inserted the probe into the drogue the hose, instead of retracting 5-7 ft. into the refuelling pod, went slack, forcing Dave rapidly to disengage before the hose struck the radome or fractured the probe. After a second attempt, with the same result, he called it a day and made contact on the starboard drogue.



S/Ldr. Rob Wright (recently converted from Phantoms) and navigator F/Lt. Pete Ritchie in Buccaneer XV341 taking on fuel from the Victor's starboard wing pod

Next on the "pump" was S/Ldr. Rob Wright and his navigator F/Lt. Pete Ritchie in XV341 "L" for his first experience at in-flight refuelling with a Buccaneer, having recently converted from Phantoms. Apart from a mild phugoid oscillation as he approached the drogue—pilot induced oscillation?—Rob didn't have any apparent difficulty refuelling. Due mainly to the problem with the port refuelling pod, we exceeded our allotted 20 minutes refuelling time, so as soon as Rob had completed his wet contact, during which fuel was transferred at 200

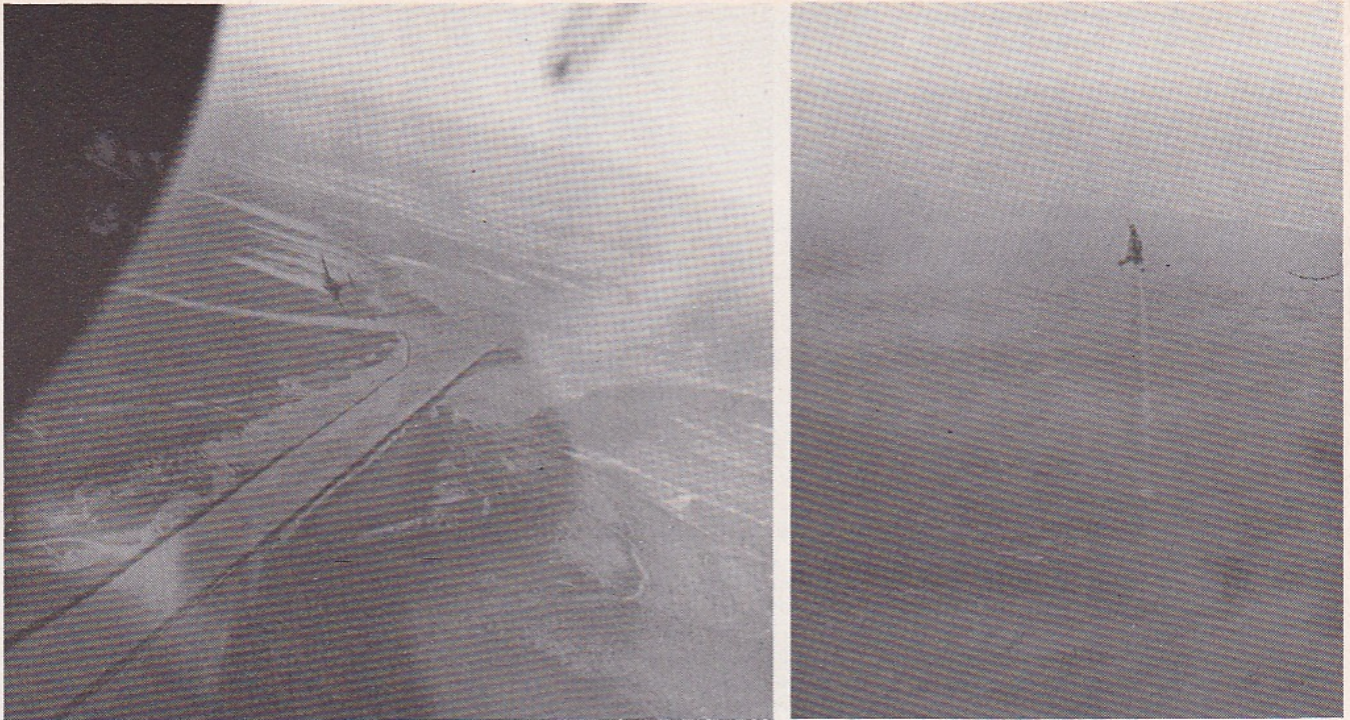
gal./min., we re-formed in battle formation and began an ear-popping descent to resume our sortie.

A 30-kt. wind was whipping up the spray as we sped, still very low, over the North Sea. To clean the windscreen which was rapidly filming over with salt, Bob pressed the windscreen wash valve and yawed the aircraft from side to side.

At Bob's suggestion I switched on the radar. Unfortunately the subtlety of radar displays is rather lost on me and all I could identify was the clear outline of the North Yorkshire coast a few miles

Back-seat views from Buccaneer XV161 as (Left) S/Ldr. Bob Joy "racks" the aircraft around a hill before flying up Lake Windermere in the Lake District and (Right) follows XN981 to the refuelling area. Note the MDC on the pilot's cockpit canopy





Left: Buccaneer XN981 flown by S/Ldr. Dave Ainge turning for the run-in to the Wainfleet target and toss-bomb manoeuvre. Right: Seconds later XN981 has released its store and is zooming upwards—the author in XV161 was inverted at this moment

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ahead of us. The visibility overland and at altitude had been good, with sunshine and an almost cloudless sky, but now the combination of salt spray and looking almost directly into the sun rendered Whitby lighthouse and the surrounding coastline a dark grey silhouette.

We recrossed the coast north of Whitby and flew low-level across the Fylingdales Moor with the huge "golf ball" radomes of the BMEWS visible to port. After flying over the Vale of Pickering we climbed to transit over Leeming. Aircraft flying east to west through the Leeming airspace are required to climb while west to east traffic pass through at low level. There have been some exciting moments when pilots have forgotten the procedure.

Two Jet Provosts were in the circuit as we flew over, their red and white colour scheme a distinct contrast against the green countryside. Descending again to low level we crossed the Yorkshire Dales. By this time the overload fuel tank gauges were indicating empty, so I transferred fuel from the bomb bay fuel tank and selected the overload fuel transfer switch "off".

The formation had changed as we crossed the coast; we were now flying close behind XN981 and the other two aircraft "did their own thing" a mile or two to port. We seldom flew straight for more than a few minutes at a time as we followed XN981 across the dales and because we were so low, XV341 and XV869 were only glimpsed occasionally through gaps in the hills. Bob

had to manoeuvre quite hard to remain close to XN981 which was often surrounded in condensation during turns.

I was particularly looking forward to the low-level flight through the Lake District. Having spent many walking holidays in the Lakes I naively thought that I would get a different view of some of my favourite haunts. Well, the view was certainly different—so much so that I was completely disorientated after three or four minutes.

After flying over the Morecambe Bay sandbanks we entered the Lake District National Park. Flying up Lake Windermere I just had time to catch a glimpse of Bowness before we were pulling up over Ambleside for some "hill skimming". As we left the lake, I noticed a flock of seagulls pass below us—one of the greatest hazards to low-level operations.

### Natural element

The Buccaneer was now in its natural element. About the only way a fighter could obtain a kill on a Buccaneer in such an environment would be to outline it against the sky. Early experiences in Exercise "Red Flag" (see *Air Pictorial*, January 1979) taught Buccaneer crews not to "balloon" over hills. When they did, pursuing fighters were able to push under them and either release a missile or even hit them with cannon fire.

Skimming over the top of a hill near the foot of Ullswater (I think), Dave Ainge dramatically demonstrated one of the lessons he had learned in Nevada. The hill dropped away steeply and I was amazed to see XN981, vortices rippling from the wingtips, hugging the

slope in what appeared to be a half roll. I was grateful to Bob for sparing my stomach by ballooning over the top and re-forming with Dave along the valley.

The Buccaneer has a reputation for giving a smooth ride at low level. This was apparent while we were flying relatively straight and level over the sea. However, flying around, up, down and over the hills, this Buccaneer selling point seemed rather academic and I left my stomach behind somewhere near Morecambe Bay.

Having flown in Buccaneers for so long, Bob had forgotten what first impressions of high-speed/low-level flight were like. As I was concentrating mainly on taking photographs of XN981, I wasn't acutely aware of speed, just the ever-present "g" and high hills—often viewed sideways. As an aside, it was because Buccaneers are often rolled to steep angles at low level, that the decision was made to camouflage their undersurfaces grey/green to match the upper surfaces.

Bob had pieced a strip map together and marked out timing intervals along the track so that I could follow our run-in and simulated laydown attack on Berry Hill, Spadeadam. All his good work was wasted, however, because there was no way I could store my cameras and get the map out of the zip pocket in the leg of my flying suit in the time between his asking me to get the map ready and flying over our IP point at Langholm.

As we ran in to Spadeadam at 540 kt. and 300 ft., slightly higher than briefed, Bob attracted my attention to an audio RWR signal we were receiving.

It was very faint and I found it difficult to distinguish over the background noise, but Bob identified it as a search radar.

A few seconds later I heard the distinctive chirping of a simulated SAM radar which was "illuminating" us. Bad news for most aircraft, but at our height and speed I don't think we would have had much to fear. As we left Spadeadam to retrace our route across the Yorkshire dales and through the Vale of Pickering, we regrouped with XV341 and XV869 who had attacked Spadeadam from a different direction.

The first practice bomb release was at the Cowden range, where the target was a white cross within a circle of barrels. Although we were not dropping a store, we formatted on XN981 up to the beginning of its low-level 8-deg. bunt laydown delivery. For safety we remained at medium altitude as Dave Ainge pushed over into the bunt, almost disappearing from view below us. I was rather disappointed in not seeing the impact but if the bunt laydown was something of an anti-climax, I was more than compensated a few minutes later as we approached the Wainfleet range closely behind XN981.

#### Bombing at Wainfleet

The target at Wainfleet was an 80-ft.-long steel barge and Dave was to deliver a practice bomb from a radar toss attack. We accelerated in a descending turn to starboard and at about 550 kt. levelled off momentarily before pulling into a 7 deg./sec. climb. Bob called out when the bomb was released, but although we were quite close to XN981 I was unable to see it. However, as we rolled off the top of the loop, the impact was clearly visible in the sea. I couldn't have asked for a more grand finale to the sortie.

By now the sun was low on the horizon but I had sufficient time to take a photograph of the three Buccaneers flying low over the North Sea in echelon formation before the sun disappeared. Having previously switched the radar set back to standby, my final task before we joined the Honington circuit was to select the bomb-bay fuel transfer switch "off".

Approaching Honington in arrow formation, we "broke" over the airfield to join the downwind leg of the circuit for our landing. On "downwind" Bob lowered the undercarriage, selected tailplane and wing "blow" and the wing flaps, aileron droop and tailplane flaps. As we turned on to approach, Bob used airbrakes to reduce our airspeed while holding our angle of attack at 20 units. I could clearly hear the audio signal from the airstream direction detector system (ADD) as we flew down the approach path.

Befitting his No. 809 Squadron (ex H.M.S. *Ark Royal*) experience, Bob carried out a no-flare touch-down, at 1720 hours, which was surprisingly less vio-

lent than I had anticipated. As Bob lowered the nosewheel on to the runway, the Buccaneer adopted a nose-down attitude which felt strange after flying for so long in a nominally level attitude.

There was a refreshing blast of fresh air when Bob slid back the cockpit canopy as we taxied around the perimeter track behind XN981. Later, with the aid of helpful groundcrew, I was able to replace the ejection seat and canopy safety pins.

When Bob had completed the necessary paperwork we adjourned to the debrief which, as with the pre-flight brief, was conducted by Dave Ainge and Alan Vincent. Three main topics were discussed: the drogue problem during tanking, the strike at Spadeadam, and the bombing results at Cowden and Wainfleet.

We had been "acquired" by the SAM radar some 3 miles out from the target and Dave emphasised the importance of staying low and using natural features to hide from the radar for as long as possible. No. 208 Squadron regularly carry ECM jamming pods on underwing pylons which would help to confuse enemy radars. Transient system failures resulted in a rather disappointing overall bombing score which was offset somewhat by F/Lt. Bob McLellan and S/Ldr. Roger Carr in XV869 who obtained a direct hit on the Wainfleet target.

The currently unexplained loss of a No. 15 Squadron Buccaneer during Exercise "Red Flag" on 7th February this year has resulted in a temporary grounding of the type—which may soon be lifted. Prior to the grounding and in spite of the Buccaneer's 25 years

since first designed, No. 208 Squadron demonstrated its ability successfully to attack heavily defended targets during many exercises. 1979 was a particularly bad year for R.A.F. aircraft accidents and the popular news media erroneously attributed many of them to low flying. It is important to appreciate that without regular low flying practice No. 208 could not have achieved its high standard of proficiency, without which it would lose its credibility as a strike force.

The Buccaneer is a very popular aircraft with all the crews I've spoken to. Typical of the acclaim it was given was a statement by one of No. 208 Squadron's pilots who considered that "given avionics as per the Buccaneer avionic hack aircraft, it would be a match for the Tornado itself".

S/Ldr. Bob Joy joined the R.A.F. as a Halton Apprentice in 1961, was selected for pilot training and obtained his wings at Cranwell. Since then his experience has included flying Canberra B.6s and B(1).8s with R.A.F. Germany, instructing at Central Flying School, Linton on Ouse, managing the "Red Arrows", a spell with the Tactical Weapons Unit at Brawdy, and 2½ years' flying Buccaneers with No. 809 Squadron, R.N. Bob joined No. 208 Squadron at the beginning of 1979 and has 900 hours of Buccaneer flying under his belt.

*Acknowledgments.*—My thanks for information and hospitality are due to the members of No. 208 Squadron, in particular S/Ldr. Bob Joy, and also to John Haslam, CPRO Strike Command, for his assistance.

*Some of No. 208 Squadron's aircrew with the C.O., W/Cdr. Graham Pitchfork (a navigator), at the head and Hunter F.6 XG152 in No. 208's markings behind. The squadron flew Hunters over ten years ago, before it was re-formed with Buccaneers*

