

Weston - Penarth service, however, SR.N2 had been shipped to Canada, in recognition of exceptional Canadian interest in hovercraft, for amphibious and over-water service. The Canadian visit had, in fact, been envisaged in a joint announcement, by Westland and Autair Helicopter Services Ltd of Montreal, at the 1962 SBAC Display. This alluded to "the joint operational exploitation of Westland hovercraft development, in Canada," and emphasized particularly the great possibilities for such craft throughout the Canadian Arctic, along the Mackenzie and St Lawrence Rivers, and in the Great Lakes area.

Freshly painted, SR.N2 arrived in Montreal on May 1 as deck cargo aboard the Canadian Pacific cargo liner *Beaverfir*. The Atlantic crossing had been extremely rough, but no significant damage was sustained. The base for the planned demonstrations was the Royal St Lawrence Yacht Club at Dorval, and during her positioning trip N2 became the first craft to make a high-speed transit of the Lachine Rapids which, for more than 300 years, had been a barrier to regular shipping on that stretch of the great Canadian river. Test driver Harry Phillips took her across at over 40kt, later remarking: "Rapids? We just didn't know they were there."

The demonstration programme ran from May 3 to May 14 and the craft was shown not only to Federal and Provincial Government representatives and officers of the US and Canadian armed services but to industry representatives from North and South America, as well as more distant countries, including Japan. More than 1,200 passengers were carried over distances totalling upwards of 500 miles. Since her first sea trials on January 8, 1962, until she returned to England she had carried some 5,300 passengers and covered over 5,500 miles.

In recent months SR.N2 has been principally engaged in skirt-development and strain-gauging; but that she is the "real hovercraft" envisaged by Mr Stanton Jones and his colleagues, and no mere experimental hack, is betokened by Westland's inclusion of the same basic type in their production range—additional to a larger Mk 2 version.

SR.N2 Mk 2 This is the designation applied to a developed version of the SR.N2 having a length of 70ft 9in and powered by four Bristol Siddeley Gnomes. The proven lift fans, transmission system and propellers of the existing N2 are retained and the craft is offered with either 2ft or 4ft skirts to achieve optimum economy over a range of operating conditions.

SR.N3 In all essential this military

member of the "SR.N" range, and the third to be constructed, is a Service counterpart of the SR.N2 Mk 2. In fact, had no Government contract been forthcoming she would have been completed as an N2 Mk 2. Happy to relate, the Minister of Aviation went down to Cowes in March 1963 to study progress for himself and a formal contract was received during the following May. N3 was wheeled out of the works on October 1 of the same year.

The first historic event in her career was the handing-over ceremony at the Interservice Hovercraft Trials Unit reported in the June 1964 issue of *Air-Cushion Vehicles* in the following terms:—

"I believe that this is the first occasion on which any piece of equipment—an aircraft, vessel or vehicle—has been accepted on behalf of the unified British Defence Forces." Thus spake Vice-Admiral Sir Richard Smeeton, KCB, MBE, Flag Officer Naval Air Command at HMS *Ariel*, the RN Air Station at Lee-on-Solent, Hants, on June 2. It was appropriate that the piece of equipment he was accepting was neither an aircraft, vessel nor vehicle (or perhaps it was all three): it was in fact, the Westland SR.N3 hovercraft. . . ."

Biggest Westland Product

On this same occasion when handing the craft over (she is, incidentally, the largest and heaviest product in Westland's fifty-year history), Mr E. C. Wheeldon, CBE, the company's deputy chairman and managing director, spoke of the many military fields foreseen for such vehicles. N3, he said, had been designed with a particular eye on the achievement of true amphibious capability, and Westland experience enabled him confidently to predict such craft weighing 200-300 tons, cruising at up to 90kt.

The SR.N3's high disposable load enables her to carry a variety of weapon systems or alternatively substantial loads of fully equipped troops or supplies. Although capable of very fast amphibious operation (she can cruise at 70kt) the craft was also equipped, initially, for extended low-speed patrolling on the water, with APUs driving outboard water screws, which have latterly been removed.

The second notable event in SR.N3's career to date occurred on September 16, 1964, only a few weeks after her handing-over. The occasion was a hovercraft demonstration at Lee-on-Solent. A full gale was blowing, with seas of 5-6ft, and of the nine craft assembled only three—the SR.N3 and two SR.N5s—were able to put to sea. The 300-odd guests stood, as we re-

ported, "like Cornish wreckers on the beach," watching history being made among the breakers. Our report continued:—

"But far from coming to grief under these sticky nautical circumstances, or even merely riding out the storm, SR.N3 and two N5s ran up and down the coast at groundspeeds—or sea-bed speeds—of around 25kt, obviously responding adequately to controls and remaining remarkably stable. . . ."

SR.N4 In February 1964 Westland made public a most ambitious report entitled *A Proposal for a Hovercraft Channel Link*. The main assumption made was that existing forms of cross-Channel transport, that is both ships and aircraft, would continue to carry about the same level of traffic as they would be carrying at the end of this decade, and that traffic growth beyond that level could be catered for by a hovercraft service. The service that would be required to do this, the report continued, and to meet the peak August daily traffic of 13,500 cars, would require a minimum fleet of sixteen SR.N4 type hovercraft, although the average August daily traffic would require about six to eight craft, and in the winter months one SR.N4 would be capable of dealing with average daily requirements.

By introducing three SR.N4s into service every two years, it was reasoned, and with the modest assumption that the craft life would be only ten years, the total predicted traffic growth would be accommodated, and the fleet would build up to sixteen craft by 1985. The production cost of an SR.N4 would be of the order of £1.15 million, and with an annual utilization of some 900hr per year, the total yearly operating costs would be in the region of £0.4 million.

Though the scheme still remains a paper project, it is worth quoting the salient characteristics of the SR.N4 to indicate the sort of Westland hovercraft which might come to pass a few years hence. To meet Channel sea-states it would be capable of operating at 70kt in 4-5ft seas; 40-50kt in 6-8ft seas; and 25-30kt in 13ft seas. The minimum size of craft to meet these requirements would be about 140ft long and with a payload made up of passengers and cars would weigh 150-165 tons. Power requirement would be in the order of 10,000-15,000 h.p., and four Bristol Siddeley Marine Proteus are specified.

SR.N5 We mentioned earlier the occasion in April 1963 when Westland were able to make public in London much new information concerning their work on flexible skirts; and it was on that same occasion that they released first details of an entirely new member of the SR family, the N5. We reported in this journal that although this latest